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March 7, 2019

Randolph Bayliss, P.E.
Hydrologist, Districts III and IV
NMOCD Environmental Bureau
1220 S St Francis St.
Santa Fe, NM 87505

Via electronic mail with delivery confirmation receipt to: Randolph.Bayliss@state.nm.us

**RE: Remedial Progress Report, Thriftway Refinery (NMOCD AP-116)
626 County Road 5500, Bloomfield, New Mexico**

Dear Mr. Bayliss:

BioTech Remediation, Inc (BioTech), on behalf of Thriftway Company (Thriftway), has completed this periodic Remedial Progress Report for the Thriftway Refinery, located at 626 County Road 5500, Bloomfield, New Mexico. This report summarizes groundwater monitoring and sampling that was completed in July 2018.

Facility Description

The facility was constructed in the 1960s and processed San Juan Basin crude oil until the early 1990s. Most of the facility infrastructure has been dismantled and removed from the site. Since March 2010, a multi-phase high vacuum extraction (MPE) remediation system has operated at the facility during non-winter months to remove hydrocarbon vapors from the soil, free product from the soil and groundwater, and dissolved-phase hydrocarbons from the groundwater. Additionally, in 2010, 2011, 2012, and 2014 hybrid poplars, obtained from New Mexico State University (NMSU) Agriculture Experimental Station, were planted in the northwest portion of the facility as part of a joint phytoremediation pilot project. A total of 1,400 trees have been planted under the supervision of NMSU personnel. A general site plan is included as **Figure 1** and groundwater monitor wells are shown on **Figure 2**. Multi-phase extraction (MPE) remediation wells and the phytoremediation areas are shown on **Figure 3**.

Groundwater Monitoring, July 2018

BioTech personnel completed free product thickness and depth to groundwater monitoring between July 5 and July 9, 2018 of the following groundwater monitor wells and MPE wells:

Monitor Wells Measured in July 2018

TW-1	TW-2	TW-3	TW-4	TW-5	TW-6	TW-7*	TW-8	TW-9	TW-10
TW-11	TW-12*	TW-13*	TW-14	TW-15	TW-16	TW-17	TW-18	TW-19*	TW-20*
TW-21*	TW-22*	TW-23	TW-24	TW-25*	TW-26*	TW-28*	TW-29*	TW-30	TW-31
TW-32*	TW-33*	TW-34	TW-35*	TW-36*	TW-37	TW-38*	TW-39	TW-40*	TW-41
TW-42	TW-43	TW-44*	TW-45	TW-46	TW-47	TW-48	TW-50*	TW-51	TW-52
TW-53	TW-54	MW-4	MW-5	MW-6	MW-7	MW-12*	MW-13	MW-16	MW-17*
MW-18	MW-19	MW-20	MW-21	RW-24*	RW-25*				

* Indicates Well Containing Free Product

MPE Wells Measured in July 2018

MPE-1	MPE-2	MPE-3	MPE-4	MPE-5	MPE-6	MPE-7*	MPE-8	MPE-9
MPE-10	MPE-11	MPE-12	MPE-13	MPE-14	MPE-16	MPE-17	MPE-18	MPE-19
MPE-20	MPE-21*	MPE-22*	MPE-23	MPE-24	MPE-25	MPE-26*	MPE-27	MPE-28
MPE-29	MPE-30	MPE-31	MPE-33*	MPE-34*	MPE-35	MPE-36	MPE-37*	MPE-38*
MPE-39	MPE-40	MPE-41	MPE-42*	MPE-43	MPE-44*	MPE-45*	MPE-46	MPE-47*
MPE-48	MPE-49	MPE-50*	MPE-51	MPE-52*	MPE-53*	MPE-54*	MPE-55	MPE-56
MPE-57	MPE-58	MPE-59	MPE-60	MPE-61	MPE-62	MPE-63*	MPE-64*	MPE-65*
MPE-66*	MPE-67*	MPE-68	MPE-69	MPE-70*	MPE-71*	MPE-72*	MPE-73*	MPE-74*
MPE-75*	MPE-76*	MPE-77*	MPE-78	MPE-79	MPE-80	MPE-81*	MPE-82*	MPE-83*
MPE-84*	MPE-85*	MPE-86*	MPE-87*	MPE-88*	MPE-89*	MPE-90*		

* Indicates Well Containing Free Product

Free Product Thickness Measurements

Measurable thicknesses of free product were recorded in 23 monitor wells and 38 MPE wells during the March 2017 monitoring event. In general, free product thicknesses remained about the same compared to those measured during the March 2017 monitoring event and ranged from 0.01 to 3.16 feet, with most thicknesses being less than 0.50 feet. Free product measurement data is summarized in **Table 1** and a free product thickness contour map, based on the July 2018 data, is included as **Figure 4**.

Groundwater Elevation Measurements

Depth to groundwater measurements at the site varied little between the March 2017 and July 2018 monitoring events. In the southeast portion of the site, depth to groundwater ranged from 23.25 feet below top of casing (TOC) to 36.81 feet below TOC, and groundwater elevations across this area ranged from 5,434.77 to 5,437.92 feet above mean sea level (AMSL). In the northwest portion of the site, depth to groundwater ranged between 7.70 and 11.99 feet below TOC, and groundwater elevations across this area ranged from 5,427.07 to 5,430.17 feet AMSL. Groundwater gradient measured between the southeast and northwest portions of the site is approximately 0.008 feet/foot west-northwest. Groundwater elevation measurement data is summarized in **Table 1** and a groundwater elevation contour map, based on the July 2018 data, is included as **Figure 5**.

Groundwater Quality Measurements

Following measurement of groundwater elevations, each well was purged with a new disposable bailer and the temperature, pH, and conductivity measurements observed during the purging, along with the purged volumes, were recorded onto Water Sample Collection Forms, which are included in **Appendix A**.

Groundwater temperature ranged between 16.25°C and 21.85°C, conductivity ranged between 3.148 mS and 7.806 mS, and pH varied between 6.27 and 7.60. Groundwater quality data are included in **Table 1**.

Groundwater Sampling and Analytical Results

Once each well was purged and measured for water quality parameters, groundwater samples were collected using a disposable bailer equipped with a slow release valve. Each sample was transferred into appropriate sample containers, labeled, and documented on the Water Sample Collection Form. The Chain of Custody Record was completed, and samples were transported to the analyzing laboratory, Hall Environmental Laboratory, Albuquerque, New Mexico, in insulated coolers at a temperature of less than 6°C. Analytical laboratory reports are included in **Appendix B**.

During the July 2018 sampling event, samples from 33 monitoring wells, which are listed below, were analyzed for volatile organic compounds (VOCs) per EPA Method 8260B.

Monitor Wells Sampled in July 2018

TW-11	TW-15	TW-16	TW-17	TW-18	TW-23	TW-24	TW-30	TW-31
TW-34	MW-21	TW-37	TW-39	TW-41	TW-42	TW-43	TW-45	TW-46
TW-47	TW-48	TW-51	TW-52	TW-53	TW-54	MW-4	MW-5	MW-6
MW-7	MW-13	MW-16	MW-18	MW-19	MW-20			

Analytical results of groundwater samples collected in July 2018 are similar in respective concentration to those collected in March 2017. For this sampling event, benzene concentrations that exceeded the cleanup standard (10 µg/L) were detected in two monitor wells (TW-41 at 41 µg/L and TW-37 at 200 µg/L), which are located outside of the free product plume. Dissolved-phase methyl-tert-butyl ether (MTBE) concentrations from the July 2018 sampling event that exceed the cleanup standard (100 µg/L) were detected in three monitor wells (MW-19 and TW-51 at 150 µg/L and TW-43 at 210 µg/L), which are all located outside of the free product plume. All other hydrocarbon contaminants analyzed were below the laboratory method detection limit or below the cleanup standard. Hydrocarbon contaminant concentration data is summarized in **Table 2**. Dissolved benzene and MTBE concentration maps, based on the July 2018 data, are included as **Figure 6** and **Figure 7**, respectively.

Remediation Operations

On April 21, 2017, during a routine inspection of the lined evaporation pond associated with the soil and groundwater remediation equipment operated at the facility, water was found to be present in the interstitial monitoring system between the pond's primary and secondary liners. At the time, the thickness of the water column measured in the interstitial well was equal to the thickness of water present in the lined pond, which was about 1 foot. Since the remediation equipment is only operated between May and October each year, besides precipitation, no water had been discharged to the pond since October 7, 2016. Between April 24 and May 1, 2017, water was pumped from the interstitial monitoring system to determine if the water present in the system was due to condensation buildup or a leak in the primary liner. Approximately 150 gallons of water was pumped from the interstitial system without influencing the water column thickness measured in the interstitial well, which confirmed that the primary liner was leaking. Because groundwater is shallow at the pond location, an excavation was made within an adjacent evaporation pond that is not used, but has an equal base elevation to the pond that is used, to determine the exact depth to groundwater beneath the base of the ponds, which was found to be 3 feet. Unsaturated soil beneath the ponds was found to consist of fine sand, which is consistent with soils encountered within historic soil borings installed throughout the facility. Based on the observed soil type and depth to water beneath the pond, it was concluded that the secondary pond liner was not leaking.

In preparation to replace the primary liner, from May 2 through May 5, 2017, all of the water within the pond, approximately 42,000 gallons, was removed and placed into two 500 barrel (bbl) frac tanks for temporary storage. Once the water was removed from the ponds, the interstitial system was pumped again and no recharge to the system was observed.

Between May 10 and May 18, 2017, evaporation pond liner vendors were contacted to determine the appropriate liner type and mil to replace the leaking primary liner. On May 19, 2017, Carl Chavez, NMOCD, was contacted by telephone to report the leaking liner and to discuss the re-lining project going forward. On the same day, Mr. Chavez sent an email to Jim Griswold, NMOCD, describing our telephone conversation as well as suggesting how the project might best move forward. The body text of the email is provided below:

I received a call at around 11:45 am from Mr. Ross Kennemer (BioTech) at (505) 215-5984 or E-mail: Ross@biotechremediation.net.

The site is under remediation, and the evaporation pond w/ leak detection system in question was constructed under the former GW-55 DP, which was not required to be renewed under the OCD Questionnaire process around 2012.

BioTech wants to modify the design of the evaporation pond that it uses for the remediation process at the facility because the LDS shows fluids present. BioTech has evaluated the situation and believes they have containment by the secondary liner system, and want to lay down

geotextile over the existing primary liner cover with OCD's Part 17 prescribed LLDPE Liner.

I believe the simplest "path forward" may be to submit a C-144 Form with "modification" checked and all available information on the modification including the former design of the pond. Even though the EPs were constructed under the former GW-55 without the original Form C-144 submittal. The operator did not submit a C-144 Form for the ponds during the transition between GW-55 and AP-116.

In preparation for preparing the C-144 Form, on May 31, 2017, an email was sent to Mr. Griswold and Mr. Chavez describing our proposed re-lining project. As-built diagrams of the existing pond construction, which are included with this report as **Figure 8** and **Figure 9**, were included with the email. The body text of the email is provided below:

On May 19, 2017 I spoke with Carl Chavez regarding our need to replace the leaking top liner on an evaporation pond associated with the soil and groundwater remediation system that is operated at the former Thriftway Refinery, which is located at 626 CR 5500, Bloomfield, San Juan County, New Mexico. On the same day, I was copied on an email sent to you by Mr. Chavez that described our situation and suggested that a C-144 be submitted to register the evaporation pond, which was constructed in 1990 under the former GW-055 permit. In NMOCD correspondence dated August 30, 2012, the GW-055 Discharge Plan was discontinued and an Abatement Plan Case Number (AP-116) was assigned to the site.

I have partially completed the C-144 reflecting the evaporation pond's original construction, but I think it would be prudent for the NMOCD to examine the attached construction diagrams, based on original drawings from 1990 and a recent inspection of pond construction materials, before we submit a C-144 to register the pond and an additional C-144 Modification that describes our proposal to install a new liner (45 mil LLDPE) and geotextile (8 oz.) directly over the existing top liner. Based on our inspection of the pond after it was emptied, we are confident that the lower liner is functioning properly and there has been no release of water from the pond to the environment.

If the described approach forward is approved by the NMOCD, we will immediately submit all required forms and supporting documents. In order to begin operating the remediation system as soon as possible, we would like to complete the re-lining during the week of June 26, 2017.

If possible, an expedited review of our approach would be appreciated. Please contact me by email or phone to discuss this matter.

At the request of the NMOCD, on July 18, 2017, BioTech submitted additional data regarding the proposed pond lining materials. This correspondence is included in **Appendix C**. Since submitting the additional data referenced in **Appendix C**, BioTech has sent periodic follow-up emails to NMOCD inquiring as to the status of NMOCD's review of the same. As of the date of this report, no response communication from NMOCD has been received.

Report Summary

During this monitoring and sampling event, free product thickness and depth to groundwater measurements were taken in 66 monitor wells and 88 MPE wells, and free product was found to be present in 23 of the monitor wells and 38 of the MPE wells. Based on comparisons of free product thickness and extent data from this event to that of previous events, the free product plume is stable and not migrating toward the western portion of the facility or the northern portion towards the Kutz Wash.

During the July 2018 sampling event, 33 monitoring wells, which did not contain free product, were sampled. Analytical results across the entire site were similar in respective concentrations to those collected in March 2017. Groundwater contaminants, benzene and MTBE, that exceeded the cleanup standards were detected in several monitor wells located in the western portion of the facility. Based on comparisons of benzene and MTBE concentration data from this event to that of previous events, the benzene and MTBE plumes are stable and not migrating further west or north towards the Kutz Wash.

Scheduled Work

The following tasks are anticipated to be completed in 2019:

1. Groundwater monitoring and sampling will be completed in April 2019;
2. Upon receipt of NMOCD approval, a new evaporation pond primary liner will be installed;
3. Soil and groundwater remediation will resume at the facility once the evaporation pond has been re-lined.

If you have any questions regarding site conditions, planned site work, or this report, please do not hesitate to contact me at (505) 215-5984.

Sincerely,



Ross Kennemer
Project Manager

Attachments:

Tables

Table 1. Summary of Groundwater Measurement and Water Quality Data

Table 2. Summary of Groundwater Analytical Results

Figures

Figure 1. General Site Plan

Figure 2. Groundwater Monitor Well Locations

Figure 3. MPE Well Locations and Phytoremediation Areas

Figure 4. Free Product Thickness Contour Map, July 2018

Figure 5. Groundwater Elevation Contour Map, July 2018

Figure 6. Dissolved Benzene Concentration Map, July 2018

Figure 7. Dissolved MTBE Concentration Map, July 2018

Figure 8. Groundwater Remediation Evaporation Pond Plan View

Figure 9. Groundwater Remediation Evaporation Pond Cross-Section

Appendices

Appendix A. Water Sample Collection Forms

Appendix B. Hall Environmental Laboratory Analytical Report

Appendix C. July 18, 2017 Correspondence to NMOCD

cc: Robert Moss, Thriftway Company

Via electronic mail with delivery confirmation receipt to:

robertgmoss@me.com

TABLES

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-1	16-Feb-16	5471.58	NA	31.58	NA	5440.00	7.51	2.654	14.66	-31.8	2
	07-Sep-16	5471.58	NA	31.79	NA	5439.79	NM				NA
	13-Mar-17	5471.58	NA	31.55	NA	5440.03	NM				NA
	09-Jul-18	5471.58	NA	36.81	NA	5434.77	NM				NA
TW-2	16-Feb-16	5469.31	NA	29.78	NA	5439.53	7.41	4.327	15.73	-26.6	4
	07-Sep-16	5469.31	NA	30.01	NA	5439.30	NM				NA
	13-Mar-17	5469.31	NA	29.77	NA	5439.54	NM				NA
	09-Jul-18	5469.31	NA	30.05	NA	5439.26	NM				NA
TW-3	26-Feb-16	5468.14	NA	28.23	NA	5439.91	7.41	5.915	15.79	-32.1	4
	07-Sep-16	5468.14	NA	29.12	NA	5439.02	NM				NA
	13-Mar-17	5468.14	NM-WELL PLUGGED WITH TREE ROOTS								
	09-Jul-18	5468.14	NA	26.35	NA	5441.79	NM				NA
TW-4	16-Feb-16	5458.72	NA	19.87	NA	5438.85	7.48	6.123	17.93	-30.3	4
	07-Sep-16	5458.72	NA	20.20	NA	5438.52	NM				NA
	13-Mar-17	5458.72	NA	19.85	NA	5438.87	NM				NA
	09-Jul-18	5458.72	NA	19.16	NA	5439.56	NM				NA
TW-5	16-Feb-16	5465.18	NA	26.31	NA	5438.87	7.41	3.260	16.07	-26.4	4
	07-Sep-16	5465.18	NM-WELL PLUGGED WITH TREE ROOTS								
	13-Mar-17	5465.18	NA	26.27	NA	5438.91	NM				NA
	09-Jul-18	5465.18	NA	26.55	NA	5438.63	NM				NA
TW-6	16-Feb-16	5463.57	NA	25.44	NA	5438.13	7.44	4.434	16.20	-30.4	4
	07-Sep-16	5463.57	NA	25.76	NA	5437.81	NM				NA
	13-Mar-17	5463.57	NA	25.43	NA	5438.14	NM				NA
	09-Jul-18	5463.57	NA	25.79	NA	5437.78	NM				NA
TW-7	16-Feb-16	5461.17	22.70	23.76	1.06	5438.29	NM				NA
	07-Sep-16	5461.17	NA	23.29	NA	5437.88	NM				NA
	13-Mar-17	5461.17	22.80	23.35	0.55	5438.27	NM				NA
	09-Jul-18	5461.17	NA	23.25	NA	5437.92	NM				NA

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TW-8	16-Feb-16	5458.29	NA	20.30	NA	5437.99	7.15	4.318	14.29	-11.7	4
	07-Sep-16	5458.29	NA	20.74	NA	5437.55	NM				NA
	13-Mar-17	5458.29	NA	20.26	NA	5438.03	NM				NA
	09-Jul-18	5458.29	NA	20.72	NA	5437.57	NM				NA
TW-9	16-Feb-16	5450.61	NA	12.74	NA	5437.87	7.59	2.154	13.12	-35.5	4.00
	07-Sep-16	5450.61	NA	13.36	NA	5437.25	NM				NA
	13-Mar-17	5450.61	NA	12.68	NA	5437.93	NM				NA
	09-Jul-18	5450.61	NA	13.32	NA	5437.29	NM				NA
TW-10	16-Feb-16	5450.16	NA	12.87	NA	5437.29	7.35	2.598	12.74	-22.4	4
	07-Sep-16	5450.16	NA	13.45	NA	5436.71	NM				NA
	13-Mar-17	5450.16	NA	12.81	NA	5437.35	NM				NA
	09-Jul-18	5450.16	NA	15.51	NA	5434.65	NM				NA
TW-11	17-Feb-16	5456.31	NA	18.72	NA	5437.59	7.53	7.106	14.34	-30.2	4
	08-Sep-16	5456.31	NA	19.12	NA	5437.19	7.62	6.870	16.55	-38.1	1
	29-Mar-17	5456.31	NA	18.71	NA	5437.60	7.80	6.951	13.47	-48.2	0.25
	09-Jul-18	5456.31	NA	18.95	NA	5437.36	7.16	5.572	16.25	-47.9	0.25
TW-12	17-Feb-16	5460.44	23.00	23.20	0.20	5437.41	NM				NA
	07-Sep-16	5460.44	23.29	24.10	0.81	5437.01	NM				NA
	13-Mar-17	5460.44	NA	23.03	NA	5437.41	NM				NA
	09-Jul-18	5460.44	23.34	23.79	0.45	5436.65	NM				NA
TW-13	17-Feb-16	5458.17	21.17	21.91	0.74	5436.87	NM				NA
	07-Sep-16	5458.17	21.50	22.81	1.31	5436.44	NM				NA
	13-Mar-17	5458.17	21.20	21.81	0.61	5436.86	NM				NA
	09-Jul-18	5458.17	21.55	22.88	1.33	5436.39	NM				NA
TW-14	17-Feb-16	5454.24	17.58	18.03	0.45	5436.58	NM				NA
	07-Sep-16	5454.24	17.93	18.56	0.63	5436.20	NM				NA
	13-Mar-17	5454.24	17.65	17.71	0.06	5436.58	NM				NA
	09-Jul-18	5454.24	NA	18.05	NA	5436.19	NM				NA

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TW-15	17-Feb-16	5450.44	NA	13.54	NA	5436.90	7.25	5.148	14.04	-18.0	4
	08-Sep-16	5450.44	NA	14.08	NA	5436.36	7.32	5.170	16.84	-21.7	1
	29-Mar-17	5450.44	NA	13.47	NA	5436.97	7.61	4.904	13.88	-37.2	0.25
	09-Jul-18	5450.44	NA	14.89	NA	5435.55	7.22	4.022	17.16	-50.3	0.25
TW-16	17-Feb-16	5448.45	NA	11.72	NA	5436.73	7.46	3.590	12.53	-27.7	4
	07-Sep-16	5448.45	NA	12.47	NA	5435.98	NM				NA
	29-Mar-17	5448.45	NA	11.70	NA	5436.75	7.66	4.180	12.69	-40.0	0.25
	09-Jul-18	5448.45	NA	12.36	NA	5436.09	7.40	4.046	18.40	-57.07	0.25
TW-17	17-Feb-16	5446.24	NA	10.69	NA	5435.55	7.59	4.682	12.39	-36.2	4
	07-Sep-16	5446.24	NA	10.75	NA	5435.49	NM				NA
	29-Mar-17	5446.24	NA	10.22	NA	5436.02	7.87	4.690	13.15	-51.6	0.25
	09-Jul-18	5446.24	NA	10.88	NA	5435.36	7.52	3.910	17.90	-62.0	0.25
TW-18	17-Feb-16	5452.73	NA	16.79	NA	5435.94	7.38	7.294	16.2	-24.5	4
	08-Sep-16	5452.73	NA	17.23	NA	5435.50	7.41	7.380	17.43	-26.8	1
	29-Mar-17	5452.73	NA	16.79	NA	5435.94	7.67	7.132	15.46	-41.1	0.25
	09-Jul-18	5452.73	NA	17.14	NA	5435.59	7.13	6.596	17.45	-46.8	0.25
TW-19	17-Feb-16	5458.49	18.09	18.30	0.21	5440.36	NM				NA
	07-Sep-16	5458.49	18.30	19.19	0.89	5440.04	NM				NA
	13-Mar-17	5458.49	18.10	18.21	0.11	5440.37	NM				NA
	09-Jul-18	5458.49	18.45	18.56	0.11	5440.02	NM				NA
TW-20	17-Feb-16	5453.74	17.97	18.49	0.52	5435.68	NM				NA
	07-Sep-16	5453.74	18.29	19.75	1.46	5435.20	NM				NA
	13-Mar-17	5453.74	17.95	18.71	0.76	5435.66	NM				NA
	09-Jul-18	5453.74	18.60	18.85	0.25	5435.10	NM				NA
TW-21	17-Feb-16	5451.85	16.84	17.15	0.31	5434.96	NM				NA
	07-Sep-16	5451.85	16.98	18.07	1.09	5434.68	NM				NA
	13-Mar-17	5451.85	16.81	17.11	0.30	5434.99	NM				NA
	09-Jul-18	5451.85	17.01	18.41	1.40	5434.60	NM				NA

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TW-22	17-Feb-16	5450.19	NA	15.24	NA	5434.95	7.20	4.289	15.95	-14.7	4
	08-Sep-16	5450.19	15.55	15.71	0.16	5434.61	NM				NA
	13-Mar-17	5450.19	NA	15.20	NA	5434.99	NM				NA
	09-Jul-18	5450.19	15.65	15.68	0.03	5434.51	NM				NA
TW-23	17-Feb-16	5443.64	NA	9.07	NA	5434.57	7.30	5.703	10.53	-18.7	4
	07-Sep-16	5443.64	NA	9.60	NA	5434.04	NM				NA
	13-Mar-17	5443.64	NA	9.00	NA	5434.64	7.54	5.191	11.26	-33.5	0.25
	09-Jul-18	5443.64	NA	9.65	NA	5433.99	7.15	5.207	18.04	-47.4	0.25
TW-24	17-Feb-16	5444.79	NA	11.02	NA	5433.77	7.36	6.110	14.21	-23.4	4
	07-Sep-16	5444.79	NA	11.36	NA	5433.43	NM				NA
	29-Mar-17	5444.79	NA	10.96	NA	5433.83	7.62	6.196	14.09	-38.2	0.25
	09-Jul-18	5444.79	NA	9.59	NA	5435.20	7.24	3.421	20.21	-51.4	0.25
TW-25	17-Feb-16	5448.80	14.46	14.69	0.23	5434.30	NM				NA
	07-Sep-16	5448.80	14.66	15.32	0.66	5434.03	NM				NA
	13-Mar-17	5448.80	14.44	14.51	0.07	5434.35	NM				NA
	09-Jul-18	5448.80	14.75	15.45	0.70	5433.93	NM				NA
TW-26	17-Feb-16	5450.34	16.18	16.79	0.61	5434.05	NM				NA
	07-Sep-16	5450.34	16.31	17.52	1.21	5433.82	NM				NA
	13-Mar-17	5450.34	16.15	16.46	0.31	5434.14	NM				NA
	09-Jul-18	5450.34	16.41	17.70	1.29	5433.71	NM				NA
TW-28	17-Feb-16	5448.89	15.13	16.14	1.01	5433.59	NM				NA
	07-Sep-16	5448.89	15.38	16.75	1.37	5433.27	NM				NA
	13-Mar-17	5448.89	15.21	15.91	0.70	5433.56	NM				NA
	09-Jul-18	5448.89	15.35	16.72	1.37	5433.30	NM				NA
TW-29	19-Feb-16	5441.87	NA	9.27	NA	5432.60	7.35	3.485	13.59	-23.50	4
	08-Sep-16	5441.87	9.51	9.78	0.27	5432.31	NM				NA
	13-Mar-17	5441.87	9.14	9.17	0.03	5432.72	NM				NA
	09-Jul-18	5441.87	9.68	9.75	0.07	5432.18	NM				NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-30	19-Feb-16	5437.93	NA	5.86	NA	5432.07	7.19	5.465	9.33	-13.7	4
	07-Sep-16	5437.93	NM-WASP NEST IN WELL								
	29-Mar-17	5437.93	NA	5.84	NA	5432.09	7.41	5.702	11.72	-26.1	0.25
	09-Jul-18	5437.93	NA	6.26	NA	5431.67	7.09	6.304	21.11	-45.3	0.25
TW-31	19-Feb-16	5438.54	NA	7.01	NA	5431.53	7.33	5.426	10.04	-21.9	4
	07-Sep-16	5438.54	NA	7.35	NA	5431.19	NM				NA
	29-Mar-17	5438.54	NA	6.95	NA	5431.59	7.56	6.037	12.09	-34.6	0.25
	09-Jul-18	5438.54	NA	7.26	NA	5431.28	7.60	7.221	21.85	-65.6	0.25
TW-32	19-Feb-16	5441.61	9.36	10.31	0.95	5432.09	NM				NA
	07-Sep-16	5441.61	9.51	10.47	0.96	5431.93	NM				NA
	13-Mar-17	5441.61	9.25	9.86	0.61	5432.25	NM				NA
	09-Jul-18	5441.61	9.69	10.00	0.31	5431.87	NM				NA
TW-33	19-Feb-16	5445.85	13.03	13.71	0.68	5432.70	NM				NA
	19-Feb-16	5445.85	13.11	14.10	0.99	5432.57	NM				NA
	13-Mar-17	5445.85	12.95	13.34	0.39	5432.83	NM				NA
	09-Jul-18	5445.85	13.30	14.54	1.24	5432.34	NM				NA
TW-34	23-Feb-16	5455.80	NA	20.27	NA	5435.53	7.14	7.126	14.04	-12.9	4
	08-Sep-16	5455.80	NA	20.85	NA	5434.95	7.37	6.730	15.86	-24.3	1
	30-Mar-17	5455.80	NA	20.26	NA	5435.54	7.56	7.407	14.60	-34.9	0.25
	10-Jul-18	5455.80	NA	20.88	NA	5434.92	6.95	7.806	17.98	-39.1	0.25
TW-35	23-Feb-16	5449.14	15.37	15.84	0.47	5433.69	NM				NA
	08-Sep-16	5449.14	15.55	16.26	0.71	5433.47	NM				NA
	13-Mar-17	5449.14	15.34	15.45	0.11	5433.78	NM				NA
	09-Jul-18	5449.14	13.30	14.54	1.24	5435.63	NM				NA
TW-36	22-Feb-16	5441.91	NA	13.19	NA	5428.72	7.18	6.502	14.97	-13.7	4
	08-Sep-16	5441.91	NA	13.30	NA	5428.61	7.45	7.270	18.28	-28.6	1
	30-Mar-17	5441.91	NA	13.02	NA	5428.89	7.68	7.220	14.31	-41.6	0.25
	10-Jul-18	5441.91	13.55	13.61	0.06	5428.30	NM	NM	NM	NM	NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-37	25-Feb-16	5439.59	NA	10.70	NA	5428.89	7.28	4.271	12.70	-19.2	4
	08-Sep-16	5439.59	NA	10.80	NA	5428.79	7.32	4.560	19.34	-21.9	1
	29-Mar-17	5439.59	NA	10.52	NA	5429.07	7.50	4.038	13.62	-31.6	0.25
	10-Jul-18	5439.59	NA	11.01	NA	5428.58	7.25	3.941	18.56	-51.5	0.25
TW-38	25-Feb-16	5442.11	NA	11.64	NA	5430.47	7.49	4.485	13.74	-35.3	4
	08-Sep-16	5442.11	11.73	11.76	0.03	5430.37	NM				NA
	13-Mar-17	5442.11	11.45	11.47	0.02	5430.66	NM				NA
	10-Jul-18	5442.11	11.93	11.99	0.06	5430.17	NM				NA
TW-39	19-Feb-16	5438.43	NA	7.78	NA	5430.65	7.37	4.201	9.63	-24.3	4
	08-Sep-16	5438.43	NA	8.05	NA	5430.38	7.43	4.100	21.36	-28.3	1
	29-Mar-17	5438.43	NA	7.48	NA	5430.95	7.57	4.223	12.00	-35.0	0.25
	09-Jul-18	5438.43	NA	9.29	NA	5429.14	7.20	4.002	21.20	-49.9	0.25
TW-40	22-Feb-16	5437.50	7.75	8.00	0.25	5429.71	NM				NA
	08-Sep-16	5437.50	8.08	8.22	0.14	5429.40	NM				NA
	13-Mar-17	5437.50	7.25	7.31	0.06	5430.24	NM				NA
	09-Jul-18	5437.50	8.29	8.71	0.42	5429.14	NM				NA
TW-41	22-Feb-16	5434.77	NA	6.05	NA	5428.72	6.99	5.896	7.89	-3.0	4
	08-Sep-16	5434.77	NA	6.28	NA	5428.49	7.29	6.550	20.93	-20.3	1
	29-Mar-17	5434.77	NA	5.62	NA	5429.15	7.37	7.045	11.60	-24.4	0.25
	09-Jul-18	5434.77	NA	7.70	NA	5427.07	7.3	4.987	21.54	-53.5	0.25
TW-42	22-Feb-16	5433.76	NA	6.46	NA	5427.30	7.39	5.909	8.54	-24.7	4
	08-Sep-16	5433.76	NA	6.34	NA	5427.42	7.37	6.460	20.86	-24.8	1
	29-Mar-17	5433.76	NA	6.02	NA	5427.74	7.53	6.175	11.30	-32.8	0.25
	09-Jul-18	5433.76	NA	8.33	NA	5425.43	7.22	6.536	20.64	-50.4	0.25
TW-43	22-Feb-16	5440.42	NA	12.33	NA	5428.09	7.12	5.159	13.14	-9.9	4
	08-Sep-16	5440.42	NA	12.49	NA	5427.93	7.23	5.140	18.98	-16.3	1
	29-Mar-17	5440.42	NA	12.16	NA	5428.26	7.40	5.100	13.11	-25.9	0.25
	10-Jul-18	5440.42	NA	12.72	NA	5427.70	6.65	3.822	18.36	-27.9	0.25

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-44	22-Feb-16	5444.08	15.19	15.31	0.12	5428.87	NM			NA	
	07-Sep-16	5444.08	15.23	15.49	0.26	5428.81	NM			NA	
	13-Mar-17	5444.08	15.03	15.31	0.28	5429.00	NM			NA	
	09-Jul-18	5444.08	15.57	15.91	0.34	5428.45	NM			NA	
TW-45	23-Feb-16	TBS	NA	7.05	NA	NA	7.16	5.190	8.47	-12.2	4
	08-Sep-16	TBS	NA	7.28	NA	NA	7.24	5.248	19.21	-17.2	1
	30-Mar-17	TBS	NA	6.91	NA	NA	7.58	5.068	10.29	-35.5	0.25
	11-Jul-18	TBS	NA	7.53	NA	NA	6.27	3.932	19.41	-12.9	0.25
TW-46	23-Feb-16	TBS	NA	7.44	NA	NA	7.41	6.827	8.84	-25.1	4
	08-Sep-16	TBS	NA	7.61	NA	NA	7.52	6.120	20.39	-33.1	1
	30-Mar-17	TBS	NA	7.28	NA	NA	7.78	6.376	10.28	-46.2	0.25
	11-Jul-18	TBS	NA	7.82	NA	NA	6.49	4.694	19.51	-21.5	0.25
TW-47	26-Feb-16	TBS	NA	6.98	NA	NA	7.28	10.320	9.56	-18.7	4
	08-Sep-16	TBS	NA	7.43	NA	NA	7.40	9.530	20.86	-26.4	1
	30-Mar-17	TBS	NA	6.26	NA	NA	7.90	13.360	11.03	-53.2	0.25
	11-Jul-18	TBS	NA	6.94	NA	NA	6.75	4.628	19.49	-36.8	0.25
TW-48	19-Feb-16	TBS	NA	6.93	NA	NA	7.25	4.726	8.74	-16.8	4
	07-Sep-16	TBS	NA	6.98	NA	NA	NM			NA	
	29-Mar-17	TBS	NA	7.37	NA	NA	7.47	5.240	11.81	-29.5	0.25
	10-Jul-18	TBS	NA	8.61	NA	NA	6.77	5.916	20.52	-32.1	0.25
TW-49	26-Feb-16	TBS	NA	5.85	NA	NA	7.14	8.247	6.65	-11.30	2
	07-Sep-16	WELL DESTROYED									
TW-50	26-Feb-16	TBS	7.88	8.21	0.33	NA	NM			NA	
	07-Sep-16	TBS	8.05	8.40	0.35	NA	NM			NA	
	13-Mar-17	TBS	7.65	8.42	0.77	NA	NM			NA	
	09-Jul-18	TBS	9.45	9.71	0.26	NA	NM			NA	

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
TW-51	26-Feb-16	TBS	NA	7.02	NA	NA	7.25	6.463	8.22	-17.3	4
	08-Sep-16	TBS	NA	7.25	NA	NA	7.21	6.770	21.68	-15.6	1
	30-Mar-17	TBS	NA	6.92	NA	NA	7.58	6.615	10.52	-35.4	0.25
	11-Jul-18	TBS	NA	7.38	NA	NA	6.87	6.059	20.71	-36.5	0.25
TW-52	26-Feb-16	TBS	NA	7.45	NA	NA	7.17	6.911	7.92	-13.4	4
	08-Sep-16	TBS	NA	7.70	NA	NA	7.27	8.040	20.52	-18.6	1
	30-Mar-17	TBS	NA	7.38	NA	NA	7.50	6.892	10.09	-31.2	0.25
	11-Jul-18	TBS	NA	7.83	NA	NA	6.86	7.798	18.87	-36.3	0.25
TW-53	26-Feb-16	TBS	NA	7.17	NA	NA	7.47	8.811	8.97	-28.9	4
	08-Sep-16	TBS	NA	7.35	NA	NA	7.46	8.670	20.65	-31.1	1
	30-Mar-17	TBS	NA	7.09	NA	NA	7.72	8.025	10.17	-42.8	0.25
	11-Jul-18	TBS	NA	7.48	NA	NA	6.96	6.314	19.25	-40.1	0.25
TW-54	26-Feb-16	TBS	NA	7.63	NA	NA	7.52	5.987	9.49	-31.9	4
	08-Sep-16	TBS	NA	8.01	NA	NA	7.53	6.540	20.29	-33.6	1
	30-Mar-17	TBS	NA	7.53	NA	NA	7.75	5.709	10.74	-44.8	0.25
	11-Jul-18	TBS	NA	7.94	NA	NA	6.98	5.061	18.06	-40.8	0.25
MW-4	19-Feb-16	5430.12	NA	5.35	NA	5424.77	7.37	5.477	9.66	-22.8	4
	08-Sep-16	5430.12	NA	5.39	NA	5424.73	7.47	5.780	21.40	-30.6	1
	29-Mar-17	5430.12	NA	4.52	NA	5425.60	7.64	5.487	11.94	-38.8	0.25
	10-Jul-18	5430.12	NA	5.30	NA	5424.82	7.12	4.968	20.89	-46.6	0.25
MW-5	08-Sep-16	5428.97	NA	5.71	NA	5423.26	7.89	5.590	19.24	-53.8	1
	29-Mar-17	5428.97	NA	4.91	NA	5424.06	7.64	7.250	11.35	-38.5	0.25
	10-Jul-18	5428.97	NA	5.66	NA	5423.31	7.40	5.673	19.06	-57.5	0.25
MW-6	19-Feb-16	5430.70	NA	4.76	NA	5425.94	7.58	7.378	10.79	-35.2	4
	08-Sep-16	5430.70	NA	5.02	NA	5425.68	7.47	6.390	20.47	-30.0	1
	29-Mar-17	5430.70	NA	4.16	NA	5426.54	7.66	5.599	11.75	-40.1	0
	10-Jul-18	5430.70	NA	4.91	NA	5425.79	6.95	4.453	20.02	-39.9	0.25

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MW-7	19-Feb-16	5435.28	NA	8.53	NA	5426.75	7.45	5.653	9.13	-28.4	4
	08-Sep-16	5435.28	NA	8.96	NA	5426.32	7.29	12.200	20.34	-19.8	1
	29-Mar-17	5435.28	NA	7.98	NA	5427.30	7.53	6.676	11.29	-32.9	0.25
	10-Jul-18	5435.28	NA	8.92	NA	5426.36	6.68	4.402	19.59	-28.8	0.25
MW-9	01-Mar-16	5436.69	NA	6.05	NA	5430.64	7.52	6.094	7.81	-31.6	4
	08-Sep-16	5436.69	NM								NA
	29-Mar-17	5436.69	NM								NA
MW-10	01-Mar-16	5437.78	NA	5.58	NA	5432.20	7.68	4.85	8.47	-41.4	4
	08-Sep-16	5437.78	NM								NA
	29-Mar-17	5437.78	NM								NA
MW-12	25-Feb-16	5446.09	14.60	15.30	0.70	5431.37	NM				NM
	08-Sep-16	5446.09	14.80	16.15	1.35	5431.06	NM				NA
	13-Mar-17	5446.09	14.59	15.10	0.51	5431.41	NM				NA
	09-Jul-18	5446.09	14.59	15.10	0.51	5431.41	NM				NA
MW-13	25-Feb-16	5452.12	NA	18.29	NA	5433.83	7.31	5.564	14.97	-20.9	4
	08-Sep-16	5452.12	NA	18.74	NA	5433.38	7.38	5.584	15.90	-25.2	1
	30-Mar-17	5452.12	NA	18.28	NA	5433.84	8.11	5.098	11.97	-64.4	0.25
	10-Jul-18	5452.12	NA	18.70	NA	5433.42	7.31	4.948	16.98	-53.8	0.25
MW-16	25-Feb-16	5442.63	NA	9.08	NA	5433.55	7.65	3.815	13.05	-35.4	4
	08-Sep-16	5442.63	NM								NA
	29-Mar-17	5442.63	NA	9.06	NA	5433.57	7.65	3.065	13.22	-39.6	0.25
	10-Jul-18	5442.63	NA	9.65	NA	5432.98	7.32	3.148	17.41	-54.4	0.25
MW-17	25-Feb-16	5435.20	NA	6.09	NA	5429.11	7.20	3.931	12.10	-14.8	4
	08-Sep-16	5435.20	NA	6.33	NA	5428.87	7.25	4.87	20.06	-17.6	1
	13-Mar-17	5435.20	5.93	5.95	0.02	5429.25	NM				NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MW-18	25-Feb-16	5428.95	NA	4.11	NA	5424.84	7.26	6.494	9.93	-15.1	4
	08-Sep-16	5428.95	NA	4.21	NA	5424.74	7.50	4.360	20.68	-32.1	1
	29-Mar-17	5428.95		3.71		5425.24	7.60	4.711	10.95	-36.8	0.25
	10-Jul-18	5428.95		4.42		5424.53	7.25	5.402	20.71	-51.7	0.25
MW-19	25-Feb-16	5428.69	NA	3.96	NA	5424.73	7.41	6.554	9.35	-25.8	4
	08-Sep-16	5428.69	NA	4.13	NA	5424.56	7.34	6.660	20.18	-23.2	1
	29-Mar-17	5428.69		3.79		5424.90	7.58	6.461	10.77	-35.5	0.25
	10-Jul-18	5428.69		4.38		5424.31	7.21	5.742	20.00	-49.9	0.25
MW-20	18-Jun-15	5430.45	NA	5.76	NA	5424.69	NM				NA
	23-Feb-16	5430.45	NA	5.61	NA	5424.84	7.33	5.387	7.70	-21.8	4
	08-Sep-16	5430.45	NA	6.24	NA	5424.21	7.32	8.340	19.86	-21.7	1
	30-Mar-17	5430.45	NA	5.89	NA	5424.56	7.69	5.604	9.80	-41.1	0.25
	11-Jul-18	5430.45	NA	6.45	NA	5424.00	6.31	3.905	19.49	-14.5	0.25
MW-21	26-Feb-16	5428.62	NA	3.89	NA	5424.73	7.24	6.388	10.15	-16.8	4
	08-Sep-16	5428.62	NA	4.03	NA	5424.59	7.28	7.020	21.13	-19.3	1
	30-Mar-17	5428.62	NA	3.02	NA	5425.60	7.67	6.424	11.31	-40.6	0.25
	11-Jul-18	5428.62	NA	3.68	NA	5424.94	NA	NA	NA	NA	NA
MW-23	26-Feb-16	5449.34	NM-DRY								NA
	07-Sep-16	5449.34	NM-DRY								NA
	29-Mar-17	5449.34	NM-DRY								NA
	29-Mar-17	5449.34	NM-DRY								NA
	11-Jul-18	5449.34	NM-DRY								NA
MW-25	26-Feb-16	5448.74	NM-DRY								NA
	07-Sep-16	5448.74	NM-DRY								NA
	29-Mar-17	5448.74	NM-DRY								NA
	11-Jul-18	5448.74	NM-DRY								NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MW-27	26-Feb-16	5449.01	NM-DRY								NA
	26-Feb-16	5449.01	NM-DRY								NA
	07-Sep-16	5449.01	NM-DRY								NA
	29-Mar-17	5449.01	NM-DRY								NA
	11-Jul-18	5449.01	NM-DRY								NA
RW-24	26-Feb-16	5447.73	16.36	17.09	0.73	5431.24	NM				NA
	07-Sep-16	5447.73	16.65	18.14	1.49	5430.82	NM				NA
	13-Mar-17	5447.73	16.53	16.97	0.44	5431.12	NM				NA
	09-Jul-18	5447.73	16.53	16.97	0.44	5431.12	NM				NA
RW-25	07-Sep-16	5448.68	17.25	18.79	1.54	5431.16	NM				NA
	09-Jul-18	5448.68	17.31	19.03	1.72	5431.07	NM				NA
MPE-1	18-Feb-16	NS	NA	24.34	NA	NA	NM				NA
	07-Sep-16	NS	NA	24.72	NA	NA	NM				NA
	10-Mar-17	NS	NA	24.34	NA	NA	NM				NA
	05-Jul-18	NS	NA	24.52	NA	NA	NM				NA
MPE-2	18-Feb-16	NS	22.19	22.32	0.13	NA	NM				NA
	07-Sep-16	NS	NA	22.29	NA	NA	NM				NA
	10-Mar-17	NS	NA	22.22	NA	NA	NM				NA
	05-Jul-18	NS	NA	22.41	NA	NA	NM				NA
MPE-3	18-Feb-16	NS	NA	21.49	NA	NA	NM				NA
	07-Sep-16	NS	NA	21.92	NA	NA	NM				NA
	10-Mar-17	NS	NA	21.50	NA	NA	NM				NA
	05-Jul-18	NS	NA	21.68	NA	NA	NM				NA
MPE-4	18-Feb-16	NS	NA	20.68	NA	NA	NM				NA
	07-Sep-16	NS	NA	21.10	NA	NA	NM				NA
	10-Mar-17	NS	NA	20.68	NA	NA	NM				NA
	05-Jul-18	NS	NA	20.86	NA	NA	NM				NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-5	18-Feb-16	NS	19.94	20.31	0.37	NA		NM			NA
	07-Sep-16	NS	20.26	21.02	0.76	NA		NM			NA
	10-Mar-17	NS	20.00	20.08	0.08	NA		NM			NA
	05-Jul-18	NS		20.20		NA		NM			NA
MPE-6	18-Feb-16	NS	20.30	20.58	0.28	NA		NM			NA
	07-Sep-16	NS	20.75	20.99	0.24	NA		NM			NA
	10-Mar-17	NS	NA	20.36	NA	NA		NM			NA
	05-Jul-18	NS	NA	20.56	NA	NA		NM			NA
MPE-7	18-Feb-16	NS	21.12	21.24	0.12	NA		NM			NA
	07-Sep-16	NS	21.53	21.62	0.09	NA		NM			NA
	10-Mar-17	NS	NA	21.18	NA	NA		NM			NA
	05-Jul-18	NS	21.33	24.49	3.16	NA		NM			NA
MPE-8	18-Feb-16	NS	NA	22.44	NA	NA		NM			NM
	07-Sep-16	NS	NA	22.84	NA	NA		NM			NA
	10-Mar-16	NS	NA	22.46	NA	NA		NM			NA
	05-Jul-18	NS	NA	22.65	NA	NA		NM			NA
MPE-9	18-Feb-16	NS	NA	24.15	NA	NA		NM			NA
	07-Sep-16	NS	NA	24.53	NA	NA		NM			NA
	10-Mar-17	NS	NA	24.17	NA	NA		NM			NA
	05-Jul-18	NS	NA	24.38	NA	NA		NM			NA
MPE-10	18-Feb-16	NS	NA	23.94	NA	NA		NM			NA
	07-Sep-16	NS	NA	24.33	NA	NA		NM			NA
	10-Mar-17	NS	NA	23.95	NA	NA		NM			NA
	05-Jul-18	NS	NA	24.18	NA	NA		NM			NA
MPE-11	18-Feb-16	NS	NA	22.10	NA	NA		NM			NA
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	10-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	05-Jul-18	NS	NA	22.94	NA	NA		NM			NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-12	18-Feb-16	NS	NA	22.59	NA	NA	NM			NA	
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	10-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	05-Jul-18	NS	NA	23.30	NA	NA	NM			NA	
MPE-13	18-Feb-16	NS	NA	23.37	NA	NA	NM			NA	
	07-Sep-16	NS	23.64	24.31	0.67	NA	NM			NA	
	10-Mar-17	NS	NA	23.39	NA	NA	NM			NA	
	05-Jul-18	NS	NA	23.60	NA	NA	NM			NA	
MPE-14	24-Feb-16	NS	NA	22.47	NA	NA	NM			NA	
	07-Sep-16	NS	22.85	22.88	0.03	NA	NM			NA	
	10-Mar-17	NS	NA	22.48	NA	NA	NM			NA	
	05-Jul-18	NS	NA	22.70	NA	NA	NM			NA	
MPE-16	24-Feb-16	NS	NA	20.61	NA	NA	NM			NA	
	07-Sep-16	NS	NA	21.00	NA	NA	NM			NA	
	10-Mar-17	NS	NA	20.61	NA	NA	NM			NA	
	05-Jul-18	NS	NA	20.81	NA	NA	NM			NA	
MPE-17	24-Feb-16	NS	20.76	20.82	0.06	NA	NM			NA	
	07-Sep-16	NS	NA	21.19	NA	NA	NM			NA	
	10-Mar-17	NS	NA	20.80	NA	NA	NM			NA	
	05-Jul-18	NS	NA	21.01	NA	NA	NM			NA	
MPE-18	24-Feb-16	NS	NA	19.90	NA	NA	NM			NA	
	07-Sep-16	NS	NA	20.31	NA	NA	NM			NA	
	10-Mar-17	NS	NA	19.92	NA	NA	NM			NA	
	05-Jul-18	NS	NA	20.13	NA	NA	NM			NA	
MPE-19	24-Feb-16	NS	NA	19.61	NA	NA	NM			NA	
	07-Sep-16	NS	NA	19.71	NA	NA	NM			NA	
	10-Mar-17	NS	NA	19.65	NA	NA	NM			NA	
	05-Jul-18	NS	NA	20.69	NA	NA	NM			NA	

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-20	24-Feb-16	NS	NA	19.35	NA	NA		NM			NA
	07-Sep-16	NS	19.74	19.75	0.01	NA		NM			NA
	10-Mar-17	NS	NA	19.35	NA	NA		NM			NA
	05-Jul-18	NS	NA	19.62	NA	NA		NM			NA
MPE-21	24-Feb-16	NS	20.41	21.15	0.74	NA		NM			NA
	07-Sep-16	NS	20.64	22.21	1.57	NA		NM			NA
	10-Mar-17	NS	20.48	20.90	0.42	NA		NM			NA
	05-Jul-18	NS	20.63	21.44	0.81	NA		NM			NA
MPE-22	24-Feb-16	NS	21.31	21.47	0.16	NA		NM			NA
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	10-Mar-17	NS	NA	21.37	NA	NA		NM			NA
	05-Jul-18	NS	21.58	21.59	0.01	NA		NM			NA
MPE-23	24-Feb-16	NS	21.38	21.40	0.02	NA		NM			NA
	07-Sep-16	NS	NA	21.78	NA	NA		NM			NA
	10-Mar-17	NS	NA	21.41	NA	NA		NM			NA
	05-Jul-18	NS	NA	21.61	NA	NA		NM			NA
MPE-24	24-Feb-16	NS	NA	23.30	NA	NA		NM			NA
	07-Sep-16	NS	23.69	23.71	0.02	NA		NM			NA
	10-Mar-17	NS	NA	23.32	NA	NA		NM			NA
	05-Jul-18	NS	NA	23.55	NA	NA		NM			NA
MPE-25	24-Feb-16	NS	NA	23.65	NA	NA		NM			NA
	07-Sep-16	NS	24.05	24.06	0.01	NA		NM			NA
	10-Mar-17	NS	NA	23.69	NA	NA		NM			NA
	05-Jul-18	NS	NA	23.94	NA	NA		NM			NA
MPE-26	24-Feb-16	NS	23.35	24.06	0.71	NA		NM			NA
	07-Sep-16	NS	23.71	24.49	0.78	NA		NM			NA
	10-Mar-17	NS	23.39	24.05	0.66	NA		NM			NA
	05-Jul-18	NS	23.68	24.24	0.56	NA		NM			NA

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Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-27	24-Feb-16	NS	NA	22.35	NA	NA	NM			NA	
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	10-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	05-Jul-18	NS	NA	23.05	NA	NA	NM			NA	
MPE-28	24-Feb-16	NS	NA	22.17	NA	NA	NM			NA	
	07-Sep-16	NS	NA	22.59	NA	NA	NM			NA	
	10-Mar-17	NS	NA	22.20	NA	NA	NM			NA	
	05-Jul-18	NS	NA	22.53	NA	NA	NM			NA	
MPE-29	24-Feb-16	NS	NA	20.80	NA	NA	NM			NA	
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	10-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	05-Jul-18	NS	NA	21.65	NA	NA	NM			NA	
MPE-30	24-Feb-16	NS	NA	21.30	NA	NA	NM			NA	
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	10-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	05-Jul-18	NS	NA	22.17	NA	NA	NM			NA	
MPE-31	24-Feb-16	NS	NA	22.65	NA	NA	NM			NA	
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	10-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	05-Jul-18	NS	NA	23.42	NA	NA	NM			NA	
MPE-33	24-Feb-16	NS	22.72	22.94	0.22	NA	NM			NA	
	07-Sep-16	NS	22.97	23.90	0.93	NA	NM			NA	
	10-Mar-17	NS	22.76	22.90	0.14	NA	NM			NA	
	05-Jul-18	NS	23.09	23.62	0.53	NA	NM			NA	
MPE-34	24-Feb-16	NS	21.31	21.35	0.04	NA	NM			NA	
	07-Sep-16	NS	21.69	21.71	0.02	NA	NM			NA	
	10-Mar-17	NS	NA	21.34	NA	NA	NM			NA	
	05-Jul-18	NS	22.95	23.25	0.30	NA	NM			NA	

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SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-35	24-Feb-16	NS	20.44	20.56	0.12	NA		NM			NA
	07-Sep-16	NS	20.68	21.49	0.81	NA		NM			NA
	10-Mar-17	NS	NA	20.49	NA	NA		NM			NA
	05-Jul-18	NS	NA	21.55	NA	NA		NM			NA
MPE-36	24-Feb-16	NS	20.70	21.32	0.62	NA		NM			NA
	07-Sep-16	NS	20.95	22.22	1.27	NA		NM			NA
	10-Mar-17	NS	20.74	21.30	0.56	NA		NM			NA
	05-Jul-18	NS	NA	20.71	NA	NA		NM			NA
MPE-37	24-Feb-16	NS	NA	20.32	NA	NA		NM			NA
	07-Sep-16	NS	20.68	20.70	0.02	NA		NM			NA
	05-Jul-18	NS	20.91	20.70	-0.21	NA		NM			NA
MPE-38	24-Feb-16	NS	NA	20.32	NA	NA		NM			NA
	07-Sep-16	NS	20.68	20.70	0.02	NA		NM			NA
	10-Mar-17	NS	NA	20.33	NA	NA		NM			NA
	05-Jul-18	NS	20.60	20.65	0.05	NA		NM			NA
MPE-39	24-Feb-16	NS	NA	17.94	NA	NA		NM			NA
	07-Sep-16	NS	NA	18.33	NA	NA		NM			NA
	10-Mar-17	NS	NA	17.94	NA	NA		NM			NA
	05-Jul-18	NS	NA	18.24	NA	NA		NM			NA
MPE-40	24-Feb-16	NS	NA	18.16	NA	NA		NM			NA
	07-Sep-16	NS	NA	18.53	NA	NA		NM			NA
	10-Mar-17	NS	NA	18.16	NA	NA		NM			NA
	05-Jul-18	NS	NA	18.44	NA	NA		NM			NA
MPE-41	24-Feb-16	NS	NA	18.82	NA	NA		NM			NA
	07-Sep-16	NS	19.18	19.20	0.02	NA		NM			NA
	10-Mar-17	NS	NA	18.85	NA	NA		NM			NA
	05-Jul-18	NS	NA	19.10	NA	NA		NM			NA

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Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-42	24-Feb-16	NS	19.55	19.69	0.14	NA		NM			NA
	07-Sep-16	NS	19.71	20.73	1.02	NA		NM			NA
	10-Mar-17	NS	19.56	19.72	0.16	NA		NM			NA
	05-Jul-18	NS	19.74	20.30	0.56	NA		NM			NA
MPE-43	24-Feb-16	NS	20.43	20.47	0.04	NA		NM			NA
	07-Sep-16	NS	20.71	21.29	0.58	NA		NM			NA
	10-Mar-17	NS	NA	20.46	NA	NA		NM			NA
	05-Jul-18	NS, Wasp Nest In Well									
MPE-44	24-Feb-16	NS	20.26	20.39	0.13	NA		NM			NA
	07-Sep-16	NS	20.46	21.50	1.04	NA		NM			NA
	10-Mar-17	NS	20.25	20.48	0.23	NA		NM			NA
	05-Jul-18	NS	21.41	22.10	0.69	NA		NM			NA
MPE-45	24-Feb-16	NS	20.73	20.96	0.23	NA		NM			NA
	07-Sep-16	NS	20.91	21.75	0.84	NA		NM			NA
	10-Mar-17	NS	20.75	21.01	0.26	NA		NM			NA
	05-Jul-18	NS	20.85	21.70	0.85	NA		NM			NA
MPE-46	24-Feb-16	NS	21.81	21.89	0.08	NA		NM			NA
	07-Sep-16	NS	22.17	22.51	0.34	NA		NM			NA
	10-Mar-17	NS	21.84	21.86	0.02	NA		NM			NA
	06-Jul-18	NS	NA	22.10	NA	NA		NM			NA
MPE-47	24-Feb-16	NS	21.21	21.77	0.56	NA		NM			NA
	07-Sep-16	NS	21.54	22.78	1.24	NA		NM			NA
	10-Mar-17	NS	21.25	21.71	0.46	NA		NM			NA
	06-Jul-18	NS	21.51	22.59	1.08	NA		NM			NA
MPE-48	24-Feb-16	NS	NA	20.39	NA	NA		NM			NA
	07-Sep-16	NS	NA	20.83	NA	NA		NM			NA
	10-Mar-17	NS	NA	20.40	NA	NA		NM			NA
	06-Jul-18	NS	NA	20.88	NA	NA		NM			NA

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Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-49	24-Feb-16	NS	NA	19.73	NA	NA		NM			NA
	07-Sep-16	NS	20.37	20.38	0.01	NA		NM			NA
	10-Mar-17	NS	NA	19.80	NA	NA		NM			NA
	06-Jul-18	NS	NA	20.35	NA	NA		NM			NA
MPE-50	24-Feb-16	NS	20.74	21.55	0.81	NA		NM			NA
	07-Sep-16	NS	21.07	22.59	1.52	NA		NM			NA
	10-Mar-17	NS	20.75	21.59	0.84	NA		NM			NA
	06-Jul-18	NS	21.08	22.09	1.01	NA		NM			NA
MPE-51	24-Feb-16	NS	21.01	21.03	0.02	NA		NM			NA
	07-Sep-16	NS	21.37	21.38	0.01	NA		NM			NA
	10-Mar-17	NS	20.89	20.97	0.08	NA		NM			NA
	06-Jul-18	NS	NA	22.02	NA	NA		NM			NA
MPE-52	24-Feb-16	NS	21.09	21.31	0.22	NA		NM			NA
	07-Sep-16	NS	21.31	22.32	1.01	NA		NM			NA
	10-Mar-17	NS	21.10	21.35	0.25	NA		NM			NA
	06-Jul-18	NS	21.26	21.92	0.66	NA		NM			NA
MPE-53	24-Feb-16	NS	19.83	20.09	0.26	NA		NM			NA
	17-Sep-16	NS	20.01	21.11	1.10	NA		NM			NA
	10-Mar-17	NS	19.87	19.99	0.12	NA		NM			NA
	06-Jul-18	NS	20.04	20.55	0.51	NA		NM			NA
MPE-54	24-Feb-16	NS	19.55	19.59	0.04	NA		NM			NA
	07-Sep-16	NS	19.80	20.41	0.61	NA		NM			NA
	10-Mar-17	NS	19.56	19.61	0.05	NA		NM			NA
	06-Jul-18	NS	19.82	19.85	0.03	NA		NM			NA
MPE-55	24-Feb-16	NS	19.00	19.02	0.02	NA		NM			NA
	07-Sep-16	NS	NA	19.37	NA	NA		NM			NA
	10-Mar-17	NS	NA	19.05	NA	NA		NM			NA
	06-Jul-18	NS	NA	19.32	NA	NA		NM			NA

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Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-56	24-Feb-16	NS	NA	14.42	NA	NA		NM			NA
	07-Sep-16	NS	NA	14.80	NA	NA		NM			NA
	10-Mar-17	NS	NA	14.45	NA	NA		NM			NA
	06-Jul-18	NS	NA	14.73	NA	NA		NM			NA
MPE-57	24-Feb-16	NS	NA	15.14	NA	NA		NM			NA
	07-Sep-16	NS	NA	15.92	NA	NA		NM			NA
	10-Mar-17	NS	NA	15.20	NA	NA		NM			NA
	06-Jul-18	NS	NA	15.01	NA	NA		NM			NA
MPE-58	24-Feb-16	NS	NA	15.39	NA	NA		NM			NA
	07-Sep-16	NS	NA	15.75	NA	NA		NM			NA
	10-Mar-17	NS	NA	15.38	NA	NA		NM			NA
	06-Jul-18	NS	NA	15.66	NA	NA		NM			NA
MPE-59	24-Feb-16	NS	NA	14.04	NA	NA		NM			NA
	07-Sep-16	NS	NA	14.39	NA	NA		NM			NA
	10-Mar-17	NS	NA	14.02	NA	NA		NM			NA
	06-Jul-18	NS	NA	14.35	NA	NA		NM			NA
MPE-60	24-Feb-16	NS	NA	14.34	NA	NA		NM			NA
	07-Sep-16	NS	NA	14.65	NA	NA		NM			NA
	13-Mar-17	NS	NA	14.20	NA	NA		NM			NA
	06-Jul-18	NS	NA	14.76	NA	NA		NM			NA
MPE-61	24-Feb-16	NS	NA	14.16	NA	NA		NM			NA
	07-Sep-16	NS	NA	14.51	NA	NA		NM			NA
	13-Mar-17	NS	NA	14.14	NA	NA		NM			NA
	06-Jul-18	NS	NA	14.43	NA	NA		NM			NA
MPE-62	24-Feb-16	NS	NA	14.53	NA	NA		NM			NA
	07-Sep-16	NS	NA	14.86	NA	NA		NM			NA
	13-Mar-17	NS	NA	14.52	NA	NA		NM			NA
	06-Jul-18	NS	NA	17.19	NA	NA		NM			NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-63	24-Feb-16	NS	NA	15.19	NA	NA		NM			NA
	07-Sep-16	NS	15.53	15.77	0.24	NA		NM			NA
	13-Mar-17	NS	15.20	15.43	0.23	NA		NM			NA
	06-Jul-18	NS	18.40	18.62	0.22	NA		NM			NA
MPE-64	24-Feb-16	NS	15.45	15.88	0.43	NA		NM			NA
	07-Sep-16	NS	15.66	16.86	1.20	NA		NM			NA
	13-Mar-17	NS	15.51	15.75	0.24	NA		NM			NA
	06-Jul-18	NS	18.17	18.86	0.69	NA		NM			NA
MPE-65	24-Feb-16	NS	16.21	16.66	0.45	NA		NM			NA
	07-Sep-16	NS	16.45	17.43	0.98	NA		NM			NA
	13-Mar-17	NS	16.25	16.60	0.35	NA		NM			NA
	06-Jul-18	NS	19.09	19.87	0.78	NA		NM			NA
MPE-66	24-Feb-16	NS	16.45	16.55	0.10	NA		NM			NA
	07-Sep-16	NS	16.62	17.69	1.07	NA		NM			NA
	13-Mar-17	NS	16.44	16.62	0.18	NA		NM			NA
	06-Jul-18	NS	16.44	16.62	0.18	NA		NM			NA
MPE-67	24-Feb-16	NS	17.64	18.10	0.46	NA		NM			NA
	07-Sep-16	NS	18.01	18.41	0.40	NA		NM			NA
	10-Mar-17	NS	17.68	18.03	0.35	NA		NM			NA
	06-Jul-18	NS	20.98	21.18	0.20	NA		NM			NA
MPE-68	24-Feb-16	NS	15.83	15.85	0.02	NA		NM			NA
	07-Sep-16	NS	NA	16.46	NA	NA		NM			NA
	13-Mar-17	NS	NA	15.94	NA	NA		NM			NA
	06-Jul-18	NS	NA	19.42	NA	NA		NM			NA
MPE-69	24-Feb-16	NS	NA	15.37	NA	NA		NM			NA
	07-Sep-16	NS	NA	15.81	NA	NA		NM			NA
	13-Mar-17	NS	NA	15.38	NA	NA		NM			NA
	06-Jul-18	NS	NA	18.84	NA	NA		NM			NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-70	29-Jun-16	NS	NA	15.60	NA	NA		NM			NA
	24-Feb-16	NS	15.65	16.17	0.52	NA		NM			NA
	07-Sep-16	NS	15.85	17.03	1.18	NA		NM			NA
	13-Mar-17	NS	15.68	16.05	0.37	NA		NM			NA
	06-Jul-18	NS	19.06	19.82	0.76	NA		NM			NA
MPE-71	24-Feb-16	NS	15.79	16.08	0.29	NA		NM			NA
	07-Sep-16	NS	15.95	17.01	1.06	NA		NM			NA
	13-Mar-17	NS	15.80	16.00	0.20	NA		NM			NA
	06-Jul-18	NS	19.35	20.15	0.80	NA		NM			NA
MPE-72	24-Feb-16	NS	16.14	16.20	0.06	NA		NM			NA
	07-Sep-16	NS	16.42	16.60	0.18	NA		NM			NA
	13-Mar-17	NS	16.11	16.31	0.20	NA		NM			NA
	06-Jul-18	NS	19.49	20.21	0.72	NA		NM			NA
MPE-73	24-Feb-16	NS	15.87	16.82	0.95	NA		NM			NA
	07-Sep-16	NS	16.06	17.86	1.80	NA		NM			NA
	13-Mar-17	NS	15.91	16.75	0.84	NA		NM			NA
	06-Jul-18	NS	19.05	20.53	1.48	NA		NM			NA
MPE-74	24-Feb-16	NS	14.84	15.44	0.60	NA		NM			NA
	07-Sep-16	NS	15.12	16.04	0.92	NA		NM			NA
	13-Mar-17	NS	14.83	15.42	0.59	NA		NM			NA
	06-Jul-18	NS	18.10	18.90	0.80	NA		NM			NA
MPE-75	24-Feb-16	NS	14.02	14.28	0.26	NA		NM			NA
	07-Sep-16	NS	14.24	15.02	0.78	NA		NM			NA
	13-Mar-17	NS	14.02	14.21	0.19	NA		NM			NA
	06-Jul-18	NS	17.26	17.89	0.63	NA		NM			NA
MPE-76	24-Feb-16	NS	12.92	13.06	0.14	NA		NM			NA
	07-Sep-16	NS	13.15	13.89	0.74	NA		NM			NA
	13-Mar-17	NS	12.94	13.01	0.07	NA		NM			NA
	06-Jul-18	NS	16.13	16.76	0.63	NA		NM			NA

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Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-77	24-Feb-16	NS	12.42	12.49	0.07	NA		NM			NA
	07-Sep-16	NS	12.79	12.87	0.08	NA		NM			NA
	13-Mar-17	NS	12.44	12.50	0.06	NA		NM			NA
	06-Jul-18	NS	15.76	15.81	0.05	NA		NM			NA
MPE-78	24-Feb-16	NS	NA	11.49	NA	NA		NM			NA
	07-Sep-16	NS	11.83	11.84	0.01	NA		NM			NA
	13-Mar-17	NS	NA	11.48	NA	NA		NM			NA
	06-Jul-18	NS	NA	15.68	NA	NA		NM			NA
MPE-79	24-Feb-16	NS	NA	11.22	NA	NA		NM			NA
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	13-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	06-Jul-18	NS	NA	14.63	NA	NA		NM			NA
MPE-80	24-Feb-16	NS	NA	8.77	NA	NA		NM			NA
	07-Sep-16	NM-WELL PLUGGED WITH TREE ROOTS									
	13-Mar-17	NM-WELL PLUGGED WITH TREE ROOTS									
	06-Jul-18	NS	NA	12.26	NA	NA		NM			NA
MPE-81	24-Feb-16	NS	10.61	10.73	0.12	NA		NM			NA
	07-Sep-16	NS	10.84	11.67	0.83	NA		NM			NA
	13-Mar-17	NS	NA	10.61	NA	NA		NM			NA
	06-Jul-18	NS	14.74	15.05	0.31	NA		NM			NA
MPE-82	24-Feb-16	NS	NA	10.91	NA	NA		NM			NA
	07-Sep-16	NS	11.20	11.45	0.25	NA		NM			NA
	13-Mar-17	NS	NA	10.90	NA	NA		NM			NA
	06-Jul-18	NS	14.52	14.75	0.23	NA		NM			NA
MPE-83	24-Feb-16	NS	12.28	12.60	0.32	NA		NM			NA
	07-Sep-16	NS	12.49	13.32	0.83	NA		NM			NA
	13-Mar-17	NS	12.30	12.49	0.19	NA		NM			NA
	06-Jul-18	NS	15.83	16.43	0.60	NA		NM			NA

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-84	24-Feb-16	NS	15.98	16.30	0.32	NA		NM			NA
	07-Sep-16	NS	16.22	17.23	1.01	NA		NM			NA
	13-Mar-17	NS	16.02	16.24	0.22	NA		NM			NA
	06-Jul-18	NS	19.55	20.35	0.80	NA		NM			NA
MPE-85	24-Feb-16	NS	15.89	16.42	0.53	NA		NM			NA
	07-Sep-16	NS	16.12	17.09	0.97	NA		NM			NA
	13-Mar-17	NS	15.90	16.41	0.51	NA		NM			NA
	06-Jul-18	NS	19.42	20.34	0.92	NA		NM			NA
MPE-86	24-Feb-16	NS	NA	17.28	NA	NA		NM			NA
	07-Sep-16	NS	17.46	18.21	0.75	NA		NM			NA
	13-Mar-17	NS	NA	17.26	NA	NA		NM			NA
	06-Jul-18	NS	20.81	22.21	1.40	NA		NM			NA
MPE-87	24-Feb-16	NS	15.78	16.16	0.38	NA		NM			NA
	07-Sep-16	NS	16.00	16.73	0.73	NA		NM			NA
	13-Mar-17	NS	15.74	16.25	0.51	NA		NM			NA
	06-Jul-18	NS	19.33	19.97	0.64	NA		NM			NA
MPE-88	24-Feb-16	NS	13.68	14.10	0.42	NA		NM			NA
	07-Sep-16	NS	13.88	15.01	1.13	NA		NM			NA
	13-Mar-17	NS	13.72	14.01	0.29	NA		NM			NA
	06-Jul-18	NS	17.19	18.19	1.00	NA		NM			NA
MPE-89	24-Feb-16	NS	14.71	15.14	0.43	NA		NM			NA
	07-Sep-16	NS	14.88	16.05	1.17	NA		NM			NA
	13-Mar-17	NS	14.69	15.11	0.42	NA		NM			NA
	06-Jul-18	NS	18.20	19.22	1.02	NA		NM			NA

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Well ID	Date	T.O.C. (ft amsl)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	Corrected GW (ft)	pH	Conductivity (mS)	Temp. (°C)	ORP (mV)	Purge Volume (gallons)
MPE-90	24-Feb-16	NS	14.79	15.15	0.36	NA		NM			NA
	07-Sep-16	NS	14.96	16.31	1.35	NA		NM			NA
	13-Mar-17	NS	14.80	15.10	0.30	NA		NM			NA
	06-Jul-18	NS	17.93	19.06	1.13	NA		NM			NA

Notes:

NA	Not Applicable
NM	Not Measured
NS	Not Surveyed

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-1	16-Feb-16	<2.0	<2.0	<2.0	<3.0	<2.0	<8.0	<0.10	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-2	16-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-3	26-Feb-16	<2.0	<2.0	<2.0	<3.0	<2.0	<4.0	0.23	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-4	16-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-5	16-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-6	16-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								

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SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-7	16-Feb-16	NS-NAPL Present								
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-8	16-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	0.10	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-9	16-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-10	16-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-11	17-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
TW-12	16-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS								
	9-Jul-18	NS-NAPL Present								

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SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-13	16-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-14	16-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS								
TW-15	17-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	0.091	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
TW-16	17-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.10	1.5	<5.0
	8-Sep-16	NS								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
TW-17	17-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	3.3	<5.0
	8-Sep-16	NS								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
TW-18	17-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA

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(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-19	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-20	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-21	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-22	17-Feb-16	<10	<10	<10	68	<10	<40	1.3	8.7	<5.0
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS								
	9-Jul-18	NS								
TW-23	17-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
TW-24	17-Feb-16	<1.0	<1.0	<1.0	<1.5	1.1	<4.0	<0.050	8.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	1.1	NA	NA	NA	NA
	9-Jul-18	1.2	<1.0	<1.0	<1.5	3.9	<4.0	NA	NA	NA

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Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-25	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-26	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-28	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-29	19-Feb-16	6.4	<1.0	1.7	3	5.9	<2.0	0.390	2.2	<5.0
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-30	19-Feb-16	<1.0	<1.0	<1.0	<1.5	10	<2.0	<0.10	<1.0	<5.0
	8-Sep-16	NS-Wasp Nest In Well								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	21	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	18	<4.0	NA	NA	NA
TW-31	19-Feb-16	<1.0	<1.0	<1.0	<1.5	10	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	4.9	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	6.6	<4.0	NA	NA	NA

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(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-32	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-33	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-34	23-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
TW-35	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-36	22-Feb-16	<1.0	<1.0	<1.0	<1.5	1.2	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	1.8	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	2.6	NA	NA	NA	NA
	10-Jul-18	NS-NAPL Present								
TW-37	25-Feb-16	130	<10	50	<15	68	<20	1.9	<1.0	<5.0
	8-Sep-16	12	<1.0	<1.0	<1.5	11	NA	NA	NA	NA
	29-Mar-17	290	<5.0	12	<7.5	79	NA	NA	NA	NA
	10-Jul-18	200	<5.0	34	<7.5	74	<20	NA	NA	NA

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-38	25-Feb-16	8	<1.0	6.5	50	52	4.6	0.97	<1.0	<5.0
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	10-Jul-18	NS-NAPL Present								
TW-39	19-Feb-16	<1.0	<1.0	<1.0	<1.5	8.8	<2.0	0.35	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	11	6	6.7	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	2	8.0	NA	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	17	<4.0	NA	NA	NA
TW-40	17-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-41	22-Feb-16	25	<10	270	710	<10	<20	4.4	5.1	<5.0
	8-Sep-16	79	<10	250	170	<10	<4.0	NA	NA	NA
	29-Mar-17	10	<2.0	29.0	4.0	6.6	<4.0	NA	NA	NA
	9-Jul-18	41	<2.0	14	47	8.0	<8.0	NA	NA	NA
TW-42	22-Feb-16	<1.0	<1.0	<1.0	<1.5	23	<4.0	0.11	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	21	<4.0	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	27	<4.0	NA	NA	NA
	9-Jul-18	<1.0	<1.0	<1.0	<1.5	16	<4.0	NA	NA	NA
TW-43	22-Feb-16	<1.0	<1.0	<1.0	<1.5	380	<2.0	0.44	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	300	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	340	NA	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	210	<4.0	NA	NA	NA

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-44	22-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-45	23-Feb-16	<1.0	<1.0	<1.0	<1.5	66	<2.0	0.15	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	83	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	82	NA	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	55	<4.0	NA	NA	NA
TW-46	23-Feb-16	<1.0	<1.0	<1.0	<1.5	17	<2.0	<0.10	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	73	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	19	NA	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	73	<4.0	NA	NA	NA
TW-47	26-Feb-16	<1.0	<1.0	<1.0	<1.5	18	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	4	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
TW-48	19-Feb-16	<1.0	<1.0	<1.0	<1.5	6.5	<2.0	<0.10	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	4.5	NA	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	4.0	<4.0	NA	NA	NA
TW-49	26-Feb-16	<1.0	<1.0	<1.0	<1.5	15	<2.0	<0.050	<1.0	<5.0
	7-Sep-16	Well Destroyed								

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
TW-50	26-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
TW-51	26-Feb-16	<2.0	<2.0	<2.0	<3.0	210	<4.0	0.70	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	220	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	270	NA	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	150	<4.0	NA	NA	NA
TW-52	26-Feb-16	<1.0	<1.0	<1.0	<1.5	93	<4.0	0.11	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	78	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	130	NA	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	90	<4.0	NA	NA	NA
TW-53	26-Feb-16	<1.0	<1.0	<1.0	<1.5	9.7	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	10	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	7.9	NA	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	9.8	<4.0	NA	NA	NA
TW-54	26-Feb-16	<1.0	<1.0	<1.0	<1.5	19	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	31	<4.0	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	20	<4.0	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	18	<4.0	NA	NA	NA

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
MW-4	19-Feb-16	<1.0	<1.0	<1.0	<1.5	47	<2.0	0.083	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	43	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	12	<4.0	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	18	<4.0	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	23	<4.0	NA	NA	NA
MW-5	22-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	72	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	28	<4.0	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	65	<4.0	NA	NA	NA
MW-6	19-Feb-16	<1.0	<1.0	<1.0	<1.5	77	<2.0	0.094	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	20	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	8.1	<4.0	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	12	<4.0	NA	NA	NA
MW-7	19-Feb-16	<1.0	<1.0	<1.0	<1.5	7.8	<2.0	<0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	2.0	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	11	NA	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	62	<4.0	NA	NA	NA
MW-9	1-Mar-16	<1.0	<1.0	<1.0	<1.5	<1.0	<2.0	<0.10	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	10-Jul-18	NS								

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
MW-10	1-Mar-16	<1.0	<1.0	<1.0	<1.5	<1.0	<2.0	<0.10	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	NS								
	10-Jul-18	NS								
MW-12	25-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
MW-13	25-Feb-16	<10	<10	<10	<15	<10	<20	<0.05	25	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
MW-16	25-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<2.0	0.160	<1.0	<5.0
	8-Sep-16	NS								
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	<1.0	<4.0	NA	NA	NA
MW-17	25-Feb-16	<1.0	<1.0	<1.0	<1.5	<1.0	<0.50	0.050	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	<1.0	NA	NA	NA	NA
	29-Mar-17	NS-NAPL Present								
	10-Jul-18	NS-NAPL Present								
MW-18	25-Feb-16	<1.0	<1.0	<1.0	<1.5	4.4	<2.0	<0.05	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	3.0	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	8.3	NA	NA	NA	NA
	10-Jul-18	2.1	<1.0	<1.0	<1.5	10	<4.0	NA	NA	NA

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

Well ID	Date Sampled	Benzene μg/L	Toluene μg/L	Ethyl- benzene μg/L	Xylenes μg/L	MTBE μg/L	Naph- thalene μg/L	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
MW-19	25-Feb-16	<1.0	<1.0	<1.0	<1.5	130	<2.0	0.240	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	88	NA	NA	NA	NA
	29-Mar-17	<1.0	<1.0	<1.0	<1.5	130	NA	NA	NA	NA
	10-Jul-18	<1.0	<1.0	<1.0	<1.5	150	<4.0	NA	NA	NA
MW-20	23-Feb-16	<1.0	<1.0	<1.0	<1.5	110	<2.0	0.81	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	55	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	63	NA	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	88	<4.0	NA	NA	NA
MW-21	26-Feb-16	<1.0	<1.0	<1.0	<1.5	47	<2.0	0.06	<1.0	<5.0
	8-Sep-16	<1.0	<1.0	<1.0	<1.5	39	NA	NA	NA	NA
	30-Mar-17	<1.0	<1.0	<1.0	<1.5	2.6	<4.0	NA	NA	NA
	11-Jul-18	<1.0	<1.0	<1.0	<1.5	2.6	<4.0	NA	NA	NA
MW-23	26-Feb-16	NS-Dry								
	8-Sep-16	NS-Dry								
	29-Mar-17	NS-Dry								
	29-Mar-17	NS-Dry								
	11-Jul-18	NS-Dry								
MW-25	26-Feb-16	NS-Dry								
	8-Sep-16	NS-Dry								
	29-Mar-17	NS-Dry								
	11-Jul-18	NS-Dry								

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(VOCs and TOTAL PETROLEUM HYDROCARBONS)
Thriftway Refinery, 626 CR 5500, Bloomfield, New Mexico

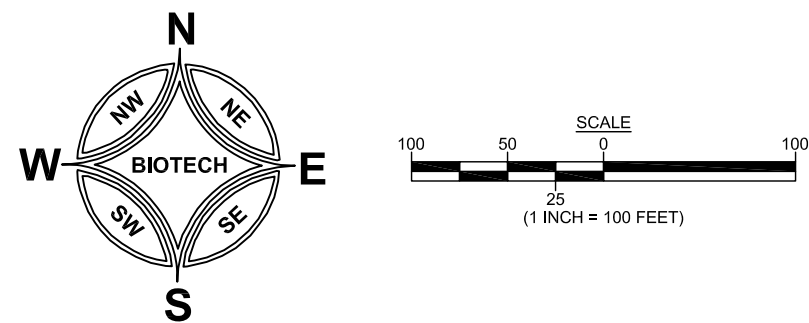
Well ID	Date Sampled	Benzene $\mu\text{g/L}$	Toluene $\mu\text{g/L}$	Ethyl- benzene $\mu\text{g/L}$	Xylenes $\mu\text{g/L}$	MTBE $\mu\text{g/L}$	Naph- thalene $\mu\text{g/L}$	GRO C6-C10 mg/L	DRO C10-C22 mg/L	MRO mg/L
Sample Method		EPA Method 8260 / 8021						EPA Method 8015D		
NM WQCC STANDARD		10	750	750	620	100	30	NE	NE	NE
MW-27	26-Feb-16	NS-Dry								
	8-Sep-16	NS-Dry								
	29-Mar-17	NS-Dry								
	11-Jul-18	NS-Dry								
RW-24	26-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								
RW-25	26-Feb-16	NS-NAPL Present								
	8-Sep-16	NS-NAPL Present								
	29-Mar-17	NS-NAPL Present								
	9-Jul-18	NS-NAPL Present								

NOTES < Analyte not detected above listed method limit
 NS Not Sampled
 NE Not established
 GRO Gasoline range organics
 DRO Diesel range organics
 MRO Motor oil range organics

FIGURES



- LEGEND**
- X — FENCE
 - G — NATURAL GAS
 - E — OVERHEAD ELECTRIC

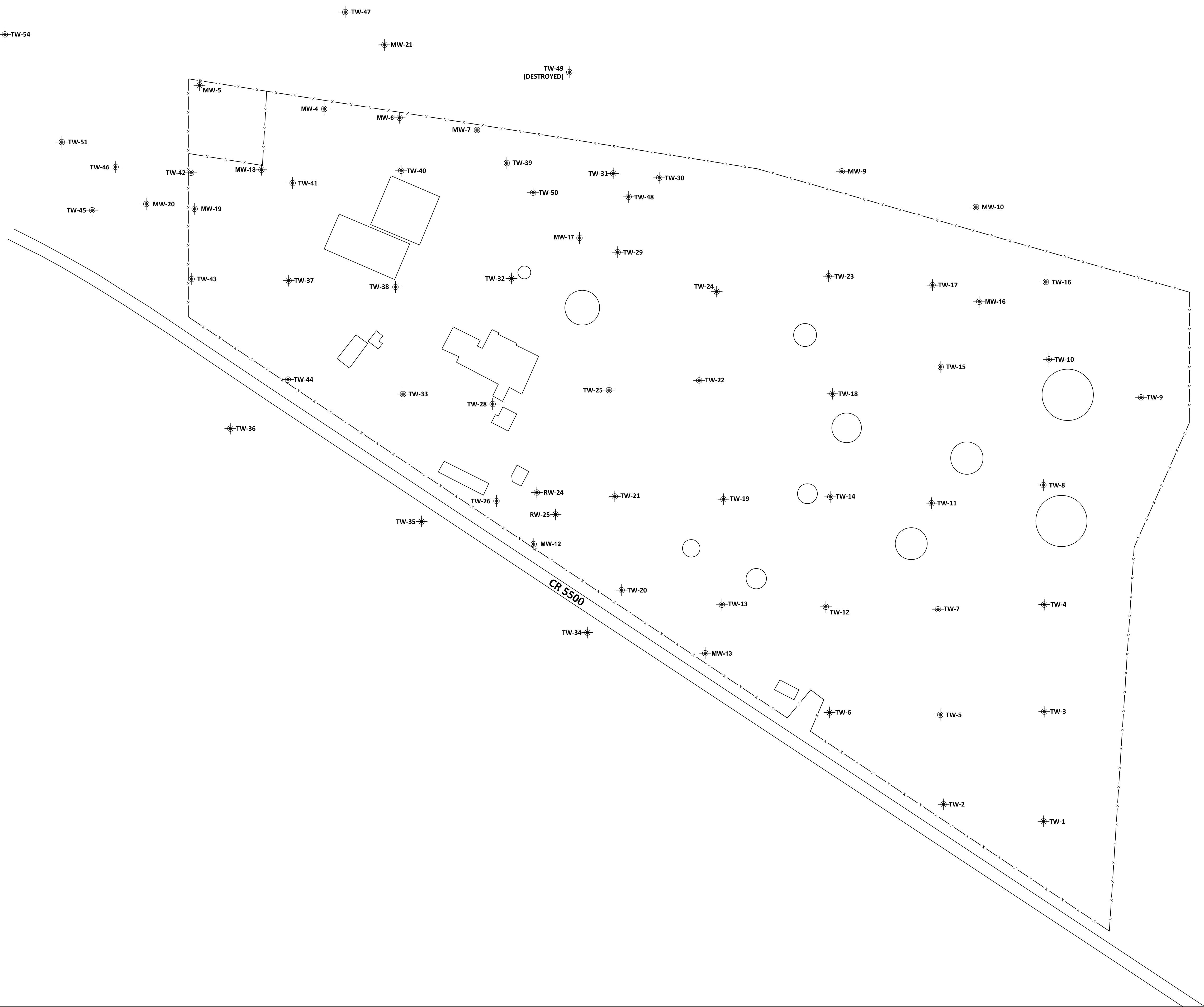


**GENERAL SITE PLAN
FORMER THRIFTWAY REFINERY
COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO**

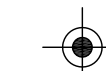
**FIGURE
1**

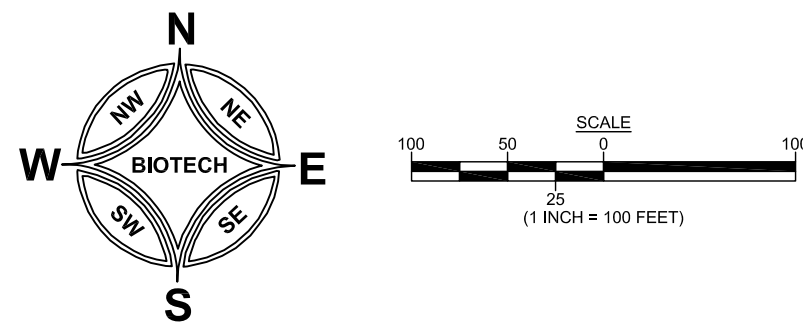
DRAWING NOTES
DRAWN BY: MRK
DATE: 02/26/19
REVISED BY:
DATE:

APPROVED BY:
DATE:



LEGEND

 GROUNDWATER MONITOR WELL AND ID
TW-14



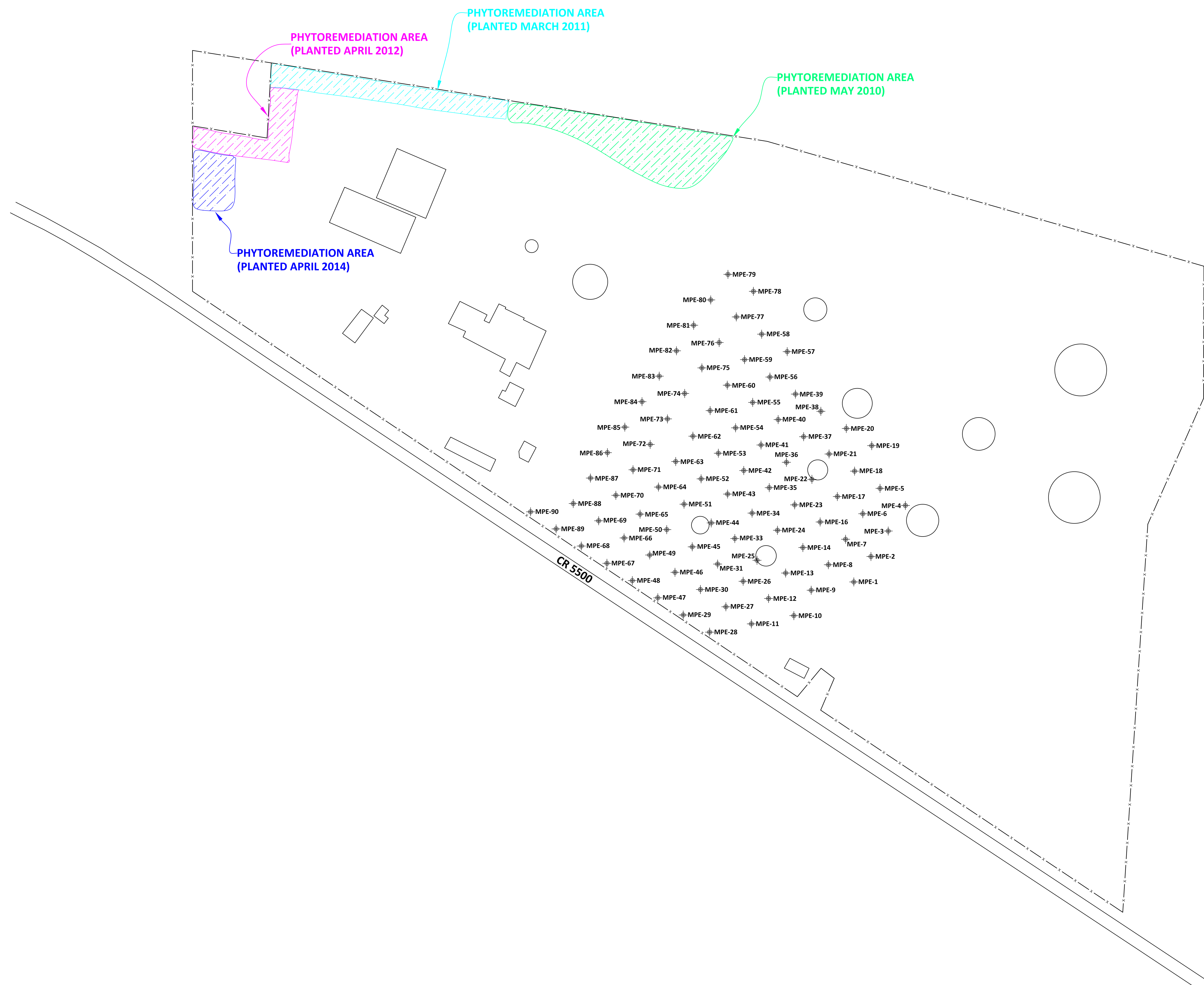
**GROUNDWATER MONITOR WELLS
FORMER THRIFTWAY REFINERY
COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO**

FIGURE
2

DRAWING NOTES

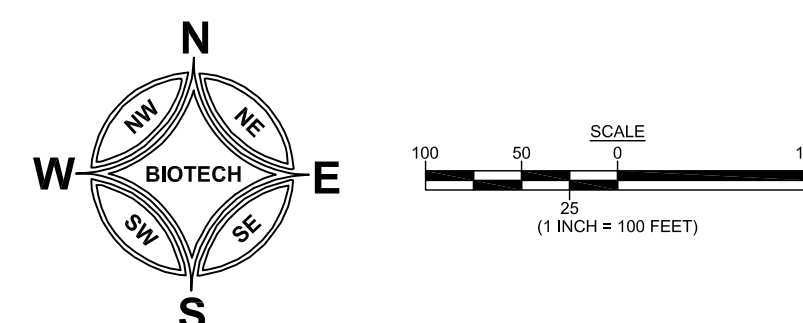
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DATE: 02/27/19
REVISED BY:
DATE:

APPROVED BY:
DATE:



LEGEND


 MULTI-PHASE EXTRACTION WELL AND ID
 MPE-1



MPE WELLS AND PHYTOREMEDIATION AREAS
FORMER THRIFTWAY REFINERY
COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

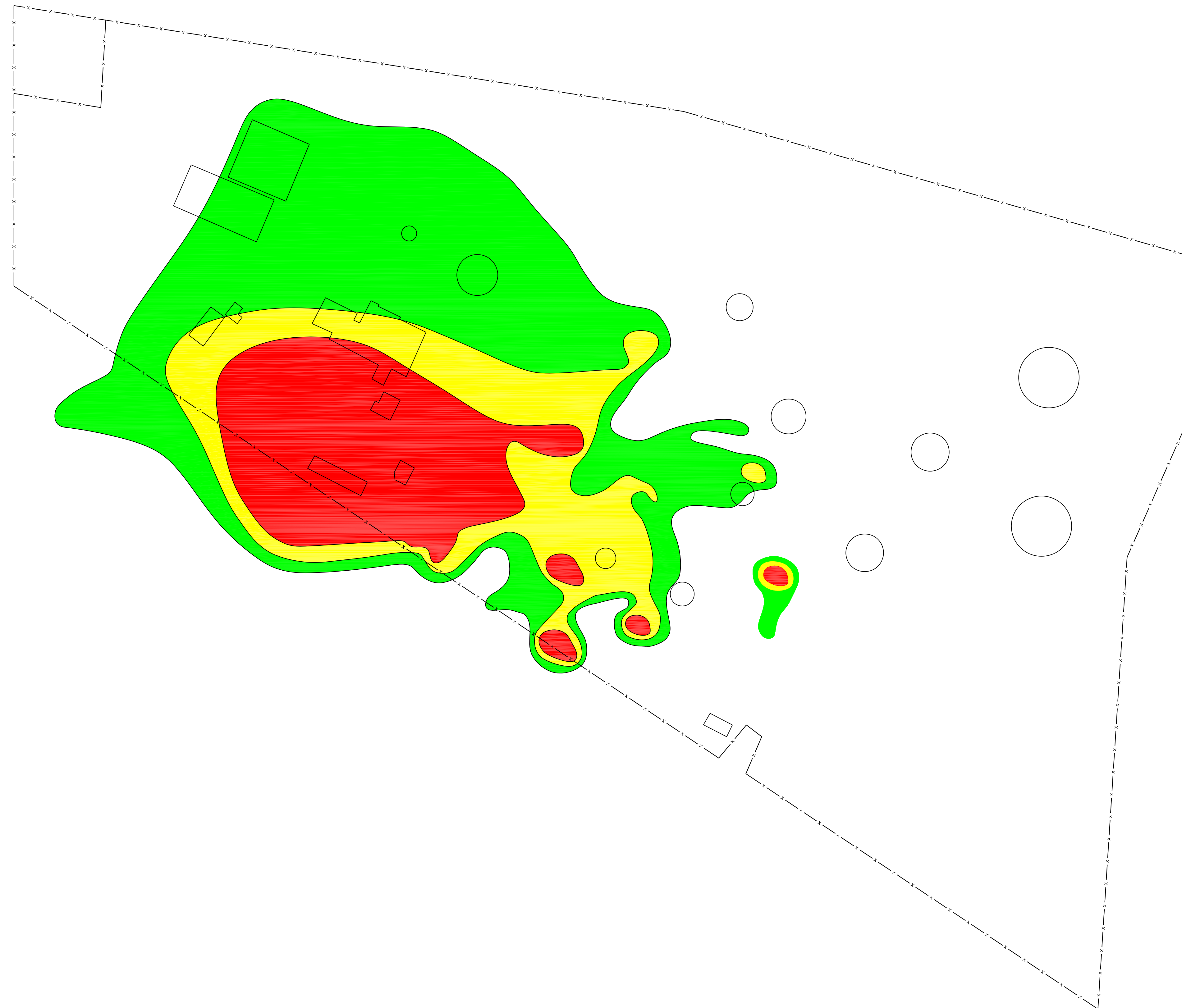
FIGURE

3

DRAWING NOTES

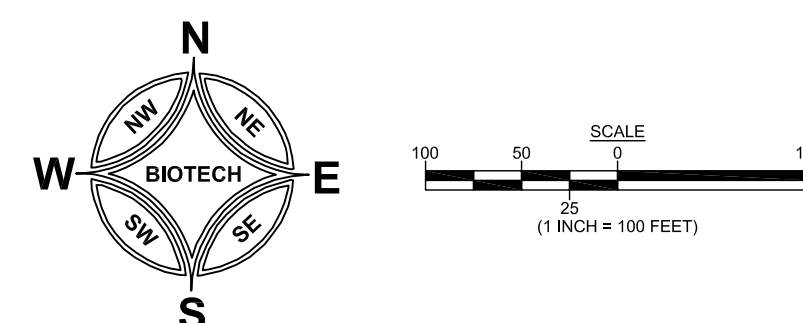
DRAWN BY: MRK
 DATE: 02/27/19
 REVISED BY:
 DATE:

APPROVED BY:
 DATE:



LEGEND

- PRODUCT THICKNESS 0.01'
- PRODUCT THICKNESS 0.5'
- PRODUCT THICKNESS 1'



FREE PRODUCT THICKNESS CONTOURS, JULY 2018
FORMER THRIFTWAY REFINERY
COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

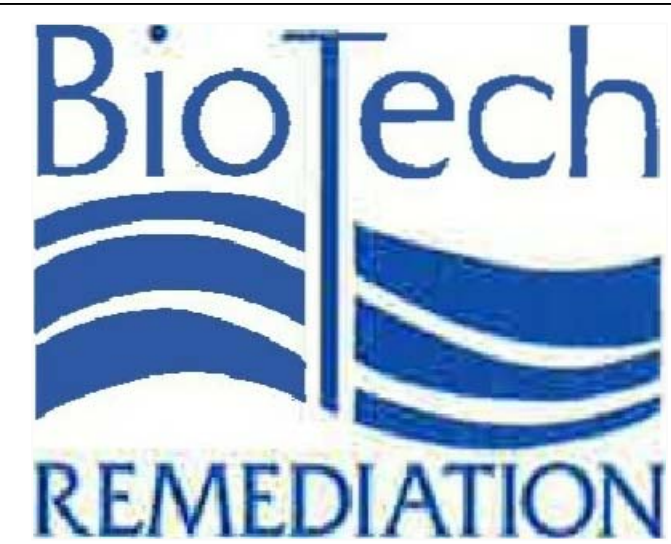
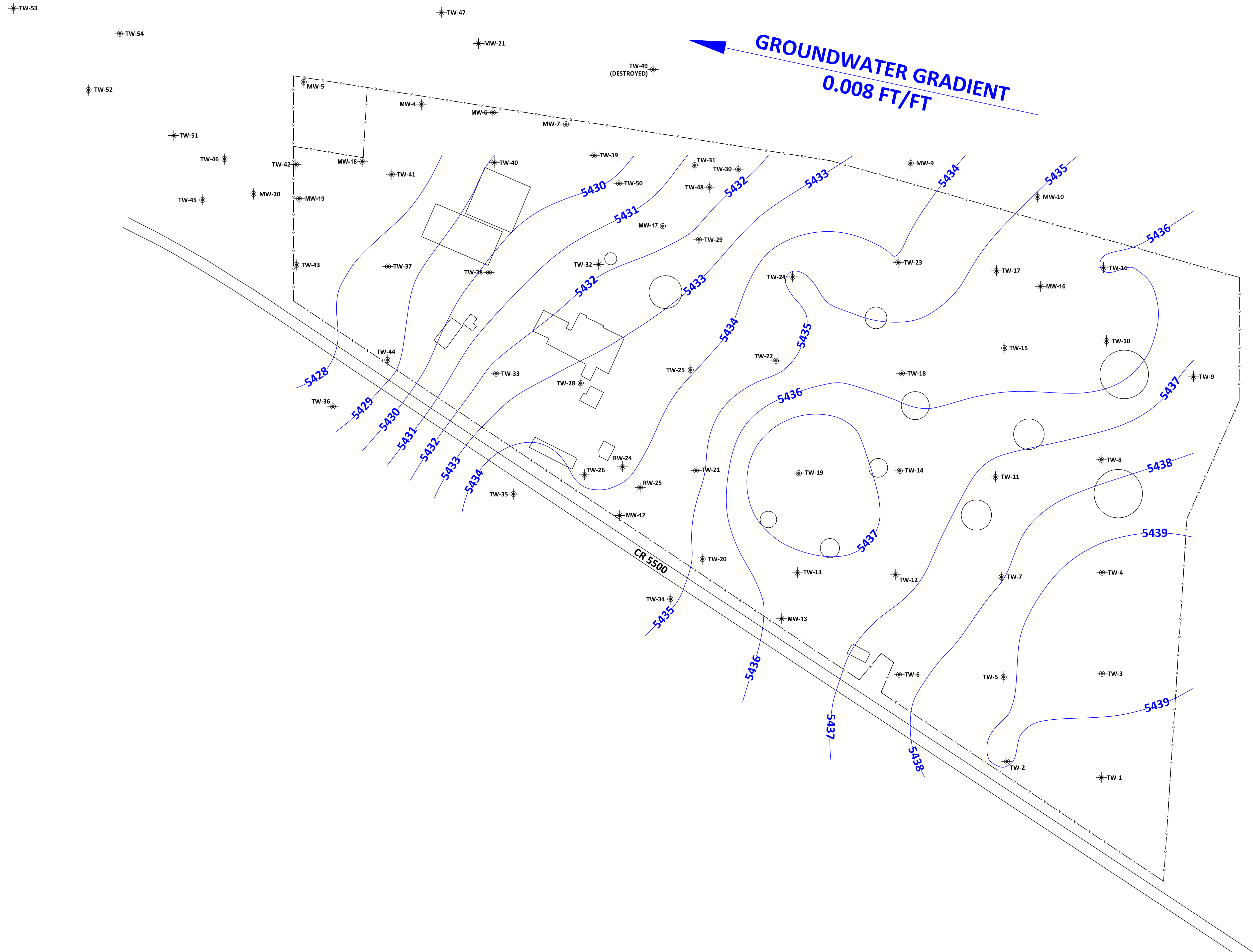
FIGURE

4

DRAWING NOTES

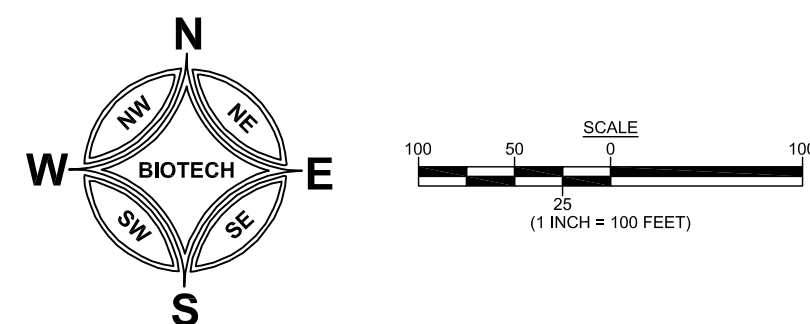
DRAWN BY: MRK
DATE: 03/06/19
REVISED BY:
DATE:

APPROVED BY:
DATE:



LEGEND

-  GROUNDWATER MONITOR WELL AND ID
TW-14
-  5438 GROUNDWATER ELEVATION (FT. AMSL)



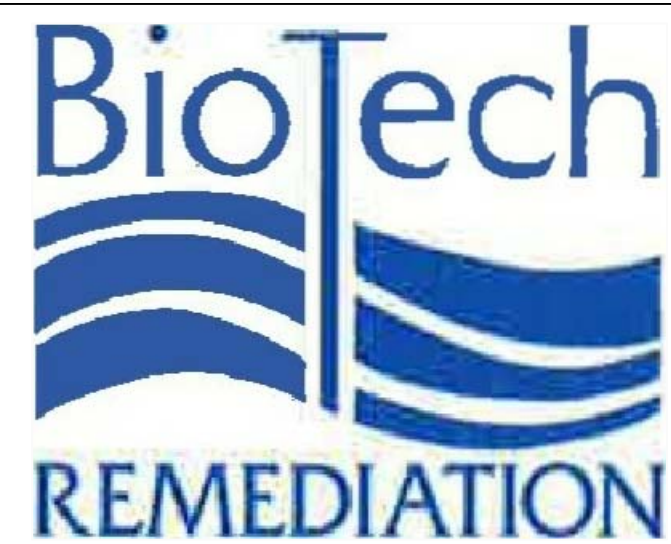
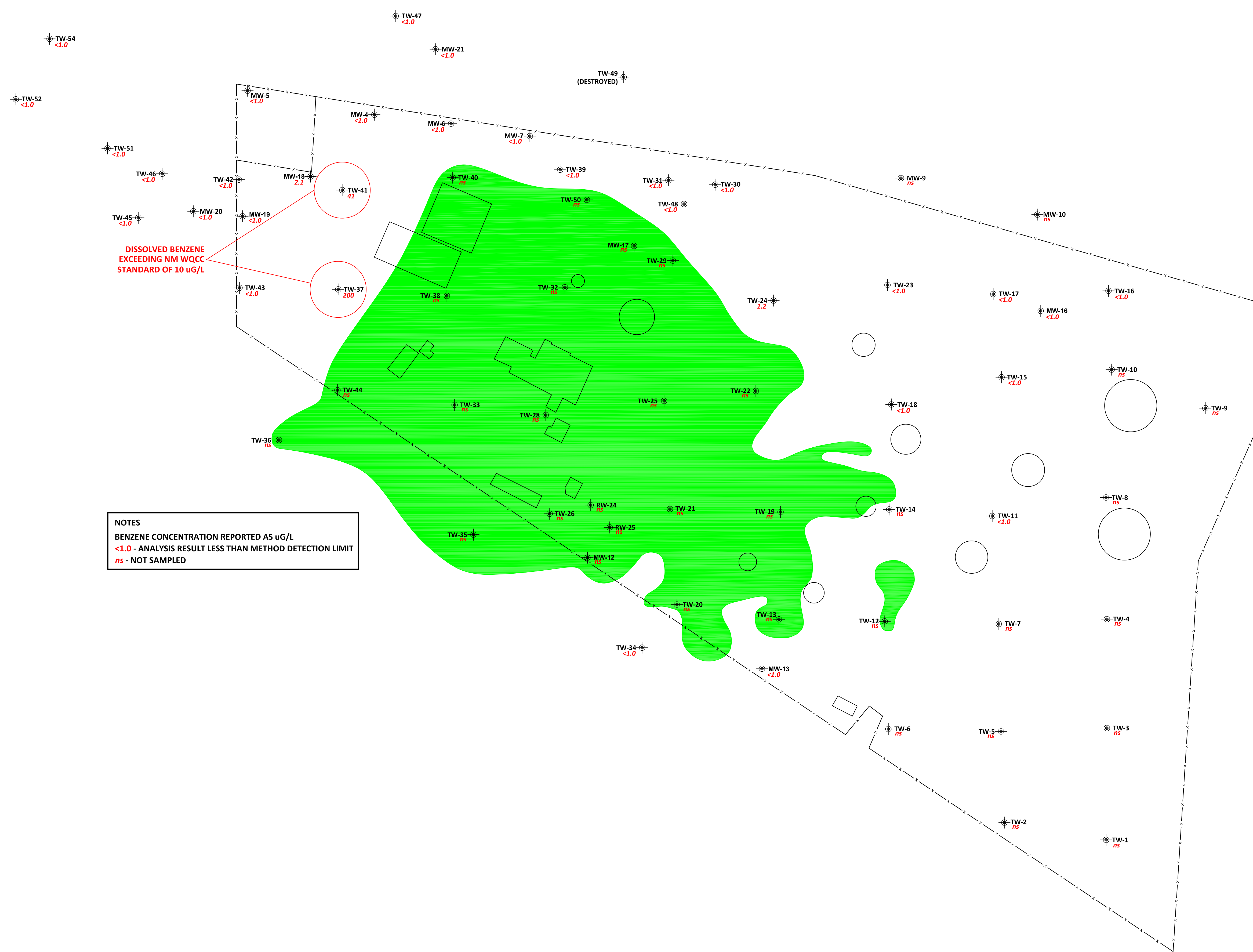
**GROUNDWATER ELEVATION CONTOURS, JULY 2018
FORMER THRIFTWAY REFINERY
COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO**

FIGURE
5

DRAWING NOTES

DRAWN BY: MRK
DATE: 02/27/19
REVISED BY:
DATE:

APPROVED BY:
DATE:



LEGEND

[Green Area] FREE PRODUCT PLUME, JULY 2018

[Well Symbol] GROUNDWATER MONITOR WELL AND ID

TW-14

North Arrow

Scale: 1 INCH = 100 FEET

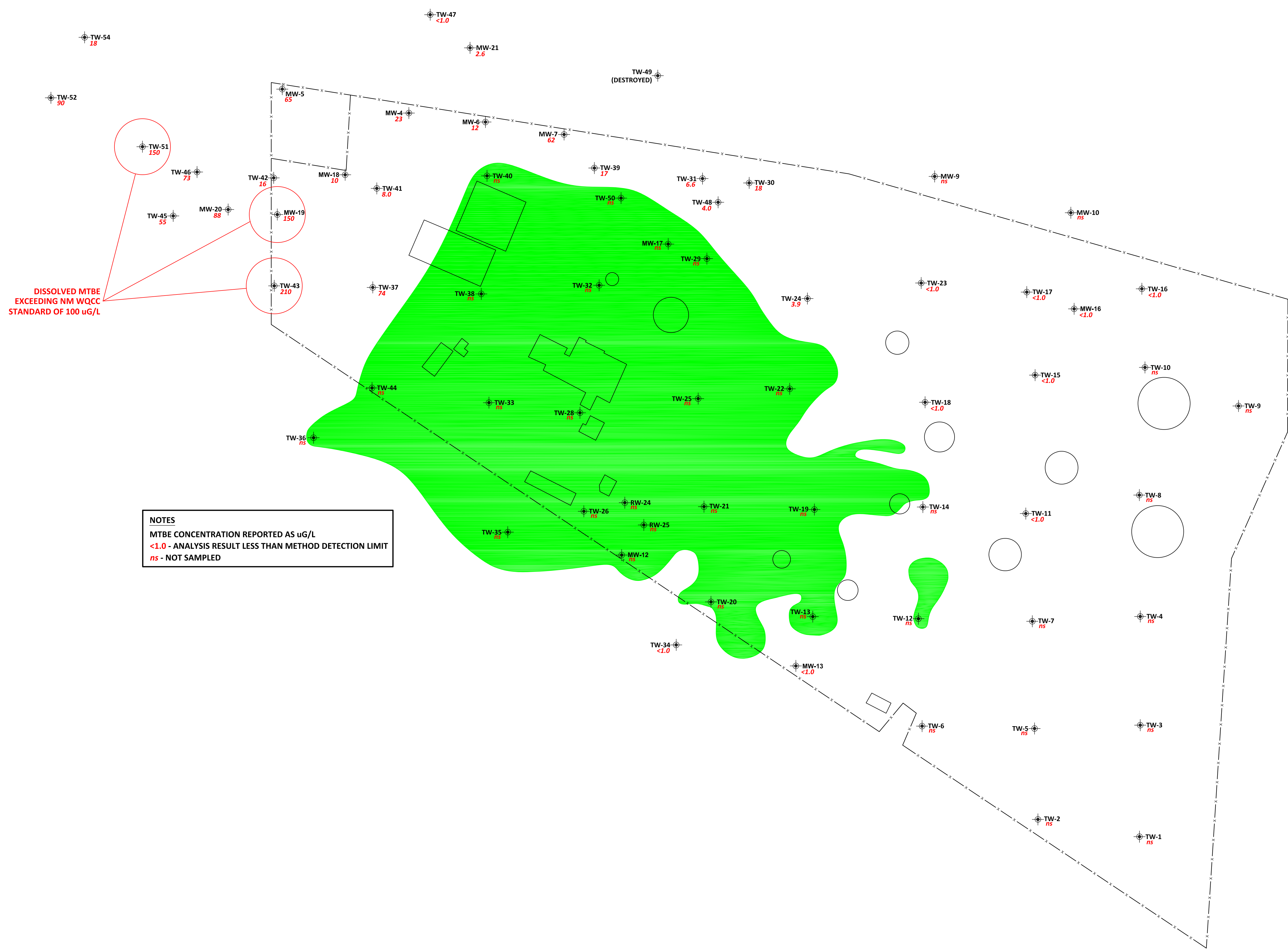
DISSOLVED BENZENE CONCENTRATIONS, JULY 2018
FORMER THRIFTWAY REFINERY
COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

FIGURE
6

DRAWING NOTES

DRAWN BY: MRK
DATE: 03/06/19
REVISED BY:
DATE:

APPROVED BY:
DATE:



LEGEND

FREE PRODUCT PLUME, JULY 2018

GROUNDWATER MONITOR WELL AND ID

TW-14

North arrow and scale bar (1 INCH = 100 FEET)

DISSOLVED MTBE CONCENTRATIONS, JULY 2018
FORMER THRIFTWAY REFINERY
COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

FIGURE
7

DRAWING NOTES
DRAWN BY: MRK
DATE: 03/07/19
REVISED BY:
DATE:
APPROVED BY:
DATE:

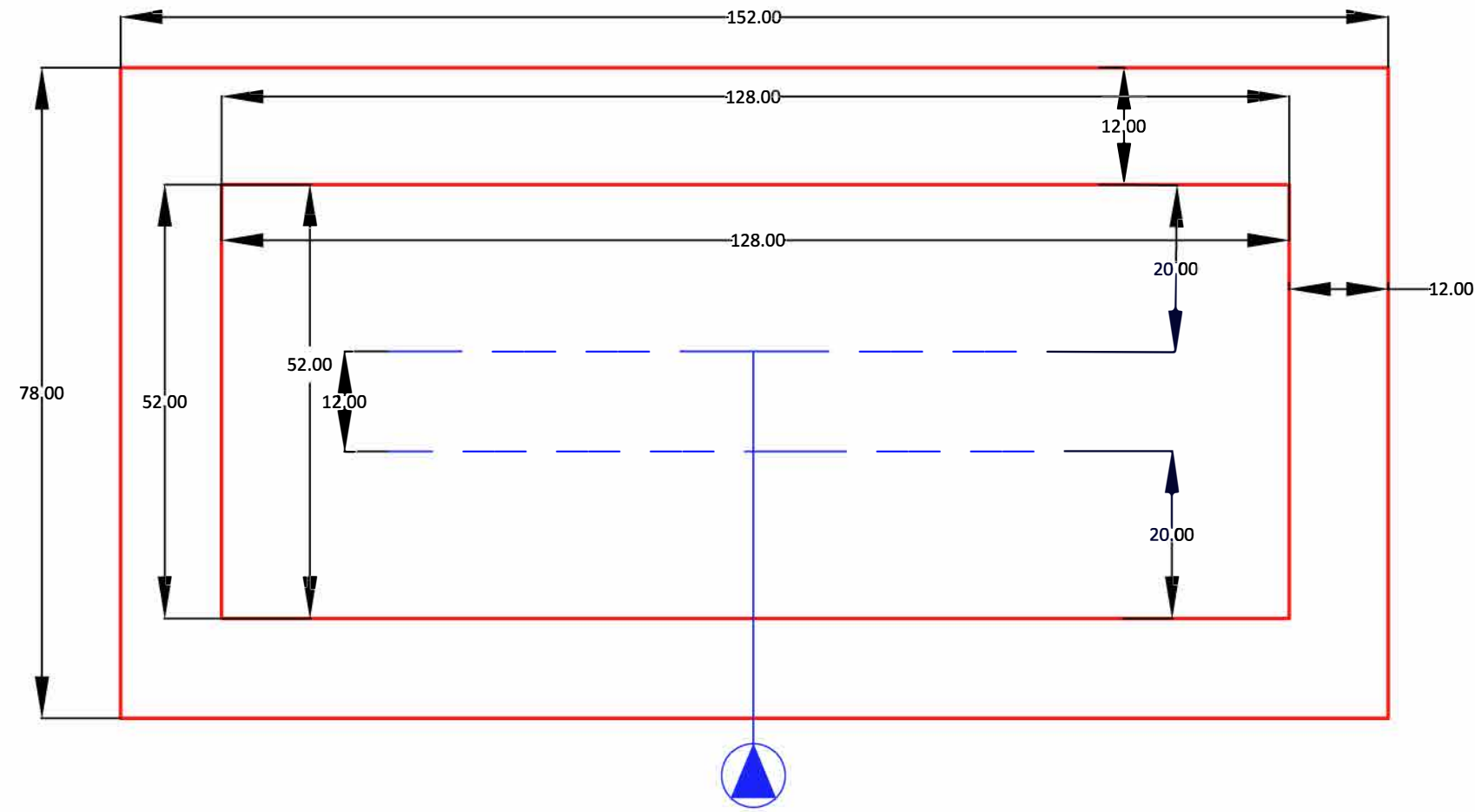


FIGURE 8

**GROUNDWATER
REMEDIATION
EVAPORATION
POND
PLAN VIEW**

THRIFTWAY REFINERY
626 CR 5500
BLOOMFIELD, NEW MEXICO

DATE DRAWN: May 30, 2017	DATE REVISED:	DATE CHECKED:	DATE APPROVED:
DRAWN BY: R. Kennermer	REVISIONS BY:	CHECKED BY:	APPROVED BY:

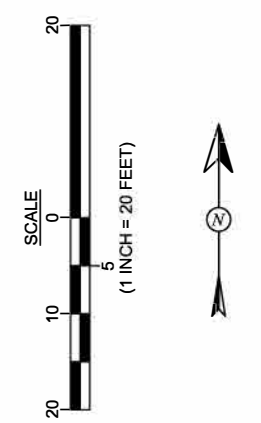
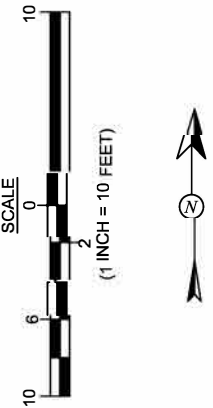
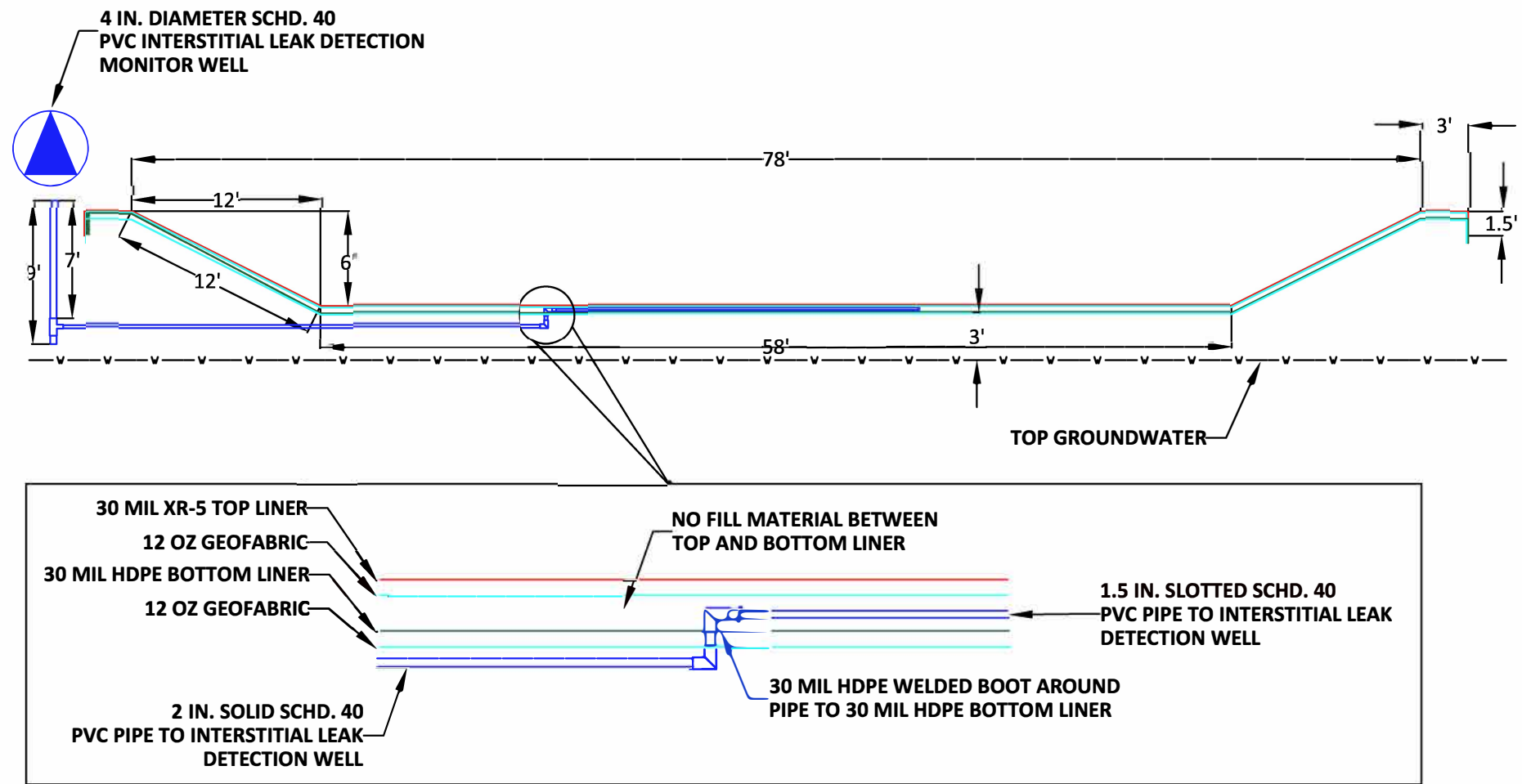


FIGURE 9

GROUNDWATER
REMEDIATION
EVAPORATION
POND
NORTH TO SOUTH
CROSSECTION

THRIFTWAY REFINERY
626 CR 5500
BLOOMFIELD, NEW MEXICO

DATE DRAWN: May 30, 2017	DATE REVISED:	DATE CHECKED:	DATE APPROVED:
DRAWN BY: R. Kenner	REVISIONS BY:	CHECKED BY:	APPROVED BY:



APPENDIX A.

DATE 7-5-18

PURPOSE #810 DPE DTW / NAPL
WB

CUE COLUMN

NOTES

<u>MPE.#S</u>	<u>DTW</u>	<u>DTW</u>
MPE #1		24.52'
MPE #2		22.41'
MPE #3		21.68'
MPE #4		20.86'
MPE #5		20.20'
MPE #6		20.56'
MPE #7	21.33'	24.49'
MPE #8		22.65'
MPE #9		24.38'
MPE #10		24.18'
✓ MPE #11 - ROOTS/CLEAR → ✓		22.94'
✓ MPE #12 - ROOTS/CLEAR → ✓		23.30'
MPE #13		23.60'
MPE #14		22.70'
MPE #16		20.81'
MPE #17		21.01'
MPE #18		20.13'
✓ MPE #19 - ROOTS/CLEAR → ✓		20.69'
MPE #20		19.62'
MPE #21	20.63'	21.44'
MPE #22	21.58'	21.59'
MPE #23		21.61'
MPE #24		23.65'
MPE #25		23.94'
MPE #26	23.68'	24.24'
✓ MPE #27 - ROOTS/CLEAR → ✓		23.05'

SUMMARY

DATE 7.5.18
PURPOSE BIO-MPE-DTW cawr

CUE COLUMN

NOTES

DTNAPL

DTW

✓*	mpe-28 Roots/Clear ✓		22.53'
✓*	mpe-29 Roots/Clear ✓		21.65'
✓*	mpe-30 Roots/Clear ✓		22.17'
✓*	mpe-31 Roots/Clear ✓		23.42'
	mpe-33	23.09	23.09' 62'
	mpe-34	22.95'	23.25'
	mpe-35		21.55'
	mpe-36		20.71'
	mpe-37		20.91'
	mpe-38	20.60'	20.65'
	mpe-39		18.24'
	mpe-40		18.44'
	mpe-41		19.10'
	mpe-42	19.74'	20.30'
*	mpe-43 - WASPS !!		
	mpe-44	21.41'	22.10'
	mpe-45	20.85' → 21.70 TD	—
7/6/18 12:00 0930 → *	mpe-46 Roots/Clear ✓		22.10'
	mpe-47	21.51	22.59'
*	mpe-48 Roots/Clear ✓		20.88
	mpe-49		20.35
	mpe-50	21.08'	22.09'
	mpe-51		22.02'
	mpe-52	21.26'	21.92'
	mpe-53	20.04'	20.55'
	mpe-54	19.82'	19.85'
	mpe-55		19.32'
	mpe-56		14.73'
	mpe-57		15.01'

SUMMARY

DATE 7-6-18

PURPOSE 810-mpe MEASUREMENT

CUE COLUMN

NOTES

	<u>DTM mpe</u>	<u>BTW</u>
mpe-58		15.66'
mpe-59		14.35'
✓ * mpe-60	Roots/Clear ✓	14.76'
mpe-61		14.43'
mpe-62		17.19'
mpe-63	18.40'	18.62'
mpe-64	18.17'	18.86'
mpe-65	19.09'	19.87'
mpe-66	19.51'	20.35'
mpe-67	20.98'	21.18'
mpe-68		19.42'
mpe-69		18.84'
mpe-70	19.06'	19.82'
mpe-71	19.33'	20.15'
mpe-72	19.49'	20.21'
mpe-73	19.05'	20.53'
mpe-74	18.10'	18.90'
mpe-75	17.26'	17.89'
mpe-76	16.13'	16.76'
mpe-77	15.76'	15.81'
mpe-78		15.68'
✓ * mpe-79	Roots/Clear ✓	14.63'
✓ * mpe-80	Roots/Clear ✓	12.26'
mpe-81	14.74'	15.05'
mpe-82	14.52'	14.73'
mpe-83	15.83'	16.43'
mpe-84	19.55'	20.35'
mpe-85	19.42'	20.34'
mpe-86	20.81'	22.21'

SUMMARY

DATE

PURPOSE 810 - mpe / contr

CUE COLUMN

NOTES

	DT nap L	DT n
mpe 87'	19.33'	19.97'
mpe 88'	17.19'	18.19'
mpe 89'	18.20'	19.22'
mpe 90	17.93'	19.06'

SUMMARY

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site:		Thriftway #810 Refinery		Technician:		M. Beauparlant	
Location:		Bloomfield, New Mexico		Date:		7-10-18	
Monitor Well ID.:		mw-4		Time:			
Well Dia.:				Air Temp.:			
Purge / No Purge:				Weather:			
Total Well Depth:				Other:			
Initial D.T.W. (ft):				Time:		(taken at initial gauging of well)	
Confirm D.T.W. (ft):		5.30'		Time:		(taken prior to purging well)	
Final D.T.W. (ft):				Time:		(taken after sample collection)	
NAPL Present:		D.T.P. (ft):				D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site:	Thriftway #810 Refinery	Technician:	M. Beauparlant
Location:	Bloomfield, New Mexico	Date:	7.10.18
Monitor Well ID.:	MW-5	Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	5.66'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):		D.T.W. (ft):

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)	
PA Method: 8000	

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-10-18	
Monitor Well ID.: MW-7		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	8.92'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7.10.18	
Monitor Well ID.: MW-13		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	18.70'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)	
PA Method 8260	

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-10-18	
Monitor Well ID.: Mw-16		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft): 9.45'		Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date:	
Monitor Well ID.: MW - 18		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):	Time:	(taken at initial gauging of well)	
Confirm D.T.W. (ft): 4.42'	Time:	(taken prior to purging well)	
Final D.T.W. (ft):	Time:	(taken after sample collection)	
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)	
PA Method 8260	

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-10-18	
Monitor Well ID.:	MW-19	Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	4.38'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 10000									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site:		Thriftway #810 Refinery	Technician:	M. Beauparlant
Location:		Bloomfield, New Mexico	Date:	7-11-18
Monitor Well ID.:		MW-20	Time:	
Well Dia.:			Air Temp.:	
Purge / No Purge:			Weather:	
Total Well Depth:			Other:	
Initial D.T.W. (ft):			Time: (taken at initial gauging of well)	
Confirm D.T.W. (ft):		6.45'	Time: (taken prior to purging well)	
Final D.T.W. (ft):			Time: (taken after sample collection)	
NAPL Present:		D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)	
PA Method 8260	

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-11-18	
Monitor Well ID.: MW-21		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	3.68	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.:	TW-15	Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	14.89'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):		D.T.W. (ft):

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site:		Thriftway #810 Refinery		Technician:		M. Beauparlant	
Location:		Bloomfield, New Mexico		Date:		7-9-18	
Monitor Well ID.:		Tw-16		Time:			
Well Dia.:				Air Temp.:			
Purge / No Purge:				Weather:			
Total Well Depth:				Other:			
Initial D.T.W. (ft):				Time:		(taken at initial gauging of well)	
Confirm D.T.W. (ft):		12.36'		Time:		(taken prior to purging well)	
Final D.T.W. (ft):				Time:		(taken after sample collection)	
NAPL Present:		D.T.P. (ft):				D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)	
PA Method 8260	

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

Roots AT WATER INTERFACE, Clear

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.: TW-17		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):	Time:	(taken at initial gauging of well)	
Confirm D.T.W. (ft): 10.88'	Time:	(taken prior to purging well)	
Final D.T.W. (ft):	Time:	(taken after sample collection)	
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.:	TW-18	Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	17.14'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):		D.T.W. (ft):

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.: Tw-23		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	9.65'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.: TW-24	Time:		
Well Dia.:	Air Temp.:		
Purge / No Purge:	Weather:		
Total Well Depth:	Other:		
Initial D.T.W. (ft):	Time:	(taken at initial gauging of well)	
Confirm D.T.W. (ft): 9.59'	Time:	(taken prior to purging well)	
Final D.T.W. (ft):	Time:	(taken after sample collection)	
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant				
Location: Bloomfield, New Mexico		Date: 7-9-18				
Monitor Well ID.: TW-30		Time:				
Well Dia.:		Air Temp.:				
Purge / No Purge:		Weather:				
Total Well Depth:		Other:				
Initial D.T.W. (ft):		Time: (taken at initial gauging of well)				
Confirm D.T.W. (ft): 6.26'		Time: (taken prior to purging well)				
Final D.T.W. (ft):		Time: (taken after sample collection)				
NAPL Present:		D.T.P. (ft):				
		D.T.W. (ft):				
Water Quality Parameters - Recorded During Well Purging						
Time	Temp (deg C)	Conductivity (uS) (mS)	DO (mg/L)	pH	ORP (mV)	Purge Vol. (gallons)
14:20	21.11	6.304	~	7.09	-45.3	
Analytical Parameters (include analysis method and number and type of sampling containers)						
VOC per EPA Method 8260						
Disposal of Purged Water:		NA, no purge sampling				
Samples Stored on Ice in Cooler:						
C.O.C. Complete:						
Analytical Laboratory:		Hall Environmental Laboratories, Albuquerque, NM				
Sampling Equipment:						
Notes / Comments						

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.:	TW-#131	Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	7.26'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-10-18	
Monitor Well ID.: Tw-34		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	20.88'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7.10.18	
Monitor Well ID.: 1W-36		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):	Time:	(taken at initial gauging of well)	
Confirm D.T.W. (ft):	Time:	(taken prior to purging well)	
Final D.T.W. (ft):	Time:	(taken after sample collection)	
NAPL Present:	D.T.P. (ft): 13.55	D.T.W. (ft): 13.61	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7.10.18	
Monitor Well ID.:	TW-37	Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	11.01'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.: Tw-39		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):	Time:	(taken at initial gauging of well)	
Confirm D.T.W. (ft): 9.29'	Time:	(taken prior to purging well)	
Final D.T.W. (ft):	Time:	(taken after sample collection)	
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.: TW-41		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	7.70'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-9-18	
Monitor Well ID.: Tw-42		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):	Time:	(taken at initial gauging of well)	
Confirm D.T.W. (ft): 8.33'	Time:	(taken prior to purging well)	
Final D.T.W. (ft):	Time:	(taken after sample collection)	
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site:		Thriftway #810 Refinery	Technician:		M. Beauparlant
Location:		Bloomfield, New Mexico	Date:		7-10-18
Monitor Well ID.:		TW-43	Time:		
Well Dia.:			Air Temp.:		
Purge / No Purge:			Weather:		
Total Well Depth:			Other:		
Initial D.T.W. (ft):			Time:		(taken at initial gauging of well)
Confirm D.T.W. (ft):		12.72'	Time:		(taken prior to purging well)
Final D.T.W. (ft):			Time:		(taken after sample collection)
NAPL Present:		D.T.P. (ft):		D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-11-18	
Monitor Well ID.: TW-45		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	7.53'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant				
Location: Bloomfield, New Mexico		Date: 7-11-18				
Monitor Well ID.: TW-46		Time:				
Well Dia.:		Air Temp.:				
Purge / No Purge:		Weather:				
Total Well Depth:		Other:				
Initial D.T.W. (ft):		Time: (taken at initial gauging of well)				
Confirm D.T.W. (ft): 7.82'		Time: (taken prior to purging well)				
Final D.T.W. (ft):		Time: (taken after sample collection)				
NAPL Present: D.T.P. (ft):		D.T.W. (ft):				
Water Quality Parameters - Recorded During Well Purging						
Time	Temp (deg C)	Conductivity (uS) (mS)	DO (mg/L)	pH	ORP (mV)	Purge Vol. (gallons)
10:10	19.51°	4.694	-	6.49	-21.5	
Analytical Parameters (include analysis method and number and type of sampling containers)						
VOC per EPA Method 8260						
Disposal of Purged Water:		NA, no purge sampling				
Samples Stored on Ice in Cooler:						
C.O.C. Complete:						
Analytical Laboratory:		Hall Environmental Laboratories, Albuquerque, NM				
Sampling Equipment:						
Notes / Comments						

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant				
Location: Bloomfield, New Mexico		Date: 7-11-18				
Monitor Well ID.: Tw-47		Time:				
Well Dia.:		Air Temp.:				
Purge / No Purge:		Weather:				
Total Well Depth:		Other:				
Initial D.T.W. (ft):		Time: (taken at initial gauging of well)				
Confirm D.T.W. (ft): 6.94'		Time: (taken prior to purging well)				
Final D.T.W. (ft):		Time: (taken after sample collection)				
NAPL Present:		D.T.P. (ft): D.T.W. (ft):				
Water Quality Parameters - Recorded During Well Purging						
Time	Temp (deg C)	Conductivity (uS) (mS)	DO (mg/L)	pH	ORP (mV)	Purge Vol. (gallons)
10:25	19.49°	4.628	-	6.75	-31.8	
Analytical Parameters (include analysis method and number and type of sampling containers)						
VOC per EPA Method 8260						
Disposal of Purged Water:		NA, no purge sampling				
Samples Stored on Ice in Cooler:						
C.O.C. Complete:						
Analytical Laboratory:		Hall Environmental Laboratories, Albuquerque, NM				
Sampling Equipment:						
Notes / Comments						

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site:		Thriftway #810 Refinery		Technician:		M. Beauparlant	
Location:		Bloomfield, New Mexico		Date:		7.10.18	
Monitor Well ID.:		TW-48		Time:			
Well Dia.:				Air Temp.:			
Purge / No Purge:				Weather:			
Total Well Depth:				Other:			
Initial D.T.W. (ft):				Time:		(taken at initial gauging of well)	
Confirm D.T.W. (ft):		8.61'		Time:		(taken prior to purging well)	
Final D.T.W. (ft):				Time:		(taken after sample collection)	
NAPL Present:		D.T.P. (ft):				D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)
PA Method 8260

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-11-18	
Monitor Well ID.:	TW-51	Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	7.38'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-11-18	
Monitor Well ID.: TW-52		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	7.83'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

GROUNDWATER SAMPLING FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery		Technician: M. Beauparlant	
Location: Bloomfield, New Mexico		Date: 7-11-18	
Monitor Well ID.: TW-53		Time:	
Well Dia.:		Air Temp.:	
Purge / No Purge:		Weather:	
Total Well Depth:		Other:	
Initial D.T.W. (ft):		Time:	(taken at initial gauging of well)
Confirm D.T.W. (ft):	7.48'	Time:	(taken prior to purging well)
Final D.T.W. (ft):		Time:	(taken after sample collection)
NAPL Present:	D.T.P. (ft):	D.T.W. (ft):	

Water Quality Parameters - Recorded During Well Purging

[illegible]

Analytical Parameters (include analysis method and number and type of sampling containers)									
PA Method 8260									

VOC per EPA Method 8260

Disposal of Purged Water:	NA, no purge sampling
Samples Stored on Ice in Cooler:	
C.O.C. Complete:	
Analytical Laboratory:	Hall Environmental Laboratories, Albuquerque, NM
Sampling Equipment:	

Notes / Comments

DEPTH TO NAPL / GROUNDWATER MEASUREMENT FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery

Date: 7-5-18

Location: Bloomfield, New Mexico

Time:

Tech: M. Beauparlant

Form: 1 of __

Well I.D.	Depth to NAPL (ft.)	Depth to Water (ft.)	Well I.D.	Depth to NAPL (ft.)	Depth to Water (ft.)
MPE #1		24.52'	MPE 38	20.60	20.65
MPE #2		22.41'	MPE 39		18.24
MPE #3		21.68'	MPE 40		18.44
MPE #4		20.86	MPE 41		19.10
MPE #5		20.20'	MPE 42	19.74	20.30
MPE #6		20.56	MPE 43		
MPE #7	21.33'	24.49'	MPE 44	21.41	22.10
MPE #8		22.65'	MPE 45	20.85 → 21.70	20
MPE #9		24.38'	MPE 46		22.10
MPE #10		24.18'	MPE 47	21.51	22.59
MPE #11		22.94	MPE 48		20.88
MPE #12		23.30	MPE 49		20.55
MPE #13		23.60	MPE 50	21.08	22.09
MPE #14		22.70	MPE 51		22.02
MPE #16		20.81	MPE 52	21.26	21.92
MPE #17		21.01	MPE 53	20.04	20.55
MPE #18		20.13'	MPE 54	19.82	19.85'
MPE #19		20.69'	MPE 55		19.32
MPE #20		19.62	MPE 56		14.73
MPE #21	20.63'	21.44	MPE 57		15.01
MPE #22	21.58	21.59	MPE 58		15.66
MPE #23		21.61	MPE 59		14.35
MPE #24		23.55	MPE 60		14.76
MPE #25		23.94	MPE 61		14.43
MPE #26	23.68	24.24	MPE 62		17.19
MPE #27		23.05	MPE 63	18.40	18.62
MPE #28		22.53	MPE 64	18.17	18.86
MPE #29		21.65	MPE 65	19.09	19.87
MPE #30		22.17	MPE 66	19.54	20.35
MPE #31		23.12	MPE 67	20.98	21.18
MPE #33	23.09	23.62	MPE 68		19.42
MPE #34	22.95'	23.25	MPE 69		18.84
MPE #35		21.55	MPE 70	19.06'	19.82
MPE #36		20.71	MPE 71	19.33	20.13
MPE #37		20.91	MPE 72	19.49	20.21

* wasps!

DEPTH TO NAPL / GROUNDWATER MEASUREMENT FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery

Date: 7-5-18

Location: *Bloomfield, New Mexico*

Time:

Tech: M. Beauparlant

Form: 1 of 1

[illegible]

DEPTH TO NAPL / GROUNDWATER MEASUREMENT FORM

BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
Phone (505) 327-4965

Site: Thriftway #810 Refinery

Date: 7-9-18

Location: Bloomfield, New Mexico

Time:

Tech: M. Beauparlant

Form: 1 of

Well I.D.	Depth to NAPL (ft.)	Depth to Water (ft.)	Well I.D. 9-8-18	Depth to NAPL (ft.)	Depth to Water (ft.)
TW-11		18.95'	TW-1		31.81'
TW-15		14.89'	TW-2	3	30.03'
TW-16		12.36'	TW-3		28.90'
TW-17		10.88'	TW-4		19.16'
TW-18		17.14'	TW-5		26.55'
TW-23		9.65'	TW-6		25.79'
TW-24		9.59'	TW-7		23.25'
TW-31		7.26'	TW-8		20.72'
TW-30		6.26'	TW-9		13.32'
TW-39		9.79'	TW-10		13.51'
TW-41		7.70'	TW-12	23.31'	23.79'
TW-42		8.33'	TW-13	21.55'	22.88'
TW-43		12.72'	TW-14		18.05'
MW-7		8.92'	TW-19	18.45'	18.96'
MW-6		4.91'	TW-20	18.60'	18.88'
MW-4		5.30'	TW-21	17.01'	18.41'
MW-5		5.66'	TW-22	15.65'	15.68'
MW-18		4.42'	TW-25	14.75'	15.43'
MW-19		4.38'	TW-26	16.41'	17.70'
TW-37		11.01'	TW-28	15.35'	16.72'
MW-13		18.70'	TW-29	9.68'	9.75'
MW-16		9.65'	TW-32	9.69'	10.49'
TW-48		8.61'	TW-33	13.30'	14.54'
TW-34		20.88'	TW-38	11.93'	11.99'
TW-36	13.55'	13.61'	TW-40	8.29'	8.71'
MW-20		6.45'	TW-50	9.45'	9.71'
TW-45		7.53'	TW-44	15.57'	15.91'
TW-46		7.82'	MW-12	14.90'	16.37'
TW-47		6.94'	MW-17		6.45'
MW-21		3.68'	RW-24	17.31'	19.03'
TW-51		7.38'	RW-24	16.58'	18.20'
TW-52		7.83'	TW-35	15.68'	16.15'
TW-53		7.18'			
TW-54		7.94'			

Roots/cup.

Roots

APPENDIX B.



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

July 18, 2018

Ross Kennemer
Biotech Remediation, Inc.
501 Airport Dr
Farmington, NM 87401
TEL:
FAX

RE: Thriftway 810 Refinery

OrderNo.: 1807619

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory received 33 sample(s) on 7/12/2018 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-11

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 10:30:00 AM

Lab ID: 1807619-001

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 3:33:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 3:33:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 3:33:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 3:33:00 PM	R52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-11

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 10:30:00 AM

Lab ID: 1807619-001

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 3:33:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 3:33:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 3:33:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 3:33:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/16/2018 3:33:00 PM	R52735
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/16/2018 3:33:00 PM	R52735
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/16/2018 3:33:00 PM	R52735
Surr: Toluene-d8	92.1	70-130		%Rec	1	7/16/2018 3:33:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-15

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 10:55:00 AM

Lab ID: 1807619-002

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 4:47:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 4:47:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 4:47:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 4:47:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-15

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 10:55:00 AM

Lab ID: 1807619-002

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 4:47:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 4:47:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 4:47:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 4:47:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/16/2018 4:47:00 PM	R52735
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/16/2018 4:47:00 PM	R52735
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/16/2018 4:47:00 PM	R52735
Surr: Toluene-d8	92.2	70-130		%Rec	1	7/16/2018 4:47:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-16

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 11:15:00 AM

Lab ID: 1807619-003

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
Benzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 5:12:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 5:12:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 5:12:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 5:12:00 PM	R52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-16

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 11:15:00 AM

Lab ID: 1807619-003

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 5:12:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 5:12:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 5:12:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 5:12:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/16/2018 5:12:00 PM	R52735
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/16/2018 5:12:00 PM	R52735
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/16/2018 5:12:00 PM	R52735
Surr: Toluene-d8	91.1	70-130		%Rec	1	7/16/2018 5:12:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-17

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 11:30:00 AM

Lab ID: 1807619-004

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
Benzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 5:37:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 5:37:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 5:37:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 5:37:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-17

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 11:30:00 AM

Lab ID: 1807619-004

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 5:37:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 5:37:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 5:37:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 5:37:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/16/2018 5:37:00 PM	R52735
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	7/16/2018 5:37:00 PM	R52735
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/16/2018 5:37:00 PM	R52735
Surr: Toluene-d8	93.7	70-130		%Rec	1	7/16/2018 5:37:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-18

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 12:00:00 PM

Lab ID: 1807619-005

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 6:01:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 6:01:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 6:01:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 6:01:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-18

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 12:00:00 PM

Lab ID: 1807619-005

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 6:01:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 6:01:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 6:01:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 6:01:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	7/16/2018 6:01:00 PM	R52735
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/16/2018 6:01:00 PM	R52735
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/16/2018 6:01:00 PM	R52735
Surr: Toluene-d8	92.5	70-130		%Rec	1	7/16/2018 6:01:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-23

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 12:25:00 PM

Lab ID: 1807619-006

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 6:26:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 6:26:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 6:26:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 6:26:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-23

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 12:25:00 PM

Lab ID: 1807619-006

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 6:26:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 6:26:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 6:26:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 6:26:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/16/2018 6:26:00 PM	R52735
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/16/2018 6:26:00 PM	R52735
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/16/2018 6:26:00 PM	R52735
Surr: Toluene-d8	92.7	70-130		%Rec	1	7/16/2018 6:26:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-24

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 12:45:00 PM

Lab ID: 1807619-007

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
Benzene	1.2	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Methyl tert-butyl ether (MTBE)	3.9	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 6:50:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 6:50:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 6:50:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 6:50:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-24

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 12:45:00 PM

Lab ID: 1807619-007

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 6:50:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 6:50:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
tert-Butylbenzene	1.3	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 6:50:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 6:50:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/16/2018 6:50:00 PM	R52735
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	7/16/2018 6:50:00 PM	R52735
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/16/2018 6:50:00 PM	R52735
Surr: Toluene-d8	90.9	70-130		%Rec	1	7/16/2018 6:50:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-31

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 1:55:00 PM

Lab ID: 1807619-008

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Methyl tert-butyl ether (MTBE)	6.6	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 7:14:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 7:14:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 7:14:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 7:14:00 PM	R52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-31

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 1:55:00 PM

Lab ID: 1807619-008

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 7:14:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 7:14:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 7:14:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 7:14:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/16/2018 7:14:00 PM	R52735
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/16/2018 7:14:00 PM	R52735
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/16/2018 7:14:00 PM	R52735
Surr: Toluene-d8	93.4	70-130		%Rec	1	7/16/2018 7:14:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-30

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 2:20:00 PM

Lab ID: 1807619-009

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Methyl tert-butyl ether (MTBE)	18	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 7:38:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 7:38:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 7:38:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 7:38:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-30

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 2:20:00 PM

Lab ID: 1807619-009

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 7:38:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 7:38:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Vinyl chloride	5.9	1.0		µg/L	1	7/16/2018 7:38:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 7:38:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/16/2018 7:38:00 PM	R52735
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/16/2018 7:38:00 PM	R52735
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/16/2018 7:38:00 PM	R52735
Surr: Toluene-d8	93.2	70-130		%Rec	1	7/16/2018 7:38:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-39

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 2:40:00 PM

Lab ID: 1807619-010

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Methyl tert-butyl ether (MTBE)	17	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 8:02:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 8:02:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 8:02:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 8:02:00 PM	R52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-39

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 2:40:00 PM

Lab ID: 1807619-010

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 8:02:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 8:02:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 8:02:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 8:02:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/16/2018 8:02:00 PM	R52735
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/16/2018 8:02:00 PM	R52735
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/16/2018 8:02:00 PM	R52735
Surr: Toluene-d8	91.3	70-130		%Rec	1	7/16/2018 8:02:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-41

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 3:00:00 PM

Lab ID: 1807619-011

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	41	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Toluene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Ethylbenzene	14	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Methyl tert-butyl ether (MTBE)	8.0	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2,4-Trimethylbenzene	13	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,3,5-Trimethylbenzene	2.2	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Naphthalene	ND	4.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1-Methylnaphthalene	ND	8.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
2-Methylnaphthalene	ND	8.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Acetone	ND	20	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Bromobenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Bromodichloromethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Bromoform	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Bromomethane	ND	6.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
2-Butanone	ND	20	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Carbon disulfide	ND	20	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Carbon Tetrachloride	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Chlorobenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Chloroethane	ND	4.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Chloroform	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Chloromethane	ND	6.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
2-Chlorotoluene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
4-Chlorotoluene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
cis-1,2-DCE	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
cis-1,3-Dichloropropene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	4.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Dibromochloromethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Dibromomethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2-Dichlorobenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,3-Dichlorobenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,4-Dichlorobenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Dichlorodifluoromethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,1-Dichloroethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,1-Dichloroethene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2-Dichloropropane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,3-Dichloropropane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
2,2-Dichloropropane	ND	4.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-41

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 3:00:00 PM

Lab ID: 1807619-011

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Hexachlorobutadiene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
2-Hexanone	ND	20	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Isopropylbenzene	17	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
4-Isopropyltoluene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
4-Methyl-2-pentanone	ND	20	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Methylene Chloride	ND	6.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
n-Butylbenzene	ND	6.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
n-Propylbenzene	8.0	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
sec-Butylbenzene	2.0	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Styrene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
tert-Butylbenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	4.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Tetrachloroethene (PCE)	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
trans-1,2-DCE	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
trans-1,3-Dichloropropene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2,3-Trichlorobenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2,4-Trichlorobenzene	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,1,1-Trichloroethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,1,2-Trichloroethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Trichloroethene (TCE)	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Trichlorofluoromethane	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
1,2,3-Trichloropropane	ND	4.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Vinyl chloride	ND	2.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Xylenes, Total	47	3.0	D	µg/L	2	7/16/2018 8:27:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	101	70-130	D	%Rec	2	7/16/2018 8:27:00 PM	R52735
Surr: 4-Bromofluorobenzene	101	70-130	D	%Rec	2	7/16/2018 8:27:00 PM	R52735
Surr: Dibromofluoromethane	103	70-130	D	%Rec	2	7/16/2018 8:27:00 PM	R52735
Surr: Toluene-d8	95.7	70-130	D	%Rec	2	7/16/2018 8:27:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-42

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 3:20:00 PM

Lab ID: 1807619-012

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Methyl tert-butyl ether (MTBE)	16	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 8:51:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 8:51:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 8:51:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 8:51:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-42

Project: Thriftway 810 Refinery

Collection Date: 7/9/2018 3:20:00 PM

Lab ID: 1807619-012

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 8:51:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 8:51:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 8:51:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 8:51:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/16/2018 8:51:00 PM	R52735
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/16/2018 8:51:00 PM	R52735
Surr: Dibromofluoromethane	107	70-130		%Rec	1	7/16/2018 8:51:00 PM	R52735
Surr: Toluene-d8	92.9	70-130		%Rec	1	7/16/2018 8:51:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-43

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 10:40:00 AM

Lab ID: 1807619-013

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Methyl tert-butyl ether (MTBE)	210	10		µg/L	10	7/17/2018 5:44:00 PM	R52775
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 9:15:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 9:15:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 9:15:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
cis-1,2-DCE	2.0	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 9:15:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-43

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 10:40:00 AM

Lab ID: 1807619-013

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 9:15:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 9:15:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 9:15:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 9:15:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	7/16/2018 9:15:00 PM	R52735
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/16/2018 9:15:00 PM	R52735
Surr: Dibromofluoromethane	107	70-130		%Rec	1	7/16/2018 9:15:00 PM	R52735
Surr: Toluene-d8	92.3	70-130		%Rec	1	7/16/2018 9:15:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-7

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 11:15:00 AM

Lab ID: 1807619-014

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Methyl tert-butyl ether (MTBE)	62	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 9:39:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 9:39:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 9:39:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 9:39:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-7

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 11:15:00 AM

Lab ID: 1807619-014

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 9:39:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 9:39:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 9:39:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 9:39:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/16/2018 9:39:00 PM	R52735
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	7/16/2018 9:39:00 PM	R52735
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/16/2018 9:39:00 PM	R52735
Surr: Toluene-d8	94.1	70-130		%Rec	1	7/16/2018 9:39:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-6

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 11:30:00 AM

Lab ID: 1807619-015

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Methyl tert-butyl ether (MTBE)	12	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 10:03:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 10:03:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 10:03:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 10:03:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-6

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 11:30:00 AM

Lab ID: 1807619-015

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 10:03:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 10:03:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 10:03:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 10:03:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/16/2018 10:03:00 PM	R52735
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/16/2018 10:03:00 PM	R52735
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/16/2018 10:03:00 PM	R52735
Surr: Toluene-d8	92.3	70-130		%Rec	1	7/16/2018 10:03:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-4

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 11:45:00 AM

Lab ID: 1807619-016

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Methyl tert-butyl ether (MTBE)	23	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 10:27:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 10:27:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 10:27:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 10:27:00 PM	R52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-4

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 11:45:00 AM

Lab ID: 1807619-016

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 10:27:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 10:27:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 10:27:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 10:27:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	7/16/2018 10:27:00 PM	R52735
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/16/2018 10:27:00 PM	R52735
Surr: Dibromofluoromethane	107	70-130		%Rec	1	7/16/2018 10:27:00 PM	R52735
Surr: Toluene-d8	94.5	70-130		%Rec	1	7/16/2018 10:27:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-5

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 12:05:00 PM

Lab ID: 1807619-017

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Methyl tert-butyl ether (MTBE)	65	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 10:51:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 10:51:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 10:51:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 10:51:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-5

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 12:05:00 PM

Lab ID: 1807619-017

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 10:51:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 10:51:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 10:51:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 10:51:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/16/2018 10:51:00 PM	R52735
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/16/2018 10:51:00 PM	R52735
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/16/2018 10:51:00 PM	R52735
Surr: Toluene-d8	92.5	70-130		%Rec	1	7/16/2018 10:51:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-18

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 12:25:00 PM

Lab ID: 1807619-018

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
Benzene	2.1	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Methyl tert-butyl ether (MTBE)	10	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 11:15:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 11:15:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 11:15:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 11:15:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-18

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 12:25:00 PM

Lab ID: 1807619-018

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 11:15:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 11:15:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 11:15:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 11:15:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/16/2018 11:15:00 PM	R52735
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	7/16/2018 11:15:00 PM	R52735
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/16/2018 11:15:00 PM	R52735
Surr: Toluene-d8	92.7	70-130		%Rec	1	7/16/2018 11:15:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-19

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 12:45:00 PM

Lab ID: 1807619-019

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Toluene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Ethylbenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Methyl tert-butyl ether (MTBE)	150	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Naphthalene	ND	2.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Acetone	ND	10		µg/L	1	7/16/2018 11:39:00 PM	R52735
Bromobenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Bromoform	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Bromomethane	ND	3.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
2-Butanone	ND	10		µg/L	1	7/16/2018 11:39:00 PM	R52735
Carbon disulfide	ND	10		µg/L	1	7/16/2018 11:39:00 PM	R52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Chlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Chloroethane	ND	2.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Chloroform	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Chloromethane	ND	3.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Dibromomethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2018 11:39:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-19

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 12:45:00 PM

Lab ID: 1807619-019

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
2-Hexanone	ND	10		µg/L	1	7/16/2018 11:39:00 PM	R52735
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2018 11:39:00 PM	R52735
Methylene Chloride	ND	3.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Styrene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Vinyl chloride	ND	1.0		µg/L	1	7/16/2018 11:39:00 PM	R52735
Xylenes, Total	ND	1.5		µg/L	1	7/16/2018 11:39:00 PM	R52735
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/16/2018 11:39:00 PM	R52735
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	7/16/2018 11:39:00 PM	R52735
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/16/2018 11:39:00 PM	R52735
Surr: Toluene-d8	91.9	70-130		%Rec	1	7/16/2018 11:39:00 PM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-37

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 1:05:00 PM

Lab ID: 1807619-020

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	200	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Toluene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Ethylbenzene	34	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Methyl tert-butyl ether (MTBE)	74	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2,4-Trimethylbenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,3,5-Trimethylbenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Naphthalene	ND	10		µg/L	5	7/17/2018 12:03:00 AM	R52735
1-Methylnaphthalene	ND	20		µg/L	5	7/17/2018 12:03:00 AM	R52735
2-Methylnaphthalene	ND	20		µg/L	5	7/17/2018 12:03:00 AM	R52735
Acetone	ND	50		µg/L	5	7/17/2018 12:03:00 AM	R52735
Bromobenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Bromodichloromethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Bromoform	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Bromomethane	ND	15		µg/L	5	7/17/2018 12:03:00 AM	R52735
2-Butanone	ND	50		µg/L	5	7/17/2018 12:03:00 AM	R52735
Carbon disulfide	ND	50		µg/L	5	7/17/2018 12:03:00 AM	R52735
Carbon Tetrachloride	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Chlorobenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Chloroethane	ND	10		µg/L	5	7/17/2018 12:03:00 AM	R52735
Chloroform	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Chloromethane	ND	15		µg/L	5	7/17/2018 12:03:00 AM	R52735
2-Chlorotoluene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
4-Chlorotoluene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
cis-1,2-DCE	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	7/17/2018 12:03:00 AM	R52735
Dibromochloromethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Dibromomethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2-Dichlorobenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,3-Dichlorobenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,4-Dichlorobenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Dichlorodifluoromethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,1-Dichloroethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,1-Dichloroethene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2-Dichloropropane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,3-Dichloropropane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
2,2-Dichloropropane	ND	10		µg/L	5	7/17/2018 12:03:00 AM	R52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-37

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 1:05:00 PM

Lab ID: 1807619-020

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Hexachlorobutadiene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
2-Hexanone	ND	50		µg/L	5	7/17/2018 12:03:00 AM	R52735
Isopropylbenzene	9.2	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
4-Isopropyltoluene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
4-Methyl-2-pentanone	ND	50		µg/L	5	7/17/2018 12:03:00 AM	R52735
Methylene Chloride	ND	15		µg/L	5	7/17/2018 12:03:00 AM	R52735
n-Butylbenzene	ND	15		µg/L	5	7/17/2018 12:03:00 AM	R52735
n-Propylbenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
sec-Butylbenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Styrene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
tert-Butylbenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	7/17/2018 12:03:00 AM	R52735
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
trans-1,2-DCE	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,1,1-Trichloroethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,1,2-Trichloroethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Trichloroethene (TCE)	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Trichlorofluoromethane	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
1,2,3-Trichloropropane	ND	10		µg/L	5	7/17/2018 12:03:00 AM	R52735
Vinyl chloride	ND	5.0		µg/L	5	7/17/2018 12:03:00 AM	R52735
Xylenes, Total	ND	7.5		µg/L	5	7/17/2018 12:03:00 AM	R52735
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	5	7/17/2018 12:03:00 AM	R52735
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	5	7/17/2018 12:03:00 AM	R52735
Surr: Dibromofluoromethane	103	70-130		%Rec	5	7/17/2018 12:03:00 AM	R52735
Surr: Toluene-d8	93.3	70-130		%Rec	5	7/17/2018 12:03:00 AM	R52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-13

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 1:25:00 PM

Lab ID: 1807619-021

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 12:27:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 12:27:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 12:27:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 12:27:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-13

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 1:25:00 PM

Lab ID: 1807619-021

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 12:27:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 12:27:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 12:27:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 12:27:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/17/2018 12:27:00 AM	B52735
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/17/2018 12:27:00 AM	B52735
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/17/2018 12:27:00 AM	B52735
Surr: Toluene-d8	92.3	70-130		%Rec	1	7/17/2018 12:27:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-16

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 1:40:00 PM

Lab ID: 1807619-022

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 3:15:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 3:15:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 3:15:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 3:15:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-16

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 1:40:00 PM

Lab ID: 1807619-022

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 3:15:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 3:15:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 3:15:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 3:15:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	7/17/2018 3:15:00 AM	B52735
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/17/2018 3:15:00 AM	B52735
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/17/2018 3:15:00 AM	B52735
Surr: Toluene-d8	93.6	70-130		%Rec	1	7/17/2018 3:15:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-48

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 2:05:00 PM

Lab ID: 1807619-023

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Methyl tert-butyl ether (MTBE)	4.0	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Acetone	12	10		µg/L	1	7/17/2018 3:39:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 3:39:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 3:39:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 3:39:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-48

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 2:05:00 PM

Lab ID: 1807619-023

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 3:39:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 3:39:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 3:39:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 3:39:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%Rec	1	7/17/2018 3:39:00 AM	B52735
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/17/2018 3:39:00 AM	B52735
Surr: Dibromofluoromethane	99.1	70-130		%Rec	1	7/17/2018 3:39:00 AM	B52735
Surr: Toluene-d8	91.6	70-130		%Rec	1	7/17/2018 3:39:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-34

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 3:00:00 PM

Lab ID: 1807619-024

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Acetone	15	10		µg/L	1	7/17/2018 4:02:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 4:02:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 4:02:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 4:02:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-34

Project: Thriftway 810 Refinery

Collection Date: 7/10/2018 3:00:00 PM

Lab ID: 1807619-024

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 4:02:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 4:02:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 4:02:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 4:02:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/17/2018 4:02:00 AM	B52735
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/17/2018 4:02:00 AM	B52735
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/17/2018 4:02:00 AM	B52735
Surr: Toluene-d8	92.0	70-130		%Rec	1	7/17/2018 4:02:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-20

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 9:45:00 AM

Lab ID: 1807619-025

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Methyl tert-butyl ether (MTBE)	88	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 4:26:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 4:26:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 4:26:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
cis-1,2-DCE	1.1	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 4:26:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-20

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 9:45:00 AM

Lab ID: 1807619-025

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 4:26:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 4:26:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
tert-Butylbenzene	1.5	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 4:26:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 4:26:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%Rec	1	7/17/2018 4:26:00 AM	B52735
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	7/17/2018 4:26:00 AM	B52735
Surr: Dibromofluoromethane	98.0	70-130		%Rec	1	7/17/2018 4:26:00 AM	B52735
Surr: Toluene-d8	92.1	70-130		%Rec	1	7/17/2018 4:26:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-45

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:00:00 AM

Lab ID: 1807619-026

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Methyl tert-butyl ether (MTBE)	55	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 4:50:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 4:50:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 4:50:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
cis-1,2-DCE	2.5	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 4:50:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-45

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:00:00 AM

Lab ID: 1807619-026

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 4:50:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 4:50:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 4:50:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 4:50:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	7/17/2018 4:50:00 AM	B52735
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/17/2018 4:50:00 AM	B52735
Surr: Dibromofluoromethane	97.1	70-130		%Rec	1	7/17/2018 4:50:00 AM	B52735
Surr: Toluene-d8	91.8	70-130		%Rec	1	7/17/2018 4:50:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-46

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:10:00 AM

Lab ID: 1807619-027

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Methyl tert-butyl ether (MTBE)	73	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 5:14:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 5:14:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 5:14:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 5:14:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-46

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:10:00 AM

Lab ID: 1807619-027

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 5:14:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 5:14:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 5:14:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 5:14:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/17/2018 5:14:00 AM	B52735
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/17/2018 5:14:00 AM	B52735
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/17/2018 5:14:00 AM	B52735
Surr: Toluene-d8	91.6	70-130		%Rec	1	7/17/2018 5:14:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-47

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:25:00 AM

Lab ID: 1807619-028

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Acetone	18	10		µg/L	1	7/17/2018 5:38:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 5:38:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 5:38:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 5:38:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-47

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:25:00 AM

Lab ID: 1807619-028

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 5:38:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 5:38:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 5:38:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 5:38:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/17/2018 5:38:00 AM	B52735
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/17/2018 5:38:00 AM	B52735
Surr: Dibromofluoromethane	97.0	70-130		%Rec	1	7/17/2018 5:38:00 AM	B52735
Surr: Toluene-d8	91.0	70-130		%Rec	1	7/17/2018 5:38:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-21

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:40:00 AM

Lab ID: 1807619-029

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Methyl tert-butyl ether (MTBE)	2.6	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 6:02:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 6:02:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 6:02:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 6:02:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: MW-21

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 10:40:00 AM

Lab ID: 1807619-029

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 6:02:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 6:02:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 6:02:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 6:02:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%Rec	1	7/17/2018 6:02:00 AM	B52735
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/17/2018 6:02:00 AM	B52735
Surr: Dibromofluoromethane	97.9	70-130		%Rec	1	7/17/2018 6:02:00 AM	B52735
Surr: Toluene-d8	91.8	70-130		%Rec	1	7/17/2018 6:02:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-51

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:05:00 AM

Lab ID: 1807619-030

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Methyl tert-butyl ether (MTBE)	150	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 6:26:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 6:26:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 6:26:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 6:26:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: **7/18/2018**

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-51

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:05:00 AM

Lab ID: 1807619-030

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 6:26:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 6:26:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 6:26:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 6:26:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%Rec	1	7/17/2018 6:26:00 AM	B52735
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/17/2018 6:26:00 AM	B52735
Surr: Dibromofluoromethane	97.6	70-130		%Rec	1	7/17/2018 6:26:00 AM	B52735
Surr: Toluene-d8	93.2	70-130		%Rec	1	7/17/2018 6:26:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-52

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:20:00 AM

Lab ID: 1807619-031

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Methyl tert-butyl ether (MTBE)	90	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 6:50:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 6:50:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 6:50:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 6:50:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-52

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:20:00 AM

Lab ID: 1807619-031

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 6:50:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 6:50:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 6:50:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 6:50:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/17/2018 6:50:00 AM	B52735
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/17/2018 6:50:00 AM	B52735
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/17/2018 6:50:00 AM	B52735
Surr: Toluene-d8	93.2	70-130		%Rec	1	7/17/2018 6:50:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-53

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:30:00 AM

Lab ID: 1807619-032

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Methyl tert-butyl ether (MTBE)	9.8	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 7:14:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 7:14:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 7:14:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 7:14:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-53

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:30:00 AM

Lab ID: 1807619-032

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 7:14:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 7:14:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 7:14:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 7:14:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	98.8	70-130		%Rec	1	7/17/2018 7:14:00 AM	B52735
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	7/17/2018 7:14:00 AM	B52735
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/17/2018 7:14:00 AM	B52735
Surr: Toluene-d8	89.8	70-130		%Rec	1	7/17/2018 7:14:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807619

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-54

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:40:00 AM

Lab ID: 1807619-033

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Toluene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Ethylbenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Methyl tert-butyl ether (MTBE)	18	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Naphthalene	ND	2.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
2-Methylnaphthalene	ND	4.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Acetone	ND	10		µg/L	1	7/17/2018 7:38:00 AM	B52735
Bromobenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Bromodichloromethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Bromoform	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Bromomethane	ND	3.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
2-Butanone	ND	10		µg/L	1	7/17/2018 7:38:00 AM	B52735
Carbon disulfide	ND	10		µg/L	1	7/17/2018 7:38:00 AM	B52735
Carbon Tetrachloride	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Chlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Chloroethane	ND	2.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Chloroform	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Chloromethane	ND	3.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
2-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
4-Chlorotoluene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
cis-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Dibromochloromethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Dibromomethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,1-Dichloroethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,1-Dichloroethene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,3-Dichloropropane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
2,2-Dichloropropane	ND	2.0		µg/L	1	7/17/2018 7:38:00 AM	B52735

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 Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1807619**

Date Reported: 7/18/2018

CLIENT: Biotech Remediation, Inc.

Client Sample ID: TW-54

Project: Thriftway 810 Refinery

Collection Date: 7/11/2018 11:40:00 AM

Lab ID: 1807619-033

Matrix: AQUEOUS

Received Date: 7/12/2018 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Hexachlorobutadiene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
2-Hexanone	ND	10		µg/L	1	7/17/2018 7:38:00 AM	B52735
Isopropylbenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
4-Isopropyltoluene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
4-Methyl-2-pentanone	ND	10		µg/L	1	7/17/2018 7:38:00 AM	B52735
Methylene Chloride	ND	3.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
n-Butylbenzene	ND	3.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
n-Propylbenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
sec-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Styrene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
tert-Butylbenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
trans-1,2-DCE	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Trichlorofluoromethane	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Vinyl chloride	ND	1.0		µg/L	1	7/17/2018 7:38:00 AM	B52735
Xylenes, Total	ND	1.5		µg/L	1	7/17/2018 7:38:00 AM	B52735
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/17/2018 7:38:00 AM	B52735
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/17/2018 7:38:00 AM	B52735
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/17/2018 7:38:00 AM	B52735
Surr: Toluene-d8	91.8	70-130		%Rec	1	7/17/2018 7:38:00 AM	B52735

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807619

18-Jul-18

Client: Biotech Remediation, Inc.

Project: Thriftway 810 Refinery

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R52735			RunNo: 52735					
Prep Date:	Analysis Date: 7/16/2018			SeqNo: 1731992		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.2	70	130			
Toluene	18	1.0	20.00	0	88.0	70	130			
Chlorobenzene	17	1.0	20.00	0	86.9	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	88.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.3	70	130			
Surr: Toluene-d8	9.5		10.00		95.2	70	130			

Sample ID	RB	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R52735			RunNo: 52735					
Prep Date:		Analysis Date: 7/16/2018			SeqNo: 1731995		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								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807619

18-Jul-18

Client: Biotech Remediation, Inc.

Project: Thriftway 810 Refinery

Sample ID	RB	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R52735			RunNo: 52735					
Prep Date:		Analysis Date: 7/16/2018			SeqNo: 1731995	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

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 Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807619

18-Jul-18

Client: Biotech Remediation, Inc.

Project: Thriftway 810 Refinery

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R52735	RunNo:	52735					
Prep Date:		Analysis Date:	7/16/2018	SeqNo:	1731995	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	9.3		10.00		93.4	70	130			

Sample ID	1807619-001ams	SampType:	MS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	TW-11	Batch ID:	R52735	RunNo:	52735					
Prep Date:		Analysis Date:	7/16/2018	SeqNo:	1731999	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	60.5	137			
Toluene	19	1.0	20.00	0	93.8	70	130			
Chlorobenzene	19	1.0	20.00	0	92.6	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.1		10.00		91.1	70	130			

Sample ID	1807619-001amsd	SampType:	MSD	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	TW-11	Batch ID:	R52735	RunNo:	52735					
Prep Date:		Analysis Date:	7/16/2018	SeqNo:	1732000	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	60.5	137	0.219	20	
Toluene	19	1.0	20.00	0	93.2	70	130	0.642	20	
Chlorobenzene	19	1.0	20.00	0	92.5	70	130	0.0540	20	
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130	0.196	20	
Trichloroethene (TCE)	20	1.0	20.00	0	99.4	70	130	0.842	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		105	70	130	0	0	
Surr: Toluene-d8	9.3		10.00		92.8	70	130	0	0	

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 Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807619

18-Jul-18

Client: Biotech Remediation, Inc.

Project: Thriftway 810 Refinery

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: B52735		RunNo: 52735					
Prep Date:			Analysis Date: 7/17/2018		SeqNo: 1732022		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130			
Toluene	19	1.0	20.00	0	94.9	70	130			
Chlorobenzene	19	1.0	20.00	0	92.6	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.3		10.00		93.1	70	130			

Sample ID	rb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: B52735			RunNo: 52735					
Prep Date:		Analysis Date: 7/17/2018			SeqNo: 1732023		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								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807619

18-Jul-18

Client: Biotech Remediation, Inc.

Project: Thriftway 810 Refinery

Sample ID	rb2	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	B52735	RunNo:	52735					
Prep Date:		Analysis Date:	7/17/2018	SeqNo:	1732023	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

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 Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807619

18-Jul-18

Client: Biotech Remediation, Inc.

Project: Thriftway 810 Refinery

Sample ID rb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: B52735			RunNo: 52735						
Prep Date:	Analysis Date: 7/17/2018			SeqNo: 1732023		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.1		10.00		91.1	70	130			

Sample ID 1807619-021ams	SampType: MS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: MW-13	Batch ID: B52735			RunNo: 52735						
Prep Date:	Analysis Date: 7/17/2018			SeqNo: 1732024		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	60.5	137			
Toluene	18	1.0	20.00	0	91.3	70	130			
Chlorobenzene	18	1.0	20.00	0	89.9	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	98.9	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.1		10.00		91.0	70	130			

Sample ID 1807619-021amsd	SampType: MSD			TestCode: EPA Method 8260B: VOLATILES						
Client ID: MW-13	Batch ID: B52735			RunNo: 52735						
Prep Date:	Analysis Date: 7/17/2018			SeqNo: 1732025		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.7	60.5	137	4.74	20	
Toluene	18	1.0	20.00	0	88.3	70	130	3.36	20	
Chlorobenzene	17	1.0	20.00	0	86.5	70	130	3.85	20	
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130	7.58	20	
Trichloroethene (TCE)	18	1.0	20.00	0	91.7	70	130	7.58	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		100	70	130	0	0	
Surr: Toluene-d8	9.2		10.00		92.5	70	130	0	0	

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 Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807619

18-Jul-18

Client: Biotech Remediation, Inc.

Project: Thriftway 810 Refinery

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R52775			RunNo: 52775					
Prep Date:		Analysis Date: 7/17/2018			SeqNo: 1733540		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	9.1		10.00		90.8	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R52775			RunNo: 52775					
Prep Date:		Analysis Date: 7/17/2018			SeqNo: 1733542		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.3	70	130			
Surr: Toluene-d8	9.1		10.00		90.8	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 Detection Limit
W Sample container temperature is out of limit as specified



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: Biotech Remediation Inc

Work Order Number: 1807619

RcptNo: 1

Received By: Anne Thorne

7/12/2018 6:45:00 AM

Anne Thorne

Completed By: Anne Thorne

7/12/2018 10:38:08 AM

Anne Thorne

Reviewed By:

ENM

7/12/18

Labeled by: MW 7/12/18

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. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
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: 7/12/18
Adjusted: (2 or 3 unless noted)
Checked by: MW

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	1.0	Good	Yes			

②

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Project Manager:

Ross Kennermer,

Sampled Mike Deaparian

On Ice: ☒ Yes ☐ No

Sample Temperature: $3.0\text{CCF}-2.0 = 1.0$

Sample Request ID

type and #	type
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Received by:	Date	Time
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7/11/12

Received by	Date	Time
Identified	11/11/18	1600

Received by: _____ Date: 12/11/19

01112118 0645

contracted to other accredited laboratories. This serves as notice

... attracted to other accredited laboratories. This serves as motivation

APPENDIX C.



501 Airport Drive, Suite 104
Farmington, New Mexico 87401
Office: (505) 327-4965
Fax: (505) 564-3604

July 18, 2017

Jim Griswold
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

**RE: Proposed Environmental Remediation Groundwater Evaporation Pond Relining,
Thriftway Refinery, Bloomfield, New Mexico (AP-116)**

Dear Mr. Griswold:

On April 21, 2017, during a routine inspection of the lined evaporation pond associated with the soil and groundwater remediation equipment operated at the Thriftway Refinery, 626 County Road 5500, Bloomfield, New Mexico, water was found to be present in the interstitial monitoring system between the pond's primary and secondary liners. At the time, the thickness of the water column measured in the interstitial well was equal to the thickness of water present in the lined pond, which was about 1 foot. Since the remediation equipment is only operated between May and October each year, besides precipitation, no water had been discharged to the pond since October 7, 2016. Between April 24 and May 1, 2017, water was pumped from the interstitial monitoring system to determine if the water present in the system was due to condensation buildup or a leak in the primary liner. Approximately 150 gallons of water was pumped from the interstitial system without influencing the water column thickness measured in the interstitial well, which confirmed that the primary liner was leaking. Because groundwater is known to be shallow at the pond location, an excavation was made within an adjacent evaporation pond that is not used, but has an equal base elevation to the pond that is used, to determine the exact depth to groundwater beneath the base of the ponds, which was found to be 3 feet. Unsaturated soil beneath the ponds was found to consist of fine sand, which is consistent with soils encountered within historic soil borings installed throughout the facility. Based on the observed soil type and depth to water beneath the pond, as well as the continued presence of water between the primary and secondary liners after the pond was emptied, it was concluded that the secondary pond liner was not leaking.

In preparation to replace the primary liner, from May 2 through May 5, 2017, all of the water within the pond, approximately 42,000 gallons, was removed and placed into two 500 barrel (bbl) frac tanks for temporary storage. Once the water was removed from the ponds, the interstitial system was pumped again and no recharge to the system was observed.

As we discussed during our July 5, 2017 telephone conversation, Thriftway is proposing to install a new 8 ounce nonwoven geotextile and 45 mil low linear density polyethylene (LLDPE) geomembrane primary liner directly on top of the existing top liner that failed. Relevant to NMAC 19.15.17 (G) (3) and (7) the proposed 45 mil LLDPE geomembrane has a hydraulic conductivity of 1.47×10^{-10} cm/sec; the proposed 8 ounce nonwoven geofabric to be placed directly under the new liner and directly on top of the existing primary liner has a hydraulic conductivity of 1.35×10^{-1} cm/sec; and the existing 12 ounce nonwoven geofabric located between the existing primary and secondary liners and above the leak detection piping has a hydraulic conductivity of 42×10^{-2} cm/sec. I have included drawings which detail the evaporation pond's original construction materials and our proposed modifications. Additionally, the manufacturer's product specifications for the existing pond materials and those that are proposed are included as well.

If you have any questions or require additional information, please do not hesitate to contact me at (505) 215-5984.

Sincerely,



Ross Kennemer
Project Manager

Attachments:

Figure 1 Site Plan

Figure 2-1 Groundwater Remediation Evaporation Pond Plan View

Figure 2-2 Groundwater Remediation Evaporation Pond North to South Cross-Section

Original Pond Construction Materials Specifications, The Snow Company, Inc.

Proposed Pond Modification Materials, GeoChem, Inc.

cc: Robert Moss, Thriftway Company
Via electronic mail with delivery confirmation receipt to:
robertgmoss@me.com