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**Terrace A's  
Groundwater Monitoring Report - 2018  
Remediation Project #7392**

February 20, 2019

**Prepared By:**

Talon/LPE  
1811 East Mulberry Street  
Fort Collins, CO 80524

**Prepared For:**

Whiting Petroleum Corporation

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## 1 Introduction

Talon/LPE (Talon) was contracted by Whiting Petroleum Corporation (Whiting) to conduct groundwater monitoring in an area associated with a former pit identified west of the Terrace Gas Plant (Site) in Weld County, Colorado. The site is located at the northwest quarter of the northeast quarter of Section 18, Township 10 North, Range 58 West, 6th Principal Meridian. The Terrace Compressor tin horn pit (COGCC facility #100035 - Remediation #7392) is located approximately one-eighth (1/8) of a mile to the west of the Terrace Gas Plant. The site is located at 40°50'44.22"N and 103°54'48.34"W. The Topographic map is shown on Figure 1, the Site Plan is shown on Figure 2.

## 2 Objective

The primary objective of this document is to report on Site activities completed during 2018 which included installation of groundwater monitoring wells, groundwater monitoring, and to compare the most recent monitoring event (Fourth Quarter) to the previous monitoring events of 2018.

## 3 Regulatory Framework

The COGCC has regulatory jurisdiction over oil and natural gas industry operations in the State of Colorado. Section 900 of the COGCC Rules is for Exploration and Production Waste Management. More specifically, Section 910 details the Concentrations and Sampling for Soil and Groundwater rules. The regulatory limits for specific analytes in soil and groundwater are detailed in Table 910-1 and are summarized below.

Compound	COGCC Table 910-1 Groundwater Concentrations
Benzene	0.005 mg/L
Toluene	1.0 mg/L
Ethylbenzene	0.7 mg/L
Xylenes (total)	10 mg/L

## 4 Site Characteristics

### 4.1 Geography

The site is located in the Pawnee Grasslands in Weld County, which is the northeastern part of Colorado. The Grasslands are part of the Colorado Eastern Plains and are relatively flat with the exception of the Pawnee Creek which drains into the South Platte River.

### 4.2 Geologic Summary

Geology in this area consists of Oligocene age soils of the White River Group comprised of the Brule Formation and Chadron Formation. The Brule Formation consists of interbedded claystones, mudstones, and siltstones of grayish green color. Underlying the Brule Formation is the Chadron Formation comprised of sandstones, claystones, and conglomerates; color varies from yellowish-brown to olive-gray.

### 4.3 Groundwater

According to the Colorado Division of Water Resources Website, there are no water wells within 1,000-foot radius of the Site.

Depth to groundwater levels as measured on December 21, 2018, in the six (6) groundwater monitoring wells range from 43.81 to 56.75 feet below top of casing (Table 3), which are above-ground by approximately three (3) feet (ft). No wells had measurable amounts of phase-separated hydrocarbons (PSH) during the gauging and sampling activities. The groundwater gradient for the Fourth Quarter has been calculated to be approximately 0.052 feet/foot to the southeast. Quarterly Groundwater Gradient maps from 2018 are shown in Figures 7, 8, 9 and 10.

## 5 Groundwater Monitoring

On May 9 through 11, 2018, Talon personnel oversaw Drilling Engineers advance three (3) additional monitoring wells to delineate the impacted area (MW-4 through MW-6). MW-4, MW-5, and MW-6 were drilled to approximately 60 feet below ground surface (bgs) using hollow-stem ager (HSA) drilling method. The depths of the monitoring wells were determined in the field based on observed lithology, hydrocarbon odors, and photoionization detector (PID) values; the goal was to drill until no further odors or elevated PIDs were observed and a confining lithologic layer was observed.

On December 21, 2018, Talon personnel gauged all six (6) monitoring wells for depth to water (Table 3). The six (6) wells were purged of three (3) casing volumes, or until the wells became dry. The water levels were allowed to recover within the wells and groundwater samples were collected. The collected groundwater samples were submitted to Summit Scientific in Golden, Colorado (Summit) for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) via method SW8260. Purge water generated during sampling activities was placed into 55-gallon steel drums pending off-site disposal.

Table 1 in Attachment 2 summarizes the well completion and survey information, Table 2 summarizes the groundwater laboratory analytical results during 2018, and Table 3 includes well gauging data. A copy of the laboratory reports and chain of custody documentation is included in Attachment 3.

Analytical results for benzene in groundwater were above COGCC Table 910-1 concentration levels in MW-1 beginning 2018 with a value of 2.2 mg/L, rising to 2.4 mg/L in the Third Quarter and dropped to 2.2 mg/L in the Fourth Quarter. Analytical results for benzene in monitoring wells MW-2 through MW-6 were below COGCC Table 910-1 concentration levels for benzene. Groundwater analytical data are shown in Table 2.

The analytical result for toluene in MW-1 was above COGCC Table 910-1 concentration levels beginning 2018 with 6.6 mg/L, it peaked at 9.3 mg/L during the Third Quarter and settled at 6.8 mg/L in the Fourth Quarter monitoring event. Monitoring wells MW-2 through MW-6 were below COGCC Table 910-1 concentration levels for toluene.

Analytical results for ethylbenzene were above COGCC Table 910-1 concentration levels in MW-1 for the first three quarters of 2018, beginning with 0.71 mg/L, peaking at 0.97 mg/L during the Second Quarter, but was below COGCC Table 910-1 concentration for the Fourth Quarter with a 0.62 mg/L. Monitoring wells MW-2 through MW-6 were below COGCC Table 910-1 concentration levels for ethylbenzene.

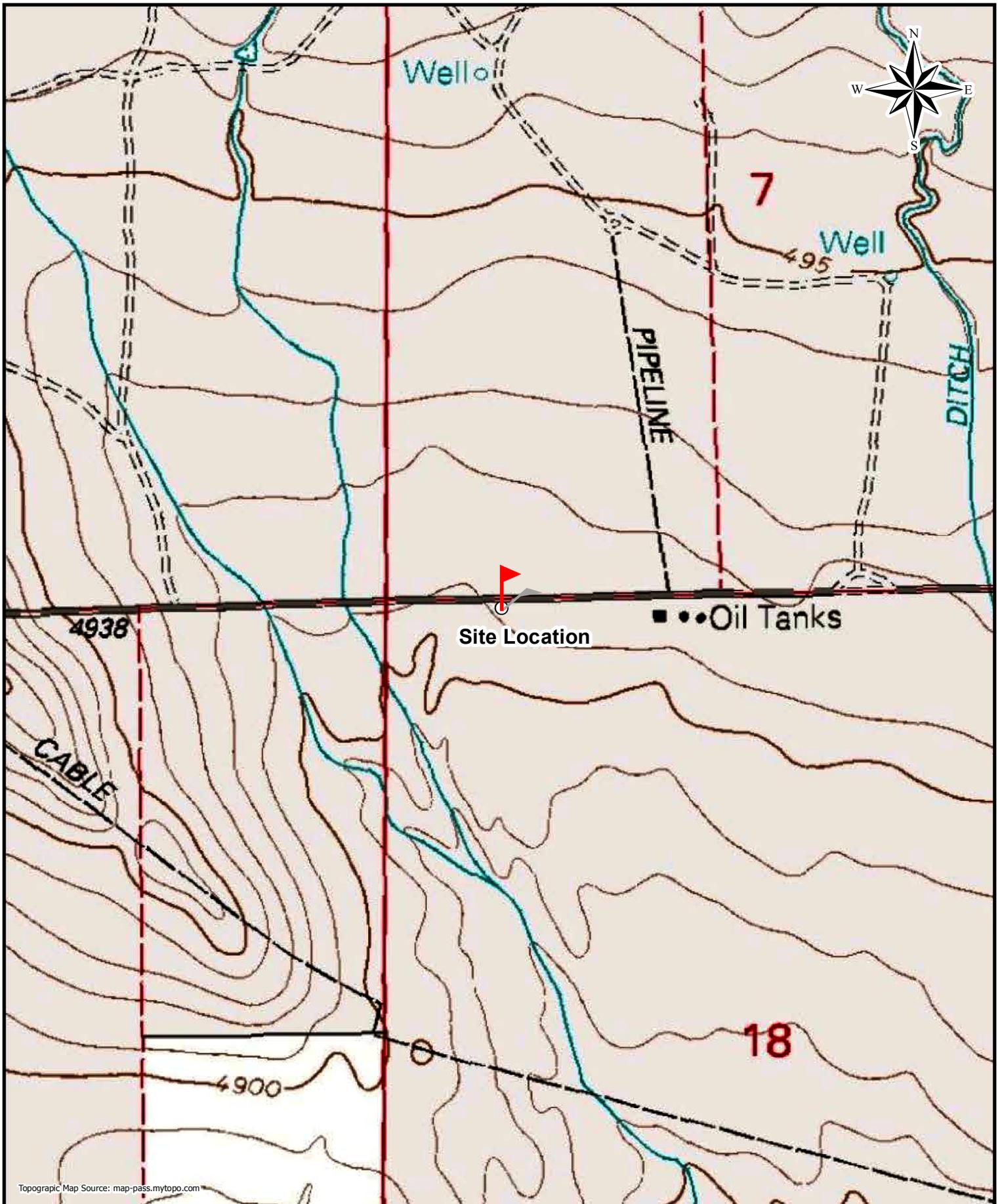
Analytical results for xylenes were below COGCC Table 910-1 concentration levels in each of the quarterly monitoring events in 2018.

All remaining groundwater analytical results were below COGCC Table 910-1 concentration levels or below laboratory detection limits. Quarterly Groundwater Concentration maps from 2018 are shown in Figures 3, 4, 5 and 6.

## **6 Conclusions & Recommendations**

During each quarter of 2018, Talon collected groundwater samples from each of the Terrace wells and had them analyzed for BTEX. Analytical results in MW-1 for benzene and toluene were above COGCC Table 910-1 concentration limits during each of the quarterly groundwater monitoring events, ranging from 2.2 mg/L-2.4 mg/L and 6.2 mg/L-9.3 mg/L, respectively. Ethylbenzene analytical results were above COGCC Table 910-1 concentration levels for the first three quarters of 2018, ranging from 0.71-0.97 mg/L, but was below COGCC Table 910-1 concentration level for Fourth Quarter with an analytical result of 0.62 mg/L. Analytical results for xylenes were below COGCC Table 910-1 concentration levels in each of the quarterly monitoring events in 2018. All remaining analytical results were below COGCC Table 910-1 concentration levels or laboratory detection limits. Talon will continue quarterly monitoring at the Site. The next groundwater sampling event is anticipated to occur in March 2019.

**Attachment 1**  
**Figures**

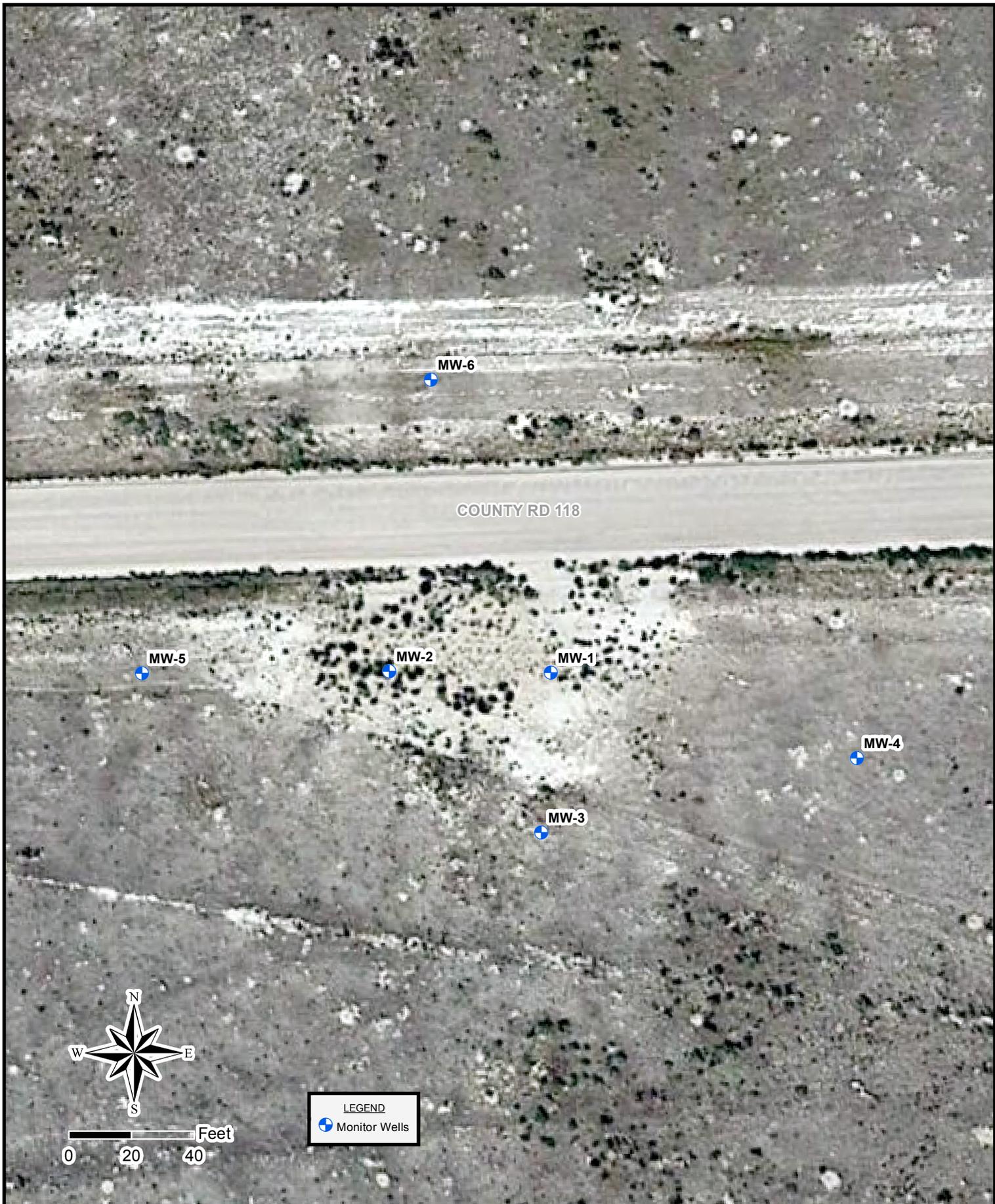


Topographic Map Source: map-pass.mytopo.com



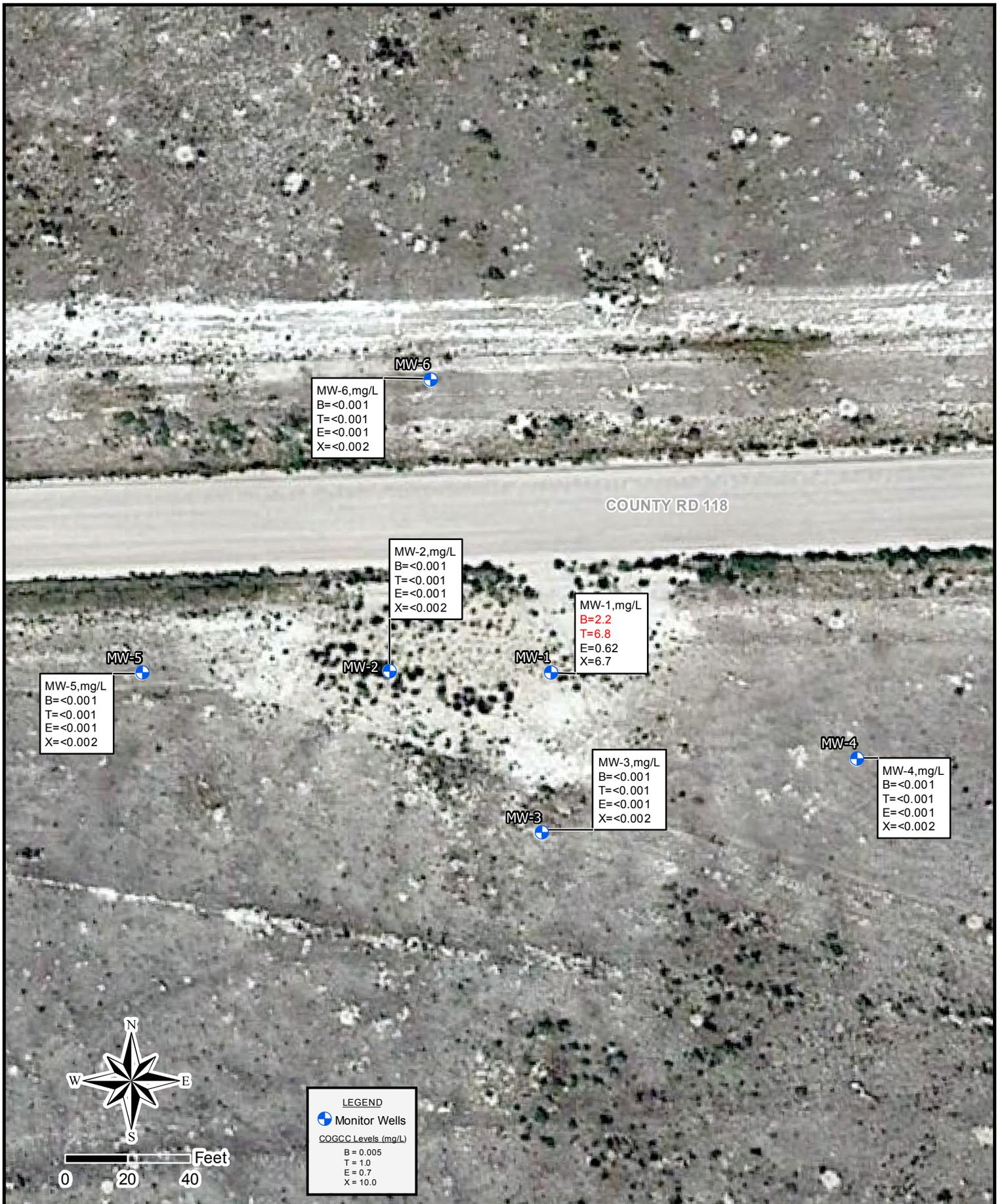
Drafted: 7/3/2018  
 Map Scale 1:10,000  
 Drafted By: IJM

Whiting Oil and Gas Corporation  
 Terrace Pit  
 Weld County, CO  
 Figure 1 - Topographic Map



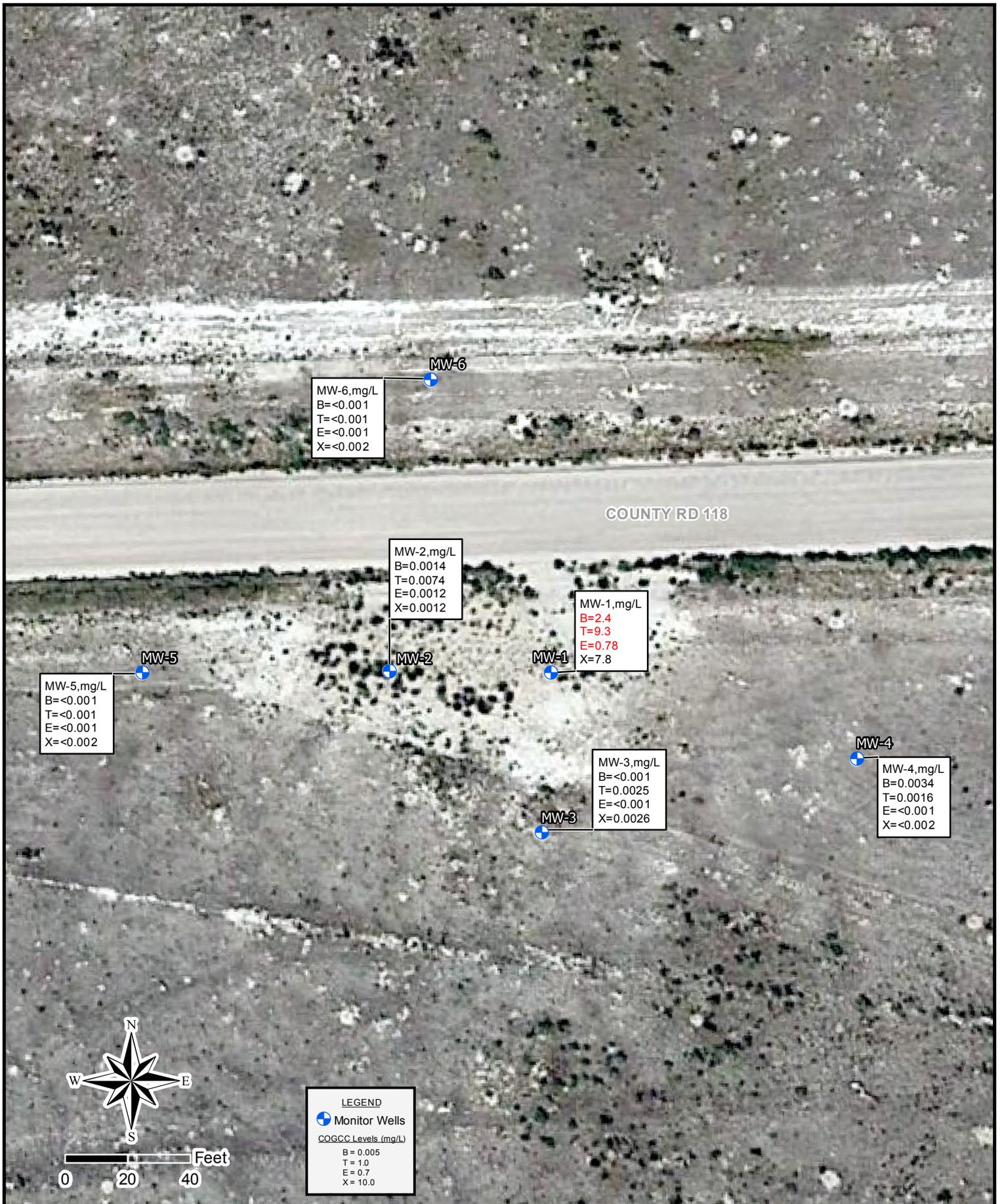
Drafted: 7/3/2018  
1 in = 40 ft  
Drafted By: IJM

Whiting Oil and Gas Corporation  
Terrace Pit  
Weld County, CO  
Figure 2 - Site Plan



Drafted: 1/28/2019  
 1 in = 40 ft  
 Drafted By: IJM

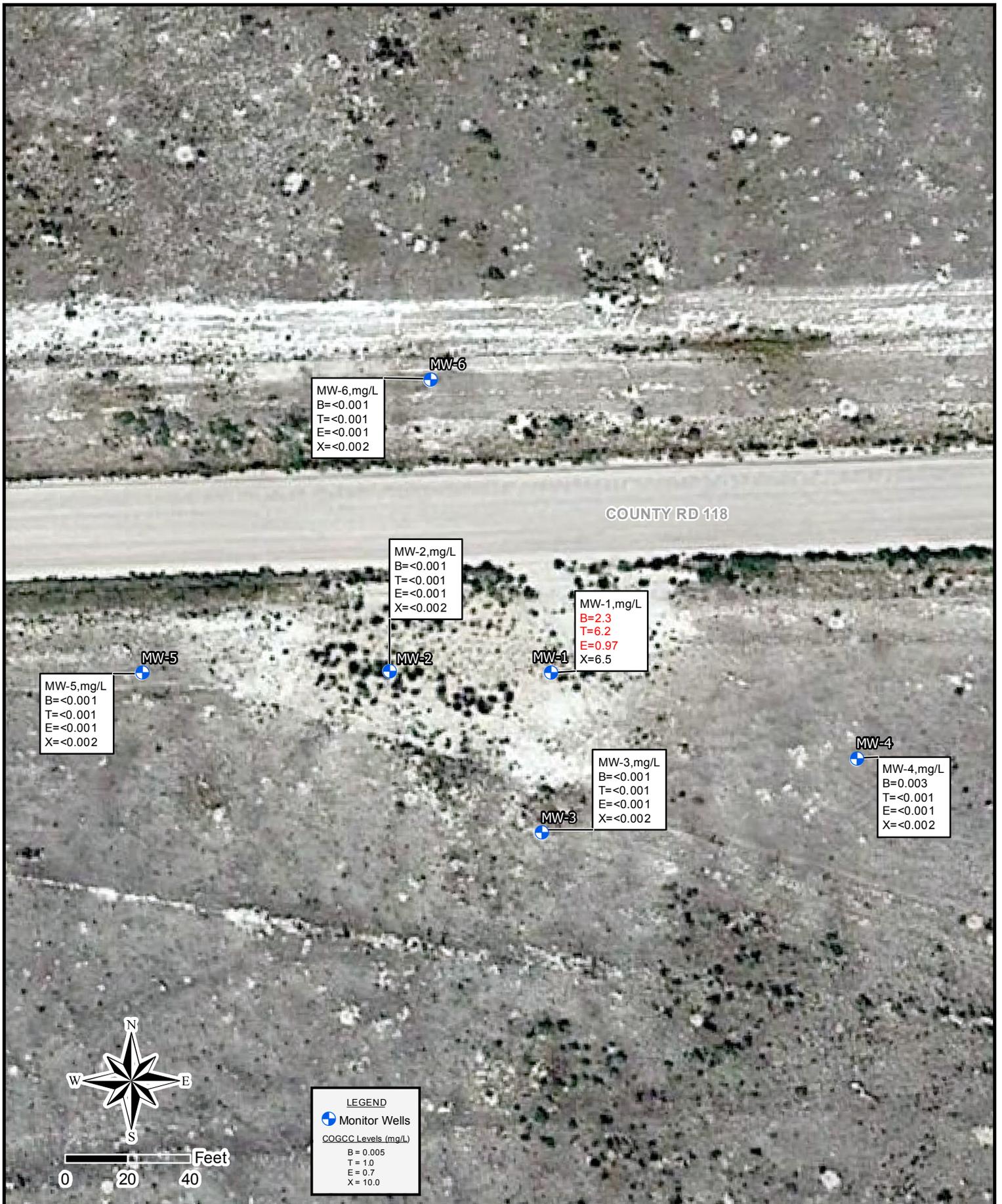
Whiting Oil and Gas Corporation  
 Terrace Pit  
 Weld County, CO  
 Figure 3 - I @Quarter Groundwater Concentration Map



Drafted: 10/3/2018  
 1 in = 40 ft  
 Drafted By: IJM

Whiting Oil and Gas Corporation  
 Terrace Pit  
 Weld County, CO

Figure I - H&A&C Groundwater Concentration Map



Drafted: 8/1/2018  
 1 in = 40 ft  
 Drafted By: IJM

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 Terrace Pit  
 Weld County, CO

Figure 1 - Groundwater Concentration Map

COUNTY RD 118

MW-2, mg/L  
B=<0.001  
T=<0.001  
E=<0.001  
X=<0.002

MW-2



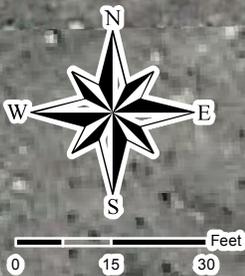
MW-1, mg/L  
B=2.2  
T=6.6  
E=0.71  
X=2.0

MW-1



MW-3, mg/L  
B=<0.001  
T=<0.001  
E=<0.001  
X=<0.002

MW-3



**Legend**

-  Monitor Wells
- COGCC Levels (mg/L)
  - B = 0.005
  - T = 1.0
  - E = 0.7
  - X = 10.0



Drafted: 4/11/2018

1 in = 30 ft

Drafted By: IJM

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Terrace As Tank Battery  
Weld County, CO

Figure 1 - Groundwater Concentration Map



Drafted: 1/25/2019  
 1 in = 40 ft  
 Drafted By: IJM

Whiting Oil and Gas Corporation  
 Terrace Pit  
 Weld County, CO  
 Figure 7 - 4th Quarter Groundwater Gradient Map



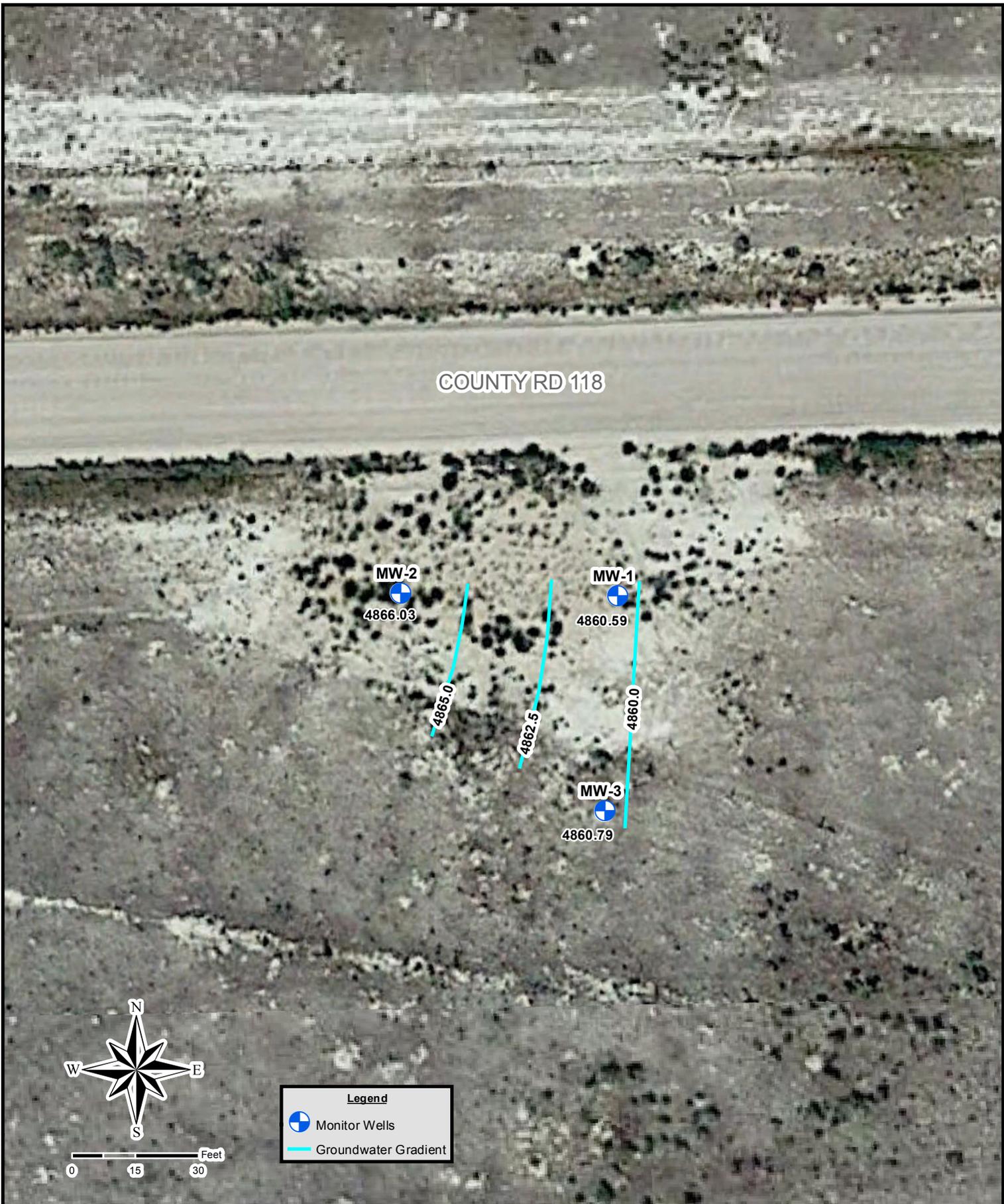
Drafted: 10/2/2018  
 1 in = 40 ft  
 Drafted By: IJM

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 Terrace Pit  
 Weld County, CO  
 Figure 8 - 3rd Quarter Groundwater Gradient Map



Drafted: 8/1/2018  
 1 in = 40 ft  
 Drafted By: IJM

Whiting Oil and Gas Corporation  
 Terrace Pit  
 Weld County, CO  
 Figure J - Groundwater Gradient Map



Drafted: 4/11/2018

1 in = 30 ft

Drafted By: IJM

Whiting Oil and Gas Corporation  
Terrace As Tank Battery  
Weld County, CO

Figure F-6 - F-6U and F-6V Groundwater Gradient Map

**Attachment 2**  
**Tables**



**Table 1 - Well Information**

**Whiting Oil and Gas Corporation  
Terrace Pit  
Weld County, Colorado**

<b>Well ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Ground Surface Elevation (ft amsl)</b>	<b>TOC Elevation (ft amsl)</b>	<b>Screen Interval (ft bgs)</b>	<b>Total Depth (ft)</b>
MW-1	40.845630	-103.913390	4909.4	4912.7	44-74	77.25
MW-2	40.845633	-103.913576	4909.6	4912.7	45-65	67.07
MW-3	40.845490	-103.913404	4909.1	4912.5	40-60	59.97
MW-4	40.845503	-103.913036	4910.3	4913.1	35-60	60.00
MW-5	40.845633	-103.913913	4909.0	4912.1	35-60	60.00
MW-6	40.845960	-103.913495	4910.1	4913.2	35-60	60.00

TOC - Top of Casing  
ft bgs - Feet Below Ground Surface  
ft amsl - Feet Above Mean Sea Level



**Table 2 - Groundwater Analytical Data**

**Whiting Oil and Gas Corporation  
Terrace Pit  
Weld County, Colorado**

Sample ID	Lab ID	Date	Concentration (mg/L)			
			Benzene	Toluene	Ethyl-Benzene	Xylenes
<b>COGCC Table 910-1 Concentration Levels</b>			<b>0.005</b>	<b>1</b>	<b>0.7</b>	<b>10</b>
MW-1	1706314-01	06/29/17	0.99	5.1	0.66	4.1
	1709242-01	09/25/17	2.4	7.2	0.0072	6.7
	1712178-01	12/13/17	3.2	9.8	0.041	7.5
	1803273-01	03/21/18	2.2	6.6	0.71	2
	1806076-01	06/06/18	2.3	6.2	0.97	6.5
	1809165-01	09/12/18	2.4	9.3	0.78	7.8
	1812303-01	12/21/18	2.2	6.8	0.62	6.7
MW-2	1706314-02	06/29/17	0.053	0.48	0.06	0.33
	1709242-02	09/25/17	0.066	0.5	0.0029	0.22
	1712178-02	12/13/17	0.036	0.0088	0.0056	0.019
	1803273-02	03/21/18	<0.001	<0.001	<0.001	<0.002
	1806076-02	06/06/18	<0.001	<0.001	<0.001	<0.002
	1809165-02	09/12/18	0.0014	0.0074	0.0012	0.012
	1812303-02	12/21/18	<0.001	<0.001	<0.001	<0.002
MW-3	1706314-03	06/29/17	0.03	0.067	0.0047	0.027
	1709242-03	09/25/17	<0.001	<0.001	<0.001	<0.002
	1712178-03	12/13/17	<0.001	1.00	<0.001	<0.002
	1803273-03	03/21/18	<0.001	<0.001	<0.001	<0.002
	1806076-03	06/06/18	<0.001	<0.001	<0.001	<0.002
	1809165-03	09/12/18	<0.001	0.0025	<0.001	0.0026
	1812303-03	12/21/18	<0.001	<0.001	<0.001	<0.002
MW-4	1805230-01	05/17/18	0.003	<0.001	<0.001	<0.002
	1806076-04	06/06/18	<0.001	<0.001	<0.001	<0.002
	1809165-04	09/12/18	0.0034	0.0016	<0.001	<0.002
	1812303-04	12/21/18	<0.001	<0.001	<0.001	<0.002
MW-5	1805230-02	05/17/18	<0.001	<0.001	<0.001	<0.002
	1806076-05	06/06/18	<0.001	<0.001	<0.001	<0.002
	1809165-05	09/12/18	<0.001	<0.001	<0.001	<0.002
	1812303-05	12/21/18	<0.001	<0.001	<0.001	<0.002
MW-6	1805230-03	05/17/18	<0.001	<0.001	<0.001	<0.002
	1806076-06	06/06/18	<0.001	<0.001	<0.001	<0.002
	1809165-06	09/12/18	<0.001	<0.001	<0.001	<0.002
	1812303-06	12/21/18	<0.001	<0.001	<0.001	<0.002

mg/L -milligrams per liter

< - Analytical result is less than the reporting limit

COGCC - Colorado Oil and Gas Conservation Commission

NS - Not Sampled

PSH - Phase-Separated Hydrocarbons



**Table 3 - Gauging Data**

**Whiting Oil and Gas Corporation  
Terrace A  
Weld County, Colorado**

Well ID	Top of Casing Elevation (ft amsl)	Date Gauged	Depth to Product (ft btoc)	DTW (ft btoc)	Total Depth (ft)	Product Thickness (ft)	Potentiometric Surface Elevation (ft)
MW-1	4912.7	6/29/2017	NA	54.21	77.25	0.00	4858.49
		8/3/2017	NA	53.99	76.80	0.00	4858.71
		9/25/2017	NA	53.27	76.72	0.00	4859.43
		12/22/2017	NA	52.20	77.15	0.00	4860.50
		3/21/2018	NA	52.31	77.25	0.00	4860.39
		6/6/2018	NA	52.65	77.65	0.00	4860.05
		9/12/2018	NA	53.14	77.15	0.00	4859.56
		12/21/2018	NA	52.10	77.15	0.00	4860.60
MW-2	4912.7	6/29/2017	NA	46.31	67.07	0.00	4866.39
		8/3/2017	NA	46.49	67.02	0.00	4866.21
		9/25/2017	NA	45.69	67.04	0.00	4867.01
		12/22/2017	NA	44.84	67.10	0.00	4867.86
		3/21/2018	NA	46.87	67.07	0.00	4865.83
		6/6/2018	NA	46.50	68.40	0.00	4866.20
		9/12/2018	NA	46.38	67.12	0.00	4866.32
		12/21/2018	NA	46.27	67.12	0.00	4866.43
MW-3	4912.5	6/29/2017	NA	55.77	59.97	0.00	4856.73
		8/3/2017	NA	54.40	60.92	0.00	4858.10
		9/25/2017	NA	53.12	60.11	0.00	4859.38
		12/22/2017	NA	52.72	60.03	0.00	4859.78
		3/21/2018	NA	51.71	59.97	0.00	4860.79
		6/6/2018	NA	52.02	59.90	0.00	4860.48
		9/12/2018	NA	51.90	59.90	0.00	4860.60
		12/21/2018	NA	51.70	59.90	0.00	4860.80
MW-4	4913.1	5/17/2018	NA	57.10	62.20	0.00	4856.00
		6/6/2018	NA	57.20	62.15	0.00	4855.90
		9/12/2018	NA	56.90	62.20	0.00	4856.20
		12/21/2018	NA	56.75	62.20	0.00	4856.35
MW-5	4912.1	5/17/2018	NA	44.02	62.22	0.00	4868.08
		6/6/2018	NA	43.45	62.40	0.00	4868.65
		9/12/2018	NA	43.43	62.22	0.00	4868.67
		12/21/2018	NA	43.81	62.22	0.00	4868.29
MW-6	4913.2	5/17/2018	NA	45.77	62.38	0.00	4867.43
		6/6/2018	NA	45.77	62.25	0.00	4867.43
		9/12/2018	NA	45.42	62.38	0.00	4867.78
		12/21/2018	NA	45.92	62.38	0.00	4867.28

NA - Not Applicable

DTW - Depth to Water

ft btoc - Feet Below Top of Casing

ft amsl - Feet Above Mean Sea Level

**Attachment 3**  
**Analytical Report**

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 29, 2018

Jennifer Galles

Talon/LPE

1811 E Mulberry

Ft Collins, CO 80524

RE: Nelson A's Tank Battery (Terrace)

Enclosed are the results of analyses for samples received by Summit Scientific on 03/21/18 16:42. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
Project Manager: Jennifer Galles

**Reported:**  
03/29/18 06:54

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	1803273-01	Water	03/21/18 13:40	03/21/18 16:42
MW-2	1803273-02	Water	03/21/18 13:30	03/21/18 16:42
MW-3	1803273-03	Water	03/21/18 13:10	03/21/18 16:42

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
Project Manager: Jennifer Galles

Reported:  
03/29/18 06:54

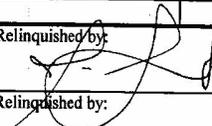
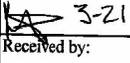
# Summit Scientific

180 3273

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: Talon/LPE - Bill Whiting	Project Manager: Jennifer Galles
Address: 1811 East Mulberry	E-Mail: jgalles@talonpe.com
City/State/Zip: Fort Collins, CO 80525	Project Name: Nelson A's Tank Battery (Terrace)
Phone: 970-818-5330 Fax:	Project Number: 701530.022.07
Sampler Name: Jason Leverton/Levi Kirk	

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:				Special Instructions	
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX					
MW-1	3/21/2018	1340	3	x				xx									
MW-2	3/21/2018	1330	3	x				xx									
MW-3	3/21/2018	1310	3	x				xx									
Relinquished by: 	Date/Time: 3-21-18 16:42	Received by: 	Date/Time: 3-21-18 16:42	Turn Around Time (Check)				Notes:									
				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>													
				24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>													
				48 Hours <input type="checkbox"/>													
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:													
				Temperature Upon Receipt: 6.5													
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>													

www.s2scientific.com





Talon/LPE  
 1811 E Mulberry  
 Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
 Project Manager: Jennifer Galles

**Reported:**  
 03/29/18 06:54

**MW-1**  
**1803273-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/21/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2200</b>	100	ug/l	100	1803255	03/24/18	03/24/18	EPA 8260B	
<b>Toluene</b>	<b>6600</b>	100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>710</b>	100	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2000</b>	2.0	"	1	"	"	"	"	

Date Sampled: **03/21/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %		37-154	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		92.7 %		45-149	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %		45-146	"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
 1811 E Mulberry  
 Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
 Project Manager: Jennifer Galles

**Reported:**  
 03/29/18 06:54

**MW-2**  
**1803273-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/21/18 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1803255	03/28/18	03/28/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/21/18 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.1 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		89.3 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	45-146		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
 1811 E Mulberry  
 Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
 Project Manager: Jennifer Galles

**Reported:**  
 03/29/18 06:54

**MW-3**  
**1803273-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/21/18 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1803255	03/28/18	03/28/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/21/18 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.8 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		90.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	45-146		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
Project Manager: Jennifer Galles

Reported:  
03/29/18 06:54

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

**Batch 1803255 - EPA 5030 Water MS**

**Blank (1803255-BLK1)**

Prepared & Analyzed: 03/24/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.7		"	13.3		87.7	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.3	45-146			

**LCS (1803255-BS1)**

Prepared & Analyzed: 03/24/18

Benzene	32.6	1.0	ug/l	33.3		97.8	51-132			
Toluene	33.4	1.0	"	33.3		100	51-138			
Ethylbenzene	37.7	1.0	"	33.1		114	58-146			
m,p-Xylene	69.4	2.0	"	66.5		104	57-144			
o-Xylene	34.4	1.0	"	32.7		105	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		87.1	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		95.9	45-149			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.9	45-146			

**Matrix Spike (1803255-MS1)**

Source: 1803269-01

Prepared & Analyzed: 03/24/18

Benzene	33.3	1.0	ug/l	33.3	ND	99.9	34-141			
Toluene	32.7	1.0	"	33.3	ND	98.2	27-151			
Ethylbenzene	37.9	1.0	"	33.1	ND	115	29-160			
m,p-Xylene	69.8	2.0	"	66.5	ND	105	20-166			
o-Xylene	34.4	1.0	"	32.7	ND	105	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.3		90.4	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2	45-146			

Summit Scientific

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Talon/LPE  
 1811 E Mulberry  
 Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
 Project Manager: Jennifer Galles

**Reported:**  
 03/29/18 06:54

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

**Batch 1803255 - EPA 5030 Water MS**

<b>Matrix Spike Dup (1803255-MSD1)</b>	<b>Source: 1803269-01</b>			<b>Prepared &amp; Analyzed: 03/24/18</b>						
Benzene	34.0	1.0	ug/l	33.3	ND	102	34-141	1.99	32	
Toluene	33.2	1.0	"	33.3	ND	99.5	27-151	1.27	25	
Ethylbenzene	37.8	1.0	"	33.1	ND	114	29-160	0.370	50	
m,p-Xylene	70.5	2.0	"	66.5	ND	106	20-166	0.955	36	
o-Xylene	34.4	1.0	"	32.7	ND	105	33-159	0.0290	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.6</i>		<i>"</i>	<i>13.3</i>		<i>102</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.6</i>		<i>"</i>	<i>13.3</i>		<i>94.7</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.8</i>		<i>"</i>	<i>13.3</i>		<i>96.2</i>	<i>45-146</i>			

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Nelson A's Tank Battery (Terrace)

Project Number: 701530.022.07  
Project Manager: Jennifer Galles

**Reported:**  
03/29/18 06:54

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

June 13, 2018

Jennifer Galles  
Talon/LPE  
1811 East Mulberry  
Fort Collins, CO 80525  
RE: Terrace A's

Enclosed are the results of analyses for samples received by Summit Scientific on 06/06/18 15:02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury  
Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace A's

Project Number: 701530.022.08  
Project Manager: Jennifer Galles

**Reported:**  
06/13/18 13:45

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	1806076-01	Water	06/06/18 11:41	06/06/18 15:02
MW-2	1806076-02	Water	06/06/18 11:51	06/06/18 15:02
MW-3	1806076-03	Water	06/06/18 11:30	06/06/18 15:02
MW-4	1806076-04	Water	06/06/18 11:39	06/06/18 15:02
MW-5	1806076-05	Water	06/06/18 11:50	06/06/18 15:02
MW-6	1806076-06	Water	06/06/18 11:57	06/06/18 15:02

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

1806076

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page      1 of      1

Client: Talon/LPE - Bill to Whiting  
Address: 1811 East Mulberry  
City/State/Zip: Fort Collins, CO 80524  
Phone: 970-818-5330 Fax:             
Sampler Name: Levi Kirk/Jason Leverton

Project Manager: Jennifer Galles  
E-Mail: jgalles@talonlpe.com and jleverton@talonlpe.com  
Project Name: Terrace As  
Project Number: 701530.022.08

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions												
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX																				
MW-1	6/6/2018	11:41	3	x				x																								
MW-2	6/6/2018	11:51	3	x				x																								
MW-3	6/6/2018	11:30	3	x				x																								
MW-4	6/6/2018	11:39	3	x				x																								
MW-5	6/6/2018	11:50	3	x				x																								
MW-6	6/6/2018	11:57	3	x				x																								
Relinquished by: <i>Levi Kirk</i>				Date/Time: <i>6/6/18 15:02</i>				Received by: <i>[Signature]</i>				Date/Time: <i>6-6-18 15:02</i>				Turn Around Time (Check)																
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input type="checkbox"/>									72 Hours <input type="checkbox"/>							
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				24 Hours <input type="checkbox"/>									Standard <input checked="" type="checkbox"/>							
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				48 Hours <input type="checkbox"/>								Sample Integrity:								
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Temperature Upon Receipt: <i>12.7</i>								Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								

### Sample Receipt Checklist

S2 Work Order 76

Client: Talon Client Project ID: Terrace As

Shipped Via: P.O. Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C)	12.7
-----------	------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	x			
Were all samples received intact <sup>(1)</sup> ?	x			
Was adequate sample volume provided <sup>(1)</sup> ?	x			
If custody seals are present, are they intact <sup>(1)</sup> ?			x	
Are samples with holding times due within 48 hours sample due within 48 hours present?			x	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	x			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	x			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	x			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	x			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>		x		
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	x			HCL
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			x	
If dissolved metals are requested, were samples field filtered?			x	
Additional Comments (if any):				
<b><sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.</b>				

Muri  
 Custodian Printed Name or Initials

M 6-6-18  
 Signature of Custodian

18:20  
 Date/Time



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.08  
 Project Manager: Jennifer Galles

**Reported:**  
 06/13/18 13:45

**MW-1**  
**1806076-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/18 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2300</b>	100	ug/l	100	1806129	06/08/18	06/12/18	EPA 8260B	
<b>Toluene</b>	<b>6200</b>	100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>970</b>	100	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>6500</b>	200	"	"	"	"	"	"	

Date Sampled: **06/06/18 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.8 %		23-173	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.9 %		20-170	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.3 %		21-167	"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.08  
 Project Manager: Jennifer Galles

**Reported:**  
 06/13/18 13:45

**MW-2**  
**1806076-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/18 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1806129	06/08/18	06/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/06/18 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.08  
 Project Manager: Jennifer Galles

**Reported:**  
 06/13/18 13:45

**MW-3**  
**1806076-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1806129	06/08/18	06/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/06/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		107 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.8 %	21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.08  
 Project Manager: Jennifer Galles

**Reported:**  
 06/13/18 13:45

**MW-4**  
**1806076-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/18 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1806129	06/08/18	06/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/06/18 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.7 %	21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.08  
 Project Manager: Jennifer Galles

**Reported:**  
 06/13/18 13:45

**MW-5**  
**1806076-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/18 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1806129	06/08/18	06/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/06/18 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	21-167		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.08  
 Project Manager: Jennifer Galles

**Reported:**  
 06/13/18 13:45

**MW-6**  
**1806076-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/18 11:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1806129	06/08/18	06/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/06/18 11:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	21-167		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace A's  
Project Number: 701530.022.08  
Project Manager: Jennifer Galles

Reported:  
06/13/18 13:45

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD		

**Batch 1806129 - EPA 5030 Water MS**

**Blank (1806129-BLK1)**

Prepared: 06/08/18 Analyzed: 06/10/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.2		99.4	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		99.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.9	21-167			

**LCS (1806129-BS1)**

Prepared: 06/08/18 Analyzed: 06/10/18

Benzene	33.0	1.0	ug/l	33.3		99.0	70-130			
Toluene	34.8	1.0	"	33.3		104	70-130			
Ethylbenzene	38.4	1.0	"	33.3		115	70-130			
m,p-Xylene	71.2	2.0	"	66.7		107	70-130			
o-Xylene	34.7	1.0	"	33.3		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.2		107	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.1	21-167			

**Matrix Spike (1806129-MS1)**

Source: 1806070-01

Prepared: 06/08/18 Analyzed: 06/10/18

Benzene	33.8	1.0	ug/l	33.3	ND	101	70-130			
Toluene	34.1	1.0	"	33.3	ND	102	70-130			
Ethylbenzene	37.6	1.0	"	33.3	ND	113	70-130			
m,p-Xylene	69.2	2.0	"	66.7	ND	104	70-130			
o-Xylene	33.6	1.0	"	33.3	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.2		108	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.7	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.08  
 Project Manager: Jennifer Galles

**Reported:**  
 06/13/18 13:45

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting		Spike Level	Source Result	%REC		RPD		Notes
	Result	Limit			Units	%REC	Limits	RPD	

**Batch 1806129 - EPA 5030 Water MS**

<b>Matrix Spike Dup (1806129-MSD1)</b>	<b>Source: 1806070-01</b>			Prepared: 06/08/18		Analyzed: 06/10/18			
Benzene	34.5	1.0	ug/l	33.3	ND	103	70-130	1.90	30
Toluene	35.2	1.0	"	33.3	ND	106	70-130	3.09	30
Ethylbenzene	39.0	1.0	"	33.3	ND	117	70-130	3.84	30
m,p-Xylene	72.3	2.0	"	66.7	ND	108	70-130	4.39	30
o-Xylene	35.1	1.0	"	33.3	ND	105	70-130	4.33	30
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.1</i>		<i>"</i>	<i>13.2</i>		<i>107</i>	<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.5</i>	<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.6</i>		<i>"</i>	<i>13.3</i>		<i>94.6</i>	<i>21-167</i>		

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace A's  
Project Number: 701530.022.08  
Project Manager: Jennifer Galles

**Reported:**  
06/13/18 13:45

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2018

Jennifer Galles  
Talon/LPE  
1811 East Mulberry  
Fort Collins, CO 80525  
RE: Terrace A's

Enclosed are the results of analyses for samples received by Summit Scientific on 09/13/18 14:43. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury  
Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace A's

Project Number: 701530.022.11

Project Manager: Jennifer Galles

**Reported:**  
09/20/18 07:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	1809165-01	Water	09/13/18 11:05	09/13/18 14:43
MW-2	1809165-02	Water	09/13/18 11:12	09/13/18 14:43
MW-3	1809165-03	Water	09/13/18 10:57	09/13/18 14:43
MW-4	1809165-04	Water	09/13/18 11:00	09/13/18 14:43
MW-5	1809165-05	Water	09/13/18 11:17	09/13/18 14:43
MW-6	1809165-06	Water	09/13/18 11:20	09/13/18 14:43

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



1809165

Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: Talon UPE Client Project ID: Terrace A

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: \_\_\_\_\_

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C)	10.0
-----------	------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

LP  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

9.13.18 1640  
Date/Time



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's

Project Number: 701530.022.11  
 Project Manager: Jennifer Galles

**Reported:**  
 09/20/18 07:28

**MW-1**  
**1809165-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/13/18 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2400</b>	100	ug/l	100	1809140	09/14/18	09/16/18	EPA 8260B	
<b>Toluene</b>	<b>9300</b>	100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>780</b>	100	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>7800</b>	200	"	"	"	"	"	"	

Date Sampled: **09/13/18 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	21-167		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.11  
 Project Manager: Jennifer Galles

**Reported:**  
 09/20/18 07:28

**MW-2**  
**1809165-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/13/18 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1.4</b>	1.0	ug/l	1	1809140	09/14/18	09/16/18	EPA 8260B	
<b>Toluene</b>	<b>7.4</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1.2</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>12</b>	2.0	"	"	"	"	"	"	

Date Sampled: **09/13/18 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.11  
 Project Manager: Jennifer Galles

**Reported:**  
 09/20/18 07:28

**MW-3**  
**1809165-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/13/18 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1809140	09/14/18	09/16/18	EPA 8260B	
<b>Toluene</b>	<b>2.5</b>	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.6</b>	2.0		"	"	"	"	"	"	

Date Sampled: **09/13/18 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		100 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.3 %		21-167		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.11  
 Project Manager: Jennifer Galles

**Reported:**  
 09/20/18 07:28

**MW-4**  
**1809165-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/13/18 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>3.4</b>	1.0	ug/l	1	1809140	09/14/18	09/16/18	EPA 8260B	
<b>Toluene</b>	<b>1.6</b>	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/13/18 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's  
 Project Number: 701530.022.11  
 Project Manager: Jennifer Galles

**Reported:**  
 09/20/18 07:28

**MW-5**  
**1809165-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/13/18 11:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1809140	09/14/18	09/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **09/13/18 11:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		103 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %		21-167		"	"	"	"	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's

Project Number: 701530.022.11  
 Project Manager: Jennifer Galles

**Reported:**  
 09/20/18 07:28

**MW-6**  
**1809165-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/13/18 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1809140	09/14/18	09/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **09/13/18 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		103 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.7 %		21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace A's

Project Number: 701530.022.11  
Project Manager: Jennifer Galles

**Reported:**  
09/20/18 07:28

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

**Batch 1809140 - EPA 5030 Water MS**

**Blank (1809140-BLK1)**

Prepared: 09/14/18 Analyzed: 09/15/18

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.2		96.8	23-173				
Surrogate: Toluene-d8	12.8		"	13.3		96.1	20-170				
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	21-167				

**LCS (1809140-BS1)**

Prepared: 09/14/18 Analyzed: 09/15/18

Benzene	31.5	1.0	ug/l	33.3		94.6	70-130				
Toluene	35.3	1.0	"	33.3		106	70-130				
Ethylbenzene	36.0	1.0	"	33.3		108	70-130				
m,p-Xylene	72.2	2.0	"	66.7		108	70-130				
o-Xylene	36.2	1.0	"	33.3		109	70-130				
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.2		98.9	23-173				
Surrogate: Toluene-d8	13.2		"	13.3		98.9	20-170				
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.6	21-167				

**Matrix Spike (1809140-MS1)**

Source: 1809148-01

Prepared: 09/14/18 Analyzed: 09/15/18

Benzene	31.5	1.0	ug/l	33.3	ND	94.4	70-130				
Toluene	34.6	1.0	"	33.3	ND	104	70-130				
Ethylbenzene	37.7	1.0	"	33.3	ND	113	70-130				
m,p-Xylene	75.7	2.0	"	66.7	ND	114	70-130				
o-Xylene	37.3	1.0	"	33.3	ND	112	70-130				
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.2		103	23-173				
Surrogate: Toluene-d8	12.9		"	13.3		96.7	20-170				
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.2	21-167				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace A's

Project Number: 701530.022.11

Project Manager: Jennifer Galles

**Reported:**  
 09/20/18 07:28

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

**Batch 1809140 - EPA 5030 Water MS**

**Matrix Spike Dup (1809140-MSD1)**

Source: 1809148-01

Prepared: 09/14/18 Analyzed: 09/15/18

Benzene	30.0	1.0	ug/l	33.3	ND	89.9	70-130	4.98	30	
Toluene	33.0	1.0	"	33.3	ND	98.9	70-130	4.68	30	
Ethylbenzene	35.6	1.0	"	33.3	ND	107	70-130	5.56	30	
m,p-Xylene	72.8	2.0	"	66.7	ND	109	70-130	3.82	30	
o-Xylene	35.9	1.0	"	33.3	ND	108	70-130	3.80	30	
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.2		102	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		95.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	21-167			

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace A's  
Project Number: 701530.022.11  
Project Manager: Jennifer Galles

**Reported:**  
09/20/18 07:28

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 31, 2018

Jennifer Galles  
Talon/LPE  
1811 East Mulberry  
Fort Collins, CO 80525  
RE: Terrace

Enclosed are the results of analyses for samples received by Summit Scientific on 12/21/18 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury  
Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace

Project Number: 702051.022.12

Project Manager: Jennifer Galles

**Reported:**  
12/31/18 07:18

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-01	1812303-01	Water	12/21/18 12:15	12/21/18 15:30
MW-02	1812303-02	Water	12/21/18 12:21	12/21/18 15:30
MW-03	1812303-03	Water	12/21/18 12:23	12/21/18 15:30
MW-04	1812303-04	Water	12/21/18 12:30	12/21/18 15:30
MW-05	1812303-05	Water	12/21/18 12:36	12/21/18 15:30
MW-06	1812303-06	Water	12/21/18 12:47	12/21/18 15:30

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

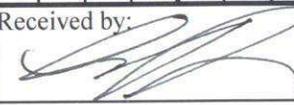
# Summit Scientific

1817303

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Client: Talon/LPE/ Bill Whiting  
Address: 1811 East Mulberry  
City/State/Zip: Fort Collins, CO 80524  
Phone: 970-818-5330 Fax:  
Sampler Name: Levi Kirk/Morgan Matthew

Project Manager: Jennifer Galles  
E-Mail: jgalles@talonlpe.com and jleverton@talonlpe.com  
Project Name: Terrace  
Project Number: 702051.022.12

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions							
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX															
MW-01	12/21/2018	12:15	3	x				x						x													
MW-02	12/21/2018	12:21	3	x				x						x													
MW-03	12/21/2018	12:23	3	x				x						x													
MW-04	12/21/2018	12:30	3	x				x						x													
MW-05	12/21/2018	12:36	3	x				x						x													
MW-06	12/21/2018	12:47	3	x				x						x													
Relinquished by: 				Date/Time: <u>12.21.18</u> <u>1530</u>				Received by: 				Date/Time: <u>12.21.18</u> <u>1530</u>				Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>											
Relinquished by:				Date/Time:				Received by:				Date/Time:				Sample Integrity: Temperature Upon Receipt: <u>12.6</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:															

**Sample Receipt Checklist**

S2 Work Order 1812303

Client: Talon/LPE - Whiting Client Project ID: Terrace

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P.U. Airbill #: \_\_\_\_\_

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C)	12.6
-----------	------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	/			
Were all samples received intact <sup>(1)</sup> ?	/			
Was adequate sample volume provided <sup>(1)</sup> ?	/			
If custody seals are present, are they intact <sup>(1)</sup> ?			/	
Are samples with holding times due within 48 hours sample due within 48 hours present?			/	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	/			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	/			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	/			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	/			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>		/		
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	/			HCl
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			/	
If dissolved metals are requested, were samples field filtered?			/	

Additional Comments (if any):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

CP  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

12.21.18 1629  
Date/Time



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace  
 Project Number: 702051.022.12  
 Project Manager: Jennifer Galles

**Reported:**  
 12/31/18 07:18

**MW-01**  
**1812303-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/21/18 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2200</b>	100	ug/l	100	1812329	12/26/18	12/28/18	EPA 8260B	
<b>Toluene</b>	<b>6800</b>	100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>620</b>	100	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>6700</b>	200	"	"	"	"	"	"	

Date Sampled: **12/21/18 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.0 %	21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace  
 Project Number: 702051.022.12  
 Project Manager: Jennifer Galles

**Reported:**  
 12/31/18 07:18

**MW-02**  
**1812303-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/21/18 12:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1812329	12/26/18	12/28/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **12/21/18 12:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		107 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		81.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		59.0 %		21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace

Project Number: 702051.022.12  
 Project Manager: Jennifer Galles

**Reported:**  
 12/31/18 07:18

**MW-03**  
**1812303-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/21/18 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1812329	12/26/18	12/28/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **12/21/18 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		93.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		90.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %		21-167		"	"	"	"	

Summit Scientific

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 Fort Collins CO, 80525

Project: Terrace  
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 Project Manager: Jennifer Galles

**Reported:**  
 12/31/18 07:18

**MW-04**  
**1812303-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/21/18 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1812329	12/26/18	12/28/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **12/21/18 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		78.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %		21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

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 Project Manager: Jennifer Galles

**Reported:**  
 12/31/18 07:18

**MW-05**  
**1812303-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/21/18 12:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1812329	12/26/18	12/28/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **12/21/18 12:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		88.3 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %		21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Terrace  
 Project Number: 702051.022.12  
 Project Manager: Jennifer Galles

**Reported:**  
 12/31/18 07:18

**MW-06**  
**1812303-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/21/18 12:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1812329	12/26/18	12/28/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **12/21/18 12:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		88.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %		21-167		"	"	"	"	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace

Project Number: 702051.022.12  
Project Manager: Jennifer Galles

**Reported:**  
12/31/18 07:18

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			Limits	RPD	Limit		

**Batch 1812329 - EPA 5030 Water MS**

**Blank (1812329-BLK1)**

Prepared: 12/26/18 Analyzed: 12/28/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.2		84.6		23-173		
Surrogate: Toluene-d8	12.1		"	13.3		90.7		20-170		
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.2		21-167		

**LCS (1812329-BS1)**

Prepared: 12/26/18 Analyzed: 12/28/18

Benzene	34.3	1.0	ug/l	33.3		103		70-130		
Toluene	28.6	1.0	"	33.3		85.7		70-130		
Ethylbenzene	37.6	1.0	"	33.3		113		70-130		
m,p-Xylene	70.8	2.0	"	66.7		106		70-130		
o-Xylene	37.4	1.0	"	33.3		112		70-130		
Surrogate: 1,2-Dichloroethane-d4	12.1		"	13.2		91.9		23-173		
Surrogate: Toluene-d8	11.8		"	13.3		88.4		20-170		
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.2		21-167		

**Matrix Spike (1812329-MS1)**

Source: 1812289-02

Prepared: 12/26/18 Analyzed: 12/28/18

Benzene	33.2	1.0	ug/l	33.3	1.39	95.3		70-130		
Toluene	31.8	1.0	"	33.3	ND	95.4		70-130		
Ethylbenzene	37.6	1.0	"	33.3	ND	113		70-130		
m,p-Xylene	71.5	2.0	"	66.7	ND	107		70-130		
o-Xylene	35.7	1.0	"	33.3	ND	107		70-130		
Surrogate: 1,2-Dichloroethane-d4	12.2		"	13.2		92.4		23-173		
Surrogate: Toluene-d8	13.1		"	13.3		98.0		20-170		
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.5		21-167		

Summit Scientific

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 Fort Collins CO, 80525

Project: Terrace

Project Number: 702051.022.12  
 Project Manager: Jennifer Galles

**Reported:**  
 12/31/18 07:18

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

**Batch 1812329 - EPA 5030 Water MS**

**Matrix Spike Dup (1812329-MSD1)**

Source: 1812289-02

Prepared: 12/26/18 Analyzed: 12/28/18

Benzene	34.6	1.0	ug/l	33.3	1.39	99.7	70-130	4.37	30	
Toluene	28.8	1.0	"	33.3	ND	86.6	70-130	9.73	30	
Ethylbenzene	38.0	1.0	"	33.3	ND	114	70-130	1.00	30	
m,p-Xylene	73.6	2.0	"	66.7	ND	110	70-130	2.84	30	
o-Xylene	37.8	1.0	"	33.3	ND	113	70-130	5.69	30	
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.2		97.4	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103	21-167			

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Terrace  
Project Number: 702051.022.12  
Project Manager: Jennifer Galles

**Reported:**  
12/31/18 07:18

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference