



April 30, 2020

Mr. Nick Psenicnik  
Oil Control Program  
Maryland Department of the Environment  
1800 Washington Blvd, Suite 620  
Baltimore, Maryland 21230

RE: **FIRST QUARTER 2020 MONITORING REPORT**  
Carroll Independent Fuel/Former Green Valley Citgo  
11791 Fingerboard Road  
Monrovia, Maryland  
OCP Case #2005-0834-FR

Dear Mr. Psenicnik,

Groundwater & Environmental Services, Inc. (GES), on behalf of Carroll Independent Fuel (CIFC), is pleased to submit the First Quarter 2020 Monitoring Report for the Carroll/Former Green Valley Citgo facility (Site). In summary, the following activities were conducted at the Site this monitoring period:

- Quarterly monitoring and/or sampling of five (5) monitoring wells and six (6) tank field wells was completed January 27, 2020;
- Sampling of the point-of-entry treatment (POET) system at the Green Valley Plaza (GVP) was completed on January 28, 2020;
- Sampling at four (4) residential POET systems was completed from January 30 to February 13, 2020 and;
- Sampling of one (1) residential potable location (former POET location 3997 Farm Lane) was completed on January 28, 2020.

A potable sample was not collected at the 3923 Rosewood Road residence as the property owner was not responsive to multiple sample requests from GES attempted during the First Quarter 2020.

During a visit to the Site on January 28, 2020, GES observed that the more recently installed supply well, #FR-13-0386, was found online and connected to the active GVP POET system. Other supply wells previously utilized for the GVP system including #FR-94-1233 and #FR-94-1281 were found offline and therefore were not individually sampled during the First Quarter 2020 monitoring period. GES confirmed with the GVP water treatment contractor that well #FR-13-0386 was the only GVP supply well in operation on January 28, 2020 when GES conducted sampling therefore the "GVP Inf" sample reported for this collection date also represents an individual sample from supply well #FR-13-0386.

GES reported the January 28, 2020 site observations and the "GVP Inf" analytical result to the MDE in email correspondence dated February 18, 2020. The MDE responded on February 19, 2020 with a request for status regarding the pending Frederick County Health Department Certificate of Potability (Certificate) for supply well #FR-13-0386. GES has received no updates regarding the Certificate status to provide to the MDE at this time.



*Mr. Nick Psenicnik  
OCP Case #2005-0834-FR  
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If you have any questions or would like additional information, please contact the undersigned at 800-220-3606, extension 3726, or Herb Meade at 410-261-5450.

Sincerely,

A handwritten signature in black ink, appearing to read 'Peter Reichardt'. The signature is fluid and cursive, with a large initial 'P'.

Peter Reichardt  
Project Manager

Enclosures

- c: Nick Psenicnik – MDE (2 additional copies & CD)
- Ellen Jackson – MDE (additional copy)
- Herb Meade – Carroll (e-copy)
- Barry Glotfelty – Frederick County Health Department (CD)
- Jennifer and Samir Andrawos – Timbercrest Limited Partnership (CD)
- File – GES, MD (PSID#812580)



**MDE Contact:** Mr Nick Psenicnik, Maryland Department of the Environment  
**Consultant Contact:** Peter Reichardt, Groundwater & Environmental Services, Inc.,  
Odenton, MD

**Client Contact:** Mr. Herb Meade, Carroll Independent Fuel

**SITE DESCRIPTION**

**Site Use:** Carroll Motor Fuels-Branded Retail Service Station adjacent to  
Green Valley Plaza (shopping center)

**Surrounding Area:** Commercial shopping centers and residential properties

**Sensitive Receptors:** Potable Wells – The Site is served by five (5) onsite supply wells  
Surrounding commercial and residential properties are all served by  
potable wells

Basements/Underground Receptors – None onsite

Surface Water/Wetlands – Fahrney Branch is located approximately  
2,400 feet to the south

Hospitals/Childcare/Schools – Green Valley YMCA (Green Valley  
Plaza) and Guardian Angel Child Care (Green Valley Shopping  
Center)

**Date of Most Recent  
Regulatory Directive  
Correspondence:** December 10, 2019 GES receives MDE's *Monitored Natural  
Attenuation Sampling Discontinuation Approval* dated December 6,  
2019

Regulatory correspondence is documented in **Appendix A –  
Historical Activities Summary.**

**SCHEDULE OF ROUTINE ACTIVITIES**

**Groundwater Sampling:** -Quarterly – Wells MW-7, MW-14D, MW-17, MW18S-R, and MW-  
18D  
-Annual – Wells MW-1, MW-4, MW-5 and MW-13 (sampled during  
Fourth Quarter)  
\*Wells MW-2, 6, 8, 9, 10, 11, 12, 14S, 15D, and MW-16 were  
abandoned and removed from the current monitoring program in  
4Q 2017 with MDE approval granted October 17, 2017.

**Laboratory Analyses:** -Full-suite volatile organic compounds (VOCs), including seven (7)  
oxygenates and naphthalene, via EPA Method 8260



**SCHEDULE OF ROUTINE ACTIVITIES (cont.)**

**Table 1** summarizes current and historical analytical results from monitoring wells in the sampling program. **Figure 1** presents a Site Map that includes the locations of the monitoring wells, adjacent residences and important land features.

**Monitoring Well Field Data:**

- Dissolved Oxygen (DO)
- Oxidation Reduction Potential (ORP)
- pH
- Temperature
- Specific Conductivity

**Table 2** presents current and historical field parameters measurements from monitoring wells in the sampling program. The supporting First Quarter 2020 monitoring well sampling data sheets are attached as **Appendix B**.

**Non-Transient, Non-Community Supply Well Sampling**

<u>Location</u>	<u>Well Number(s)</u>	<u>Sampling Frequency:</u>
Green Valley Plaza (GVP):	FR-13-0386	Quarterly
	FR-94-1281*	Quarterly
	FR-94-1233*	Quarterly

\*Note supply well offline during First Quarter 2020.

**Laboratory Analyses:** Target VOCs List, including oxygenates and naphthalene, via EPA Method 524.2.

Note: FR-81-5955, FR-88-1394, FR-88-1366, FR-73-4918, FR-73-6674, FR-73-7687 were removed from the current monitoring program with MDE approval granted July 29, 2015.

**Non-Transient, Non-Community Point-of-Entry Treatment (POET) System Sampling**

<u>Location</u>	<u>System Diagnostic Sample Locations</u>	<u>Sampling Frequency:</u>
Green Valley Plaza (GVP):	-Influent (“Inf”)	Quarterly
	-Midfluent (“Mid”)	
	-Effluent (“Eff”)	

**Laboratory Analyses:** Target VOCs List, including oxygenates and naphthalene, via EPA Method 524.2

**Table 3** summarizes current and historical analytical data for the Green Valley Plaza potable supply wells and the Influent, Midfluent and Effluent diagnostic samples associated to the GVP POET treatment system.

**Residential Potable Well POET System Sampling**

<u>Location</u>	<u>Well Number(s)</u>	<u>Sampling Frequency:</u>
3990 Farm Lane:	FR-73-5449	Quarterly
3992 Farm Lane:	Unknown	Quarterly
3994 Farm Lane:	FR-73-2625	Quarterly
3996 Farm Lane:	FR-73-2625	Quarterly

**Laboratory Analyses:** Target VOCs List including oxygenates and naphthalene, via EPA Method 524.2.



**SCHEDULE OF ROUTINE ACTIVITIES (cont.)**

Note: Carroll Fuel was released from POET maintenance at 3997 Farm Lane and 3923 Rosewood Road by the MDE on May 24, 2018. The influent water at these locations will now be sampled quarterly.

**Table 4** summarizes the current and historical analytical results for the offsite residential POET systems.

**POET System Carbon Change-out Summary:**

- There were no POET carbon change outs performed during First Quarter 2020

**Residential Potable Well Sampling**

**Location**

3997 Farm Lane:

3923 Rosewood Road:

**Sampling Frequency:**

Quarterly

Quarterly

**Laboratory Analyses:**

Target VOCs List, including oxygenates and naphthalene, via EPA Method 524.2.

\*Note: Resident location 3829 Greenridge Road has been removed from the routine sampling schedule at the request of the property owner. The following residential potable well locations were removed from the current monitoring program with MDE approval granted July 29, 2015:

- 3979, 3981, 3983, 3984A, 3984, 3985, 3987, 3989 Farm Lane
- 3833, 3835, 3837 Greenridge Road
- 3737, 3739 Blueberry Court
- 3992, 3994, 3996, 3998 Rye Lane

The following residential potable well locations were removed from the current monitoring program with MDE approval granted September 11, 2018:

- 3991, 3993, 3995, 3998 Farm Lane
- 3740 Blueberry Court

**Figure 2** presents a Local Area Map noting the various onsite and offsite potable and supply wells within the current study area. **Table 5** summarizes the current and historical analytical results for the offsite residential potable wells. All First Quarter 2020 laboratory reports and chain-of-custody (COC) documentation are attached as **Appendix C**.



## **FIELD ACTIVITIES**

### **Quarterly Groundwater Sampling Data Summary:**

Quarterly Groundwater Sampling Dates:	January 27, 2020
# of Monitoring Wells in study area/# Sampled:	9/5
Groundwater Sampling and Analyses Notes:	The revised routine sampling program outlined in the MDE's response letter, <i>Site Status and Modifications to Sampling Program</i> dated October 17, 2017 began implementation in the Fourth Quarter 2017.
Apparent Groundwater Flow Direction:	Local groundwater flow is mapped to move south to southwest across the site and interpreted to move regionally toward the south-southwest.

**Figure 3** presents an interpretation of groundwater contours based on water elevations gauged from overburden/weathered rock monitoring wells on January 27, 2020. **Figure 4** presents the First Quarter 2020 MTBE concentration levels for onsite monitoring wells and both onsite and offsite potable supply wells. Groundwater well and potable well monitoring graphs are attached as **Appendix D and Appendix E** respectively. **Table 6** provides a summary of monitoring well construction details.

### **Maximum Monitoring Well Concentrations:**

BTEX:	Non-detect (combined method detection limit of 0.38 µg/L)
MTBE:	27 µg/L (MW-18D) on January 27, 2020
Naphthalene:	Non-detect (method detection limit of 0.05 µg/L)
	BTEX= Benzene, Toluene, Ethylbenzene and Xylene
	MTBE= Methyl tert-butyl ether

## **REMEDIAL SYSTEM STATUS**

No remedial activities took place in the First Quarter of 2020. Past remedial activities can be referenced in the *ISCO System Comprehensive Summary & Update to the Conceptual Site Model (CSM)* submitted to the MDE on September 28, 2012.

## **REMEDIAL PERMITS**

No remedial permits currently in effect.



## **FUTURE ACTIVITES**

### **Second Quarter 2020:**

- GES to continue quarterly sampling for monitoring wells and potable well locations during the Second Quarter 2020 monitoring period unless otherwise directed by the MDE.
- GES to coordinate the proper disposal and treatment of groundwater waste generated from groundwater sampling, as needed.

## **ATTACHMENTS**

### **LIST OF FIGURES**

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Figure 1	Site Map
Figure 2	Local Area Map
Figure 3	Groundwater Contour Map, First Quarter 2020
Figure 4	Onsite and Residential POET System MTBE Concentration Map, First Quarter 2020

### **LIST OF TABLES**

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Table 1	Historical Monitoring Well Analytical Summary
Table 2	Historical Monitoring Well Field Parameters Summary
Table 3	Historical GVP Potable Well and POET System Analytical Summary
Table 4	Historical Residential POET System Analytical Summary
Table 5	Historical Residential Potable Well Analytical Summary
Table 6	Monitoring Well Construction Details

### **APPENDICES**

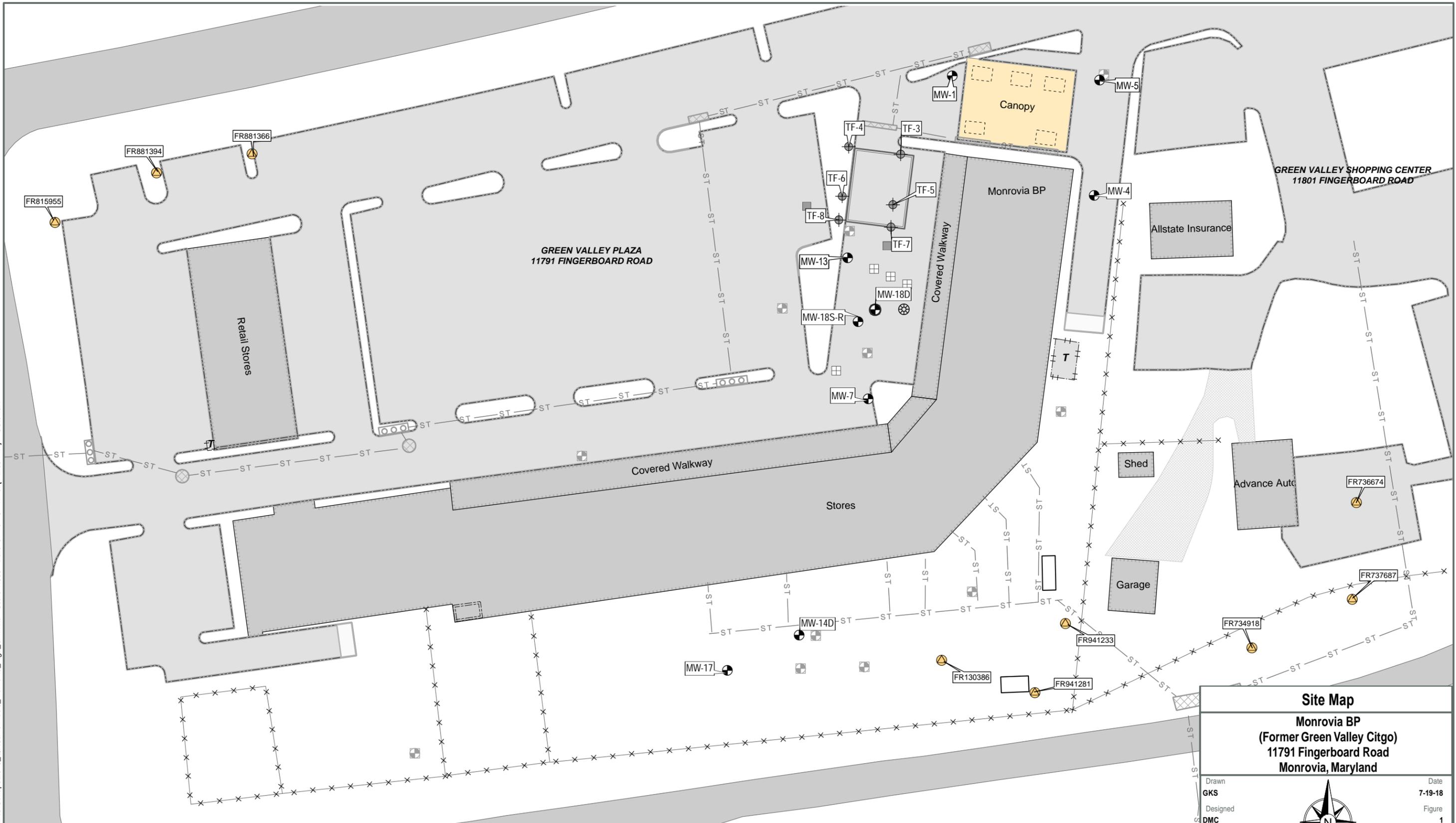
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Appendix A	Historical Activities Summary
Appendix B	Monitoring Well Sampling Data Sheets
Appendix C	Laboratory Reports and Chain of Custody Documentation (See Files on CD)
Appendix D	Groundwater Well Monitoring Graphs
Appendix E	Potable Well Monitoring Graphs

## **FIGURES**

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Legend			

Source:  
NAIP aerial photograph for Frederick Co. Based on GIS data provided by Environmental Alliance, Inc.

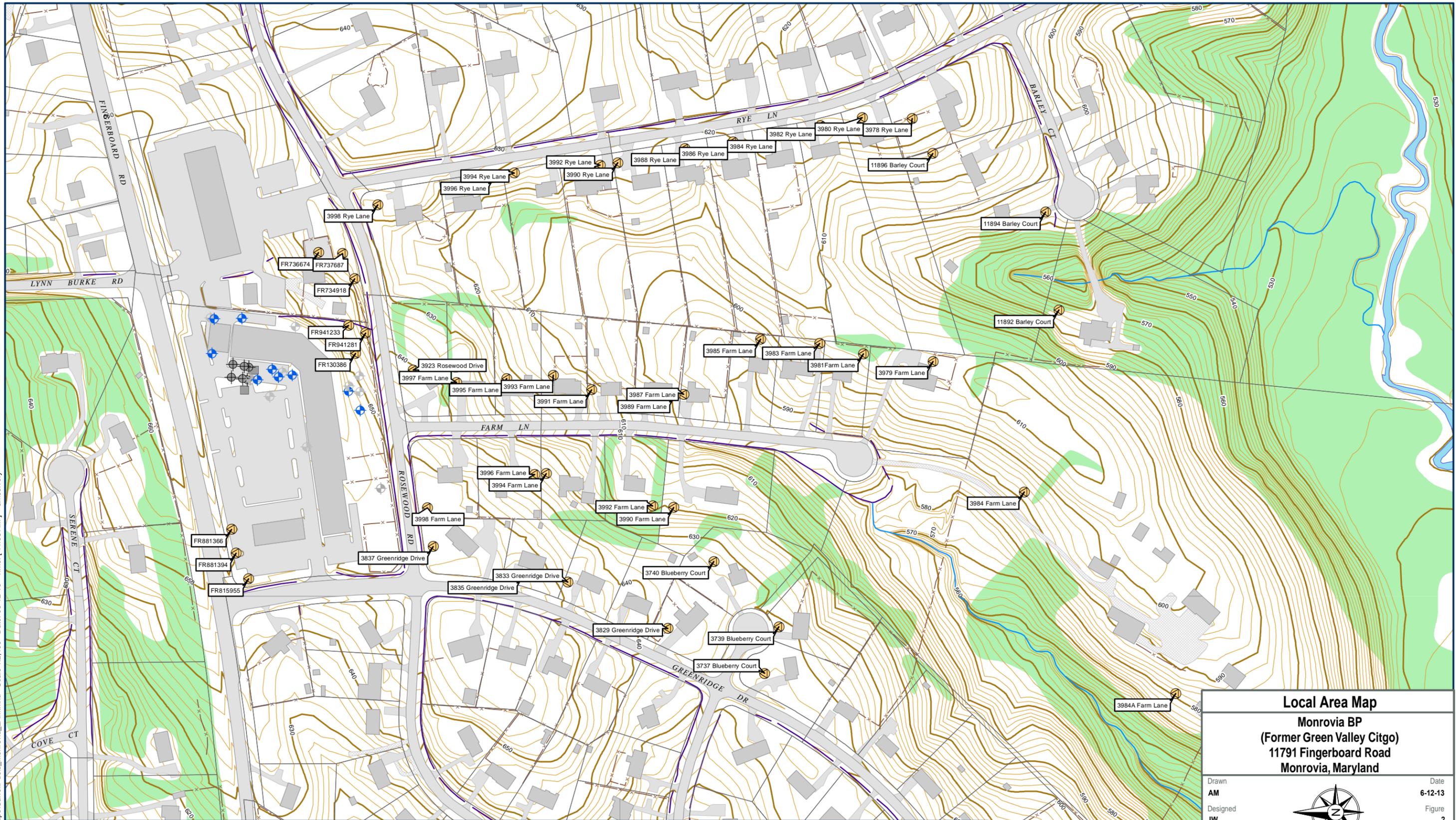
### Site Map

**Monrovia BP**  
**(Former Green Valley Citgo)**  
**11791 Fingerboard Road**  
**Monrovia, Maryland**

<p>Drawn <b>GKS</b></p> <p>Designed <b>DMC</b></p> <p>Approved <b>LK</b></p>	<p>Date <b>7-19-18</b></p> <p>Figure <b>1</b></p>
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Scale In Feet (Approximate)

Groundwater & Environmental Services, Inc.



**Legend**

- |  |                 |  |                            |  |                             |  |                  |  |            |  |             |
|--|-----------------|--|----------------------------|--|-----------------------------|--|------------------|--|------------|--|-------------|
|  | Abandoned Well  |  | Tank Field Well            |  | Topographic Contour (10 ft) |  | Building         |  | Stream     |  | Wooded Area |
|  | Monitoring Well |  | Abandoned Soil Vapor Point |  | Intermediate Contour (2 ft) |  | Paved Road/Drive |  | Ditch      |  |             |
|  | Potable Well    |  | Fence                      |  | Property Boundary           |  | Unpaved Drive    |  | Water Body |  |             |

**Local Area Map**

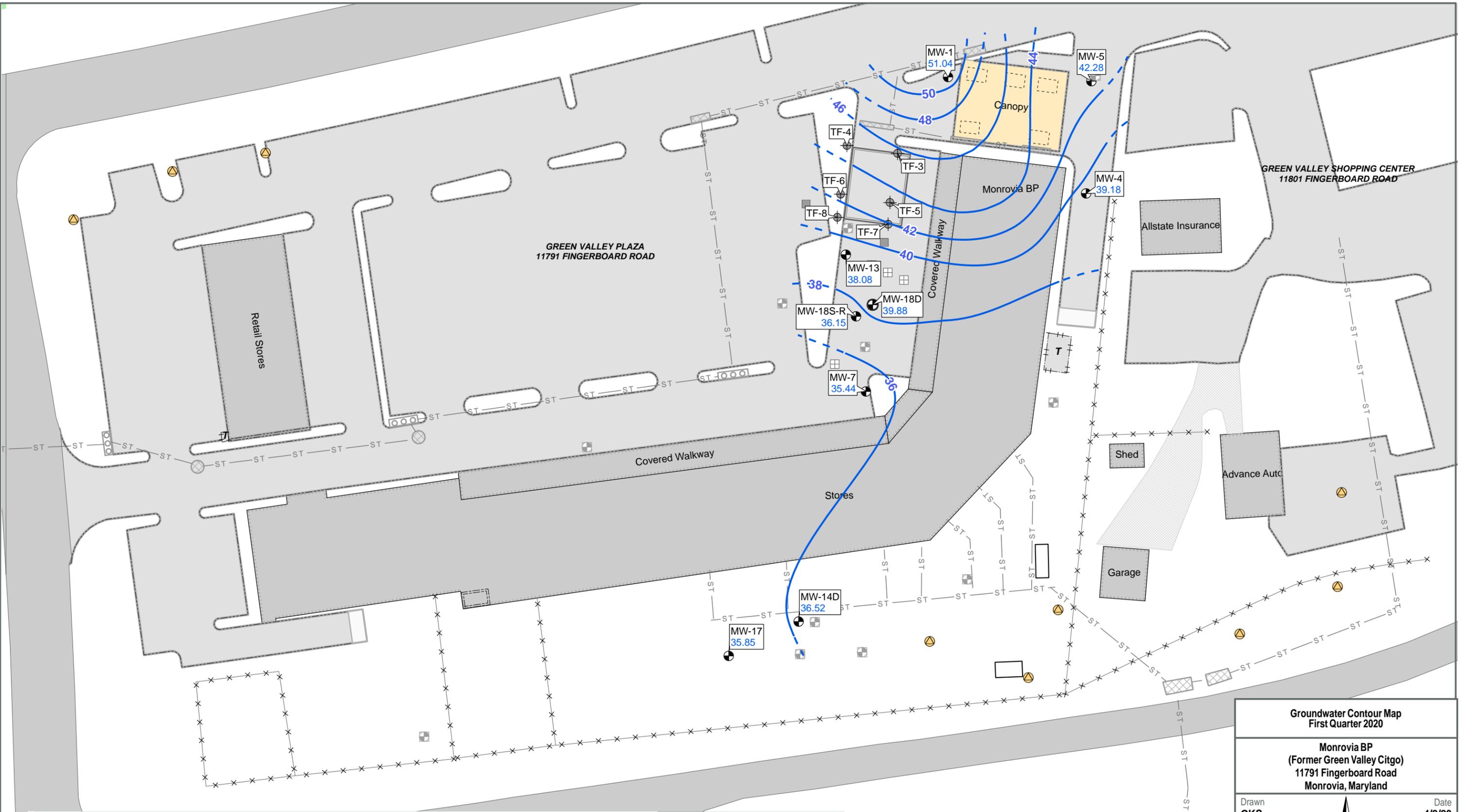
**Monrovia BP  
(Former Green Valley Citgo)  
11791 Fingerboard Road  
Monrovia, Maryland**

Drawn <b>AM</b>		Date <b>6-12-13</b>
Designed <b>JW</b>		Figure <b>2</b>
Approved <b>GR</b>		



Source:  
Frederick County GIS

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Legend			

Source:  
NAIP aerial photograph for Frederick Co. Based on GIS data provided by Environmental Alliance, Inc.

**Groundwater Contour Map**  
First Quarter 2020

**Monrovia BP**  
(Former Green Valley Citgo)  
11791 Fingerboard Road  
Monrovia, Maryland

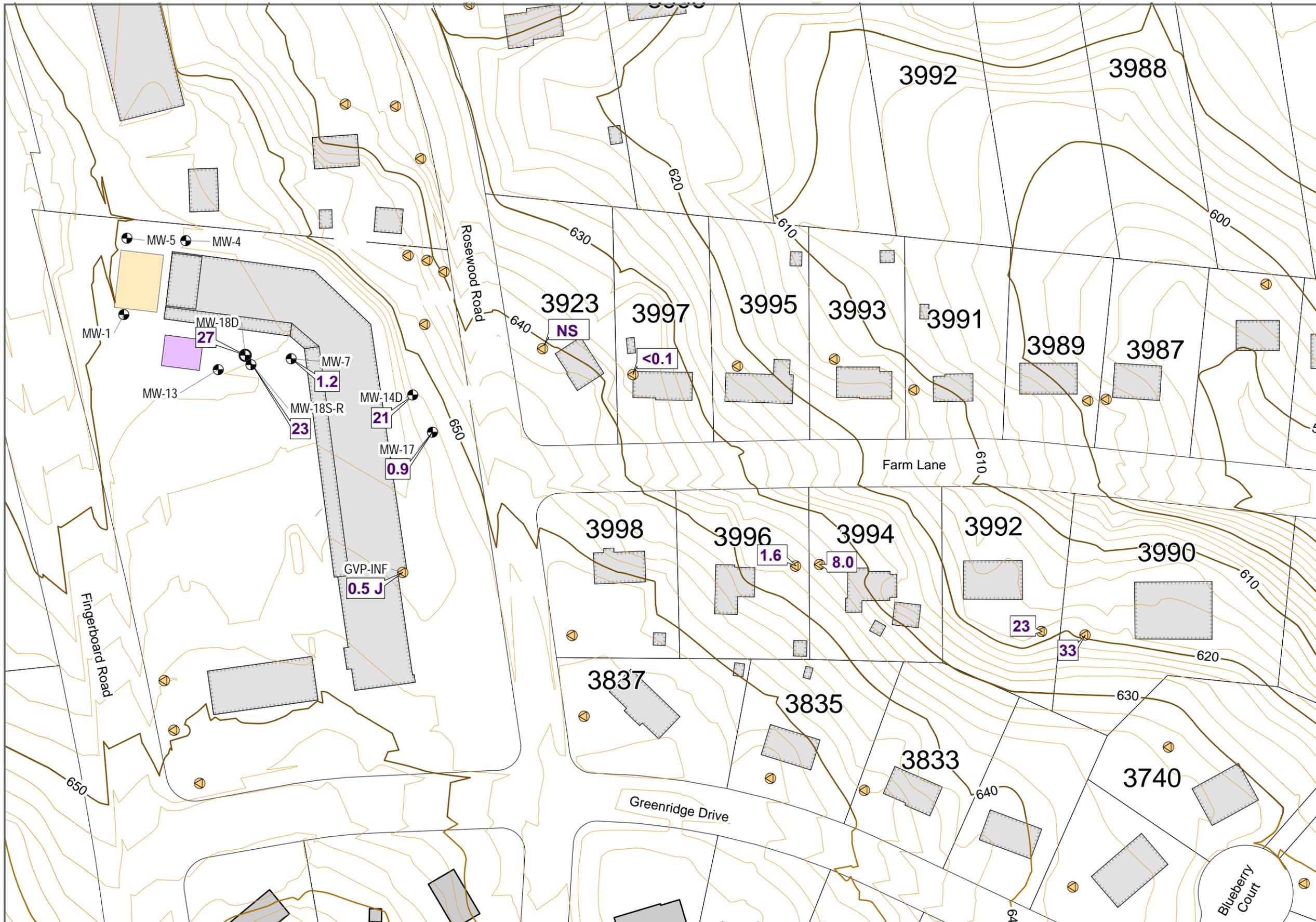
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Approved  
**LK**

Date  
**4/2/20**  
Figure  
**3**

Scale In Feet (Approximate)

Groundwater & Environmental Services, Inc.

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- Legend**
- Building
  - Canopy
  - Tank Field
  - Monitoring Well
  - Potable Well
  - Nested Obs Well
  - Index Contour
  - Intermediate Contour
  - 1.0 MTBE Concentration (ug/L)

**Source:**  
Based on GIS data provided by Environmental Alliance, Inc.

**Notes:**  
All concentrations reported in micrograms per liter (ug/L)  
J = Estimated value  
MTBE = Methyl tert-butyl ether  
NS = Not Sampled

**Onsite and Residential MTBE Concentration Map - First Quarter 2020**

**Monrovia BP  
(Former Green Valley Citgo)  
11791 Fingerboard Road  
Monrovia, Maryland**

Drawn  
**AMW**  
Designed  
**DMC**  
Approved  
**LK**

Date  
**4/2/20**  
Figure  
**4**

Scale In Feet (Approximate)  
0 100

**GES**  
Groundwater & Environmental Services, Inc.

## **TABLES**

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Table 1

### HISTORICAL MONITORING WELL ANALYTICAL SUMMARY

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	Sample Method	Top of Casing (ft)	Depth to Water (ft)	Depth to Bottom (Measured Depth) (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Diisopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	1,2-Dichloroethane (µg/L)	Acrylonitrile (µg/L)	Carbon Disulfide (ug/L)	Chloroform (ug/L)	Methylene chloride (µg/L)	Naphthalene (µg/L)	p-Isopropyltoluene (µg/L)	Tetrachloroethene (µg/L)
GW Clean-up Standards*							5	1,000	700	10,000	NA	20	NA	NA	NA	NA	47	47	5	NA	81	80	5	0.17	NA	5
MW-1	05/01/2018	-	99.19	48.12	-	51.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	08/02/2018	-	99.19	39.66	-	59.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	10/30/2018	LF(60)	99.19	45.50	-	53.69	<0.05	<0.05	<0.05	<0.08	<0.23	0.3 J	<0.05	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.9	<0.06	<0.09	<0.05	<0.05
MW-1	03/05/2019	-	99.19	41.98	-	57.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	05/01/2019	-	99.19	44.98	-	54.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	08/13/2019	-	99.19	48.63	-	50.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	10/28/2019	LF(60)	99.19	52.65	-	46.54	<0.05	<0.07	<0.06	<0.2	<0.38	1.1	<0.05	<0.05	<0.2	<1.1	-	-	<0.05	<0.4	<0.06	0.4 J	<0.07	<0.05	<0.05	<0.06
MW-1	01/27/2020	-	99.19	48.15	-	51.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	05/01/2018	-	97.84	57.94	-	39.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	08/02/2018	-	97.84	47.51	-	50.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	10/30/2018	P&S	97.84	51.08	-	46.76	<0.05	<0.05	<0.05	<0.08	<0.23	<0.05	<0.05	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.2 J	<0.06	<0.09	<0.05	<0.05
MW-4	03/05/2019	-	97.84	50.90	-	46.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	05/01/2019	-	97.84	51.97	-	45.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	08/13/2019	-	97.84	55.84	-	42.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	10/28/2019	GRAB	97.84	58.92	60.65	38.92	<0.05	<0.07	<0.06	<0.2	<0.38	<0.05	<0.05	<0.05	<0.2	<1.1	-	-	<0.05	<0.4	<0.06	0.1 J	<0.07	<0.05	<0.05	<0.06
MW-4	01/27/2020	-	97.84	58.66	-	39.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5	05/01/2018	-	99.60	57.15	-	42.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5	08/02/2018	-	99.60	41.40	-	58.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5	10/30/2018	LF(68)	99.60	48.78	-	50.82	<0.05	<0.05	<0.05	<0.08	<0.23	<0.05	<0.05	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.2 J	<0.06	<0.09	<0.05	0.3
MW-5	03/05/2019	-	99.60	45.17	-	54.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5	05/01/2019	-	99.60	49.28	-	50.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5	08/13/2019	-	99.60	57.58	-	42.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5	10/28/2019	LF(68)	99.60	64.68	-	34.92	<0.05	<0.07	<0.06	<0.2	<0.38	<0.05	<0.05	<0.05	<0.2	<1.1	-	-	<0.05	<0.4	<0.06	0.3 J	<0.07	<0.05	<0.05	0.2 J
MW-5	01/27/2020	-	99.60	57.32	-	42.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-7	02/06/2018	LF(69)	97.66	65.97	-	31.69	<0.1	<0.1	<0.1	<0.1	<0.4	0.8	0.4 J	<0.1	<0.1	<4.0	-	-	<0.1	<1.0	<0.4	0.3 J	<0.2	<0.1	<0.1	<0.1
MW-7	05/01/2018	LF(69)	97.66	61.41	-	36.25	<0.1	<0.1	<0.1	<0.1	<0.4	3	0.3 J	<0.1	<0.1	<4.0	-	-	<0.1	<1.0	<0.4	0.3 J	<0.2	<0.1	<0.1	<0.1
MW-7	08/02/2018	LF(69)	97.66	48.17	-	49.49	<0.1	<0.1	<0.1	<0.1	<0.4	5.9	0.7	<0.1	<0.1	<4.0	-	-	<0.1	<1.0	<0.4	0.2 J	<0.2	<0.1	<0.1	<0.1
MW-7	10/30/2018	LF(69)	97.66	53.25	-	44.41	<0.05	<0.05	<0.05	<0.08	<0.23	3.1	0.2 J	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.4 J	<0.06	<0.09	<0.05	<0.05
MW-7	03/05/2019	LF(69)	97.66	52.20	-	45.46	<0.05	<0.05	<0.05	<0.08	<0.23	3.7	0.4 J	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.5	<0.06	<0.09	<0.05	<0.05
MW-7	05/01/2019	-	97.66	54.99	-	42.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-7	05/03/2019	LF (69)	97.66	55.20	-	42.46	<0.05	<0.05	<0.05	<0.08	<0.23	2.5	0.1 J	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.5 J	<0.06	<0.09	<0.05	<0.05
MW-7	08/13/2019	-	97.66	60.33	-	37.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-7	08/14/2019	LF (69)	97.66	60.33	-	37.33	<0.05	<0.05	<0.05	<0.1	<0.25	2.0	0.1 J	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.3 J	0.06 J	<0.09	<0.05	<0.05
MW-7	10/28/2019	LF(69)	97.66	64.68	-	32.98	<0.05	<0.07	<0.06	<0.2	<0.38	1.3	0.1 J	<0.05	<0.2	<1.1	-	-	<0.05	<0.4	<0.06	0.3 J	<0.07	<0.05	<0.05	<0.06
MW-7	01/27/2020	LF(69)	97.66	62.22	-	35.44	<0.05	<0.07	<0.06	<0.2	<0.38	1.2	0.1 J	<0.05	<0.2	<1.1	-	-	<0.05	<0.4	<0.06	0.3 J	<0.07	<0.05	<0.05	<0.06
MW-13	05/01/2018	-	98.11	59.91	-	38.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-13	08/02/2018	-	98.11	46.25	-	51.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-13	10/30/2018	LF(73)	98.11	52.53	-	45.58	<0.05	<0.05	<0.05	<0.08	<0.23	2.8	0.2 J	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.7	<0.06	<0.09	<0.05	<0.05
MW-13	03/05/2019	-	98.11	50.87	-	47.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-13	05/01/2019	-	98.11	53.87	-	44.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-13	08/13/2019	-	98.11	59.05	-	39.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1

### HISTORICAL MONITORING WELL ANALYTICAL SUMMARY

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	Sample Method	Top of Casing (ft)	Depth to Water (ft)	Depth to Bottom (Measured Depth) (ft)	GW Elevation (ft)	GW Clean-up Standards*																			
							Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Diisopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	1,2-Dichloroethane (µg/L)	Acrylonitrile (µg/L)	Carbon Disulfide (µg/L)	Chloroform (µg/L)	Methylene chloride (µg/L)	Naphthalene (µg/L)	p-Isopropyltoluene (µg/L)	Tetrachloroethene (µg/L)
							5	1,000	700	10,000	NA	20	NA	NA	NA	NA	47	47	5	NA	81	80	5	0.17	NA	5
MW-13	10/28/2019	LF(73)	98.11	63.08	-	35.03	<0.05	<0.07	<0.06	<0.2	<0.38	1	0.05 J	<0.05	<0.2	<1.1	-	-	<0.05	<0.4	<0.06	0.3 J	<0.07	<0.05	<0.05	<0.06
MW-13	01/27/2020	-	98.11	60.03	-	38.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-14D	02/06/2018	-	92.07	60.90	-	31.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-14D	02/07/2018	LF(212)	92.07	60.90	-	31.17	<0.1	<0.1	<0.1	<0.1	<0.4	10	0.1 J	<0.1	0.1 J	4.7 J	-	-	<0.1	<1.0	<0.4	<0.1	<0.2	<0.1	<0.1	<0.1
MW-14D	05/01/2018	LF(212)	92.07	55.36	-	36.71	<0.1	<0.1	<0.1	<0.1	<0.4	11	0.1 J	<0.1	0.1 J	5.3 J	-	-	<0.1	<1.0	<0.4	<0.1	<0.2	<0.1	<0.1	<0.1
MW-14D	08/02/2018	LF(212)	92.07	43.03	-	49.04	<0.1	<0.1	<0.1	<0.1	<0.4	14	0.3 J	<0.1	0.3 J	6.1 J	-	-	<0.1	<1.0	<0.4	<0.1	<0.2	<0.1	<0.1	<0.1
MW-14D	10/30/2018	-	92.07	43.80	-	48.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-14D	10/31/2018	LF(212)	92.07	-	-	-	<0.05	<0.05	<0.05	<0.08	<0.23	23	0.5	<0.06	<0.3	8.6 J	-	-	0.05 J	<0.3	0.3 J	<0.05	<0.06	<0.09	<0.05	<0.05
MW-14D	03/05/2019	LF(212)	92.07	44.08	-	47.99	<0.05	<0.05	<0.05	<0.08	<0.23	25	0.5	<0.06	<0.3	6.6 J	-	-	<0.05	<0.3	0.5 J	<0.05	<0.06	<0.09	<0.05	<0.05
MW-14D	05/01/2019	-	92.07	45.98	-	46.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-14D	05/03/2019	LF(212)	92.07	46.85	-	45.22	<0.05	<0.05	<0.05	<0.08	<0.23	21	0.6	<0.06	<0.3	7.7 J	-	-	<0.05	<0.3	0.5 J	<0.05	<0.06	<0.09	<0.05	<0.05
MW-14D	08/13/2019	-	92.07	52.93	-	39.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-14D	08/14/2019	LF(212)	92.07	52.93	-	39.14	<0.05	<0.05	<0.05	<0.1	<0.25	25	0.7	<0.06	0.4 J	8.8 J	-	-	<0.05	<0.3	0.8 J	<0.05	<0.06	<0.09	0.06 J	<0.05
MW-14D	10/28/2019	-	92.07	61.17	-	30.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-14D	10/29/2019	LF(212)	92.07	60.98	-	31.09	<0.05	<0.07	<0.06	<0.2	<0.38	22	0.6	<0.05	0.3 J	8.3 J	-	-	<0.05	<0.4	0.7 J	<0.09	<0.07	<0.05	<0.05	<0.06
MW-14D	01/27/2020	LF(212)	92.07	55.55	-	36.52	<0.05	<0.07	<0.06	<0.2	<0.38	21	0.4 J	<0.05	0.3 J	8.0 J	-	-	<0.05	<0.4	0.5 J	<0.09	<0.07	<0.05	<0.05	<0.06
MW-17	02/06/2018	LF (68)	92.84	60.65	-	32.19	<0.1	<0.1	<0.1	<0.1	<0.4	2.1	0.9	<0.1	<0.1	<4.0	-	-	<0.1	<1.0	<0.4	0.3 J	<0.2	<0.1	<0.1	<0.1
MW-17	05/01/2018	LF(68)	92.84	56.03	-	36.81	<0.1	<0.1	<0.1	<0.1	<0.4	1.6	0.9	<0.1	<0.1	<4.0	-	-	<0.1	<1.0	<0.4	0.3 J	<0.2	<0.1	<0.1	<0.1
MW-17	08/02/2018	LF(68)	92.84	42.97	-	49.87	<0.1	<0.1	<0.1	<0.1	<0.4	6.6	1.2	<0.1	<0.1	5.0 J	-	-	<0.1	<1.0	<0.4	0.3 J	<0.2	<0.1	<0.1	<0.1
MW-17	10/30/2018	-	92.84	47.54	-	45.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-17	10/31/2018	LF(68)	92.84	-	-	-	<0.05	<0.05	<0.05	<0.08	<0.23	0.9	0.5	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.3 J	<0.06	<0.09	<0.05	<0.05
MW-17	03/05/2019	LF(68)	92.84	46.47	-	46.37	<0.05	<0.05	<0.05	<0.08	<0.23	1.0	0.4 J	<0.06	<0.3	1.8 J	-	-	<0.05	<0.3	<0.09	0.5	<0.06	<0.09	<0.05	<0.05
MW-17	05/01/2019	LF(68)	92.84	49.20	-	43.64	<0.05	<0.05	<0.05	<0.08	<0.23	1.1	0.6	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.6	<0.06	<0.09	<0.05	<0.05
MW-17	08/13/2019	-	92.84	54.73	-	38.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-17	08/14/2019	LF(68)	92.84	54.73	-	38.11	<0.05	<0.05	<0.05	<0.1	<0.25	1.3	0.4 J	<0.06	<0.3	1.8 J	-	-	<0.05	<0.3	<0.09	0.6	<0.06	<0.09	<0.05	<0.05
MW-17	10/28/2019	LF(68)	92.84	59.38	-	33.46	<0.05	<0.07	<0.06	<0.2	<0.38	0.8	0.4 J	<0.05	<0.2	1.3 J	-	-	<0.05	<0.4	<0.06	0.7	<0.07	<0.05	<0.05	<0.06
MW-17	01/27/2020	LF(68)	92.84	56.99	-	35.85	<0.05	<0.07	<0.06	<0.2	<0.38	0.9	0.3 J	<0.05	<0.2	1.9 J	-	-	<0.05	<0.4	<0.06	0.5 J	<0.07	<0.05	<0.05	<0.06
MW-18S-R	02/06/2018	-	97.72	65.50	-	32.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18S-R	02/07/2018	LF(68)	97.72	65.50	-	32.22	<0.5	<0.5	<0.5	<0.5	<2.0	570	6.1	<0.5	10	130	-	-	<0.5	<5.0	<2.0	0.7 J	<1.0	<0.5	<0.5	<0.5
MW-18S-R	05/01/2018	-	97.72	60.91	-	36.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18S-R	05/02/2018	LF(68)	97.72	60.87	-	36.85	<0.5	<0.5	<0.5	<0.5	<2.0	110	1.6 J	<0.5	1.4 J	<20	-	-	<0.5	<5.0	<2.0	<0.5	<1.0	<0.5	<0.5	<0.5
MW-18S-R	08/02/2018	LF(68)	97.72	47.38	-	50.34	<0.1	<0.1	<0.1	<0.1	<0.4	15	0.2 J	<0.1	<0.1	<4.0	-	-	<0.1	<1.0	<0.4	0.3 J	<0.2	<0.1	<0.1	<0.1
MW-18S-R	10/30/2018	-	97.72	53.02	-	44.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18S-R	10/31/2018	LF(68)	97.72	-	-	-	<0.05	<0.05	<0.05	<0.08	<0.23	26	0.3 J	<0.06	<0.3	1.7 J	-	-	<0.05	<0.3	<0.09	0.5 J	<0.06	<0.09	<0.05	<0.05
MW-18S-R	03/05/2019	LF(68)	97.72	51.60	-	46.12	<0.05	<0.05	<0.05	<0.08	<0.23	12	0.3 J	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	0.4 J	<0.06	<0.09	<0.05	<0.05
MW-18S-R	05/01/2019	-	97.72	54.43	-	43.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18S-R	05/03/2019	LF(68)	97.72	54.81	-	42.91	<0.05	<0.05	<0.05	<0.08	<0.23	62	0.8	<0.06	0.9 J	<1.6	-	-	<0.05	6	<0.09	0.4 J	<0.06	<0.09	<0.05	<0.05
MW-18S-R	08/13/2019	-	97.72	59.77	-	37.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18S-R	08/14/2019	LF(68)	97.72	59.87	-	37.85	<0.05	<0.05	<0.05	<0.1	<0.25	46	0.7	<0.06	0.9 J	<1.6	-	-	<0.05	<0.3	<0.09	0.3 J	0.06 J	<0.09	<0.05	<0.05
MW-18S-R	10/28/2019	-	97.72	64.26	-	33.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18S-R	10/29/2019	LF(68)	97.72	64.07	-	33.65	<0.05	<0.07	<0.06	<0.2	<0.38	77	1.1	<0.05	1.1	<1.1	-	-	<0.05	<0.4	<0.06	0.3 J	<0.07	<0.05	<0.05	<0.06

Table 1

### HISTORICAL MONITORING WELL ANALYTICAL SUMMARY

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	Sample Method	Top of Casing (ft)	Depth to Water (ft)	Depth to Bottom (Measured Depth) (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Diisopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	1,2-Dichloroethane (µg/L)	Acrylonitrile (µg/L)	Carbon Disulfide (ug/L)	Chloroform (ug/L)	Methylene chloride (µg/L)	Naphthalene (µg/L)	p-Isopropyltoluene (µg/L)	Tetrachloroethene (µg/L)
GW Clean-up Standards*							5	1,000	700	10,000	NA	20	NA	NA	NA	NA	47	47	5	NA	81	80	5	0.17	NA	5
MW-18S-R	01/27/2020	LF(68)	97.72	61.57	-	36.15	<0.05	<0.07	<0.06	<0.2	<0.38	23	0.4 J	<0.05	0.3 J	1.1 J	-	-	<0.05	<0.4	<0.06	0.3 J	<0.07	<0.05	<0.05	<0.06
MW-18D	02/06/2018	-	98.31	61.80	-	36.51	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1.0	<0.4	<0.1	<0.2	<0.1	<0.1	<0.1
MW-18D	02/07/2018	LF(125)	98.31	61.80	-	36.51	<0.1	<0.1	<0.1	<0.1	<0.4	28	0.2 J	<0.1	0.6	15	-	-	<0.1	<1.0	<0.4	<0.1	<0.2	<0.1	<0.1	<0.1
MW-18D	05/01/2018	-	98.31	60.90	-	37.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18D	05/02/2018	LF(125)	98.31	60.74	-	37.57	<0.1	<0.1	<0.1	<0.1	<0.4	29	0.2 J	<0.1	0.6	13	-	-	<0.1	<1.0	<0.4	<0.1	<0.2	<0.1	<0.1	<0.1
MW-18D	08/02/2018	LF(125)	98.31	56.91	-	41.40	<0.1	<0.1	<0.1	<0.1	<0.4	3.1	0.2 J	<0.1	<0.1	<4.0	-	-	<0.1	<1.0	<0.4	<0.1	<0.2	<0.1	<0.1	<0.1
MW-18D	10/30/2018	-	98.31	50.65	-	47.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18D	10/31/2018	LF(125)	98.31	-	-	-	<0.05	<0.05	<0.05	<0.08	<0.23	0.09 J	0.1 J	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	<0.05	<0.06	<0.09	<0.05	<0.05
MW-18D	03/05/2019	LF(125)	98.31	51.70	-	46.61	0.2 J	<0.05	<0.05	<0.08	0.2 J	<0.05	<0.05	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	<0.05	<0.06	<0.09	<0.05	<0.05
MW-18D	05/01/2019	-	98.31	47.22	-	51.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18D	05/03/2019	LF(125)	98.31	47.85	-	50.46	<0.05	<0.05	<0.05	<0.08	<0.23	0.2 J	<0.05	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	<0.05	<0.06	<0.09	<0.05	<0.05
MW-18D	08/13/2019	-	98.31	54.97	-	43.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18D	08/14/2019	LF(125)	98.31	55.12	-	43.19	<0.05	<0.05	<0.05	<0.1	<0.25	0.9	<0.05	<0.06	<0.3	<1.6	-	-	<0.05	<0.3	<0.09	<0.05	<0.06	<0.09	<0.05	<0.05
MW-18D	10/28/2019	-	98.31	60.69	-	37.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18D	10/29/2019	LF(125)	98.31	60.68	-	37.63	<0.05	<0.07	<0.06	<0.2	<0.38	51	0.4 J	<0.05	1.1	18	-	-	<0.05	<0.4	0.09 J	<0.09	<0.07	<0.05	<0.05	<0.06
MW-18D	01/27/2020	LF(125)	98.31	58.43	-	39.88	<0.05	<0.07	<0.06	<0.2	<0.38	27	0.2 J	<0.05	0.6	11	-	-	<0.05	<0.4	0.07 J	<0.09	<0.07	<0.05	<0.05	<0.06
TF-3	02/06/2018	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	05/01/2018	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	08/02/2018	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	10/30/2018	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	03/05/2019	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	05/01/2019	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	08/13/2019	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	10/28/2019	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-3	01/27/2020	-	NR	DRY	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	02/06/2018	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	05/01/2018	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	08/02/2018	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	10/30/2018	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	03/05/2019	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	05/01/2019	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	08/13/2019	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	10/28/2019	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-4	01/27/2020	-	NR	DRY	14.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	02/06/2018	-	NR	14.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	05/01/2018	-	NR	14.22	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	08/02/2018	-	NR	14.20	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	10/30/2018	-	NR	14.08	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	03/05/2019	-	NR	13.83	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	05/01/2019	-	NR	13.85	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	08/13/2019	-	NR	14.17	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1

**HISTORICAL MONITORING WELL ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

Monitoring Well	Date	Sample Method	Top of Casing (ft)	Depth to Water (ft)	Depth to Bottom (Measured Depth) (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Disopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	1,2-Dichloroethane (µg/L)	Acrylonitrile (µg/L)	Carbon Disulfide (ug/L)	Chloroform (ug/L)	Methylene chloride (µg/L)	Naphthalene (µg/L)	p-Isopropyltoluene (µg/L)	Tetrachloroethene (µg/L)
<b>GW Clean-up Standards*</b>							<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>NA</b>	<b>20</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>47</b>	<b>47</b>	<b>5</b>	<b>NA</b>	<b>81</b>	<b>80</b>	<b>5</b>	<b>0.17</b>	<b>NA</b>	<b>5</b>
TF-5	10/28/2019	-	NR	14.15	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-5	01/27/2020	-	NR	13.90	14.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	02/06/2018	-	NR	13.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	05/01/2018	-	NR	13.47	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	08/02/2018	-	NR	13.58	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	10/30/2018	-	NR	13.45	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	03/05/2019	-	NR	13.55	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	05/01/2019	-	NR	13.55	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	08/13/2019	-	NR	13.45	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	10/28/2019	-	NR	13.40	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-6	01/27/2020	-	NR	13.45	13.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	02/06/2018	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	05/01/2018	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	08/02/2018	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	10/30/2018	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	03/05/2019	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	05/01/2019	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	08/13/2019	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	10/28/2019	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-7	01/27/2020	-	NR	DRY	12.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	02/06/2018	-	NR	11.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	05/01/2018	-	NR	11.45	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	08/02/2018	-	NR	11.55	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	10/30/2018	-	NR	11.40	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	03/05/2019	-	NR	11.45	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	05/01/2019	-	NR	11.46	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	08/13/2019	-	NR	11.43	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	10/28/2019	-	NR	11.40	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TF-8	01/27/2020	-	NR	11.40	11.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: Compounds of concern and detected compounds are summarized in the data table and all analytical results can be found in the Laboratory Reports and Chain of Custody Documentation.

\* GW Clean-up Standards for Type I and II Aquifers taken from the MDE Cleanup Standards for Soil and Groundwater, Interim Final Guidance, Oct. 2018

LF (##) = Low Flow ground water sampling method (depth that the sample was taken at in feet)

GRAB = Grab sample method

DRY = No water for sampling

P&S = Purge & Sample method

<# = Less than the method detection limit

µg/L = Micrograms per liter

2d = The Lab Control Sample (LCS) spike recovery was outside acceptance limits

MS = The spike recovery was outside acceptance limits for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) due to sample

2b = The spike recovery was outside acceptance limits for the MS and/or MSD. Data accepted based on acceptable LCS recovery.



Table 1

**HISTORICAL MONITORING WELL ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

Monitoring Well	Date	Sample Method	Top of Casing (ft)	Depth to Water (ft)	Depth to Bottom (Measured Depth) (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Diisopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	1,2-Dichloroethane (µg/L)	Acrylonitrile (µg/L)	Carbon Disulfide (ug/L)	Chloroform (ug/L)	Methylene chloride (µg/L)	Naphthalene (µg/L)	p-Isopropyltoluene (µg/L)	Tetrachloroethene (µg/L)
<b>GW Clean-up Standards*</b>							<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>NA</b>	<b>20</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>47</b>	<b>47</b>	<b>5</b>	<b>NA</b>	<b>81</b>	<b>80</b>	<b>5</b>	<b>0.17</b>	<b>NA</b>	<b>5</b>

V4 = Check standard was outside the Quality Control (QC) range. Data accepted based on acceptable Laboratory Control Sampling (LCS).

2e = CCV was outside the QC range. Data accepted based on additional batch QC.

L10 = This sample was analyzed at a dilution due to the matrix. Reporting limits were adjusted accordingly.

J = Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

QK = This result was above the calibration range; therefore it is an estimated value.

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylene. Total BTEX is a sum of detected concentrations of the prior mentioned analytes, including estimated concentrations (identified with a "J").

MTBE = Methyl Tertiary Butyl Ether

NA/(-) = Not Available or Not Analyzed for that specific compound

NR/(-) = Not recorded

TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics

TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics

VOC = Volatile Organic Compounds

Table 2

**HISTORICAL MONITORING WELL FIELD PARAMETERS SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

Monitoring Well	Date	Well Temperature (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Well pH	ORP (mV)
MW-1	10/30/2018	16.06	1,237	6.03	5.41	59.9
MW-1	10/28/2019	16.44	1,006	3.91	4.96	111.2
MW-4	10/30/2018	16.50	455	6.48	4.94	78.6
MW-4	10/28/2019	17.18	419	6.87	5.04	83.6
MW-5	10/30/2018	16.86	840	5.51	4.60	94.8
MW-5	10/28/2019	17.60	1,058	4.64	5.17	101.3
MW-7	05/01/2018	15.32	1,120	3.26	5.46	390.2
MW-7	08/02/2018	15.65	1,057	3.82	5.15	37.2
MW-7	10/30/2018	15.82	1,425	2.69	5.09	82.4
MW-7	03/05/2019	14.45	1,658	3.70	4.65	117.9
MW-7	05/03/2019	16.00	1,201	2.93	5.74	144.3
MW-7	08/14/2019	17.20	997	4.21	5.32	86.8
MW-7	10/28/2019	16.57	1,117	4.28	5.17	82.0
MW-7	01/27/2020	15.14	1,102	3.82	5.20	308.0
MW-13	10/30/2018	17.09	1,340	5.09	4.91	81.9
MW-13	10/28/2019	17.21	1,228	4.07	4.94	124.3
MW-14D	05/01/2018	15.37	411	0.95	8.15	-60.9
MW-14D	08/02/2018	14.83	406	0.68	7.51	-185.6
MW-14D	10/31/2018	15.20	380	0.28	8.31	-146.8
MW-14D	03/05/2019	14.83	406	0.41	8.03	-99.2
MW-14D	05/03/2019	15.17	307	0.89	8.45	-96.0
MW-14D	08/14/2019	16.13	301	0.28	8.20	-146.3
MW-14D	10/29/2019	15.37	376	0.45	7.67	-163.7
MW-14D	01/27/2020	14.22	368	0.51	8.09	-117.8
MW-17	05/01/2018	15.74	1,104	2.27	5.80	265.7
MW-17	08/02/2018	14.71	1,119	2.50	5.47	-10.2
MW-17	10/31/2018	15.62	1,176	1.86	5.86	39.3
MW-17	03/05/2019	14.60	1,286	2.81	4.88	113.0
MW-17	05/01/2019	15.16	973	3.20	6.02	121.2
MW-17	08/14/2019	16.20	973	2.98	5.59	70.3
MW-17	10/28/2019	16.18	1,251	3.07	5.37	58.5
MW-17	01/27/2020	14.44	1,184	2.70	5.36	297.5
MW-18S-R	05/02/2018	16.33	1,322	2.01	5.74	240.5
MW-18S-R	08/02/2018	16.61	972	4.49	5.12	-46.2
MW-18S-R	10/31/2018	18.05	1,214	3.56	5.04	49.2
MW-18S-R	03/05/2019	15.70	1,320	4.46	4.45	127.3
MW-18S-R	05/03/2019	16.88	1,009	2.88	5.68	160.7
MW-18S-R	08/14/2019	18.13	838	3.40	5.35	2.1
MW-18S-R	10/29/2019	17.14	1,307	2.00	6.10	-33.4
MW-18S-R	01/27/2020	15.66	1,195	2.79	4.86	246.9

Table 2

**HISTORICAL MONITORING WELL FIELD PARAMETERS SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

Monitoring Well	Date	Well Temperature (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Well pH	ORP (mV)
MW-18D	05/02/2018	15.90	1,922	0.75	7.60	-119.5
MW-18D	08/02/2018	18.85	1,551	0.49	7.93	-214.1
MW-18D	10/31/2018	17.42	1,277	0.55	7.82	-94.1
MW-18D	03/05/2019	15.43	773	0.85	8.26	8.4
MW-18D	05/03/2019	16.85	606	0.91	7.62	95.0
MW-18D	08/14/2019	18.31	651	0.26	7.87	-75.8
MW-18D	10/29/2019	17.24	6,486	0.33	8.00	-163.8
MW-18D	01/27/2020	14.91	8,074	0.35	7.98	-155.1

°C = Degrees Celsius

µS/cm = Microsiemens per centimeter

mg/L = Milligrams per liter

mV = Millivolts

ppm = Parts per million

Table 3

### HISTORICAL GVP POTABLE WELL AND POET SYSTEM ANALYTICAL SUMMARY

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	Carbon Change	POET Totalizer (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Diisopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	Naphthalene (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)
GW Clean-up Standards*				5	1,000	700	10,000	NL	20	NL	NL	NL	NL	0.17	47	47
GVP-FR941281	01/30/2019		-	<0.1	<0.1	<0.1	<0.1	<0.4	0.1 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-FR941281	05/01/2019		-	<0.1	<0.1	<0.1	<0.1	<0.4	0.2 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-FR941281	08/13/2019		-	<0.1	<0.1	<0.1	<0.3	<0.6	1.1	<0.1	<0.1	<0.1	5.9 J	<0.2	NA	NA
GVP-INF	05/01/2018		-	<0.1	<0.1	<0.1	<0.1	<0.4	0.3	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-INF	08/02/2018		-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-INF	10/31/2018		-	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-INF	01/30/2019		-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-INF	05/01/2019		-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-INF	08/13/2019		-	<0.1	<0.1	<0.1	<0.3	<0.6	0.7	<0.1	<0.1	<0.1	3.9 J	<0.2	NA	NA
GVP-INF	10/29/2019		-	<0.1	<0.1	<0.1	<0.3	<0.6	1.4	<0.1	<0.1	<0.1	3.6 J	<0.2	NA	NA
GVP-INF	01/28/2020		-	<0.1	<0.1	<0.1	<0.3	<0.6	0.5 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	05/01/2018		-	<0.1	<0.1	<0.1	<0.1	<0.4	0.3	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	08/02/2018		-	<0.1	<0.1	<0.1	<0.1	<0.4	0.5	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	10/31/2018		-	<0.1	<0.1	<0.1	<0.1	NA	0.4 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	01/30/2019		-	<0.1	<0.1	<0.1	<0.1	<0.4	0.4 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	05/01/2019		-	<0.1	<0.1	<0.1	<0.1	<0.4	0.3 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	08/13/2019		-	<0.1	<0.1	<0.1	<0.3	<0.6	0.4 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	10/29/2019		-	<0.1	<0.1	<0.1	<0.3	<0.6	0.8	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-MID	01/28/2020		-	<0.1	<0.1	<0.1	<0.3	<0.6	0.5	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	05/01/2018		9,648,000	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	08/02/2018		9,883,070	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	10/31/2018		10,113,000	<0.1	<0.1	<0.1	<0.1	NA	0.1 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	01/30/2019		10,348,727	<0.1	<0.1	<0.1	<0.1	<0.4	0.1 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	05/01/2019		10,606,273	<0.1	<0.1	<0.1	<0.1	<0.4	0.2 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	08/13/2019		NR	<0.1	<0.1	<0.1	<0.3	<0.6	0.4 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	10/29/2019		11,145,150	<0.1	<0.1	<0.1	<0.3	<0.6	0.3 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA
GVP-EFF	01/28/2020		11,318,800	<0.1	<0.1	<0.1	<0.3	<0.6	0.3 J	<0.1	<0.1	<0.1	<2.5	<0.2	NA	NA

### HISTORICAL GVP POTABLE WELL AND POET SYSTEM ANALYTICAL SUMMARY

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	Carbon Change	POET Totalizer (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Diisopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	Naphthalene (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)
<b>GW Clean-up Standards*</b>				<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>NL</b>	<b>20</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>0.17</b>	<b>47</b>	<b>47</b>

Notes:

\* GW Clean-up Standards for Type I and II Aquifers taken from the MDE Clean-up Standards for Soil and Groundwater, Interim Final Guidance, Oct. 2018

&lt;# = Less than the method detection limit of #

&lt;#\* = Less than the method reporting limit of #

µg/L = Micrograms per liter

B3 = The prep blank associated with this sample had a result greater than the Method Reporting Limit (MRL). Data may be biased high.

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylene. Total BTEX is a sum of detected concentrations of these chemicals, including estimated concentrations (identified with a "J"). If BTEX is non-detect, Total BTEX is the sum of the reporting limits.

D1 = The Relevant Percent Difference (RPD) result exceeded the Quality Control (QC) control limits for the duplicate sample analyzed.

EFF = Effluent sample location

gal = Gallons

GVP = Green Valley Plaza

INF = Influent sample location

J = Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

L12 = The prep method Laboratory Control Sampling (LCS) spike recovery was outside acceptance limits. The batch results were accepted based on the acceptable recovery

mg/L = Milligrams per liter

M1 = Matrix spike recovery was high; the associated blank spike recovery was acceptable.

MID = Midfluent sample location

MTBE = Methyl Tertiary Butyl Ether

NL = No Limit (Screening)

NR = Not recorded

POET = Point of Entry Treatment

POU = Point-of-use sample location

QA = The RPD result exceeded the QC control limits for the duplicate sample analyzed.

- = No Data Available

TDS = Total Dissolved Solids

TSS = Total Suspended Solids

TOC = Total Organic Carbons

**HISTORICAL GVP POTABLE WELL AND POET SYSTEM ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

Monitoring Well	Date	Carbon Change	POET Totalizer (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Diisopropyl ether (µg/L)	Ethyl tert-butyl ether (µg/L)	Tert-amyl methyl ether (µg/L)	Tert-Butyl Alcohol (µg/L)	Naphthalene (µg/L)	TPH-DRO (µg/L)	TPH-GRO (µg/L)
<b>GW Clean-up Standards*</b>				<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>NL</b>	<b>20</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>0.17</b>	<b>47</b>	<b>47</b>

TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics

TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics

V8 = LCS value was outside the QC range. Data accepted based on acceptable check standard.

Table 4

**HIST. RESIDENTIAL POET SYSTEM ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	CARBON CHANGE	POET Totalizer (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	tert-Butyl Alcohol (µg/L)	Diisopropyl ether (µg/L)	ethyl tert-butyl ether (µg/L)	tert-amyl methyl ether (µg/L)	Tetrachloroethene (ug/L)
<b>GW Clean-up Standards*</b>				<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>NL</b>	<b>20</b>	<b>0.17</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>5</b>
3923-ROSE-INF	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.1 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3923-ROSE-INF	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.6	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3923-ROSE-INF	03/06/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.3 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-INF	05/01/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	63	<0.2	13 J	0.6	<0.1	1.5	<0.1
3990-FARM-INF	08/28/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	38	<0.2	<2.5	0.3 J	<0.1	0.9	<0.1
3990-FARM-INF	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	47	<0.2	7.3 J	0.3 J	<0.1	0.8	<0.1
3990-FARM-INF	03/29/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	33	<0.2	<2.5	0.3 J	<0.1	0.5	<0.1
3990-FARM-INF	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	41	<0.2	5.0 J	0.4 J	<0.1	0.8	<0.1
3990-FARM-INF	08/13/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	40	<0.2	9.6 J	0.3 J	<0.1	0.9	<0.1
3990-FARM-INF	11/12/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	40	<0.2	3.6 J	0.3 J	<0.1	0.7	<0.1
3990-FARM-INF	01/28/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	33	<0.2	<2.5	0.3 J	<0.1	0.8	<0.1
3990-FARM-MID2	05/01/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	6.4 J	<0.1	<0.1	<0.1	<0.1
3990-FARM-MID2	08/28/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-MID2	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-MID2	03/29/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-MID2	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	2.5 J	<0.1	<0.1	<0.1	<0.1
3990-FARM-MID2	08/13/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-MID2	11/12/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-MID2	01/28/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	05/01/2018	-	83,371	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	06/22/2018	CARBON CHANGE	87,000	-	-	-	-	-	-	-	-	-	-	-	-
3990-FARM-EFF	08/28/2018	-	90,343	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	10/30/2018	-	94,354	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	03/29/2019	-	102,647	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	05/01/2019	-	105,007	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	05/29/2019	CARBON CHANGE	106,900	-	-	-	-	-	-	-	-	-	-	-	-
3990-FARM-EFF	08/13/2019	-	111,033	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	11/12/2019	-	116,080	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3990-FARM-EFF	01/28/2020	-	121,235	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-INF	05/23/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	31	<0.2	<2.5	0.3 J	<0.1	0.6	<0.1
3992-FARM-INF	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	32	<0.2	<2.5	0.2 J	<0.1	0.5	<0.1
3992-FARM-INF	10/31/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	29	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	03/06/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	23	<0.2	8.4 J	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	21	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	09/09/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	22	<0.2	2.6 J	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	10/29/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	24	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	02/13/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	23	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1

Table 4

**HIST. RESIDENTIAL POET SYSTEM ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	CARBON CHANGE	POET Totalizer (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	tert-Butyl Alcohol (µg/L)	Diisopropyl ether (µg/L)	ethyl tert-butyl ether (µg/L)	tert-amyl methyl ether (µg/L)	Tetrachloroethene (ug/L)
<b>GW Clean-up Standards*</b>				<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>NL</b>	<b>20</b>	<b>0.17</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>5</b>
3992-FARM-MID2	05/23/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-MID2	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-MID2	10/31/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-MID2	03/06/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	3.8 J	<0.1	<0.1	<0.1	<0.1
3992-FARM-MID2	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-MID2	09/09/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-MID2	10/29/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-MID2	02/13/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	05/23/2018	-	522,845	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	08/02/2018	-	528,309	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	10/31/2018	-	536,900	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	03/06/2019	-	552,947	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	03/26/2019	CARBON CHANGE	555,300	-	-	-	-	-	-	-	-	-	-	-	-
3992-FARM-EFF	05/01/2019	-	559,346	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	09/09/2019	-	568,654	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	10/29/2019	-	572,078	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3992-FARM-EFF	02/13/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-INF	05/23/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	11	<0.2	<2.5	0.1 J	<0.1	0.2 J	<0.1
3994-FARM-INF	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	17	<0.2	3.7 J	0.1 J	<0.1	0.3 J	<0.1
3994-FARM-INF	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	20	<0.2	4.4 J	0.2 J	<0.1	0.3 J	<0.1
3994-FARM-INF	03/06/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	14	<0.2	9.5 J	0.1 J	<0.1	0.3 J	<0.1
3994-FARM-INF	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	17	<0.2	3.5 J	0.1 J	<0.1	0.3 J	<0.1
3994-FARM-INF	08/13/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	11	<0.2	4.8 J	0.1 J	<0.1	0.2 J	<0.1
3994-FARM-INF	10/29/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	9.1	<0.2	4.4 J	<0.1	<0.1	0.2 J	<0.1
3994-FARM-INF	01/28/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	8	<0.2	3.7 J	<0.1	<0.1	0.2 J	<0.1
3994-FARM-MID2	05/23/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-MID2	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	2.7 J	<0.1	<0.1	<0.1	<0.1
3994-FARM-MID2	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-MID2	03/06/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-MID2	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-MID2	08/13/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-MID2	10/29/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-MID2	01/28/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-EFF	05/23/2018	-	477,865	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-EFF	08/02/2018	-	485,944	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-EFF	08/29/2018	CARBON CHANGE	-	-	-	-	-	-	-	-	-	-	-	-	-
3994-FARM-EFF	10/30/2018	-	496,632	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1

Table 4

**HIST. RESIDENTIAL POET SYSTEM ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	CARBON CHANGE	POET Totalizer (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	tert-Butyl Alcohol (µg/L)	Diisopropyl ether (µg/L)	ethyl tert-butyl ether (µg/L)	tert-amyl methyl ether (µg/L)	Tetrachloroethene (ug/L)
<b>GW Clean-up Standards*</b>				<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>NL</b>	<b>20</b>	<b>0.17</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>5</b>
3994-FARM-EFF	03/06/2019	-	508,131	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-EFF	05/01/2019	-	512,794	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-EFF	08/13/2019	-	520,399	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-EFF	10/29/2019	-	526,002	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3994-FARM-EFF	01/28/2020	-	534,580	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	05/01/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	3.7	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	6.0	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	7.0	<0.2	3.8 J	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	01/30/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	5.0	<0.2	6.9 J	<0.1	<0.1	0.1 J	<0.1
3996-FARM-INF	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	4.4	<0.2	3.8 J	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	08/13/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	2.7	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	10/29/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	2.0	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	01/28/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	1.6	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	05/01/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	01/30/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	3.1 J	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	08/13/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	10/29/2019	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	2.7 J	<0.1	<0.1	<0.1	<0.1
3996-FARM-MID2	01/28/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	05/01/2018	-	972,994	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	08/02/2018	-	995,300	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	10/30/2018	-	1,005,518	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	01/30/2019	-	1,016,684	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	02/25/2019	CARBON CHANGE	1,024,000	-	-	-	-	-	-	-	-	-	-	-	-
3996-FARM-EFF	05/01/2019	-	1,027,560	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	08/13/2019	-	1,048,155	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	10/29/2019	-	1,061,370	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-EFF	11/25/2019	CARBON CHANGE	NR	-	-	-	-	-	-	-	-	-	-	-	-
3996-FARM-EFF	01/28/2020	-	1,071,838	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	06/19/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.4 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	08/02/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.3 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	10/30/2018	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.2 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	03/06/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.2 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	05/01/2019	-	-	<0.1	<0.1	<0.1	<0.1	<0.4	0.3 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	01/28/2020	-	-	<0.1	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1

**HIST. RESIDENTIAL POET SYSTEM ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	CARBON CHANGE	POET Totalizer (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	tert-Butyl Alcohol (µg/L)	Diisopropyl ether (µg/L)	ethyl tert-butyl ether (µg/L)	tert-amyl methyl ether (µg/L)	Tetrachloroethene (ug/L)
<b>GW Clean-up Standards*</b>															
				5	1,000	700	10,000	NL	20	0.17	NL	NL	NL	NL	5

Notes:

\* GW Clean-up Standards for Type I and II Aquifers taken from the MDE Cleanup Standards for Soil and Groundwater, Interim Final Guidance, Oct. 2018

\*\* Resident was resampled May 5, 2015 due to suspected mislabeling of samples

(#)<sup>2</sup> = Totalizer Reading incorrectly recorded in the field.

<# = less than the method detection limit of #

<#<sup>1</sup> = less than the method reporting limit of #

µg/L = Micrograms/Liter

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylene. Total BTEX is a sum of detected concentrations of these chemicals, including estimated concentrations (identified with a "J").

J = Result is between the method detection and reporting limits; therefore, result is estimated.

MS = The spike recovery was outside acceptance limits for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) due to sample matrix interferences. The batch was accepted based on acceptable Continuous Calibration Verification (CCV) recovery.

D1 = The Relevant Percent Difference (RPD) result exceeded the QC control limits for the duplicate sample analyzed.

EFF = Effluent sample location

INF = Influent sample location

MID2 = Second midfluent sample location

MTBE = Methyl Tertiary Butyl Ether

NA = Not Available or Not Analyzed for that specific compound

<# = Less than the method detection limit (#).

POU = Point-of-use sample location

12G = Laboratory control sample (LCS) value was outside the quality control (QC) range. Data accepted based on acceptable check standard.

L1 = This result was above the calibration range; therefore it is an estimated value.

QK = This result was above the calibration range; therefore it is an estimated value.

V4 = Check standard was outside the QC range. Data accepted based on acceptable LCS.

V8 = LCS value was outside the QC range. Data accepted based on acceptable check standard.

VH = LCS value was outside the QC range. Data accepted based on acceptable check standard.

BB = The method blank result was at or above the method reporting limit (MRL), therefore sample results may be biased high.

NT = Not Tabulated, historical laboratory analytical report available for specified date. |

QB = The spike recovery was outside acceptance limits for the MS and/or MSD due to sample matrix interferences. The batch was accepted based on acceptable CCV range.

11B = The spike recovery was outside acceptance limits for the MS and/or MSD due to sample matrix interferences. The batch was accepted based on acceptable CCV recovery.

NA = Not Analyzed

Table 5

**HISTORICAL RESIDENTIAL POTABLE WELL ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

Monitoring Well	Date	Benzene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	tert-Butyl Alcohol (µg/L)	Diisopropyl ether (µg/L)	ethyl tert-butyl ether (µg/L)	tert-amyl methyl ether (µg/L)	Tetrachloroethene (ug/L)
GW Clean-up Standards*		5	700	10,000	NL	20	0.17	NL	NL	NL	NL	5
3923-ROSE-INF	08/02/2018	<0.1	<0.1	<0.1	<0.4	0.1 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3923-ROSE-INF	10/30/2018	<0.1	<0.1	<0.1	<0.4	0.6	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3923-ROSE-INF	03/06/2019	<0.1	<0.1	<0.1	<0.4	0.3 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3923-ROSE-INF	08/15/2019	<0.1	<0.1	<0.3	<0.6	1.0	<0.2	<2.5	<0.1	<0.1	<0.1	0.1 J
3923-ROSE-INF	10/29/2019	<0.1	<0.1	<0.3	<0.6	0.6	<0.2	<2.5	<0.1	<0.1	<0.1	0.1 J
3990-FARM-INF	05/01/2018	<0.1	<0.1	<0.1	<0.4	63	<0.2	13 J	0.6	<0.1	1.5	<0.1
3990-FARM-INF	08/28/2018	<0.1	<0.1	<0.1	<0.4	38	<0.2	<2.5	0.3 J	<0.1	0.9	<0.1
3990-FARM-INF	10/30/2018	<0.1	<0.1	<0.1	<0.4	47	<0.2	7.3 J	0.3 J	<0.1	0.8	<0.1
3990-FARM-INF	03/29/2019	<0.1	<0.1	<0.1	<0.4	33	<0.2	<2.5	0.3 J	<0.1	0.5	<0.1
3990-FARM-INF	05/01/2019	<0.1	<0.1	<0.1	<0.4	41	<0.2	5.0 J	0.4 J	<0.1	0.8	<0.1
3990-FARM-INF	08/13/2019	<0.1	<0.1	<0.3	<0.6	40	<0.2	9.6 J	0.3 J	<0.1	0.9	<0.1
3990-FARM-INF	11/12/2019	<0.1	<0.1	<0.3	<0.6	40	<0.2	3.6 J	0.3 J	<0.1	0.7	<0.1
3990-FARM-INF	01/28/2020	<0.1	<0.1	<0.3	<0.6	33	<0.2	<2.5	0.3 J	<0.1	0.8	<0.1
3992-FARM-INF	05/23/2018	<0.1	<0.1	<0.1	<0.4	31	<0.2	<2.5	0.3 J	<0.1	0.6	<0.1
3992-FARM-INF	08/02/2018	<0.1	<0.1	<0.1	<0.4	32	<0.2	<2.5	0.2 J	<0.1	0.5	<0.1
3992-FARM-INF	10/31/2018	<0.1	<0.1	<0.1	<0.4	29	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	03/06/2019	<0.1	<0.1	<0.1	<0.4	23	<0.2	8.4 J	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	05/01/2019	<0.1	<0.1	<0.1	<0.4	21	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	09/09/2019	<0.1	<0.1	<0.3	<0.6	22	<0.2	2.6 J	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	10/29/2019	<0.1	<0.1	<0.3	<0.6	24	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1
3992-FARM-INF	02/13/2020	<0.1	<0.1	<0.3	<0.6	23	<0.2	<2.5	0.2 J	<0.1	0.4 J	<0.1
3994-FARM-INF	05/23/2018	<0.1	<0.1	<0.1	<0.4	11	<0.2	<2.5	0.1 J	<0.1	0.2 J	<0.1
3994-FARM-INF	08/02/2018	<0.1	<0.1	<0.1	<0.4	17	<0.2	3.7 J	0.1 J	<0.1	0.3 J	<0.1
3994-FARM-INF	10/30/2018	<0.1	<0.1	<0.1	<0.4	20	<0.2	4.4 J	0.2 J	<0.1	0.3 J	<0.1
3994-FARM-INF	03/06/2019	<0.1	<0.1	<0.1	<0.4	14	<0.2	9.5 J	0.1 J	<0.1	0.3 J	<0.1
3994-FARM-INF	05/01/2019	<0.1	<0.1	<0.1	<0.4	17	<0.2	3.5 J	0.1 J	<0.1	0.3 J	<0.1
3994-FARM-INF	08/13/2019	<0.1	<0.1	<0.3	<0.6	11	<0.2	4.8 J	0.1 J	<0.1	0.2 J	<0.1
3994-FARM-INF	10/29/2019	<0.1	<0.1	<0.3	<0.6	9.1	<0.2	4.4 J	<0.1	<0.1	0.2 J	<0.1
3994-FARM-INF	01/28/2020	<0.1	<0.1	<0.3	<0.6	8	<0.2	3.7 J	<0.1	<0.1	0.2 J	<0.1

**HISTORICAL RESIDENTIAL POTABLE WELL ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

Monitoring Well	Date	Benzene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	tert-Butyl Alcohol (µg/L)	Diisopropyl ether (µg/L)	ethyl tert-butyl ether (µg/L)	tert-amyl methyl ether (µg/L)	Tetrachloroethene (ug/L)
<b>GW Clean-up Standards*</b>		<b>5</b>	<b>700</b>	<b>10,000</b>	<b>NL</b>	<b>20</b>	<b>0.17</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>5</b>
3996-FARM-INF	05/01/2018	<0.1	<0.1	<0.1	<0.4	3.7	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	08/02/2018	<0.1	<0.1	<0.1	<0.4	6.0	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	10/30/2018	<0.1	<0.1	<0.1	<0.4	7.0	<0.2	3.8 J	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	01/30/2019	<0.1	<0.1	<0.1	<0.4	5.0	<0.2	6.9 J	<0.1	<0.1	0.1 J	<0.1
3996-FARM-INF	05/01/2019	<0.1	<0.1	<0.1	<0.4	4.4	<0.2	3.8 J	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	08/13/2019	<0.1	<0.1	<0.3	<0.6	2.7	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	10/29/2019	<0.1	<0.1	<0.3	<0.6	2.0	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3996-FARM-INF	01/28/2020	<0.1	<0.1	<0.3	<0.6	1.6	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	06/19/2018	<0.1	<0.1	<0.1	<0.4	0.4 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	08/02/2018	<0.1	<0.1	<0.1	<0.4	0.3 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	10/30/2018	<0.1	<0.1	<0.1	<0.4	0.2 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	03/06/2019	<0.1	<0.1	<0.1	<0.4	0.2 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	05/01/2019	<0.1	<0.1	<0.1	<0.4	0.3 J	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1
3997-FARM-INF	08/13/2019	<0.1	<0.1	<0.3	<0.6	0.5 J	<0.2	<2.5	<0.1	<0.1	<0.1	0.1 J
3997-FARM-INF	10/29/2019	<0.1	<0.1	<0.3	<0.6	0.3 J	<0.2	<2.5	<0.1	<0.1	<0.1	0.1 J
3997-FARM-INF	01/28/2020	<0.1	<0.1	<0.3	<0.6	<0.1	<0.2	<2.5	<0.1	<0.1	<0.1	<0.1

Notes:

\* GW Clean-up Standards for Type I and II Aquifers taken from the MDE Cleanup Standards for Soil and Groundwater, Interim Final Guidance, Oct. 2018

\*\* Resident resampled on May 5, 2015 due to suspected mislabeling of samples

- = No Data Available

INF = Influent sample location

POU = Point-of-use sample location

<# = Less than the method detection limit of #

<#<sup>1</sup> = less than the method reporting limit of #

µg/L = Micrograms/Liter

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylene. Total BTEX is a sum of detected concentrations of these chemicals, including estimated concentrations (identified with a J). If BTEX is non-detect, total BTEX is sum of the reporting limits.

MTBE = Methyl Tertiary Butyl Ether

VOC = Volatile Organic Compounds

**HISTORICAL RESIDENTIAL POTABLE WELL ANALYTICAL SUMMARY**

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

Monitoring Well	Date	Benzene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	tert-Butyl Alcohol (µg/L)	Diisopropyl ether (µg/L)	ethyl tert-butyl ether (µg/L)	tert-amyl methyl ether (µg/L)	Tetrachloroethene (ug/L)
<b>GW Clean-up Standards*</b>		<b>5</b>	<b>700</b>	<b>10,000</b>	<b>NL</b>	<b>20</b>	<b>0.17</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>NL</b>	<b>5</b>

NA = Not Analyzed

J = Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

NT = Not Tabulated, historical laboratory analytical report available for specified date.

L1 = This result was above the calibration range; therefore it is an estimated value.

2b = The spike recovery was outside acceptance limits for the MS and/or MSD.

12G = Laboratory Control Sampling (LCS) value was outside the Quality Control (QC) range. Data accepted based on acceptable check standard.

QK = This result was above the calibration range; therefore it is an estimated value.

V4 = Check standard was outside the QC range. Data accepted based on acceptable LCS.

V8 = LCS value was outside the QC range. Data accepted based on acceptable check standard.

VH = LCS value was outside the QC range. Data accepted based on acceptable check standard.

VC = Check standard was outside the QC range. Data accepted based on acceptable LCS.

MS = The spike recovery was outside acceptance limits for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) due to sample matrix interferences. The batch was accepted based on acceptable Continuous Calibration Verification (CCV) recovery.

QB = The spike recovery was outside acceptance limits for the MS and/or MSD due to sample matrix interferences. The

BB = The method blank result was at or above the method reporting limit (MRL), therefore sample results may be biased high.

NL = No Limit (screening)

Table 6

### MONITORING WELL CONSTRUCTION DETAILS

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Road  
Monrovia, MD

Monitoring Well	Well Permit #	Date Well Drilled	Date Well Installed	Well Diameter (inches)	TOC Elevation	Date of Last Survey	Total Depth of Well (from Ground Surface)	DTB of Steel Casing (feet)	TOS from Ground Surface	BOS from Ground Surface	Comments
MW-1	FR-94-5045	2/7/06	2/7/2006	2	99.19	2/27/2006	61.5	--	40	61.5	
MW-2	FR-94-5046	2/7/06	2/7/2006	2	99.47	2/27/2006	61.5	--	40	61.5	Well abandoned 12/21/17
MW-3	FR-94-5047	2/7/06	2/7/2006	2	99.16	2/27/2006	81.5	--	40	64	Drilled to 81.5 feet, backfilled and set at 64 feet; well abandoned 5/15/08
MW-4	FR-94-5048	2/7/06	2/7/2006	2	97.84	2/27/2006	61.5	--	40	61.5	
MW-5	FR-95-0982	5/12/08	2/23/2009	4	99.60	3/18/2009	70	14	40	70	
MW-6	FR-95-0983	5/12/08	2/23/2009	4	98.09	3/18/2009	59.5	14	40	59.5	boring caved to 59.5 feet; well abandoned 12/20/17
MW-7	FR-95-0984	5/12/08	2/24/2009	4	97.66	3/18/2009	80	19.5	53	80	
MW-8	FR-95-0985	5/12/08	2/23/2009	4	97.93	3/18/2009	70	15	45	70	Well abandoned 12/20/17
MW-9	FR-95-1216	2/26/09	3/11/2009	4	88.48	3/18/2009	78	10	48	78	Well abandoned 12/20/17
MW-10	FR-95-1217	2/26/09	3/11/2009	4	91.64	3/18/2009	80	10	40	80	Well abandoned 12/20/17
MW-11	FR-95-1219	2/27/09	3/11/2009	4	94.28	3/18/2009	77	10	47	77	Well abandoned 12/20/17
MW-12	FR-95-1218	3/2/09	3/12/2009	4	95.33	3/18/2009	84	10	44	82	Well abandoned 12/20/17
MW-13	FR-95-1215	3/2/09	3/12/2009	4	98.11	3/18/2009	84	10	49	84	
MW-14S	FR-95-1599	7/20/10	7/22/2010	4	91.21	7/22/2010	100	11.0	40	100	Well abandoned 12/20/17
MW-14D	FR-95-1418	9/24/09	7/22/2010	4	92.07	7/22/2010	221	10.5	201	221	
MW-15D	FR-95-1419	9/28/09	7/19/2010	4	97.67	7/22/2010	133.5	10	45.5	133.5	Well abandoned 12/20/17
MW-16	FR-95-1420	9/25/09	7/20/2010	4	89.78	7/22/2010	121	9.75	35.5	121	Well abandoned 12/20/17
MW-17	FR-95-1421	9/25/09	7/20/2010	4	92.84	7/22/2010	121	10.5	35	121	
MW-18S	FR-95-1674	11/17/10	11/17/2010	2	98.29	1/4/2011	70	--	45	70	MW-18S and MW-18D nested in one borehole; MW-18S abandoned on 11/10/15
MW-18D			11/18/2010	2	98.31	1/4/2011	130	--	120	130	
MW-18S-R	FR-95-2578	1/27/15	1/27/2015	4	97.72	1/27/2015	70	--	25	70	
VE-1	FR-95-1673	11/19/10	11/17/2010	4	98.40	1/4/2011	25	--	5	25	Abandoned 12/21/17
IW-1S	FR-95-1672	11/18/10	11/18/2010	0.60	98.52	1/4/2011	67	--	63	67	IW-1S and IW-1D nested in one borehole - stainless steel screen and casing; abandoned 12/21/17
IW-1D			11/19/2010	0.60	98.60	1/4/2011	73	--	69	73	
IW-2S	FR-95-1671	11/18/10	11/18/2010	0.60	98.63	1/4/2011	91	--	87	91	IW-2S and IW-2D nested in one borehole - stainless steel screen and casing; abandoned 12/21/17
IW-2D			11/19/2010	0.60	98.71	1/4/2011	103	--	99	103	
IW-3S	FR-95-1670	11/18/10	11/18/2010	0.60	98.51	1/4/2011	127	--	123	127	IW-3S and IW-3D nested in one borehole - stainless steel screen and casing; abandoned 12/21/17
IW-3D			11/19/2010	0.60	98.62	1/4/2011	134	--	130	134	
IW-4	FR-95-2019	5/30/12	5/30/12	0.75	NA	NA	92	--	85	89	Abandoned 12/21/17

BOS =Bottom of screen  
NA = Not Available  
TOS =Top of screen  
TOC =Top of casing  
U =Unknown



**APPENDIX A**

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Historical Activities Summary



## HISTORICAL ACTIVITY SUMMARY (key / relevant dates):

- 1990 – 2000: The facility was operated by Timbercrest LP.  
2000: Underground storage tanks (USTs) were registered to Carroll Independent Fuel Company (Carroll).
- June 13, 2001: Three soil borings (SB-1AR, SB-2AR and SB-3) were advanced onsite and soil samples were collected by ATC Associates (ATC) as part of a Phase II Environmental Assessment.
- July 24, 2001: ATC completed a *Phase II Environmental Assessment* report.
- January 28, 2005: The Maryland Department of the Environment (MDE) Oil Control Program (OCP) conducted a compliance inspection, during which elevated levels of petroleum vapors were detected in the vicinity of the tank field, around tank top components, and in the tank field monitoring wells.
- June 1, 2005: MDE correspondence required vapor leak testing, containment sump and catchment basin testing, the installation of groundwater monitoring wells to comply with High-Risk Groundwater Use Area (HRGUA) Regulations, and the submittal of a *Subsurface Investigation Work Plan* to assess the vertical and lateral extent of any contamination of soil and/or groundwater. OCP Case #2005-0834-FR was assigned to the site.
- July 8, 2005: A *Work Plan – Subsurface Investigation and Emergency Regulation Compliance* was submitted to the MDE by Environmental Alliance (Alliance), proposing a soil boring event, installation of four monitoring wells, groundwater sampling, slug tests, and a sensitive receptor search.
- August 18, 2005: The MDE approved the *Work Plan*, with modifications, and required a drinking water well survey within a half-mile radius of the site be conducted.
- September 14-15, 2005: Ten soil borings (GP-1 through GP-10) were advanced.
- February 6-7, 2006: Four bedrock monitoring wells (MW-1 through MW-4) were installed.
- March 28, 2006: Methyl-tertiary butyl ether (MTBE) was detected at a concentration of 14 micrograms per liter ( $\mu\text{g/L}$ ) in a blended influent sample collected from two onsite drinking water wells supplying the shopping center, Green Valley Plaza (GVP), which house the gas station.
- April 2006: Mr. Arshad Ranjha, doing business as Saaba Corporation, registered as the new UST owner.
- May 24, 2006: An *Assessment for the Emergency Regulations Compliance Report* was submitted to the MDE, detailing the soil boring event, the monitoring well installation, groundwater sampling, sampling of the onsite potable wells, and a sensitive receptor survey.
- July 7, 2006: The MDE responded to the *Assessment Report*, and required semi-annual sampling of the monitoring wells, the tank field wells, and the Site's supply wells, and submittal of boring logs for the onsite drinking water supply wells and the bedrock monitoring wells.
- September 19, 2006: MTBE was detected in a blended influent sample from the GVP's supply wells at a concentration of 42  $\mu\text{g/L}$ .
- November 17, 2006: A *Semi-Annual Sampling Report* was submitted to the MDE detailing the results of groundwater sampling and the potable well sampling, and the intention to install a point of entry treatment (POET) system on GVP's water supply.



## HISTORICAL ACTIVITY SUMMARY (Continued):

- January 22, 2007: The MDE issued a *Request for Interim Corrective Action Plan (ICAP) and Supplemental Investigation*, requiring the submittal of an ICAP to reduce vapor concentrations in the tank field, including a soil-vapor extraction (SVE) test on the tank field and monitoring well MW-3, an investigation of surface drains, and increased frequency of monitoring well and tank field well sampling from semi-annually to quarterly. The submittal of a *Site Conceptual Model (SCM)* and a supplemental *Work Plan* to further develop the SCM were also required. Quarterly sampling of GVP's and the adjacent Green Valley Shopping Center's (GVSC's) potable wells, initial sampling of several private offsite potable wells, and a detailed drinking water well survey within a half-mile radius of the site was required.
- March 23, 2007: An extension request for the submittal of the ICAP was submitted to the MDE, noting that there was more than one potentially responsible party at the Site.
- April 5, 2007: MDE correspondence acknowledged that more than one potentially responsible party existed at the Site.
- April 5, 2007: The MDE issued *Notice of Violation (NOV) NV-2007-069* to all potentially responsible parties for failure to meet the requirements of the January 22, 2007 directive letter within the specified deadlines. The MDE also sent correspondence regarding the case to the Frederick County Health Department (FCHD).
- April 5-6, 2007: An initial round of samples was collected from select offsite residential potable wells.
- April 11, 2007: Alliance met with the MDE's Water Supply Division to discuss installing a POET system on GVP's water supply.
- April 12, 2007: Email correspondence to MDE proposed sampling of additional select residential potable wells. The proposal was approved.
- April 19, 2007: Email correspondence to MDE proposed sampling of additional select residential potable wells. The proposal was approved.
- April 25, 2007: An ICAP was submitted to the MDE proposing SVE feasibility testing.
- April 25, 2007: A *Sampling Results and Work Plan* was submitted to the MDE detailing the results of sampling of offsite residential potable wells, the GVP supply wells and the GVSC supply wells, and included plans for future sampling.
- April 30, 2007: A *Drinking Water Well Survey* detailing the results of a search for potable wells within a half-mile radius of the site was submitted to the MDE.
- April 30, 2007: Granular activated carbon (GAC) POET systems were installed at two residences (3996 and 3994 Farm Lane) where MTBE was detected above the MDE's action level of 20 µg/L.
- May 7, 2007: The MDE approved the ICAP, with modifications, and required monthly sampling of certain residential potable wells. Alliance submitted *Site Conceptual Model and Supplemental Work Plan* to the MDE. A POET system was installed at 3990 Farm Lane.
- May 11, 2007: A POET system was installed at 3923 Rosewood Road.
- May 17, 2007: A *Surface Drain Evaluation* was submitted to the MDE.
- May 22, 2007: *Modifications to the Work Plan and the ICAP* was submitted to the MDE via email.
- May 23, 2007: A POET system was installed at 3992 Farm Lane.
- May 31 – June 1, 2007: Soil vapor monitoring points SV-1, SV-2 and SV-3 were installed around the tank field in preparation for SVE testing. Soil boring SB-1 was also advanced.
- June 9, 2007: A POET system was installed at 3997 Farm Lane.



## HISTORICAL ACTIVITY SUMMARY (Continued):

- June 21-22, 2007: SVE feasibility testing was performed onsite.
- June 27, 2007: The MDE approved the *Supplemental Work Plan*.
- July 27, 2007: The MDE sent *Request to Sample Drinking Water Supply Well* notices to seven residences surrounding the Site.
- August 8, 2007: The MDE issued the directive *Off-Site Domestic Well Sampling Frequencies* requiring monthly sampling of 25 residences with potable wells and the submission of *Monthly Status Reports*, and quarterly sampling of 14 residences with potable wells and the submission of *Quarterly Drinking Water Supply Well Sampling Reports*.
- October 15, 2007: A *Potable Well Sampling Report* was submitted to the MDE. A *Quarterly Sampling Report* was also submitted, and included details of the SVE testing.
- March 27, 2008: The MDE issued *Modifications to Off-Site Domestic Well Sampling Frequencies and Request for Site Status*, reducing the reporting frequency for all data and the sampling frequency of certain potable wells to quarterly, but still required monthly sampling of wells outfitted with POET systems. The MDE requested an update on the proposed installation of a POET system on the GVSC supply wells, and the installation of five monitoring wells required in the April 5, 2007 NOV.
- May 6, 2008: A *Supplemental Work Plan Addendum* was submitted to the MDE proposing changes to the construction and installation of monitoring wells.
- May 12-15 2008: Four shallow groundwater monitoring wells (MW-5 through MW-8) were installed. The monitoring wells were left as open boreholes in the water-bearing zone. Monitoring well MW-3 was abandoned in anticipation of upcoming UST removal activities.
- May 28, 2008: The MDE approved the *Supplemental Work Plan Addendum*.
- June 2008: Down-hole geophysical testing of monitoring wells MW-6, MW-7 and MW-8, and drinking water wells FR-88-1356 and FR-94-1233 was conducted.
- June 20, 2008: A *Response to Directive* was submitted to the MDE, proposing the installation of four monitoring wells rather than five.
- July 21-25, 2008: One 2,000-gallon diesel UST and three 10,000-gallon gasoline USTs were removed from the Site. MDE was onsite to observe UST removal activities. Over 1,100 tons of soil, approximately 523 tons were petroleum-impacted, were removed from the Site. Soil vapor point SV-3 and tank field wells TF-1 and TF-2 were destroyed during UST removal activities. Site surface water discharge was reconfigured during Site upgrade activities.
- August 2008: A new UST system, consisting of two 10,000-gallon gasoline USTs, one 10,000-gallon diesel UST and one 4,000-gallon diesel UST, was installed at the Site. SVE piping was installed, connected to the tank field monitoring wells.
- August 2008: Water treatment permit was approved for modifications to the GVP supply well.
- August 22, 2008: A *UST System Closure Report* was submitted to the MDE.
- September 2008: A POET system was installed on the GVP water supply.
- September 16, 2008: A *Hydrogeologic Investigation Update Report and Work Plan* was submitted to the MDE, and included results of the down-hole geophysical well testing. The Work Plan proposed the installation of monitoring wells within the open boreholes of monitoring wells MW-5 through MW-8, installation of additional shallow monitoring wells, additional SVE testing, modifications to the potable well sampling plan, and preparation of an updated SCM.



## HISTORICAL ACTIVITY SUMMARY (Continued):

- December 12, 2008: The MDE approved the *Work Plan* with modifications. The MDE did not approve the installation of new shallow monitoring wells, but requested the evaluation of need for deep monitoring wells near the tank field and offsite to the south and southeast; frequency of sampling POET systems at three residential addresses was increased to semi-monthly, frequency of the other three residential POET systems remained monthly; frequency of sampling at certain residences with potable wells was changed to quarterly, and others were changed to semi-annually. The MDE sent letters to area residents to inform them of the sampling frequency change.
- December 16, 2008: The need for installation of shallow monitoring wells in order to better place deep monitoring wells was verbally discussed with Jim Richmond of MDE.
- December 17, 2008: Susan Bull of MDE approved, via email, the installation of shallow monitoring wells if the data from them was needed in order to place deep monitoring wells.
- December 30, 2008: A *Response to Directive* was sent to the MDE.
- January 16, 2009: SVE feasibility testing was conducted.
- February 3, 2009: The MDE issued *Work Plan Clarification*, approving the installation of shallow wells in order to better place deep monitoring wells, and clarified the frequency of monitoring of the GVP and CVSC supply wells and residential potable wells.
- February 2009: Permanent screened monitoring wells were constructed in the open boreholes of monitoring wells MW-5 through MW-8.
- February 27, 2009: Alliance submitted *Soil Vapor Extraction (SVE) Pilot Testing Results* to the MDE.
- March 12, 2009: Five shallow monitoring wells (MW-9 through MW-13) were installed.
- May 20, 2009: The MDE issued *Changes to Off-Site Sampling Frequency*, changing the frequency of sampling residential POET systems to quarterly, and restating the required frequency of sampling offsite residential potable wells. The MDE also sent letters to area residents to inform them of the sampling frequency changes.
- June 5, 2009: A *Hydrogeologic Investigation Update and Work Plan* was submitted to MDE, detailing recent monitoring well installation, groundwater and potable well sampling, and updating the SCM. The *Work Plan* proposed the installation and geophysical testing of one deep monitoring well, installation of five shallow monitoring wells to help monitoring pump testing, packer testing of the deep monitoring well, pump testing of monitoring well MW-10, installation of an injection well, and injection testing of that well.
- August 21, 2009: A meeting was conducted with representatives of Carroll, Alliance, and MDE to discuss monitoring well installation and aquifer testing activities proposed in the *Work Plan*. It was decided that additional investigation in the vicinity of the tank field was necessary, and that short-term and long-term aquifer testing would be completed on monitoring wells close to the tank field in order to determine hydraulic conductivity and determine if any of the selected wells could function as recovery wells.
- August 26, 2009: *Work Plan Update* was submitted to the MDE, proposing installation of two deep monitoring wells, installation of two shallow monitoring wells, down-hole geophysical testing, packer testing of deep monitoring well PMW-14D, a 72-hour pumping test on deep monitoring well PMW-15D, and 4-hour pumping tests on monitoring wells MW-10, MW-13, PMW-16, and PMW-17.
- September 22, 2009: The MDE approved the *Work Plan Update*, but required a brief report be submitted prior to packer testing, and a brief report be submitted prior to the short-term pumping tests.



## HISTORICAL ACTIVITY SUMMARY (Continued):

- September 21–25, 2009: Deep monitoring wells MW-14D and MW-15D and shallow monitoring wells MW-16 and MW-17 were installed. The monitoring wells were left as open boreholes.
- October 8, 2009: Alliance submitted *Response to September 22, 2009 Directive*, and included the required details of the planned short-term pumping tests.
- October 19, 2009: Pumping tests were performed onsite, including a step-drawdown test and subsequent 72-hour pumping test on monitoring well MW-15D.
- November 2, 2009: Geophysical testing of monitoring wells MW-14D, MW-16 and MW-17 was performed.
- November 4, 2009: *Packer Testing Work Plan* was submitted to the MDE.
- November 5-6, 2009: Packer testing was completed on monitoring well MW-14D.
- March 15, 2010: Alliance submitted *Update Report and Work Plan* to the MDE detailing monitoring well installation, step testing, pump testing, geophysical well testing and packer testing. The *Work Plan* proposed the installation of 2-inch wells within monitoring well MW-14D, conversion of monitoring wells MW-15D, MW-16 and MW-17 to permanent screened wells, and the submittal of a *Corrective Action Plan (CAP)*.
- June 17, 2010: MDE issued *Request for Corrective Action Plan*, requiring the submittal of a CAP by August 6, 2010. The MDE also required that monitoring well MW-14D be finished as a 4-inch well, and a new 4-inch well, MW-14S be installed adjacent to it; and approved the completion of monitoring wells MW-15D, MW-16, and MW-17 as permanent screened wells, continued quarterly groundwater sampling, the initiation of quarterly sampling of the GVP POET system, continued quarterly sampling of residential POET systems, continued quarterly sampling of 14 residential potable wells, continued semi-annual sampling of 8 residential potable wells.
- July 9, 2010: Carroll submitted a response to the MDE's request for a CAP, requesting an extension of the deadline for the submittal of a CAP to October 31, 2010.
- July 19-21, 2010: Monitoring well MW-14S was installed onsite. Monitoring wells MW-15D, MW-16, and MW-17 were converted to permanent screened wells.
- August 9, 2010: The MDE approved the extension of the deadline for CAP submittal.
- August 10, 2010: A meeting was conducted between GES, Carroll, and the MDE.
- September 2010: The case was transferred from Alliance to GES.
- September 9, 2010: GES submitted *In Situ Chemical Oxidation (ISCO) Pilot Test Work Plan* to the MDE, proposing the installation of three nested injection wells, a nested observation well, and a vapor extraction well; and the injection of hydrogen peroxide and ozone at three subsurface intervals during a two-day pilot test.
- October 13, 2010: A *Proposed Groundwater and Potable Well Sampling Program* was submitted to the MDE, proposing low-flow sampling methods and the collection of field measurements to replace the current purge and sample method for groundwater sampling; and the removal of Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO) from the list of parameters analyzed for all monitoring and non-transient, non-community supply wells. All POET system sampling, non-transient, non-community supply well sampling and residential potable well sampling was to remain on the schedule previously followed.
- November 16-19, 2010: Nested monitoring wells MW-18S and MW-18D, vapor extraction well VE-1 and injection wells IW-1S/D, IW-2S/D and IW-3S/D were installed onsite.



## HISTORICAL ACTIVITY SUMMARY (Continued):

- November 18, 2010: The MDE approved the *ISCO Pilot Test Work Plan*, with slight modifications, and the use of low-flow sampling techniques at the Site. The MDE approved the elimination of TPH-DRO and TPH-Gasoline Range Organics (GRO) from analysis of samples collected from the GVP POET system, the GVP supply wells, and the GVSC supply wells. The MDE stated that the request to eliminate TPH-DRO from the analysis of groundwater would be considered pending a review of low-flow sampling data and pilot testing activities.
- November 30, 2010: ISCO pilot testing was conducted onsite.
- December 1, 2010: Carroll informed the MDE of the results of the pilot testing via email, and included a proposed plan to redevelop the injection wells and introduce air to see if they could be used for further injection testing. Carroll also requested to modify the post ISCO pilot test groundwater sampling plan proposed in the *ISCO Pilot Test Work Plan*. Monitoring wells sampled prior to the pilot testing (with the exception of MW-18S and MW-18D) would be omitted from additional groundwater sampling in December 2010. The MDE approved both proposals via email.
- December 8, 2010: Injection wells IW-1S/D, IW-2S/D and IW-3S/D were re-developed.
- December 15, 2010: Slug testing was conducted on monitoring wells MW-18S and MW-18D.
- January 4, 2011: Monitoring wells MW-18S and MW-18D, vapor extraction well VE-1 and injection wells IW-1S/D, IW-2S/D and IW-3S/D were surveyed into the existing well network.
- March 15, 2011: A CAP was submitted to the MDE proposing the installation of an ISCO remediation system, and an eight-week pilot program.
- June 1, 2011: The MDE issued *Extended Pilot Testing Approval* in response to the CAP, approving the ISCO pilot program, and requiring expanded groundwater monitoring during the pilot program.
- June 3, 2011: Carroll requested clarifications of two points in the *Extended Pilot Testing Approval* via email.
- June 6, 2011: The MDE responded via email to Carroll's questions, and issued an updated *Site Management Schedule*, requiring the submission of a *CAP Implementation Plan* by July 1, 2011.
- July 1, 2011: A *CAP Implementation Plan* was submitted to the MDE.
- August 28, 2011: The MDE approved the *CAP Implementation Plan* and required an *Extended ISCO Pilot Testing Reports* be submitted during operation of the system and after completion of the pilot test period.
- September 14, 2011: The ISCO system was activated and GES began groundwater and POET System monitoring as per the schedule outlined in the MDE approved *CAP Implementation Plan*.
- October 14, 2011: An *Extended ISCO Pilot Testing – Week 3 Operation Report* was submitted to the MDE.
- November 11, 2011: ISCO system operation stopped, completing the 8 week ISCO Pilot Test.
- November 18, 2011: An *Extended ISCO Pilot Testing – Week 7 Operation Report* was submitted to the MDE.
- December 19, 2011: An *Extended ISCO Pilot Testing – Comprehensive Summary Report* was submitted to the MDE.
- February 10, 2012: GES received from the MDE a *Corrective Action Plan (CAP) Approval* letter.
- February 20, 2012: The ISCO system was activated and GES began groundwater and POET System monitoring as per the schedule outlined in the MDE *Corrective Action Plan (CAP) Approval* letter and subsequent correspondence.



## HISTORICAL ACTIVITY SUMMARY (Continued):

April 2, 2012: An *ISCO Injection Well Installation Work Plan* was submitted to the MDE.  
May 5, 2012: An *ISCO System Operation Report* was submitted to the MDE.  
May 21-30, 2012: Completion of a rock coring and hydraulic pressure testing investigation and the construction of injection well IW-4.  
May 31-June 5, 2012: Injection well IW-4 trenching, system connections, development and testing were completed, followed by the well being added to the injection well network for ISCO system operation.  
June 25, 2012: An *ISCO System Operation Report* was submitted to the MDE.  
July 31, 2012: The MDE requested that the ISCO system be shut down at the site pending further groundwater sampling.  
August 1, 2012: The ISCO system was deactivated.  
August 1, 2012: GES received from the MDE a *Modification to the Corrective Action Plan* letter.  
August 3, 2012: GES sent a letter to the MDE in response to the *Modification to the Corrective Action Plan* letter received.  
August 9-23 and September 4, 2012: GES emailed laboratory analytical results to the MDE that included hexavalent and chromium data.  
August 31, 2012: Monitoring well slug testing conducted at select monitoring wells.  
September 12, 2012: GES received from the MDE an email requesting additional information regarding lead analysis.  
September 18, 2012: GES received from the MDE an email regarding remediation system equipment removal.  
September 21, 2012: Carroll sent an email to the MDE regarding additional monitoring and sampling to be conducted during the 4<sup>th</sup> quarter sampling event and the timing of the event.  
September 27, 2012: The ISCO system trailer was removed from the site.  
September 28, 2012: An *ISCO System Comprehensive Summary Report and Update to the Conceptual Site Model* and *Supplemental Chromium and Lead Investigation Summary* were submitted to the MDE.  
November 21, 2012: GES submitted an *October 2012 Sampling Data Transmittal Letter* to the MDE.  
December 1, 2012: The FCHD and the MDE's contractor sampled the drinking water supply at 3833 Greenridge Drive.  
December 20, 2012: The MDE sent a letter to Mr. and Mrs. Gray in regards to the additional investigation of 11712 Serene Court.  
December 21, 2012: The MDE sent a letter to Mr. Schlessinger in regards to the sampling results for 3833 Greenridge Drive.  
March 1, 2013: GES submitted a *January 2013 Sampling Data Transmittal Letter* to the MDE.  
March 14, 2013: GES submitted an attachment to the January 2013 Sampling Data Transmittal Letter to the MDE.  
April 19, 2013: The MDE sent a letter to Mr. and Mrs. Gray in regards to the additional investigation of 11712 Serene Court.  
May 22, 2013: GES submitted a *Request to Revise the Monitoring Well Sampling Plan*.  
May 29, 2013: GES submitted an *April 2013 Sampling Data Transmittal Letter* to the MDE.  
June 17, 2013: GES submitted a *May 2013 Sampling Data Transmittal Letter* to the MDE.  
October 18, 2013: GES received a response from the MDE regarding the *Request to Revise Sampling Plan*. The MDE denied the request to eliminate TPH-DRO from the monitoring well sampling program. The MDE has requested an additional supplemental sampling event during the fourth quarter of 2013 and a *Revised CAP* by January 31, 2014.  
November 15, 2013: GES submitted an *October 2013 Sampling Data Transmittal Letter* to the MDE.



## HISTORICAL ACTIVITY SUMMARY (Continued):

- December 5, 2013: A conference call with the MDE to discuss metals analytical results from select wells collected during the fourth quarter 2013.
- December 18, 2013: MW-18S and potable well GVP-FR815955 were resampled for metals, including chromium and lead, as requested by the MDE.
- January 31, 2014: GES submitted a *Revised CAP* to the MDE.
- February 18, 2014: Based on a correspondence with the MDE, well FR-73-1687 may have been misidentified, and the actual well identification is FR-73-7687.
- May 2014: The MDE issued a *Report of Results for Lead and Hexavalent Chromium Groundwater Investigation*.
- September 16, 2014: The property owner of 3829 Greenridge Drive requested (via telephone) GES to discontinue all future sampling of their property. A confirmation letter of this request was sent to the resident on September 26, 2014.
- October 3, 2014: An approval response to the January 31, 2014 *Revised Corrective Action Plan (CAP)* was received from the MDE. The routine monitoring and potable well sampling program was revised.
- October 7, 2014: CIFIC issued a notice of dispute to the MDE regarding the requirement for additional metals sampling as outlined in the MDE approval of the Revised CAP.
- October 27, 2014: GES submitted a *Monitoring Well MW-18S Replacement Work Plan*.
- November 7, 2014: The MDE responded to the dispute regarding metals sampling, reducing the number of wells required for metals sampling and requiring that 2 sampling events occur six months apart. The letter also acknowledged that the property owner of 3829 Greenridge Drive requested to discontinue sampling at the property.
- November 12, 2014: The MDE confirmed with the property owner of 3829 Greenridge Drive that they would no longer like to be sampled in the future.
- December 12, 2014: A response from the MDE to the October 27, 2014 *Monitoring Well MW-18S Replacement Work Plan* was received.
- December 12, 2014: The MDE issued a letter to the property owner of 3829 Greenridge Drive regarding the discontinuation of potable sampling.
- January 14, 2015: A *Request for MW-18S-R Report Submittal Deadline Extension* was submitted to the MDE.
- January 27, 2015: The replacement monitoring well for MW-18S was installed and identified as MW-18S-R.
- February 10, 2015: The MDE approved the extension request for the MW-18S-R report.
- February 13, 2015: The annual *Data Trends Analysis & Revised Monitoring Plan* was submitted with the *Fourth Quarter 2014 Monitoring Report*.
- March 17, 2015: The *MW-18S Replacement Well Installation Report* was submitted to the MDE.
- May 12, 2015: The *First Quarter 2015 Monitoring Report* was submitted to the MDE.
- June 8, 2015: GES follows up with the MDE on sampling reduction requests discussed in the *Fourth Quarter 2014 Monitoring Report with Data Trend Analysis and Revised Monitoring Plan – February 15, 2015*, the *MW-18S-Replacement Well Installation Report – March 17, 2015*, and the *First Quarter 2015 Monitoring Report – May, 15, 2015*. The MDE responds to GES follow-up correspondence indicating a response letter is being drafted.
- July 14, 2015: GES requests and is permitted from the MDE postponement of the third quarter sampling event until August 2015 while waiting on the MDE's letter responding to GES's sampling reduction requests.



## HISTORICAL ACTIVITY SUMMARY (Continued):

- July 30, 2015: GES received MDE's response letter *Site Status and Modifications to Sampling Program – July 29, 2015*. GES was permitted to discontinue sampling several monitoring and potable wells.
- August 4, 2015: GES submitted correspondence *Response to Green Valley Citgo Letter – 07.29.15* regarding July 30, 2015 MDE letter requesting clarification.
- August 11, 2015: GES received MDE response to Aug. 4, 2015 GES correspondence.
- August 14, 2015: GES submitted *Second Quarter 2015 Monitoring Report* to the MDE, requesting MW-18S abandonment within the report.
- October 6, 2015: GES notifies the MDE of Michael Pensario's, owner of 3996 Farm Lane, potable sampling inquiry, and GES requests the MDE to confirm with Mr. Pensario that his well was removed from GES' sampling program.
- October 21, 2015: GES confirms receiving the MDE's notification (via phone call) of contact with Mr. Pensario, confirming his removal from GES's potable sampling program.
- October 30, 2015: GES received the MDE's *Approval for Monitoring Well Abandonment* letter, dated October 27, 2015, approving abandonment of well MW-18S.
- November 10, 2015: GES abandoned monitoring well MW-18S per the MDE's requirements stated in their *Approval for Monitoring Well Abandonment* letter.
- November 13, 2015: GES submitted *Third Quarter 2015 Monitoring Report* to the MDE.
- December 29, 2015: GES submitted *Completion of MW-18S Well Abandonment*, dated December 30, 2015, letter to the MDE.
- February 12, 2016: GES submitted *Fourth Quarter 2015 Monitoring Report* to the MDE with *Annual Monitored Natural Attenuation (MNA) Evaluation*. GES also requested, in this correspondence, reductions of specific monitoring points and sampling frequency for select monitoring and potable wells for the case.
- May 13, 2016: GES submitted *First Quarter 2016 Monitoring Report* to the MDE.
- June 23, 2016: The MDE confirms the Case Status Meeting with GES scheduled for August 9, 2016.
- August 9, 2016: GES met with the MDE at the MDE Headquarters in Baltimore to discuss future sampling reduction and monitoring well abandonment requests and required documents for the MDE to consider requests.
- August 11, 2016: GES submitted *Second Quarter 2016 Monitoring Report* to the MDE.
- September 9, 2016: The MDE sent a *Request for Potable Well Sampling – September 9, 2016* to 3991 Farm Lane.
- October 21, 2016: GES submitted *Request for Monitoring Reduction* letter and the *Third Quarter 2016 Monitoring Report* to the MDE.
- February 1, 2017: The MDE informed CIFC that the Department was working on a response to the *Request for Monitoring Reduction* letter from GES and to supplement the response, the MDE requested individual time-series data tables for specific private residential properties, including the EPA Method 524.2 analytical results. GES confirmed the MDE's request.
- February 15, 2017: GES submitted the *Fourth Quarter 2016 Monitoring Report* and *2016 Annual Remedial Evaluation*.
- April 25, 2017: GES submits individual time-series data tables with EPA Method 524.2 analytical results, including First Quarter 2017 results, to the MDE.
- May 12, 2017: GES submitted the *First Quarter 2017 Monitoring Report* to the MDE.
- August 11, 2017: GES submitted the *Second Quarter 2017 Monitoring Report* to the MDE.
- October 17, 2017: GES received MDE's response letter *Site Status and Modifications to Sampling Program – October 17, 2017*.



## **HISTORICAL ACTIVITY SUMMARY (Continued):**

November 14, 2017: GES submitted the *Third Quarter 2017 Monitoring Report* to the MDE.

December 20-21, 2017: GES abandoned MW-2, MW-6, MW-8, MW-10, MW-11, MW-12, MW-14S, MW-15D, MW16, IW-1S, IW-1D, IW-2S, IW-2D, IW-3S, IW-3D, IW-14, VE-1, SV-1 and SV-2 as approved in MDE correspondence dated October 17, 2017.

February 15, 2018: GES submitted the *Fourth Quarter 2017 Monitoring Report* to the MDE.

May 15, 2018: GES submitted the *First Quarter 2018 Monitoring Report* to the MDE.

May 24, 2018: GES received MDE's response letter *POET Treatment System Discontinuation Approval – May 24, 2018*.

May 25, 2018: GES submitted *Addendum - First Quarter 2018 Monitoring Report*

July 13, 2018: The POET systems from 3997 Farm Lane and 3923 Rosewood Road were removed.

August 15, 2018: GES submitted the *Second Quarter 2018 Monitoring Report* to the MDE.

September 17, 2018: GES received MDE's response letter *Site Status and Modifications to Sampling Program, September 11, 2018*.

November 14, 2018: GES submitted the *Third Quarter 2018 Monitoring Report* to the MDE.

February 15, 2019: GES submitted the *Fourth Quarter 2018 Monitoring Report* and *2018 Annual Remedial Evaluation Report* to the MDE under separate cover.

April 16, 2019: GES submitted the *Request for Release from POET System Maintenance Responsibility 3996 Farm Lane, Monrovia* to the MDE.

April 29, 2019: GES submitted the *First Quarter 2019 Monitoring Report* to the MDE.

May 1, 2019: GES received MDE's *Report of Observations* from site visit this day.

May 10, 2019: GES received MDE's response letter *Poet System Maintenance Responsibility* dated May 7, 2019.

August 5, 2019: GES submitted the *Second Quarter 2019 Monitoring Report* to the MDE.

November 1, 2019: GES submitted the *Third Quarter 2019 Monitoring Report* to the MDE.

December 10, 2019: GES received MDE's *Monitored Natural Attenuation Sampling Discontinuation Approval* date December 6, 2019.

February 13, 2020: GES submitted the *Fourth Quarter 2019 Monitoring Report* to the MDE.

**APPENDIX B**

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Monitoring Well Sampling Data Sheets



# Groundwater Sampling Data Collection Sheet



Well ID:	mw-7		Site ID:	Carroll - Monrovia	Sample Date:	1-27-2020
Initial DTW / Time:			Address:	11791 Fingerboard Rd.		
Well Diameter:	4"	Sample Method (circle one) Low Flow Purge/sample Grab/No Pruge	Monrovia, MD			
Total Well Depth:	Sampling Tech(s): Jeff Plummer - Kirk Marks					
Water Column Length:	Weather Conditions: overcast					
Pump Intake depth:			Air Temp (°F) = 40			

### Data Collection: Low Flow

Time	DTW	Temp (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Comment
		± 0.3 °C	± 3%	± 10%	± 0.1	± 10				
0905	62.22	Just prior to lowering any equipment into well								
0911	62.21	After lowering equipment into the well & before turning on the pump								
0911	Purge Start Time									
0916	62.29	14.08	1.092	4.38	5.33	255.7	400ml/min		clear	
0921	62.31	14.46	1.095	4.06	5.20	267.4				
0926	62.33	14.59	1.095	3.97	5.18	281.0				
0931	62.37	14.62	1.095	3.88	5.17	290.4				
0936	62.39	14.82	1.097	3.81	5.18	299.2				
0941	62.41	15.02	1.099	3.82	5.18	304.1				
0946	62.43	15.14	1.102	3.82	5.20	308.0		3 1/2 gallons		
0950	Sample Collection Time									
	Purge Stop Time									

### Data Collection: Purge and Sample / Grab Sampling

Time	DTW	pH	Conductivity (mS/cm)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Method of Purging
Just prior to lowering any equipment into well										
Sample Collection Time				Note: Unless otherwise stated, field parameters collected during purge and sample or grab sampling were collected from the well with a sonde before purging or sampling.						

### General Comment & Type of Equipment Used (pumps/YSI meter/ect./calibration info):

4 cycles min      10 sec fill / 5 sec discharge

Stabilization is achieved when three successive readings are within  
 ± 0.3 °C for temperature,  
 ± 0.1 for pH,  
 ± 3% for specific conductivity,  
 ± 10 for reduction-oxidation potential  
 ± 10% for dissolved oxygen

#### Purge Volumes:

2-inch diameter well:  
 0.16 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water  
 4-inch diameter well:  
 0.65 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water

# Groundwater Sampling Data Collection Sheet



Well ID: <b>MW-17</b>		Site ID: Carroll - Monrovia		Sample Date: <b>1-27-2020</b>						
Initial DTW / Time:		Address: 11791 Fingerboard Rd.								
Well Diameter: <b>4"</b>		Sample Method (circle one) <b>Low Flow</b>		Monrovia, MD						
Total Well Depth:		Purge/sample		Sampling Tech(s): <b>J. Plummer - K. Marks</b>						
Water Column Length:		Grab/No Pruge		Weather Conditions: <b>overcast</b>						
Pump Intake depth:				Air Temp (°F) = <b>40°</b>						
<b>Data Collection: Low Flow</b>										
Time	DTW	Temp (°C) ± 0.3 °C	Conductivity (mS/cm) ± 3%	D.O. (mg/L) ± 10%	pH ± 0.1	ORP (mV) ± 10	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Comment
<b>1009</b>	<b>56.99</b>	Just prior to lowering any equipment into well								
<b>1012</b>	<b>56.99</b>	After lowering equipment into the well & before turning on the pump								
<b>1017</b>	Purge Start Time									
<b>1022</b>	<b>57.00</b>	<b>14.44</b>	<b>1.182</b>	<b>2.66</b>	<b>5.34</b>	<b>295.1</b>	<b>400 mL/min</b>		<b>clear</b>	
<b>1027</b>	<b>57.00</b>	<b>14.56</b>	<b>1.183</b>	<b>2.78</b>	<b>5.36</b>	<b>296.5</b>				
<b>1032</b>	<b>57.00</b>	<b>14.47</b>	<b>1.185</b>	<b>2.73</b>	<b>5.37</b>	<b>296.7</b>				
<b>1037</b>	<b>57.00</b>	<b>14.44</b>	<b>1.184</b>	<b>2.70</b>	<b>5.36</b>	<b>297.5</b>	<b>↓</b>	<b>2 gal</b>	<b>↓</b>	
<b>10:40</b>	Sample Collection Time									
	Purge Stop Time									
<b>Data Collection: Purge and Sample / Grab Sampling</b>										
Time	DTW	pH	Conductivity (mS/cm)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Method of Purging
	Just prior to lowering any equipment into well									
	Sample Collection Time									
Note: Unless otherwise stated, field parameters collected during purge and sample or grab sampling were collected from the well with a sonde before purging or sampling.										
General Comment & Type of Equipment Used (pumps/YSI meter/ect./caibration info): <b>4 cycles min 10 sec fill / 5 sec discharge</b>										

Stabilization is achieved when three successive readings are within

- ± 0.3 °C for temperature,
- ± 0.1 for pH,
- ± 3% for specific conductivity,
- ± 10 for reduction-oxidation potential
- ± 10% for dissolved oxygen

Purge Volumes:

- 2-inch diameter well:  
0.16 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water
- 4-inch diameter well:  
0.65 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water

# Groundwater Sampling Data Collection Sheet



Well ID: <b>MW-140</b>		Site ID: Carroll - Monrovia		Sample Date: <b>1-27-2020</b>						
Initial DTW / Time:		Address: 11791 Fingerboard Rd.								
Well Diameter: <b>4"</b>		<i>Sample Method (circle one)</i> <input checked="" type="radio"/> Low Flow <input type="radio"/> Purge/sample <input type="radio"/> Grab/No Pruge		Monrovia, MD						
Total Well Depth:				Sampling Tech(s): <b>J. Plummer - K. Marks</b>						
Water Column Length:				Weather Conditions: <b>overcast</b>						
Pump Intake depth:				Air Temp (°F) = <b>40</b>						
<b>Data Collection: Low Flow</b>										
Time	DTW	Temp (°C) ± 0.3 °C	Conductivity (mS/cm) ± 3%	D.O. (mg/L) ± 10%	pH ± 0.1	ORP (mV) ± 10	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Comment
<b>1048</b>	<b>55.55</b>	Just prior to lowering any equipment into well								
<b>1053</b>	<b>54.35</b>	After lowering equipment into the well & before turning on the pump								
<b>1053</b>	Purge Start Time									
<b>1058</b>	<b>54.90</b>	<b>12.84</b>	<b>0.371</b>	<b>4.64</b>	<b>6.70</b>	<b>269.5</b>	<b>200 mL/min</b>		<b>clear</b>	
<b>1103</b>	<b>55.46</b>	<b>14.13</b>	<b>0.362</b>	<b>1.18</b>	<b>7.33</b>	<b>-37.2</b>				
<b>1108</b>	<b>55.80</b>	<b>14.33</b>	<b>0.365</b>	<b>0.80</b>	<b>7.71</b>	<b>-76.8</b>				
<b>1113</b>	<b>56.30</b>	<b>14.29</b>	<b>0.367</b>	<b>0.69</b>	<b>7.92</b>	<b>-94.1</b>				
<b>1118</b>	<b>56.68</b>	<b>14.23</b>	<b>0.368</b>	<b>0.62</b>	<b>8.01</b>	<b>-104.0</b>				
<b>1123</b>	<b>57.10</b>	<b>14.20</b>	<b>0.368</b>	<b>0.57</b>	<b>8.05</b>	<b>-109.9</b>				
<b>1128</b>	<b>57.57</b>	<b>14.22</b>	<b>0.368</b>	<b>0.51</b>	<b>8.09</b>	<b>-117.8</b>		<b>2 gal</b>		
<b>11:30</b>	Sample Collection Time									
	Purge Stop Time									
<b>Data Collection: Purge and Sample / Grab Sampling</b>										
Time	DTW	pH	Conductivity (mS/cm)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Method of Purging
	Just prior to lowering any equipment into well									
	Sample Collection Time									
Note: Unless otherwise stated, field parameters collected during purge and sample or grab sampling were collected from the well with a sonde before purging or sampling.										
<b>General Comment &amp; Type of Equipment Used (pumps/YSI meter/ect./caibration info):</b> <b>4 cycles/min      10 sec fill / 5 sec discharge</b>										

Stabilization is achieved when three successive readings are within

- ± 0.3 °C for temperature,
- ± 0.1 for pH,
- ± 3% for specific conductivity,
- ± 10 for reduction-oxidation potential
- ± 10% for dissolved oxygen

Purge Volumes:

- 2-inch diameter well:  
0.16 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water
- 4-inch diameter well:  
0.65 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water

# Groundwater Sampling Data Collection Sheet



Well ID: <b>MW-121</b>	Site ID: Carroll - Monrovia	Sample Date: <b>1-27-2020</b>
Initial DTW / Time:	Address: 11791 Fingerboard Rd.	
Well Diameter: <b>2"</b>	Monrovia, MD	
Total Well Depth:	Sampling Tech(s): <b>J. Plummer - K. Marks</b>	
Water Column Length:	Weather Conditions: <b>overcast + windy</b>	
Pump Intake depth:	Air Temp (°F) = <b>42</b>	

Data Collection: Low Flow										
Time	DTW	Temp (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Comment
		± 0.3 °C	± 3%	± 10%	± 0.1	± 10				
<b>1153</b>	<b>58.43</b>	Just prior to lowering any equipment into well								
<b>1157</b>	<b>55.80</b>	After lowering equipment into the well & before turning on the pump								
<b>1157</b>	Purge Start Time									
<b>1202</b>	<b>58.00</b>	<b>10.74</b>	<b>1.599</b>	<b>10.00</b>	<b>8.08</b>	<b>-23.2</b>	<b>360 mL/min</b>		<b>clear</b>	
<b>1207</b>	<b>59.50</b>	<b>14.82</b>	<b>5.671</b>	<b>2.72</b>	<b>7.31</b>	<b>0.4</b>				
<b>1212</b>	<b>61.74</b>	<b>15.04</b>	<b>8.350</b>	<b>0.54</b>	<b>7.69</b>	<b>-108.7</b>				
<b>1217</b>	<b>63.77</b>	<b>15.03</b>	<b>8.460</b>	<b>0.42</b>	<b>7.83</b>	<b>-140.5</b>				
<b>1222</b>	<b>66.16</b>	<b>15.03</b>	<b>8.455</b>	<b>0.31</b>	<b>7.89</b>	<b>-154.5</b>				
<b>1227</b>	<b>67.98</b>	<b>15.04</b>	<b>8.426</b>	<b>0.29</b>	<b>7.92</b>	<b>-156.3</b>				
<b>1232</b>	<b>69.77</b>	<b>14.90</b>	<b>8.244</b>	<b>0.32</b>	<b>7.95</b>	<b>-156.6</b>				
<b>1237</b>	<b>76.30</b>	<b>14.91</b>	<b>8.074</b>	<b>0.35</b>	<b>7.98</b>	<b>-155.1</b>		<b>2.5 gal</b>		
<b>1240</b>	Sample Collection Time									
	Purge Stop Time									

Data Collection: Purge and Sample / Grab Sampling										
Time	DTW	pH	Conductivity (mS/cm)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Method of Purging
	Just prior to lowering any equipment into well									
	Sample Collection Time									

Note: Unless otherwise stated, field parameters collected during purge and sample or grab sampling were collected from the well with a sonde before purging or sampling.

General Comment & Type of Equipment Used (pumps/YSI meter/etc / calibration info):  
**4 cycles min - 10 sec fill / 15 sec discharge**

Stabilization is achieved when three successive readings are within  
 ± 0.3 °C for temperature,  
 ± 0.1 for pH,  
 ± 3% for specific conductivity,  
 ± 10 for reduction-oxidation potential  
 ± 10% for dissolved oxygen

Purge Volumes:  
 2-inch diameter well:  
 0.16 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water  
 4-inch diameter well:  
 0.65 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water

# Groundwater Sampling Data Collection Sheet



Well ID: <b>MW-185-R</b>		Site ID: Carroll - Monrovia		Sample Date: <b>1-27-2020</b>						
Initial DTW / Time:		Address: 11791 Fingerboard Rd.								
Well Diameter: <b>4"</b>		Sample Method (circle one) <b>Low Flow</b>		Monrovia, MD						
Total Well Depth:				Sampling Tech(s): <b>Jeff Plummer - Kirk Marks</b>						
Water Column Length:		Purge/sample		Weather Conditions: <b>overcast - windy</b>						
Pump Intake depth:		Grab/No Pruge		Air Temp (°F) = <b>45°</b>						
<b>Data Collection: Low Flow</b>										
Time	DTW	Temp (°C) ± 0.3 °C	Conductivity (mS/cm) ± 3%	D.O. (mg/L) ± 10%	pH ± 0.1	ORP (mV) ± 10	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Comment
<b>1248</b>	<b>61.57</b>	Just prior to lowering any equipment into well								
<b>1251</b>	<b>61.55</b>	After lowering equipment into the well & before turning on the pump								
<b>1251</b>	Purge Start Time									
<b>1256</b>	<b>61.65</b>	<b>15.03</b>	<b>1.245</b>	<b>2.79</b>	<b>5.25</b>	<b>103.6</b>				
<del>1261</del>										
<b>1306</b>	<b>61.65</b>	<b>15.03</b>	<b>1.245</b>	<b>2.79</b>	<b>5.25</b>	<b>103.6</b>			<b>450ml/min</b>	<b>clear</b>
<b>1311</b>	<b>61.65</b>	<b>15.47</b>	<b>1.205</b>	<b>2.70</b>	<b>4.96</b>	<b>158.7</b>				
<b>1316</b>	<b>61.65</b>	<b>15.50</b>	<b>1.205</b>	<b>2.72</b>	<b>4.92</b>	<b>161.4</b>				
<b>1321</b>	<b>61.65</b>	<b>15.48</b>	<b>1.202</b>	<b>2.72</b>	<b>4.90</b>	<b>201.3</b>				
<b>1326</b>	<b>61.65</b>	<b>15.44</b>	<b>1.201</b>	<b>2.76</b>	<b>4.88</b>	<b>218.4</b>				
<b>1331</b>	<b>61.65</b>	<b>15.48</b>	<b>1.199</b>	<b>2.78</b>	<b>4.87</b>	<b>227.9</b>				
<b>1336</b>	<b>61.65</b>	<b>15.52</b>	<b>1.197</b>	<b>2.77</b>	<b>4.86</b>	<b>237.0</b>				
<b>1341</b>	<b>61.65</b>	<b>15.66</b>	<b>1.195</b>	<b>2.79</b>	<b>4.86</b>	<b>246.9</b>			<b>412 gallons</b>	
<del>1342</del>										
<b>1345</b>	Sample Collection Time									
	Purge Stop Time									
<b>Data Collection: Purge and Sample / Grab Sampling</b>										
Time	DTW	pH	Conductivity (mS/cm)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Flow Rate (mL/min)	Cumulative Purge Volume	Appearance of Purge Water	Method of Purging
	Just prior to lowering any equipment into well									
	Sample Collection Time									
Note: Unless otherwise stated, field parameters collected during purge and sample or grab sampling were collected from the well with a sonde before purging or sampling.										
<b>General Comment &amp; Type of Equipment Used (pumps/YSI meter/etc./caibration info):</b>										
<b>4 cycles min 10 sec fill / 5 sec discharge</b>										

Stabilization is achieved when three successive readings are within

- ± 0.3 °C for temperature,
- ± 0.1 for pH,
- ± 3% for specific conductivity,
- ± 10 for reduction-oxidation potential
- ± 10% for dissolved oxygen

Purge Volumes:

- 2-inch diameter well:  
0.16 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water
- 4-inch diameter well:  
0.65 gal./ft x \_\_\_\_\_ (linear feet of water) = gallons of water





## **APPENDIX C**

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Laboratory Reports and Chain of Custody Documentation  
(See Files on CD)

Eurofins Lancaster  
Laboratories ID Numbers:

2085386  
2085387  
2085388  
2088173

**APPENDIX D**

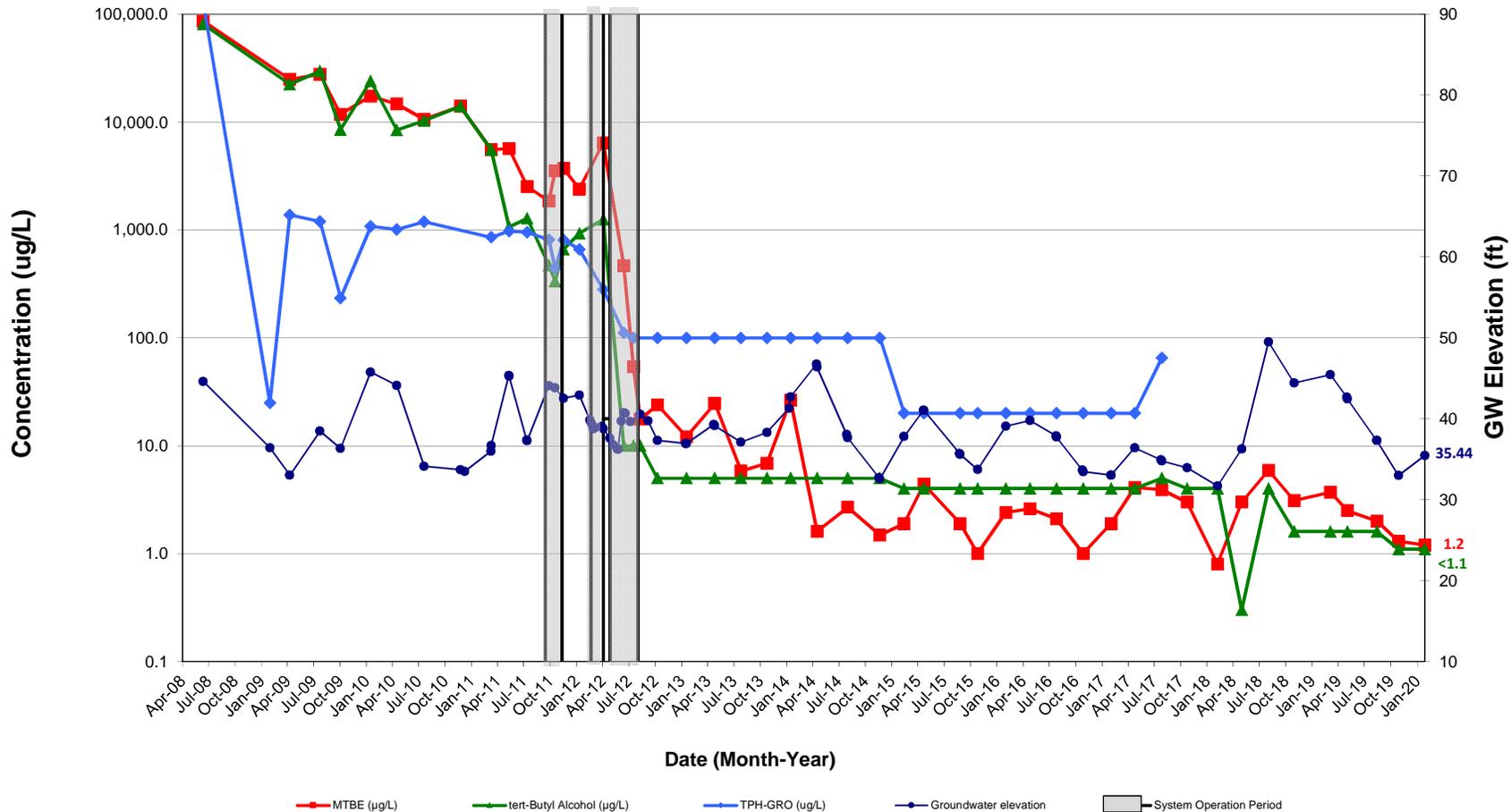
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Groundwater Monitoring Graphs

**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**MW-7**



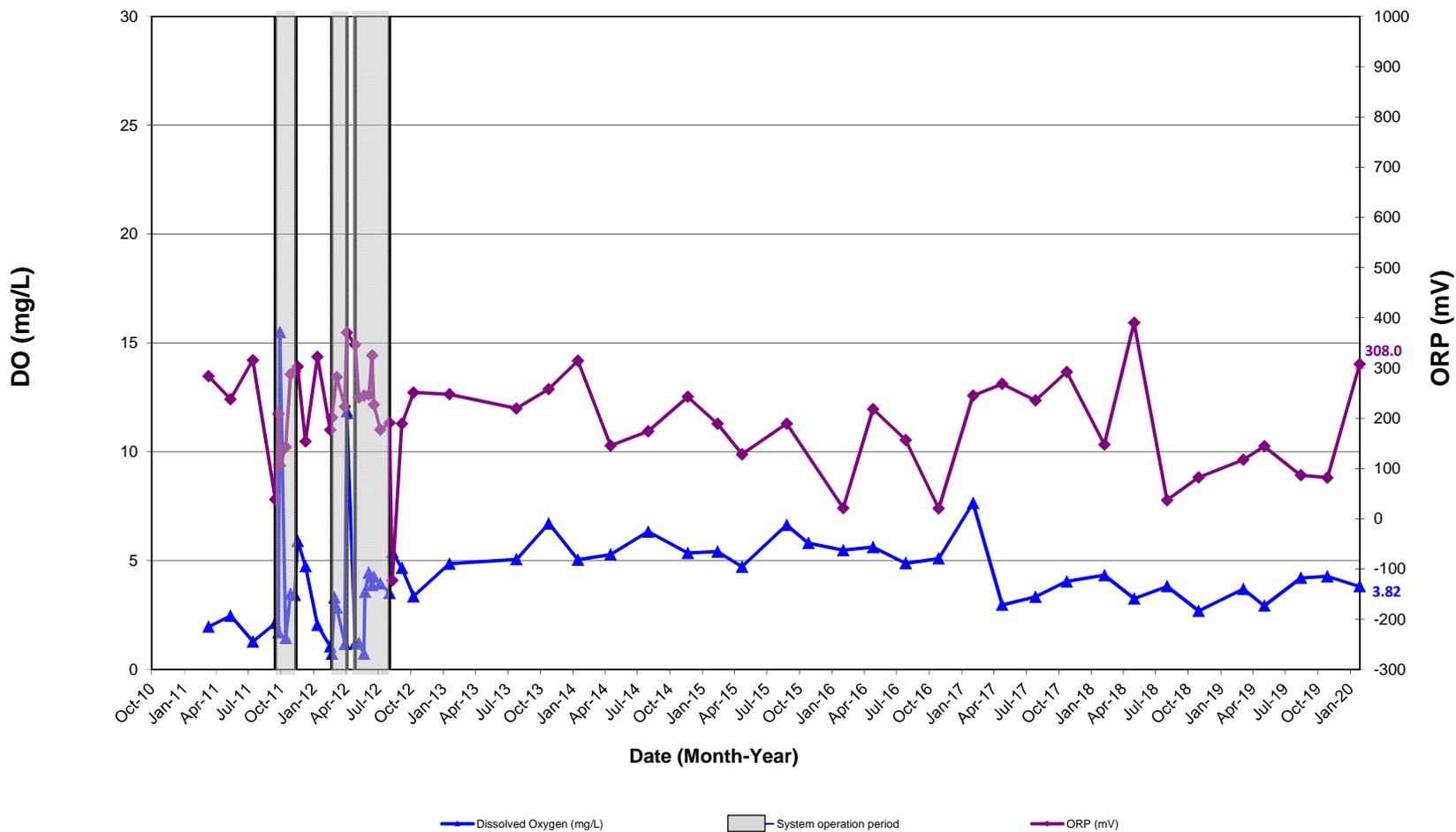
Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 µg/L, 100 µg/L is plotted).



**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

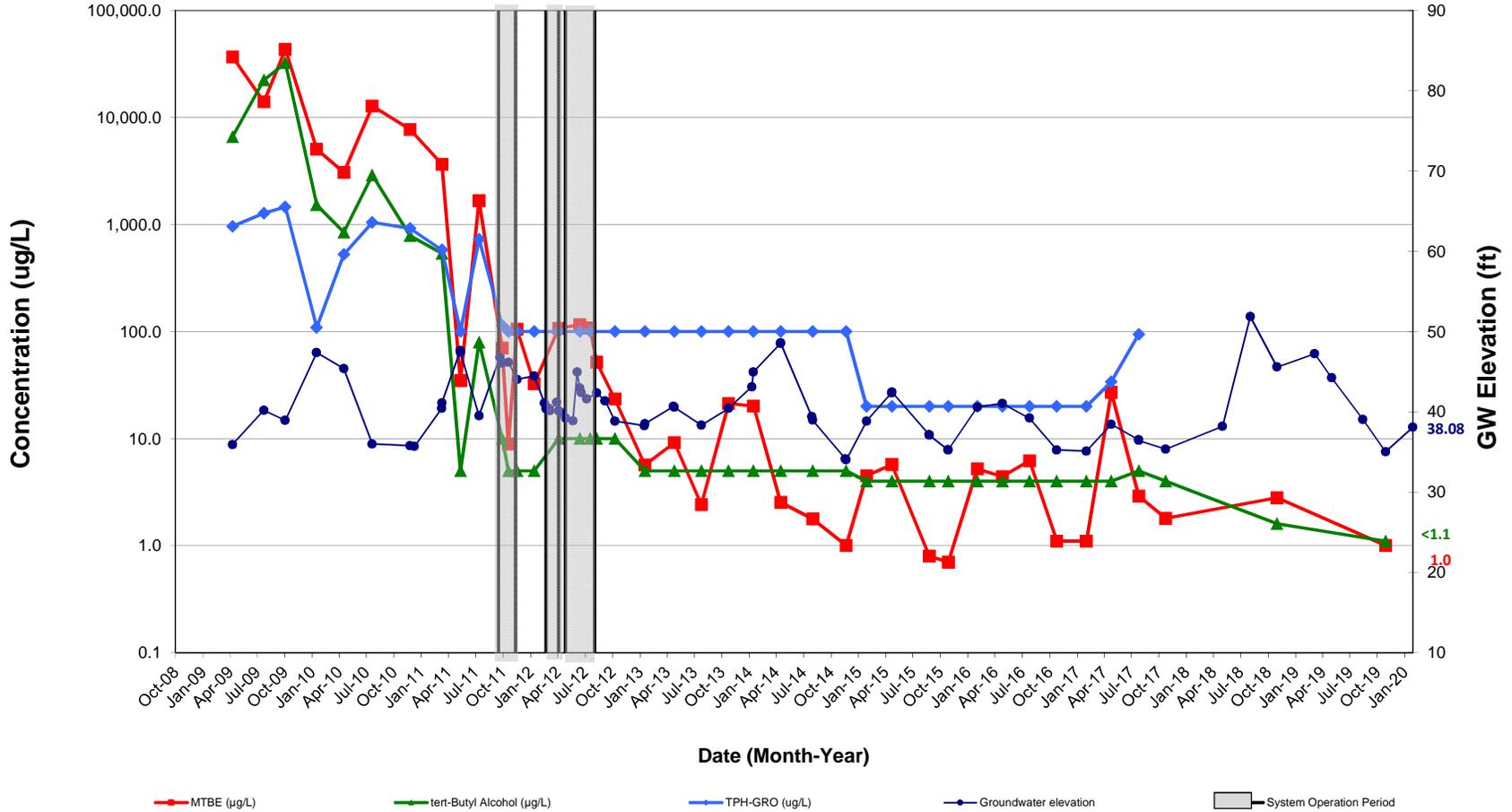
**MW-7**



GROUNDWATER MONITORING GRAPHS

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

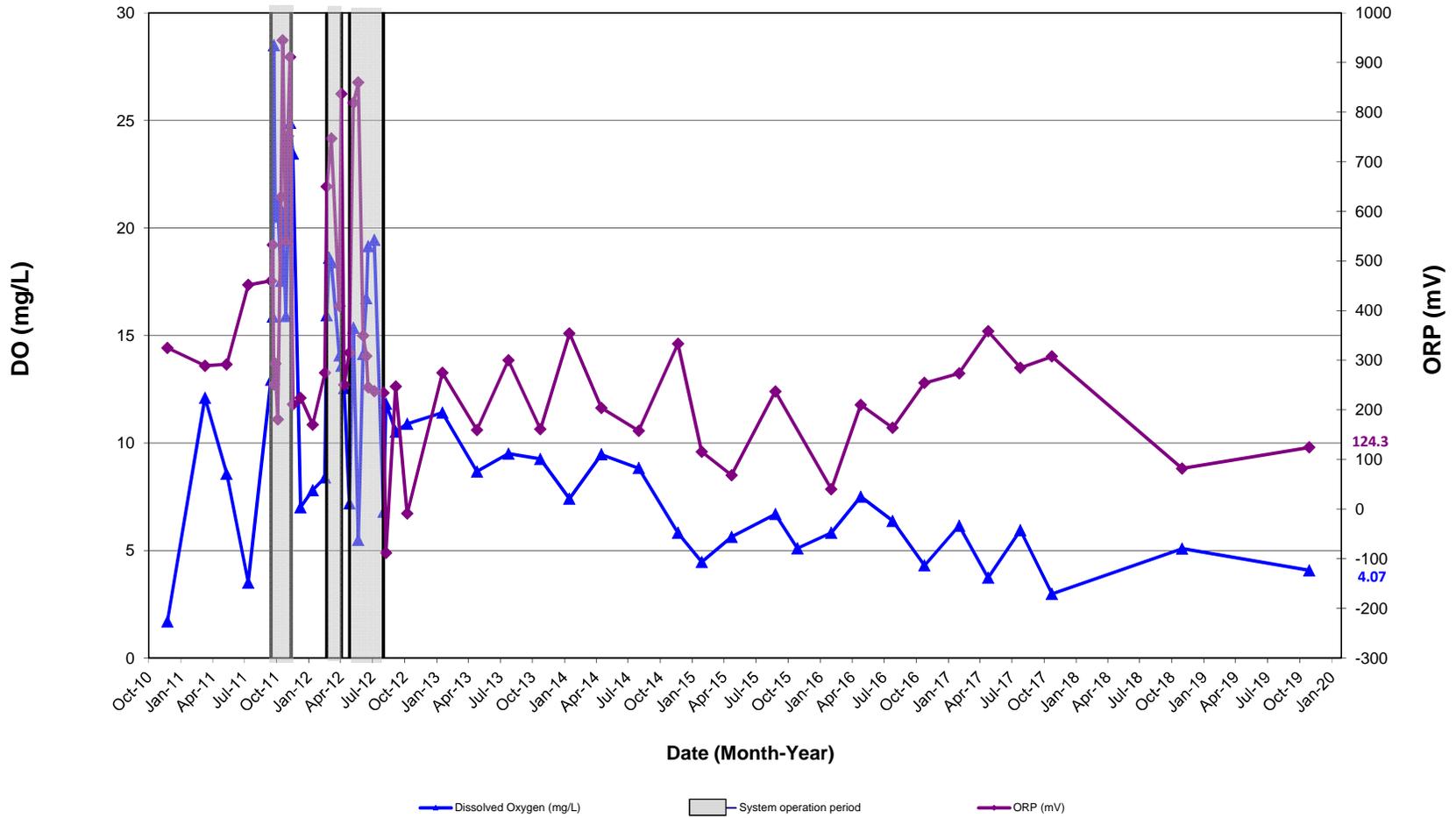
MW-13



**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
11791 Fingerboard Rd  
Monrovia, MD

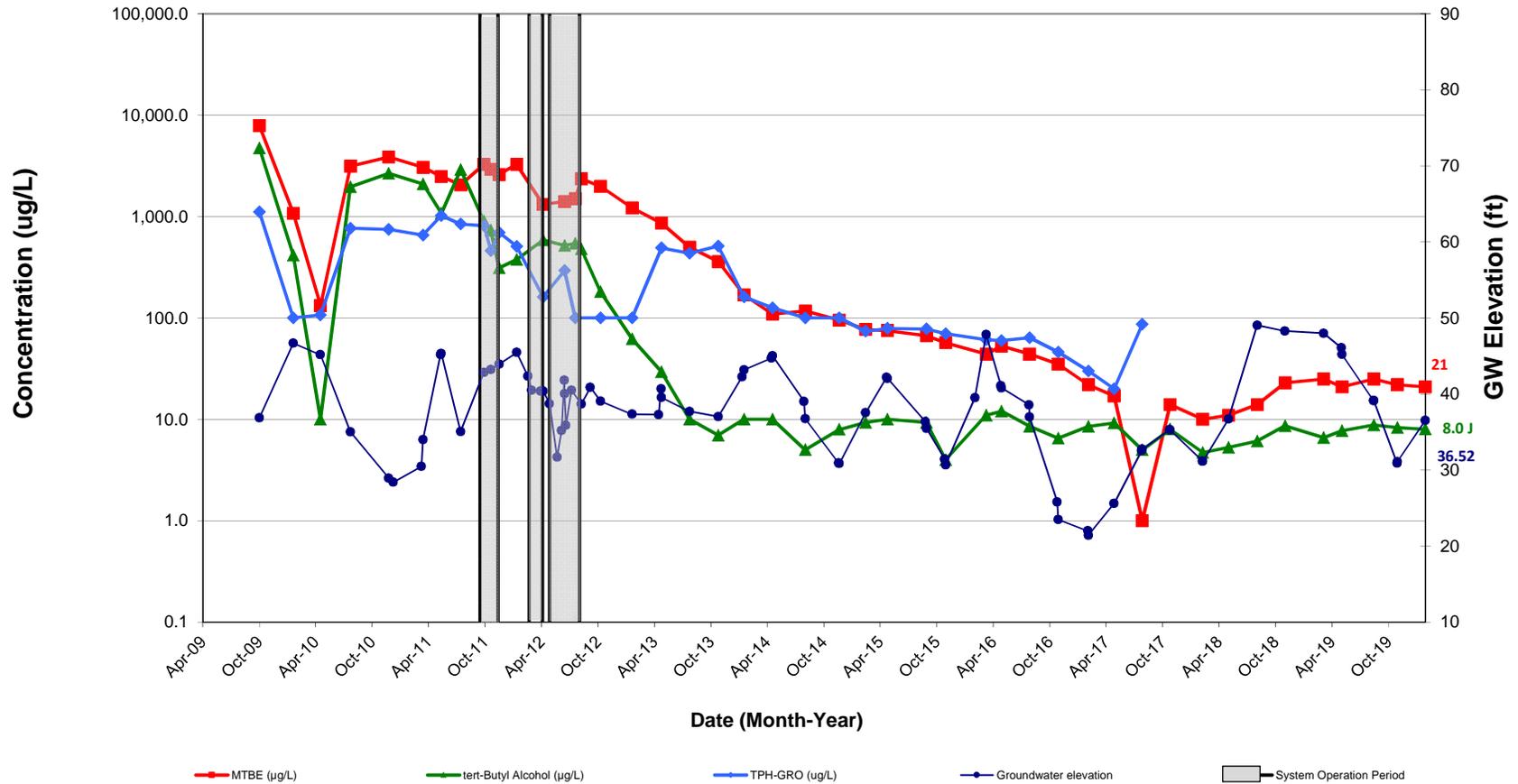
**MW-13**



**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**MW-14D**

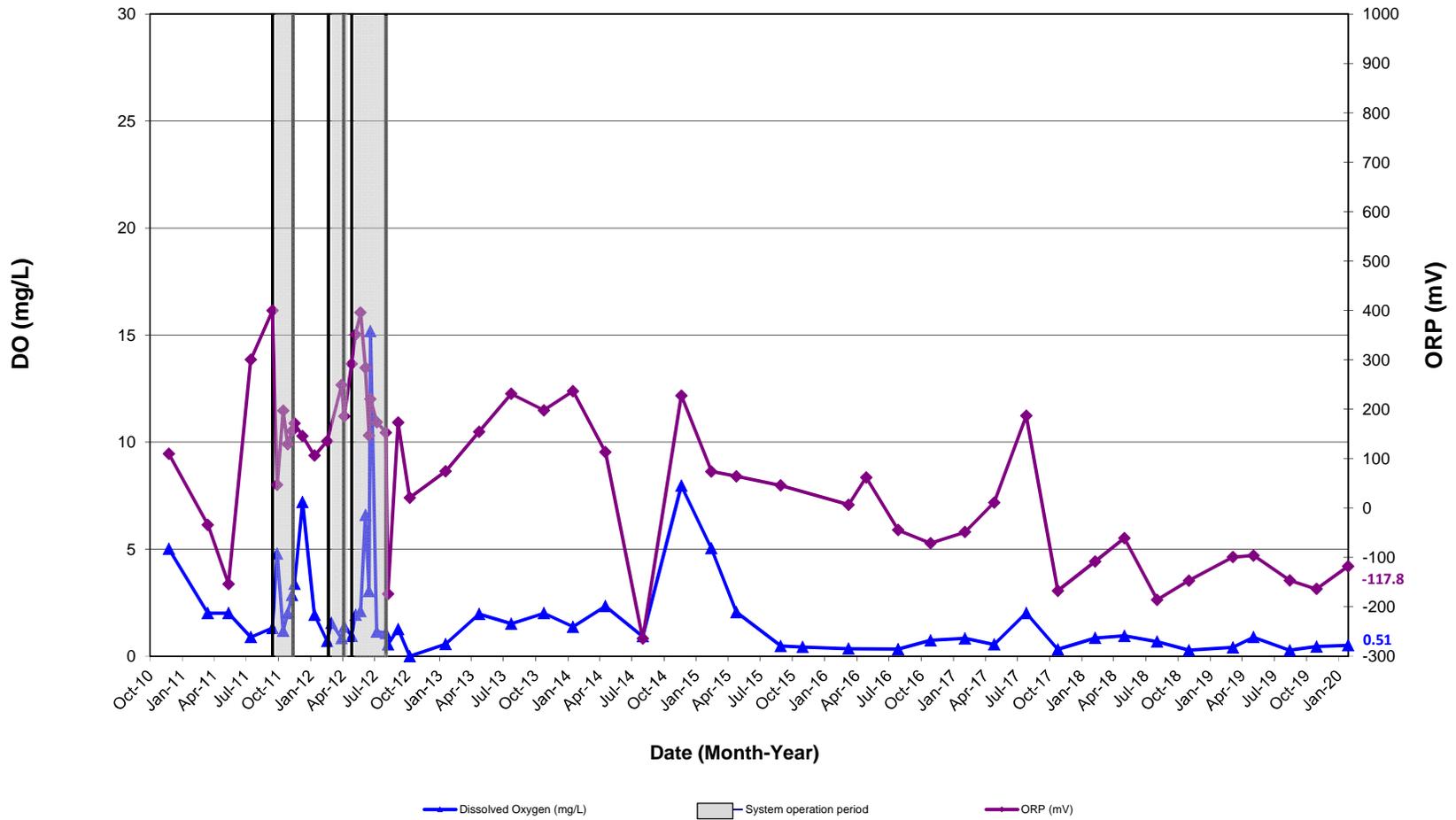


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 µg/L, 100 µg/L is plotted).

**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

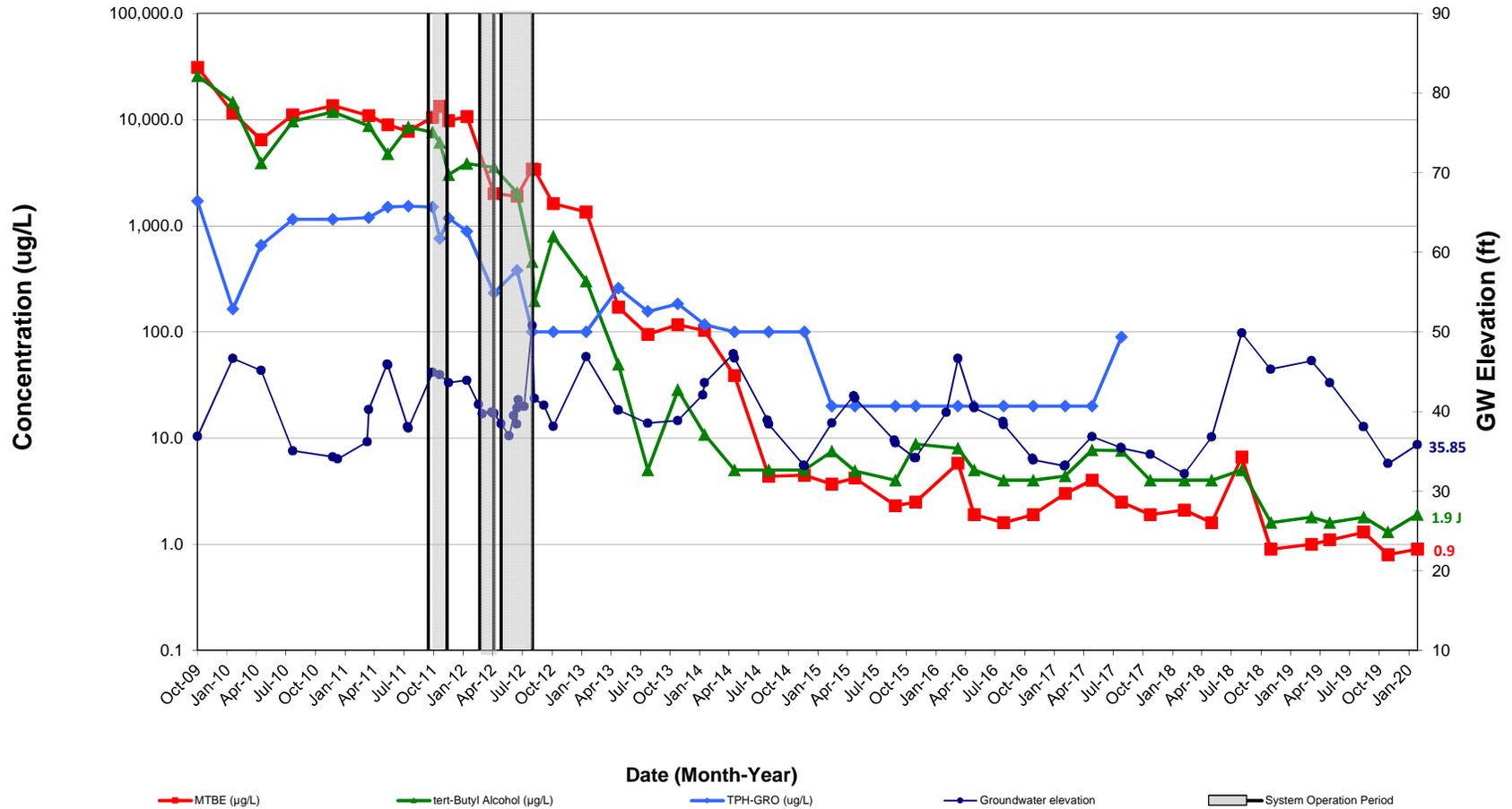
**MW-14D**



**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**MW-17**

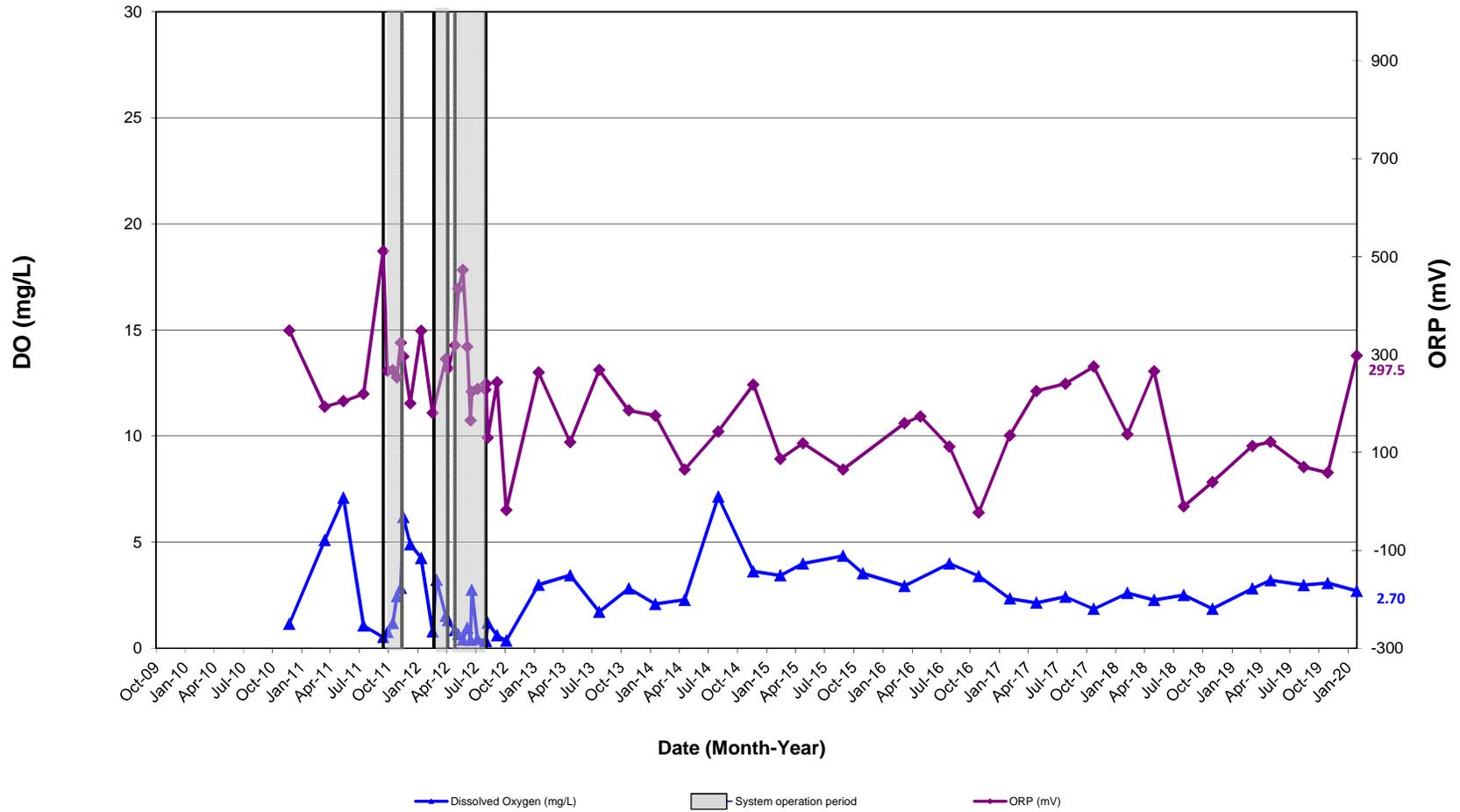


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 ug/L, 100 ug/L is plotted).

**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

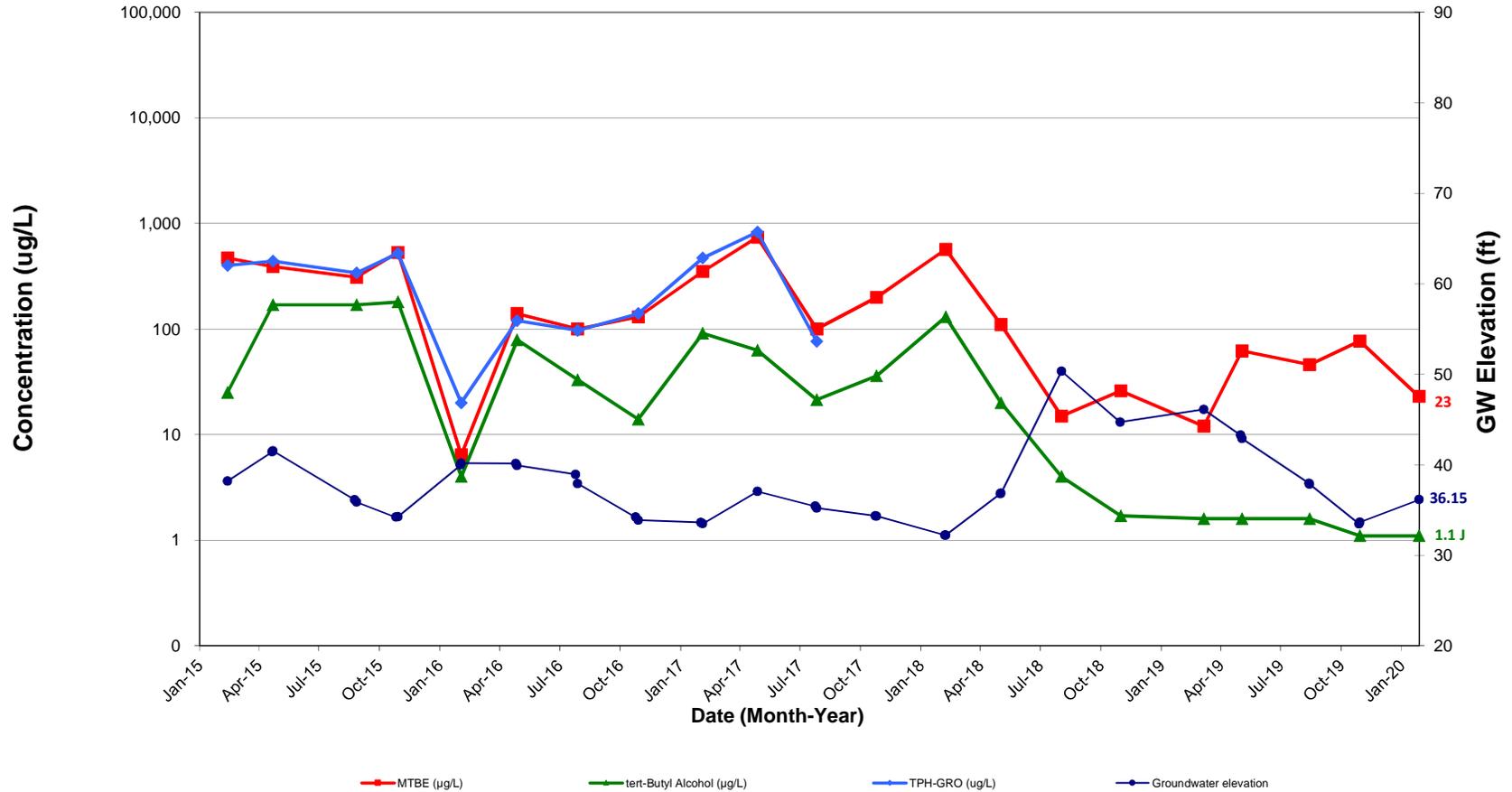
**MW-17**



**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**MW-18S-R**

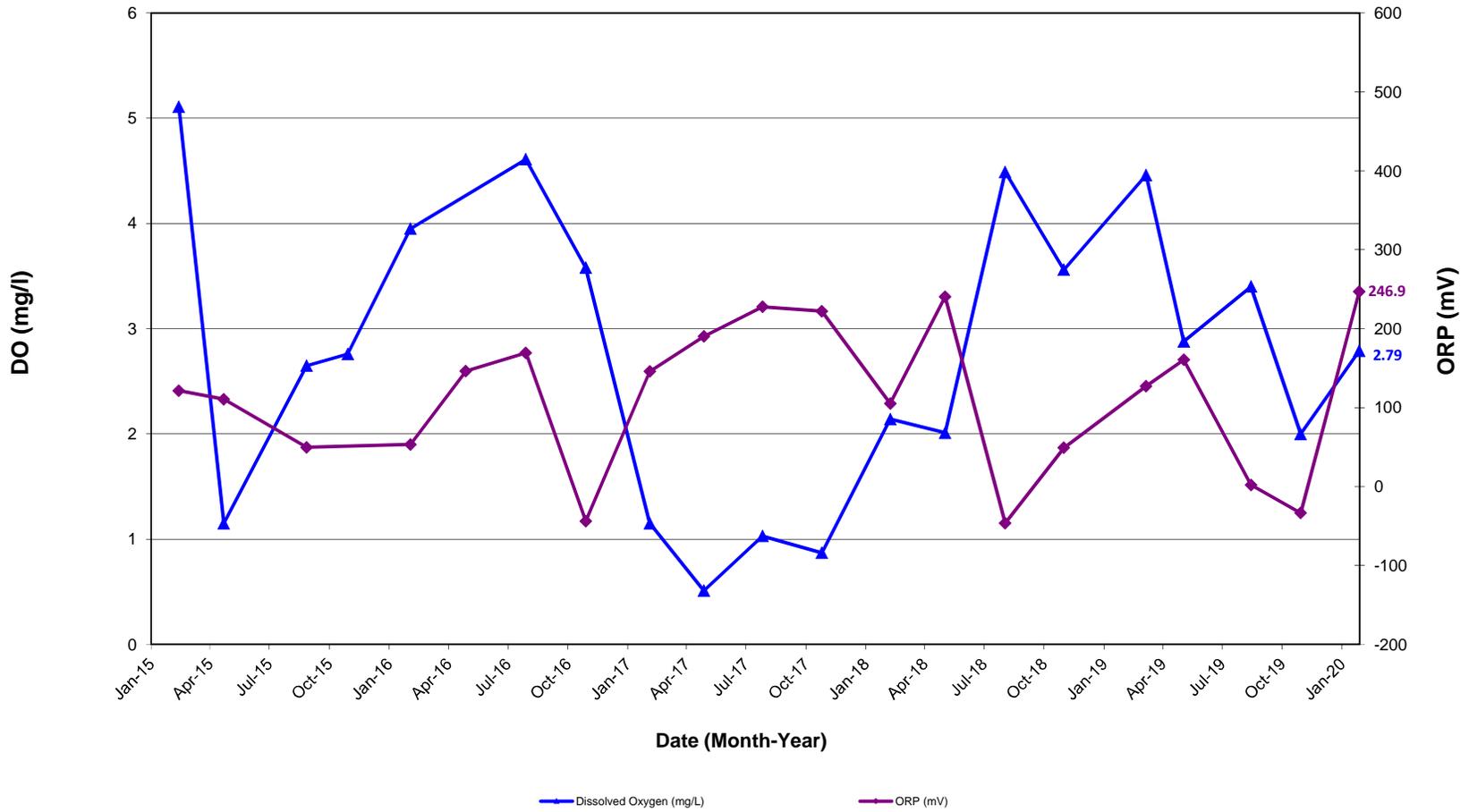


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 µg/L, 100 µg/L is plotted).

**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**MW-18S-R**

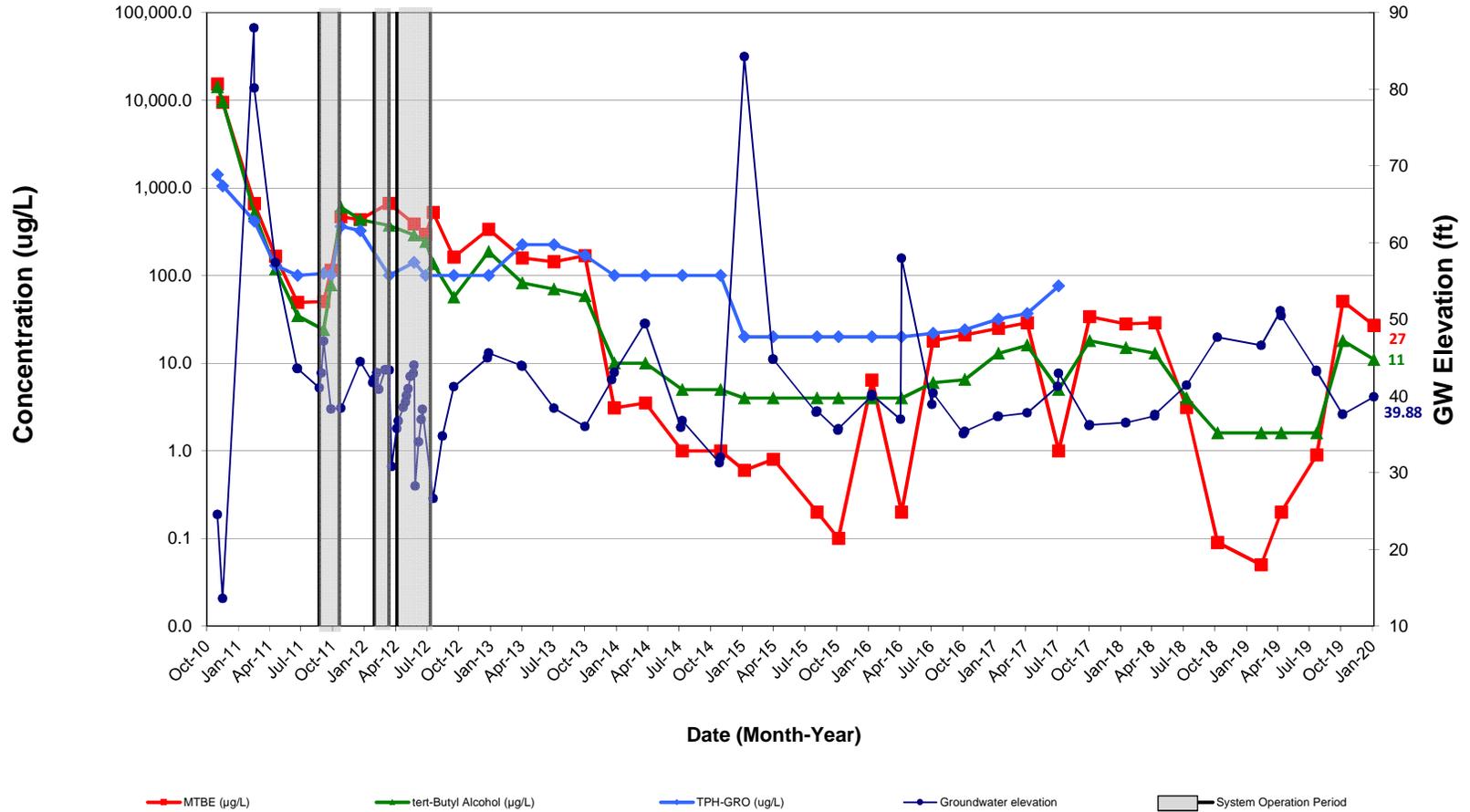


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 µg/L, 100 µg/L is plotted).

**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**MW-18D**

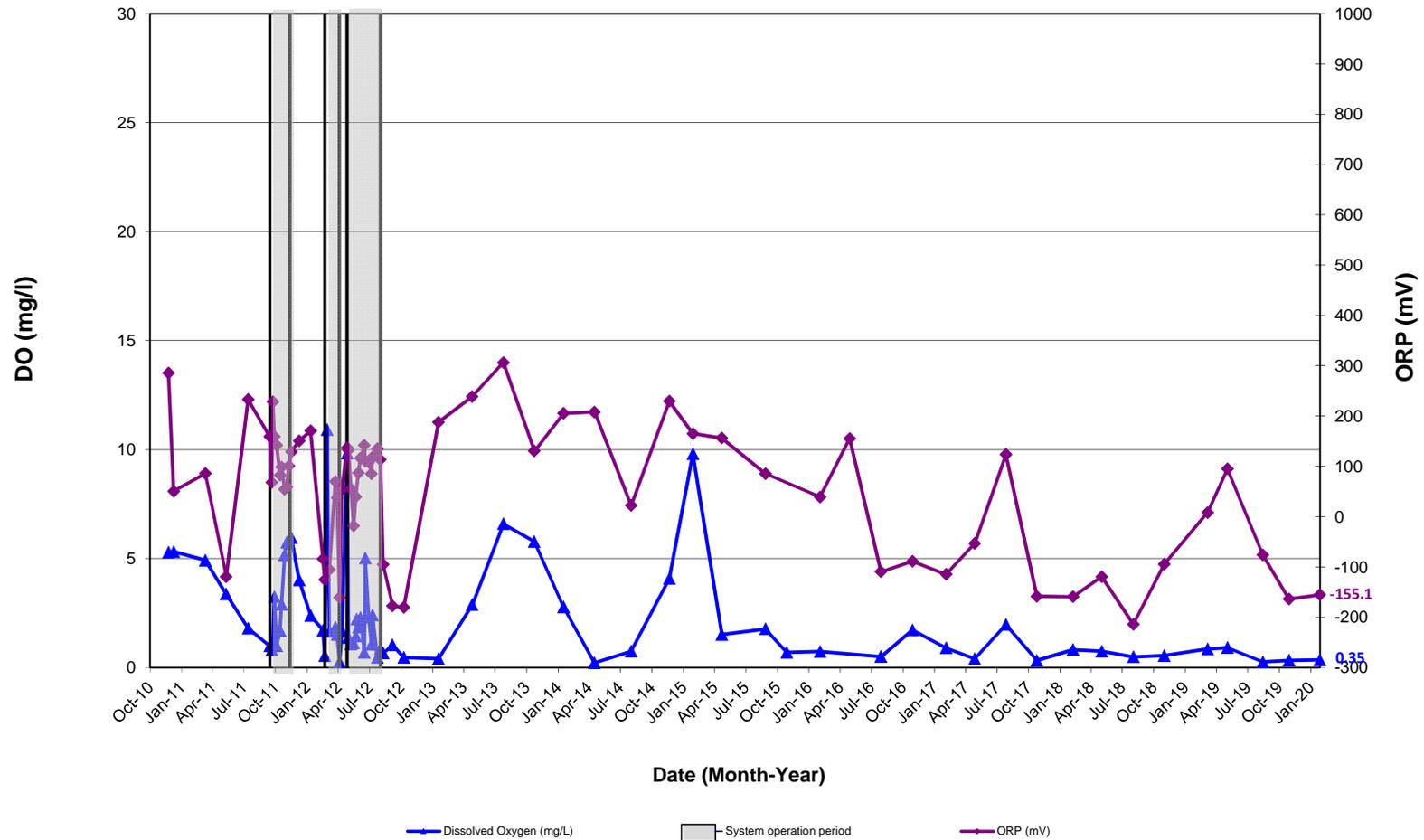


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 µg/L, 100 µg/L is plotted).

**GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**MW-18D**



**APPENDIX E**

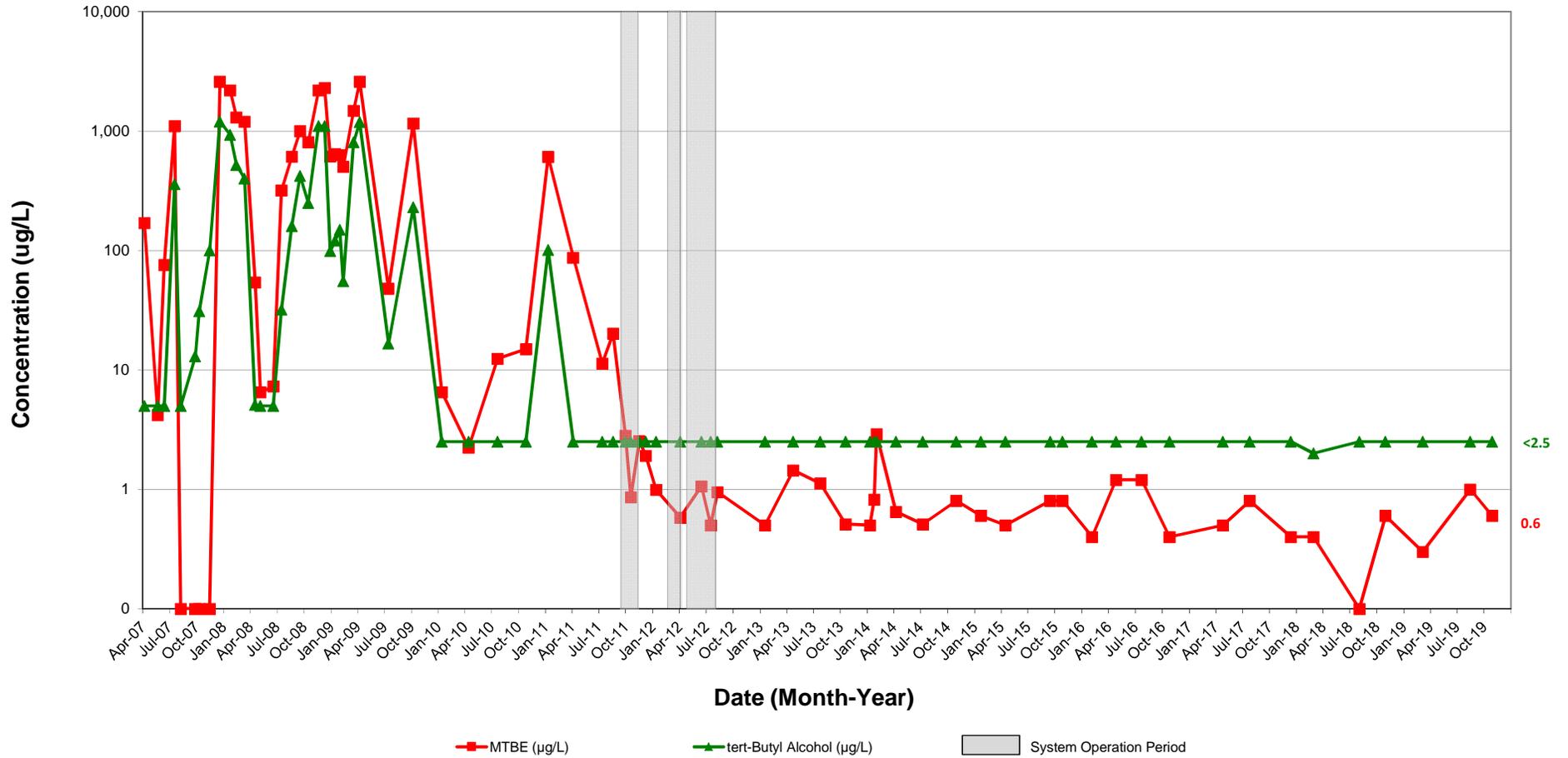
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Supply Well Monitoring Graphs

**RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD**

**3923-ROSE-INF**

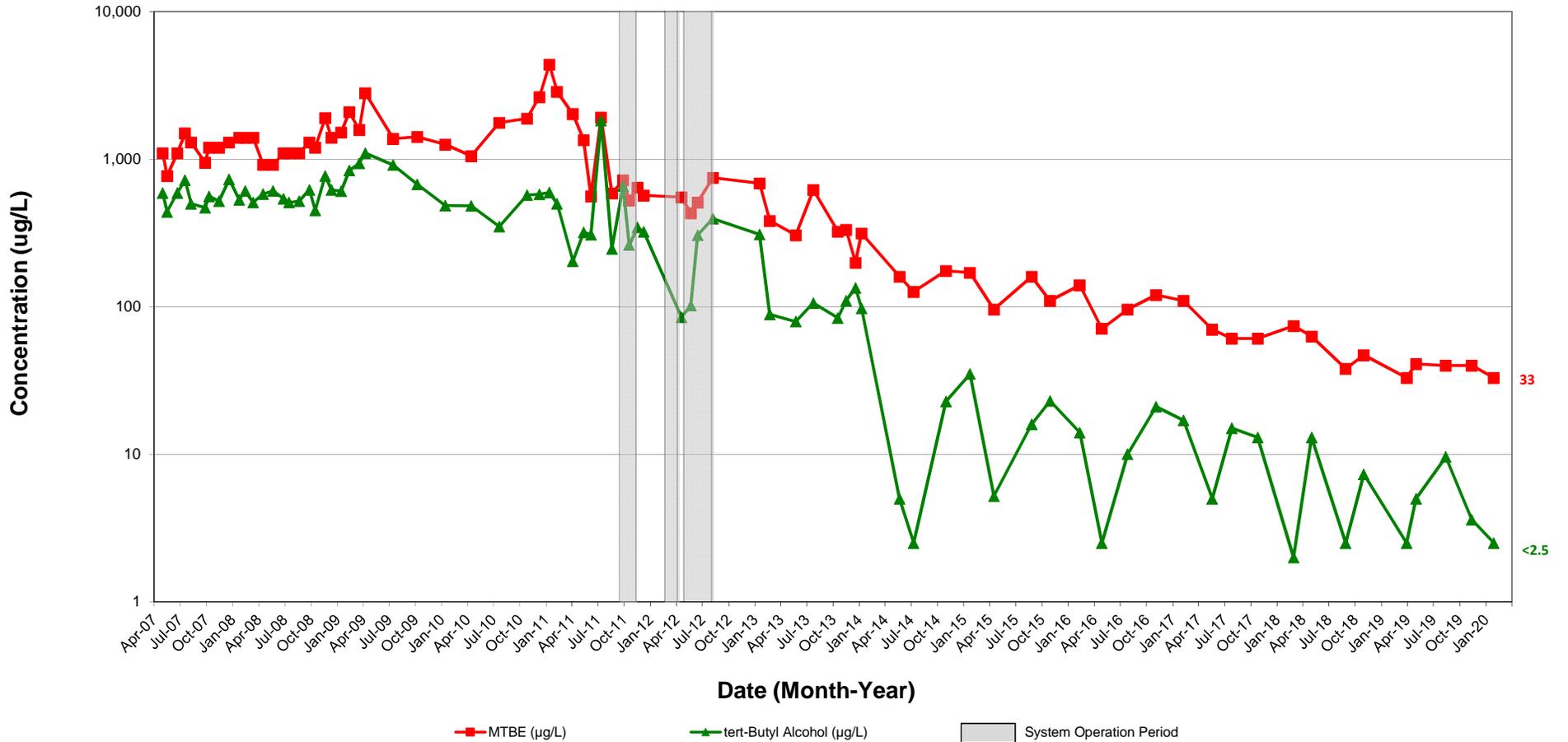


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 ug/L, 100 ug/L is plotted).

RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

3990-FARM-INF

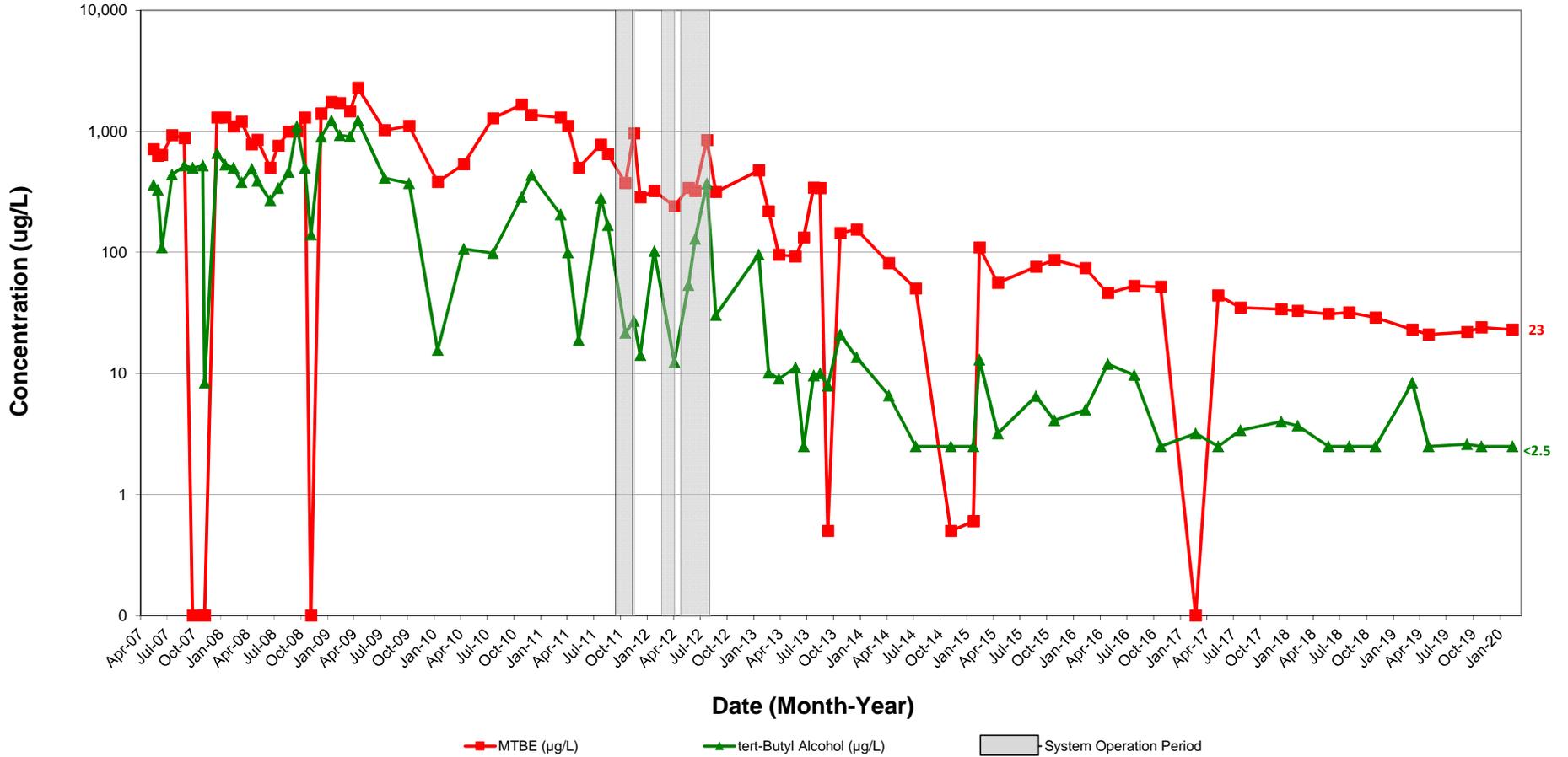


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 ug/L, 100 ug/L is plotted).

RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS

Carroll Independent Fuel - Former Green Valley Citgo  
 11791 Fingerboard Rd  
 Monrovia, MD

3992-FARM-INF

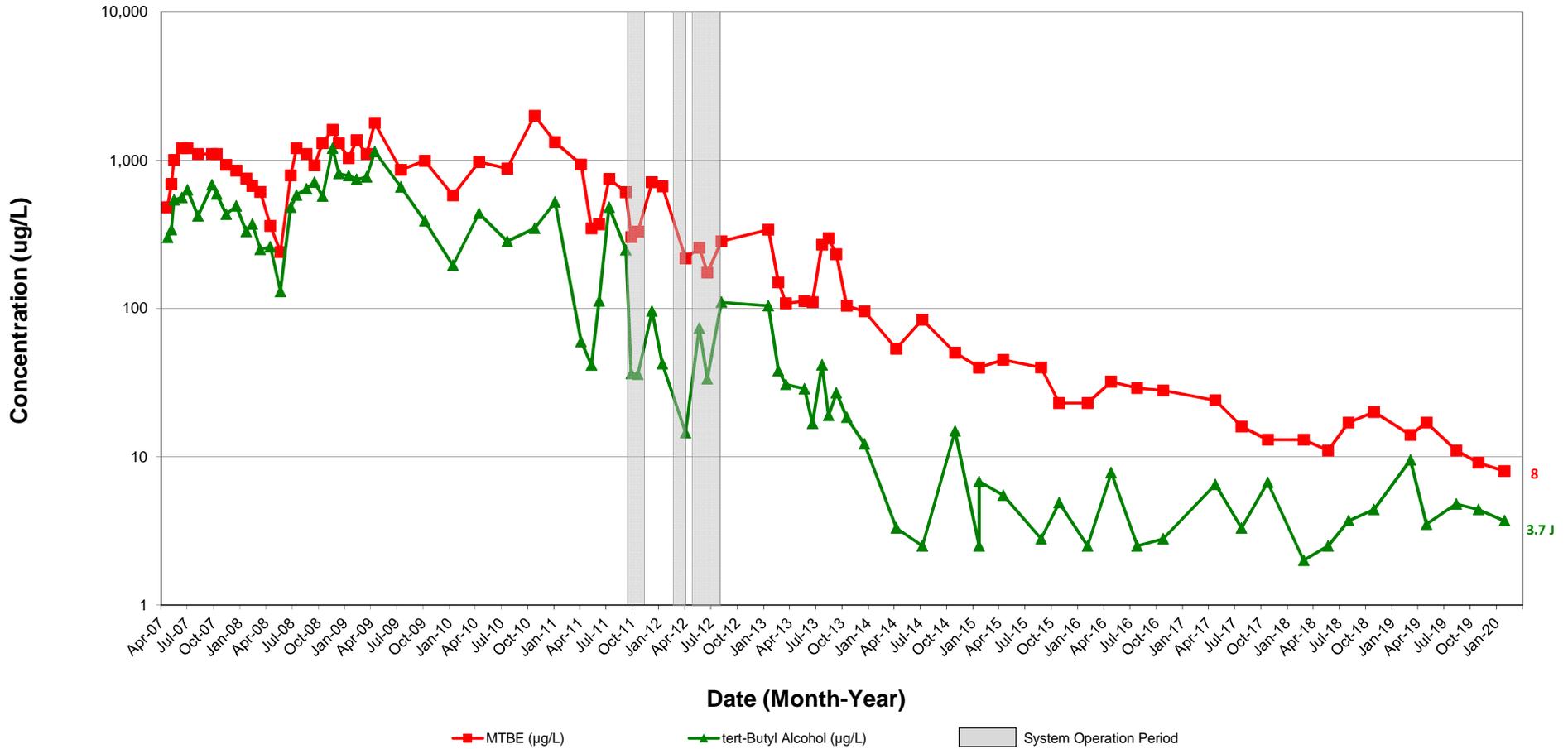


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 ug/L, 100 ug/L is plotted).

**RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**3994-FARM-INF**

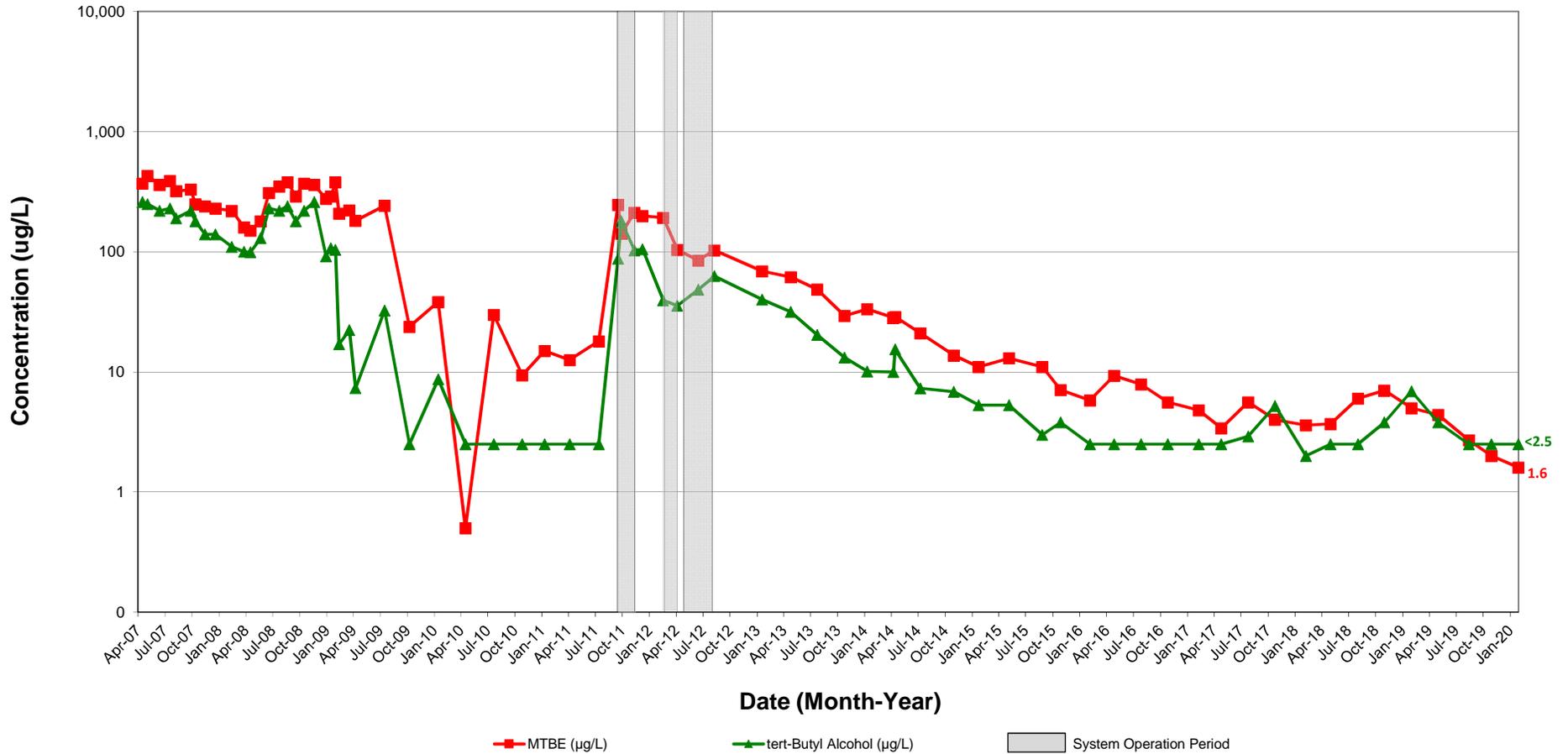


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 ug/L, 100 ug/L is plotted).

RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

3996-FARM-INF

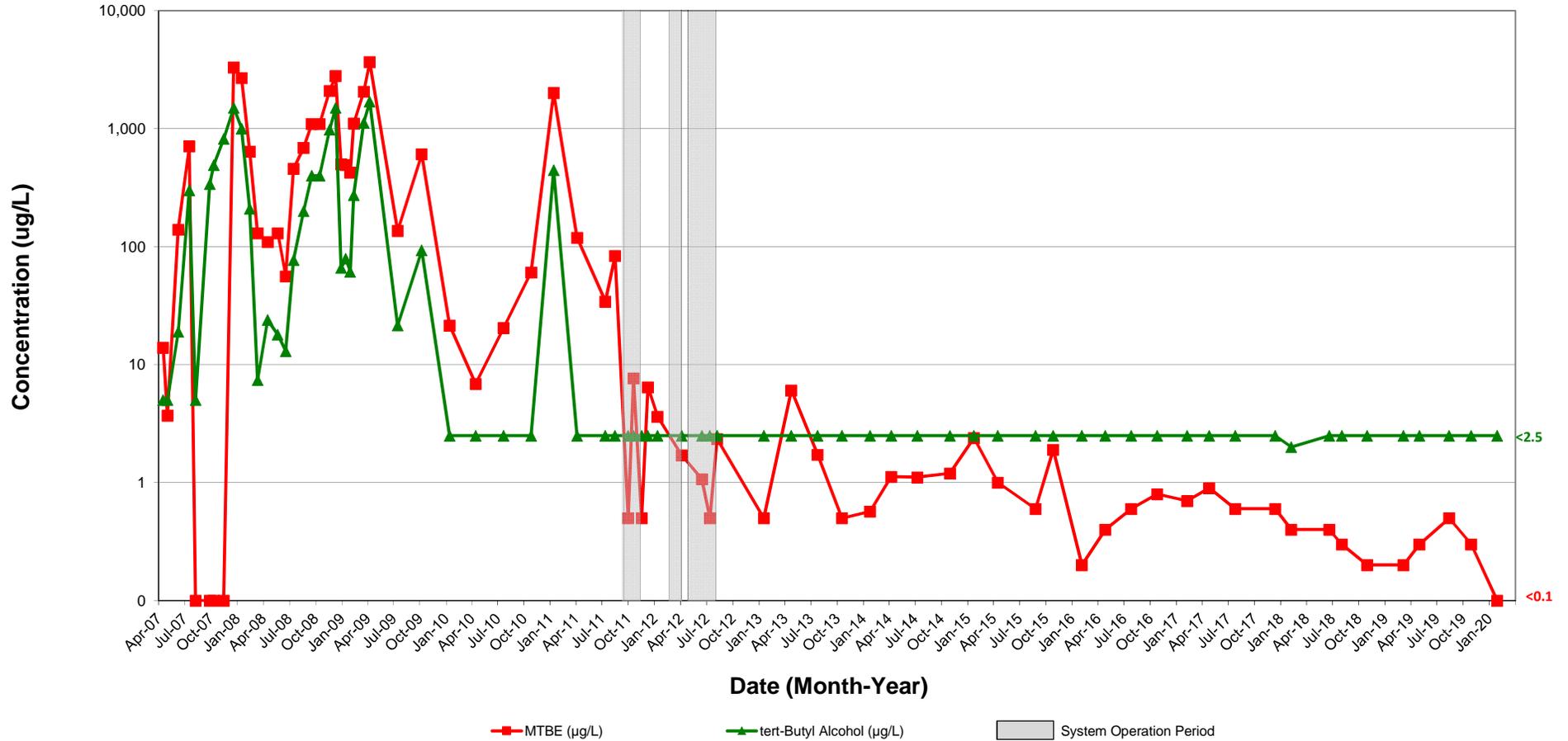


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 ug/L, 100 ug/L is plotted).

RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

3997-FARM-INF

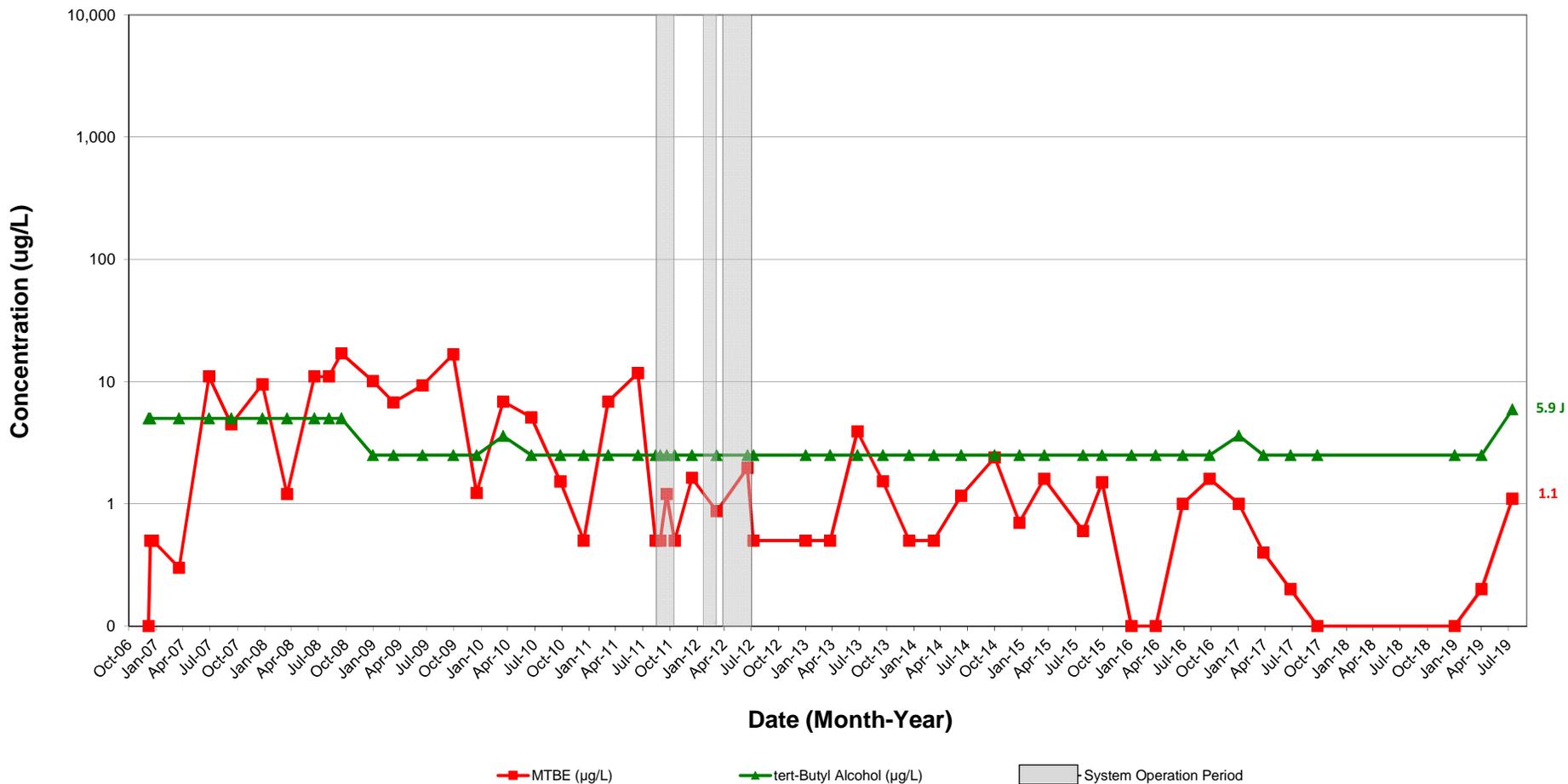


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 ug/L, 100 ug/L is plotted).

**RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS**

**Carroll Independent Fuel - Former Green Valley Citgo**  
**11791 Fingerboard Rd**  
**Monrovia, MD**

**GVP-FR941281**

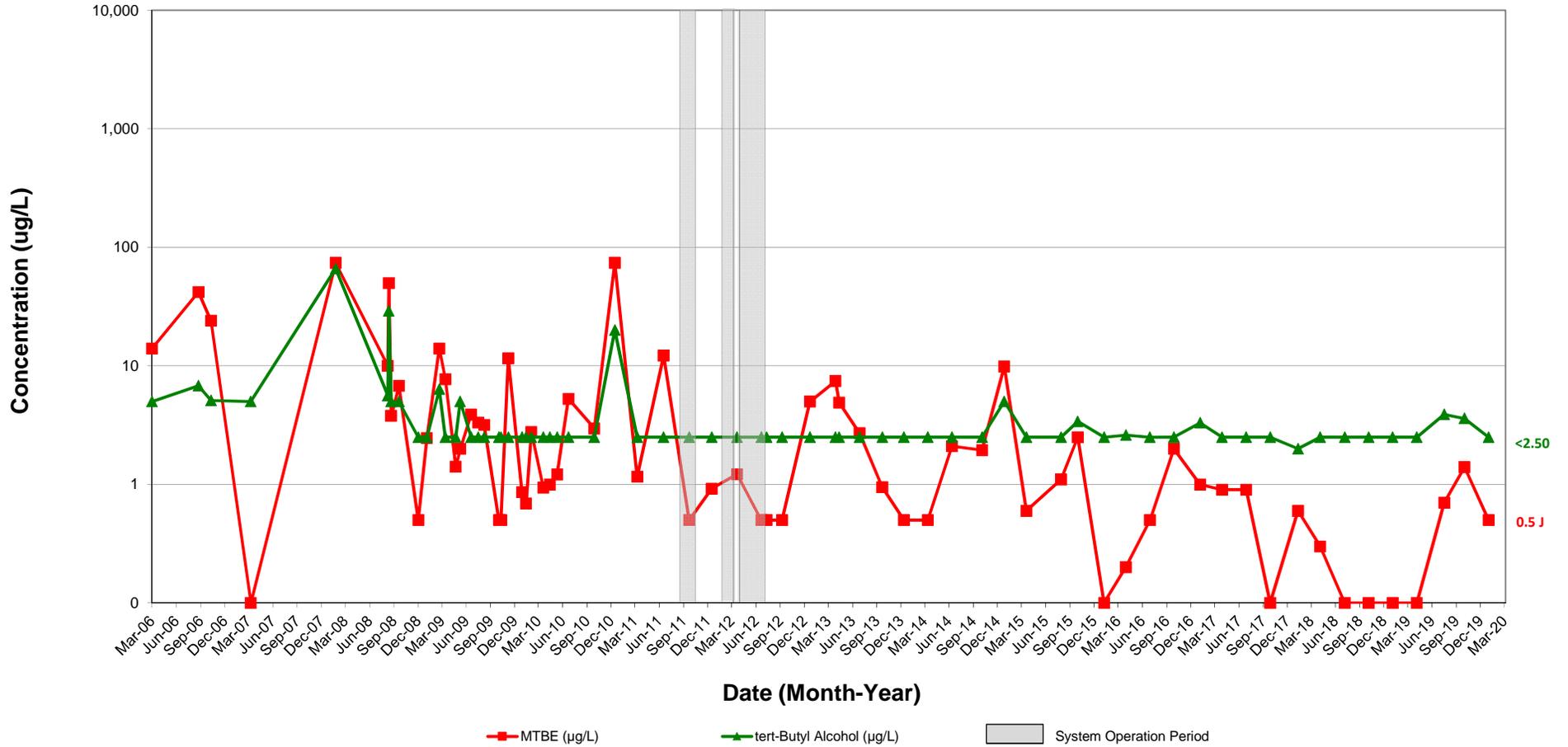


Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND<100 µg/L, 100 µg/L is plotted).

RESIDENTIAL SUPPLY WELL GROUNDWATER MONITORING GRAPHS

Carroll Independent Fuel - Former Green Valley Citgo  
11791 Fingerboard Rd  
Monrovia, MD

GVP-INF



Note: 1. Non-detect results are plotted at the method detection/reporting limit (i.e., for TPH-GRO = ND100 ug/L, 100 ug/L is plotted).