



January 10, 2020

Ms. Susan Bull  
Oil Control Program  
Maryland Department of the Environment  
1800 Washington Blvd, Suite 620  
Baltimore, Maryland 21230

**RE: REQUEST FOR RELEASE OF POET MAINTENANCE RESPONSIBILITY**  
**3914 MADONNA ROAD**  
MDE Case No. 2006-0442-HA  
High's Store #130  
4101 Norrisville Road, Jarrettsville, Harford County, Maryland  
Facility ID No. 2057

Dear Ms. Bull:

Groundwater & Environmental Services, Inc. (GES), on behalf of High's of Baltimore, LLC (High's), respectfully submits a request for release of Point-of-Entry-Treatment (POET) system maintenance responsibility for the private supply well located at 3914 Madonna Road, Jarrettsville, MD. Justification for High's request for release of POET maintenance responsibility for the residence is provided below.

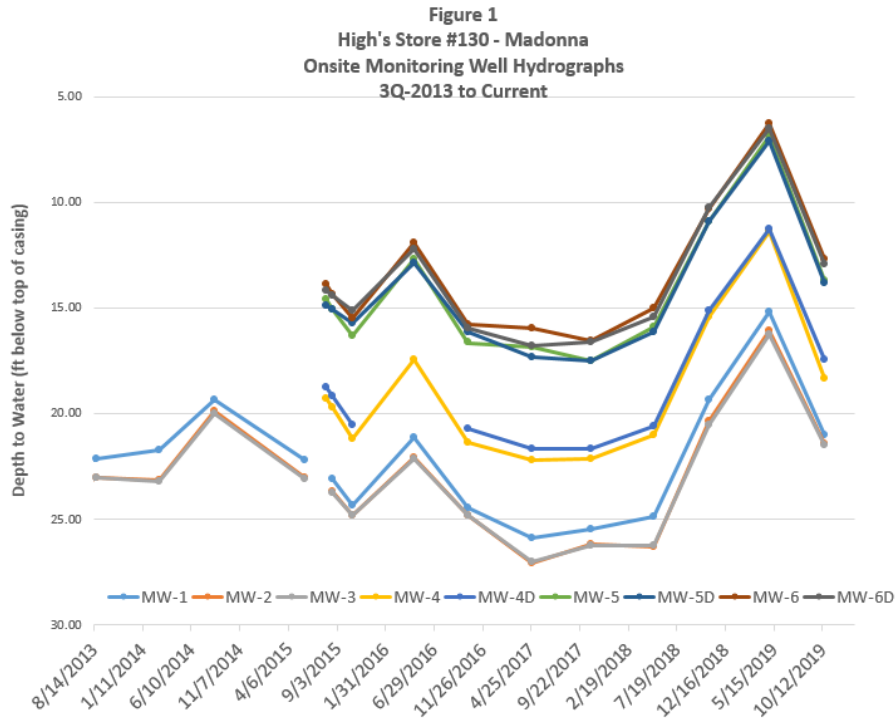
#### Influent MTBE Trend for 3914 Madonna Road

Water samples have been collected from the 3914 Madonna Road POET system, on a routine basis, since 2008. The current influent concentration for methyl tert-butyl ether (MTBE), most recently tested on October 30, 2019, was 1.6 micrograms per liter ( $\mu\text{g/L}$ ) which is well below the Maryland Department of the Environment (MDE) Cleanup Standard for the constituent at 20  $\mu\text{g/L}$  (MDE 2018). In fact, the 3914 Madonna Road influent MTBE concentration fell below the MTBE Cleanup Standard of 20  $\mu\text{g/L}$  on October 18, 2016 and has remained below the Cleanup Standard over the last 12 quarterly sampling events.

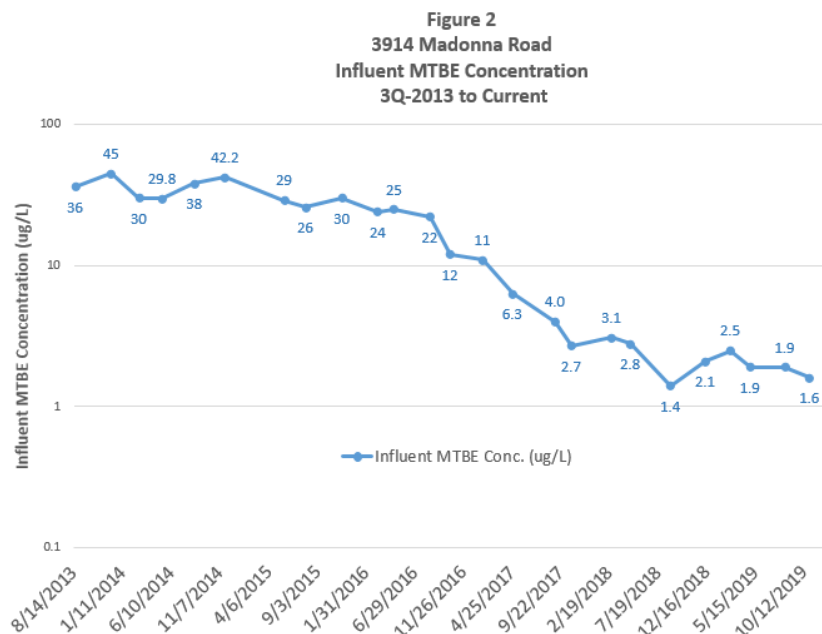
A Mann-Kendall statistical analysis of long-term influent MTBE concentration for 3914 Madonna Road is included as **Attachment A**. Review of **Attachment A** denotes a decreasing trend for influent MTBE concentrations at this residence, with a 99.9% confidence factor, over 40 sampling events, spanning from August 2009 to October 2019.

#### Recent Increase in Height of Local Water Table

Historically high rainfall and, correspondingly, an elevated local water table over the last two years may have biased supply well sample results collected during this period. To evaluate how this period of elevated groundwater levels may have potentially affected the water quality of 3914 Madonna Road, GES prepared a hydrograph for all nine monitoring wells installed at the nearby High's Store #130 (as there is no practical way to routinely gauge water levels from the 3914 Madonna Road supply well.) The High's Store #130 monitoring well hydrograph is presented on the next page as **Figure 1**.



Review of **Figure 1** demonstrates a consistent trend among all nine High's monitoring wells in which a period of historically high water table height (expressed as depth-to-water) is apparent by Fourth Quarter 2018 and peaks by Second Quarter 2019. Increases in water table height, by as much as 10.2 feet (MW-2), occurred between Second Quarter 2018 and Second Quarter 2019. As of October 18, 2019 (last gauging event), groundwater levels at the High's Store #130 appear to be declining but still remain above average 5-year levels.





Comparison of local water level trends in **Figure 1** to the long-term influent MTBE concentration for 3914 Madonna Road through the same period, (presented as **Figure 2** on the previous page), indicate no significant effects of increased water table height to influent MTBE concentration at the residence.

In summary, a combination of factors support High's request for release from continued maintenance responsibility for the 3914 Madonna Road POET system which include: 1) a currently low influent MTBE concentration, 2) a decreasing, long-term MTBE concentration trend, and 3) the apparent lack of effect between groundwater level fluctuations to influent MTBE concentrations at the residence.

GES appreciates MDE's consideration of the 3914 Madonna Rd. POET release request and looks forward to the Department's response.

Sincerely,

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

Pete Reichardt  
Project Manager

Enclosure

- c: Susan Bull – MDE (2 additional copies & CD)
- Herb Meade –High's of Baltimore (e-copy)
- Julie Mackert (Harford County Health Dept.)
- Calvin Mentzer –Apex Co. (e-copy)
- File – GES, MD (PSID 820321)

# GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis

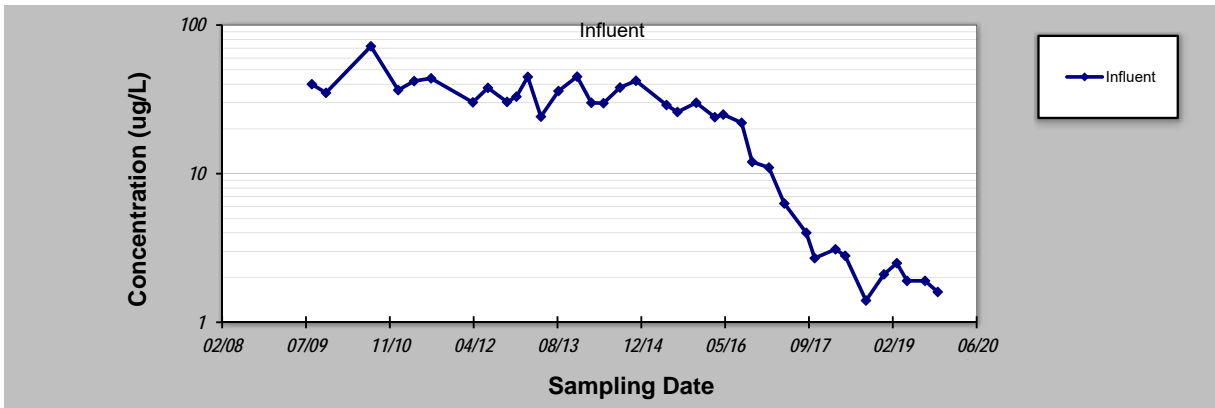
Evaluation Date: **3-Jan-20**  
 Facility Name: **3914 Madonna Rd.**  
 Conducted By: **P. Reichardt**

Job ID: \_\_\_\_\_  
 Constituent: **MTBE**  
 Concentration Units: **ug/L**

Sampling Point ID: **Influent**

Sampling Event	Sampling Date	MTBE CONCENTRATION (ug/L)					
1	10-Aug-09	40					
2	2-Nov-09	35					
3	22-Feb-10	3.4					
4	28-Jul-10	72					
5	7-Jan-11	36.5					
6	12-Apr-11	42					
7	22-Jul-11	43.8					
8	6-Dec-11	ND					
9	27-Mar-12	30.2					
10	25-Jun-12	37.8					
11	24-Sep-12	ND					
12	17-Oct-12	30.4					
13	12-Dec-12	33					
14	18-Feb-13	44.8					
15	7-May-13	24.2					
16	20-Aug-13	36					
17	9-Dec-13	45					
18	4-Mar-14	30					
19	15-May-14	29.8					
20	22-Aug-14	38					
21	25-Nov-14	42.2					
22	26-May-15	29					
23	30-Jul-15	26					
24	19-Nov-15	30					
25	9-Mar-16	24					
26	28-Apr-16	25					
27	16-Aug-16	22					
28	18-Oct-16	12					
29	26-Jan-17	11					
30	28-Apr-17	6.3					
31	6-Sep-17	4					
32	26-Oct-17	2.7					
33	27-Feb-18	3.1					
34	26-Apr-18	2.8					
35	28-Aug-18	1.4					
36	13-Dec-18	2.1					
37	28-Feb-19	2.5					
38	30-Apr-19	1.9					
39	15-Aug-19	1.9					
40	30-Oct-19	1.6					

Coefficient of Variation: **0.71**  
 Mann-Kendall Statistic (S): **-531**  
 Confidence Factor: **>99.9%**  
 Concentration Trend: **Decreasing**



- Notes:**
- At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
  - Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
  - Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

**DISCLAIMER:** The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

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