June 20, 2019

Ms. Ellen Jackson
Maryland Department of the Environment
Oil Control Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1719

Re: **Request for Case Closure – June 2019**
Gasoline Fueling Station – Royal Farms #64
7950 Pulaski Highway
Baltimore, Maryland 21237
MDE Case No. 10-0339-BA
MDE Facility No. 3975

Dear Ms. Jackson,

Advantage Environmental Consultants, LLC (AEC) is pleased to submit this Request for Case Closure for Royal Farms #64 at 7950 Pulaski Highway, Baltimore, Maryland (i.e., the "Site"). AEC is submitting this case closure request based on the following lines of evidence:

- Mann-Kendall Analysis
- Maryland Environmental Assessment Technology (MEAT) Assessment
- Potable Well Search
- Off-Site Receptor Risk Evaluation

Mann-Kendall Analysis

As part of AEC's *Quarterly Progress Report – First Quarter 2019*, dated May 8, 2019, AEC conducted a Mann-Kendall analysis on all monitoring wells for benzene, methyl tert-butyl ether (MTBE), and naphthalene since the on-Site remediation system was shut down (i.e., January 2016). No increasing benzene, MTBE, or naphthalene trends were noted in any of the monitoring wells. The Maryland Department of the Environment (MDE) Oil Control Program (OCP) requested that AEC perform the Mann-Kendall analysis on all monitoring wells since the beginning of sampling rather than just post-shutdown. AEC notes that after discussions with Ms. Ellen Jackson of the MDE OCP, instances where a monitoring well was not sampled due to presence of liquid phase hydrocarbons (LPH) are left blank and highlighted in red in the Mann-Kendall analysis. Also, when an analyte was below the laboratory quantitation limit (BQL), AEC assigned a value of 1.0 microgram per liter (µg/L). A Monitoring Well Location Map is included as Attachment A. The results of the expanded Mann-Kendall analysis are included as Attachment B.

The expanded Mann-Kendall analysis showed no increasing benzene, MTBE, or naphthalene trends in any of the monitoring wells, with the exception of MTBE in MW-6 and benzene in MW-27 and CMW-1. AEC suggests that the increasing trend of MTBE in MW-6 is misleading. Due to the relatively high levels of contamination for other volatile organic compounds (VOCs) in earlier sampling events, MTBE was consistently BQL as a result of dilution. As concentrations of other VOCs decreased, MTBE was subsequently above the laboratory quantitation limit as the samples were less diluted in the laboratory, resulting in an increasing trend. However, it should be noted that MTBE has never been detected in MW-6 at a concentration above the MDE cleanup standard for Type I and II Aquifers (i.e., 20 µg/L). With respect to the most recent monitoring well sampling event (First Quarter 2019), benzene concentrations in both MW-27 and CMW-1 showed significant reductions. Also, as discussed in the MEAT Assessment section below, there are no complete pathways for benzene impact in these two wells to affect human health, the environment, or any sensitive receptors.

The following table summarizes the results of the Mann-Kendall analysis. Historical benzene, MTBE, and naphthalene concentrations were analyzed in each of the 32 monitoring wells, which resulted in a total of 96 analyses:

Mann-Kendall Analysis Summary
Royal Farms #64
7950 Pulaski Highway, Baltimore, Maryland 21237

Result	Decreasing	Probably Decreasing	Stable	Probably Increasing	Increasing	No Trend
Analytes (Total of 96)	40	11	17	0	3	25

MEAT Assessment

AEC's *Rebound Evaluation Soil Investigation* report, dated January 11, 2018, evaluated the MEAT seven risk factors for the Site and surrounding areas. The MDE OCP produced the MEAT for Leaking Underground Storage Tanks (LUSTs) document (2010) to provide guidance in the event of a release of a hazardous substance from regulated underground storage tank (UST) systems. According to the MEAT document, the OCP requires the potential risk be measured at every facility that has a reported release in order to establish cleanup goals and to determine if remediation is necessary. The OCP evaluates risk by a "Seven Risk Factor" process. The seven factors that require consideration include LPH, Current and Future Use of Impacted Groundwater, Migration of Contamination, Human Exposure, Environmental Ecological Exposure, Impact to Utilities and Other Buried Services, and Other Sensitive Receptors.

The following sections of this report state each of the seven risk factors, and presents AEC's evaluation of each factor as it pertains to the Site.

Liquid Phase Hydrocarbons

"LPH refers to a regulated substance that is present as a non-aqueous phase liquid. When LPH is found on-site, the liquid product must be removed to the maximum extent possible. OCP has determined this to be sheen. (MEAT for LUSTs, 2010)."

Measurable LPH has not been detected within any of the monitoring or recovery wells since December 6, 2013.

Current and Future Use of Impacted Groundwater

"If the groundwater impacted by the release is used for direct consumption within a half mile of the site or the site is located within an approved wellhead protection zone, a site assessment and CAP must be designed. Other uses of groundwater that would warrant remediation include industrial, agricultural, and surface water augmentation. If known, future use of the groundwater must be taken into consideration. If site-specific future use is unsure, regional trends must be considered. Generally, if future use is not clear, a more conservative approach to cleanup is applied (MEAT for LUSTs, 2010)."

A potable well survey was conducted by AEC, and the results were presented to the MDE OCP in a report dated July 6, 2018. Based on the findings of the well search and the presence of municipal water infrastructure in the immediate Site vicinity, it is AEC's opinion that potential impacts at the Site would not represent a risk to current or future groundwater use. The findings from the July 6, 2018 report are discussed in further detail in the next section.

Migration of Contamination

"The ability of contamination to migrate off-site or to migrate to a receptor is a critical measure. If it can be demonstrated that the contamination is stationary and site conditions restrict the potential for migration, the need for cleanup may be reduced (MEAT for LUSTs, 2010)."

Initial subsurface investigations following the release indicated that petroleum constituents migrated away from the release point across the northern and eastern boundaries of the 7950 Pulaski Highway portion of the Site. This was demonstrated by the existence of LPH and dissolved phase petroleum constituents detected in several wells and piezometers on the adjoining parcels (e.g., 1205 Chesaco Avenue).

Extensive groundwater quality testing since the release, summarized in quarterly progress reports and AECs Rebound Evaluation Completion Report, dated February 17, 2017, has shown that neither concentration spikes nor migration of petroleum constituents is occurring.

Human Exposure

"Any exposure to the public warrants site corrective action. There are several exposure pathways that must be considered. These pathways include but are not limited to inhalation, ingestion, and dermal contact (MEAT for LUSTs, 2003)."

Soil

Direct dermal contact with or ingestion of impacted soil is improbable due the depth of the impacted soil and extensive impervious cover at the 7950 Pulaski Highway portion of the Site and the controlled access to the 1205 Chesaco Avenue portion of the Site.

Groundwater

Ingestion of impacted groundwater is improbable as discussed above. Extensive groundwater quality testing at the Site has shown that neither concentration spikes nor migration of petroleum constituents is occurring. Results from the February 17, 2017 Rebound Evaluation Completion Report show that the rebound evaluation has met the criteria set in the Rebound Evaluation Work Plan – Revised, dated March 28, 2013 and revised June 27, 2013.

In addition, results from the sump sampling at adjoining properties do not indicate a complete pathway between impacts from the release at the Site and occupants of the residences investigated (1207, 1209, and 1209.5 Chesaco Avenue). Sump sampling results for each of these properties is summarized below.

1207 Chesaco Avenue – In 18 sampling events between December 2009 and December 2016, TPH DRO was detected twice at a concentration of 0.23 milligrams per liter (mg/L) in July and December of 2013. Naphthalene was detected once at a concentration of 13 µg/L in June of 2010.These results do not support the existence of a pathway between the impacts of the release at the Site and occupants of this residence.

1209 Chesaco Avenue – In 18 sampling events between December 2009 and December 2016, TPH DRO was detected once at a concentration of 0.25 mg/L in December of 2015. MTBE was detected once at a concentration of 32 µg/L in June of 2010.These results do not support the existence of a pathway between the impacts of the release at the Site and occupants of this residence.

1209.5 Chesaco Avenue – In 19 sampling events between December 2009 and December 2016, TPH DRO was detected 14 times at concentrations ranging from below detection limits to 1,970 mg/L. Detectable concentrations of TPH DRO have shown a decreasing trend over this time period. TPH DRO was most recently detected at a concentration of 0.27 mg/L in November 2016. Mann-Kendall trend analysis for TPH DRO in samples from the 1209.5 Chesaco Avenue is included as Attachment B. Furthermore, this structure has not been occupied since 2013. Based on this, a pathway between the impacts of the release at the Site and human exposure is not complete.

Indoor Air Quality

Results from indoor air quality (IAQ) sampling do not indicate a complete pathway between impacts from the release at the Site and occupants of the 1207 Chesaco Avenue residence.

In the second-floor apartment, benzene and naphthalene concentrations were regularly reported above residential MDE Standards due to frequent tobacco use. Significantly lower concentrations were reported in samples from the first floor and basement. The basement level has been sampled on 24 occasions between August 2010 and December 2016.

Over that time benzene was detected above MDE standards once in July of 2011. Naphthalene has been detected above MDE standards twice since March 2012 and most recently in June 2015. No other analytes have been detected above the regulatory standard in the basement of the 1207 Chesaco Avenue residence. Indoor air sampling has been terminated at this residence as per MDEs Approval to Discontinue Sump and Indoor Air Sampling correspondence, dated September 26, 2017.

Environmental Ecological Exposure

"The need to protect the natural resources of the State is mandated by Maryland law. If there is exposure to animal or plant life from the petroleum release or the degradation of a natural resource, corrective action is warranted (MEAT for LUSTs, 2003)."

AEC did not observe any signs of staining or vegetative stress in the grass-covered areas surrounding the Site or off-site properties. The most proximal natural surface body of water to the Site, an unnamed tributary of Back River located approximately 800 feet northwest of the Site at its closest point, is not expected to be impacted by the Site's release. AEC does not consider this release to represent a threat to animals or plant life in the vicinity of the Site.

Impact to Utilities and Other Buried Services

"The responsible party must correct adverse effects to utilities. Utility materials have been known to degrade from contact with petroleum products. Utilities may also act as conduits that lead to the migration of contamination. Migration along utilities may cause vapor impacts or other issues at nearby structures (MEAT for LUSTs, 2003)."

Electricity and communications service are supplied to the Site via overhead utilities located along Chesaco Avenue and Pulaski Highway. Based on observations made during Site investigation activities (miss utility markings and water meter/sewer manholes), the Site and vicinity are connected to the municipal water and sewer systems. Municipal water and sewer services are provided to the Site and vicinity by the Baltimore City/County Department of Public Works. Electric and natural gas utilities are provided to the Site and vicinity by Baltimore Gas & Electric (BGE). Stormwater drains via sheet-flow into trench drains located near the Chesaco Avenue entrance to the Site, which connects to the stormwater system along Chesaco Avenue.

Depth to groundwater at the Site in the vicinity of the subsurface utilities is approximately 11 to 13 feet bgs. Depth to groundwater at the 1205 Chesaco Avenue residence is approximately 5 to 6 feet bgs. Utility trenches on the Site are not expected to be affected by the petroleum impact due to the fact that they are unlikely to be located at a depth greater than 3 to 4 feet bgs.

Other Sensitive Receptors

"Sensitive receptors such as surface water, historic structures, and subways are an indication that a site may warrant corrective action (MEAT for LUSTs, 2003)."

Natural surface bodies of water, historic structures, and subways are not located at the Site; as such, these receptors are not a concern. Additional sensitive receptors in the vicinity of the Site location were not observed during the site assessment. Based on the lack of these types of sensitive receptors in the Site vicinity, no risks to these types of receptors due to constituents detected at the Site are expected to exist.

Conclusions

Based on the results of the comprehensive data collected to date, and the evaluation of the seven risk factors, it is AEC's opinion that the Site has met all of the designated remediation criteria and is a candidate for case closure.

Potable Well Search

In response to AEC's assessment of the seven risk factors, the MDE OCP requested that AEC conduct a sensitive receptor survey for the Site and provide more information regarding off-Site building basements and sumps. AEC conducted a sensitive receptor survey and submitted the subsequent *Potable Well Search* letter, dated July 6, 2018, detailing the results of the investigation.

Sensitive Receptor Survey

AEC submitted a Public Information Act (PIA) request for a well database search within a one-half mile radius of the Site. The request was submitted to Ms. Wendy Donaldson of the MDE on February 28, 2018. Database search results were received from the MDE on March 7, 2018. Only one drinking water well was identified on the MDE well search report. Numerous other wells for non-consumptive groundwater monitoring and industrial use were included in the well search report supplied by MDE. AEC obtained a well completion report of the drinking water well from the MDE.

On March 23, 2018, AEC personnel performed a Site reconnaissance to verify the well locations provided in the MDE well search report and possibly identify other potable wells that were not listed in the MDE database. All residential and commercial areas located within a one-half mile radius of the Site were investigated for the presence of municipal water supply structures. Fire hydrants indicative of public water supply were observed throughout the search area with the exception of Lacotti Lane, which intersects with Sumter

Avenue east of the Site. No municipal water supply structures were observed on Lacotti Lane. AEC identified a utility structure resembling a well near the west side of Lacotti Lane. Findings for each investigated well are described below.

Wells Identified on the MDE Well Database

Well Permit: BA700399
According to the Global Positioning System (GPS) coordinates provided on the MDE database, this well is located at 1006 Sumter Avenue near the intersection of Sumter Avenue and Lacotti Lane, approximately 2,400 feet southeast and topographically upgradient of the Site. The associated well completed report lists the owner address at 1008 Sumter Avenue, which is the neighboring property just across Lacotti Lane from 1006 Sumter Avenue. This well was not visually verified during the Site reconnaissance on March 23, 2018. The well was reportedly installed in 1970 to a depth of 200 feet. No screen interval depth is noted. Based on topographic gradient and distance from the Site, impacted soil and groundwater at the Site would not present concern to this well.

Wells Not Identified on the MDE Well Database

Lacotti Lane
During Site reconnaissance on March 23, 2018 AEC observed a utility structure resembling a potable well near 8208 Lacotti Lane, approximately 2,400 feet southeast and topographically upgradient of the Site. This suspect well was not identified on the MDE well database. Based on topographic gradient and distance from the Site, impacted soil and groundwater at the Site would not present concern to a well at this location.

Well Search Conclusions

Based on the findings of the well search and the presence of municipal water infrastructure in the immediate Site vicinity, it is AEC's opinion that potential impacts at the Site would not represent a risk to current or future groundwater use.

Off-Site Receptor Risk Evaluation

AEC submitted the *Off-Site Receptor Risk Evaluation – Report of Results* letter to the MDE OCP on November 26, 2018. This letter summarized the results of the sump water sampling, IAQ sampling, and sub-slab vapor sampling that occurred at 1211 Chesaco Avenue (i.e., the funeral home) in October 2018.

Sump Water Sampling

There are five sumps located within the basement of the funeral home at 1211 Chesaco Avenue. All five sumps were purged of water using the sump pumps on October 11, 2018. MDE OCP personnel were present during the sump purging activities. The sumps were allowed to recharge overnight. On October 12, 2018, AEC collected water samples from four of the five sumps. Sump 2 was dry and therefore was not sampled. Sump samples were analyzed for VOCs using Environmental Protection Agency (EPA) method 8260, total

petroleum hydrocarbons (TPH) gasoline range organics (GRO) using EPA method 8015, and TPH diesel range organics (DRO) using EPA method 8015.

The results of the sump water sampling showed that all analytes were BQL.

IAQ Sampling

AEC conducted IAQ sampling at the funeral home on October 19, 2018. One IAQ sample was collected from the basement garage area, and another IAQ sample was collected from the first-floor office area. An additional ambient air sample was collected outside for comparison purposes. The samples were analyzed for VOCs using EPA method TO-15. The results of the IAQ sampling showed that all detected analytes were below the MDE commercial cleanup standards.

Sub-Slab Vapor Sampling

AEC conducted sub-slab vapor sampling on October 18 and 19, 2018. One vapor point was installed in the original central basement area, and another vapor point was installed in the southern-wing garage area. At each sub-slab vapor sampling location, AEC performed a helium tracer leak test to verify the integrity of the sub-slab port annular seal, sample port fittings, and sample tubing connections. Each sub-slab vapor sample was analyzed for VOCs using EPA method TO-15.

Laboratory analytical results for both sub-slab vapor samples showed all detected analytes below Tier 1 MDE commercial cleanup standards.

Request for Case Closure

Based on the aforementioned lines of evidence, including the Mann-Kendall analysis, the MEAT assessment, the potable well search, and the off-Site receptor risk evaluation, it is AEC's opinion that the Site has met all of the designated remediation criteria and is a candidate for case closure. AEC respectfully requests closure of MDE OCP case number 10-0339-BA. Also, AEC requests to postpone all future groundwater sampling events until the MDE OCP issues a response to this case closure request.

If there are any questions regarding this letter, please contact AEC at (301) 776-0500.

Sincerely,

Advantage Environmental Consultants, LLC

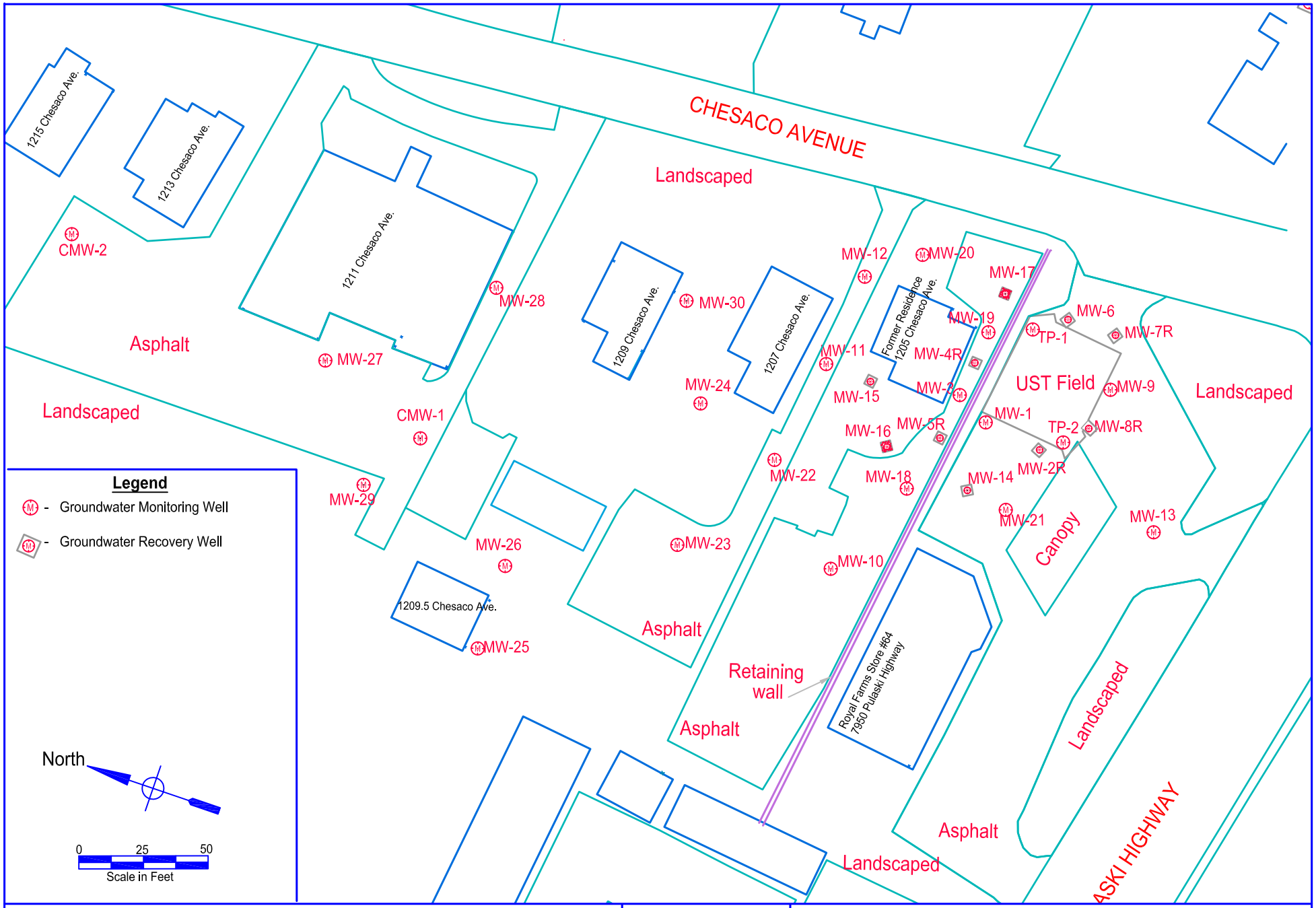
Jeffery Stein
Principal

Stephen Dessel
Project Manager

Cc: Thomas E. Ruszin, Royal Farms

Attachment A

Monitoring Well Location Map



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Drawn by: STD

Project No. 05-056-RF064

Date: June 2019

Figure 1 - Monitoring Well Location Map
Royal Farms No. 64
7950 Pulaski Highway
Baltimore, MD 21237

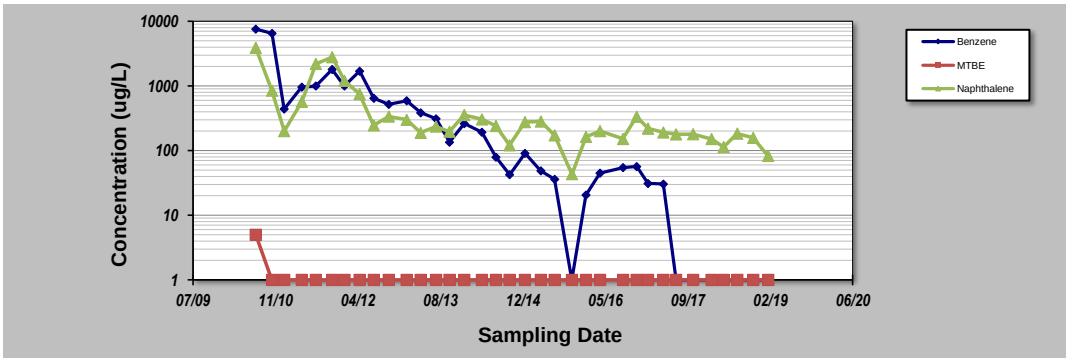
Attachment B

Mann-Kendall Analysis

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-1
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-1 CONCENTRATION (ug/L)						
1	7/22/2010	7,600	**5.0**	**3900.0**				
2	10/28/2010	6,500	1.0	**850.0**				
3	1/10/2011	440	1.0	**200.0**				
4	4/27/2011	960	1.0	**570.0**				
5	7/21/2011	1,000	1.0	**2200.0**				
6	10/28/2011	1,800	1.0	**2800.0**				
7	1/10/2012	1,000	1.0	**1200.0**				
8	4/11/2012	1,700	1.0	**750.0**				
9	7/6/2012	646	1.0	**247.0**				
10	10/5/2012	520	1.0	**337.0**				
11	1/21/2013	590	1.0	**301.0**				
12	4/17/2013	385	1.0	**189.0**				
13	7/19/2013	311	1.0	**236.0**				
14	10/8/2013	135	1.0	**197.0**				
15	1/6/2014	261	1.0	**356.0**				
16	4/23/2014	193	1.0	**305.0**				
17	7/17/2014	79.2	1.0	**241.0**				
18	10/8/2014	42.6	1.0	**121.0**				
19	1/9/2015	91	1.0	277.0				
20	4/15/2015	48.6	1.0	283.0				
21	7/8/2015	36	1.0	172.0				
22	10/21/2015	1.0	1.0	43.3				
23	1/14/2016	20.5	1.0	163.0				
24	4/8/2016	44.7	1.0	200.0				
25	8/25/2016	54.7	1.0	152.0				
26	11/16/2016	56.7	1.0	335.0				
27	1/24/2017	31.1	1.0	219.0				
28	4/27/2017	30.4	1.0	191.0				
29	7/13/2017	1.0	1.0	179				
30	10/25/2017	1.0	1.0	180				
31	2/13/2018	1.0	1.0	151				
32	4/27/2018	1.0	1.0	114				
33	7/19/2018	1.0	1.0	184				
34	10/24/2018	1.0	1.0	158				
35	1/23/2019	1.0	1.0	82.9				
36								
37								
38								
39								
40								
Coefficient of Variation:		2.36	0.61	1.59				
Mann-Kendall Statistic (S):		-480	-34	-346				
Confidence Factor:		>99.9%	67.9%	>99.9%				
Concentration Trend:		Decreasing	Stable	Decreasing				



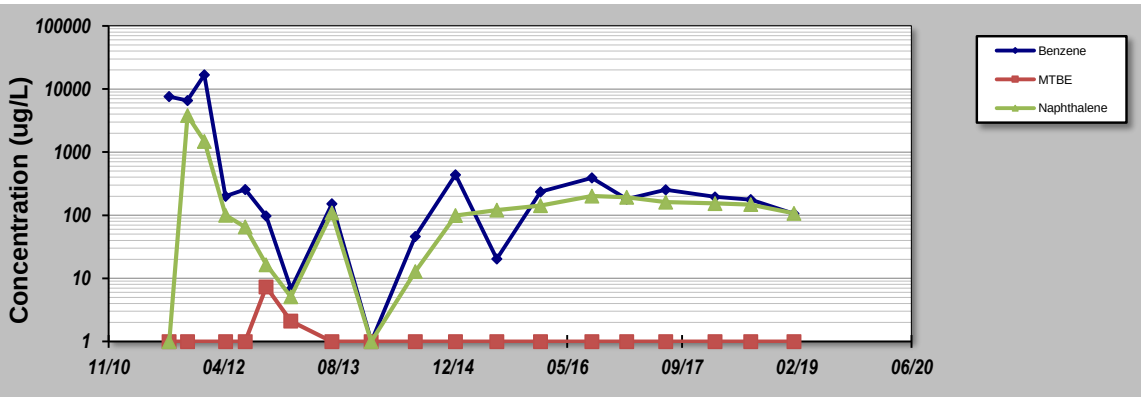
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-2R
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-2R CONCENTRATION (ug/L)						
1	8/9/2011	7,600	1.0	**1.0**				
2	10/28/2011	6,600	1.0	**3800.0**				
3	1/10/2012	16,800		**1484.0**				
4	4/11/2012	200	1.0	**100.0**				
5	7/6/2012	255	1.0	**65.2**				
6	10/5/2012	97.9	**7.3**	**16.5**				
7	1/21/2013	6.8	**2.1**	**5.1**				
8	7/19/2013	152	1.0	**109.0**				
9	1/6/2014	1.0	1.0	1.0				
10	7/17/2014	46.2	1.0	12.8				
11	1/9/2015	437	1.0	99.2				
12	7/8/2015	20.4	1.0	121				
13	1/14/2016	235	1.0	142				
14	8/25/2016	391	1.0	201				
15	1/24/2017	181.0	1.0	193.0				
16	7/13/2017	254	1.0	161				
17	2/13/2018	195	1.0	154				
18	7/19/2018	177	1.0	148				
19	1/23/2019	106	1.0	107				
20								
Coefficient of Variation:		2.39	1.06	2.45				
Mann-Kendall Statistic (S):		-41	-17	34				
Confidence Factor:		91.8%	72.5%	87.4%				
Concentration Trend:		Prob. Decreasing	No Trend	No Trend				



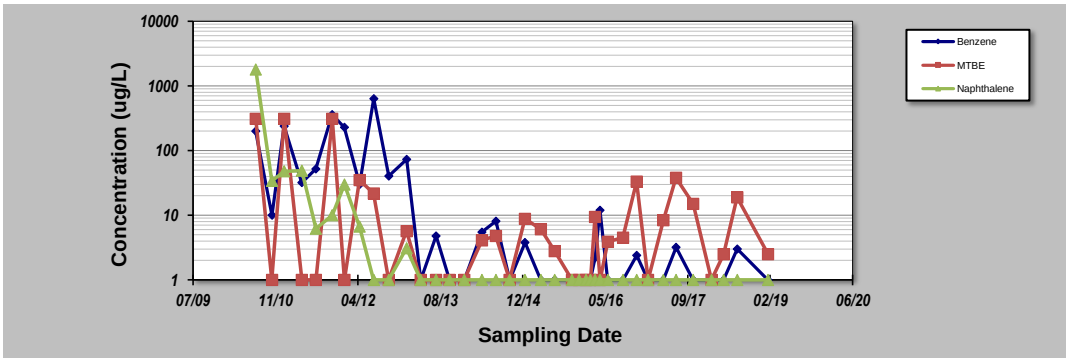
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-3
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-3 CONCENTRATION (ug/L)						
1	7/22/2010	200	**310**	**1800**				
2	10/28/2010	10	1.0	**34.0**				
3	1/10/2011	240	**310**	**48.0**				
4	4/27/2011	32	1.0	**49.0**				
5	7/21/2011	52	1.0	**6.2**				
6	10/28/2011	360	**310.0**	**10.0**				
7	1/10/2012	230	1.0	**30.0**				
8	4/11/2012	30	**35.0**	**6.7**				
9	7/6/2012	639	**21.7**	1.0				
10	10/5/2012	40.4	1.0	1.0				
11	1/21/2013	73.4	**5.7**	**3.1**				
12	4/17/2013	1.0	1.0	1.0				
13	7/19/2013	**4.8**	1.0	1.0				
14	10/8/2013	1.0	1.0	1.0				
15	1/6/2014	1.0	1.0	1.0				
16	4/23/2014	**5.5**	4.1	1.0				
17	7/17/2014	**8.1**	4.8	1.0				
18	10/8/2014	1.0	1.0	1.0				
19	1/9/2015	3.8	8.8	1.0				
20	4/15/2015	1.0	6.1	1.0				
21	7/8/2015	1.0	2.8	1.0				
22	10/21/2015	1.0	1.0	1.0				
23	12/3/2015	1.0	1.0	1.0				
24	1/14/2016	1.0	1.0	1.0				
25	2/10/2016	1.0	1.0	1.0				
26	3/9/2016	2.2	9.4	1.0				
27	4/8/2016	12.0	1.0	1.0				
28	5/25/2016	1.0	3.9	1.0				
29	8/25/2016	1.0	4.5	1.0				
30	11/16/2016	2.4	33.1	1.0				
31	1/24/2017	1.0	1.0	1.0				
32	4/27/2017	1.0	8.4	1.0				
33	7/13/2017	3.2	38.0	1.0				
34	10/25/2017	1.0	15.0	1.0				
35	2/13/2018	1.0	1.0	1.0				
36	4/27/2018	1.0	2.5	1.0				
37	7/19/2018	3.0	18.9	1.0				
38	1/22/2019	1.0	2.5	1.0				
39								
40								
Coefficient of Variation:		2.45	2.70	5.49				
Mann-Kendall Statistic (S):		-312	21	-279				
Confidence Factor:		>99.9%	59.9%	>99.9%				
Concentration Trend:		Decreasing	No Trend	Decreasing				



Notes:

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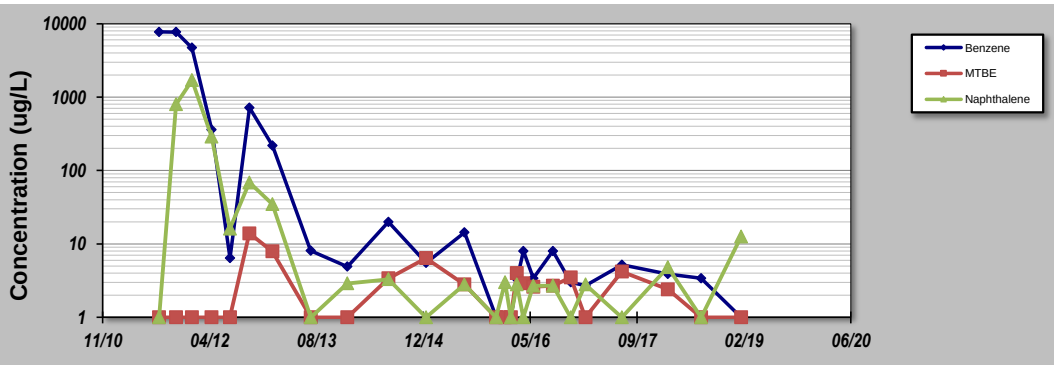
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-4R
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	Constituent: Benzene	MTBE	Naphthalene				
		MW-4R CONCENTRATION (ug/L)						
1	8/9/2011	7,710	1.0	1.0				
2	10/28/2011	7,700	1.0	**800.0**				
3	1/10/2012	4,700	1.0	**1700.0**				
4	4/11/2012	360	1.0	**290.0**				
5	7/6/2012	6.4	1.0	**16.1**				
6	10/5/2012	718	**13.9**	**68.6**				
7	1/21/2013	218	**7.9**	**34.8**				
8	7/19/2013	8.1	1.0	1.0				
9	1/6/2014	4.9	1.0	**2.9**				
10	7/17/2014	19.9	3.4	3.3				
11	1/9/2015	**5.5**	**6.4**	1.0				
12	7/8/2015	14.3	2.8	2.8				
13	12/3/2015	1.0	1.0	1.0				
14	1/14/2016	1.0	1.0	3.0				
15	2/10/2016	1.0	1.0	1.0				
16	3/9/2016	3.3	4.0	2.8				
17	4/8/2016	8.0	2.9	1.0				
18	5/25/2016	3.4	2.6	2.7				
19	8/25/2016	8.0	2.7	2.7				
20	11/16/2016	3.0	3.5	1.0				
21	1/24/2017	2.7	1.0	2.8				
22	7/13/2017	5.2	4.2	1.0				
23	2/13/2018	3.9	2.4	4.8				
24	7/19/2018	3.4	1.0	1.0				
25	1/22/2019	1.0	1.0	12.6				
26								
27								
28								
29								
30								
Coefficient of Variation:		2.63	1.06	3.12				
Mann-Kendall Statistic (S):		-170	18	-94				
Confidence Factor:		>99.9%	65.3%	98.6%				
Concentration Trend:		Decreasing	No Trend	Decreasing				



Notes:

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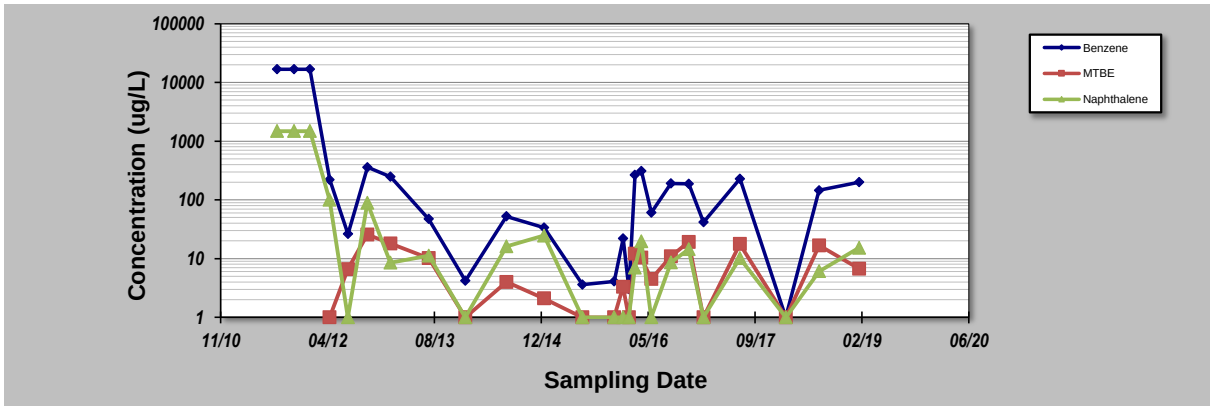
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-5R
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	Benzene	MTBE	Naphthalene				
		MW-5R CONCENTRATION (ug/L)						
1	8/9/2011	16,800		**1484.0**				
2	10/28/2011	16,800		**1484.0**				
3	1/10/2012	16,800		**1484.0**				
4	4/11/2012	220	1.0	**100.0**				
5	7/6/2012	26.2	**6.6**	1.0				
6	10/5/2012	359	**25.7**	**88.9**				
7	1/21/2013	248	**18.1**	**8.5**				
8	7/19/2013	47.2	**10.2**	**11.2**				
9	1/6/2014	4.2	1.0	1.0				
10	7/17/2014	52.4	4.0	16.2				
11	1/9/2015	**33.6**	**2.1**	**24.6**				
12	7/8/2015	3.6	1.0	1.0				
13	12/3/2015	4.1	1.0	1.0				
14	1/14/2016	22.0	3.3	1.0				
15	2/10/2016	3.0	1.0	1.0				
16	3/9/2016	265	12.1	7.0				
17	4/8/2016	309	10.4	19.7				
18	5/25/2016	61	4.5	1.0				
19	8/25/2016	191	10.9	8.6				
20	11/16/2016	187	19.2	14.5				
21	1/24/2017	41.8	1.0	1.0				
22	7/13/2017	228	17.7	10.2				
23	2/13/2018	1.0	1.0	1.0				
24	7/19/2018	145	16.8	6.1				
25	1/22/2019	200	6.7	15.3				
26								
27								
28								
29								
30								
Coefficient of Variation:		2.61	0.94	2.54				
Mann-Kendall Statistic (S):		-69	18	-91				
Confidence Factor:		94.4%	68.2%	98.3%				
Concentration Trend:		Prob. Decreasing	No Trend	Decreasing				



Notes:

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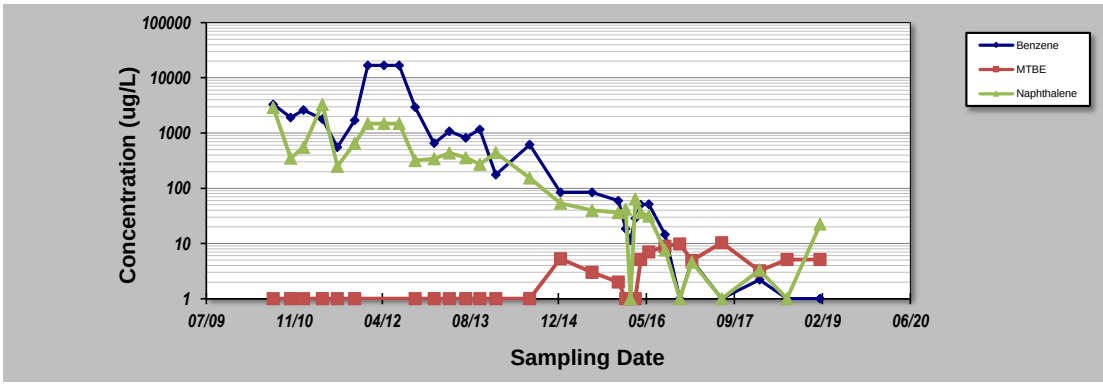
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-6
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-6 CONCENTRATION (ug/L)						
1	7/22/2010	3,300	1.0	**2900.0**				
2	10/28/2010	1,900	1.0	**350.0**				
3	1/10/2011	2,600	1.0	**550.0**				
4	4/27/2011	1,800	1.0	**3300.0**				
5	7/21/2011	550	1.0	**250.0**				
6	10/28/2011	1,700	1.0	**650.0**				
7	1/10/2012	16,800		**1484.0**				
8	4/11/2012	16,800		**1484.0**				
9	7/6/2012	16,800		**1484.0**				
10	10/5/2012	2,940	1.0	**318.0**				
11	1/21/2013	652	1.0	**343.0**				
12	4/17/2013	1,070	1.0	**436.0**				
13	7/19/2013	820	1.0	**358.0**				
14	10/8/2013	1,160	1.0	**272.0**				
15	1/6/2014	175	1.0	**442.0**				
16	7/17/2014	615	1.0	153.0				
17	1/9/2015	84	5.3	53.5				
18	7/8/2015	84.1	3.0	39.7				
19	12/3/2015	59.5	2.0	36.3				
20	1/14/2016	18.5	**1.0**	**41.8**				
21	2/10/2016	11.4	1.0	1.0				
22	3/9/2016	28.5	1.0	64.3				
23	4/8/2016	50.6	**5.1**	**36.2**				
24	5/25/2016	51.3	7.0	31.2				
25	8/25/2016	14.5	8.9	7.6				
26	11/16/2016	1.0	9.8	1.0				
27	1/24/2017	**4.9**	4.9	4.6				
28	7/13/2017	**1.0**	10.3	1.0				
29	2/13/2018	**2.2**	3.2	3.3				
30	7/19/2018	1.0	5.1	1.0				
31	1/23/2019	1.0	5.1	22.4				
32								
33								
34								
35								
Coefficient of Variation:		2.18	0.97	1.69				
Mann-Kendall Statistic (S):		-356	185	-336				
Confidence Factor:		>99.9%	>99.9%	>99.9%				
Concentration Trend:		Decreasing	Increasing	Decreasing				



Notes:

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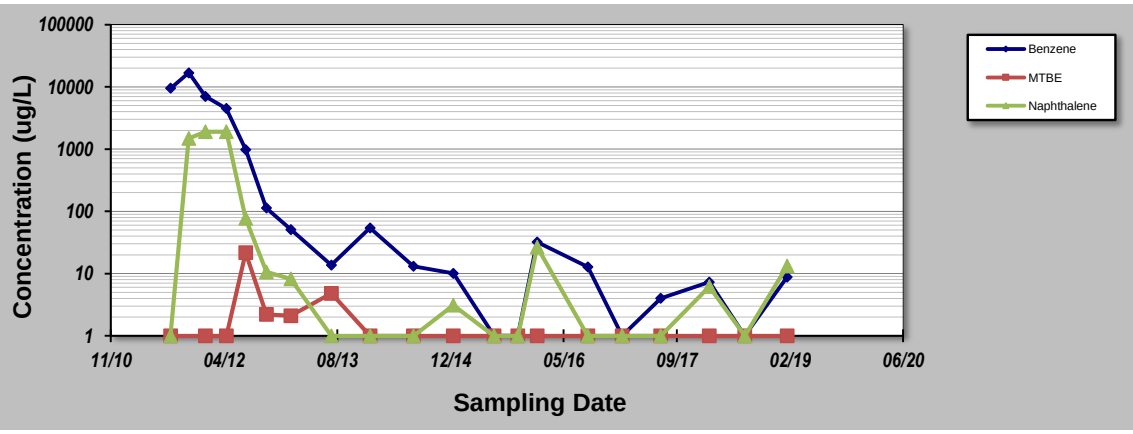
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-7R
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-7R CONCENTRATION (ug/L)						
1	8/9/2011	**9,500**	1.0	1.0				
2	10/28/2011	16,800		**1484.0**				
3	1/10/2012	**7,000**	1.0	**1900.0**				
4	4/11/2012	**4,500**	1.0	**1900.0**				
5	7/6/2012	**978**	**21.7**	**77.0**				
6	10/5/2012	**113**	**2.2**	**10.6**				
7	1/21/2013	**50.8**	**2.1**	**8.2**				
8	7/19/2013	13.7	**4.8**	1.0				
9	1/6/2014	**53.9**	1.0	1.0				
10	7/17/2014	13.1	1.0	1.0				
11	1/9/2015	**10.1**	1.0	3.1				
12	7/8/2015	1.0	1.0	1.0				
13	10/21/2015	1.0	1.0	1.0				
14	1/14/2016	**32.2**	1.0	**26.7**				
15	8/25/2016	**12.8**	1.0	1.0				
16	1/24/2017	1.0	1.0	1.0				
17	7/13/2017	4.0	1.0	1.0				
18	2/13/2018	**7.3**	1.0	**6.2**				
19	7/19/2018	1.0	1.0	1.0				
20	1/23/2019	**8.8**	1.0	**13.2**				
21								
22								
23								
24								
25								
Coefficient of Variation:		2.25	1.97	2.38				
Mann-Kendall Statistic (S):		-136	-38	-54				
Confidence Factor:		>99.9%	90.1%	95.7%				
Concentration Trend:		Decreasing	Prob. Decreasing	Decreasing				



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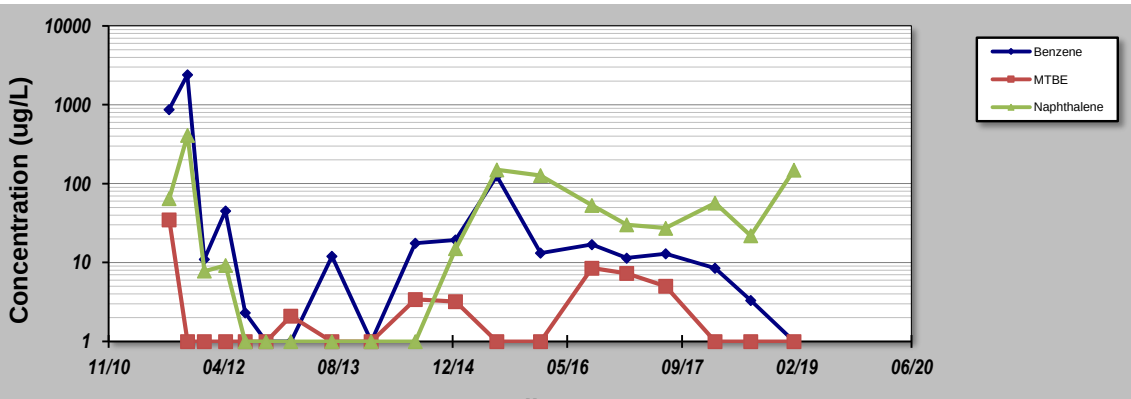
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-8R
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-8R CONCENTRATION (ug/L)						
1	8/9/2011	870	**34.8**	**64.8**				
2	10/28/2011	2,400	1.0	**410.0**				
3	1/10/2012	11	1.0	**7.8**				
4	4/11/2012	45	1.0	**9.2**				
5	7/6/2012	2.3	1.0	1.0				
6	10/5/2012	1.0	1.0	1.0				
7	1/21/2013	1.0	**2.1**	1.0				
8	7/19/2013	12	1.0	1.0				
9	1/6/2014	1.0	1.0	1.0				
10	7/17/2014	**17.6**	**3.4**	1.0				
11	1/9/2015	19.4	3.2	15.0				
12	7/8/2015	125.0	1.0	150.0				
13	1/14/2016	13.2	1.0	127.0				
14	8/25/2016	16.9	8.5	53.0				
15	1/24/2017	11.4	7.3	30.1				
16	7/13/2017	12.9	5.0	27.3				
17	2/13/2018	8.5	1.0	56.8				
18	7/19/2018	3.3	1.0	21.9				
19	1/23/2019	1.0	1.0	149.0				
20								
Coefficient of Variation:		3.04	1.94	1.66				
Mann-Kendall Statistic (S):		-43	9	32				
Confidence Factor:		92.8%	60.9%	85.9%				
Concentration Trend:		Prob. Decreasing	No Trend	No Trend				



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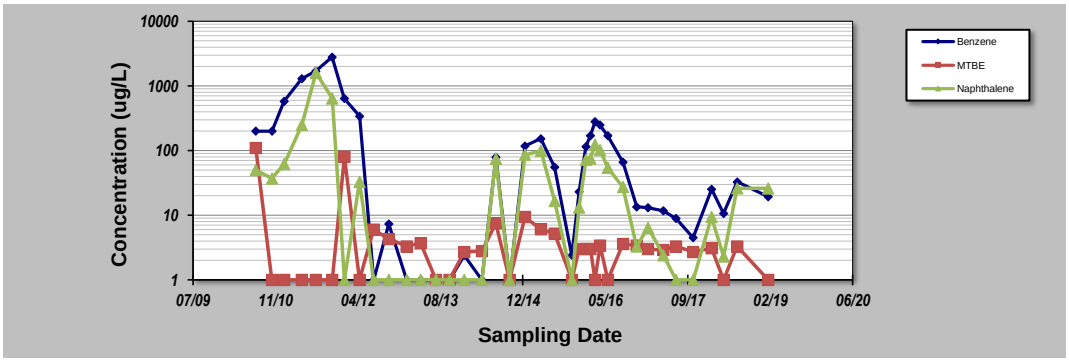
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-9
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-9 CONCENTRATION (ug/L)						
1	7/22/2010	200	**110.0**	**50.0**				
2	10/28/2010	200	1.0	**37.0**				
3	1/10/2011	580	1.0	**62.0**				
4	4/27/2011	1,300	1.0	**250.0**				
5	7/21/2011	1,700	1.0	**1600.0**				
6	10/28/2011	2,800	1.0	**640.0**				
7	1/10/2012	640	**81.0**	1.0				
8	4/11/2012	340	1.0	**33.0**				
9	7/6/2012	1.0	**6.0**	1.0				
10	10/5/2012	7.3	**4.3**	1.0				
11	1/21/2013	1.0	**3.3**	1.0				
12	4/17/2013	1.0	**3.7**	1.0				
13	7/19/2013	1.0	1.0	1.0				
14	10/8/2013	1.0	1.0	1.0				
15	1/6/2014	2.4	**2.7**	1.0				
16	4/23/2014	1.0	**2.8**	1.0				
17	7/17/2014	**79.2**	**7.5**	**74.7**				
18	10/8/2014	1.0	1.0	1.0				
19	1/9/2015	118	9.4	85.6				
20	4/15/2015	153	6.1	99.1				
21	7/8/2015	55.4	5.2	16.6				
22	10/21/2015	2.4	1.0	1.0				
23	12/3/2015	23.1	3.0	13.2				
24	1/14/2016	115	3.0	**72.4**				
25	2/10/2016	170.0	3.0	75.6				
26	3/9/2016	281.0	1.0	123.0				
27	4/8/2016	249	3.4	**102.0**				
28	5/25/2016	170.0	1.0	54.2				
29	8/25/2016	66.2	3.6	27.4				
30	11/16/2016	13.5	3.4	3.3				
31	1/24/2017	13.1	3.0	6.4				
32	4/27/2017	11.7	2.9	2.4				
33	7/13/2017	8.9	3.3	1.0				
34	10/25/2017	4.5	2.7	1.0				
35	2/13/2018	25.3	3.1	9.4				
36	4/27/2018	10.7	1.0	2.3				
37	7/19/2018	32.8	3.3	26.2				
38	1/23/2019	19.3	1.0	26.0				
39								
40								
Coefficient of Variation:		2.23	2.76	2.97				
Mann-Kendall Statistic (S):		-107	-7	-43				
Confidence Factor:		90.8%	53.0%	70.0%				
Concentration Trend:		Prob. Decreasing	No Trend	No Trend				



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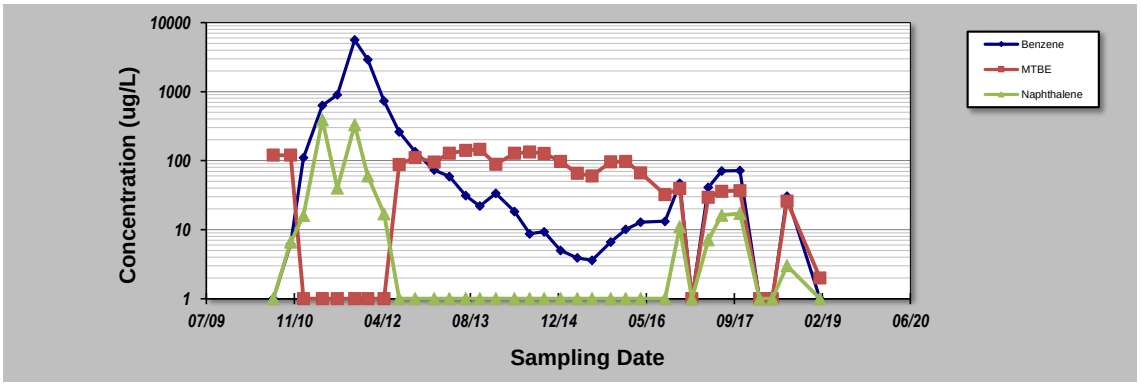
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-10
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-10 CONCENTRATION (ug/L)						
1	7/22/2010	1.0	**120.0**	1.0				
2	10/28/2010	**6.2**	**120.0**	**6.6**				
3	1/10/2011	**110**	**1.0**	**16.0**				
4	4/27/2011	**630**	**1.0**	**390.0**				
5	7/21/2011	900.0	**1.0**	**40.0**				
6	10/28/2011	5600.0	**1.0**	**330.0**				
7	1/10/2012	2900.0	**1.0**	**60.0**				
8	4/11/2012	730.0	**1.0**	**17.0**				
9	7/6/2012	260.0	**88.1**	1.0				
10	10/5/2012	**134.0**	**111.0**	**1.0**				
11	1/21/2013	**73.3**	**95.5**	**1.0**				
12	4/17/2013	**58.8**	**128.0**	**1.0**				
13	7/19/2013	**31.1**	**141.0**	1.0				
14	10/8/2013	**21.9**	**146.0**	1.0				
15	1/6/2014	33.6	**88.8**	1.0				
16	4/23/2014	18.3	**128.0**	1.0				
17	7/17/2014	**8.7**	**133.0**	1.0				
18	10/8/2014	9.3	**127**	1				
19	1/9/2015	**5**	**97.7**	1				
20	4/15/2015	**3.9**	**65.4**	1				
21	7/8/2015	**3.6**	**60.1**	1				
22	10/21/2015	**6.6**	**95.8**	1				
23	1/14/2016	**10.1**	**97.5**	1				
24	4/8/2016	**12.8**	**66.5**	1				
25	8/25/2016	**13.2**	**32.3**	1				
26	11/16/2016	**46.8**	**39.6**	**11**				
27	1/24/2017	**1**	**1**	1				
28	4/27/2017	**40.9**	**29.4**	**7.1**				
29	7/13/2017	**70.8**	**36**	**16.2**				
30	10/25/2017	**71.6**	**36.6**	**17.2**				
31	2/13/2018	1	1	1				
32	4/27/2018	1	1	1				
33	7/19/2018	30.4	25.9	3				
34	1/22/2019	1	2	1				
35								
Coefficient of Variation:		3.06	0.83	3.11				
Mann-Kendall Statistic (S):		-211	-103	-74				
Confidence Factor:		99.9%	93.4%	86.0%				
Concentration Trend:		Decreasing	Prob. Decreasing	No Trend				



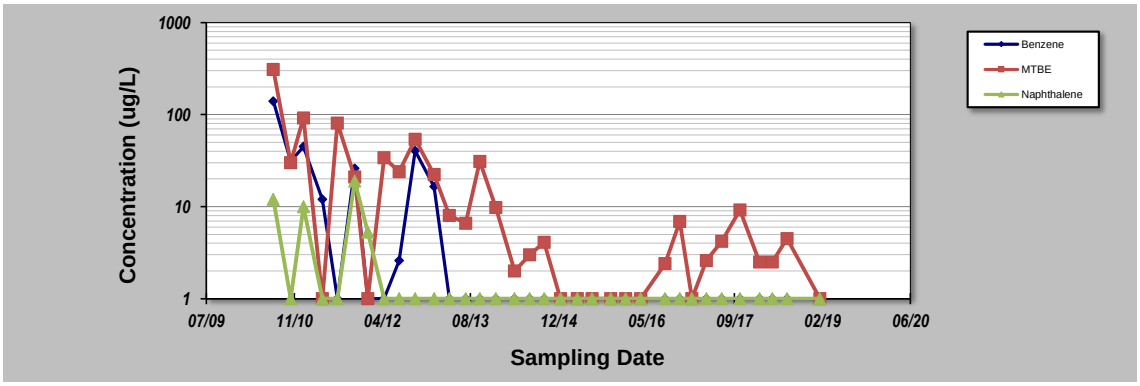
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-11
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-11 CONCENTRATION (ug/L)						
1	7/22/2010	140	**310.0**	**12.0**				
2	10/28/2010	31	**30.0**	1.0				
3	1/10/2011	45	**92.0**	**10.0**				
4	4/27/2011	12	1.0	1.0				
5	7/21/2011	1.0	**81.0**	1.0				
6	10/28/2011	26	**21.0**	**19.0**				
7	1/10/2012	1.0	**1.0**	**5.3**				
8	4/11/2012	1.0	**34.0**	1.0				
9	7/6/2012	2.6	**24.0**	1.0				
10	10/5/2012	40	**54.0**	1.0				
11	1/21/2013	16.5	**22.3**	1.0				
12	4/17/2013	1.0	**8.0**	1.0				
13	7/19/2013	1.0	**6.6**	1.0				
14	10/8/2013	1.0	**31.0**	1.0				
15	1/6/2014	1.0	**9.8**	1.0				
16	4/23/2014	1.0	**2.0**	1.0				
17	7/17/2014	1.0	**3.0**	1.0				
18	10/8/2014	1.0	**4.1**	1.0				
19	1/9/2015	1.0	1.0	1.0				
20	4/15/2015	1.0	1.0	1.0				
21	7/8/2015	1.0	1.0	1.0				
22	10/21/2015	1.0	1.0	1.0				
23	1/14/2016	1.0	1.0	1.0				
24	4/8/2016	1.0	1.0	1.0				
25	8/25/2016	1.0	2.4	1.0				
26	11/16/2016	1.0	6.9	1.0				
27	1/24/2017	1.0	1.0	1.0				
28	4/17/2017	1.0	2.6	1.0				
29	7/13/2017	1.0	4.2	1.0				
30	10/25/2017	1.0	9.2	1.0				
31	2/13/2018	1.0	2.5	1.0				
32	4/27/2018	1.0	2.5	1.0				
33	7/19/2018	1.0	4.5	1.0				
34	1/22/2019	1.0	1.0	1.0				
35								
Coefficient of Variation:		2.58	2.42	1.72				
Mann-Kendall Statistic (S):		-200	-217	-108				
Confidence Factor:		99.9%	99.9%	94.4%				
Concentration Trend:		Decreasing	Decreasing	Prob. Decreasing				



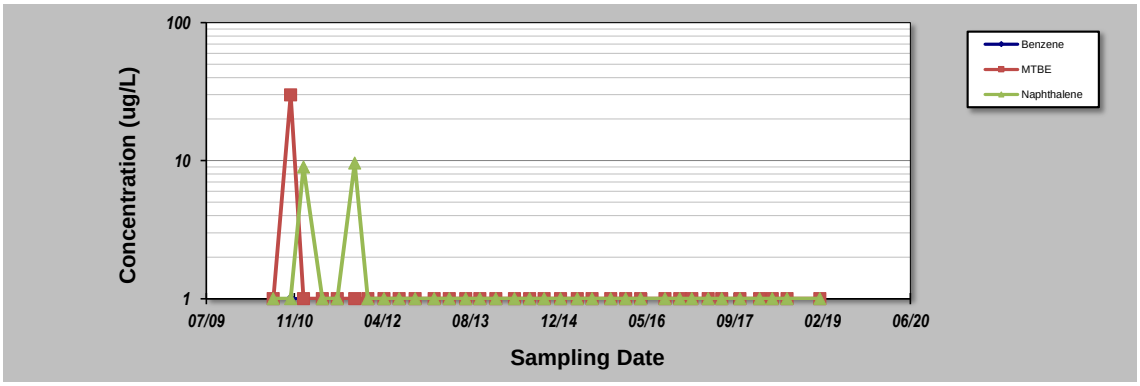
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-12
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-12 CONCENTRATION (ug/L)						
1	7/22/2010	1.0	1.0	1.0				
2	10/28/2010	1.0	**30.0**	1.0				
3	1/10/2011	1.0	1.0	**9.0**				
4	4/27/2011	1.0	1.0	1.0				
5	7/21/2011	1.0	1.0	1.0				
6	10/28/2011	1.0	1.0	**9.6**				
7	1/10/2012	1.0	1.0	1.0				
8	4/11/2012	1.0	1.0	1.0				
9	7/6/2012	1.0	1.0	1.0				
10	10/5/2012	1.0	1.0	1.0				
11	1/21/2013	1.0	1.0	1.0				
12	4/17/2013	1.0	1.0	1.0				
13	7/19/2013	1.0	1.0	1.0				
14	10/8/2013	1.0	1.0	1.0				
15	1/6/2014	1.0	1.0	1.0				
16	4/23/2014	1.0	1.0	1.0				
17	7/17/2014	1.0	1.0	1.0				
18	10/8/2014	1.0	1.0	1.0				
19	1/9/2015	1.0	1.0	1.0				
20	4/15/2015	1.0	1.0	1.0				
21	7/8/2015	1.0	1.0	1.0				
22	10/21/2015	1.0	1.0	1.0				
23	1/14/2016	1.0	1.0	1.0				
24	4/8/2016	1.0	**1.0**	**1.0**				
25	8/25/2016	1.0	**1.0**	**1.0**				
26	11/16/2016	1.0	**1.0**	**1.0**				
27	1/24/2017	1.0	1.0	1.0				
28	4/27/2017	1.0	1.0	1.0				
29	7/13/2017	1.0	1.0	1.0				
30	10/25/2017	1.0	1.0	1.0				
31	2/13/2018	1.0	1.0	1.0				
32	4/27/2018	1.0	1.0	1.0				
33	7/19/2018	1.0	1.0	1.0				
34	1/22/2019	1.0	1.0	1.0				
35								
Coefficient of Variation:		0.00	2.68	1.33				
Mann-Kendall Statistic (S):		0	-31	-51				
Confidence Factor:		49.4%	67.1%	76.9%				
Concentration Trend:		Stable	No Trend	No Trend				



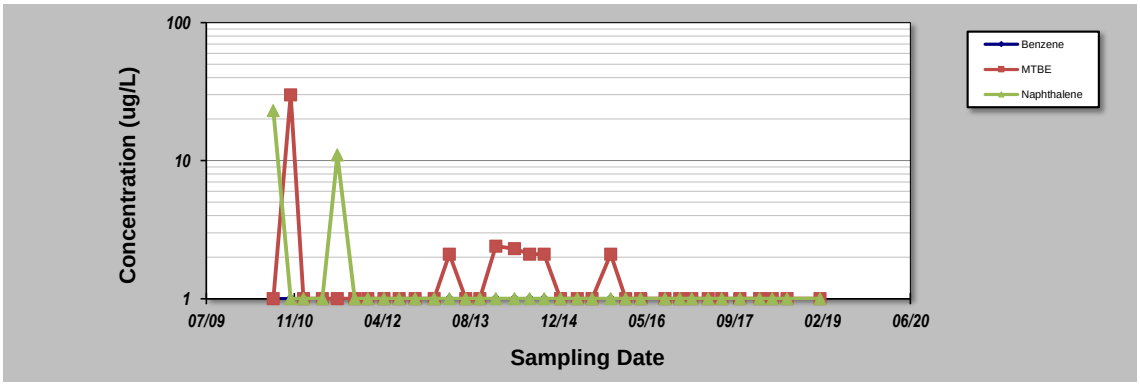
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-13
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-13 CONCENTRATION (ug/L)						
1	7/22/2010	1.0	1.0	**23.0**				
2	10/28/2010	1.0	**30.0**	1.0				
3	1/10/2011	1.0	1.0	1.0				
4	4/27/2011	1.0	1.0	1.0				
5	7/21/2011	1.0	1.0	**11.0**				
6	10/28/2011	1.0	1.0	1.0				
7	1/10/2012	1.0	1.0	1.0				
8	4/11/2012	1.0	1.0	1.0				
9	7/6/2012	1.0	1.0	1.0				
10	10/5/2012	1.0	1.0	1.0				
11	1/21/2013	1.0	1.0	1.0				
12	4/17/2013	1.0	**2.1**	1.0				
13	7/19/2013	1.0	1.0	1.0				
14	10/8/2013	1.0	1.0	1.0				
15	1/6/2014	1.0	**2.4**	1.0				
16	4/23/2014	1.0	**2.3**	1.0				
17	7/17/2014	1.0	**2.1**	1.0				
18	10/8/2014	1.0	**2.1**	1.0				
19	1/9/2015	1.0	1.0	1.0				
20	4/15/2015	1.0	1.0	1.0				
21	7/8/2015	1.0	1.0	1.0				
22	10/21/2015	1.0	**2.1**	1.0				
23	1/14/2016	1.0	**1.0**	**1.0**				
24	4/8/2016	1.0	**1.0**	**1.0**				
25	8/25/2016	1.0	**1.0**	**1.0**				
26	11/16/2016	1.0	**1.0**	**1.0**				
27	1/24/2017	1.0	1.0	1.0				
28	4/27/2017	1.0	**1.0**	**1.0**				
29	7/13/2017	1.0	**1.0**	**1.0**				
30	10/25/2017	1.0	**1.0**	**1.0**				
31	2/13/2018	1.0	1.0	1.0				
32	4/27/2018	1.0	1.0	1.0				
33	7/19/2018	1.0	1.0	1.0				
34	1/23/2019	1.0	1.0	1.0				
35								
Coefficient of Variation:		0.00	2.40	2.11				
Mann-Kendall Statistic (S):		0	-52	-59				
Confidence Factor:		49.4%	77.4%	80.4%				
Concentration Trend:		Stable	No Trend	No Trend				



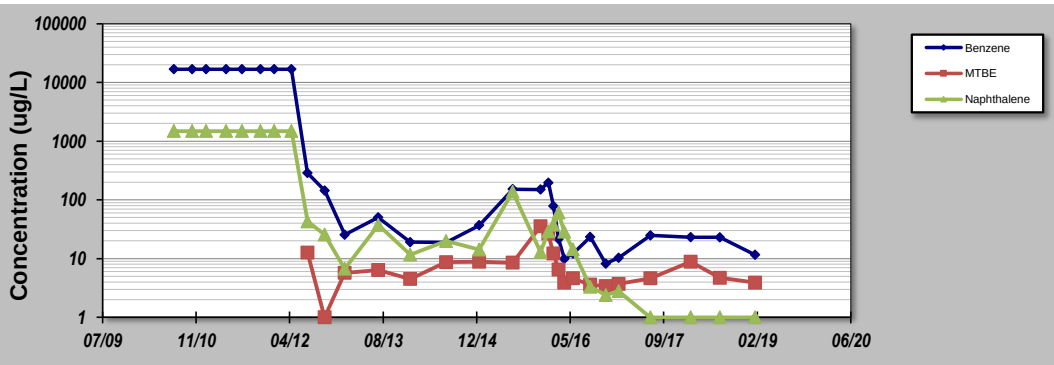
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-14
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-14 CONCENTRATION (ug/L)						
1	7/22/2010	16800.0		**1484.0**				
2	10/28/2010	16800		**1484.0**				
3	1/10/2011	16800.0		**1484.0**				
4	4/27/2011	16800.0		**1484.0**				
5	7/21/2011	16800		**1484.0**				
6	10/28/2011	16800.0		**1484.0**				
7	1/10/2012	16800.0		**1484.0**				
8	4/11/2012	16800.0		**1484.0**				
9	7/6/2012	287.0	**12.6**	**42.8**				
10	10/5/2012	144.0	1.0	**25.6**				
11	1/21/2013	25.5	**5.7**	**6.7**				
12	7/19/2013	50.3	**6.4**	**37.3**				
13	1/6/2014	19.0	4.5	11.7				
14	7/17/2014	18.9	8.7	19.9				
15	1/9/2015	36.9	8.8	14.2				
16	7/8/2015	152	8.5	138.0				
17	12/3/2015	150	35.4	12.8				
18	1/14/2016	196	26.6	29.2				
19	2/10/2016	78.1	12.2	37.5				
20	3/9/2016	21.5	6.5	60.6				
21	4/8/2016	9.9	3.9	28.7				
22	5/25/2016	12.2	4.6	14.3				
23	8/25/2016	23.3	3.6	**3.3**				
24	11/16/2016	8.2	3.4	**2.4**				
25	1/24/2017	10.3	3.7	**2.8**				
26	7/13/2017	24.8	4.6	1				
27	2/13/2018	23.2	8.8	1				
28	7/19/2018	23	4.7	1				
29	1/23/2019	11.6	3.9	1				
30								
Coefficient of Variation:		1.63	0.96	1.56				
Mann-Kendall Statistic (S):		-250	-39	-270				
Confidence Factor:		>99.9%	87.3%	>99.9%				
Concentration Trend:		Decreasing	Stable	Decreasing				



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
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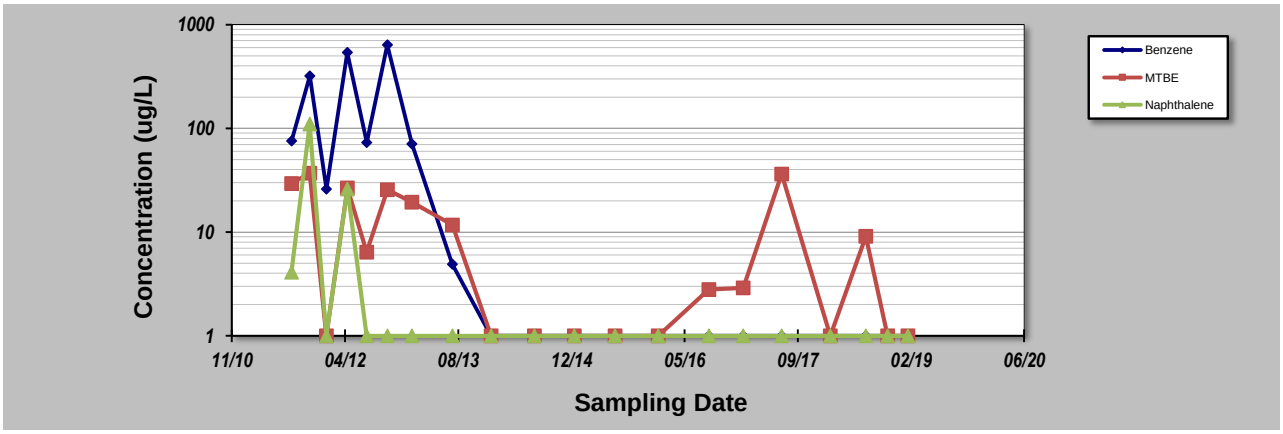
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-15
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-15 CONCENTRATION (ug/L)						
1	8/9/2011	**75.5**	**29.3**	**4.1**				
2	10/28/2011	**320.0**	**37.0**	**110.0**				
3	1/10/2012	**26.0**	**1.0**	**1.0**				
4	4/11/2012	**540.0**	**26.6**	**26.0**				
5	7/6/2012	**73.1**	**6.4**	**1.0**				
6	10/5/2012	**637.0**	**25.6**	**1.0**				
7	1/21/2013	**70.9**	**19.4**	**1.0**				
8	7/19/2013	**4.9**	**11.7**	**1.0**				
9	41645.0	1.0	1.0	1.0				
10	7/17/2014	**1.0**	1.0	1.0				
11	1/9/2015	1.000	1.0	1.0				
12	7/8/2015	**1.0**	1.0	1.0				
13	1/14/2016	1.0	1.0	1.0				
14	8/25/2016	**1.0**	2.8	1.0				
15	1/24/2017	1.0	2.9	1.0				
16	7/13/2017	1.0	36.2	1.0				
17	2/13/2018	1.0	1.0	1.0				
18	43,300.0	1.0	9.1	1.0				
19	43,397.0	1.0	1.0	1.0				
20	43,487.0	1.0	1.0	1.0				
21								
22								
23								
24								
25								
Coefficient of Variation:		2.12	1.21	3.14				
Mann-Kendall Statistic (S):		-102	-62	-48				
Confidence Factor:		>99.9%	97.7%	93.6%				
Concentration Trend:		Decreasing	Decreasing	Prob. Decreasing				



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
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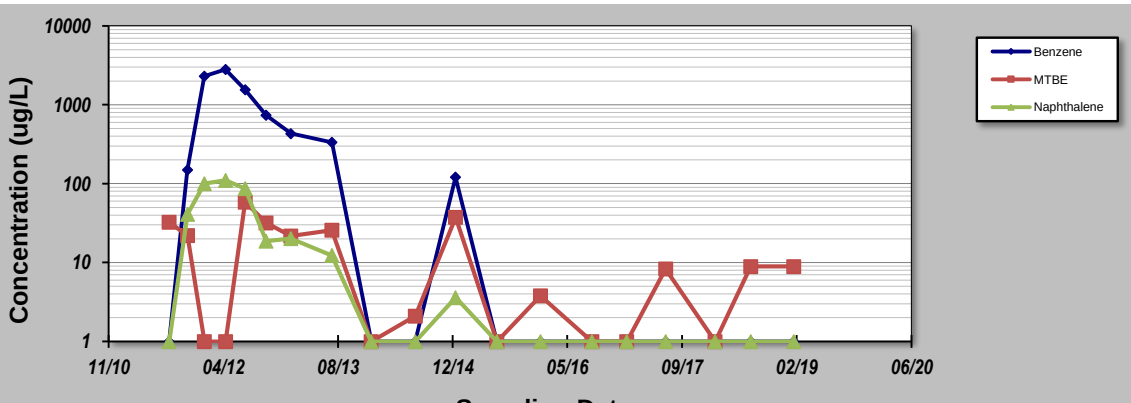
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-16
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-16 CONCENTRATION (ug/L)						
1	8/9/2011	1.0	**32.5**	1.0				
2	10/28/2011	150	**22.0**	**41.0**				
3	1/10/2012	2,300	1.0	**100.0**				
4	4/11/2012	2,800	1.0	**110.0**				
5	7/6/2012	1,550	**58.5**	**86.7**				
6	10/5/2012	736	**31.8**	**18.7**				
7	1/21/2013	432	**21.8**	**20.2**				
8	7/19/2013	335	**25.7**	**12.3**				
9	1/6/2014	1.0	1.0	1.0				
10	7/17/2014	1.0	2.1	1.0				
11	1/9/2015	121	37.4	3.6				
12	7/8/2015	1.0	1.0	1.0				
13	1/14/2016	1.0	3.8	1.0				
14	8/25/2016	1.0	1.0	1.0				
15	1/24/2017	1.0	1.0	1.0				
16	7/13/2017	1.0	8.3	1.0				
17	2/13/2018	1.0	1.0	1.0				
18	7/19/2018	1.0	8.9	1.0				
19	1/22/2019	1.0	8.9	1.0				
20								
Coefficient of Variation:		1.89	1.17	1.71				
Mann-Kendall Statistic (S):		-82	-33	-86				
Confidence Factor:		99.8%	86.7%	99.9%				
Concentration Trend:		Decreasing	No Trend	Decreasing				



Notes:

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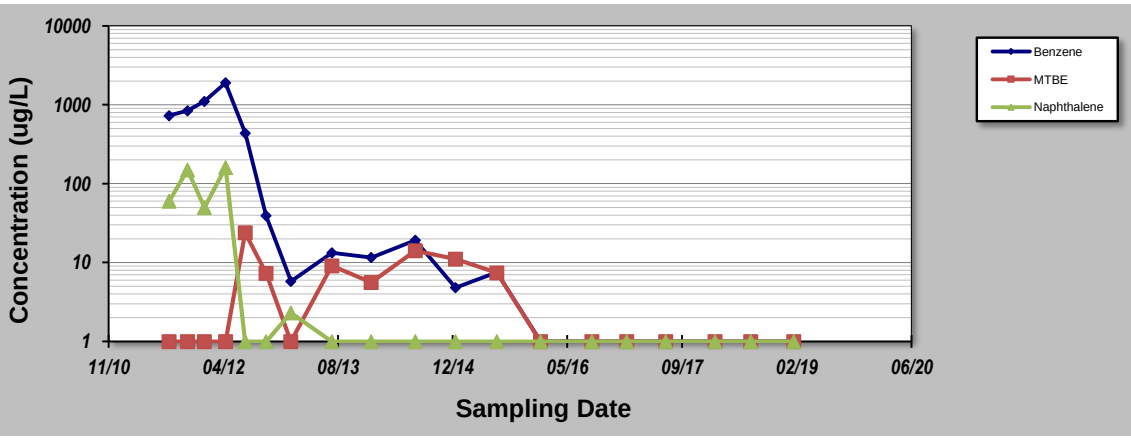
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-17
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-17 CONCENTRATION (ug/L)						
1	8/9/2011	**728**	1.0	**59.9**				
2	10/28/2011	**840**	1.0	**150.0**				
3	1/10/2012	**1,100**	1.0	**50.0**				
4	4/11/2012	**1,900**	1.0	**160.0**				
5	7/6/2012	**438**	**23.9**	1.0				
6	10/5/2012	**39.3**	**7.3**	1.0				
7	1/21/2013	**5.8**	1.0	**2.3**				
8	7/19/2013	13.3	**9.1**	1.0				
9	1/6/2014	**11.6**	**5.6**	1.0				
10	7/17/2014	**19.2**	14.1	1.0				
11	1/9/2015	4.8	11.1	1.0				
12	7/8/2015	**7.5**	7.4	1.0				
13	1/14/2016	1.0	1.0	1.0				
14	8/25/2016	1.0	1.0	1.0				
15	1/24/2017	1.0	1.0	1.0				
16	7/13/2017	1.0	1.0	1.0				
17	2/13/2018	1.0	1.0	1.0				
18	7/19/2018	1.0	1.0	1.0				
19	1/22/2019	1.0	1.0	1.0				
20								
Coefficient of Variation:		1.93	1.31	2.16				
Mann-Kendall Statistic (S):		-124	-21	-68				
Confidence Factor:		>99.9%	75.5%	99.1%				
Concentration Trend:		Decreasing	No Trend	Decreasing				



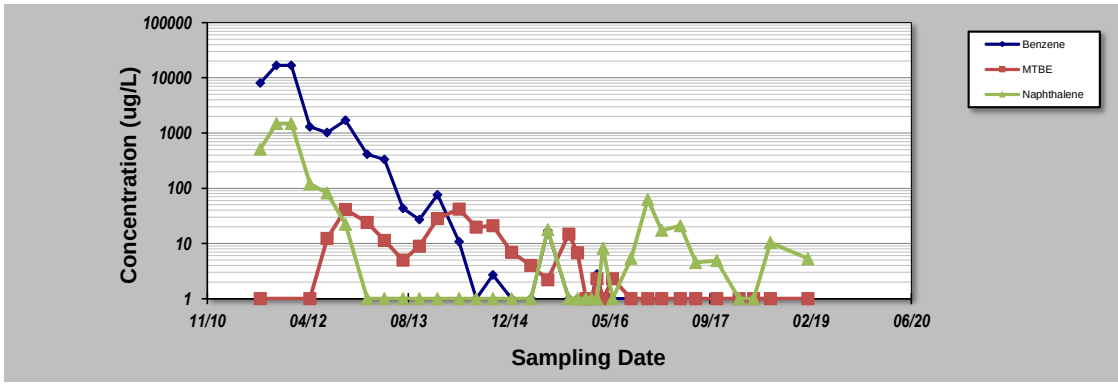
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-18
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-18 CONCENTRATION (ug/L)						
1	8/9/2011	**8,050**	1.0	**511.0**				
2	10/28/2011	16,800		**1484.0**				
3	1/10/2012	16,800		**1484.0**				
4	4/11/2012	**1,300**	1.0	**120.0**				
5	7/6/2012	**1,020**	**12.3**	**82.4**				
6	10/5/2012	**1,700**	**41.3**	**22.3**				
7	1/21/2013	**413**	**24.1**	1.0				
8	4/17/2013	**332**	**11.3**	1.0				
9	7/19/2013	**43.2**	**5.0**	1.0				
10	10/8/2013	**27.1**	**8.9**	1.0				
11	1/6/2014	**76.4**	**28.3**	1.0				
12	4/23/2014	**10.8**	**42.0**	1.0				
13	7/17/2014	1.0	**19.7**	1.0				
14	10/8/2014	**2.7**	**21.0**	1.0				
15	1/9/2015	1.0	6.9	1.0				
16	4/15/2015	1.0	4.0	1.0				
17	7/8/2015	**17.1**	2.2	**17.8**				
18	10/21/2015	1.0	14.8	1.0				
19	12/3/2015	1.0	6.8	1.0				
20	1/14/2016	1.0	1.0	1.0				
21	2/10/2016	1.0	1.0	1.0				
22	3/9/2016	2.8	2.3	1.0				
23	4/8/2016	**1.0**	**1.0**	**8.2**				
24	5/25/2016	1.0	2.3	1.0				
25	8/25/2016	**1.0**	**1.0**	**5.4**				
26	11/16/2016	**1.0**	**1.0**	**62.4**				
27	1/24/2017	**1.0**	**1.0**	**17.3**				
28	4/27/2017	**1.0**	**1.0**	**21.0**				
29	7/13/2017	**1.0**	**1.0**	**4.5**				
30	10/25/2017	**1.0**	**1.0**	**4.9**				
31	2/13/2018	1.0	1.0	1.0				
32	4/27/2018	1.0	1.0	1.0				
33	7/19/2018	1.0	1.0	**10.4**				
34	1/22/2019	1.0	1.0	**5.3**				
35								
Coefficient of Variation:		3.03	1.38	3.15				
Mann-Kendall Statistic (S):		-349	-238	-55				
Confidence Factor:		>99.9%	>99.9%	78.7%				
Concentration Trend:		Decreasing	Decreasing	No Trend				



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
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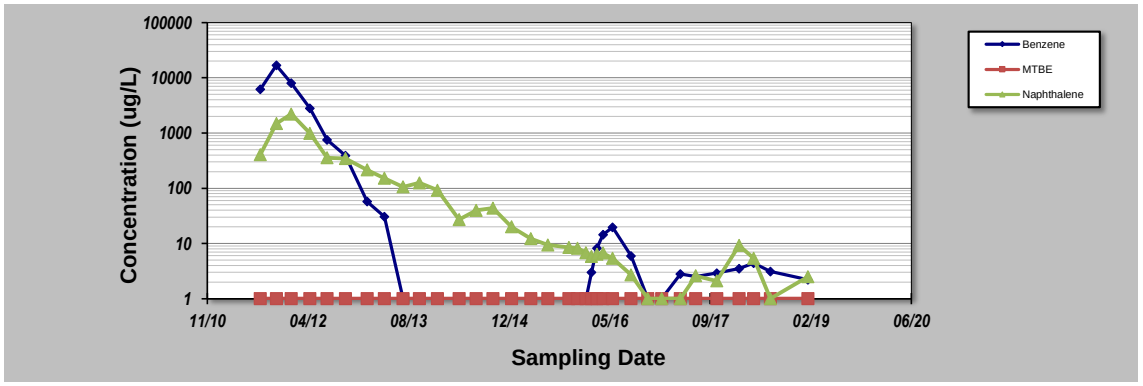
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-19
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-19 CONCENTRATION (ug/L)						
1	8/9/2011	6,180	1.0	**405.0**				
2	10/28/2011	16,800	1.0	**1484.0**				
3	1/10/2012	8,000	1.0	**2200.0**				
4	4/11/2012	2,800	1.0	**990.0**				
5	7/6/2012	749	1.0	**356.0**				
6	10/5/2012	388	1.0	**345.0**				
7	1/21/2013	57.4	1.0	**215.0**				
8	4/17/2013	30.5	1.0	**152.0**				
9	7/19/2013	1.0	1.0	**106.0**				
10	10/8/2013	1.0	1.0	**125.0**				
11	1/6/2014	1.0	1.0	**92.1**				
12	4/23/2014	1.0	1.0	**27.0**				
13	7/17/2014	1.0	1.0	**39.8**				
14	10/8/2014	1.0	1.0	**43.8**				
15	1/9/2015	1.0	1.0	20.0				
16	4/15/2015	1.0	1.0	12.2				
17	7/8/2015	1.0	1.0	9.4				
18	10/21/2015	1.0	1.0	8.5				
19	12/3/2015	1.0	1.0	8.2				
20	1/14/2016	1.0	1.0	6.8				
21	2/10/2016	3.0	1.0	5.8				
22	3/9/2016	8.2	1.0	6.4				
23	4/8/2016	14.4	1.0	6.7				
24	5/25/2016	19.6	1.0	5.4				
25	8/25/2016	5.9	1.0	2.7				
26	11/16/2016	1.0	1.0	1.0				
27	1/24/2017	1.0	1.0	1.0				
28	4/27/2017	**2.8**	1.0	1.0				
29	7/13/2017	**2.5**	1.0	**2.6**				
30	10/25/2017	**2.9**	1.0	**2.1**				
31	2/13/2018	**3.5**	1.0	**9.2**				
32	4/27/2018	**4.4**	1.0	**5.4**				
33	7/19/2018	**3.1**	1.0	1.0				
34	1/22/2019	**2.2**	1.0	2.5				
35								
Coefficient of Variation:		3.19	0.00	2.37				
Mann-Kendall Statistic (S):		-106	0	-472				
Confidence Factor:		94.0%	49.4%	>99.9%				
Concentration Trend:		Prob. Decreasing	Stable	Decreasing				



Notes:

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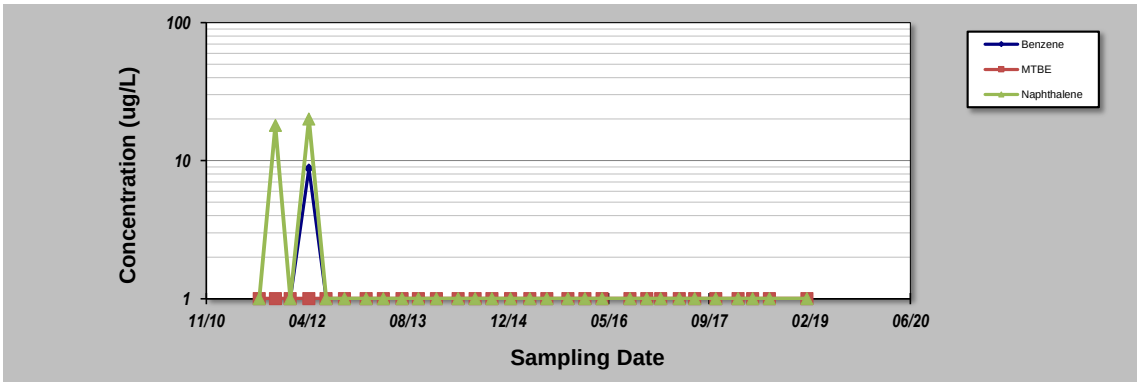
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-20
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-20 CONCENTRATION (ug/L)						
1	8/9/2011	1.0	1.0	1.0				
2	10/28/2011	1.0	1.0	18.0				
3	1/10/2012	1.0	1.0	1.0				
4	4/11/2012	8.8	1.0	20.0				
5	7/6/2012	1.0	1.0	1.0				
6	10/5/2012	1.0	1.0	1.0				
7	1/21/2013	1.0	1.0	1.0				
8	4/17/2013	1.0	1.0	1.0				
9	7/19/2013	1.0	1.0	1.0				
10	10/8/2013	1.0	1.0	1.0				
11	1/6/2014	1.0	1.0	1.0				
12	4/23/2014	1.0	1.0	1.0				
13	7/17/2014	1.0	1.0	1.0				
14	10/8/2014	1.0	1.0	1.0				
15	1/9/2015	1.0	1.0	1.0				
16	4/15/2015	1.0	1.0	1.0				
17	7/8/2015	1.0	1.0	1.0				
18	10/21/2015	1.0	1.0	1.0				
19	1/14/2016	1.0	1.0	1.0				
20	4/8/2016	1.0	1.0	1.0				
21	8/25/2016	1.0	1.0	1.0				
22	11/16/2016	1.0	1.0	1.0				
23	1/24/2017	1.0	1.0	1.0				
24	4/27/2017	1.0	1.0	1.0				
25	7/13/2017	1.0	1.0	1.0				
26	10/25/2017	1.0	1.0	1.0				
27	2/13/2018	1.0	1.0	1.0				
28	4/27/2018	1.0	1.0	1.0				
29	7/19/2018	1.0	1.0	1.0				
30	1/22/2019	1.0	1.0	1.0				
31								
32								
33								
34								
35								
Coefficient of Variation:		1.13	0.00	2.08				
Mann-Kendall Statistic (S):		-23	0	-49				
Confidence Factor:		65.1%	49.3%	80.2%				
Concentration Trend:		No Trend	Stable	No Trend				



Notes:

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2. 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.
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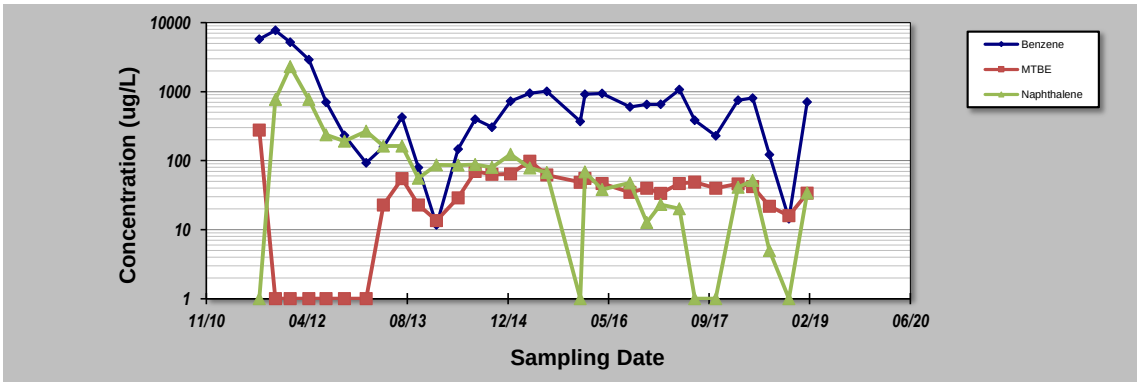
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-21
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-21 CONCENTRATION (ug/L)						
1	8/9/2011	5,770	**278.0**	1.0				
2	10/28/2011	7,700	1.0	**770.0**				
3	1/10/2012	5,200	1.0	**2300.0**				
4	4/11/2012	2,900	1.0	**770.0**				
5	7/6/2012	702	1.0	**237.0**				
6	10/5/2012	232	1.0	**191.0**				
7	1/21/2013	93	1.0	**267.0**				
8	4/17/2013	158	**22.8**	**163.0**				
9	7/19/2013	427	**54.9**	**163.0**				
10	10/8/2013	79.6	**22.8**	**55.6**				
11	1/6/2014	11.7	13.5	**86.9**				
12	4/23/2014	147	**28.8**	**86.0**				
13	7/17/2014	399	**69.9**	**88.0**				
14	10/8/2014	305	**63.3**	**79.8**				
15	1/9/2015	728	64.3	124.0				
16	4/15/2015	945	98.3	78.4				
17	7/8/2015	1010	62.0	67.4				
18	12/21/2015	369	48.6	1.0				
19	1/14/2016	919	55.1	68.9				
20	4/8/2016	940	46.6	38.3				
21	8/25/2016	598	34.8	47.6				
22	11/16/2016	653	39.7	12.7				
23	1/24/2017	655	33.6	23.2				
24	4/27/2017	1070	46.5	20.1				
25	7/13/2017	384	48.8	1.0				
26	10/25/2017	229	39.9	1.0				
27	2/13/2018	749	46.1	41.1				
28	4/27/2018	805	42.0	51.6				
29	7/19/2018	122	21.8	5.0				
30	10/24/2018	14.4	15.9	1.0				
31	1/23/2019	705	33.7	34.0				
32								
33								
34								
35								
Coefficient of Variation:		1.60	1.16	2.29				
Mann-Kendall Statistic (S):		-51	57	-293				
Confidence Factor:		80.1%	82.8%	>99.9%				
Concentration Trend:		No Trend	No Trend	Decreasing				



Notes:

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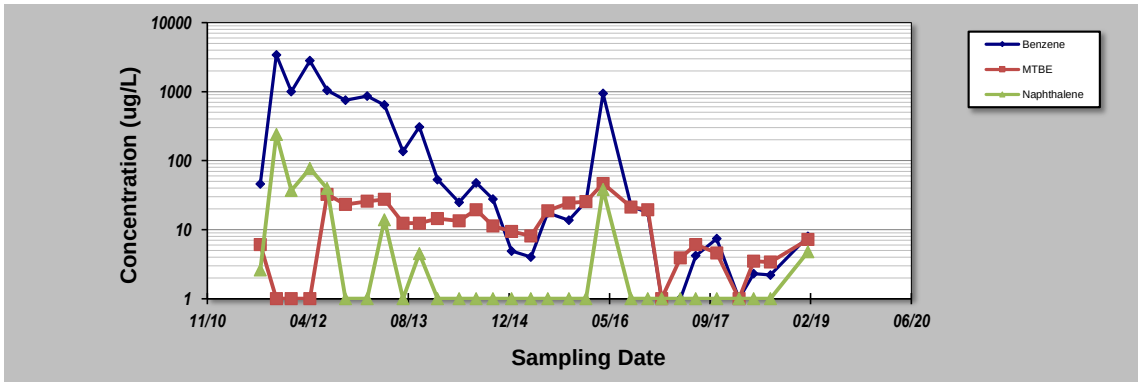
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-22
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-22 CONCENTRATION (ug/L)						
1	8/9/2011	**46.1**	**6.1**	**2.6**				
2	10/28/2011	**3,400**	1.0	**240.0**				
3	1/10/2012	**1,000**	1.0	**37.0**				
4	4/11/2012	**2,800**	1.0	**77.0**				
5	7/6/2012	**1,040**	**32.5**	**39.5**				
6	10/5/2012	**751**	**23.2**	1.0				
7	1/21/2013	**864**	**25.8**	1.0				
8	4/17/2013	**642**	**27.5**	**13.9**				
9	7/19/2013	**136**	**12.4**	1.0				
10	10/8/2013	**308**	**12.4**	**4.5**				
11	1/6/2014	**52.9**	**14.5**	1.0				
12	4/23/2014	**24.8**	**13.4**	1.0				
13	7/17/2014	**47.6**	**19.4**	1.0				
14	10/8/2014	**27.8**	**11.3**	1.0				
15	1/9/2015	4.9	9.4	1.0				
16	4/15/2015	4.0	8.1	1.0				
17	7/8/2015	**17.5**	18.8	1.0				
18	10/21/2015	**13.7**	**24.3**	1.0				
19	1/14/2016	**25.6**	**25.5**	1.0				
20	4/8/2016	940	46.6	38.3				
21	8/25/2016	**21.7**	**21.2**	1.0				
22	11/16/2016	**17.7**	19.4	1.0				
23	1/24/2017	1.0	1.0	1.0				
24	4/27/2017	1.0	3.9	1.0				
25	7/13/2017	4.2	6.1	1.0				
26	10/25/2017	**7.4**	4.6	1.0				
27	2/13/2018	1.0	1.0	1.0				
28	4/27/2018	2.3	3.5	1.0				
29	7/19/2018	2.2	3.4	1.0				
30	1/22/2019	**8.0**	7.2	4.8				
31								
32								
33								
34								
35								
Coefficient of Variation:		2.00	0.83	2.86				
Mann-Kendall Statistic (S):		-288	-66	-121				
Confidence Factor:		>99.9%	87.6%	98.4%				
Concentration Trend:		Decreasing	Stable	Decreasing				



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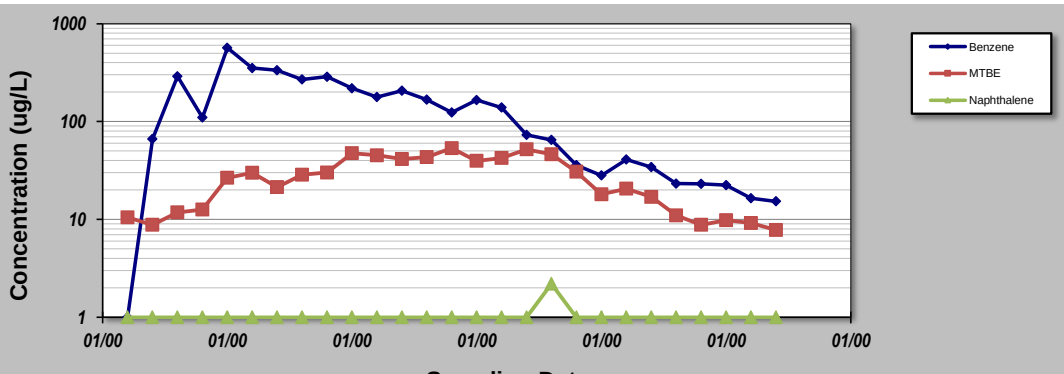
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-23
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-23 CONCENTRATION (ug/L)						
1	11/29/2012	1.0	**10.5**	1.0				
2	1/21/2013	66.3	**8.8**	1.0				
3	4/17/2013	290	**11.8**	1.0				
4	4/30/2013*	110	**12.6**	1.0				
5	7/19/2013	566	**26.6**	1.0				
6	10/8/2013	352	**30.0**	1.0				
7	1/6/2014	334	**21.4**	1.0				
8	4/23/2014	269	**28.6**	1.0				
9	7/17/2014	287	**30.1**	1.0				
10	10/8/2014	219	**47.5**	1.0				
11	1/9/2015	178	45.2	1.0				
12	4/15/2015	207	41.3	1.0				
13	7/8/2015	167	43.3	1.0				
14	10/21/2015	124	53.5	1.0				
15	1/14/2016	166	39.7	1.0				
16	4/8/2016	139	42.4	1.0				
17	8/25/2016	73	52.1	1.0				
18	11/16/2016	65	46.2	2.2				
19	1/24/2017	35.8	30.7	1.0				
20	4/27/2017	28.2	18.1	1.0				
21	7/13/2017	40.9	20.6	1.0				
22	10/25/2017	34.2	17.0	1.0				
23	2/13/2018	23.2	11.0	1.0				
24	4/27/2018	23.1	8.8	1.0				
25	7/19/2018	22.4	9.8	1.0				
26	10/24/2018	16.5	9.2	1.0				
27	1/22/2019	15.3	7.8	1.0				
28								
29								
30								
Coefficient of Variation:		0.96	0.58	0.22				
Mann-Kendall Statistic (S):		-225	-32	8				
Confidence Factor:		>99.9%	73.9%	55.8%				
Concentration Trend:		Decreasing	Stable	No Trend				



Notes:

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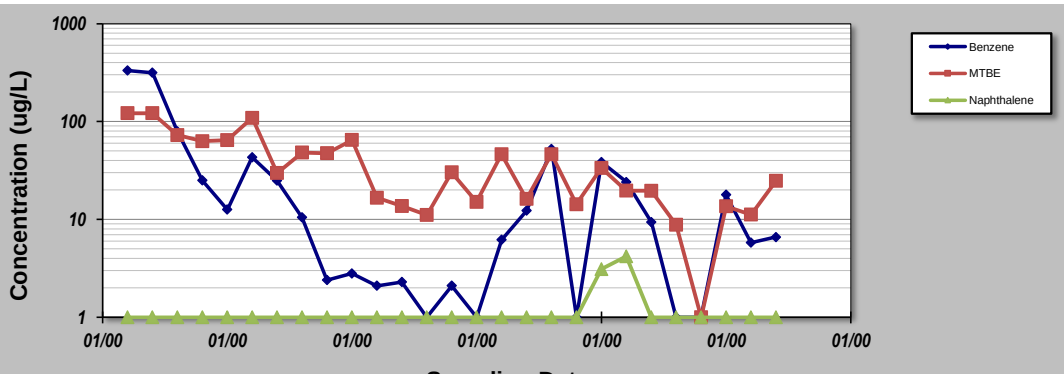
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-24
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-24 CONCENTRATION (ug/L)						
1	11/29/2012	333	**122.0**	1.0				
2	1/21/2013	316.0	**122.0**	1.0				
3	4/17/2013	79.1	**72.8**	1.0				
4	4/30/2013*	25.0	**63.1**	1.0				
5	7/19/2013	12.6	**64.6**	1.0				
6	10/8/2013	43.1	**109.0**	1.0				
7	1/6/2014	24.9	**29.8**	1.0				
8	4/23/2014	10.5	**48.3**	1.0				
9	7/17/2014	2.4	**47.5**	1.0				
10	10/8/2014	2.8	**64.8**	1.0				
11	1/9/2015	2.1	16.6	1.0				
12	4/15/2015	2.3	13.7	1.0				
13	7/8/2015	1.0	11.1	1.0				
14	10/21/2015	2.1	30.3	1.0				
15	1/14/2016	1.0	15.1	1.0				
16	4/8/2016	6.2	46.3	1.0				
17	8/25/2016	12.3	16.2	1.0				
18	11/16/2016	52.3	46.2	1.0				
19	1/24/2017	1.0	14.3	1.0				
20	4/27/2017	38.6	33.5	3.1				
21	7/13/2017	24.1	19.7	4.2				
22	10/25/2017	9.4	19.6	1.0				
23	2/13/2018	1.0	8.8	1.0				
24	4/27/2018	1.0	1.0	1.0				
25	7/19/2018	17.9	13.6	1.0				
26	10/24/2018	5.8	11.2	1.0				
27	1/22/2019	6.6	24.8	1.0				
28								
29								
30								
Coefficient of Variation:		2.21	0.85	0.60				
Mann-Kendall Statistic (S):		-124	-204	27				
Confidence Factor:		99.6%	>99.9%	70.4%				
Concentration Trend:		Decreasing	Decreasing	No Trend				



Notes:

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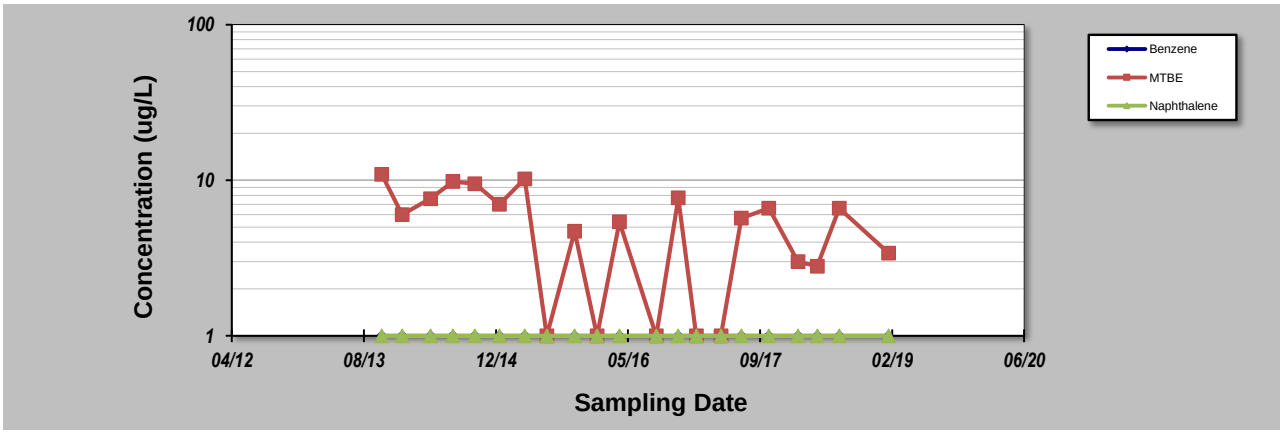
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-25
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	Constituent: Benzene	MTBE	Naphthalene				
		MW-25 CONCENTRATION (ug/L)						
1	10/20/2013	1.0	10.9	1.0				
2	1/6/2014	1.0	**6.0**	1.0				
3	4/23/2014	1.0	**7.6**	1.0				
4	7/17/2014	1.0	**9.8**	1.0				
5	10/8/2014	1.0	**9.5**	1.0				
6	1/9/2015	1.0	**7.0**	1.0				
7	4/15/2015	1.0	**10.2**	1.0				
8	7/8/2015	1.0	1.0	1.0				
9	10/21/2015	1.0	**4.7**	1.0				
10	1/14/2016	1.0	1.0	1.0				
11	4/8/2016	1.0	**5.4**	1.0				
12	8/25/2016	1.0	1.0	1.0				
13	11/16/2016	1.0	7.7	1.0				
14	1/24/2017	1.0	1.0	1.0				
15	4/27/2017	1.0	1.0	1.0				
16	7/13/2017	1.0	**5.7**	1.0				
17	10/25/2017	1.0	**6.6**	1.0				
18	2/13/2018	1.0	**3.0**	1.0				
19	4/27/2018	1.0	**2.8**	1.0				
20	7/19/2018	1.0	**6.6**	1.0				
21	1/22/2019	1.0	**3.4**	1.0				
22								
23								
24								
25								
Coefficient of Variation:		0.00	0.62	0.00				
Mann-Kendall Statistic (S):		0	-65	0				
Confidence Factor:		48.8%	97.4%	48.8%				
Concentration Trend:		Stable	Decreasing	Stable				



Notes:

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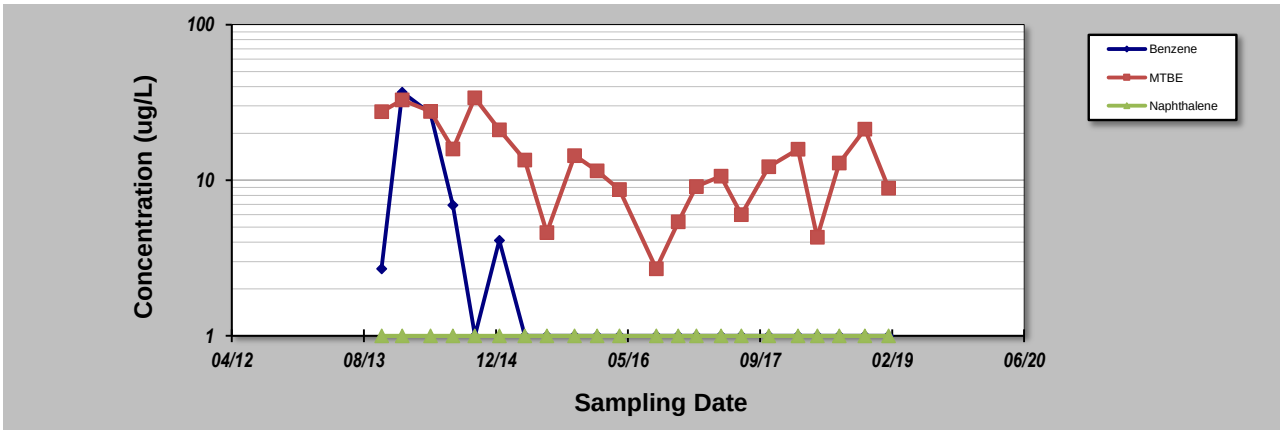
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-26
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	MW-26 CONCENTRATION (ug/L)						
Constituent		Benzene	MTBE	Naphthalene				
1	10/20/2013	2.7	27.6	1.0				
2	1/6/2014	36.7	**32.8**	1.0				
3	4/23/2014	26.9	**27.7**	1.0				
4	7/17/2014	6.9	**15.9**	1.0				
5	10/8/2014	1.0	**33.8**	1.0				
6	1/9/2015	**4.1**	**21.1**	1.0				
7	4/15/2015	1.0	**13.5**	1.0				
8	7/8/2015	1.0	**4.6**	1.0				
9	10/21/2015	1.0	**14.4**	1.0				
10	1/14/2016	1.0	**11.5**	1.0				
11	4/8/2016	1.0	**8.7**	1.0				
12	8/25/2016	1.0	**2.7**	1.0				
13	11/16/2016	1.0	**5.4**	1.0				
14	1/24/2017	1.0	**9.1**	1.0				
15	4/27/2017	1.0	**10.6**	1.0				
16	7/13/2017	1.0	**6.0**	1.0				
17	10/25/2017	1.0	**12.2**	1.0				
18	2/13/2018	1.0	**15.8**	1.0				
19	4/27/2018	1.0	**4.3**	1.0				
20	7/19/2018	1.0	**12.9**	1.0				
21	10/24/2018	1.0	**21.3**	1.0				
22	1/22/2019	1.0	**8.9**	1.0				
23								
24								
25								
Coefficient of Variation:		2.13	0.63	0.00				
Mann-Kendall Statistic (S):		-85	-77	0				
Confidence Factor:		99.2%	98.5%	48.9%				
Concentration Trend:		Decreasing	Decreasing	Stable				



Notes:

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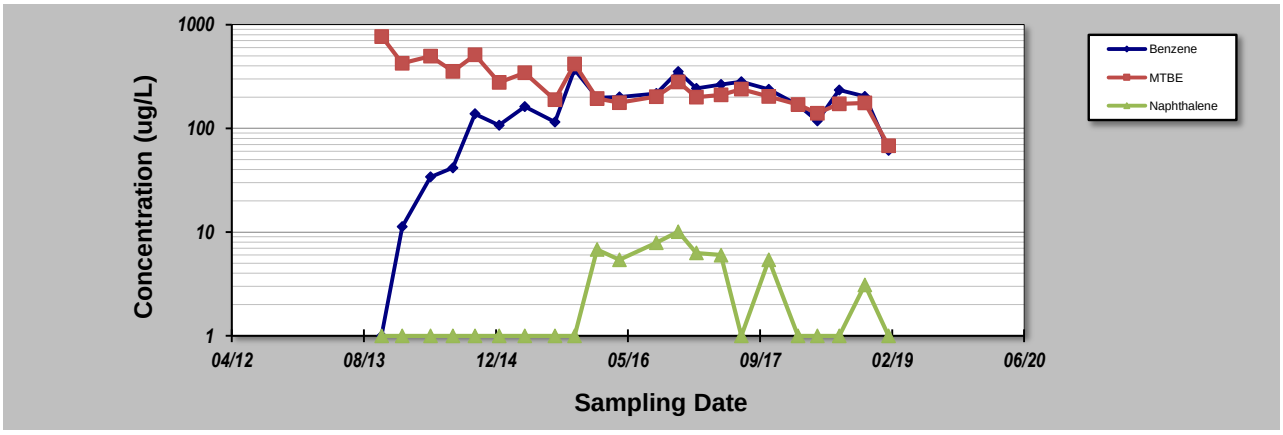
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-27
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	MW-27 CONCENTRATION (ug/L)						
Constituent		Benzene	MTBE	Naphthalene				
1	10/20/2013	1.0	769.0	1.0				
2	1/6/2014	11.3	**425.0**	1.0				
3	4/23/2014	34.0	**497.0**	1.0				
4	7/17/2014	41.6	**355.0**	1.0				
5	10/9/2014	138	**512.0**	1.0				
6	1/8/2015	**107**	**277.0**	1.0				
7	4/15/2015	**162**	**343.0**	1.0				
8	8/7/2015	**115**	**189.0**	1.0				
9	10/21/2015	**368**	**418.0**	1.0				
10	1/14/2016	**198**	**194.0**	6.8				
11	4/8/2016	**201**	**177.0**	5.4				
12	8/25/2016	**217**	**202.0**	7.9				
13	11/16/2016	**353**	**280.0**	10.1				
14	1/24/2017	**243**	**200.0**	6.3				
15	4/27/2017	**265**	**210.0**	6.0				
16	7/13/2017	**282**	**239**	1.0				
17	10/25/2017	**238**	**203**	5.4				
18	2/13/2018	**168**	**170**	1.0				
19	4/27/2018	**118**	**140**	1.0				
20	7/19/2018	**234**	**172**	1.0				
21	10/24/2018	**203**	**176**	3.1				
22	1/22/2019	**61.5**	**67.8**	1.0				
23								
24								
25								
Coefficient of Variation:		0.61	0.57	0.98				
Mann-Kendall Statistic (S):		91	-147	29				
Confidence Factor:		99.5%	>99.9%	78.3%				
Concentration Trend:		Increasing	Decreasing	No Trend				



Notes:

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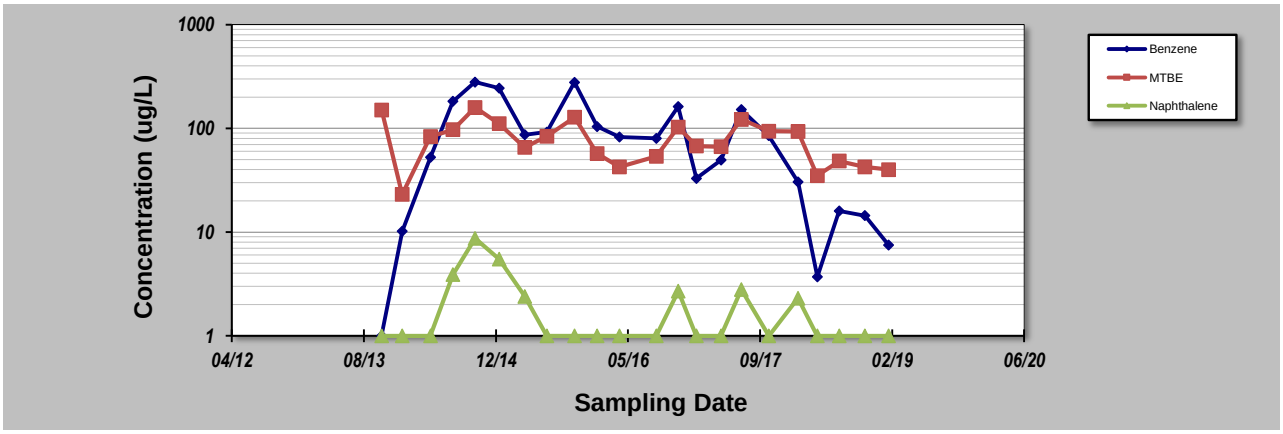
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-28
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	MW-28 CONCENTRATION (ug/L)						
Constituent		Benzene	MTBE	Naphthalene				
1	10/20/2013	1.0	150.0	1.0				
2	1/6/2014	10.2	**23.1**	1.0				
3	4/23/2014	52.7	**83.4**	1.0				
4	7/17/2014	182.0	**97.0**	**3.9**				
5	10/9/2014	279.0	**159.0**	**8.7**				
6	1/8/2015	**244**	**111.0**	**5.5**				
7	4/15/2015	**86.8**	**65.6**	**2.4**				
8	7/8/2015	**92.1**	**83.8**	1.0				
9	10/21/2015	**278**	**128.0**	1.0				
10	1/14/2016	**104**	**57.1**	1.0				
11	4/8/2016	**82.5**	**42.5**	1.0				
12	8/25/2016	**80.1**	**53.7**	1.0				
13	11/16/2016	**162**	**103.0**	**2.7**				
14	1/24/2017	**32.9**	**67.6**	1.0				
15	4/27/2017	**49.6**	**66.5**	1.0				
16	7/13/2017	**152**	**122**	**2.8**				
17	10/25/2017	**85.1**	**93.9**	1.0				
18	2/13/2018	**30.4**	**93.2**	**2.3**				
19	4/27/2018	**3.7**	**35.0**	1.0				
20	7/19/2018	**16.0**	**48.4**	1.0				
21	10/24/2018	**14.4**	**42.4**	1.0				
22	1/22/2019	**7.5**	**40.0**	1.0				
23								
24								
25								
Coefficient of Variation:		0.94	0.47	0.97				
Mann-Kendall Statistic (S):		-71	-71	-34				
Confidence Factor:		97.6%	97.6%	82.2%				
Concentration Trend:		Decreasing	Decreasing	Stable				



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GSI MANN-KENDALL TOOLKIT
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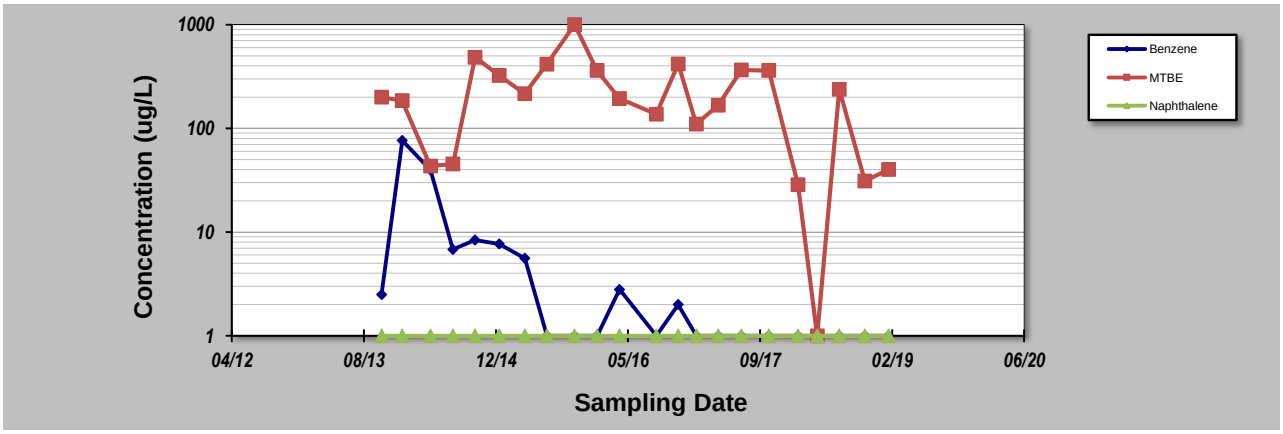
Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-29
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	MW-29 CONCENTRATION (ug/L)						
Constituent		Benzene	MTBE	Naphthalene				
1	10/20/2013	2.5	200.0	1.0				
2	1/6/2014	76.5	**185.0**	1.0				
3	4/23/2014	39.8	**43.4**	1.0				
4	7/17/2014	6.8	**45.3**	1.0				
5	10/9/2014	**8.4**	**485.0**	1.0				
6	1/8/2015	**7.7**	**323.0**	1.0				
7	4/15/2015	**5.6**	**216.0**	1.0				
8	7/8/2015	1.0	**416.0**	1.0				
9	10/21/2015	1.0	**1000.0**	1.0				
10	1/14/2016	1.0	**361**	1.0				
11	4/8/2016	2.8	**194**	1.0				
12	8/25/2016	1.0	**137**	1.0				
13	11/16/2016	2.0	**418**	1.0				
14	1/24/2017	1.0	**110**	1.0				
15	4/17/2017	1.0	167	1.0				
16	7/13/2017	1.0	365	1.0				
17	10/25/2017	1.0	361	1.0				
18	2/13/2018	1.0	28.7	1.0				
19	4/27/2018	1.0	1.0	1.0				
20	7/19/2018	1.0	238	1.0				
21	10/24/2018	1.0	31.1	1.0				
22	1/22/2019	1.0	40.2	1.0				
23								
24								
25								
Coefficient of Variation:		2.33	0.92	0.00				
Mann-Kendall Statistic (S):		-121	-48	0				
Confidence Factor:		>99.9%	90.6%	48.9%				
Concentration Trend:		Decreasing	Prob. Decreasing	Stable				



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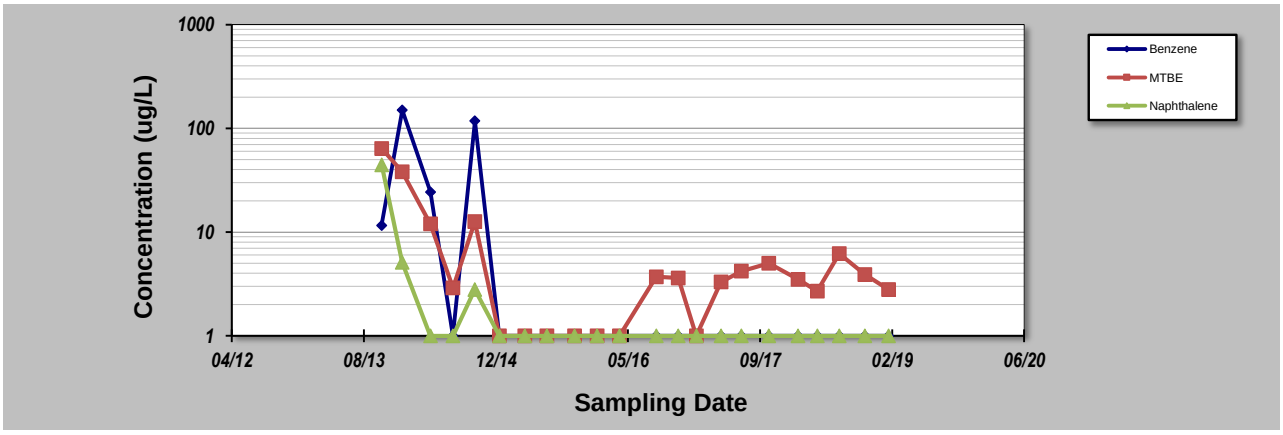
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	MW-30
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	MW-30 CONCENTRATION (ug/L)						
1	10/20/2013	11.6	64.0	**44.5**				
2	1/6/2014	150	**38.2**	**5.1**				
3	4/23/2014	24.3	**12.0**	1.0				
4	7/17/2014	1.0	**2.9**	1.0				
5	10/8/2014	118	**12.6**	2.8				
6	1/9/2015	1.0	1.0	1.0				
7	4/15/2015	1.0	1.0	1.0				
8	7/8/2015	1.0	1.0	1.0				
9	10/21/2015	1.0	1.0	1.0				
10	1/14/2016	1.0	1.0	1.0				
11	4/8/2016	1.0	1.0	1.0				
12	8/25/2016	1.0	3.7	1.0				
13	11/16/2016	1.0	3.6	1.0				
14	1/24/2017	1.0	1.0	1.0				
15	4/27/2017	1.0	**3.3**	1.0				
16	7/13/2017	1.0	**4.2**	1.0				
17	10/25/2017	1.0	**5.0**	1.0				
18	2/13/2018	1.0	**3.5**	1.0				
19	4/27/2018	1.0	**2.7**	1.0				
20	7/19/2018	1.0	**6.2**	1.0				
21	10/24/2018	1.0	**3.9**	1.0				
22	1/22/2019	1.0	**2.8**	1.0				
23								
24								
25								
Coefficient of Variation:		2.69	1.86	2.85				
Mann-Kendall Statistic (S):		-68	-12	-56				
Confidence Factor:		97.1%	62.1%	93.9%				
Concentration Trend:		Decreasing	No Trend	Prob. Decreasing				



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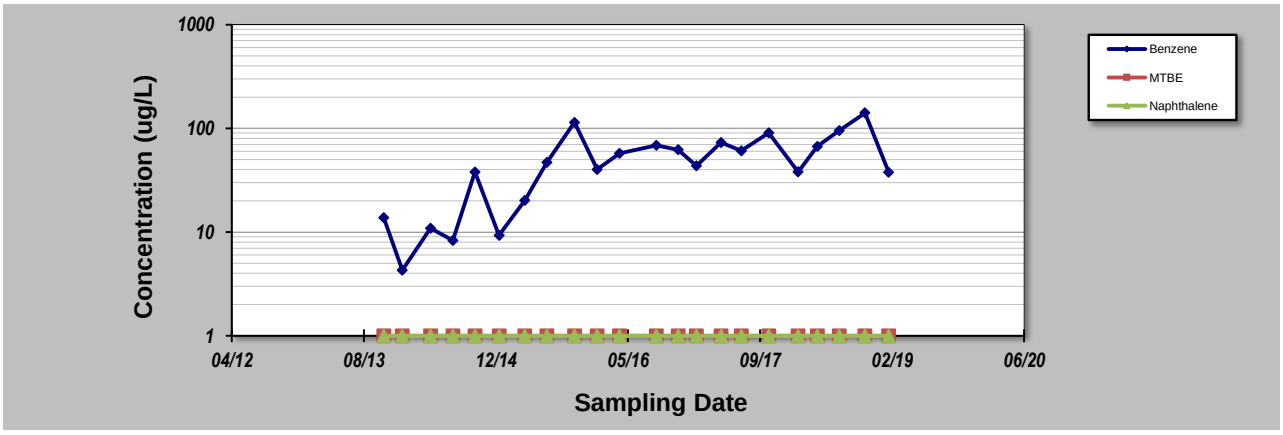
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	CMW-1
Conducted By:	AEC	Concentration Units:	ug/L

Constituent	Benzene	MTBE	Naphthalene				
Sampling Event	Sampling Date	CMW-1 CONCENTRATION (ug/L)						
1	10/28/2013	**13.8**	1.0	1.0				
2	1/6/2014	4.3	1.0	1.0				
3	4/23/2014	**10.9**	1.0	1.0				
4	7/17/2014	**8.3**	1.0	1.0				
5	10/9/2014	**38.0**	1.0	1.0				
6	1/8/2015	**9.3**	1.0	1.0				
7	4/15/2015	**20.2**	1.0	1.0				
8	7/8/2015	**47.1**	1.0	1.0				
9	10/21/2015	**114**	1.0	1.0				
10	1/14/2016	**40.2**	1.0	1.0				
11	4/8/2016	**57.3**	1.0	1.0				
12	8/25/2016	**68.6**	1.0	1.0				
13	11/16/2016	**62.2**	1.0	1.0				
14	1/24/2017	**43.5**	1.0	1.0				
15	4/27/2017	**72.9**	1.0	1.0				
16	7/13/2017	**60.7**	1.0	1.0				
17	10/25/2017	**90.5**	1.0	1.0				
18	2/13/2018	**38.1**	1.0	1.0				
19	4/27/2018	**66.9**	1.0	1.0				
20	7/19/2018	**95.0**	1.0	1.0				
21	10/24/2018	**141**	1.0	1.0				
22	1/22/2019	**37.7**	1.0	1.0				
23								
24								
25								
Coefficient of Variation:		0.69	0.00	0.00				
Mann-Kendall Statistic (S):		121	0	0				
Confidence Factor:		>99.9%	48.9%	48.9%				
Concentration Trend:		Increasing	Stable	Stable				



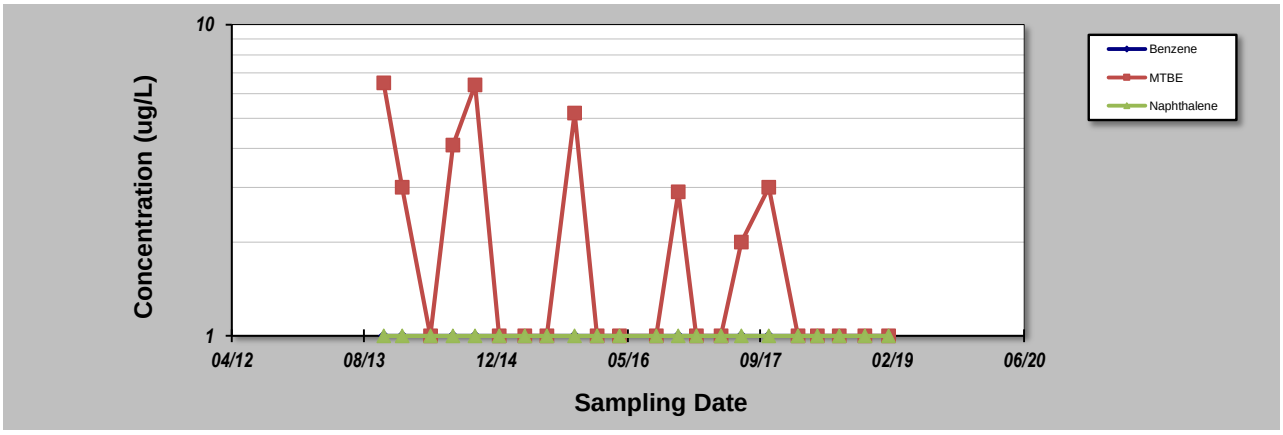
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. 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.
3. 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.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jan-19	Job ID:	05-056
Facility Name:	RF-64	Sampling Point ID:	CMW-2
Conducted By:	AEC	Concentration Units:	ug/L

Sampling Event	Sampling Date	CMW-2 CONCENTRATION (ug/L)						
Constituent		Benzene	MTBE	Naphthalene				
1	10/28/2013	1.0	6.5	1.0				
2	1/6/2014	1.0	**3.0**	1.0				
3	4/23/2014	1.0	1.0	1.0				
4	7/17/2014	1.0	**4.1**	1.0				
5	10/9/2014	1.0	**6.4**	1.0				
6	1/8/2015	1.0	1.0	1.0				
7	4/15/2015	1.0	1.0	1.0				
8	7/8/2015	1.0	1.0	1.0				
9	10/21/2015	1.0	5.2	1.0				
10	1/14/2016	1.0	1.0	1.0				
11	4/8/2016	1.0	1.0	1.0				
12	8/25/2016	1.0	1.0	1.0				
13	11/16/2016	1.0	2.9	1.0				
14	1/24/2017	1.0	1.0	1.0				
15	4/27/2017	1.0	1.0	1.0				
16	7/13/2017	1.0	2.0	1.0				
17	10/25/2017	1.0	3.0	1.0				
18	2/13/2018	1.0	1.0	1.0				
19	4/27/2018	1.0	1.0	1.0				
20	7/19/2018	1.0	1.0	1.0				
21	10/24/2018	1.0	1.0	1.0				
22	1/22/2019	1.0	1.0	1.0				
23								
24								
25								
Coefficient of Variation:		0.00	0.86	0.00				
Mann-Kendall Statistic (S):		0	-63	0				
Confidence Factor:		48.9%	96.0%	48.9%				
Concentration Trend:		Stable	Decreasing	Stable				



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