Annual Groundwater Monitoring Report

Appalachian Power Company

John E. Amos Plant

Bottom Ash Pond CCR Unit

Winfield, West Virginia

January 2025

Prepared by:
American Electric Power Service Corporation
1 Riverside Plaza
Columbus, Ohio 43215

APPALACHIAN POWER℠

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BOUNDLESS ENERGY℠

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Abbreviations:
ASD – Alternate Source Demonstration
CCR – Coal Combustion Residual
GWPS – Groundwater Protection Standard
SSI – Statistically Significant Increase
SSL – Statistically Significant Level
AMBAP – Amos Bottom Ash Pond

I. Overview

This *Annual Groundwater Monitoring and Corrective Action Report* (Report) has been prepared to report the status of activities for the preceding year for an existing Bottom Ash Pond (BAP) CCR unit at Appalachian Power Company's, a wholly-owned subsidiary of American Electric Power Company (AEP) John E. Amos Power Plant. The USEPA's CCR rules require that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31.

In general, the following activities were completed:

- An assessment monitoring program was established for the Amos Bottom Ash Pond (AMBAP) on April 13, 2018.
- The CCR unit began 2024 in assessment monitoring and completed closure by removal in September 2024. Therefore, the groundwater monitoring program has been suspended because the CCR Unit no longer existed at the end of 2024.
- Groundwater samples were collected and analyzed for Appendix III and Appendix IV constituents, as specified in 40 CFR 257.95 *et seq.* and AEP's *Groundwater Sampling and Analysis Plan (2016)* in March and May 2024.
- Groundwater data underwent various validation tests, including tests for completeness, valid values, transcription errors, and consistent units.
- Analytical results of the rounds of sampling are listed in the tables in **Appendix 1**. Also shown are the groundwater flow rates and flow directions for the 2024 sampling events.
- Statistical analysis of the October 2023 sampling event was completed in February 2024 and is included in **Appendix 2**. There were no statistically significant levels (SSLs) above established groundwater protection standards (GWPS's) so the unit remains in assessment monitoring. However, the following statistically significant increases (SSI's) occurred for Appendix III indicator parameters:
    - MW-1: Calcium, chloride, sulfate, and total dissolved solids (TDS)
    - MW-4: Calcium, Sulfate,
    - MW-5: Calcium, Chloride, sulfate, TDS
    - MW-1604: Boron, Calcium
    - MW-1605: Calcium, chloride, sulfate, and TDS
    - MW-1606: Calcium, chloride, sulfate, and TDS
- Statistical analysis of the May 2024 sampling event was completed in September 2024 and is included in **Appendix 2**. There were no SSLs above established GWPS's so the unit has completed required groundwater monitoring because the unit was closed by

removal as of August 5, 2024. The May 2024 sampling event was the last groundwater sampling event for the now closed unit completing closure by removal requirements showing that groundwater meets all established GWPS's. However, the following SSIs occurred for Appendix III indicator parameters:

  - MW-1: Calcium, chloride, sulfate, and TDS
  - MW-4: Calcium, Sulfate, TDS
  - MW-5: Calcium, Chloride, Sulfate, TDS
  - MW-1605: Calcium, chloride, sulfate, and TDS
  - MW-1606: Calcium, chloride, sulfate, and TDS

- The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:
- A map/aerial photograph showing the AMBAP Complex CCR unit, all groundwater monitoring wells, and monitoring well identification numbers.
- All of the monitoring data collected including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected and whether the sample was collected as part of detection monitoring or assessment monitoring programs (**Appendix 1**).
- Statistical analysis reports completed in 2024 (**Appendix 2**).
- Discussion of any alternative source demonstrations completed (Appendix 3). This is not applicable.
- The notification of the establishment of an assessment monitoring program (**Appendix 4**).
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a statement as to why that happened, if applicable (Appendix 5). This is not applicable.
- Other information required to be included in the annual report such as assessment of corrective measures, if applicable.

In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

Figure 1 depicts the PE-certified groundwater monitoring network, the monitoring well locations, and their corresponding identification numbers. The monitoring well distribution adequately covers downgradient and upgradient areas as detailed in the *Groundwater Monitoring Well Network Evaluation Report* that was updated in October 2020 and placed on the American Electric Power CCR public internet site. The CCR groundwater quality monitoring network includes the following:

- Four upgradient wells MW-6, MW-1601, MW-1602A, and MW-1603A; and
- Six downgradient wells MW-1, MW-4, MW-5, MW-1604, MW-1605, and MW-1606.

Legend

Monitoring Well Network

- Upgradient Sampling Location
- Downgradient Sampling Location
- Ash Pond System

Notes

- Monitoring well coordinates provided by AEP.
- Site features based on information available in the Ash Pond- CCR Groundwater Monitoring Well Network Evaluation - Amos Plant (Arcadis, 2016) provided by AEP.
- Rev. 1: Updated CCR Unit boundary. September 13, 2018

1,000 500 0 1,000 Feet

Site Layout
Ash Pond System

AEP Amos Generating Plant
Winfield, West Virginia

Geosyntec consultants

Columbus, Ohio | 2018/12/24

Figure **1**

P:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Amos\2018\AEP-Amos_BAP_Site_Layout.mxd. ARevezzo. 12/24/2018. CHA8423.

III. Monitoring Wells Installed or Decommissioned

There were no new monitoring wells installed or decommissioned in 2024. The network design, as summarized in the revised *Groundwater Monitoring Well Network Evaluation Report* (2020) and as posted as the CCR website for Amos' Bottom Ash Pond, did not change. That network design report, viewable on the AEP CCR web site, discusses the facility location, the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, downgradient monitoring well locations and the upgradient monitoring well locations.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction Calculations and Discussion

Appendix 1 contains tables showing the groundwater quality data collected and received during the establishment of background quality and the groundwater monitoring samples collected and received through 2024. Static water elevation data from each monitoring event in 2024 are also shown in **Appendix 1**, along with the groundwater velocity calculations, groundwater flow direction and potentiometric maps developed after each sampling event.

The sampling event conducted in March 2024 satisfies the requirement of 257.95(b).

The CCR Unit officially completed the closure by removal plan as of August 5, 2024. No CCR remains. The final groundwater monitoring event of May 2024 satisfies that there are no exceedances above the established GWPS's; therefore, groundwater monitoring has now been suspended.

V. Groundwater Quality Data Statistical Analysis

Appendix 2 contains the statistical analysis reports. Statistical analysis of the assessment monitoring samples from the October 2023 event was completed in February 2024 (**Appendix 2**). No SSLs above a GWPS were identified. However, the following statistically significant increases occurred for Appendix III indicator parameters:

- MW-1: Calcium, chloride, sulfate, and total dissolved solids (TDS)
- MW-4: Calcium, Sulfate,
- MW-5: Calcium, Chloride, sulfate, TDS
- MW-1604: Boron, Calcium
- MW-1605: Calcium, chloride, sulfate, and TDS
- MW-1606: Calcium, chloride, sulfate, and TDS

Statistical analysis of the May 2024 sampling event was completed in September 2024 and is included in **Appendix 2**. There were no SSLs above an established GWPS so the unit remains in assessment monitoring. However, the following SSIs occurred for Appendix III indicator parameters:

- MW-1: Calcium, chloride, sulfate, and TDS
- MW-4: Calcium, Sulfate, TDS
- MW-5: Calcium, Chloride, Sulfate, TDS
- MW-1605: Calcium, chloride, sulfate, and TDS
- MW-1606: Calcium, chloride, sulfate, and TDS

VI. Alternative Source Demonstration

No alternative source demonstrations (ASD) were performed in 2024 since no SSLs were identified.

An ASD investigation was completed in April 2018. That demonstration concluded that SSIs identified in the statistical evaluations were potentially influenced by a release from the Amos BAP to the groundwater. An alternate source could not be identified. Therefore, an ASD investigation was not undertaken for the current SSIs.

Because either there were no SSLs or because an ASD for the SSLs was identified, but no alternate source for the SSIs was identified, Amos BAP remained in Assessment Monitoring until the closure by removal was completed.

VII. Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency

The Amos BAP transitioned from detection monitoring to assessment monitoring on April 13, 2018. The notification per 40 CFR 257.94(e)(3) is included in **Appendix 4**. Assessment monitoring continued through the 2023 calendar year.

The Amos BAP will remain in assessment monitoring unless all Appendix III and IV parameters are below background values for two consecutive monitoring events (return to detection monitoring) as prescribed by 40 CFR 257.95(e). If an Appendix IV parameter exceeds its respective GWPS due to a release from the BAP, an assessment of corrective measures will be undertaken as required by 40 CFR 257.96.

Regarding defining an alternate monitoring frequency, the groundwater velocity and monitoring well production are high enough at this facility that no modification to the monitoring frequency is needed.

VIII. Other Information Required

The BAP has progressed from detection monitoring to assessment monitoring since April 2018. In August of 2024 all CCR was removed from the unit in accordance with the closure by removal plan. The final groundwater monitoring event was conducted in May 2024 and statistical analysis completed in September 2024. Because no SSLs were identified, the unit officially completed closure by removal and is no longer in existence. All required information has been included in this annual groundwater monitoring report.

IX. Description of Any Problems Encountered in 2024 and Actions Taken

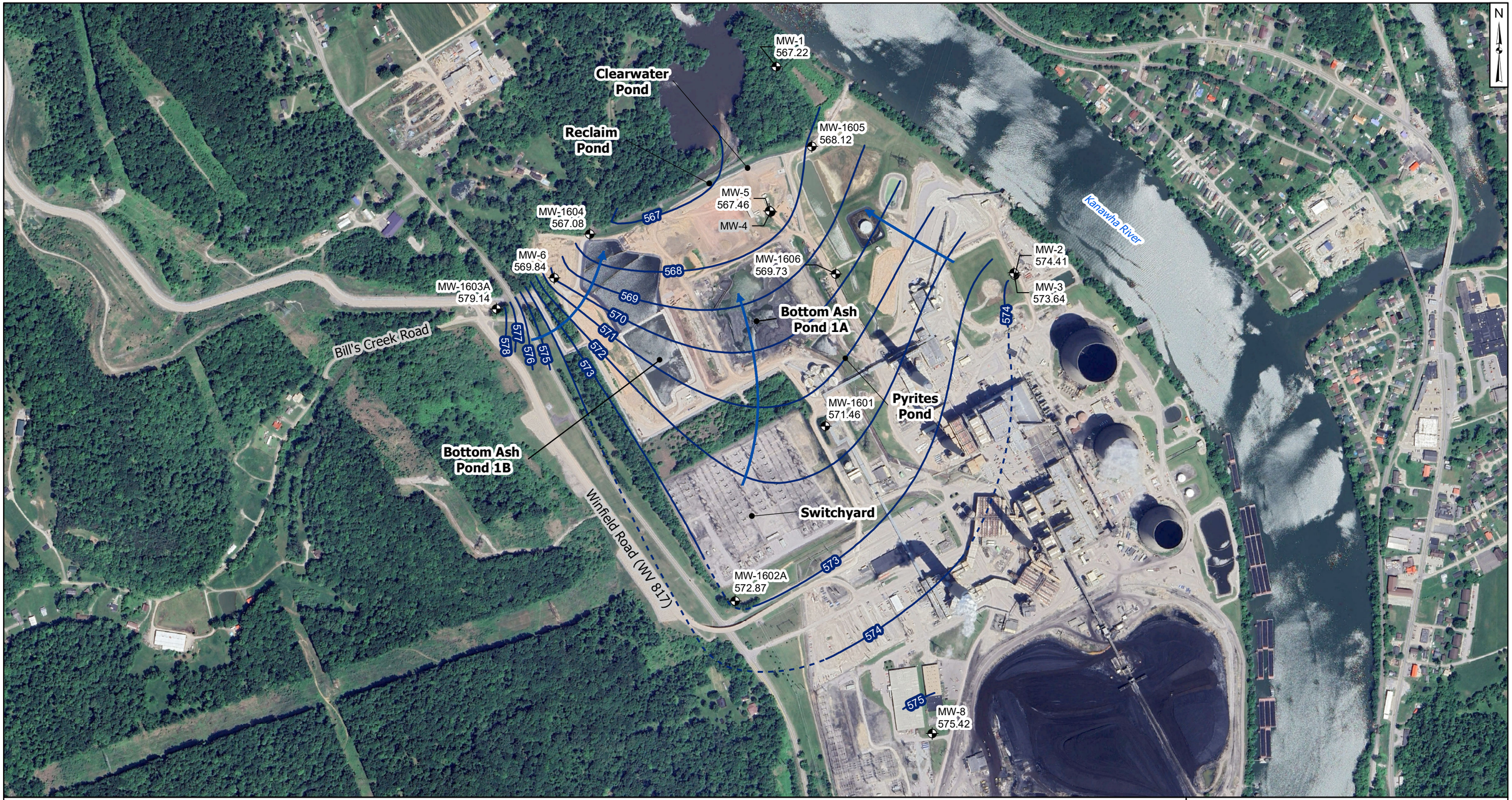
No significant problems were encountered. The low flow sampling effort went smoothly and the schedule was met to support the 2024 annual groundwater report preparation.

X. A Projection of Key Activities for the Upcoming Year

Because the unit has officially completed closure by removal, there are no required obligations for the CCR Unit as it is no longer in existence.

APPENDIX 1

Figures and Tables follow showing data collected and the rate and direction of groundwater flow. The dates that the samples were collected is shown, as well as, whether the data were collected under background, detection, or assessment monitoring.



Legend

- Monitoring Well Location
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water level data (collected on March 14, 2024) provided by AEP.
2. MW-4 (566.70 ft amsl) was not used for contouring due to anomalous reading.
3. Groundwater elevation units are feet above mean sea level.
4. Construction at Pond 1B started in 2021. CCR material was removed and a liner was put in place to repurpose Pond 1B as a wastewater pond. The remaining ponds are undergoing a similar process as of 2023.
5. Site features based on information available in the Ash Pond- CCR Groundwater Monitoring Well Network Evaluation - Amos Plant (Arcadis 2016) provided by AEP.
6. Aerial imagery provided by Google Earth Pro, dated May 25, 2023.

500 250 0 500 Feet

Potentiometric Surface Map - Uppermost Aquifer March 2024

AEP Amos Generating Plant - Ash Pond System
Winfield, West Virginia

Geosyntec consultants

Columbus, Ohio | 2024/05/20

Figure X

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Legend

- Monitoring Well Location
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water level data (collected on May 6, 2024) provided by AEP.
2. Groundwater elevation units are feet above mean sea level (amsl).
3. MW-4 (567.73 ft amsl) was not used for contouring due to anomalous reading.
4. Construction at Pond 1B started in 2021. CCR material was removed and a liner was put in place to repurpose Pond 1B as a wastewater pond. The remaining ponds are undergoing a similar process as of 2023.
5. Site features based on information available in the Ash Pond- CCR Groundwater Monitoring Well Network Evaluation - Amos Plant (Arcadis 2016) provided by AEP.
6. Aerial imagery provided by Google Earth Pro, dated May 25, 2023.

1,000 500 0 1,000 Feet

Potentiometric Surface Map - Uppermost Aquifer
May 2024

AEP Amos Generating Plant - Ash Pond System
Winfield, West Virginia

Geosyntec consultants

Columbus, Ohio | 2024/06/06

Figure **X**

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Table 1: Residence Time Calculation Summary
Amos Bottom Ash Pond

Geosyntec Consultants, Inc.

CCR Management Unit	Monitoring Well	Well Diameter (inches)	2024-03		2024-05	
			Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Bottom Ash Pond	MW-1 [2]	2.0	17.6	3.5	17.3	3.5
	MW-4 [2]	2.0	NC	NC	NC	NC
	MW-5 [2]	2.0	31.2	1.9	21.4	2.8
	MW-6 [1]	2.0	63.3	1.0	63.0	1.0
	MW-1601 [1]	2.0	16.5	3.7	16.0	3.8
	MW-1602A [1]	2.0	8.9	6.8	6.6	9.2
	MW-1603A [1]	2.0	192.1	0.3	173.5	0.4
	MW-1604 [2]	2.0	70.5	0.9	70.4	0.9
	MW-1605 [2]	2.0	22.8	2.7	28.0	2.2
	MW-1606 [2]	2.0	32.0	1.9	35.0	1.7

Notes:
[1] - Background Well
[2] - Downgradient Well
NC - Not calculated

Table 1. Groundwater Data Summary: MW-1
Amos - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.042	41.6	61.6	< 0.05 U1	5.0	146	320
8/22/2016	Background	0.051	41.6	60.3	< 0.05 U1	4.9	148	320
10/19/2016	Background	0.031	43.7	64.9	< 0.05 U1	5.1	150	348
11/7/2016	Background	--	--	--	--	5.1	--	--
12/13/2016	Background	0.053	42.9	69.0	< 0.05 U1	5.0	153	318
2/7/2017	Background	0.056	40.4	62.9	0.03 J1	5.5	139	314
3/13/2017	Background	0.108	38.1	64.2	0.02 J1	5.2	140	330
5/22/2017	Background	0.082	35.7	62.6	0.03 J1	6.1	138	316
6/20/2017	Background	0.092	38.2	65.1	< 0.02 U1	5.2	147	348
11/1/2017	Detection	0.039	43.7	75.8	0.03 J1	5.0	156	358
1/9/2018	Detection	--	43.2	83.2	--	4.9	164	362
5/3/2018	Assessment	0.095	39.9	71.8	0.02 J1	7.3	154	328
9/4/2018	Assessment	0.094	38.3	67.9	0.03 J1	5.1	145	338
3/14/2019	Assessment	0.2 J1	38.4	55.2	0.03 J1	5.2	138	321
6/10/2019	Assessment	0.08 J1	35.9	64.4	0.03 J1	10.2	141	330
7/22/2019	Assessment	0.05 J1	36.8	57.4	0.02 J1	4.9	143	362
2/12/2020	Assessment	--	--	--	0.03 J1	5.3	--	--
5/7/2020	Assessment	0.126	32.9	53.4	0.02 J1	5.0	137	336
10/27/2020	Assessment	0.04 J1	39.9	64.0	0.03 J1	4.8	161	374
3/16/2021	Assessment	--	--	--	0.04 J1	5.0	--	--
5/11/2021	Assessment	0.117	31.6	51.2	0.03 J1	5.2	142	332
11/9/2021	Assessment	0.023 J1	40.9 M1, P3	76.1	0.03 J1	5.2	166	410
3/2/2022	Assessment	--	--	--	0.02 J1	5.4	--	--
5/18/2022	Assessment	0.082	36.4	54.2	0.02 J1	5.7	145	340 L1
10/27/2022	Assessment	0.067	35.6	56.8	0.03 J1	4.9	154	350
2/9/2023	Assessment	0.056	32.2 M1	54.4	0.02 J1	5.1	148	350
5/26/2023	Assessment	0.088	29.4	48.8	0.02 J1	5.0	144	330
10/24/2023	Assessment	0.103	32.2	50.3	0.03 J1	4.9	147	340
3/20/2024	Assessment	0.111	30.7	47.0	0.03 J1	5.1	142	330
5/8/2024	Assessment	0.108	32.6	46.4	0.03 J1	5.1	145	350

Table 1. Groundwater Data Summary: MW-1
Amos - BAP
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.02 J1	0.13	30.2	0.107	2.09	0.1	10.7	0.528	< 0.05 U1	0.134	0.004	< 0.002 U1	1.67	0.09 J1	0.04 J1
8/22/2016	Background	0.01 J1	0.12	28.5	0.105	2.02	0.1	12.3	0.725	< 0.05 U1	0.081	0.003	< 0.002 U1	1.48	0.1	0.04 J1
10/19/2016	Background	0.02 J1	0.15	31.1	0.119	2.33	0.510	13.9	1.860	< 0.05 U1	0.133	0.0008 J1	< 0.002 U1	2.33	0.1	0.066
11/7/2016	Background	--	--	--	--	--	--	--	0.615	--	--	--	--	--	--	--
12/13/2016	Background	0.01 J1	0.16	28.9	0.115	2.55	1.24	14.6	0.136	< 0.05 U1	0.102	0.014	< 0.002 U1	1.38	0.2	0.04 J1
2/7/2017	Background	0.01 J1	0.20	25.4	0.115	2.43	0.141	14.9	0.609	0.03 J1	0.093	0.004	< 0.002 U1	0.79	0.1	0.056
3/13/2017	Background	0.02 J1	0.14	26.3	0.112	2.36	0.566	12.5	0.675	0.02 J1	0.129	0.002	< 0.002 U1	1.15	0.1	0.03 J1
5/22/2017	Background	0.03 J1	0.09	25.8	0.114	2.54	0.113	9.69	0.707	0.03 J1	0.066	0.006	0.002 J1	0.31	0.1 J1	0.04 J1
6/20/2017	Background	0.02 J1	0.10	27.7	0.123	2.65	0.173	9.38	0.587	< 0.02 U1	0.062	0.005	< 0.002 U1	0.34	0.09 J1	0.04 J1
5/3/2018	Assessment	0.01 J1	0.13	27.8	0.143	3.12	0.093	15.1	1.74	0.02 J1	0.068	0.004	< 0.002 U1	0.62	0.2	0.04 J1
9/4/2018	Assessment	0.22	0.18	29.4	0.130	2.97	0.548	17.7	0.575	0.03 J1	1.16	0.003	--	0.34	0.2	0.05 J1
3/14/2019	Assessment	0.05 J1	0.12	26.9	0.131	3.48	0.255	10.3	0.887	0.03 J1	0.252	< 0.09 U1	--	0.5 J1	0.09 J1	< 0.1 U1
6/10/2019	Assessment	0.02 J1	0.11	27.5	0.125	2.14	0.2 J1	12.8	0.998	0.03 J1	0.08 J1	< 0.009 U1	< 0.002 U1	< 0.4 U1	0.1 J1	< 0.1 U1
7/22/2019	Assessment	< 0.02 U1	0.09 J1	26.4	0.136	2.47	0.06 J1	13.5	0.825	0.02 J1	0.08 J1	0.00257	--	< 0.4 U1	0.2 J1	< 0.1 U1
2/12/2020	Assessment	< 0.02 U1	0.09 J1	25.7	0.139	2.22	0.2 J1	18.6	1.100	0.03 J1	0.07 J1	0.00259	< 0.002 U1	< 0.4 U1	0.1 J1	< 0.1 U1
5/7/2020	Assessment	< 0.02 U1	0.06 J1	25.7	0.126	2.43	0.1 J1	13.9	0.499	0.02 J1	< 0.05 U1	0.00239	--	< 0.4 U1	0.08 J1	< 0.1 U1
10/27/2020	Assessment	< 0.02 U1	0.09 J1	25.4	0.130	2.42	0.1 J1	20.5	1.722	0.03 J1	< 0.05 U1	0.00270	--	< 0.4 U1	0.1 J1	< 0.1 U1
3/16/2021	Assessment	0.03 J1	0.09 J1	25.4	0.129	3.14	0.2 J1	13.9	0.705	0.04 J1	0.06 J1	0.00266	< 0.002 U1	< 0.1 U1	0.1 J1	< 0.04 U1
5/11/2021	Assessment	< 0.02 U1	0.10	24.1	0.127	1.96	0.2 J1	14.0	0.845	0.03 J1	0.05 J1	0.00258	--	0.2 J1	0.09 J1	--
11/9/2021	Assessment	< 0.02 U1	0.14	24.9	0.102	0.881	0.15 J1	11.0	0.45	0.03 J1	0.13 J1	0.00270	--	0.3 J1	0.10 J1	< 0.04 U1
3/2/2022	Assessment	< 0.02 U1	0.08 J1	24.0	0.120	2.32	0.53	19.9	1.98	0.02 J1	0.08 J1	0.00259	< 0.002 U1	0.1 J1	< 0.09 U1	< 0.04 U1
5/18/2022	Assessment	< 0.02 U1	0.12	25.1	0.131	2.79	0.52	15.0	2.00	0.02 J1	0.14 J1	0.00275	--	< 0.1 U1	< 0.09 U1	< 0.04 U1
10/27/2022	Assessment	< 0.02 U1	0.11	24.8	0.140	1.99	0.39	18.3	1.75	0.03 J1	0.1 J1	0.00315	--	0.2 J1	0.1 J1	0.04 J1
2/9/2023	Assessment	< 0.02 U1	0.08 J1	22.5	0.131	1.57	0.17 J1	17.3	1.17	0.02 J1	0.12 J1	0.00286	--	0.1 J1	< 0.09 U1	< 0.04 U1
5/26/2023	Assessment	0.020 J1	0.06 J1	21.5	0.128	1.71	0.58	11.2	0.98	0.02 J1	0.06 J1	0.00280	< 0.002 U1	< 0.1 U1	0.04 J1	0.02 J1
10/24/2023	Assessment/ Closure	< 0.008 U1	0.11	23.6	0.122	1.67	0.32	15.9	0.96	0.03 J1	0.06 J1	0.00272	< 0.002 U1	0.1 J1	0.13 J1	0.03 P2, J1
3/20/2024	Assessment	0.012 J1	0.07 J1	21.7	0.124	1.85	0.32	12.6	0.74	0.03 J1	0.10 J1	0.00266	< 0.002 U1	< 0.1 U1	< 0.04 U1	0.04 J1
5/8/2024	Assessment/ Closure	0.011 J1	0.09 J1	21.6	0.123	1.56	0.47	10.3	1.13	0.03 J1	0.09 J1	0.00264	< 0.002 U1	< 0.1 U1	0.12 J1	0.03 J1

Table 1. Groundwater Data Summary: MW-4
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/25/2016	Background	0.074	16.2	11.7	0.07 J1	5.9	44.8	190
8/23/2016	Background	0.054	17.9	10.9	0.04 J1	5.5	39.2	184
10/18/2016	Background	0.070	15.2	12.2	< 0.05 U1	5.7	44.5	206
11/8/2016	Background	--	--	12.8	0.03 J1	5.7	47.3	170
12/12/2016	Background	0.079	16.3	14.0	0.04 J1	5.5	48.0	348
2/8/2017	Background	0.087	15.3	13.4	0.06 J1	5.6	46.1	176
3/14/2017	Background	0.093	15.8	12.9	0.05 J1	5.8	43.5	185
5/22/2017	Background	0.099	15.3	13.2	0.04 J1	6.3	43.9	192
6/19/2017	Background	0.097	15.0	13.3	0.03 J1	5.5	50.9	196
11/1/2017	Detection	0.073	14.2	12.3	0.06	5.5	43.0	210
5/3/2018	Assessment	0.100	15.9	14.4	0.06 J1	5.9	49.2	178
9/5/2018	Assessment	0.067	13.3	13.4	0.06	7.0	42.4	179
3/15/2019	Assessment	< 0.2 U1	14.5	13.3	0.06 J1	5.5	42.8	184
6/10/2019	Assessment	0.06 J1	14.4	13.0	0.06	6.8	43.3	172
7/23/2019	Assessment	0.06 J1	14.8	13.4	0.04 J1	5.4	44.5	186
2/11/2020	Assessment	--	--	--	0.04 J1	5.9	--	--
5/6/2020	Assessment	0.135	17.6	16.9	0.04 J1	5.5	54.6	213
10/30/2020	Assessment	0.085	16.0	12.9	0.05 J1	5.4	39.0	187
3/17/2021	Assessment	--	--	--	0.06	5.5	--	--
5/10/2021	Assessment	0.073	16.4	18.7	0.07	5.9	38.6	190
11/3/2021	Assessment	0.068	14.9	18.6	0.06	5.3	39.9	190
3/1/2022	Assessment	--	--	--	0.04 J1	6.2	--	--
5/19/2022	Assessment	0.040 J1	13.9	21.4	0.06	5.9	14.7	170 L1
10/26/2022	Assessment	0.081	16.5 M1	17.5	0.04 J1	5.3	53.8	210
2/9/2023	Assessment	0.077	17.3	18.3	0.05 J1	5.7	51.2	190
5/24/2023	Assessment	0.105	19.1	25.7	0.03 J1	5.6	69.2	220
10/20/2023	Assessment	0.086 M1	20.7 M1	25.7	0.05 J1	5.7	80.8	240
3/19/2024	Assessment	0.105	30.9	36.6	0.05 J1	5.8	113	290
5/7/2024	Assessment	0.113	29.2	30.5	0.04 J1	5.7	117	310

Table 1. Groundwater Data Summary: MW-4
Amos - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/25/2016	Background	0.05 J1	13.6	101	0.068	0.18	0.5	26.6	0.539	0.07 J1	0.502	0.007	< 0.002 U1	11.1	0.07 J1	0.055
8/23/2016	Background	0.02 J1	4.34	90.8	0.051	0.03	0.3	5.55	0.405	0.04 J1	0.275	0.002	< 0.002 U1	19.2	0.08 J1	0.01 J1
10/18/2016	Background	0.11	15.8	84.1	0.055	0.53	0.600	85.9	1.884	< 0.05 U1	0.395	0.002	< 0.002 U1	2.44	0.1	0.156
11/8/2016	Background	--	--	--	--	--	--	--	0.457	0.03 J1	--	--	--	--	--	--
12/12/2016	Background	0.03 J1	3.35	96.0	0.049	0.09	1.18	10.9	2.116	0.04 J1	0.255	0.012	< 0.002 U1	0.75	0.1 J1	0.090
2/8/2017	Background	0.02 J1	8.17	82.5	0.045	0.12	0.290	18.9	0.46	0.06 J1	0.306	0.001	< 0.002 U1	0.93	0.07 J1	0.099
3/14/2017	Background	0.03 J1	5.36	91.0	0.043	0.16	0.327	23.3	1.339	0.05 J1	0.192	0.0005 J1	< 0.002 U1	0.51	0.07 J1	0.072
5/22/2017	Background	0.04 J1	6.38	96.2	0.053	0.09	0.226	20.8	0.550	0.04 J1	0.188	0.008	< 0.002 U1	0.49	0.08 J1	0.068
6/19/2017	Background	0.02 J1	5.65	88.5	0.049	0.08	0.216	22.1	0.929	0.03 J1	0.247	0.002	< 0.002 U1	0.31	0.1	0.069
5/3/2018	Assessment	< 0.01 U1	1.15	93.1	0.046	0.04	0.175	7.93	1.569	0.06 J1	0.153	0.0008 J1	< 0.002 U1	0.31	0.06 J1	0.01 J1
9/5/2018	Assessment	0.05 J1	11.0	89.1	0.037	0.21	0.200	25.8	0.623	0.06	0.083	0.003	--	0.28	0.06 J1	0.109
3/15/2019	Assessment	< 0.02 U1	1.63	80.4	0.05 J1	0.05	0.2 J1	9.81	0.501	0.06 J1	0.219	< 0.09 U1	--	< 0.4 U1	0.06 J1	< 0.1 U1
6/10/2019	Assessment	< 0.02 U1	2.50	90.5	0.06 J1	0.07	0.274	10.5	0.787	0.06	0.406	< 0.009 U1	< 0.002 U1	< 0.4 U1	0.08 J1	< 0.1 U1
7/23/2019	Assessment	0.03 J1	2.48	84.6	0.07 J1	0.05	0.236	7.24	0.486	0.04 J1	0.430	0.00162	--	< 0.4 U1	0.1 J1	< 0.1 U1
2/11/2020	Assessment	< 0.02 U1	0.92	96.9	0.04 J1	0.05 J1	0.2 J1	8.30	1.883	0.04 J1	0.2 J1	0.00151	< 0.002 U1	0.9 J1	0.06 J1	< 0.1 U1
5/6/2020	Assessment	< 0.02 U1	5.20	110	0.09 J1	0.05	0.367	8.17	2.176	0.04 J1	0.545	0.00139	--	1 J1	0.2 J1	< 0.1 U1
10/30/2020	Assessment	0.08 J1	21.7	83.5	0.07 J1	0.61	0.308	42.4	0.2618	0.05 J1	0.416	0.00166	--	< 0.4 U1	0.09 J1	0.2 J1
3/17/2021	Assessment	< 0.02 U1	2.15	94.0	0.05 J1	0.06	0.331	8.82	0.515	0.06	0.2 J1	0.00177	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
5/10/2021	Assessment	< 0.02 U1	1.40	92.6	0.04 J1	0.03 J1	0.334	7.23	0.534	0.07	0.2 J1	0.00172	--	0.2 J1	< 0.09 U1	--
11/3/2021	Assessment	< 0.02 U1	1.42	89.8 M1	0.050	0.040	0.42	7.38	0.76	0.06	0.23	0.00164	--	0.1 J1	< 0.09 U1	< 0.04 U1
3/1/2022	Assessment	< 0.02 U1	1.65	87.6	0.040 J1	0.110	0.67	7.53	1.74	0.04 J1	0.21	0.00147	< 0.002 U1	0.1 J1	< 0.09 U1	< 0.04 U1
5/19/2022	Assessment	< 0.02 U1	1.12	93.4	0.040 J1	0.040	0.32	8.84	1.00	0.06	0.05 J1	0.00198	--	0.2 J1	< 0.09 U1	< 0.04 U1
10/26/2022	Assessment	0.09 J1	16.3	108	0.116	0.225	0.56	13.6	1.89	0.04 J1	0.88	0.00170	--	0.2 J1	0.11 J1	0.06 J1
2/9/2023	Assessment	< 0.02 U1	1.19	88.9	0.045 J1	0.040	0.40	6.66	1.22	0.05 J1	0.20	0.00163	--	0.1 J1	< 0.09 U1	< 0.04 U1
5/24/2023	Assessment	0.185	8.08	83.8	0.086	0.201	0.73	22.3	1.42	0.03 J1	0.90	0.00145	< 0.002 U1	0.2 J1	0.09 J1	0.19 J1
10/20/2023	Assessment/ Closure	0.166	9.21	81.7	0.038 J1	0.287	0.42	13.2	1.33	0.05 J1	0.54	0.00108	< 0.002 U1	0.2 J1	0.08 J1	0.28
3/19/2024	Assessment	0.009 J1	0.81	126	0.024 J1	0.028	0.37	2.05	0.92	0.05 J1	0.17 J1	0.00088	< 0.002 U1	0.1 J1	< 0.04 U1	< 0.02 U1
5/7/2024	Assessment/ Closure	< 0.008 U1	0.83	107	0.023 J1	0.031	0.38	2.44	1.47	0.04 J1	0.14 J1	0.00104	< 0.002 U1	< 0.1 U1	< 0.04 U1	< 0.02 U1

Table 1. Groundwater Data Summary: MW-5
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.051	19.7	21.4	0.04 J1	5.8	57.7	156
8/23/2016	Background	0.014	18.4	21.3	0.04 J1	5.4	57.5	136
10/18/2016	Background	0.018	18.6	20.0	< 0.05 U1	5.9	56.0	188
11/8/2016	Background	--	--	20.1	0.05 J1	5.8	56.5	176
12/12/2016	Background	0.002 J1	18.1	20.4	0.03 J1	5.7	54.1	154
2/8/2017	Background	0.032	16.3	19.6	0.05 J1	5.8	51.1	158
3/14/2017	Background	0.028	16.5	19.5	0.03 J1	5.9	51.5	172
5/22/2017	Background	0.046	16.8	18.9	0.04 J1	6.6	51.1	180
6/19/2017	Background	0.060	11.4	19.1	0.03 J1	5.6	57.3	170
11/1/2017	Detection	0.033	15.7	17.5	0.05 J1	5.7	53.9	190
5/3/2018	Assessment	0.156	16.6	17.8	0.04 J1	6.3	51.9	166
9/4/2018	Assessment	0.028	15.2	17.8	0.05 J1	5.8	45.4	151
3/15/2019	Assessment	< 0.2 U1	16.2	18.5	0.05 J1	5.7	51.3	180
6/10/2019	Assessment	0.04 J1	15.7	16.9	0.05 J1	5.9	48.4	178
7/23/2019	Assessment	< 0.04 U1	14.9	15.3	0.04 J1	5.6	45.2	162
2/11/2020	Assessment	--	--	--	0.04 J1	6.0	--	--
5/6/2020	Assessment	--	--	--	--	5.5	--	--
7/7/2020	Assessment	0.055	14.7	14.6	0.03 J1	6.1	45.7	156
10/27/2020	Assessment	0.04 J1	14.3	14.3	0.04 J1	5.5	43.5	177
3/17/2021	Assessment	--	--	--	0.05 J1	5.7	--	--
5/11/2021	Assessment	0.050	12.6	11.2	0.05 J1	5.9	42.7	156
11/3/2021	Assessment	0.024 J1	12.1	9.88	0.04 J1	5.4	42.2	150
3/1/2022	Assessment	--	--	--	0.03 J1	5.5	--	--
5/19/2022	Assessment	0.047 J1	25.4	21.8	0.03 J1	5.9	115	270 L1
10/27/2022	Assessment	0.040 J1	25.8	25.9	0.03 J1	5.5	111	250
2/8/2023	Assessment	0.037 J1	18.1	20.2	0.03 J1	5.5	68.1	200
5/24/2023	Assessment	0.019 J1	22.0	39.8	0.03 J1	5.6	72.1	220
10/18/2023	Assessment	0.018 J1	44.8	105	0.04 J1	5.5	172	400
3/19/2024	Assessment	0.019 J1	44.5 M1	105	0.03 J1	5.7	161	420
5/7/2024	Assessment	0.021 J1	41.9	95.9	0.03 J1	5.7	143	400

Table 1. Groundwater Data Summary: MW-5
Amos - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.03 J1	2.71	170	0.039	0.01 J1	0.2	0.966	1.264	0.04 J1	0.123	0.0005 J1	< 0.002 U1	2.15	< 0.03 U1	0.04 J1
8/23/2016	Background	0.01 J1	2.42	157	0.029	0.007 J1	0.2	1.01	0.406	0.04 J1	0.056	0.004	< 0.002 U1	2.57	< 0.03 U1	0.01 J1
10/18/2016	Background	0.05	4.00	166	0.079	0.007 J1	0.841	1.45	1.123	< 0.05 U1	0.667	0.004	< 0.002 U1	2.20	0.09 J1	0.01 J1
11/8/2016	Background	--	--	--	--	--	--	--	1.099	0.05 J1	--	--	--	--	--	--
12/12/2016	Background	0.08	3.41	166	0.053	0.006 J1	0.892	1.14	1.46	0.03 J1	0.264	0.006	< 0.002 U1	1.01	0.04 J1	0.02 J1
2/8/2017	Background	0.04 J1	3.26	141	0.051	0.006 J1	0.237	0.981	3.676	0.05 J1	0.216	0.003	< 0.002 U1	0.99	< 0.03 U1	0.01 J1
3/14/2017	Background	0.03 J1	2.79	152	0.033	0.007 J1	0.170	0.949	1.055	0.03 J1	0.022	0.002	< 0.002 U1	0.49	< 0.03 U1	0.01 J1
5/22/2017	Background	0.04 J1	2.74	151	0.052	0.007 J1	0.195	1.11	1.062	0.04 J1	0.236	0.013	< 0.002 U1	0.31	0.03 J1	< 0.01 U1
6/19/2017	Background	0.02 J1	3.25	155	0.053	0.006 J1	0.237	0.997	1.099	0.03 J1	0.207	0.002	< 0.002 U1	0.22	0.05 J1	< 0.01 U1
5/3/2018	Assessment	0.02 J1	3.18	149	0.049	0.006 J1	0.237	1.03	1.631	0.04 J1	0.147	0.0004 J1	< 0.002 U1	0.31	0.05 J1	< 0.01 U1
9/4/2018	Assessment	0.02 J1	2.34	157	0.034	0.01 J1	0.122	1.03	0.3383	0.05 J1	0.038	0.002	--	0.15	< 0.03 U1	0.03 J1
3/15/2019	Assessment	0.02 J1	3.63	162	0.06 J1	< 0.01 U1	0.344	1.21	0.853	0.05 J1	0.124	< 0.09 U1	--	< 0.4 U1	< 0.03 U1	< 0.1 U1
6/10/2019	Assessment	< 0.02 U1	2.85	155	0.04 J1	< 0.01 U1	0.1 J1	1.13	0.890	0.05 J1	0.04 J1	< 0.009 U1	< 0.002 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
7/23/2019	Assessment	0.10	6.74	158	0.121	< 0.01 U1	0.291	1.12	0.811	0.04 J1	0.762	0.00153	--	< 0.4 U1	0.08 J1	< 0.1 U1
2/11/2020	Assessment	0.03 J1	4.35	130	0.06 J1	< 0.01 U1	0.273	1.21	1.855	0.04 J1	0.201	0.00147	< 0.002 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
7/7/2020	Assessment	< 0.02 U1	2.77	140	0.04 J1	< 0.01 U1	0.1 J1	1.39	1.120	0.03 J1	0.08 J1	0.00157	--	0.5 J1	0.06 J1	< 0.1 U1
10/27/2020	Assessment	< 0.02 U1	3.18	134	0.04 J1	< 0.01 U1	0.214	1.42	2.254	0.04 J1	< 0.05 U1	0.00138	--	< 0.4 U1	< 0.03 U1	< 0.1 U1
3/17/2021	Assessment	< 0.02 U1	3.36	128	0.04 J1	< 0.004 U1	0.222	1.23	0.845	0.05 J1	0.06 J1	0.00138	< 0.002 U1	0.1 J1	< 0.09 U1	< 0.04 U1
5/11/2021	Assessment	< 0.02 U1	2.77	132	0.04 J1	0.005 J1	0.236	1.34	0.96	0.05 J1	< 0.05 U1	0.00136	--	0.2 J1	< 0.09 U1	--
11/3/2021	Assessment	< 0.02 U1	3.07	120	0.036 J1	0.004 J1	0.45	1.03	0.55	0.04 J1	< 0.05 U1	0.00132	--	0.2 J1	< 0.09 U1	< 0.04 U1
3/1/2022	Assessment	< 0.02 U1	3.41	171	0.040 J1	0.006 J1	0.37	0.833	1.28	0.03 J1	0.06 J1	0.00142	< 0.002 U1	0.1 J1	< 0.09 U1	< 0.04 U1
5/19/2022	Assessment	< 0.02 U1	3.58	272 M1, P3	0.066	< 0.004 U1	0.25	0.862	1.85	0.03 J1	0.06 M1, P3, J1	0.00201	--	3.5	< 0.09 U1	< 0.04 U1
10/27/2022	Assessment	< 0.02 U1	3.05	258	0.065	0.007 J1	0.31	1.28	1.24	0.03 J1	0.06 J1	0.00190	--	0.1 J1	< 0.09 U1	< 0.04 U1
2/8/2023	Assessment	< 0.02 U1	3.08	176	0.049 J1	0.006 J1	0.37	0.973	1.67	0.03 J1	0.05 J1	0.00159	--	0.1 J1	< 0.09 U1	< 0.04 U1
5/24/2023	Assessment	0.018 J1	2.89	202	0.053	< 0.004 U1	0.31	0.276	1.09	0.03 J1	< 0.05 U1	0.00184	< 0.002 U1	< 0.1 U1	< 0.04 U1	< 0.02 U1
10/18/2023	Assessment/ Closure	0.011 J1	3.01	349	0.083	< 0.004 U1	0.28 J1	0.429	1.68	0.04 J1	0.06 J1	0.00239	< 0.002 U1	< 0.1 U1	0.04 J1	< 0.02 U1
3/19/2024	Assessment	< 0.008 U1	2.64	305 M1	0.065	0.004 J1	0.36	0.780	1.29	0.03 J1	< 0.05 U1	0.00207	< 0.002 U1	< 0.1 U1	< 0.04 U1	< 0.02 U1
5/7/2024	Assessment/ Closure	0.008 J1	2.74	311	0.062	0.005 J1	0.33	1.03	1.65	0.03 J1	< 0.05 U1	0.00243	< 0.002 U1	< 0.1 U1	0.05 J1	< 0.02 U1

Table 1. Groundwater Data Summary: MW-6
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.117	12.2	8.88	0.08 J1	6.2	2.8	204
8/24/2016	Background	0.023	12.2	10.7	0.03 J1	5.5	6.1	244
10/19/2016	Background	0.006	11.3	8.67	0.04 J1	6.1	3.7	196
11/8/2016	Background	--	--	--	--	6.0	--	--
12/13/2016	Background	< 0.002 U1	12.4	9.79	0.04 J1	5.9	2.1	190
2/8/2017	Background	0.051	11.6	10.3	0.06 J1	6.0	2.8	170
3/14/2017	Background	0.048	11.5	9.90	0.05 J1	6.1	2.1	203
5/23/2017	Background	0.037	11.9	11.5	0.04 J1	6.2	4.4	238
6/20/2017	Background	0.183	11.6	9.61	0.07	6.0	2.5	222
11/1/2017	Detection	0.017	12.2	11.6	0.07	5.9	5.5	258
5/3/2018	Assessment	0.056	12.0	10.1	0.07	6.3	2.9	188
9/4/2018	Assessment	< 0.002 U1	11.3	8.97	0.09	6.0	1.3	176
3/15/2019	Assessment	< 0.2 U1	12.4	10.4	0.05 J1	5.9	1.6	226
6/10/2019	Assessment	< 0.02 U1	11.8	9.68	0.08	9.3	2.2	205
7/24/2019	Assessment	0.04 J1	12.1	9.71	0.05 J1	5.9	2.2	199
2/12/2020	Assessment	--	--	--	0.06	6.2	--	--
5/5/2020	Assessment	0.04 J1	11.7	8.55	0.09	5.5	1.3	202
10/28/2020	Assessment	< 0.02 U1	12.8	10.8	0.06 J1	5.8	2.6	244
3/16/2021	Assessment	--	--	--	0.09	6.0	--	--
5/11/2021	Assessment	0.02 J1	11.6	9.71	0.07	6.0	2.1	180
11/2/2021	Assessment	< 0.009 U1	10.8	9.11	0.05 J1	7.0	0.75	230
3/2/2022	Assessment	--	--	--	0.05 J1	7.0	--	--
5/23/2022	Assessment	0.01 J1	11.9	10.9	0.05 J1	6.5	3.31	190 L1
10/26/2022	Assessment	0.014 J1	13.8	13.6	0.04 J1	5.7	4.34	280
2/9/2023	Assessment	0.011 J1	13.6	11.7	0.04 J1	5.7	3.29	200
5/25/2023	Assessment	0.010 J1	12.1	11.9	0.04 J1	5.7	3.5	250
10/23/2023	Assessment	0.012 J1	13.4	11.0	0.05 J1	5.8	2.6	250
3/20/2024	Assessment	0.013 J1	13.2	9.28	0.05 J1	6.2	0.6	240
5/7/2024	Assessment	0.016 J1	13.4	9.96	0.05 J1	6.1	1.1	220

Table 1. Groundwater Data Summary: MW-6
Amos - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.03 J1	33.6	191	0.065	0.01 J1	1.5	13.6	1.3779	0.08 J1	1.25	0.002	< 0.002 U1	1.77	0.2	0.075
8/24/2016	Background	0.01 J1	33.4	185	0.037	0.01 J1	1.0	12.4	0.961	0.03 J1	0.581	0.003	< 0.002 U1	0.97	0.2	0.070
10/19/2016	Background	0.01 J1	34.4	171	0.026	0.006 J1	0.647	11.0	1.941	0.04 J1	0.281	0.0005 J1	< 0.002 U1	0.78	0.2	0.185
11/8/2016	Background	--	--	--	--	--	--	--	1.026	--	--	--	--	--	--	--
12/13/2016	Background	0.02 J1	33.9	169	0.038	0.007 J1	1.88	10.6	1.635	0.04 J1	0.515	0.006	< 0.002 U1	0.53	0.2	0.060
2/8/2017	Background	0.02 J1	32.8	157	0.038	0.007 J1	0.817	12.3	20.83	0.06 J1	0.574	0.004	< 0.002 U1	0.60	0.2	0.055
3/14/2017	Background	0.02 J1	36.3	168	0.037	0.006 J1	1.54	12.0	1.178	0.05 J1	0.416	< 0.0002 U1	< 0.002 U1	0.62	0.2	0.054
5/23/2017	Background	0.04 J1	33.6	183	0.032	0.006 J1	0.748	13.1	1.013	0.04 J1	0.305	0.006	< 0.002 U1	0.41	0.2	0.053
6/20/2017	Background	0.02 J1	32.4	169	0.022	< 0.005 U1	0.496	10.7	1.345	0.07	0.157	0.0003 J1	< 0.002 U1	0.44	0.1	0.055
5/3/2018	Assessment	0.01 J1	34.1	163	0.028	< 0.005 U1	0.455	11.9	2.0087	0.07	0.216	< 0.0002 U1	< 0.002 U1	0.50	0.2	0.092
9/4/2018	Assessment	0.16	29.8	147	0.01 J1	0.03	0.380	9.16	0.769	0.09	0.214	< 0.0002 U1	--	0.46	0.1	0.084
3/15/2019	Assessment	0.06 J1	32.0	184	0.106	0.02 J1	1.82	14.0	0.865	0.05 J1	1.72	< 0.09 U1	--	0.5 J1	0.4	0.1 J1
6/10/2019	Assessment	0.03 J1	34.3	161	< 0.02 U1	< 0.01 U1	0.309	9.72	0.688	0.08	0.104	< 0.009 U1	< 0.002 U1	0.5 J1	0.1 J1	< 0.1 U1
7/24/2019	Assessment	< 0.02 U1	34.2	164	0.03 J1	< 0.01 U1	0.418	8.97	0.657	0.05 J1	0.2 J1	0.00114	--	0.4 J1	0.1 J1	< 0.1 U1
2/12/2020	Assessment	< 0.02 U1	38.5	165	< 0.02 U1	< 0.01 U1	0.433	9.52	1.539	0.06	0.07 J1	0.00118	< 0.002 U1	0.5 J1	0.09 J1	< 0.1 U1
5/5/2020	Assessment	0.17	37.2	149	< 0.02 U1	< 0.01 U1	0.429	8.80	2.62	0.09	0.390	0.00102	--	1 J1	0.09 J1	< 0.1 U1
10/28/2020	Assessment	< 0.02 U1	33.5	152	< 0.02 U1	< 0.01 U1	0.406	8.57	0.573	0.06 J1	< 0.05 U1	0.00113	--	0.4 J1	0.05 J1	< 0.1 U1
3/16/2021	Assessment	< 0.02 U1	36.8	164	0.02 J1	< 0.004 U1	0.519	9.08	0.78	0.09	0.07 J1	0.00121	< 0.002 U1	0.5 J1	0.1 J1	< 0.04 U1
5/11/2021	Assessment	0.02 J1	34.1	155	0.02 J1	< 0.004 U1	0.562	8.54	1.105	0.07	0.2 J1	0.00108	--	0.5 J1	0.1 J1	--
11/2/2021	Assessment	< 0.02 U1	35.4	146	0.013 J1	< 0.004 U1	0.45	8.03	1.33	0.05 J1	0.05 J1	0.00097	--	0.4 J1	0.1 J1	< 0.04 U1
3/2/2022	Assessment	< 0.02 U1	33.7	170	0.016 J1	< 0.004 U1	0.83	10.6	1.93	0.05 J1	< 0.05 U1	0.00108	< 0.002 U1	0.4 J1	< 0.09 U1	< 0.04 U1
5/23/2022	Assessment	0.05 J1	37.2	169	0.022 J1	0.005 J1	1.03	11.7	2.88	0.05 J1	0.24	0.00118	--	0.6	< 0.09 U1	0.06 J1
10/26/2022	Assessment	< 0.02 U1	38.0	213	0.017 J1	< 0.004 U1	0.72	15.0	2.89	0.04 J1	< 0.05 U1	0.00134	--	0.4 J1	< 0.09 U1	< 0.04 U1
2/9/2023	Assessment	< 0.02 U1	39.4	199	0.019 J1	< 0.004 U1	0.60	12.8	1.57	0.04 J1	< 0.05 U1	0.00125	--	0.4 J1	< 0.09 U1	< 0.04 U1
5/25/2023	Assessment	0.020 J1	31.3	174	0.015 J1	< 0.004 U1	0.43	11.3	1.80	0.04 J1	0.07 J1	0.00122	< 0.002 U1	0.4 J1	0.08 J1	0.06 J1
10/23/2023	Assessment/ Closure	0.022 J1	36.1	193	0.016 J1	< 0.004 U1	0.91	12.4	1.14	0.05 J1	0.11 J1	0.00117	< 0.002 U1	0.4 J1	0.16 J1	0.03 P2, J1
3/20/2024	Assessment	0.032 J1	36.1	183	0.014 J1	< 0.004 U1	0.55	10.6	0.98	0.05 J1	0.10 J1	0.00094	< 0.002 U1	0.6	0.09 J1	0.07 J1
5/7/2024	Assessment/ Closure	0.010 J1	31.4	173	0.015 J1	< 0.004 U1	0.51	9.32	1.49	0.05 J1	< 0.05 U1	0.00114	< 0.002 U1	0.4 J1	0.09 J1	0.04 J1

Table 1. Groundwater Data Summary: MW-1601
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.070	11.8	7.17	0.06 J1	5.8	54.5	120
8/24/2016	Background	0.035	10.9	6.54	0.05 J1	5.6	49.1	142
10/18/2016	Background	< 0.002 U1	10.1	6.56	0.05 J1	6.0	39.6	136
11/7/2016	Background	--	--	6.79	0.05 J1	5.9	39.7	122
12/13/2016	Background	< 0.002 U1	10.4	7.79	0.04 J1	5.8	43.6	140
2/7/2017	Background	0.109	11.6	9.09	0.05 J1	6.0	55.6	168
3/13/2017	Background	0.107	11.2	9.89	0.04 J1	6.0	57.4	169
5/23/2017	Background	0.170	11.2	9.75	0.04 J1	5.9	52.8	182
6/20/2017	Background	0.107	10.4	8.59	0.04 J1	5.9	51.3	184
11/2/2017	Detection	0.087	8.91	9.91	0.05 J1	5.8	39.1	164
5/4/2018	Assessment	0.070	11.0	10.3	0.05 J1	6.1	53.0	159
9/5/2018	Assessment	< 0.002 U1	11.6	10.4	0.04 J1	7.8	52.2	157
3/19/2019	Assessment	0.05 J1	11.9	8.80	< 0.01 U1	5.8	52.7	176
6/12/2019	Assessment	< 0.02 U1	11.0	10.0	0.05 J1	6.7	48.8	185
7/24/2019	Assessment	< 0.04 U1	10.3	10.3	0.05 J1	5.9	44.6	154
2/12/2020	Assessment	--	--	--	0.05 J1	5.9	--	--
5/6/2020	Assessment	0.03 J1	9.42	19.0	0.04 J1	5.6	25.9	143
10/28/2020	Assessment	< 0.02 U1	10.8	28.3	0.05 J1	5.6	24.1	156
3/17/2021	Assessment	--	--	--	0.06 J1	5.9	--	--
5/10/2021	Assessment	0.01 J1	9.66	25.6	0.05 J1	6.1	27.2	116
11/9/2021	Assessment	0.052	19.4	42.9	0.04 J1	5.8	75.7	250
3/2/2022	Assessment	--	--	--	0.03 J1	5.5	--	--
5/24/2022	Assessment	0.009 J1	15.1	28.1	0.02 J1	6.1	60.2	170 L1
10/25/2022	Assessment	< 0.009 U1	10.8	12.7	0.04 J1	5.6	50.5	160
2/8/2023	Assessment	0.009 J1	9.84	13.7	0.03 J1	5.5	47.1	150
5/25/2023	Assessment	< 0.007 U1	10.7	24.9	0.03 J1	5.4	51.2	210
10/20/2023	Assessment	0.016 J1	11.1	19.9	0.04 J1	5.5	46.7	140
3/18/2024	Assessment	0.007 J1	12.7	28.3	0.04 J1	5.6	52.3	180
5/7/2024	Assessment	0.011 J1	12.4	34.0	0.04 J1	5.7	55.9	190

Table 1. Groundwater Data Summary: MW-1601
Amos - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.01 J1	4.57	128	0.030	0.02	0.4	7.24	0.106	0.06 J1	0.366	0.003	< 0.002 U1	0.32	0.07 J1	0.01 J1
8/24/2016	Background	< 0.01 U1	5.14	120	0.02 J1	0.02 J1	0.3	6.19	0.975	0.05 J1	0.109	0.007	< 0.002 U1	0.62	0.09 J1	0.02 J1
10/18/2016	Background	0.01 J1	5.64	118	0.027	0.02 J1	0.688	4.04	2.413	0.05 J1	0.265	0.003	< 0.002 U1	0.26	0.1 J1	0.065
11/7/2016	Background	--	--	--	--	--	--	--	0.842	0.05 J1	--	--	--	--	--	--
12/13/2016	Background	0.02 J1	5.38	113	0.027	0.02 J1	1.35	4.67	1.101	0.04 J1	0.272	0.009	< 0.002 U1	0.16	0.1	0.02 J1
2/7/2017	Background	< 0.01 U1	5.09	107	0.025	0.02 J1	0.224	6.20	35.021	0.05 J1	0.227	0.004	< 0.002 U1	0.21	0.1	0.01 J1
3/13/2017	Background	< 0.01 U1	5.54	117	0.023	0.02 J1	0.588	6.47	0.7405	0.04 J1	0.161	0.004	< 0.002 U1	0.16	0.05 J1	0.01 J1
5/23/2017	Background	0.02 J1	7.08	122	0.051	0.02	0.740	5.48	0.573	0.04 J1	0.687	0.007	< 0.002 U1	0.21	0.2	0.02 J1
6/20/2017	Background	0.02 J1	5.57	113	0.02 J1	0.02 J1	0.215	4.72	1.037	0.04 J1	0.142	0.003	< 0.002 U1	0.17	0.06 J1	0.02 J1
5/4/2018	Assessment	0.01 J1	6.44	112	0.038	0.02	0.353	4.43	1.723	0.05 J1	0.397	0.010	< 0.002 U1	0.20	0.1	0.02 J1
9/5/2018	Assessment	0.02 J1	5.39	90.4	0.01 J1	0.02	0.270	6.73	0.252	0.04 J1	0.045	0.002	--	0.08 J1	< 0.03 U1	0.02 J1
3/19/2019	Assessment	< 0.02 U1	6.55	122	0.02 J1	0.01 J1	0.1 J1	3.41	0.666	< 0.01 U1	0.105	0.02 J1	--	< 0.4 U1	0.04 J1	< 0.1 U1
6/12/2019	Assessment	< 0.02 U1	6.02	118	0.04 J1	0.02 J1	0.2 J1	2.75	0.533	0.05 J1	0.154	< 0.009 U1	< 0.002 U1	< 0.4 U1	0.08 J1	< 0.1 U1
7/24/2019	Assessment	< 0.02 U1	6.63	130	0.02 J1	0.01 J1	0.2 J1	3.01	1.005	0.05 J1	0.2 J1	0.00141	--	< 0.4 U1	0.06 J1	< 0.1 U1
2/12/2020	Assessment	0.03 J1	8.26	122	0.05 J1	0.02 J1	0.938	3.19	0.398	0.05 J1	0.602	0.00159	< 0.002 U1	< 0.4 U1	0.1 J1	< 0.1 U1
5/6/2020	Assessment	< 0.02 U1	7.83	115	< 0.02 U1	0.01 J1	0.272	2.78	2.682	0.04 J1	0.2 J1	0.00121	--	0.5 J1	0.04 J1	< 0.1 U1
10/28/2020	Assessment	< 0.02 U1	8.68	127	0.03 J1	0.01 J1	0.369	3.04	0.447	0.05 J1	0.227	0.00138	--	< 0.4 U1	0.07 J1	< 0.1 U1
3/17/2021	Assessment	< 0.02 U1	7.76	133	0.03 J1	0.01 J1	0.488	3.44	0.869	0.06 J1	0.271	0.00153	< 0.002 U1	0.2 J1	< 0.09 U1	< 0.04 U1
5/10/2021	Assessment	< 0.02 U1	10.9	127	0.03 J1	0.02 J1	0.375	2.82	0.717	0.05 J1	0.211	0.00134	--	0.4 J1	< 0.09 U1	--
11/9/2021	Assessment	< 0.02 U1	7.64	168	0.042 J1	0.028	0.73	8.34	1.33	0.04 J1	0.43	0.00201	--	0.2 J1	0.1 J1	< 0.04 U1
3/2/2022	Assessment	< 0.02 U1	5.78	131	0.016 J1	0.021	0.45	7.03	1.69	0.03 J1	0.06 J1	0.00189	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
5/24/2022	Assessment	< 0.02 U1	6.57	113	0.031 J1	0.021	0.46	6.60	0.79	0.02 J1	0.28	0.00195	--	< 0.1 U1	< 0.09 U1	< 0.04 U1
10/25/2022	Assessment	0.02 J1	8.62	105	0.091	0.021	1.42	5.03	1.84	0.04 J1	0.98	0.00247	--	0.1 J1	0.12 J1	< 0.04 U1
2/8/2023	Assessment	< 0.02 U1	8.79	99.3	0.034 J1	0.019 J1	0.59	4.56	1.35	0.03 J1	0.31	0.00183	--	< 0.1 U1	< 0.09 U1	< 0.04 U1
5/25/2023	Assessment	0.093 J1	7.50	109	0.018 J1	0.017 J1	0.28 J1	4.83	0.65	0.03 J1	0.13 J1	0.00169	< 0.002 U1	< 0.1 U1	0.04 J1	< 0.02 U1
10/20/2023	Assessment/ Closure	0.011 J1	7.00	119	0.039 J1	0.015 J1	0.79	4.44	1.10	0.04 J1	0.37	0.00196	< 0.002 U1	0.1 J1	0.10 J1	< 0.02 U1
3/18/2024	Assessment	< 0.008 U1	5.20	137	0.015 J1	0.016 J1	0.18 J1	4.60	1.05	0.04 J1	0.06 J1	0.00173	< 0.002 U1	< 0.1 U1	< 0.04 U1	< 0.02 U1
5/7/2024	Assessment/ Closure	< 0.008 U1	6.83	139	0.016 J1	0.014 J1	0.21 J1	4.16	1.29	0.04 J1	0.08 J1	0.00199	< 0.002 U1	< 0.1 U1	< 0.04 U1	< 0.02 U1

Table 1. Groundwater Data Summary: MW-1602A
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.063	18.2	38.4	0.18	7.0	18.7	172
8/24/2016	Background	0.015	18.2	37.9	0.17	6.1	17.7	200
10/19/2016	Background	0.003 J1	17.3	37.2	0.1 J1	6.7	15.0	242
11/9/2016	Background	--	--	--	--	6.3	--	--
12/13/2016	Background	< 0.002 U1	18.8	39.1	0.1 J1	6.5	10.7	170
2/8/2017	Background	0.051	17.7	37.3	0.1 J1	6.7	9.8	144
3/15/2017	Background	0.039	16.1	38.1	0.1 J1	6.8	11.4	209
5/23/2017	Background	0.081	18.5	38.8	0.1 J1	6.7	11.4	224
6/20/2017	Background	0.090	18.5	38.3	0.1 J1	6.5	13.5	178
11/2/2017	Detection	0.050	18.6	38.0	0.1 J1	6.5	12.8	254
5/10/2018	Assessment	0.127	19.5	39.1	0.16	7.2	13.2	184
9/5/2018	Assessment	< 0.002 U1	18.1	40.0	0.14	6.4	12.7	176
3/19/2019	Assessment	0.03 J1	19.6	41.0	0.14	6.6	13.2	232
6/11/2019	Assessment	< 0.02 U1	18.8	41.9	0.16	9.5	13.8	217
7/23/2019	Assessment	< 0.04 U1	16.7	39.4	0.13	6.3	10.3	201
2/12/2020	Assessment	--	--	--	0.14	6.7	--	--
5/6/2020	Assessment	0.03 J1	19.3	43.2	0.11	6.3	12.7	209
10/30/2020	Assessment	< 0.02 U1	20.5	42.8	0.13	6.4	12.3	220
3/17/2021	Assessment	--	--	--	0.17	6.6	--	--
5/7/2021	Assessment	< 0.009 U1	19.7	43.0	0.15	6.5	12.7	202
11/10/2021	Assessment	0.012 J1	19.0	43.4	0.13	6.5	11.9	190
3/2/2022	Assessment	--	--	--	0.14	6.5	--	--
5/23/2022	Assessment	0.01 J1	19.5	39.5	0.14	6.5	13.6	190 L1
10/27/2022	Assessment	0.017 J1	20.0	39.8	0.14	6.4	16.3	190
2/6/2023	Assessment	0.024 J1	19.1	40.4	0.12	6.5	17.3	210
5/25/2023	Assessment	0.011 J1	16.9	39.7	0.12	6.4	18.9	230
10/23/2023	Assessment	0.011 J1	18.9	39.1	0.12	6.3	19.6	220
3/18/2024	Assessment	0.013 J1	20.6	41.4	0.13	5.5	21.1	220
5/8/2024	Assessment	0.014 J1	20.0	40.8	0.13	6.5	21.0	220

Table 1. Groundwater Data Summary: MW-1602A
Amos - BAP
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.12	17.6	220	0.085	0.02 J1	1.7	4.19	7.914	0.18	7.94	0.004	< 0.002 U1	3.62	0.2	0.02 J1
8/24/2016	Background	0.04 J1	18.1	209	0.036	0.006 J1	1.1	3.04	0.569	0.17	2.80	0.003	< 0.002 U1	2.80	0.2	0.01 J1
10/19/2016	Background	0.10	18.3	213	0.064	0.01 J1	1.46	2.38	2.65	0.1 J1	6.56	0.003	0.003 J1	2.00	0.2	0.063
11/9/2016	Background	--	--	--	--	--	--	--	0.874	--	--	--	--	--	--	--
12/13/2016	Background	0.08	19.3	217	0.048	0.01 J1	2.24	2.00	0.989	0.1 J1	4.53	0.006	0.002 J1	1.90	0.2	0.02 J1
2/8/2017	Background	0.05	19.1	194	0.051	0.009 J1	0.981	1.87	6.853	0.1 J1	4.07	0.005	< 0.002 U1	1.68	0.2	0.224
3/15/2017	Background	0.04 J1	21.5	198	0.055	0.008 J1	0.951	1.47	1.094	0.1 J1	2.65	0.0005 J1	0.002 J1	1.22	0.2	0.01 J1
5/23/2017	Background	0.04 J1	20.8	221	0.029	0.006 J1	0.568	1.23	1.833	0.1 J1	2.11	0.005	< 0.002 U1	1.22	0.1	< 0.01 U1
6/20/2017	Background	0.07	20.3	224	0.043	0.01 J1	0.807	1.30	0.901	0.1 J1	2.68	< 0.0002 U1	< 0.002 U1	1.55	0.2	0.01 J1
5/10/2018	Assessment	0.03 J1	20.4	223	0.022	< 0.005 U1	0.437	0.940	0.438	0.16	0.982	0.004	< 0.002 U1	0.91	0.1	< 0.01 U1
9/5/2018	Assessment	0.08	20.5	223	0.055	0.01 J1	0.855	1.05	0.941	0.14	5.99	0.001	--	0.71	0.2	0.03 J1
3/19/2019	Assessment	0.04 J1	19.7	217	0.04 J1	< 0.01 U1	0.472	0.691	0.5231	0.14	2.64	< 0.009 U1	--	0.7 J1	0.09 J1	< 0.1 U1
6/11/2019	Assessment	< 0.04 U1	20.6	229	< 0.04 U1	< 0.02 U1	0.3 J1	0.523	1.144	0.16	0.677	< 0.009 U1	< 0.002 U1	< 0.8 U1	< 0.06 U1	< 0.2 U1
7/23/2019	Assessment	< 0.02 U1	21.7	213	< 0.02 U1	< 0.01 U1	0.297	0.545	0.888	0.13	1.08	0.000908	--	0.7 J1	0.06 J1	< 0.1 U1
2/12/2020	Assessment	0.03 J1	21.9	234	0.03 J1	< 0.01 U1	0.758	0.632	0.699	0.14	1.23	0.00127	< 0.002 U1	0.7 J1	0.05 J1	< 0.1 U1
5/6/2020	Assessment	0.02 J1	21.8	238	< 0.02 U1	< 0.01 U1	0.361	0.468	1.429	0.11	1.22	0.000954	--	0.9 J1	0.07 J1	< 0.1 U1
10/30/2020	Assessment	0.05 J1	22.1	229	0.02 J1	< 0.01 U1	0.749	0.587	1.067	0.13	1.20	0.00117	--	0.8 J1	< 0.03 U1	< 0.1 U1
3/17/2021	Assessment	0.03 J1	20.5	235	0.01 J1	< 0.004 U1	0.458	0.338	0.84	0.17	0.491	0.000988	< 0.002 U1	0.7 J1	< 0.09 U1	< 0.04 U1
5/7/2021	Assessment	< 0.02 U1	21.2	228	0.009 J1	0.008 J1	0.366	0.290	1.103	0.15	0.240	0.000930	--	0.8 J1	< 0.09 U1	--
11/10/2021	Assessment	0.07 J1	17.5	222	0.044 J1	0.021	1.65	0.920	0.86	0.13	2.21	0.00122	--	0.8	0.14 J1	< 0.04 U1
3/2/2022	Assessment	0.07 J1	20.3	242	0.027 J1	0.006 J1	1.19	0.516	1.33	0.14	1.17	0.00107	< 0.002 U1	0.8	< 0.09 U1	< 0.04 U1
5/23/2022	Assessment	< 0.02 U1	19.6	241	0.010 J1	< 0.004 U1	0.41	0.244	1.59	0.14	0.42	0.00090	--	0.8	< 0.09 U1	< 0.04 U1
10/27/2022	Assessment	< 0.02 U1	21.0	240	0.01 J1	< 0.004 U1	0.39	0.174	1.48	0.14	0.23	0.00104	--	0.7	< 0.09 U1	< 0.04 U1
2/6/2023	Assessment	0.02 J1	21.0	228	0.028 J1	< 0.004 U1	0.67	0.246	1.27	0.12	0.83	0.00115	--	0.7	< 0.09 U1	< 0.04 U1
5/25/2023	Assessment	0.014 J1	17.7	201	0.008 J1	< 0.004 U1	0.31	0.131	0.58	0.12	0.20	0.00095	< 0.002 U1	0.6	< 0.04 U1	< 0.02 U1
10/23/2023	Assessment/ Closure	0.065 J1	20.1	229	< 0.007 U1	< 0.004 U1	1.33	0.127	1.56	0.12	0.13 J1	0.00097	< 0.002 U1	0.6	0.04 J1	< 0.02 P2, U1
3/18/2024	Assessment	0.011 J1	20.0	253	0.013 J1	< 0.004 U1	0.40	0.186	1.33	0.13	0.38	0.00096	< 0.002 U1	0.7	< 0.04 U1	< 0.02 U1
5/8/2024	Assessment/ Closure	0.009 J1	18.6	236	0.009 J1	< 0.004 U1	0.32	0.149	1.48	0.13	0.22	0.00111	< 0.002 U1	0.6	0.04 J1	< 0.02 U1

Table 1. Groundwater Data Summary: MW-1603A
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.051	17.4	4.76	0.29	7.3	0.9	116
8/24/2016	Background	0.012	16.9	5.62	0.28	6.2	0.1	84
10/19/2016	Background	< 0.002 U1	17.2	5.11	0.29	7.0	< 0.04 U1	168
11/9/2016	Background	--	--	5.60	0.28	6.5	< 0.04 U1	90
12/13/2016	Background	< 0.002 U1	16.6	5.41	0.20	6.7	< 0.04 U1	93
2/9/2017	Background	0.038	15.5	5.00	0.22	7.0	< 0.04 U1	80
3/15/2017	Background	0.025	15.6	5.12	0.24	7.1	< 0.04 U1	102
5/24/2017	Background	0.061	15.2	5.35	0.23	6.8	< 0.04 U1	108
6/20/2017	Background	0.069	14.6	4.93	0.23	6.7	< 0.04 U1	100
11/2/2017	Detection	0.035	15.2	5.61	0.24	6.7	< 0.04 U1	150
5/2/2018	Assessment	0.051	17.2	5.18	0.28	6.8	< 0.04 U1	100
9/5/2018	Assessment	< 0.002 U1	15.8	4.99	0.28	6.7	< 0.04 U1	89
3/15/2019	Assessment	< 0.2 U1	15.5	5.65	0.27	7.1	< 0.06 U1	95
6/11/2019	Assessment	< 0.02 U1	15.5	5.70	0.31	8.8	< 0.06 U1	95
7/24/2019	Assessment	< 0.04 U1	14.4	5.73	0.28	6.8	< 0.06 U1	102
2/11/2020	Assessment	--	--	--	0.24	6.9	--	--
5/6/2020	Assessment	0.02 J1	15.5	5.87	0.23	6.5	< 0.06 U1	121
10/30/2020	Assessment	< 0.02 U1	16.3	6.03	0.25	6.9	< 0.06 U1	115
3/15/2021	Assessment	--	--	--	0.30	6.9	--	--
5/10/2021	Assessment	0.02 J1	13.8	6.28	0.26	6.8	< 0.06 U1	40 J1
11/5/2021	Assessment	0.011 J1	15.1	6.54	0.25	6.7	< 0.06 U1	90
3/1/2022	Assessment	--	--	--	0.23	6.6	--	--
5/19/2022	Assessment	0.017 J1	14.7	8.26	0.23	6.6	< 0.06 U1	110 L1
10/27/2022	Assessment	0.017 J1	15.2	6.46	0.25	6.6	0.19 J1	80
2/7/2023	Assessment	0.020 J1	14.9	6.61	0.23	6.6	< 0.06 U1	100
5/25/2023	Assessment	0.01 J1	13.4	7.17	0.23	6.5	< 0.1 U1	130
10/23/2023	Assessment	0.011 J1	14.6	7.14	0.22	6.5	< 0.1 U1	120
3/19/2024	Assessment	0.012 J1	14.3	7.43	0.24	6.6	< 0.1 U1	100
5/8/2024	Assessment	0.011 J1	13.5	7.13	0.23	6.7	< 0.1 U1	110

Table 1. Groundwater Data Summary: MW-1603A
Amos - BAP
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.04 J1	78.0	303	0.052	0.01 J1	1.2	1.04	1.619	0.29	1.35	0.002	< 0.002 U1	2.11	0.09 J1	0.01 J1
8/24/2016	Background	0.03 J1	77.6	264	0.044	0.008 J1	1.0	0.725	0.726	0.28	1.07	0.007	< 0.002 U1	1.36	0.1 J1	< 0.01 U1
10/19/2016	Background	0.04 J1	73.7	258	0.096	0.01 J1	1.94	1.23	2.39	0.29	2.18	< 0.0002 U1	< 0.002 U1	1.34	0.2	0.02 J1
11/9/2016	Background	--	--	--	--	--	--	--	1.039	0.28	--	--	--	--	--	--
12/13/2016	Background	0.05 J1	78.3	270	0.102	0.01 J1	3.27	1.13	0.524	0.20	1.81	0.009	< 0.002 U1	1.22	0.2	0.03 J1
2/9/2017	Background	0.01 J1	78.3	229	0.055	0.008 J1	0.915	0.746	0.693	0.22	1.19	0.0005 J1	< 0.002 U1	1.15	0.2	0.075
3/15/2017	Background	0.04 J1	83.4	245	0.070	0.01 J1	1.42	1.02	0.974	0.24	1.25	0.002	0.002 J1	1.27	0.1	0.01 J1
5/24/2017	Background	0.05	63.3	233	0.033	0.009 J1	0.999	0.619	0.720	0.23	0.900	0.011	< 0.002 U1	1.56	0.09 J1	< 0.01 U1
6/20/2017	Background	0.03 J1	81.3	257	0.054	0.02	1.12	0.846	0.603	0.23	0.970	0.004	< 0.002 U1	1.11	0.1	0.01 J1
5/2/2018	Assessment	0.04 J1	80.0	251	0.093	0.01 J1	1.82	1.52	0.23065	0.28	1.60	0.0008 J1	< 0.002 U1	1.21	0.3	0.02 J1
9/5/2018	Assessment	0.02 J1	87.1	242	0.006 J1	0.007 J1	0.180	0.246	0.577	0.28	0.045	0.002	--	1.07	0.04 J1	0.01 J1
3/15/2019	Assessment	< 0.02 U1	89.9	252	< 0.02 U1	< 0.01 U1	0.407	0.360	1.261	0.27	0.232	< 0.09 U1	--	1 J1	0.05 J1	< 0.1 U1
6/11/2019	Assessment	< 0.02 U1	90.3	255	< 0.02 U1	< 0.01 U1	0.280	0.288	0.3562	0.31	0.163	< 0.009 U1	< 0.002 U1	1 J1	0.04 J1	< 0.1 U1
7/24/2019	Assessment	< 0.02 U1	85.8	249	0.04 J1	< 0.01 U1	0.650	0.517	0.439	0.28	0.580	0.000870	--	1 J1	0.07 J1	< 0.1 U1
2/11/2020	Assessment	< 0.02 U1	87.7	241	0.03 J1	< 0.01 U1	0.663	0.376	0.984	0.24	0.347	0.000630	< 0.002 U1	1 J1	0.06 J1	< 0.1 U1
5/6/2020	Assessment	< 0.02 U1	90.2	241	< 0.02 U1	< 0.01 U1	0.362	0.255	2.242	0.23	0.2 J1	0.000339	--	1 J1	< 0.03 U1	< 0.1 U1
10/30/2020	Assessment	0.03 J1	88.9	239	< 0.02 U1	< 0.01 U1	0.293	0.209	0.384	0.25	0.1 J1	0.000324	--	1 J1	< 0.03 U1	< 0.1 U1
3/15/2021	Assessment	< 0.02 U1	86.1	224	< 0.007 U1	< 0.004 U1	0.339	0.152	0.584	0.30	< 0.05 U1	0.000283	< 0.002 U1	1 J1	< 0.09 U1	< 0.04 U1
5/10/2021	Assessment	0.03 J1	86.8	240	0.01 J1	< 0.004 U1	0.335	0.212	0.703	0.26	0.2 J1	0.000303	--	1 J1	< 0.09 U1	--
11/5/2021	Assessment	0.04 J1	85.2	234	0.017 J1	< 0.004 U1	0.67	0.269	1.13	0.25	0.36	0.00037	--	1.0	< 0.09 U1	< 0.04 U1
3/1/2022	Assessment	0.03 J1	87.2	241	0.011 J1	< 0.004 U1	0.71	0.228	1.13	0.23	0.19 J1	0.00027	< 0.002 U1	1	< 0.09 U1	< 0.04 U1
5/19/2022	Assessment	0.03 J1	83.2	239	< 0.007 U1	0.009 J1	0.43	0.175	1.38	0.23	0.06 J1	0.00026	--	1.3	< 0.09 U1	< 0.04 U1
10/27/2022	Assessment	< 0.02 U1	87.9	245	0.008 J1	< 0.004 U1	0.51	0.205	2.45	0.25	0.08 J1	0.00030	--	1.0	< 0.09 U1	< 0.04 U1
2/7/2023	Assessment	0.03 J1	88.1	238	0.023 J1	< 0.004 U1	0.86	0.353	2.20	0.23	0.30	0.00049	--	1	< 0.09 U1	< 0.04 U1
5/25/2023	Assessment	0.026 J1	75.9	220	0.015 J1	< 0.004 U1	0.48	0.250	1.30	0.23	0.20	0.00073	< 0.002 U1	0.9	< 0.04 U1	< 0.02 U1
10/23/2023	Assessment/ Closure	0.013 J1	81.0	242	0.007 J1	< 0.004 U1	0.58	0.197	0.72	0.22	0.1 J1	0.00029 J1	< 0.002 U1	0.9	0.05 J1	< 0.02 P2, U1
3/19/2024	Assessment	0.015 J1	78.9	239	0.015 J1	< 0.004 U1	0.67	0.277	0.77	0.24	0.22	0.00032	< 0.002 U1	0.9	< 0.04 U1	< 0.02 U1
5/8/2024	Assessment/ Closure	0.013 J1	74.2	217 M1	0.011 J1	< 0.004 U1	0.39	0.197	0.98	0.23	0.11 J1	0.00031	< 0.002 U1	0.8	0.04 J1	< 0.02 U1

Table 1. Groundwater Data Summary: MW-1604
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.116	20.5	23.0	0.1 J1	6.2	2.2	236
8/22/2016	Background	0.074	18.0	22.9	0.05 J1	6.2	0.3	168
10/18/2016	Background	0.059	18.2	22.6	0.05 J1	6.3	0.3	196
11/8/2016	Background	--	--	22.5	0.05 J1	6.2	0.3	206
12/13/2016	Background	0.042	17.9	24.0	0.05 J1	6.1	0.9	182
2/8/2017	Background	0.094	16.6	23.1	0.09	6.2	0.7	172
3/14/2017	Background	0.083	16.1	24.1	0.08	6.4	0.9	204
5/23/2017	Background	0.129	17.4	26.1	0.08	6.1	2.2	222
6/20/2017	Background	0.152	16.2	25.2	0.09	6.2	1.2	224
11/1/2017	Detection	0.153	16.8	23.4	0.10	6.1	0.5	228
5/3/2018	Assessment	0.200	17.8	25.5	0.13	6.4	< 0.04 U1	210
9/5/2018	Assessment	0.043	15.1	22.8	0.12	7.2	< 0.04 U1	180
3/15/2019	Assessment	< 0.2 U1	13.1	16.6	0.09	6.3	< 0.06 U1	170
6/10/2019	Assessment	0.09 J1	16.5	24.4	0.11	8.7	< 0.06 U1	60
7/24/2019	Assessment	0.132	18.7	27.0	0.07	5.9	< 0.06 U1	242
2/12/2020	Assessment	--	--	--	0.08	6.3	--	--
5/6/2020	Assessment	0.175	20.8	29.4	0.06 J1	6.0	< 0.06 U1	241
10/28/2020	Assessment	0.200	19.5	27.7	0.08	6.0	< 0.06 U1	266
3/16/2021	Assessment	--	--	--	0.08	6.2	--	--
5/11/2021	Assessment	0.186	18.1	28.0	0.09	6.2	< 0.06 U1	237
11/4/2021	Assessment	0.143	17.7	25.7	0.06	6.2	< 0.06 U1	210
3/2/2022	Assessment	--	--	--	0.06	6.4	--	--
5/24/2022	Assessment	0.218	23.1	56.6	0.21	5.9	456	1,090 L1
10/26/2022	Assessment	0.132	17.1	--	--	5.9	--	--
11/2/2022	Assessment	--	--	25.1	0.05 J1	6.1	< 0.06 U1	200
2/9/2023	Assessment	0.093	16.1	22.6	0.06	5.9	< 0.06 U1	180
5/26/2023	Assessment	0.153	20.0	23.2	0.06	6.2	< 0.1 U1	230
10/24/2023	Assessment	0.196	23.7	20.9	0.09	6.1	2.6	240
3/20/2024	Assessment	0.176	22.0	21.5	0.07	6.2	1.3	240
5/8/2024	Assessment	0.135	18.4 M1	20.5	0.07	6.2	0.8	240 P1

Table 1. Groundwater Data Summary: MW-1604
Amos - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.05 J1	4.43	139	0.087	0.007 J1	1.9	2.06	3.5822	0.1 J1	1.58	0.002	< 0.002 U1	0.74	0.2	0.02 J1
8/22/2016	Background	0.04 J1	5.15	147	0.063	0.02 J1	1.4	1.06	0.695	0.05 J1	1.14	0.004	0.002 J1	0.64	0.2	0.02 J1
10/18/2016	Background	0.03 J1	4.60	134	0.048	0.005 J1	1.27	0.805	1.387	0.05 J1	0.869	< 0.0002 U1	< 0.002 U1	0.30	0.2	0.01 J1
11/8/2016	Background	--	--	--	--	--	--	--	0.512	0.05 J1	--	--	--	--	--	--
12/13/2016	Background	0.02 J1	4.58	137	0.038	< 0.004 U1	1.20	0.632	1.743	0.05 J1	0.603	0.004	< 0.002 U1	0.25	0.2	0.02 J1
2/8/2017	Background	0.02 J1	4.52	125	0.039	< 0.004 U1	0.814	0.638	1.239	0.09	0.719	0.004	< 0.002 U1	0.32	0.2	0.05 J1
3/14/2017	Background	0.02 J1	4.46	132	0.038	< 0.004 U1	0.824	0.570	0.892	0.08	0.482	0.0008 J1	< 0.002 U1	0.22	0.2	< 0.01 U1
5/23/2017	Background	0.04 J1	3.90	142	0.042	< 0.005 U1	0.836	0.647	0.859	0.08	0.444	0.006	< 0.002 U1	0.21	0.2	< 0.01 U1
6/20/2017	Background	0.02 J1	4.44	146	0.040	< 0.005 U1	0.706	0.601	1.459	0.09	0.406	0.003	< 0.002 U1	0.20	0.2	< 0.01 U1
5/3/2018	Assessment	0.02 J1	6.33	146	0.047	< 0.005 U1	0.556	0.494	1.334	0.13	0.230	< 0.0002 U1	< 0.002 U1	0.25	0.2	0.01 J1
9/5/2018	Assessment	0.03 J1	6.11	135	0.043	< 0.005 U1	0.649	0.533	0.248	0.12	0.349	0.0008 J1	--	0.22	0.3	0.01 J1
3/15/2019	Assessment	0.04 J1	6.78	118	0.07 J1	< 0.01 U1	0.931	0.406	0.596	0.09	1.19	< 0.09 U1	--	< 0.4 U1	0.2	< 0.1 U1
6/10/2019	Assessment	0.05 J1	4.88	142	0.142	< 0.01 U1	0.360	0.306	0.831	0.11	0.148	< 0.009 U1	< 0.002 U1	< 0.4 U1	0.1 J1	< 0.1 U1
7/24/2019	Assessment	< 0.02 U1	4.76	170	0.06 J1	< 0.01 U1	1.33	0.415	0.943	0.07	0.294	0.000485	--	0.4 J1	0.1 J1	< 0.1 U1
2/12/2020	Assessment	< 0.02 U1	3.88	174	0.05 J1	< 0.01 U1	0.798	0.538	1.375	0.08	0.319	0.000626	< 0.002 U1	< 0.4 U1	0.2 J1	< 0.1 U1
5/6/2020	Assessment	< 0.02 U1	4.04	175	0.04 J1	< 0.01 U1	0.484	0.406	1.647	0.06 J1	0.1 J1	0.000430	--	< 0.4 U1	0.2 J1	< 0.1 U1
10/28/2020	Assessment	< 0.02 U1	3.98	156	0.05 J1	< 0.01 U1	0.595	0.387	0.261	0.08	0.232	0.000515	--	< 0.4 U1	0.1 J1	< 0.1 U1
3/16/2021	Assessment	< 0.02 U1	4.89	168	0.04 J1	< 0.004 U1	0.590	0.295	0.66	0.08	0.1 J1	0.000475	< 0.002 U1	0.2 J1	0.2 J1	< 0.04 U1
5/11/2021	Assessment	< 0.02 U1	4.45	163	0.04 J1	< 0.004 U1	0.537	0.256	0.809	0.09	0.08 J1	0.000433	--	0.3 J1	0.1 J1	--
11/4/2021	Assessment	< 0.02 U1	4.38	138	0.054	< 0.004 U1	1.02	0.469	1.18	0.06	0.38	0.00058	--	0.2 J1	0.13 J1	< 0.04 U1
3/2/2022	Assessment	< 0.02 U1	3.56	131	0.042 J1	< 0.004 U1	0.87	0.507	1.36	0.06	0.23	0.00044	< 0.002 U1	0.2 J1	0.10 J1	< 0.04 U1
5/24/2022	Assessment	< 0.02 U1	3.66	172	0.036 J1	< 0.004 U1	0.60	0.422	1.29	0.21	0.15 J1	0.00040	--	0.4 J1	0.13 J1	< 0.04 U1
10/26/2022	Assessment	< 0.02 U1	3.41	133	0.040 J1	< 0.004 U1	0.67	0.469	0.86	--	0.11 J1	0.00039	--	0.3 J1	0.16 J1	< 0.04 U1
11/2/2022	Assessment	--	--	--	--	--	--	--	--	0.05 J1	--	--	--	--	--	--
2/9/2023	Assessment	0.03 J1	4.14	128	0.059	< 0.004 U1	1.77	0.540	1.31	0.06	0.58	0.00068	--	0.2 J1	0.12 J1	< 0.04 U1
5/26/2023	Assessment	0.013 J1	4.82	138	0.042 J1	< 0.004 U1	0.59	0.464	1.31	0.06	0.17 J1	0.00037	< 0.002 U1	0.3 J1	0.11 J1	< 0.02 U1
10/24/2023	Assessment/ Closure	0.035 J1	5.87	162	0.070	0.009 J1	1.51	0.994	1.44	0.09	0.89	0.00070	< 0.002 U1	0.4 J1	0.34 J1	< 0.02 P2, U1
3/20/2024	Assessment	0.029 J1	5.05	157	0.056	0.006 J1	1.24	0.807	1.64	0.07	0.68	0.00054	< 0.002 U1	0.3 J1	0.15 J1	< 0.02 U1
5/8/2024	Assessment/ Closure	0.046 M1, J1	4.79 M1	148 M1	0.090 M1	0.008 J1	2.78 M1	0.971 M1	1.19	0.07	1.31 M1	0.00097	< 0.002 U1	0.4 J1	0.32 J1	< 0.02 U1

Table 1. Groundwater Data Summary: MW-1605
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/26/2016	Background	0.091	63.6	111	0.09	6.2	170	490
8/22/2016	Background	0.038	50.8	114	0.08	5.9	174	440
10/17/2016	Background	0.025	57.5	108	0.06 J1	6.1	161	446
11/8/2016	Background	--	--	116	0.06 J1	5.9	162	456
12/12/2016	Background	< 0.002 U1	53.9	125	< 0.05 U1	5.8	164	920
2/7/2017	Background	0.055	47.6	110	< 0.05 U1	5.9	161	472
3/13/2017	Background	0.039	45.7	106	0.03 J1	5.8	173	455
5/22/2017	Background	0.071	46.4	109	0.03 J1	6.6	171	458
6/19/2017	Background	0.103	48.1	111	< 0.02 U1	5.5	193	462
11/1/2017	Detection	0.076	50.0	113	0.03 J1	5.6	212	488
1/9/2018	Detection	--	45.9	108	--	5.5	202	462
5/3/2018	Assessment	0.109	47.0	97.7	< 0.02 U1	6.1	246	434
9/5/2018	Assessment	< 0.002 U1	49.4	97.1	0.03 J1	5.6	213	483
3/14/2019	Assessment	< 0.2 U1	45.4	92.5	< 0.01 U1	5.6	222	507
6/11/2019	Assessment	0.06 J1	45.5	91.8	0.02 J1	5.7	226	530
7/24/2019	Assessment	0.06 J1	46.5	91.6	0.02 J1	5.4	226	517
2/11/2020	Assessment	--	--	--	0.02 J1	5.7	--	--
5/5/2020	Assessment	0.051	49.6	85.6	0.03 J1	5.3	236	526
10/27/2020	Assessment	0.051	49.7	84.2	0.02 J1	5.3	234	521
3/16/2021	Assessment	--	--	--	0.03 J1	5.5	--	--
5/7/2021	Assessment	0.05 J1	45.4	85.1	< 0.01 U1	5.5	231	504
11/9/2021	Assessment	0.053	46.4	85.3	0.02 J1	5.6	226	520
3/2/2022	Assessment	--	--	--	< 0.02 U1	5.4	--	--
5/18/2022	Assessment	0.055	50.1	92.3	< 0.02 U1	5.9	225	520 L1
10/25/2022	Assessment	0.052	43.9	89.9	< 0.02 U1	5.5	218	490
2/8/2023	Assessment	0.049 J1	39.1	81.8	< 0.02 U1	5.4	178	430
5/25/2023	Assessment	0.041 J1	37.7	80.3	< 0.02 U1	5.5	200	450
10/23/2023	Assessment	0.041 J1	37.5	70.1	0.03 J1	5.4	188	430
3/19/2024	Assessment	0.061	37.7	63.4	0.03 J1	5.5	189	410
5/8/2024	Assessment	0.055	30.5	54.0	0.02 J1	5.4	171	400

Table 1. Groundwater Data Summary: MW-1605
Amos - BAP
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/26/2016	Background	0.04 J1	5.70	83.2	0.035	< 0.004 U1	0.4	32.1	1.722	0.09	0.201	0.008	< 0.002 U1	0.66	0.05 J1	< 0.01 U1
8/22/2016	Background	0.03 J1	4.96	69.1	0.027	< 0.004 U1	0.1	24.5	0.683	0.08	0.062	0.004	< 0.002 U1	0.39	0.06 J1	< 0.01 U1
10/17/2016	Background	0.02 J1	4.98	67.3	0.034	< 0.004 U1	0.244	15.8	5.063	0.06 J1	0.038	0.005	< 0.002 U1	0.27	0.06 J1	< 0.01 U1
11/8/2016	Background	--	--	--	--	--	--	--	1.249	0.06 J1	--	--	--	--	--	--
12/12/2016	Background	0.03 J1	4.33	73.8	0.060	0.005 J1	0.645	11.5	0.853	< 0.05 U1	0.159	0.011	< 0.002 U1	0.30	0.1	0.062
2/7/2017	Background	0.03 J1	4.03	68.8	0.063	< 0.004 U1	0.381	10.3	0.586	< 0.05 U1	0.298	0.004	< 0.002 U1	0.36	0.1	0.04 J1
3/13/2017	Background	0.01 J1	3.70	75.1	0.056	< 0.004 U1	0.456	9.14	1.073	0.03 J1	0.059	0.005	< 0.002 U1	0.12	0.03 J1	< 0.01 U1
5/22/2017	Background	0.03 J1	3.38	80.5	0.062	< 0.005 U1	0.193	8.77	0.852	0.03 J1	0.071	0.003	< 0.002 U1	0.15	0.04 J1	0.02 J1
6/19/2017	Background	0.01 J1	3.64	82.2	0.061	< 0.005 U1	0.250	9.07	0.746	< 0.02 U1	0.050	0.004	< 0.002 U1	0.12	0.08 J1	< 0.01 U1
5/3/2018	Assessment	0.01 J1	3.34	80.4	0.069	0.009 J1	0.176	9.75	1.068	< 0.02 U1	0.148	0.006	< 0.002 U1	0.10	0.1	0.01 J1
9/5/2018	Assessment	0.02 J1	3.19	103	0.074	0.02 J1	0.260	10.7	0.916	0.03 J1	0.080	0.003	--	0.1 J1	0.07 J1	0.02 J1
3/14/2019	Assessment	< 0.02 U1	2.95	88.1	0.08 J1	< 0.01 U1	0.2 J1	8.83	0.3036	< 0.01 U1	0.161	< 0.09 U1	--	< 0.4 U1	0.05 J1	< 0.1 U1
6/11/2019	Assessment	< 0.02 U1	3.01	93.2	0.07 J1	0.01 J1	0.2 J1	9.09	1.061	0.02 J1	0.06 J1	< 0.009 U1	< 0.002 U1	< 0.4 U1	0.06 J1	< 0.1 U1
7/24/2019	Assessment	< 0.02 U1	2.82	108	0.09 J1	< 0.01 U1	0.306	8.57	0.739	0.02 J1	0.2 J1	0.00255	--	< 0.4 U1	0.08 J1	< 0.1 U1
2/11/2020	Assessment	< 0.02 U1	2.75	89.3	0.08 J1	< 0.01 U1	0.205	9.47	2.668	0.02 J1	0.1 J1	0.00259	< 0.002 U1	< 0.4 U1	0.07 J1	< 0.1 U1
5/5/2020	Assessment	0.27	2.99	97.8	0.08 J1	0.01 J1	0.363	9.99	1.427	0.03 J1	0.973	0.00232	--	< 0.4 U1	0.09 J1	< 0.1 U1
10/27/2020	Assessment	< 0.02 U1	2.69	92.3	0.09 J1	< 0.01 U1	0.334	9.65	0.81	0.02 J1	0.230	0.00234	--	< 0.4 U1	0.1 J1	< 0.1 U1
3/16/2021	Assessment	0.04 J1	2.85	104	0.126	0.007 J1	0.865	9.21	3.565	0.03 J1	0.676	0.00269	< 0.002 U1	< 0.1 U1	0.2 J1	< 0.04 U1
5/7/2021	Assessment	< 0.02 U1	3.46	94.9	0.08 J1	0.005 J1	0.390	9.69	0.773	< 0.01 U1	0.2 J1	0.00236	--	< 0.1 U1	< 0.09 U1	--
11/9/2021	Assessment	0.04 J1	4.96	116	0.117	0.012 J1	0.58	9.41	0.78	0.02 J1	0.60	0.00205	--	0.2 J1	0.16 J1	< 0.04 U1
3/2/2022	Assessment	< 0.02 U1	2.98	99.9	0.099	0.006 J1	0.70	9.63	0.87	< 0.02 U1	0.41	0.00222	< 0.002 U1	< 0.1 U1	0.12 J1	< 0.04 U1
5/18/2022	Assessment	< 0.02 U1	3.07	104	0.113	0.006 J1	0.75	9.82	0.61	< 0.02 U1	0.53	0.00257	--	< 0.1 U1	0.09 J1	< 0.04 U1
10/25/2022	Assessment	< 0.02 U1	3.01	108	0.097	0.007 J1	0.51	9.28	1.45	< 0.02 U1	0.23	0.00243	--	< 0.1 U1	0.11 J1	< 0.04 U1
2/8/2023	Assessment	0.02 J1	3.09	101	0.167	0.007 J1	1.01	8.17	1.83	< 0.02 U1	0.73	0.00275	--	< 0.1 U1	0.12 J1	< 0.04 U1
5/25/2023	Assessment	0.017 J1	2.69	73.5	0.071	0.072	0.25 J1	13.1	1.04	< 0.02 U1	0.14 J1	0.00238	< 0.002 U1	< 0.1 U1	0.06 J1	< 0.02 U1
10/23/2023	Assessment/ Closure	0.012 J1	2.90	64.8	0.091	0.106	0.53	14.4	0.87	0.03 J1	0.28	0.00229	< 0.002 U1	< 0.1 U1	0.10 J1	< 0.02 P2, U1
3/19/2024	Assessment	0.014 J1	2.80	71.3	0.089	0.039	0.46	9.65	1.27	0.03 J1	0.37	0.00217	< 0.002 U1	< 0.1 U1	0.05 J1	< 0.02 U1
5/8/2024	Assessment/ Closure	0.023 J1	2.67	75.0	0.111	0.019 J1	0.83	5.59	1.71	0.02 J1	0.61	0.00224	< 0.002 U1	< 0.1 U1	0.15 J1	< 0.02 U1

Table 1. Groundwater Data Summary: MW-1606
Amos - BAP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
7/25/2016	Background	0.084	43.4	55.5	0.03 J1	5.7	189	410
8/23/2016	Background	0.023	45.6	56.8	< 0.05 U1	5.3	186	372
10/17/2016	Background	0.013	47.3	61.5	< 0.05 U1	5.6	202	390
11/7/2016	Background	--	--	--	--	5.5	--	--
12/12/2016	Background	< 0.002 U1	50.4	27.0	< 0.02 U1	5.3	215	418
2/7/2017	Background	0.048	42.2	57.9	< 0.05 U1	5.7	179	370
3/14/2017	Background	0.036	42.2	59.5	< 0.05 U1	5.6	180	384
5/23/2017	Background	0.061	49.2	75.0	< 0.05 U1	5.6	199	442
6/19/2017	Background	0.108	48.3	78.8	< 0.05 U1	5.3	219	440
11/1/2017	Detection	0.055	51.6	91.4	< 0.05 U1	5.3	227	462
1/8/2018	Detection	--	43.9	88.3	--	8.4	190	400
5/4/2018	Assessment	0.077	53.0	119	0.03 J1	7.5	232	478
9/5/2018	Assessment	0.032	51.7	133	< 0.02 U1	5.4	202	507
3/15/2019	Assessment	< 0.2 U1	59.0	157	< 0.01 U1	5.4	232	597
6/11/2019	Assessment	0.04 J1	56.6	177	0.02 J1	6.7	204	571
7/24/2019	Assessment	0.04 J1	52.8	186	0.02 J1	5.4	191	597
2/12/2020	Assessment	--	--	--	0.02 J1	5.4	--	--
5/6/2020	Assessment	0.03 J1	36.7	116	0.02 J1	5.2	108	372
10/26/2020	Assessment	0.03 J1	32.4	100	0.02 J1	5.6	98.5	335
3/16/2021	Assessment	--	--	--	--	5.4	--	--
3/17/2021	Assessment	--	--	--	0.03 J1	--	--	--
5/7/2021	Assessment	0.03 J1	23.7	73.4	0.03 J1	5.5	79.3	275
11/4/2021	Assessment	0.032 J1	17.7	81.5	0.03 J1	5.4	78.6	290
2/28/2022	Assessment	--	--	--	< 0.02 U1	6.8	--	--
5/23/2022	Assessment	0.031 J1	47.0 M1, P3	134	< 0.02 U1	6.0	109	380 L1
10/25/2022	Assessment	0.042 J1	46.1	175	< 0.02 U1	5.4	168	520
2/8/2023	Assessment	0.043 J1	43.2 M1	153	< 0.02 U1	5.2	186	540
5/25/2023	Assessment	0.039 J1	46.8	170	< 0.02 U1	5.2	183	550
10/18/2023	Assessment	0.067	32.3	78.5	0.02 J1	5.3	198	420
3/19/2024	Assessment	0.079	34.1	77.6	0.02 J1	5.4	196	430
5/8/2024	Assessment	0.058	34.7	92.5	0.03 J1	5.4	193	500

Table 1. Groundwater Data Summary: MW-1606
Amos - BAP
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
7/25/2016	Background	0.04 J1	2.89	71.8	0.112	0.12	1.3	14.9	0.2045	0.03 J1	1.01	0.005	< 0.002 U1	0.26	0.09 J1	0.03 J1
8/23/2016	Background	0.02 J1	2.58	67.2	0.087	0.14	0.6	14.5	1.039	< 0.05 U1	0.483	0.007	< 0.002 U1	0.14	0.1 J1	0.01 J1
10/17/2016	Background	0.03 J1	2.58	69.5	0.131	0.14	1.58	13.1	1.347	< 0.05 U1	1.20	0.006	0.002 J1	0.15	0.2	0.02 J1
11/7/2016	Background	--	--	--	--	--	--	--	1.331	--	--	--	--	--	--	--
12/12/2016	Background	0.03 J1	2.55	65.8	0.100	0.17	1.03	13.9	0.651	< 0.02 U1	0.588	0.010	< 0.002 U1	0.12	0.2	0.04 J1
2/7/2017	Background	0.03 J1	3.50	57.5	0.134	0.31	1.76	14.2	0.886	< 0.05 U1	1.55	0.003	< 0.002 U1	0.29	0.3	0.05 J1
3/14/2017	Background	0.02 J1	3.52	56.3	0.091	0.16	0.920	13.4	2.45	< 0.05 U1	0.572	0.003	< 0.002 U1	0.14	0.1	0.01 J1
5/23/2017	Background	0.02 J1	2.83	59.8	0.085	0.12	0.286	14.2	0.236	< 0.05 U1	0.448	0.007	< 0.002 U1	0.1 J1	0.1	0.01 J1
6/19/2017	Background	0.03 J1	3.42	61.8	0.097	0.13	0.596	13.7	0.769	< 0.05 U1	0.666	< 0.0002 U1	< 0.002 U1	0.13	0.09 J1	0.02 J1
5/4/2018	Assessment	0.01 J1	2.81	58.7	0.088	0.15	0.289	16.9	1.012	0.03 J1	0.286	0.003	< 0.002 U1	0.07 J1	0.1	0.02 J1
9/5/2018	Assessment	0.01 J1	2.21	61.0	0.073	0.17	0.249	16.4	0.1805	< 0.02 U1	0.088	0.003	--	0.04 J1	0.06 J1	0.01 J1
3/15/2019	Assessment	0.03 J1	2.94	74.6	0.152	0.19	1.24	18.2	0.295	< 0.01 U1	1.06	< 0.09 U1	--	< 0.4 U1	0.2 J1	< 0.1 U1
6/11/2019	Assessment	< 0.02 U1	2.44	64.1	0.08 J1	0.18	0.2 J1	16.5	0.4433	0.02 J1	0.181	< 0.009 U1	< 0.002 U1	< 0.4 U1	0.06 J1	< 0.1 U1
7/24/2019	Assessment	0.03 J1	3.44	72.9	0.140	0.21	1.14	16.2	0.743	0.02 J1	1.11	0.00340	--	< 0.4 U1	0.2 J1	< 0.1 U1
2/12/2020	Assessment	0.04 J1	2.82	50.2	0.112	0.19	0.680	10.1	1.515	0.02 J1	0.644	0.00256	< 0.002 U1	< 0.4 U1	0.07 J1	< 0.1 U1
5/6/2020	Assessment	0.03 J1	3.43	51.3	0.08 J1	0.18	0.645	11.7	1.529	0.02 J1	0.549	0.00239	--	< 0.4 U1	0.09 J1	< 0.1 U1
10/26/2020	Assessment	< 0.02 U1	2.26	41.8	0.06 J1	0.26	0.286	11.6	0.2071	0.02 J1	0.1 J1	0.00228	--	< 0.4 U1	< 0.03 U1	< 0.1 U1
3/17/2021	Assessment	< 0.02 U1	2.62	39.9	0.06 J1	0.24	0.490	9.34	0.824	0.03 J1	0.319	0.00221	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
5/7/2021	Assessment	< 0.02 U1	2.66	38.9	0.06 J1	0.21	0.302	8.71	0.766	0.03 J1	0.280	0.00217	--	< 0.1 U1	< 0.09 U1	--
11/4/2021	Assessment	< 0.02 U1	2.68	41.2	0.064	0.221	0.38	8.18	0.67	0.03 J1	0.20	0.00229	--	< 0.1 U1	< 0.09 U1	< 0.04 U1
2/28/2022	Assessment	0.03 J1	3.03	58.7	0.110	0.390	0.57	11.8	1.50	< 0.02 U1	0.58	0.00217	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
5/23/2022	Assessment	0.06 J1	8.83	75.1	0.145	0.359	0.79	14.6	1.46	< 0.02 U1	1.23	0.00260	--	0.1 J1	< 0.09 U1	< 0.04 U1
10/25/2022	Assessment	0.03 J1	5.65	75.9	0.113	0.275	0.58	14.1	2.32	< 0.02 U1	0.62	0.00276	--	0.1 J1	< 0.09 U1	< 0.04 U1
2/8/2023	Assessment	0.05 J1	7.01	71.8	0.155	0.293	1.59	13.4	1.39	< 0.02 U1	1.54	0.00332	--	0.1 J1	0.14 J1	< 0.04 U1
5/25/2023	Assessment	0.035 J1	6.21	65.8	0.099	0.759	0.48	13.3	1.37	< 0.02 U1	0.82	0.00275	< 0.002 U1	< 0.1 U1	0.06 J1	0.02 J1
10/18/2023	Assessment/ Closure	0.039 J1	9.50	49.0	0.103	0.097	0.67	6.50	1.45	0.02 J1	0.98	0.00221	< 0.002 U1	0.2 J1	0.14 J1	< 0.02 U1
3/19/2024	Assessment	0.036 J1	7.69	50.7	0.088	0.062	0.51	6.23	1.64	0.02 J1	0.76	0.00203	< 0.002 U1	0.1 J1	< 0.04 U1	< 0.02 U1
5/8/2024	Assessment/ Closure	0.029 J1	7.87	43.9	0.094	0.331	0.45	8.37	1.21	0.03 J1	0.61	0.00266	< 0.002 U1	0.1 J1	0.09 J1	< 0.02 U1

Notes:
1. Combined radium values were calculated from the sum of the reported radium-226 and radium-228 results.
Radium data quality flags were not included. Reported negative radium-226 or radium-228 results were replaced with zero.
--: Not analyzed
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
P1: The precision between duplicate results was above acceptance limits.
P2: The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.
P3: The precision on the matrix spike duplicate (MSD) was above acceptance limits.
pCi/L: picocuries per liter
SU: standard unit
µg/L: micrograms per liter

APPENDIX 2

Statistical analysis reports completed in 2024 follow.

Geosyntec consultants

engineers | scientists | innovators

STATISTICAL ANALYSIS SUMMARY, BOTTOM ASH POND

Amos Plant

Winfield, West Virginia

Prepared for

American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215-2372

Prepared by

Geosyntec Consultants, Inc.
500 West Wilson Bridge Road, Suite 250
Worthington, Ohio 43085

Project Number: CHA8500B

February 28, 2024

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ACRONYMS AND ABBREVIATIONS

BAP	bottom ash pond
CCR	coal combustion residuals
CFR	code of federal regulations
GWPS	groundwater protection standard
LPL	lower prediction limit
MCL	maximum contaminant level
mg/L	milligrams per liter
PQL	practical quantitation limit
QA/QC	quality assurance/quality control
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
UPL	upper prediction limit

1. INTRODUCTION

In accordance with United States Environmental Protection Agency regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Code of Federal Regulations [CFR] Title 40, Section 257, Subpart D), groundwater monitoring has been conducted at the Bottom Ash Pond (BAP), an existing CCR unit at the Amos Power Plant in Winfield, West Virginia. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above the groundwater protection standards (GWPSs).

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for calcium, chloride, sulfate, and total dissolved solids (TDS) at the BAP. An alternative source was not identified following the detection monitoring events; thus, the BAP has been in assessment monitoring since 2018. During the previous assessment monitoring event, conducted in February and May 2023, no statistically significant levels (SSLs) were identified and the unit remained in assessment monitoring (Geosyntec 2023a).

A semiannual sampling event for Appendix III parameters and Appendix IV parameters, as required by 40 CFR 257.95(d)(1), was completed in October 2023. The results of the October 2023 assessment sampling event are documented in this report.

Before the statistical analyses were conducted, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues that would impact data usability were identified.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. GWPSs were reestablished for the Appendix IV parameters following calculation of site-specific background values. Confidence intervals were calculated from the Appendix IV parameter data at the compliance wells to assess whether any were present at SSLs above the corresponding GWPS. No SSLs were identified; however, concentrations of Appendix III parameters remained above background. Therefore, the unit will remain in assessment monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. BOTTOM ASH POND EVALUATION

2.1 Data Validation and QA/QC

One set of samples was collected for analysis from each upgradient and downgradient well to meet the requirements of 40 CFR 257.95(d)(1) in October 2023 as part of the assessment monitoring program. Samples from the October 2023 sample event were analyzed for all Appendix III and Appendix IV parameters. A summary of data collected during this assessment monitoring event is presented in Table 1.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program-certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.10.0.15 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for the BAP were conducted in accordance with the October 2020 *Statistical Analysis Plan* (Geosyntec 2020). Time series plots and results for all completed statistical tests are provided in Attachment B.

The data obtained in October 2023 were screened for potential outliers. Outliers were identified at background wells MW-1603 for arsenic, MW-1602 for chromium, and MW-6 for cobalt. The identified values were either similar to upgradient concentrations or below their respective maximum contaminant level (MCL); therefore, no outliers were flagged for this event.

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix IV parameter in accordance with 40 CFR 257.95(h) and the Statistical Analysis Plan (Geosyntec 2020). The established GWPS was determined to be the greater value of the background concentration and either the MCL or risk-based level specified in 40 CFR 257.95(h)(2) for each Appendix IV parameter. To determine background concentrations, an upper tolerance limit was calculated using pooled data from the background wells collected during the background monitoring and assessment monitoring events.

Tolerance limits were calculated parametrically with 95% coverage and 95% confidence for chromium, combined radium, lead, and molybdenum. Nonparametric tolerance limits were calculated for antimony, arsenic, barium, beryllium, cadmium, cobalt, fluoride, lithium, and selenium due to apparent nonnormal distributions. Nonparametric tolerance limits were calculated for mercury and thallium because greater than 50% of the data was composed of nondetect results. Upper tolerance limits and the final GWPSs are summarized in Table 2.

2.2.2 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, nonparametric confidence limits were calculated in some cases (e.g., when the data were not normally distributed or when the nondetect frequency was too high). An SSL was concluded if the lower confidence limit exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). The calculated confidence limits (Attachment B) were compared to the GWPSs provided in Table 2.

No SSLs were identified at the Amos BAP.

2.2.3 Updating Appendix III Prediction Limits

Upper prediction limits (UPLs) were originally established for all Appendix III parameters following the background monitoring period. Intrawell tests were used to evaluate potential SSIs for fluoride and pH, whereas interwell tests were used to evaluate potential SSIs for boron, calcium, chloride, sulfate, and TDS. Prediction limits have been updated periodically during the assessment monitoring period as sufficient data became available.

For intrawell tests, insufficient data was available to compare against the existing background dataset, and so the prediction limits were not updated for the intrawell tests at this time. The intrawell prediction limits were previously calculated using historical data through May 2022 (Geosyntec 2023b). The established intrawell prediction limits were used to evaluate potential SSIs for fluoride and pH.

Prediction limits for the interwell tests were recalculated using data collected during the 2023 assessment monitoring events. New upgradient well data were tested for outliers prior to being added to the background dataset. Upgradient well data were also evaluated for statistically significant trends using the Sen's Slope/Mann-Kendall trend test, and the results are included in Attachment B. The revised interwell prediction limits were used to evaluate potential SSIs for boron, calcium, chloride, sulfate, and TDS.

After the revised background set was established, a parametric or nonparametric analysis was selected based on the distribution of the data and the frequency of nondetect data. Estimated results less than the reporting limit (practical quantitation limit, [PQL]) but above the method detection limit – i.e., "J-flagged" data – were considered detections and the estimated results were used in the statistical analyses. Nonparametric analyses were selected for datasets with at least 50% nondetect data or datasets that could not be normalized by transformation. Parametric analyses were selected for datasets (either transformed or untransformed) that passed the Shapiro-Wilk / Shapiro-Francía test for normality. The Kaplan-Meier nondetect adjustment was applied to datasets with between 15% and 50% nondetect data. For datasets with fewer than 15% nondetect data, nondetect data were replaced with one half of the PQL. The selected analysis (i.e., parametric or nonparametric) and transformation (where applicable) for each background dataset are shown in Attachment B.

The updated interwell prediction limits for boron, calcium, chloride, sulfate, and TDS and the previously established intrawell prediction limits for fluoride and pH are summarized in Table 3. The UPLs were calculated for a one-of-two retesting procedure; i.e., if at least one sample in a series of two does not exceed the UPL, or in the case of pH, is neither less than the lower prediction

limit (LPL) nor greater than the UPL, then it can be concluded that an SSI has not occurred. In practice, where the initial result does not exceed the UPL, or in the case of pH, is neither less than the LPL nor greater than the UPL, a second sample will not be collected. The retesting procedures allow achieving an acceptably high statistical power to detect changes at downgradient wells for constituents evaluated using intrawell prediction limits.

2.2.4 Evaluation of Potential Appendix III SSIs

The Appendix III results were analyzed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the October 2023 assessment monitoring event from each compliance well were compared to updated prediction limits to assess whether the results were statistically above background values. The results from these events and the prediction limits are summarized in Table 3. The following exceedances of the UPLs were noted:

- Boron concentrations were above the interwell UPL of 0.183 milligrams per liter (mg/L) at MW-1604 (0.196 mg/L).

- Calcium concentrations were above the interwell UPL of 20.5 mg/L at MW-1 (32.2 mg/L), MW-4 (20.7 mg/L), MW-5 (44.8 mg/L), MW-1604 (23.7 mg/L), MW-1605 (37.5 mg/L), and MW-1606 (32.3 mg/L).

- Chloride concentrations were above the interwell UPL of 43.4 mg/L at MW-1 (50.3 mg/L), MW-5 (105 mg/L), MW-1605 (70.1 mg/L), and MW-1606 (78.5 mg/L).

- Sulfate concentrations were above the interwell UPL of 75.7 mg/L at MW-1 (147 mg/L), MW-4 (80.8 mg/L), MW-5 (172 mg/L), MW-1605 (188 mg/L), and MW-1606 (198 mg/L).

- TDS concentrations were above the interwell UPL of 265 mg/L at MW-1 (340 mg/L), MW-5 (400 mg/L), MW-1605 (430 mg/L), and MW-1606 (420 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the October 2023 sample was above the UPL or, in the case of pH, below the LPL. Based on this evaluation, concentrations of Appendix III constituents appear to be above background concentrations and the unit will remain in assessment monitoring.

2.3 Conclusions

A semiannual assessment monitoring event was conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that prevented data usage. While three potential outliers were identified in the October 2023 data, they were not removed from the dataset due to their similarity to other background locations or their relative concentration below their respective MCL. GWPSs were reestablished for the Appendix IV parameters. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPSs. No SSLs were identified. Appendix III parameters were compared to updated prediction limits; concentrations of boron, calcium, chloride, sulfate, and TDS were identified above the prediction limits.

Based on this evaluation, the Amos BAP CCR unit will remain in assessment monitoring.

3. REFERENCES

Geosyntec. 2020. Statistical Analysis Plan – Amos Plant. Geosyntec Consultants, Inc. October.

Geosyntec. 2023a. Statistical Analysis Summary – Bottom Ash Pond, Amos Plant, Winfield, West Virginia. Geosyntec Consultants, Inc. September.

Geosyntec. 2023b. Statistical Analysis Summary – Bottom Ash Pond, Amos Plant, Winfield, West Virginia. Geosyntec Consultants, Inc. February.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Amos Plant – Bottom Ash Pond

Parameter	Unit	MW-1	MW-4	MW-5	MW-6	MW-1601	MW-1602	MW-1603	MW-1604	MW-1605	MW-1606
		10/24/2023	10/20/2023	10/18/2023	10/23/2023	10/20/2023	10/23/2023	10/23/2023	10/24/2023	10/23/2023	10/18/2023
Antimony	µg/L	0.1 U1	0.166	0.011 J1	0.022 J1	0.011 J1	0.065 J1	0.013 J1	0.035 J1	0.012 J1	0.039 J1
Arsenic	µg/L	0.11	9.21	3.01	36.1	7.00	20.1	81.0	5.87	2.90	9.50
Barium	µg/L	23.6	81.7	349	193	119	229	242	162	64.8	49.0
Beryllium	µg/L	0.122	0.038 J1	0.083	0.016 J1	0.039 J1	0.05 U1	0.007 J1	0.070	0.091	0.103
Boron	mg/L	0.103	0.086 M1	0.018 J1	0.012 J1	0.016 J1	0.011 J1	0.011 J1	0.196	0.041 J1	0.067
Cadmium	µg/L	1.67	0.287	0.02 U1	0.02 U1	0.015 J1	0.02 U1	0.02 U1	0.009 J1	0.106	0.097
Calcium	mg/L	32.2	20.7 M1	44.8	13.4	11.1	18.9	14.6	23.7	37.5	32.3
Chloride	mg/L	50.3	25.7	105	11.0	19.9	39.1	7.14	20.9	70.1	78.5
Chromium	µg/L	0.32	0.42	0.28 J1	0.91	0.79	1.33	0.58	1.51	0.53	0.67
Cobalt	µg/L	15.9	13.2	0.429	12.4	4.44	0.127	0.197	0.994	14.4	6.50
Combined Radium	pCi/L	0.96	1.33	1.68	1.14	1.1	1.56	0.72	1.44	0.87	1.45
Fluoride	mg/L	0.03 J1	0.05 J1	0.04 J1	0.05 J1	0.04 J1	0.12	0.22	0.09	0.03 J1	0.02 J1
Lead	µg/L	0.06 J1	0.54	0.06 J1	0.11 J1	0.37	0.13 J1	0.1 J1	0.89	0.28	0.98
Lithium	mg/L	0.00272	0.00108	0.00239	0.00117	0.00196	0.00097	0.00029 J1	0.00070	0.00229	0.00221
Mercury	µg/L	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1
Molybdenum	µg/L	0.1 J1	0.2 J1	0.5 U1	0.4 J1	0.1 J1	0.6	0.9	0.4 J1	0.5 U1	0.2 J1
Selenium	µg/L	0.13 J1	0.08 J1	0.04 J1	0.16 J1	0.10 J1	0.04 J1	0.05 J1	0.34 J1	0.10 J1	0.14 J1
Sulfate	mg/L	147	80.8	172	2.6	46.7	19.6	0.6 U1	2.6	188	198
Thallium	µg/L	0.03 P2, J1	0.28	0.2 U1	0.03 P2, J1	0.2 U1	0.2 P2, U1	0.2 P2, U1	0.2 P2, U1	0.2 P2, U1	0.2 U1
Total Dissolved Solids	mg/L	340	240	400	250	140	220	120	240	430	420
pH	SU	4.9	5.7	5.5	5.8	5.5	6.3	6.5	6.1	5.4	5.3

Notes:
µg/L: micrograms per liter
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
P2: The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.
pCi/L: picocuries per liter
SU: standard unit
U1: Not detected at or above method detection limit (MDL). For statistical analysis, parameters that were not detected were replaced with the reporting limit.

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Amos Plant - Bottom Ash Pond

Constituent Name	MCL	CCR Rule-Specified	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600		0.000170	0.00600
Arsenic, Total (mg/L)	0.0100		0.0903	0.0903
Barium, Total (mg/L)	2.00		0.303	2.00
Beryllium, Total (mg/L)	0.00400		0.0001060	0.00400
Cadmium, Total (mg/L)	0.00500		0.0000300	0.00500
Chromium, Total (mg/L)	0.100		0.00175	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.0150	0.0150
Combined Radium, Total (pCi/L)	5.00		2.51	5.00
Fluoride, Total (mg/L)	4.00		0.310	4.00
Lead, Total (mg/L)	0.0150		0.00407	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.0200	0.0400
Mercury, Total (mg/L)	0.00200		0.00000500	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00208	0.100
Selenium, Total (mg/L)	0.0500		0.000500	0.0500
Thallium, Total (mg/L)	0.00200		0.000224	0.00200

Notes:
1. Calculated UTL (upper tolerance limit) represents site-specific background values.
2. Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: coal combustion residuals
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/l: milligrams per liter
pCi/L: picocuries per liter

Table 3. Appendix III Data Summary
Statistical Analysis Summary
Amos Plant – Bottom Ash Pond

Analyte	Unit	Description	MW-1	MW-4	MW-5	MW-1604	MW-1605	MW-1606
			10/24/2023	10/20/2023	10/18/2023	10/24/2023	10/23/2023	10/18/2023
Boron	mg/L	Interwell Background Value (UPL)	0.183					
		Analytical Result	0.103	0.086	0.018	**0.196**	0.041	0.067
Calcium	mg/L	Interwell Background Value (UPL)	20.5					
		Analytical Result	**32.2**	**20.7**	**44.8**	**23.7**	**37.5**	**32.3**
Chloride	mg/L	Interwell Background Value (UPL)	43.4					
		Analytical Result	**50.3**	25.7	**105**	20.9	**70.1**	**78.5**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.0600	0.0700	0.0500	0.160	0.0900	0.0600
		Analytical Result	0.03	0.05	0.04	0.09	0.03	0.02
pH	SU	Intrawell Background Value (UPL)	7.3	7.0	6.3	7.2	6.4	6.8
		Intrawell Background Value (LPL)	4.8	5.3	5.2	5.9	5.1	5.2
		Analytical Result	4.9	5.7	5.5	6.1	5.4	5.3
Sulfate	mg/L	Interwell Background Value (UPL)	75.7					
		Analytical Result	**147**	**80.8**	**172**	2.6	**188**	**198**
Total Dissolved Solids	mg/L	Interwell Background Value (UPL)	265					
		Analytical Result	**340**	240	**400**	240	**430**	**420**

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
LPL: lower prediction limit
mg/L: milligrams per liter
SU: standard units
UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Amos Bottom Ash Pond CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

22663	West Virginia	02.28.2024
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

February 1, 2024

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Ste. #250
Worthington, OH 43085

Re: Amos Bottom Ash Pond
Background Update & Statistical Analysis – October 2023

Dear Ms. Kreinberg,

Groundwater Stats Consulting (GSC), formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the background update and the statistical analysis of the of 2023 groundwater data at American Electric Power Company's Amos Bottom Ash Pond. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015) as well as with the USEPA Unified Guidance (2009).

Sampling began at the site for the CCR program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** BAP-MW-1601, BAP-MW-1602A, BAP-MW-1603A, and BAP-MW-6
- **Downgradient wells:** BAP-MW-1, BAP-MW-1604, BAP-MW-1605, BAP-MW-1606, BAP-MW-4, and BAP-MW-5

Data were sent electronically, and the statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Kirk Cameron, PhD, statistician and owner of MacStat Consulting, primary author of the USEPA Unified Guidance and Senior Advisor for GSC. The analysis was reviewed by Kristina Rayner, Founder and Senior Statistician of Groundwater Stats Consulting.

The CCR program consists of the following constituents listed below. The terms "constituent" and "parameter" are interchangeable.

- **Appendix III** (Detection Monitoring) **–** boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. A summary of well/constituent pairs with 100% non-detects follows this letter. For all constituents, a substitution of the most recent reporting limit is used for non-detect data. When calculating intrawell prediction limits, the substitution is performed for individual wells and may differ across wells. This generally gives the most conservative limit in each case.

Time series plots for Appendix III and IV parameters are provided for all wells and are used to evaluate concentrations over time and for updating statistical limits (Figure A). Additionally, box plots are included for all constituents at upgradient and downgradient wells (Figure B). Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graph. A summary of these values follows this letter (Figure C). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells.

For regulatory comparison of current observations against statistical limits for Appendix III constituents, the annual site-wide false positive rate is based on the USEPA Unified Guidance (2009) recommendation of 10% (5% for each semi-annual sample event). Power curves were included with the original background screening conducted in December 2017 and demonstrated that the selected statistical method provides sufficient power to detect a change at any of the downgradient wells which complies with the USEPA Unified Guidance recommendation. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations. Power curves were based on the following:

Semi-Annual Sampling
1-of-2 resample plan
Constituents, c=7
Downgradient wells, w=6

Summary of Statistical Methods:

1) Intrawell prediction limits, combined with a 1-of-2 resample plan for fluoride and pH
2) Interwell prediction limits combined with a 1-of-2 resample plan for boron, calcium, chloride, sulfate, and TDS

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits. Non-detects are handled as follows.

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

Note that values shown on data pages reflect raw data as reported by the laboratory. Any non-detects that have been substituted with one-half of the reporting limit due to data sets containing <15% non-detects as described above are shown as the original reporting limit (i.e., fluoride in well BAP-MW-1601).

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the intrawell case, data for all wells and constituents may be re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In the interwell case, prediction limits are updated with upgradient well data following each sampling event after careful screening for any new outliers. In some cases,

deselecting the earlier portion of data may be necessary prior to construction of limits so that resulting statistical limits are conservative (lower) from a regulatory perspective and capable of rapidly detecting changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

December 2017 – Initial Background Screening

All proposed background data were screened for outliers and trends during the background screening and the findings of those reports were submitted during that time. At the time of the screening, intrawell prediction limits combined with a 1-of-2 verification strategy were recommended for fluoride and pH while interwell prediction limits combined with a 1-of-2 verification strategy were recommended for boron, calcium, chloride, sulfate, and TDS.

February 2024 – Background Update Summary

During this analysis, Tukey's outlier test and visual screening were used to evaluate data through October 2023 at upgradient wells for boron, calcium, chloride, sulfate, and TDS, which are tested using interwell prediction limits (Figure C).

For any parameters which use intrawell prediction limits (fluoride and pH), values were not re-evaluated for new outliers as these records had insufficient samples for updating background limits during this evaluation period.

Outlier Analysis

Prior to updating background data, Tukey's outlier test on pooled upgradient well data for constituents that are tested using interwell prediction limits did not identify outliers; therefore, no values were flagged. As mentioned above, any flagged data are displayed in a lighter font and as a disconnected symbol on the time series reports, as well as in a lighter font on the accompanying data pages. A summary table of all flagged outliers follows this report (Figure C).

Intrawell – Prediction Limits

Intrawell prediction limits, combined with a 1-of-2 resample plan, are constructed using historical data through May 2022 for fluoride and pH. A summary table of the limits follows this report (Figure D). No comparison of the October 2023 compliance data was performed in this analysis.

Interwell – Trend Test Evaluation

The Sen's Slope/Mann Kendall trend test was used to evaluate data at upgradient wells for boron, calcium, chloride, sulfate, and TDS to identify statistically significant increasing or decreasing trends at the 99% confidence level (Figure E). Statistically significant trends were identified for the following well/constituent pairs:

Increasing

- Chloride: BAP-MW-1601, BAP-MW-1602A, and BAP-MW-1603A

Decreasing

- Boron: BAP-MW-1601 and BAP-MW-1603A
- Calcium: BAP-MW-1603A

Since the magnitudes of the trends were low relative to the average concentrations in these wells with the exception of chloride at well MW-1601, no adjustments were required at this time. The record for chloride at MW-1601, however, also did not require adjustment as the trend does not influence the nonparametric interwell limit, which is constructed using the highest reported concentration from pooled upgradient well data. Therefore, all available data were used to construct statistical limits for boron, calcium, chloride, sulfate, and TDS.

Interwell – Prediction Limits

Interwell prediction limits, combined with a 1-of-2 resample plan, were updated using all available data from upgradient wells through October 2023 for boron, calcium, chloride, sulfate, and TDS. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. A summary table and graphical results for the updated limits follow this letter (Figure F). Time series plots are included with the interwell prediction limit graphs to display concentrations at upgradient wells that were used to construct the statistical limits. No comparison of the October 2023 compliance data from downgradient wells was performed in this analysis.

Evaluation of Appendix IV Parameters – October 2023

Prior to evaluating Appendix IV parameters, background (upgradient) data are screened through visual screening and Tukey's outlier test for potential outliers and extreme trending patterns that would lead to artificially elevated statistical limits.

Outlier Analysis

For the current analysis, Tukey's outlier test on pooled upgradient well data through October 2023 identified outliers for arsenic, barium, chromium, cobalt, combined radium 226 + 228, fluoride, and lithium (Figure C). Tukey's outlier test and visual screening confirmed the previously flagged values and no new outliers were flagged during this analysis. Several of the values identified by Tukey's test were either similar to concentrations from neighboring upgradient wells or were lower than the respective Maximum Contaminant Level (MCL); therefore, the values were not flagged as outliers.

Additionally, downgradient well data through October 2023 were screened through visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, a regulatory conservative approach is taken in that values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding the measurements. No new outliers among downgradient wells were flagged during this analysis. All flagged values may be seen on the Outlier Summary following this letter (Figure C).

Interwell Upper Tolerance Limits

Interwell upper tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data through October 2023 for the Appendix IV constituents discussed above (Figure G). These limits are updated on an annual basis and will be updated again during the Fall 2024 sample event. Parametric tolerance limits are calculated, with a target of 95% confidence and 95% coverage, when data follow a normal or transformed-normal distribution such as for chromium, combined radium 226 + 228, lead, and molybdenum. When data contained greater than 50% non-detects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

These limits were compared to the Maximum Contaminant Levels (MCLs) and the CCR-Rule specified levels in the Groundwater Protection Standards (GWPS) table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons (Figure H).

Confidence Intervals

Confidence intervals were then constructed using all available data through October 2023 on downgradient wells for each of the Appendix IV parameters using the highest limit of either the MCL, CCR-Rule specified, or background as the GWPS as discussed above (Figure I). These intervals were constructed as either parametric or nonparametric confidence intervals depending on the data distribution and percentage of non-detects. When data followed a normal or transformed-normal distribution, parametric confidence intervals were used for Appendix IV parameters. Nonparametric confidence intervals were constructed when data did not follow a normal or transformed-normal distribution or when there were greater than 50% non-detects. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. Complete graphical results of the confidence intervals follow this report and no confidence interval exceedances were noted for any of the Appendix IV parameters.

Trend Test Evaluation

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable at the 95% confidence level. Utilizing the 95% confidence level for trend tests readily identifies significant trends and is more sensitive than the 99% confidence level without drastically increasing the false negative rate. Upgradient wells are included in the trend analyses for all parameters found to exceed their confidence interval in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be unrelated to practices at the site. Since no confidence interval exceedances were identified, no trend tests were required.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Amos Bottom Ash Pond. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Andrew T. Collins
Project Manager

Kristina L. Rayner
Senior Statistician

100% Non-Detects: Appendix IV Downgradient

Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Mercury, total (mg/L)
BAP-MW-1605, BAP-MW-4, BAP-MW-5

FIGURE A

Time Series

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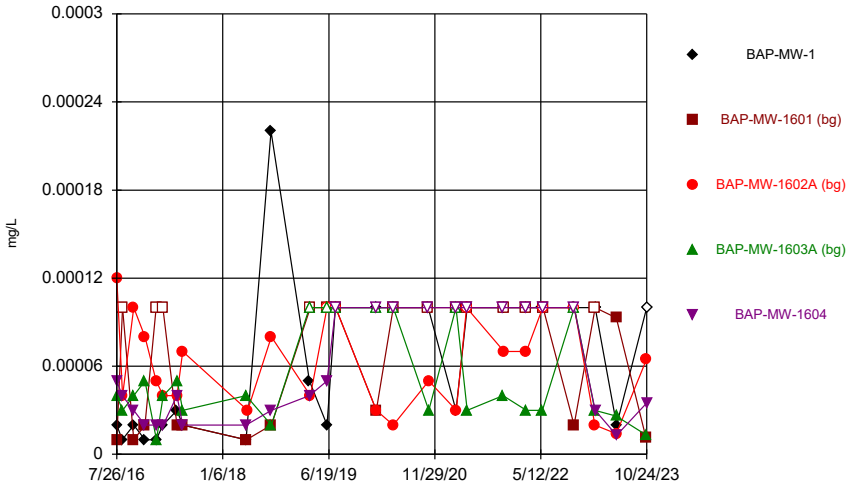
Hollow symbols indicate censored values.

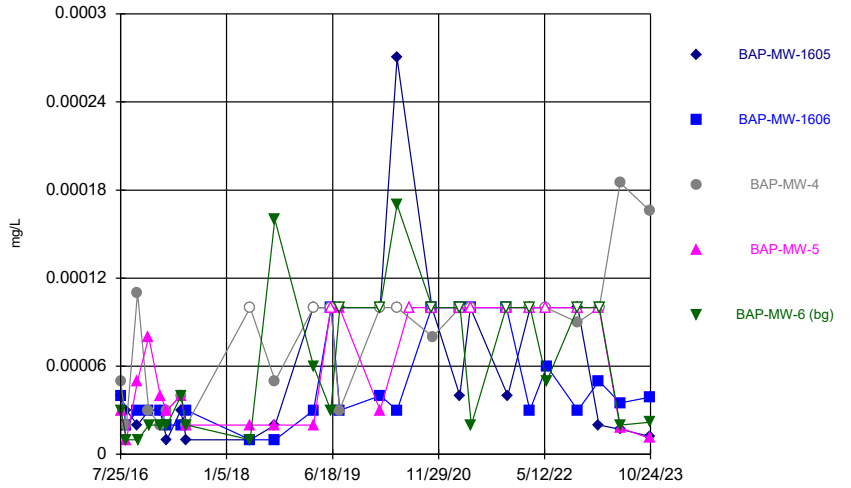
Time Series



Constituent: Antimony, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

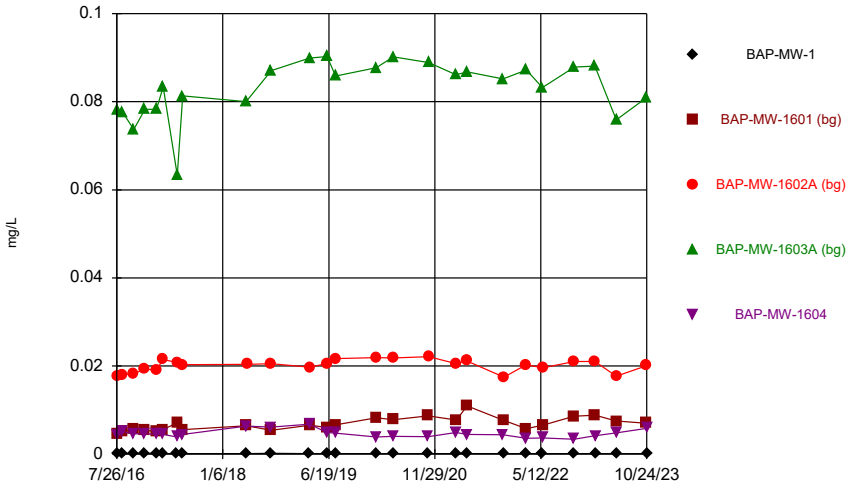
Time Series



Constituent: Antimony, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

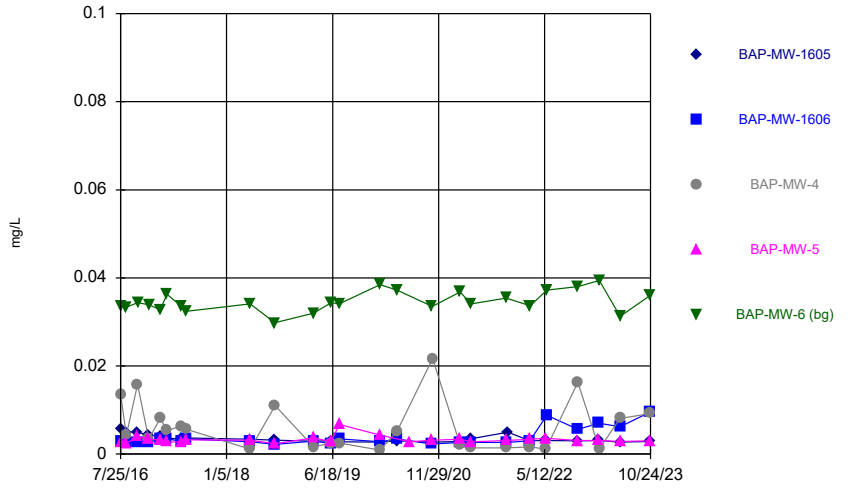
Time Series



Constituent: Arsenic, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Time Series



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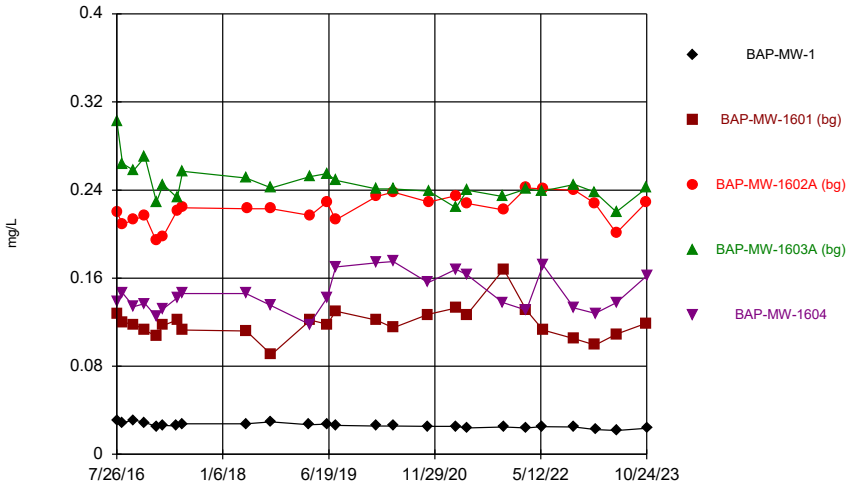

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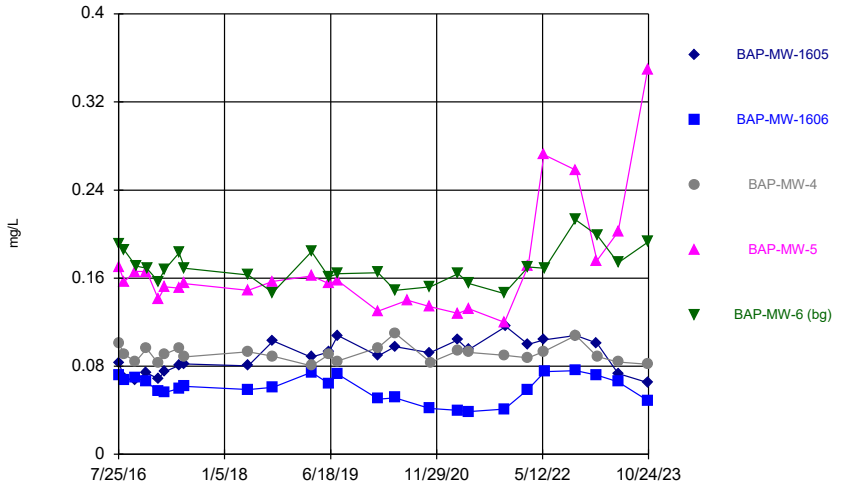
Amos BAP Client: Geosyntec Data: Amos BAP

Time Series

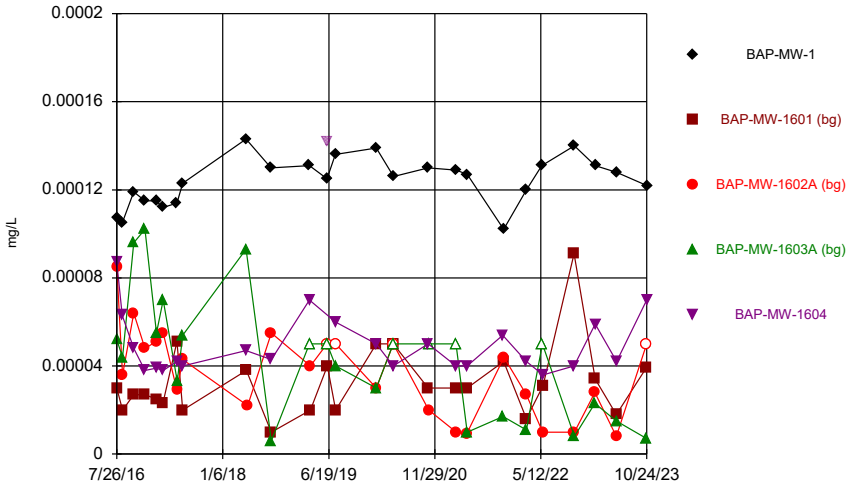


Constituent: Barium, total Analysis Run 1/26/2024 11:44 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Hollow symbols indicate censored values.

Time Series



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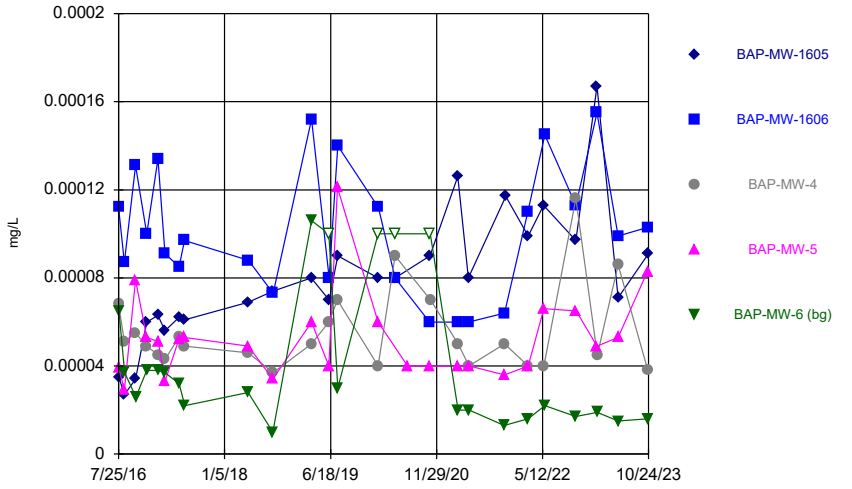
Amos BAP Client: Geosyntec Data: Amos BAP

Hollow symbols indicate censored values.

Time Series

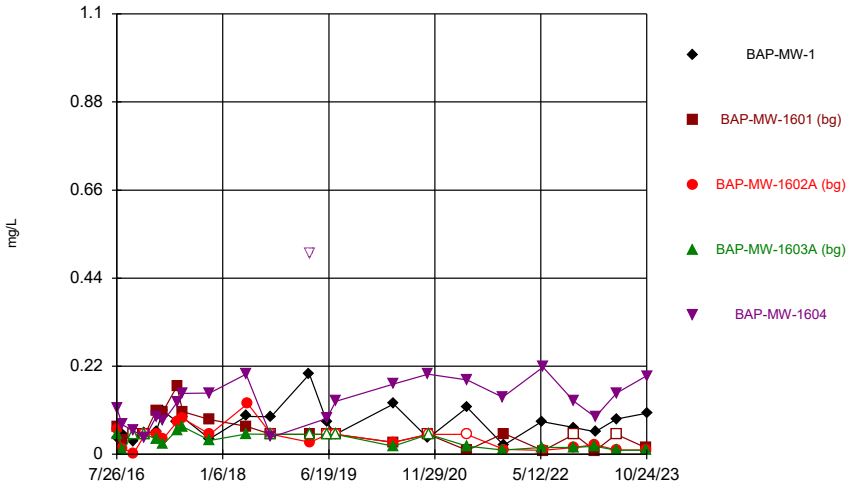


Constituent: Beryllium, total Analysis Run 1/26/2024 11:44 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



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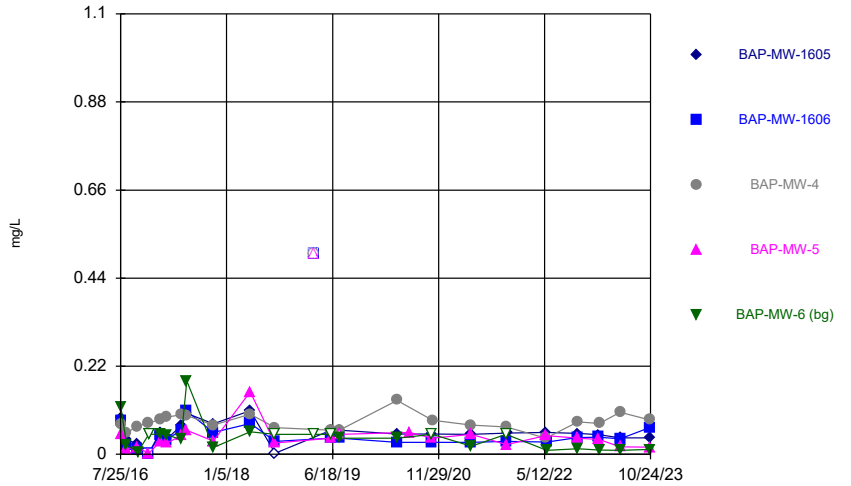
Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



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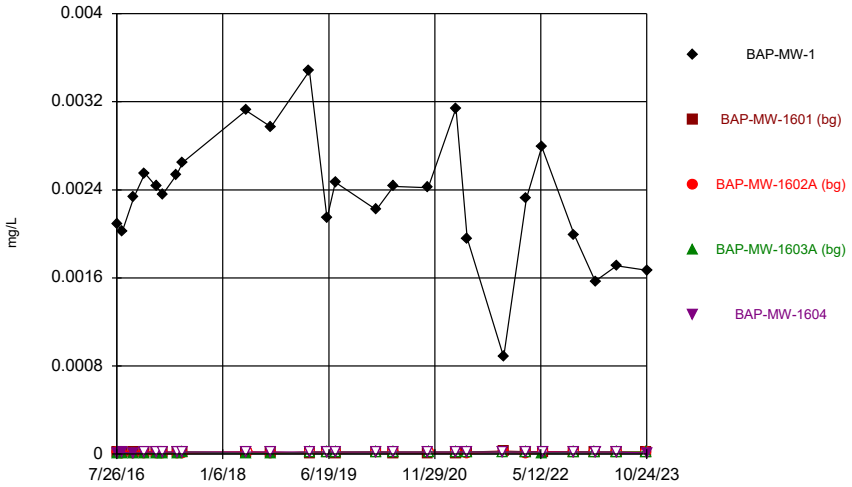
Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium, total Analysis Run 1/26/2024 11:44 AM
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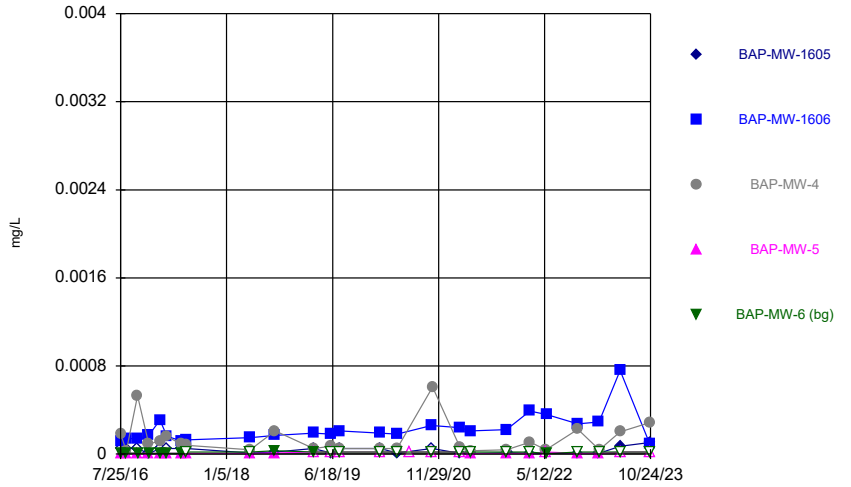
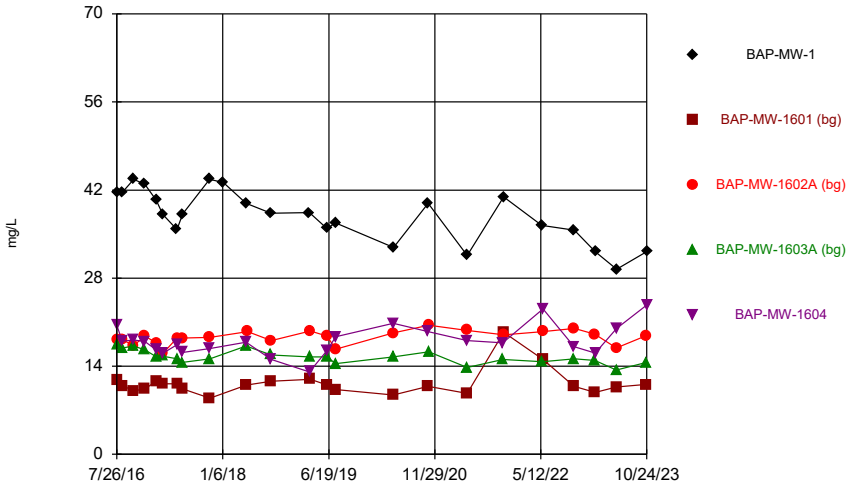
Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

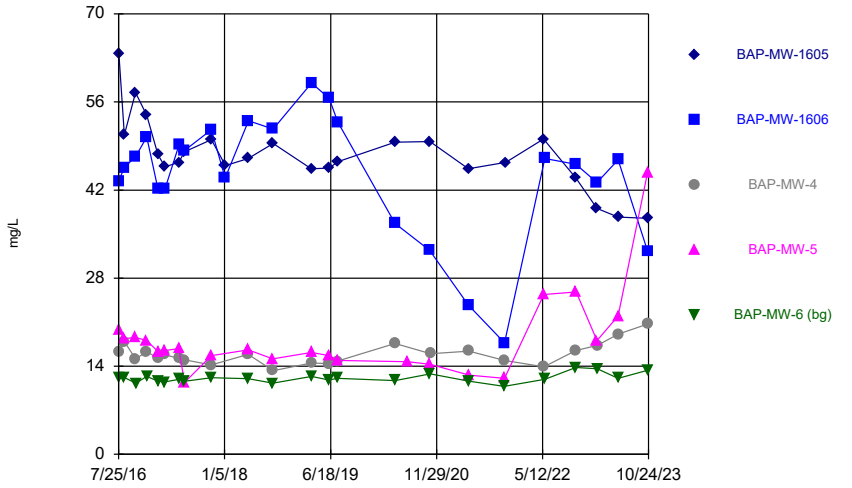
Time Series



Constituent: Calcium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Time Series



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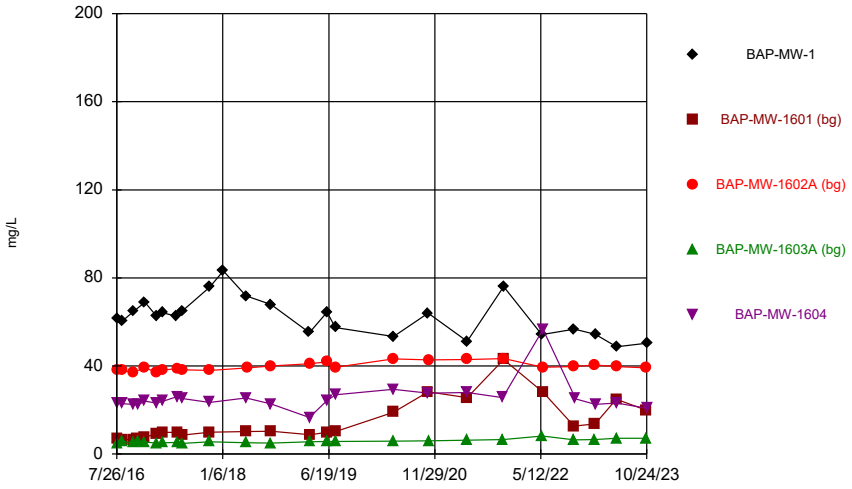
Time Series



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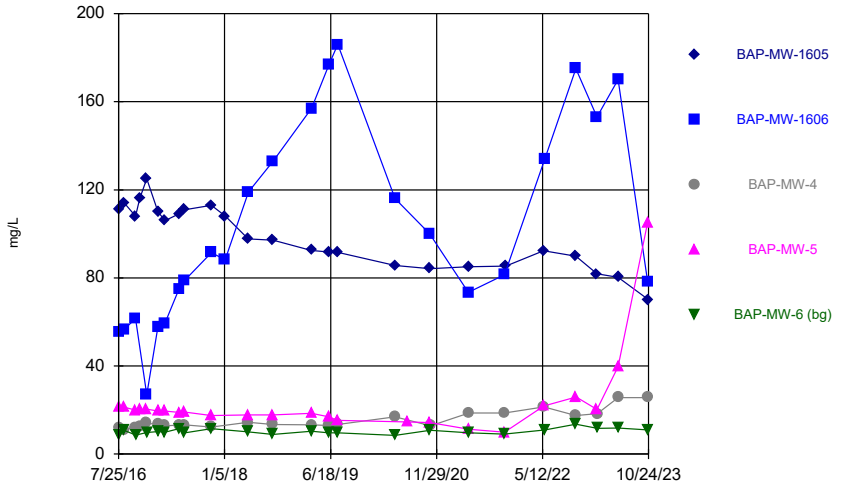
Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Time Series



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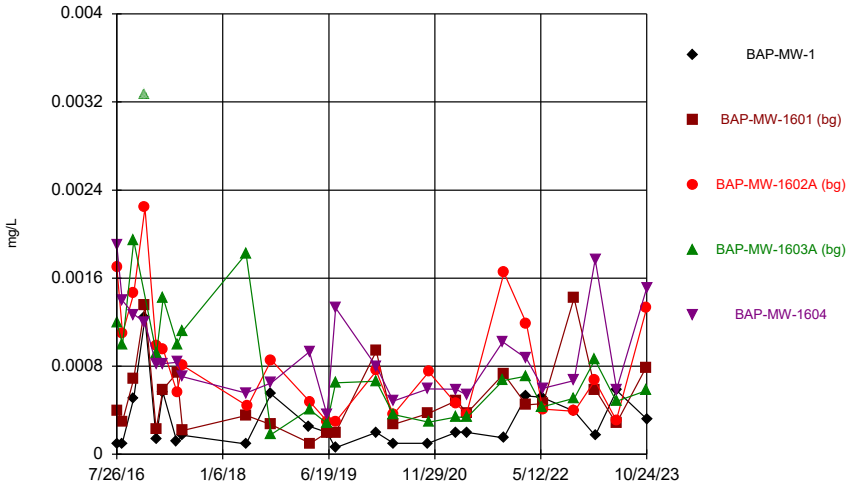
Amos BAP Client: Geosyntec Data: Amos BAP

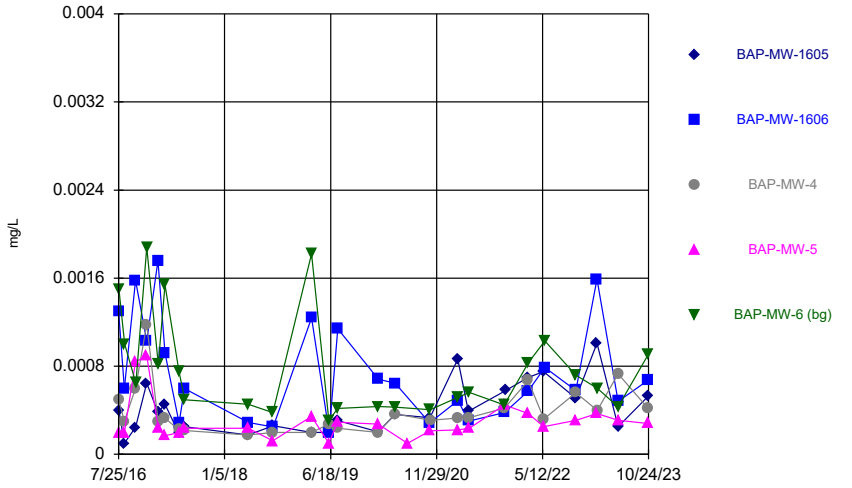
Time Series



Constituent: Chromium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

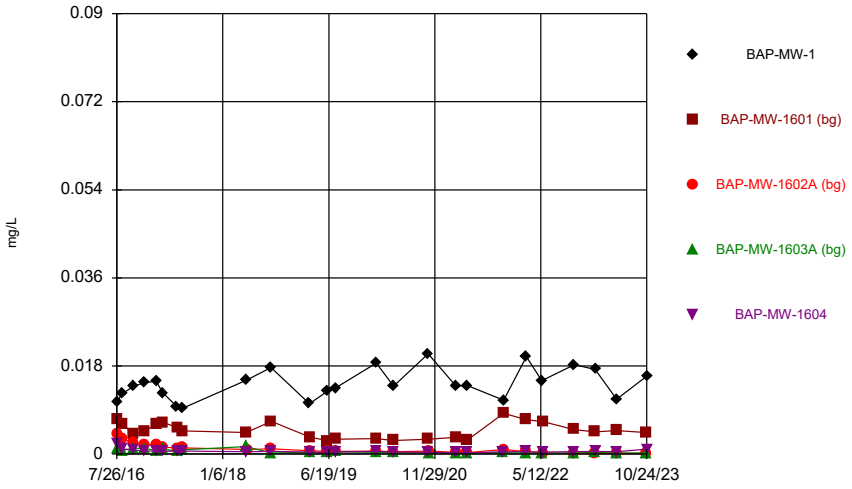
Time Series



Constituent: Chromium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

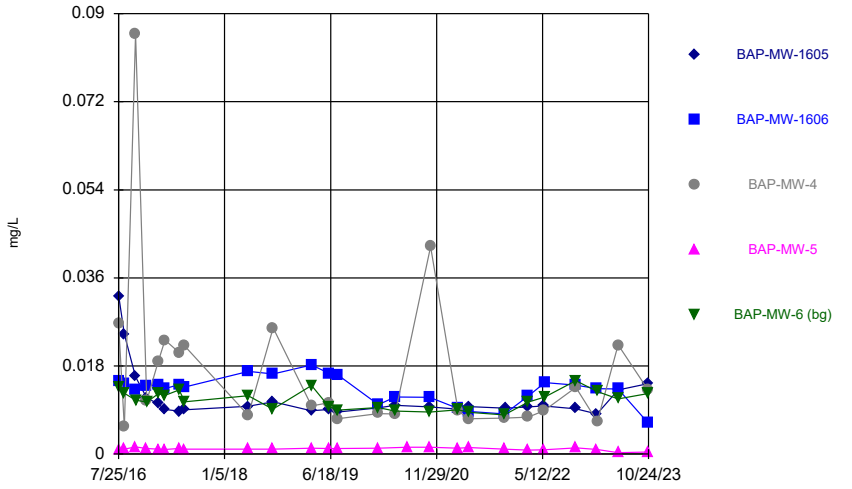
Time Series



Constituent: Cobalt, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

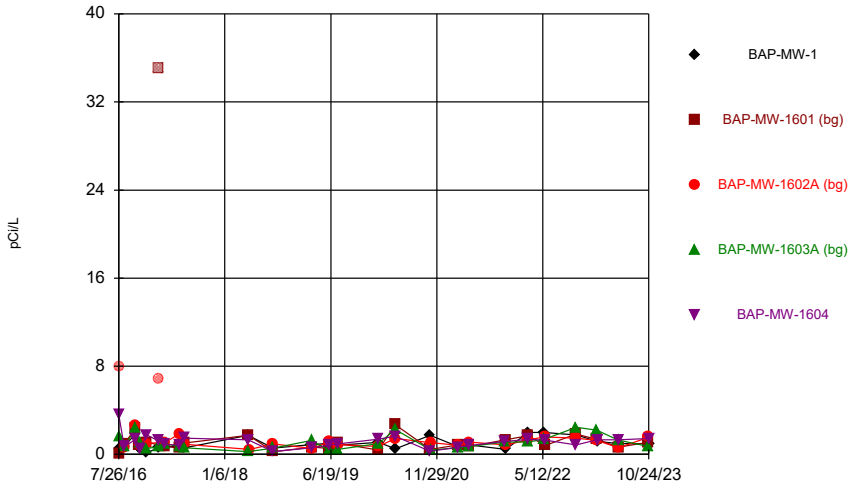
Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Cobalt, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

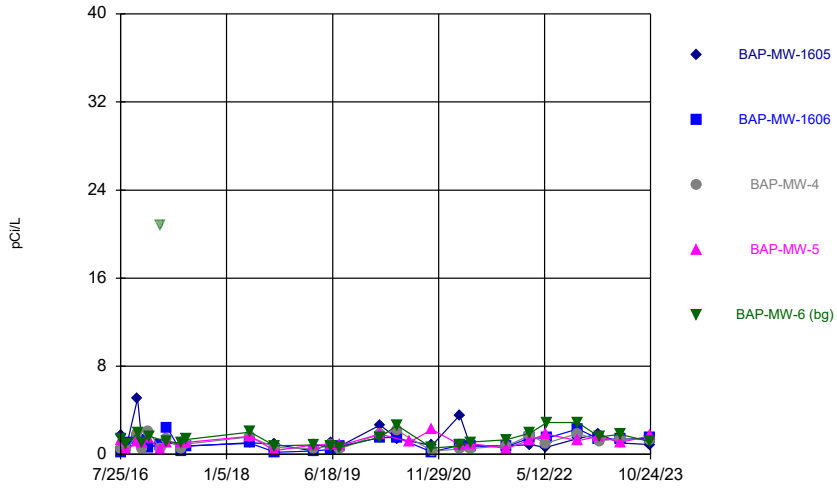
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 1/26/2024 11:44 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Time Series

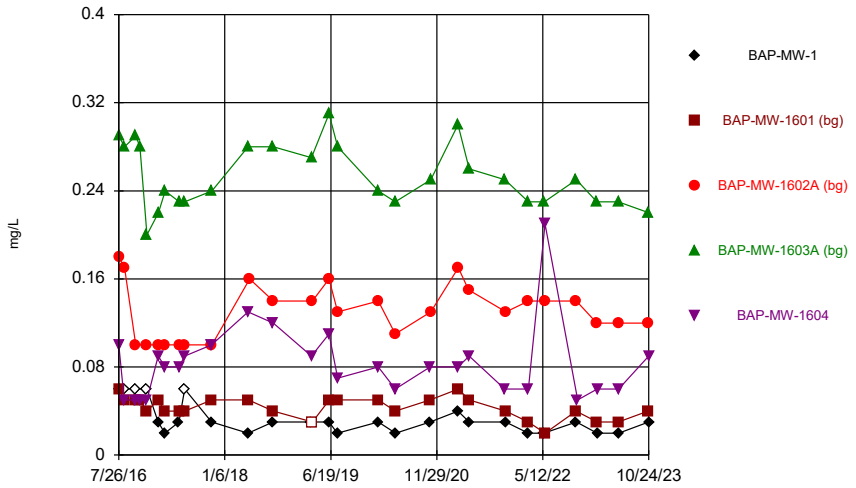


Constituent: Combined Radium 226 + 228 Analysis Run 1/26/2024 11:44 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Hollow symbols indicate censored values.

Time Series

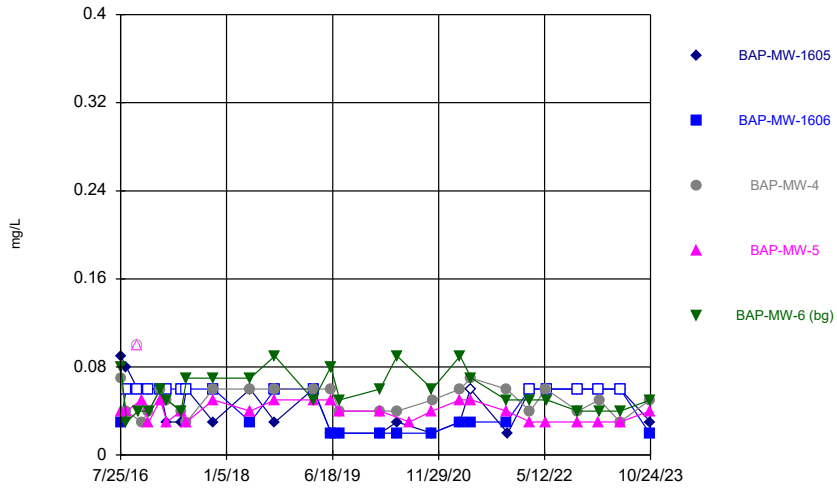


Constituent: Fluoride, total Analysis Run 1/26/2024 11:44 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Hollow symbols indicate censored values.

Time Series

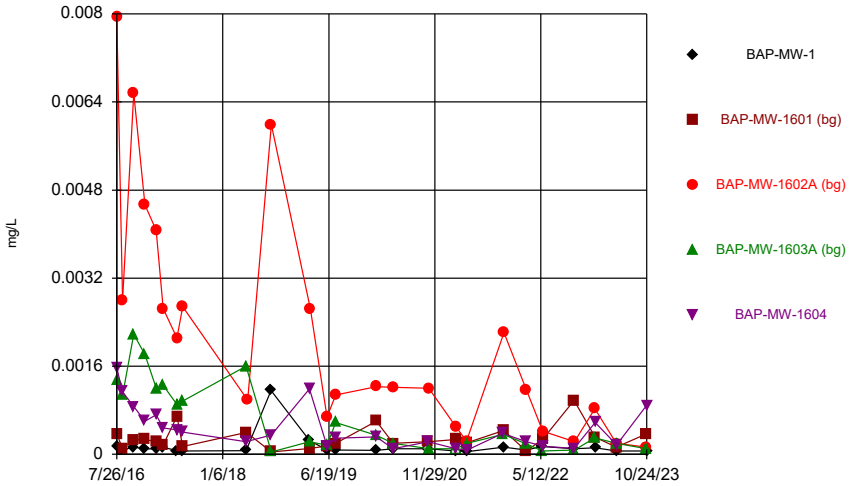


Constituent: Fluoride, total Analysis Run 1/26/2024 11:44 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

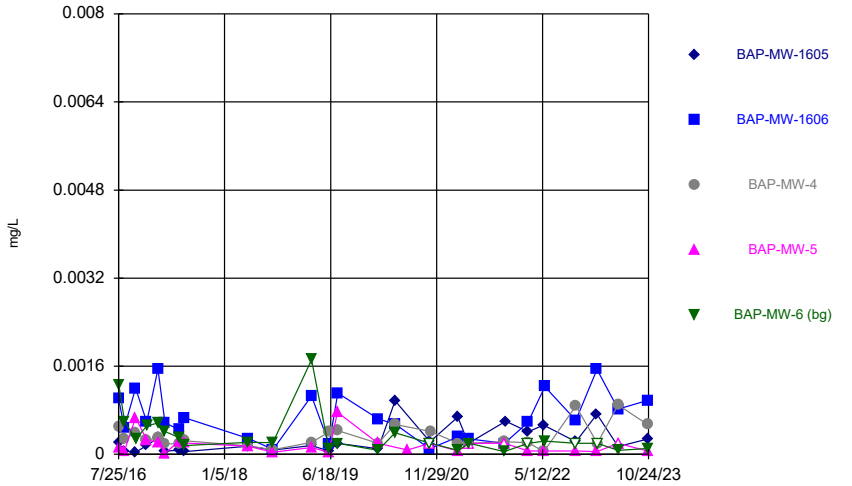
Time Series



Constituent: Lead, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

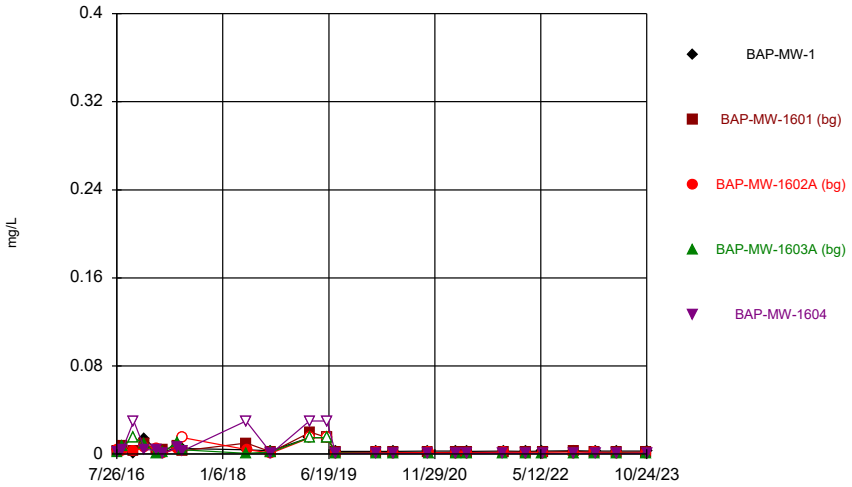
Time Series



Constituent: Lead, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

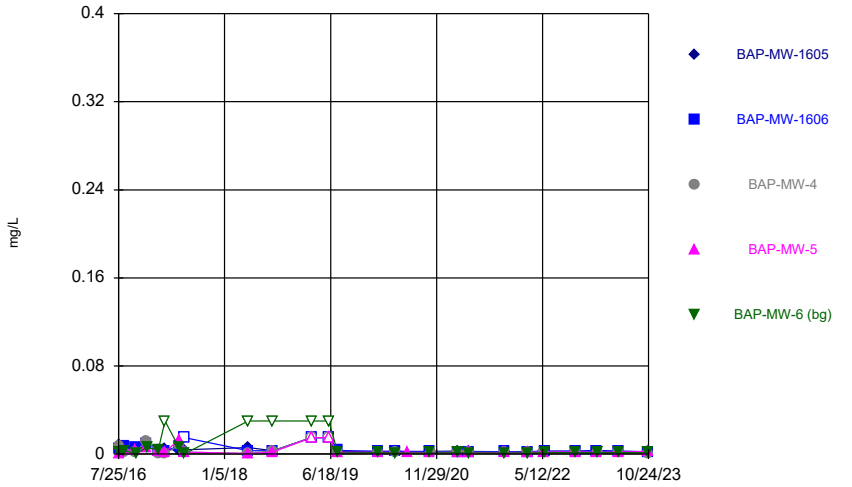
Time Series



Constituent: Lithium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

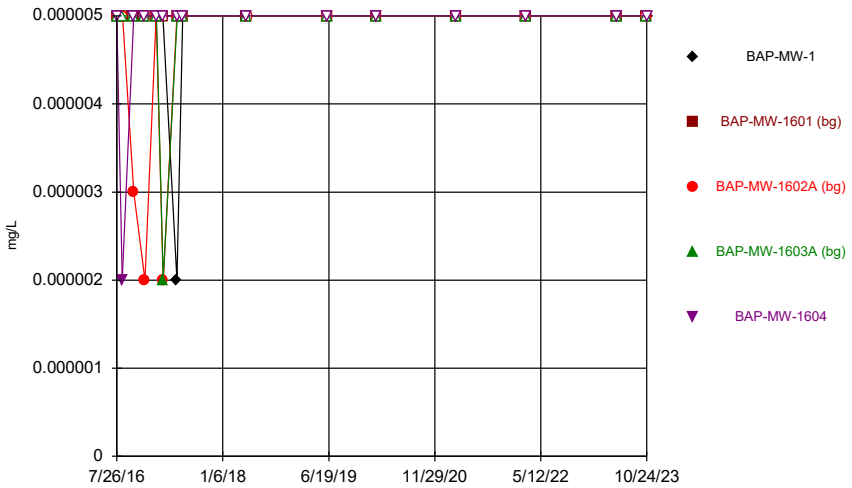
Time Series



Constituent: Lithium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury, total Analysis Run 1/26/2024 11:44 AM
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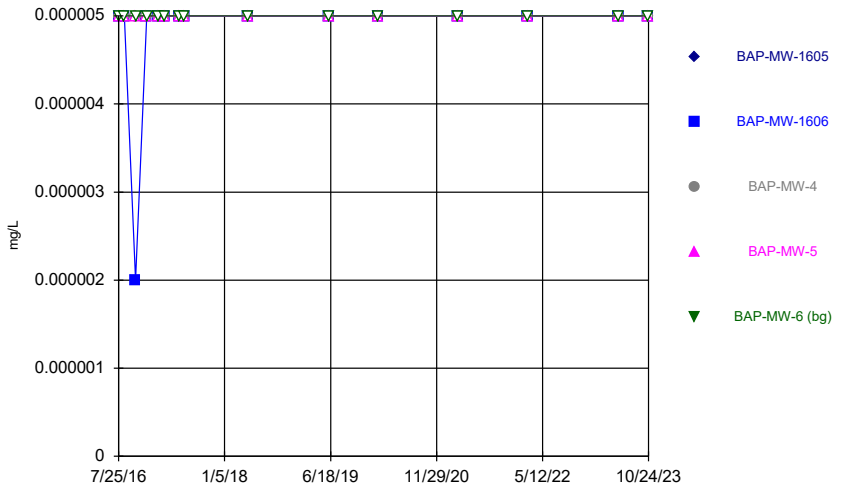
Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

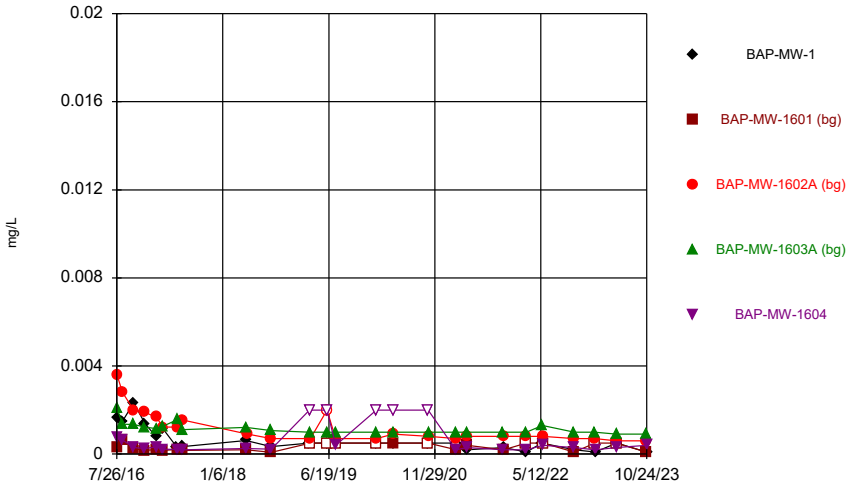
Time Series



Constituent: Mercury, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

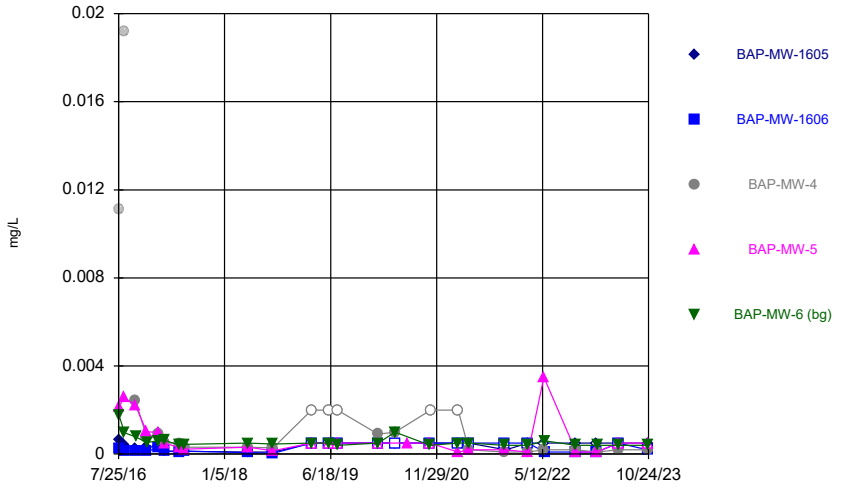
Time Series



Constituent: Molybdenum, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

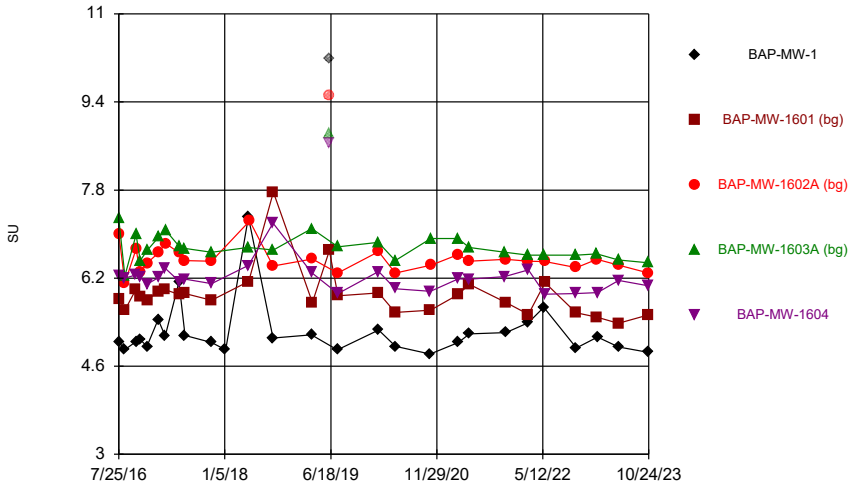
Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



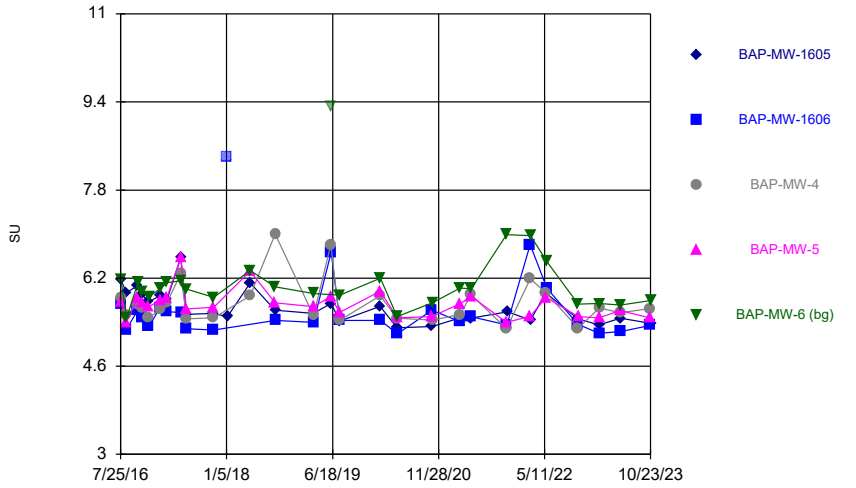
Constituent: Molybdenum, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Time Series



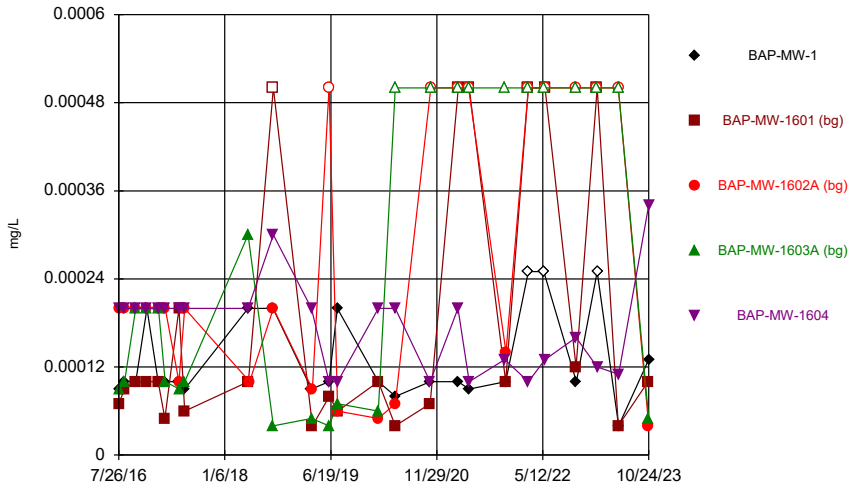
Constituent: pH, field Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Time Series



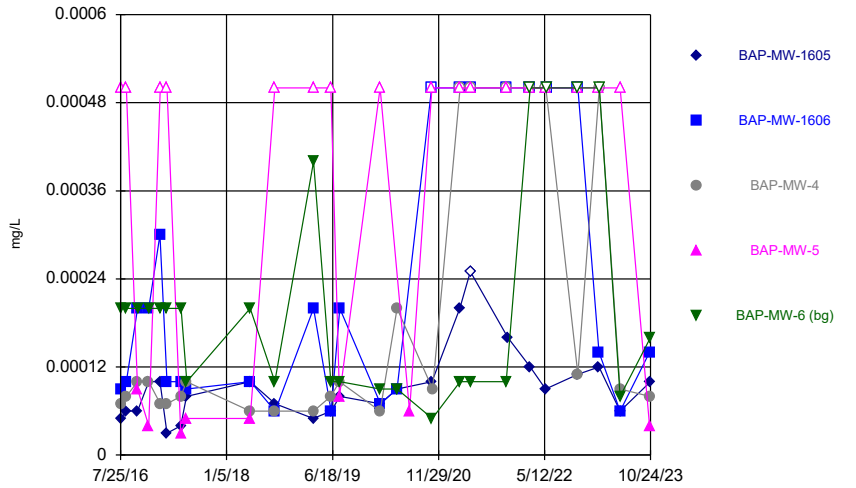
Constituent: pH, field Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Time Series



Constituent: Selenium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Time Series



Constituent: Selenium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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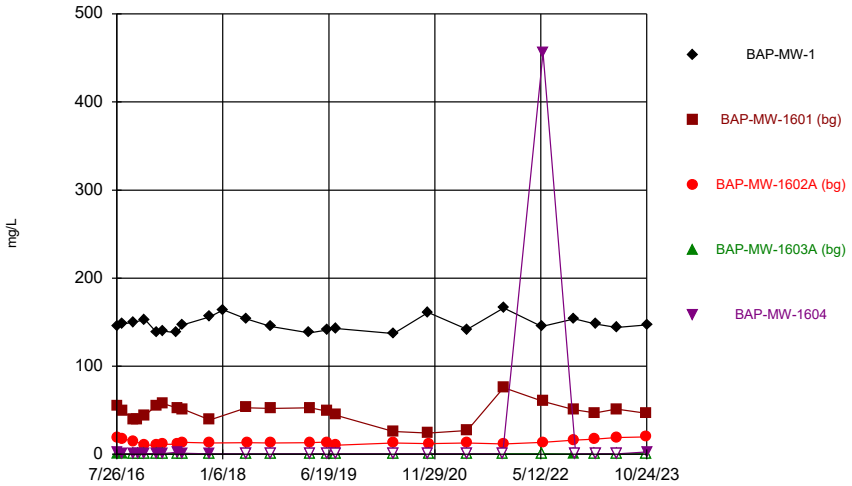
Hollow symbols indicate censored values.

Time Series



Constituent: Sulfate, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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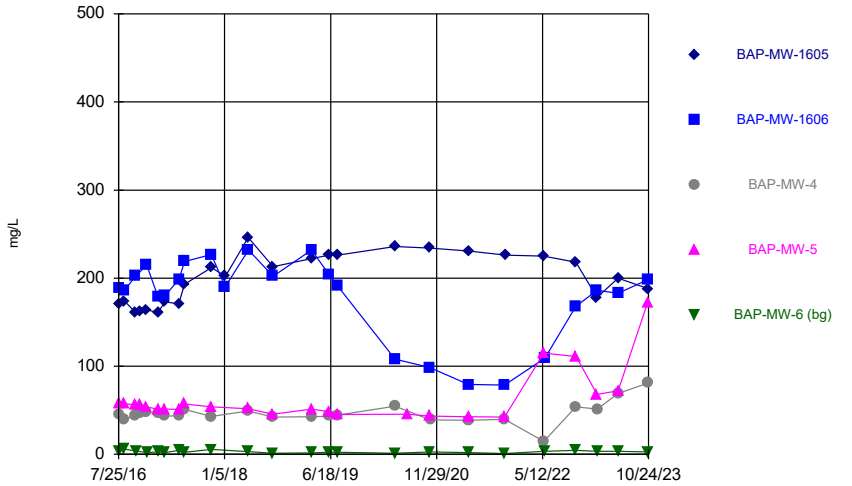
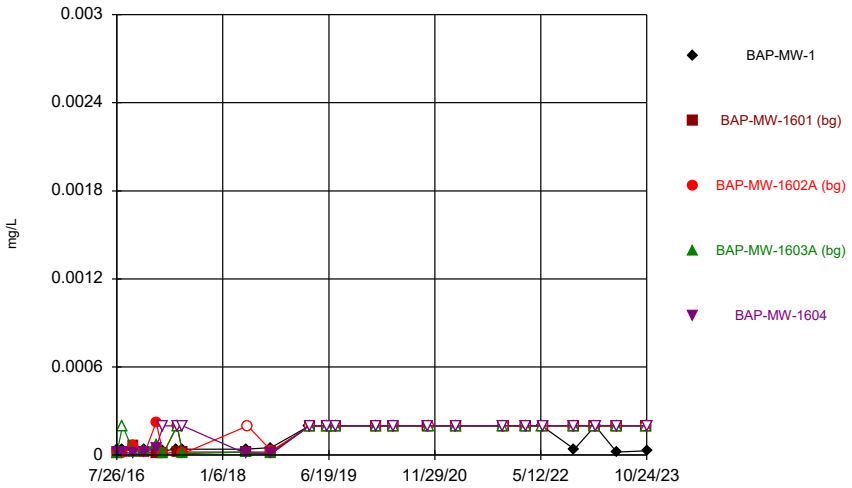
Time Series



Constituent: Sulfate, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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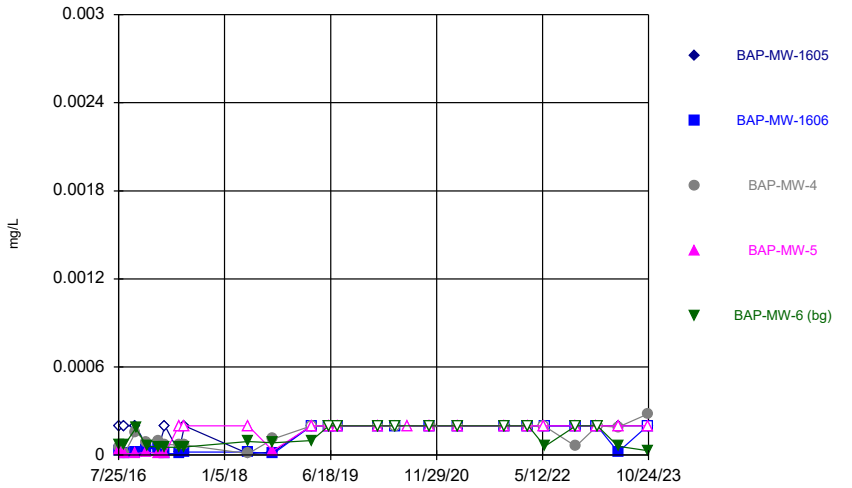
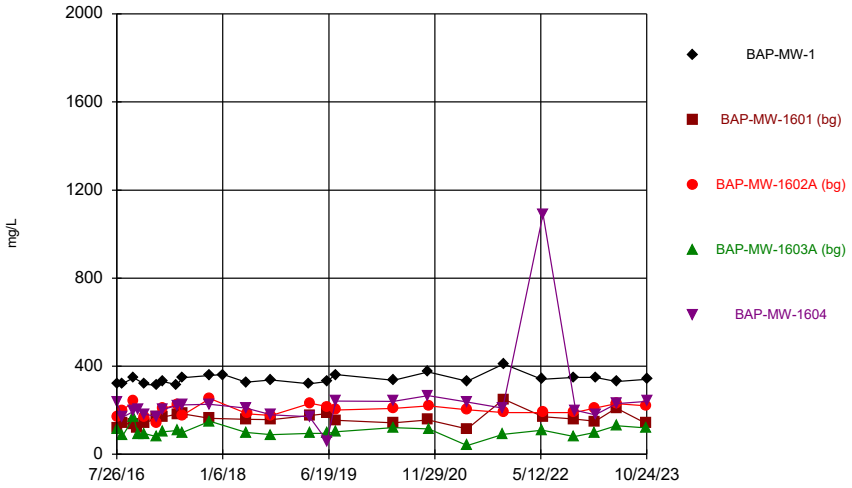
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium, total Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

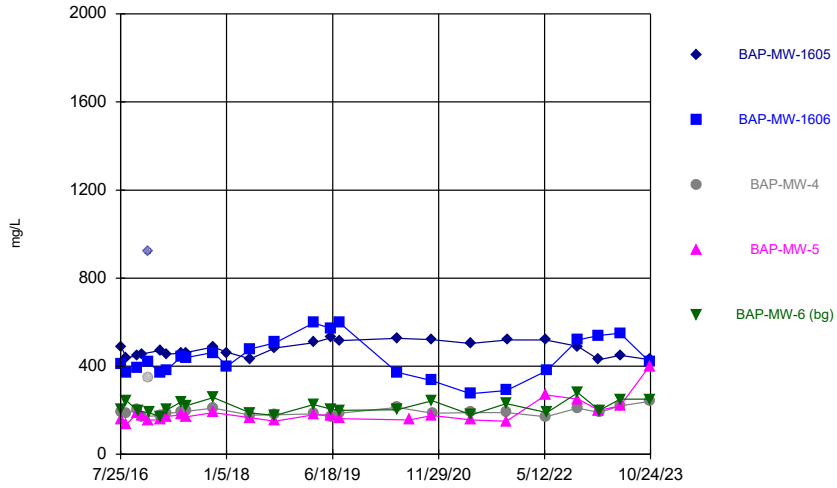
Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Time Series

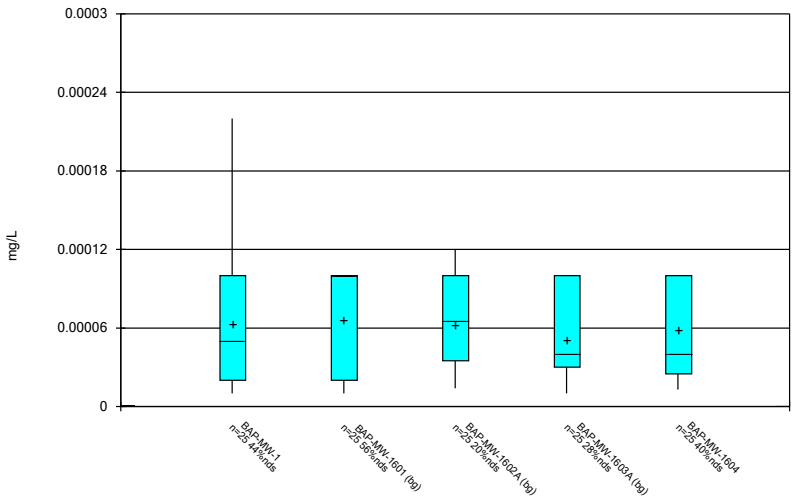


Constituent: Total Dissolved Solids [TDS] Analysis Run 1/26/2024 11:44 AM
Amos BAP Client: Geosyntec Data: Amos BAP

FIGURE B

Box Plots

Box & Whiskers Plot



Constituent: Antimony, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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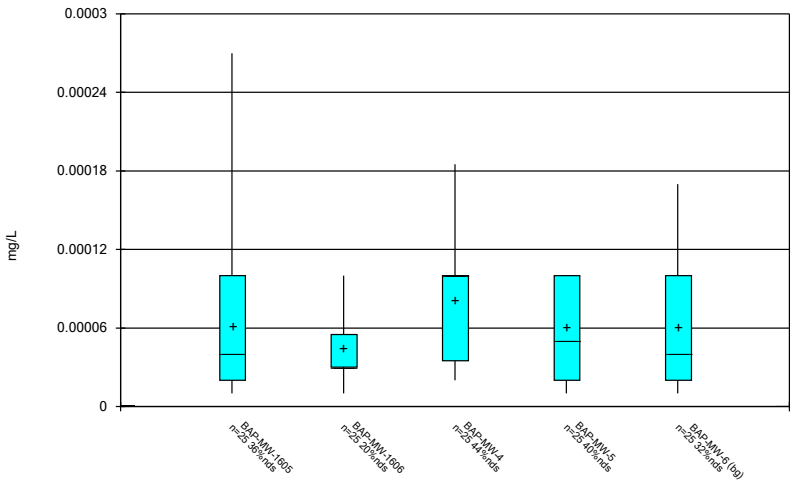
Box & Whiskers Plot

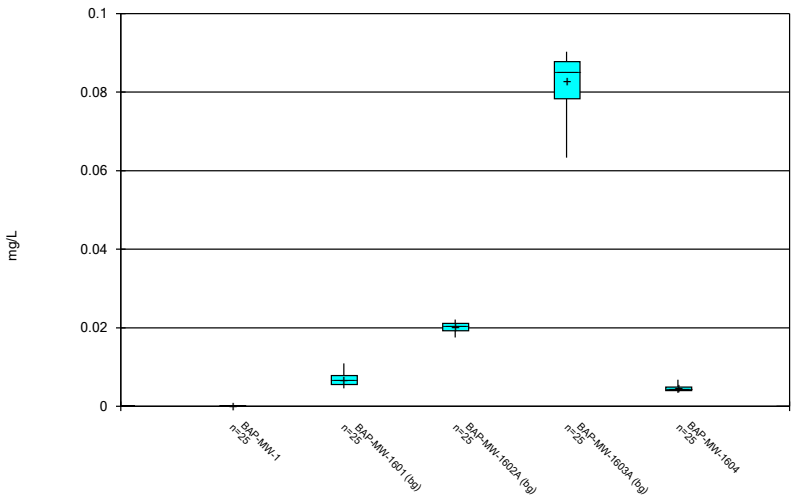


Constituent: Antimony, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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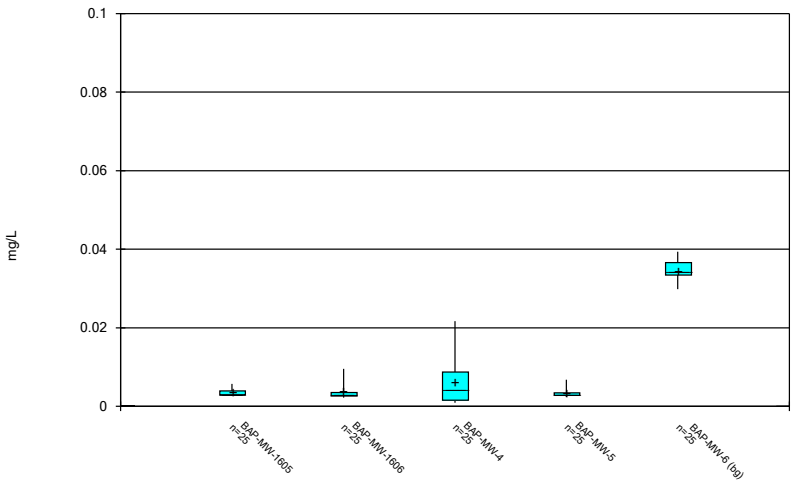
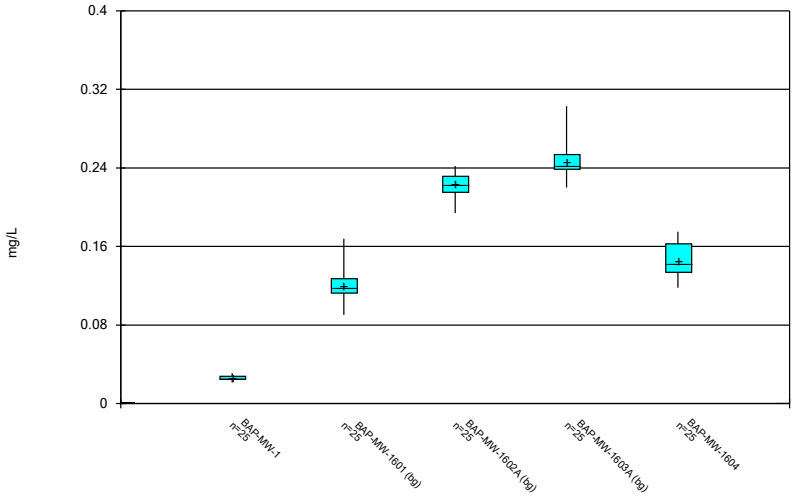
Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Barium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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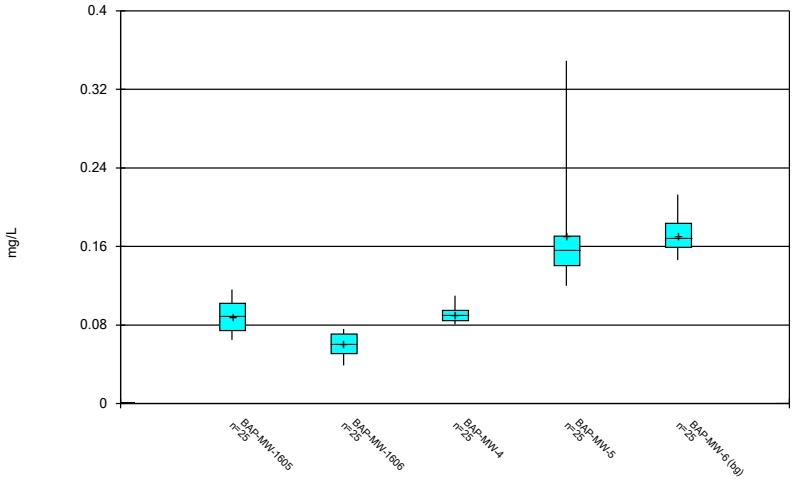
Box & Whiskers Plot



Constituent: Barium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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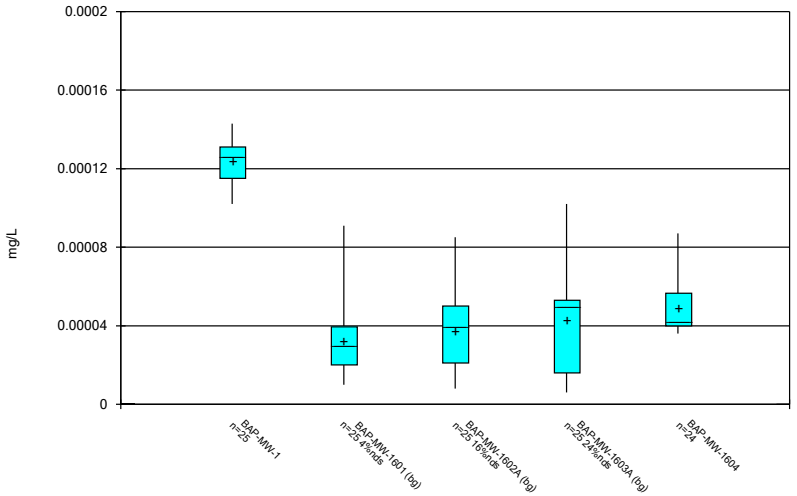
Box & Whiskers Plot



Constituent: Beryllium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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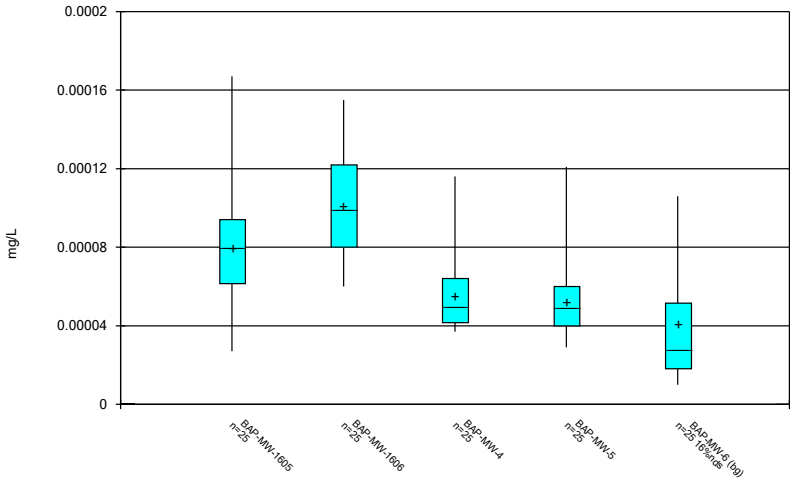
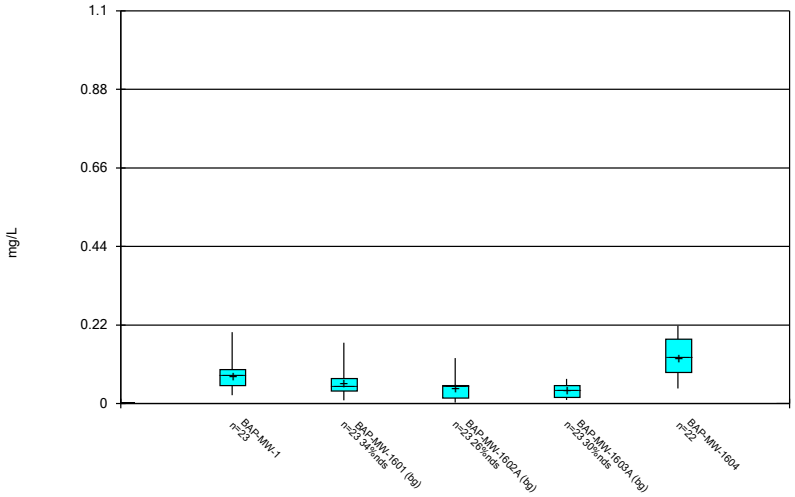
Box & Whiskers Plot



Constituent: Beryllium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Boron, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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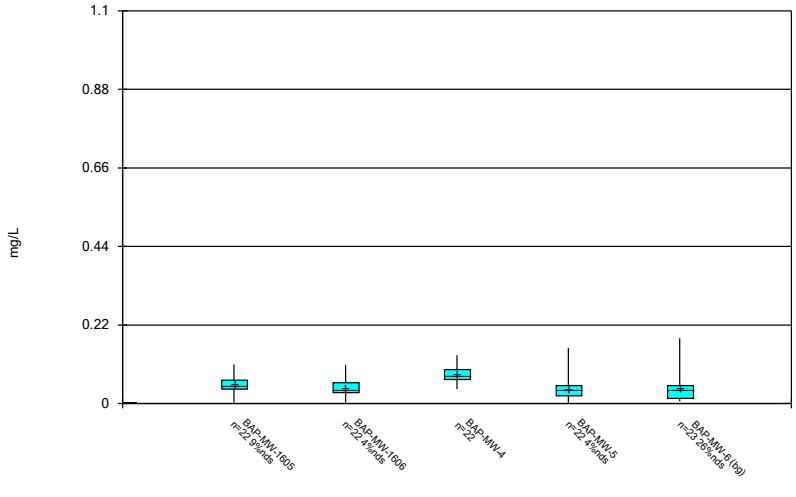
Box & Whiskers Plot



Constituent: Boron, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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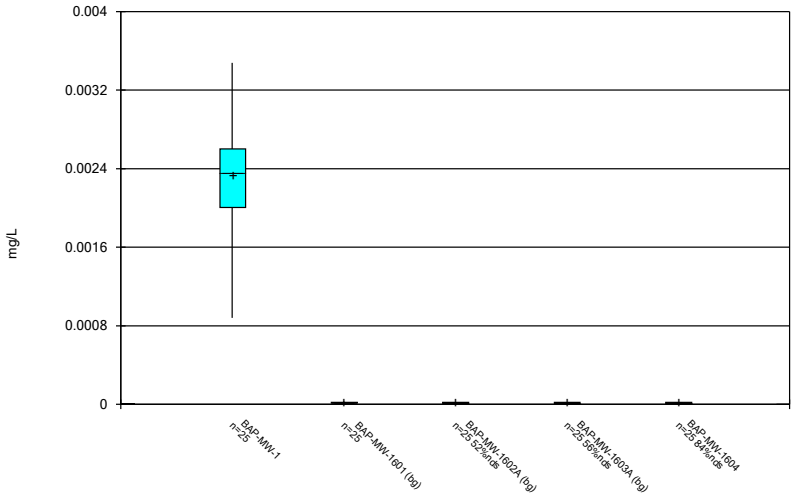
Box & Whiskers Plot



Constituent: Cadmium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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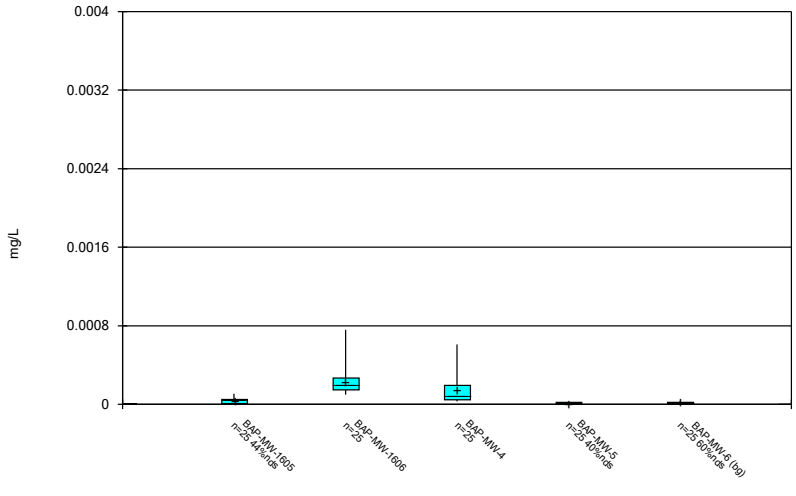
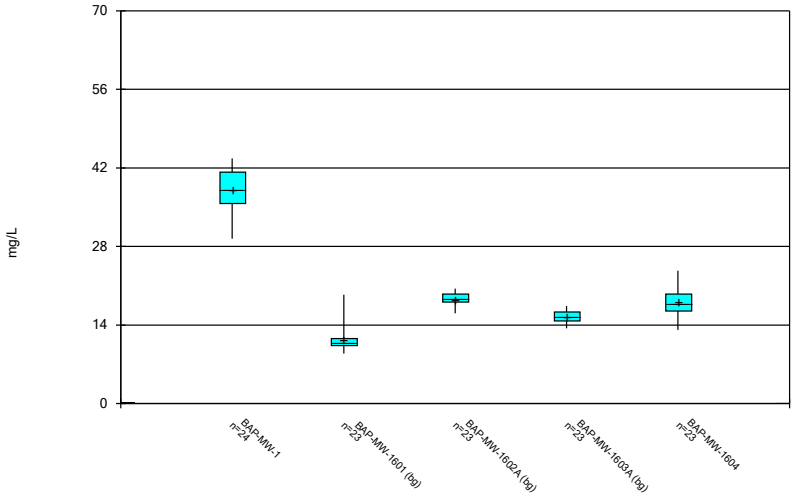
Box & Whiskers Plot



Constituent: Cadmium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Calcium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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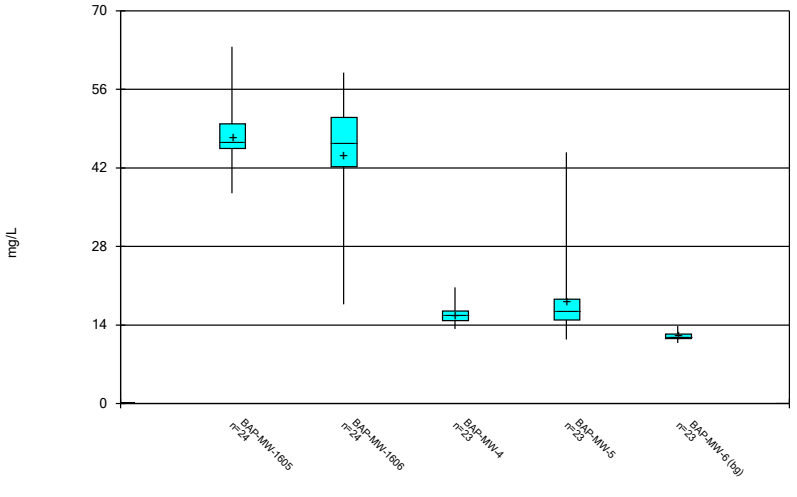
Box & Whiskers Plot



Constituent: Calcium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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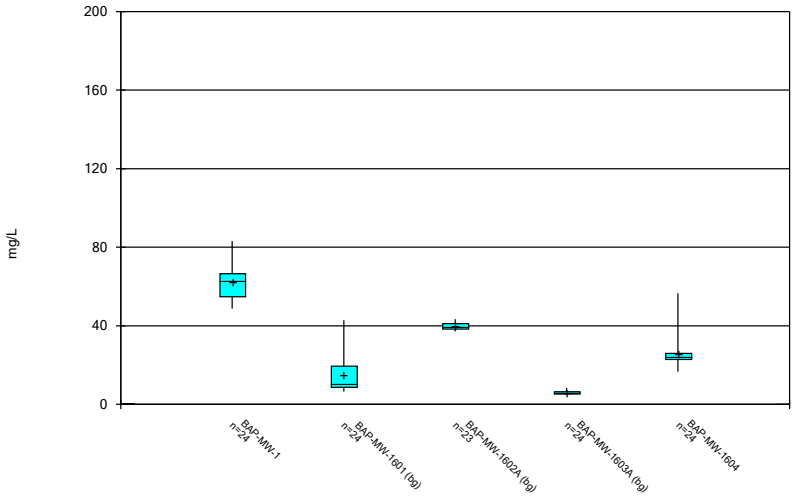
Box & Whiskers Plot



Constituent: Chloride, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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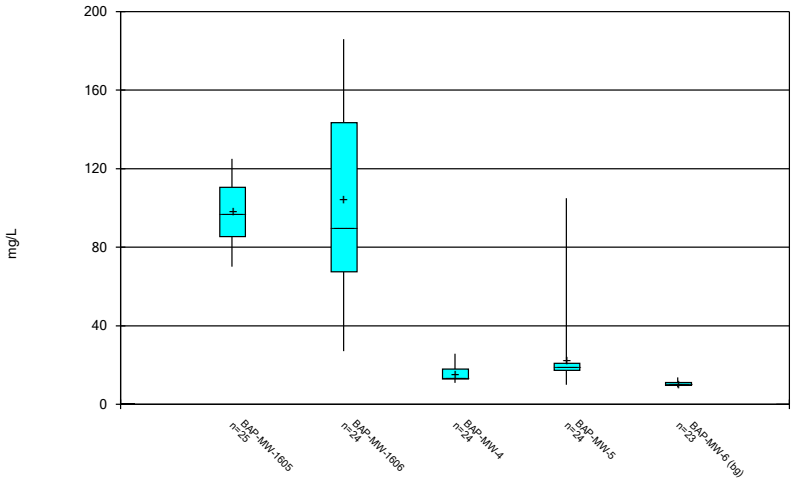
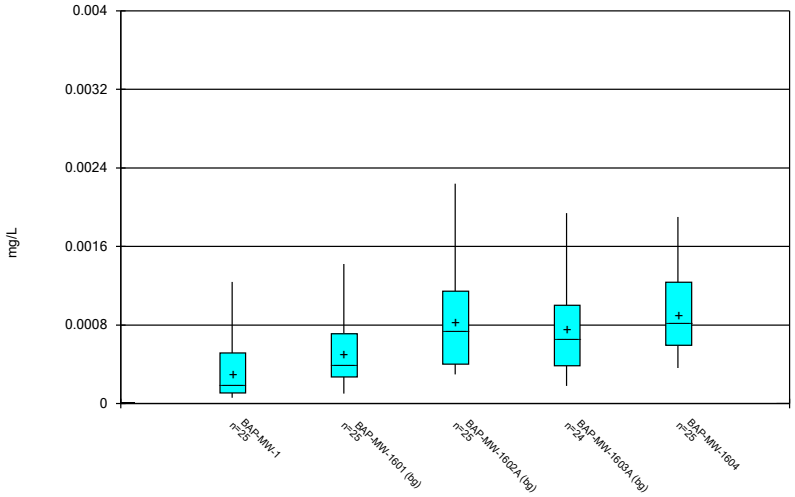
Box & Whiskers Plot



Constituent: Chloride, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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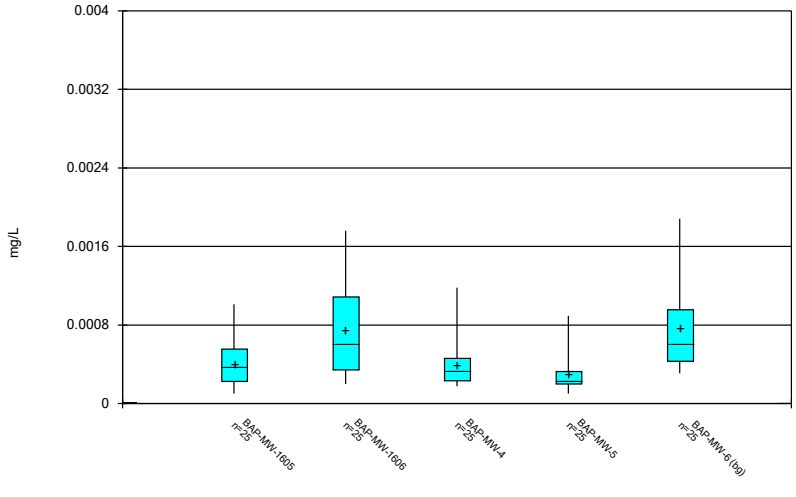
Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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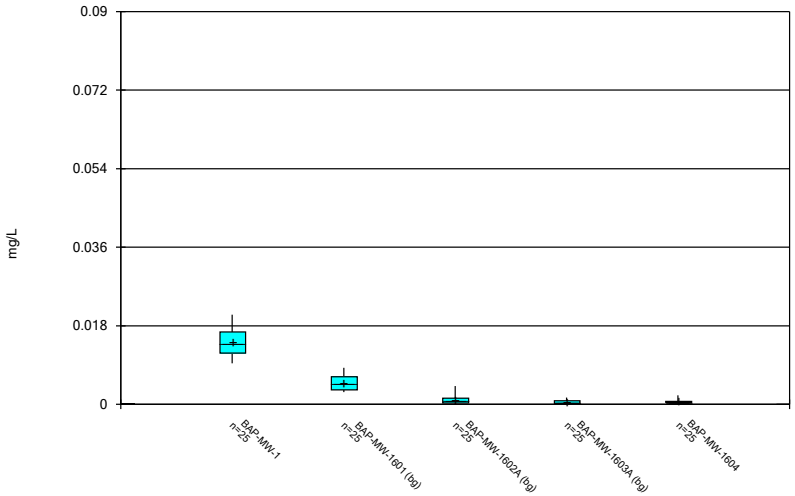
Box & Whiskers Plot



Constituent: Cobalt, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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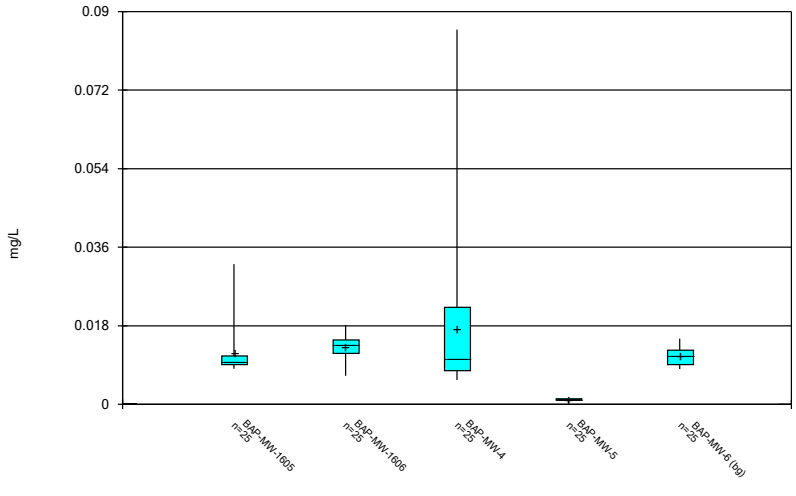
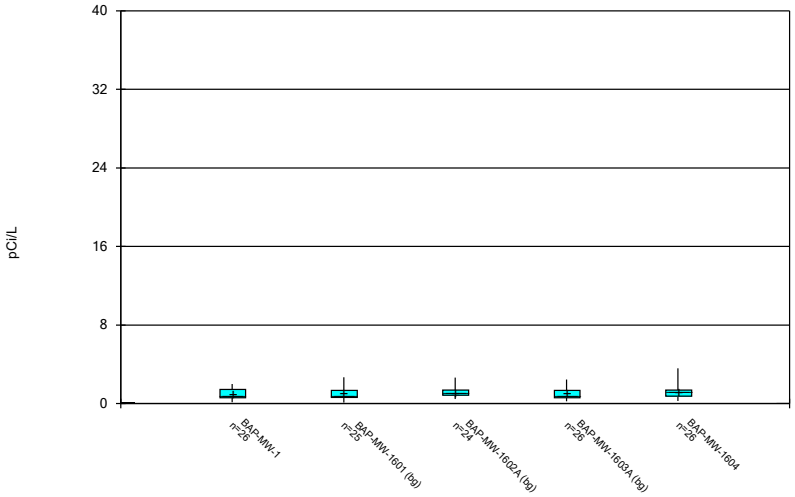
Box & Whiskers Plot



Constituent: Cobalt, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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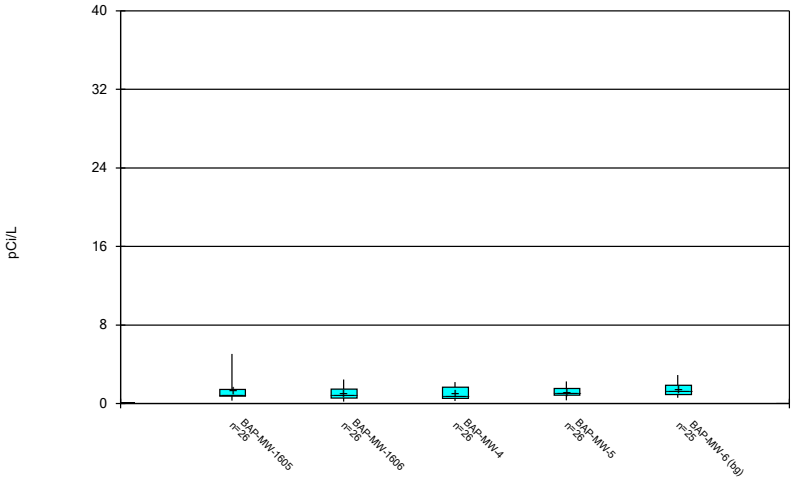
Box & Whiskers Plot

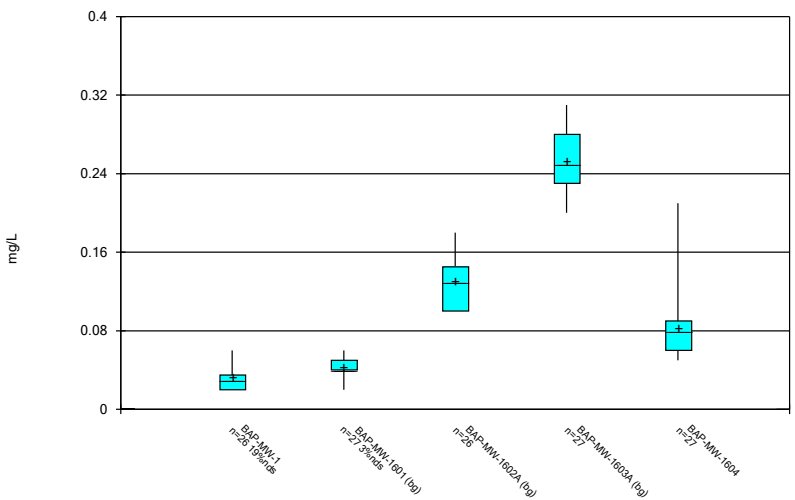


Constituent: Combined Radium 226 + 228 Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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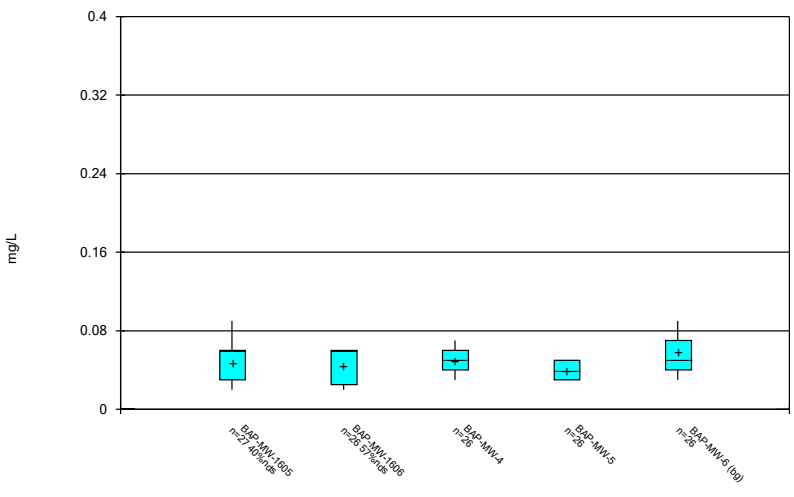
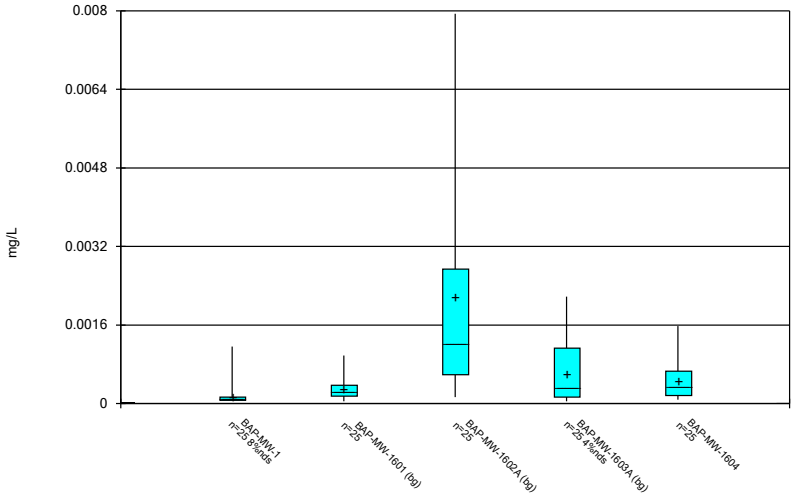
Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 1/26/2024 11:45 AM

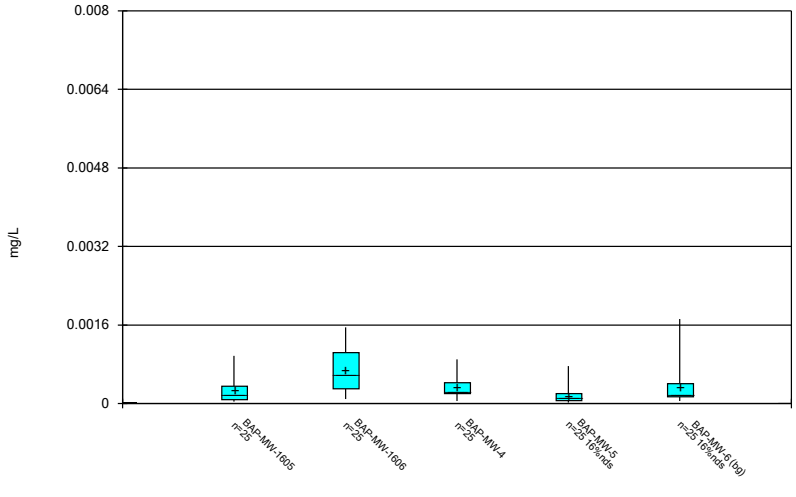
Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



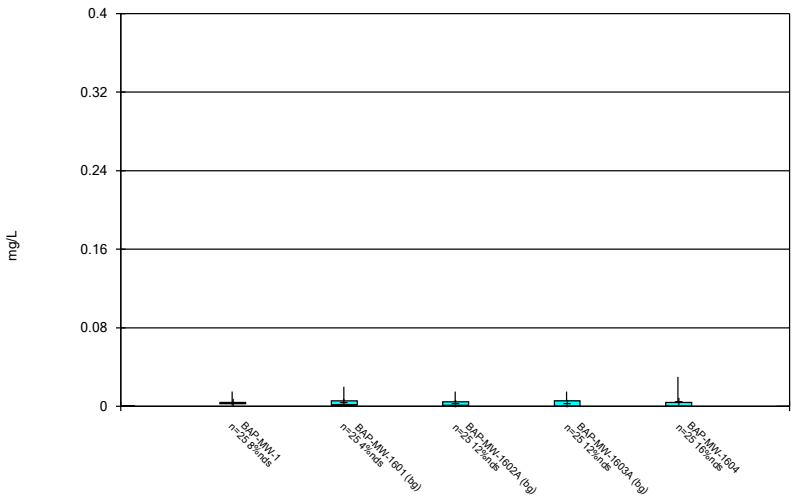
Constituent: Lead, total Analysis Run 1/26/2024 11:45 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



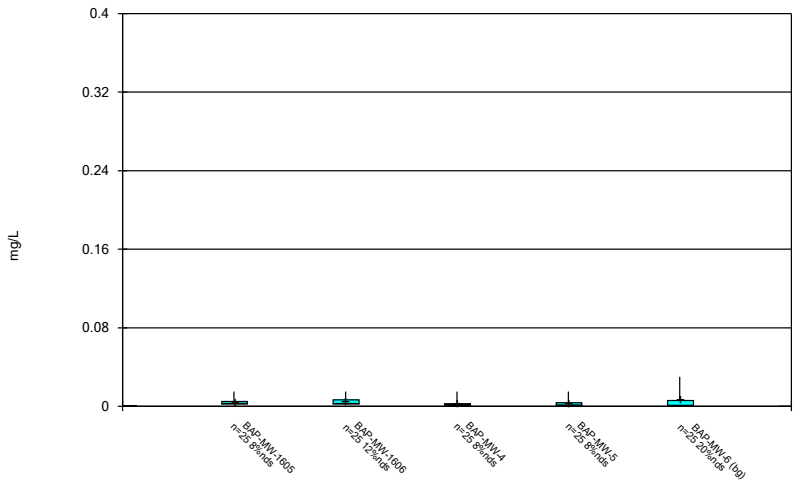
Constituent: Lead, total Analysis Run 1/26/2024 11:45 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



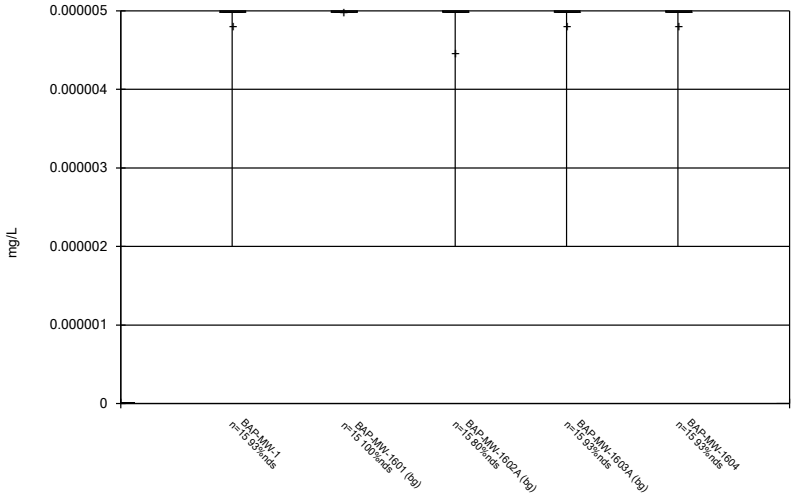
Constituent: Lithium, total Analysis Run 1/26/2024 11:45 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Lithium, total Analysis Run 1/26/2024 11:45 AM
Amos BAP Client: Geosyntec Data: Amos BAP

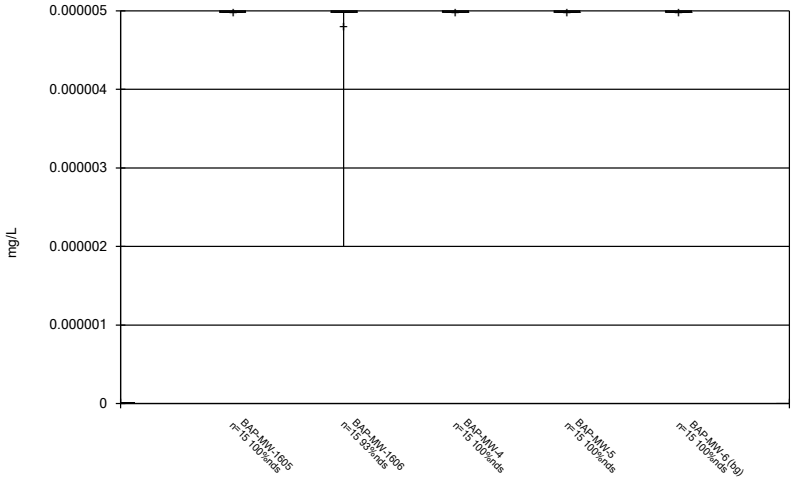
Box & Whiskers Plot



Constituent: Mercury, total Analysis Run 1/26/2024 11:45 AM

Amos BAP Client: Geosyntec Data: Amos BAP

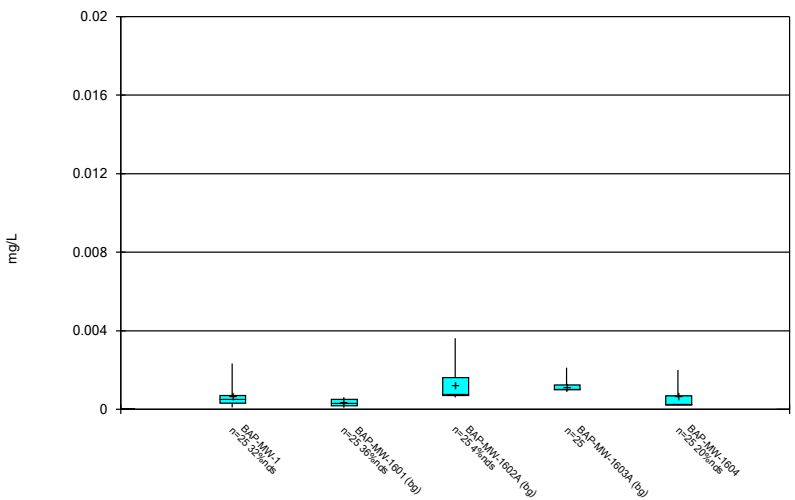
Box & Whiskers Plot



Constituent: Mercury, total Analysis Run 1/26/2024 11:46 AM

Amos BAP Client: Geosyntec Data: Amos BAP

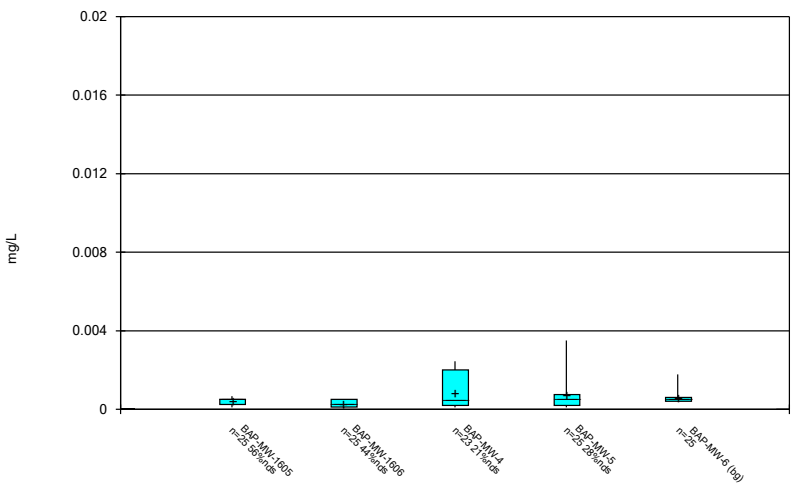
Box & Whiskers Plot



Constituent: Molybdenum, total Analysis Run 1/26/2024 11:46 AM

Amos BAP Client: Geosyntec Data: Amos BAP

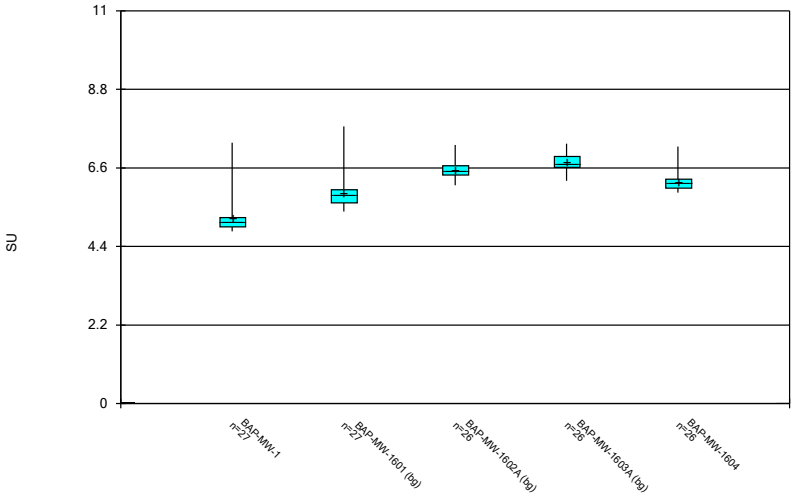
Box & Whiskers Plot



Constituent: Molybdenum, total Analysis Run 1/26/2024 11:46 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: pH, field Analysis Run 1/26/2024 11:46 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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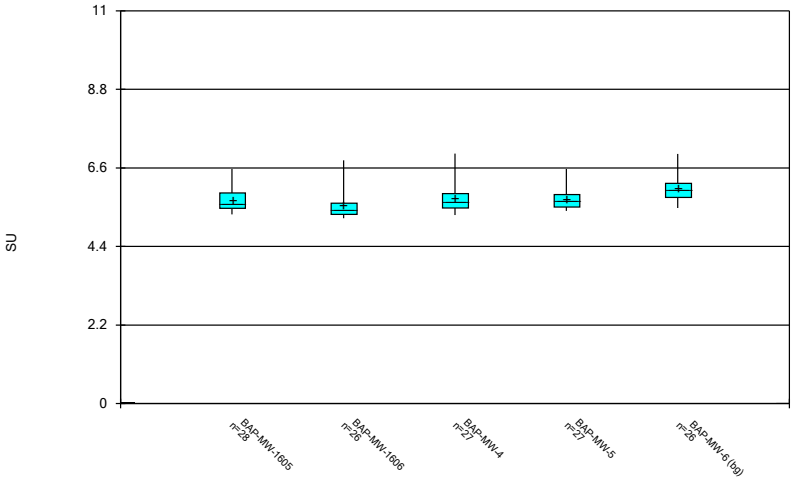
Box & Whiskers Plot



Constituent: pH, field Analysis Run 1/26/2024 11:46 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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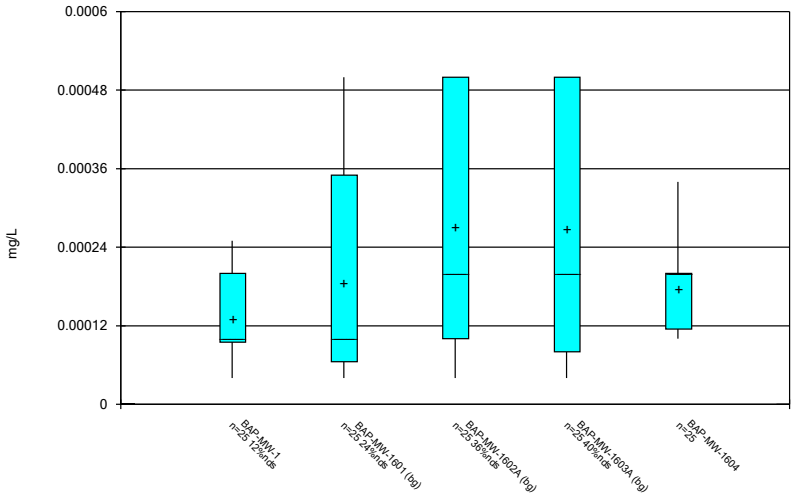
Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 1/26/2024 11:46 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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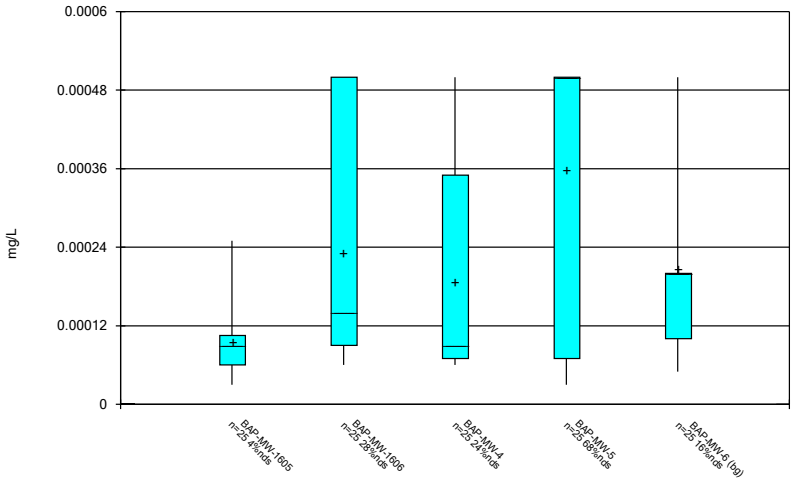
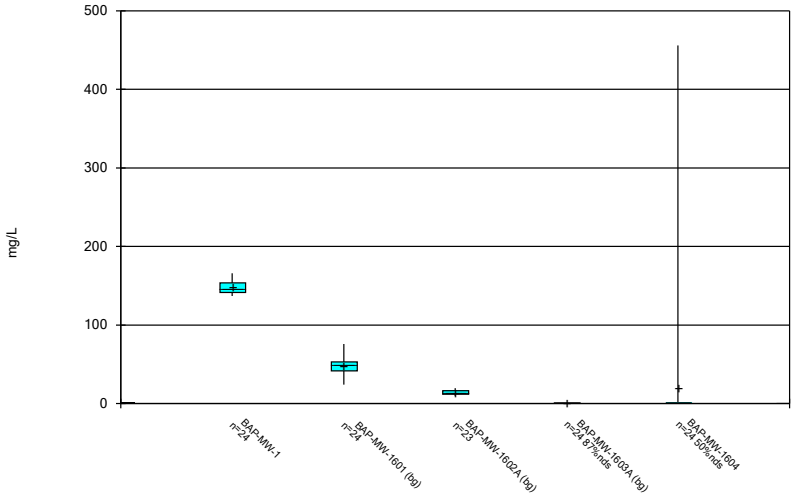
Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 1/26/2024 11:46 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Sulfate, total Analysis Run 1/26/2024 11:46 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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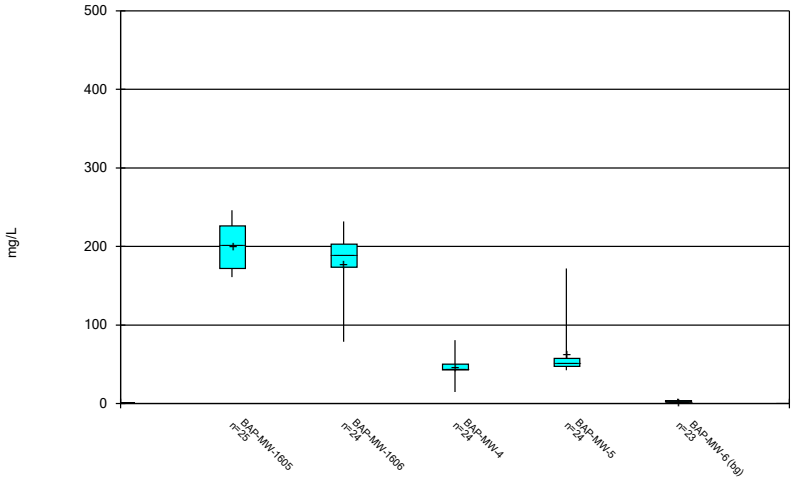
Box & Whiskers Plot

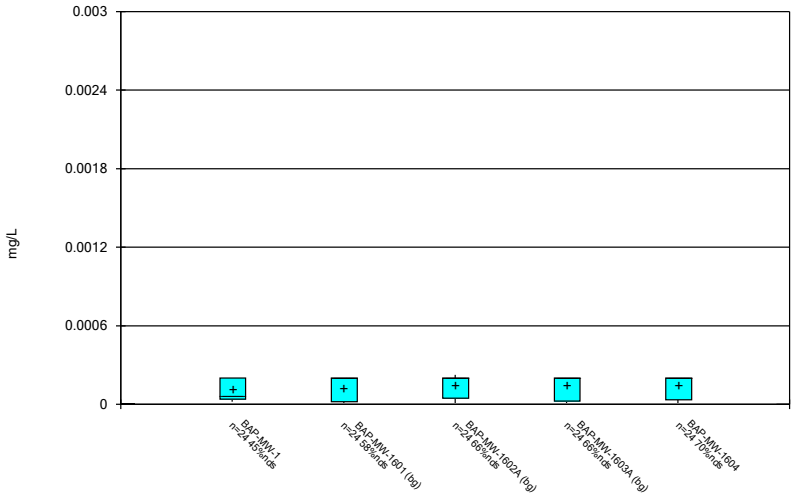


Constituent: Sulfate, total Analysis Run 1/26/2024 11:46 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 1/26/2024 11:46 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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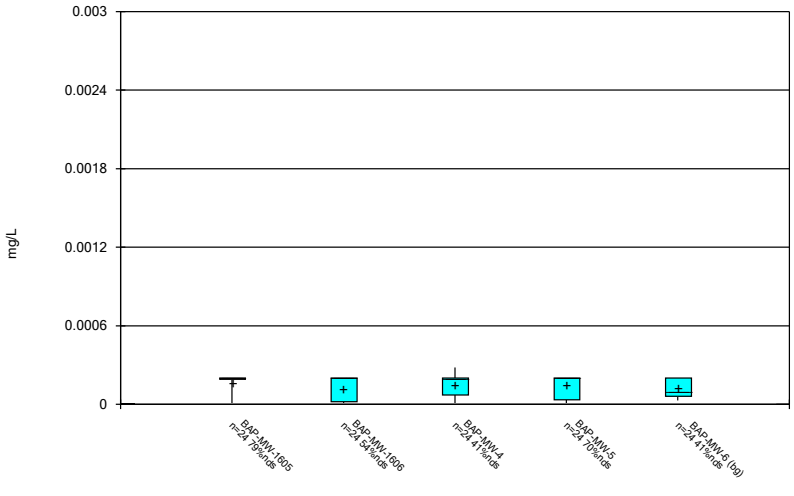
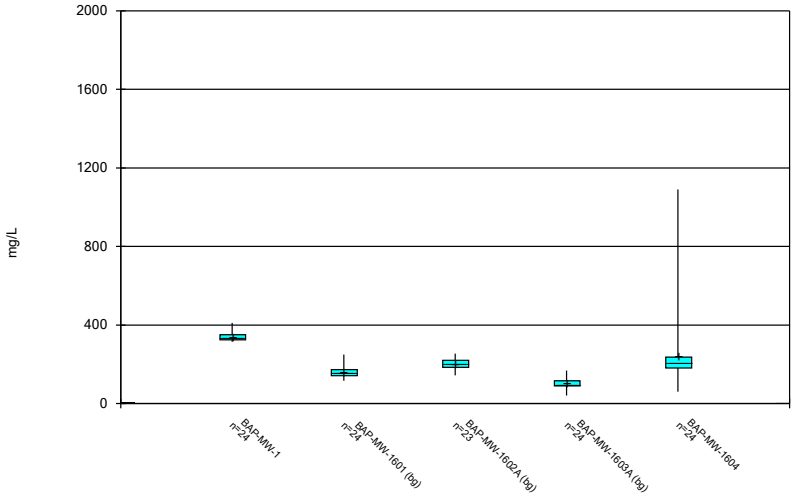
Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 1/26/2024 11:46 AM

Amos BAP Client: Geosyntec Data: Amos BAP

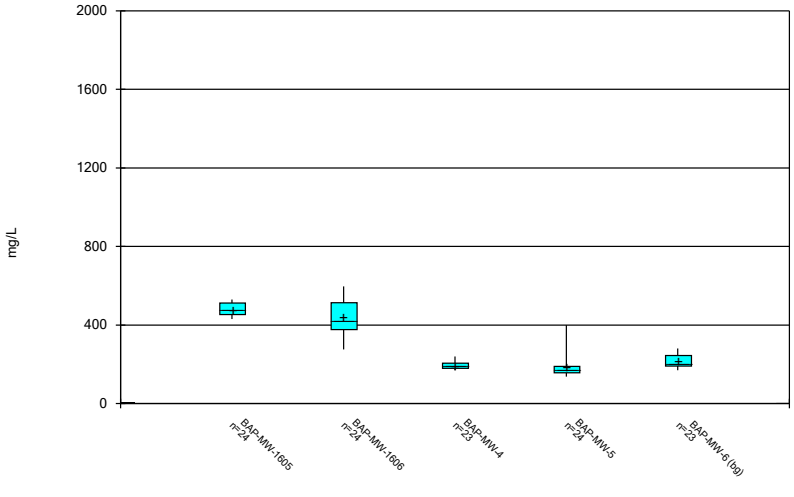
Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 1/26/2024 11:46 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 1/26/2024 11:46 AM
Amos BAP Client: Geosyntec Data: Amos BAP

FIGURE C

Outlier Summary and Tukey's Outlier Test

Outlier Summary

Amos BAP Client: Geosyntec Data: Amos BAP Printed 1/26/2024, 11:49 AM

	BAP-MW-1604 Beryllium, total (mg/L)	BAP-MW-1604 Boron, total (mg/L)	BAP-MW-1605 Boron, total (mg/L)	BAP-MW-1606 Boron, total (mg/L)	BAP-MW-4 Boron, total (mg/L)	BAP-MW-5 Boron, total (mg/L)	BAP-MW-1603A Chromium, total (mg/L)	BAP-MW-1601 Combined Radium 226 + 228 (pCi/L)	BAP-MW-1602A Combined Radium 226 + 228 (pCi/L)	BAP-MW-6 Combined Radium 226 + 228 (pCi/L)
7/25/2016										
7/26/2016								7.914 (o)		
8/23/2016										
10/18/2016										
12/12/2016										
12/13/2016							0.00327 (o)			
2/7/2017								35.021 (o)		
2/8/2017								6.853 (o)	20.83 (o)	
1/8/2018										
3/14/2019			<1 (o)							
3/15/2019		<1 (o)		<1 (o)	<1 (o)	<0.1 (o)				
6/10/2019	0.000142 (o)									
6/11/2019										

	BAP-MW-4 Fluoride, total (mg/L)	BAP-MW-5 Fluoride, total (mg/L)	BAP-MW-4 Molybdenum, total (mg/L)	BAP-MW-1 pH, field (SU)	BAP-MW-1602A pH, field (SU)	BAP-MW-1603A pH, field (SU)	BAP-MW-1604 pH, field (SU)	BAP-MW-1606 pH, field (SU)	BAP-MW-6 pH, field (SU)	BAP-MW-1605 Total Dissolved Solids [TDS] (mg/L)
7/25/2016			0.0111 (o)							
7/26/2016										
8/23/2016			0.0192 (o)							
10/18/2016	<0.2 (o)	<0.2 (o)								
12/12/2016										920 (o)
12/13/2016										
2/7/2017										
2/8/2017										
1/8/2018								8.4 (o)		
3/14/2019										
3/15/2019										
6/10/2019				10.19 (o)			8.65 (o)		9.32 (o)	
6/11/2019					9.51 (o)	8.82 (o)				

Outlier Summary

Amos BAP Client: Geosyntec Data: Amos BAP Printed 1/26/2024, 11:49 AM

	BAP-MW-4 Total Dissolved Solids [TDS] (mg/L)
7/25/2016	
7/26/2016	
8/23/2016	
10/18/2016	
12/12/2016	348 (o)
12/13/2016	
2/7/2017	
2/8/2017	
1/8/2018	
3/14/2019	
3/15/2019	
6/10/2019	
6/11/2019	

Tukey's Outlier Test - Upgradient Wells - Significant Results

Amos BAP Client: Geosyntec Data: Amos BAP Printed 1/26/2024, 11:51 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Arsenic, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.078,0.0776,0.0783,0.0783,0.0834,0.0813,0.08,0.0**	**NP**	**NaN**	**100**	**0.03614**	**0.02915**	**x^5**	**ChiSquared**
Barium, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.303**	**NP**	**NaN**	**100**	**0.1896**	**0.05152**	**x^6**	**ChiSquared**
Chromium, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.00135,0.00142,0.00142,0.0017,0.00146,0.00224,0.**	**NP**	**NaN**	**100**	**0.0007436**	**0.0005256**	**x^6**	**ChiSquared**
Cobalt, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.0136,0.0124,0.0124,0.011,0.0123,0.012,0.0131,0.**	**NP**	**NaN**	**100**	**0.004363**	**0.004429**	**x^5**	**ChiSquared**
Combined Radium 226 + 228 (pCi/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**35.02,2.682,7.914,2.65,6.853,2.45,20.83,2.62,2.88**	**NP**	**NaN**	**104**	**1.789**	**3.953**	**x^3**	**ChiSquared**
Fluoride, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.29,0.29,0.28,0.28,0.28,0.28,0.28,0.27,0.31,0.3**	**NP**	**NaN**	**106**	**0.1218**	**0.08663**	**x^6**	**ChiSquared**
Lithium, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.007,0.007,0.009,0.01,0.02,0.015,0.015,0.015,0.0**	**NP**	**NaN**	**100**	**0.003998**	**0.00496**	**x^6**	**ChiSquared**

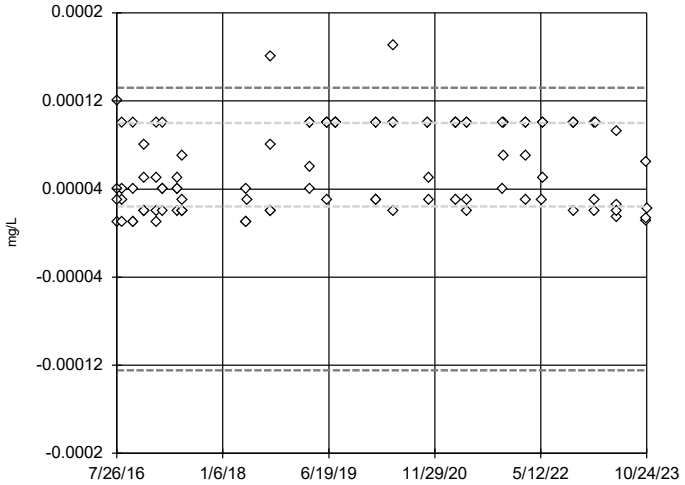
Tukey's Outlier Test - Upgradient Wells - All Results

Amos BAP Client: Geosyntec Data: Amos BAP Printed 1/26/2024, 11:51 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony, total (mg/L)	BAP-MW-1601,BAP-M...	n/a	n/a	NP	NaN	100	0.00006014	0.00003884	unknown	ChiSquared
Arsenic, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.078,0.0776,0.0783,0.0783,0.0834,0.0813,0.08,0.0**	**NP**	**NaN**	**100**	**0.03614**	**0.02915**	**x^5**	**ChiSquared**
Barium, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.303**	**NP**	**NaN**	**100**	**0.1896**	**0.05152**	**x^6**	**ChiSquared**
Beryllium, total (mg/L)	BAP-MW-1601,BAP-M...	n/a	n/a	NP	NaN	100	0.00003629	0.00002163	unknown	ChiSquared
Boron, total (mg/L)	BAP-MW-1601,BAP-M...	No	n/a	NP	NaN	92	0.04465	0.03293	x^(1/3)	ShapiroFrancia
Cadmium, total (mg/L)	BAP-MW-1601,BAP-M...	n/a	n/a	NP	NaN	100	0.00001634	0.000005783	unknown	ChiSquared
Calcium, total (mg/L)	BAP-MW-1601,BAP-M...	No	n/a	NP	NaN	92	14.36	3.216	ln(x)	ShapiroFrancia
Chloride, total (mg/L)	BAP-MW-1601,BAP-M...	No	n/a	NP	NaN	94	17.44	14	ln(x)	ShapiroFrancia
Chromium, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.00135,0.00142,0.00142,0.0017,0.00146,0.00224,0.**	**NP**	**NaN**	**100**	**0.0007436**	**0.0005256**	**x^6**	**ChiSquared**
Cobalt, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.0136,0.0124,0.0124,0.011,0.0123,0.012,0.0131,0.**	**NP**	**NaN**	**100**	**0.004363**	**0.004429**	**x^5**	**ChiSquared**
Combined Radium 226 + 228 (pCi/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**35.02,2.682,7.914,2.65,6.853,2.45,20.83,2.62,2.88**	**NP**	**NaN**	**104**	**1.789**	**3.953**	**x^3**	**ChiSquared**
Fluoride, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.29,0.29,0.28,0.28,0.28,0.28,0.28,0.27,0.31,0.3**	**NP**	**NaN**	**106**	**0.1218**	**0.08663**	**x^6**	**ChiSquared**
Lead, total (mg/L)	BAP-MW-1601,BAP-M...	n/a	n/a	NP	NaN	100	0.0008519	0.00136	unknown	ChiSquared
Lithium, total (mg/L)	**BAP-MW-1601,BAP-M...**	**Yes**	**0.007,0.007,0.009,0.01,0.02,0.015,0.015,0.015,0.0**	**NP**	**NaN**	**100**	**0.003998**	**0.00496**	**x^6**	**ChiSquared**
Mercury, total (mg/L)	BAP-MW-1601,BAP-M...	n/a	n/a	NP	NaN	60	0.0000048177	0.e-7	unknown	ShapiroFrancia
Molybdenum, total (mg/L)	BAP-MW-1601,BAP-M...	n/a	n/a	NP	NaN	100	0.0007718	0.000574	unknown	ChiSquared
Selenium, total (mg/L)	BAP-MW-1601,BAP-M...	n/a	n/a	NP	NaN	100	0.0002323	0.0001818	unknown	ChiSquared
Sulfate, total (mg/L)	BAP-MW-1601,BAP-M...	No	n/a	NP	NaN	94	16.4	19.92	ln(x)	ShapiroFrancia
Thallium, total (mg/L)	BAP-MW-1601,BAP-M...	No	n/a	NP	NaN	96	0.0001356	0.000082	x^(1/3)	ShapiroFrancia
Total Dissolved Solids [TDS] (mg/L)	BAP-MW-1601,BAP-M...	No	n/a	NP	NaN	94	169.6	51.71	normal	ShapiroFrancia

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

No outliers found.
Tukey's method selected by user.

Data were x^5 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Antimony, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

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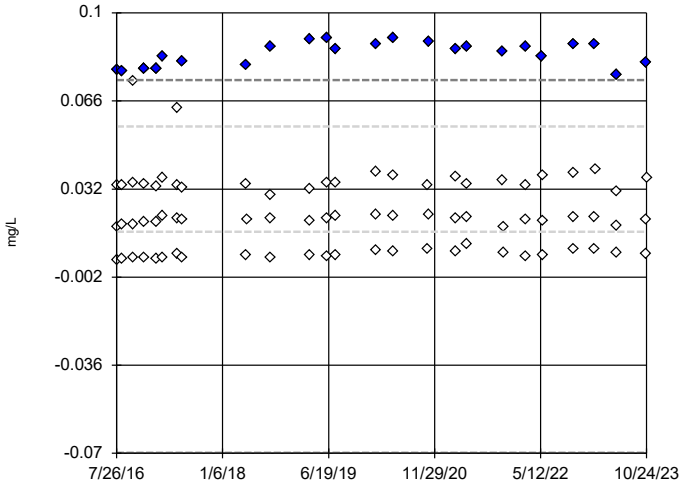
Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

Outliers are drawn as solid.
Tukey's method selected by user.

Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.07401, low cutoff = -0.06985, based on IQR multiplier of 3.

Constituent: Arsenic, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

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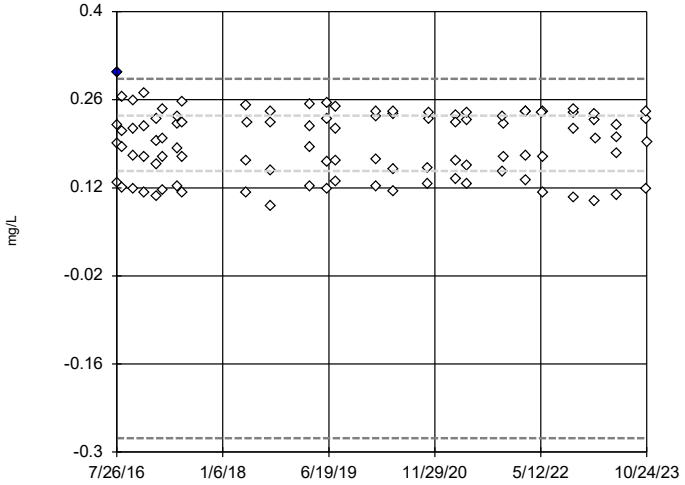
Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

Outlier is drawn as solid.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2932, low cutoff = -0.2778, based on IQR multiplier of 3.

Constituent: Barium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

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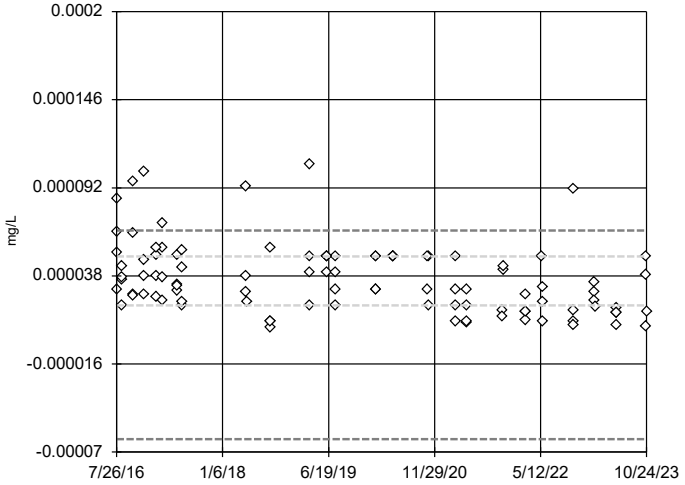
Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

No outliers found.
Tukey's method selected by user.

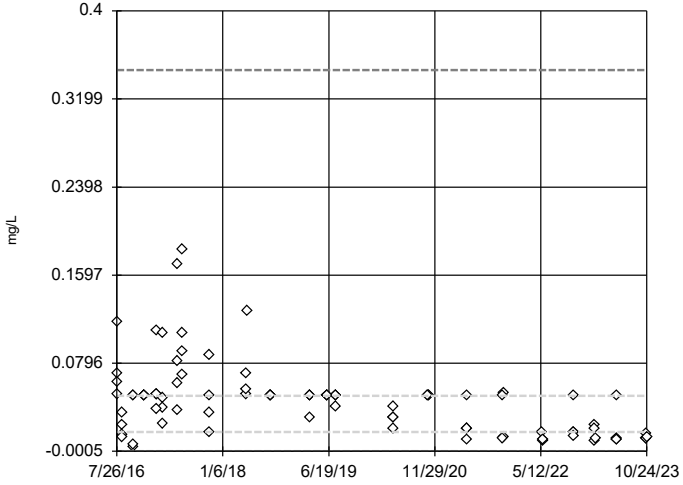
Data were x^5 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Beryllium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 92

No outliers found. Tukey's method selected by user.

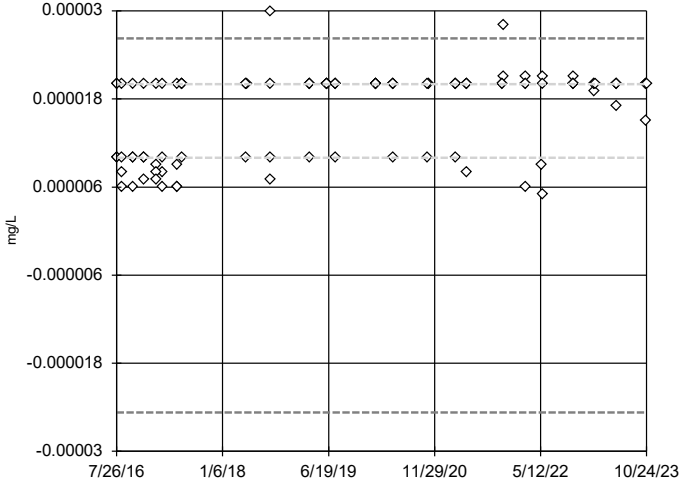
Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3463, low cutoff = -0.0004512, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

No outliers found. Tukey's method selected by user.

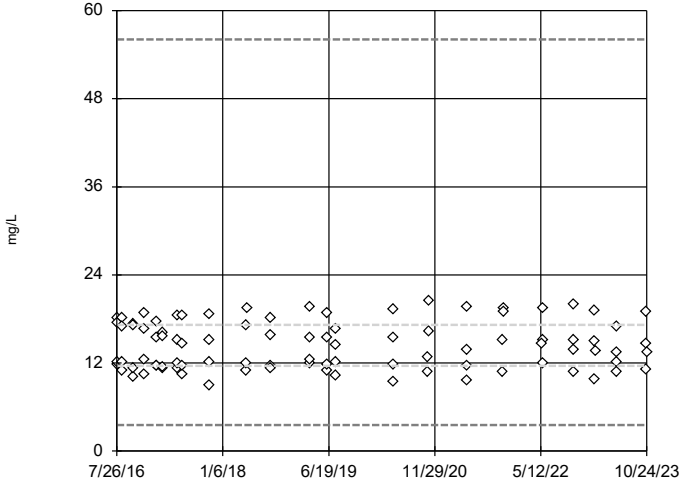
Data were x^5 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Cadmium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 92

No outliers found. Tukey's method selected by user.

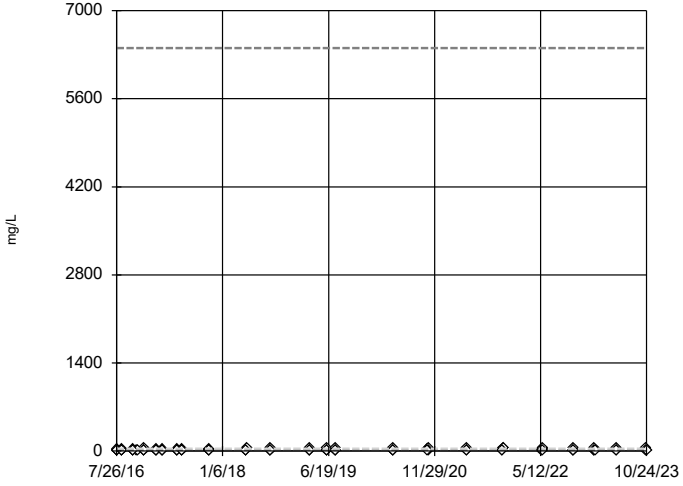
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 56.07, low cutoff = 3.558, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 94

No outliers found. Tukey's method selected by user.

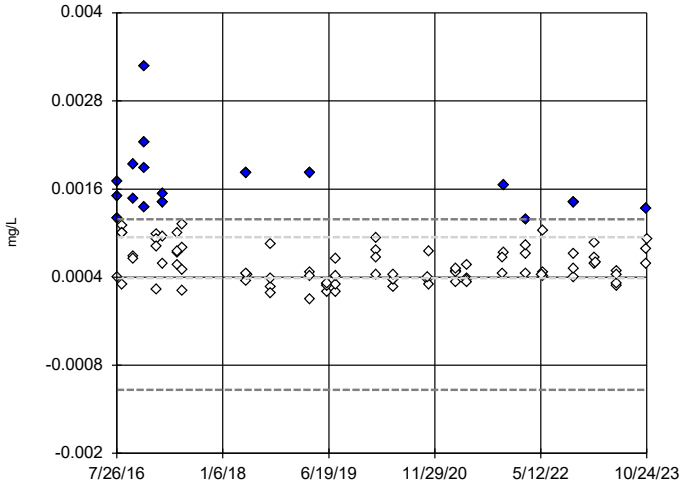
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 6403, low cutoff = 0.03897, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

Outliers are drawn as solid.
Tukey's method selected by user.

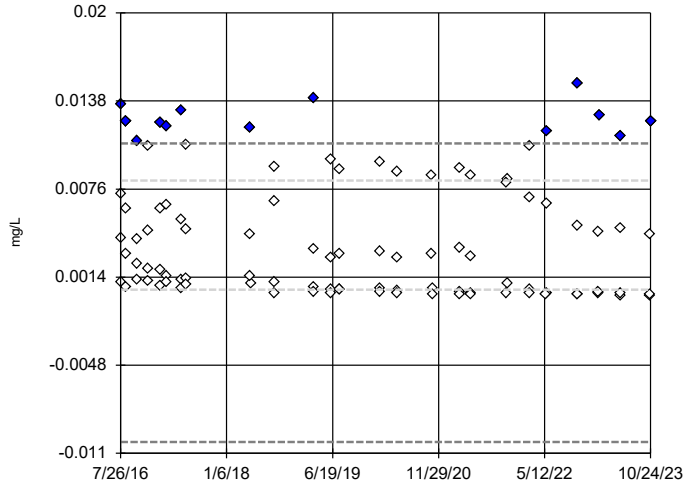
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.001189, low cutoff = -0.001133, based on IQR multiplier of 3.

Constituent: Chromium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

Outliers are drawn as solid.
Tukey's method selected by user.

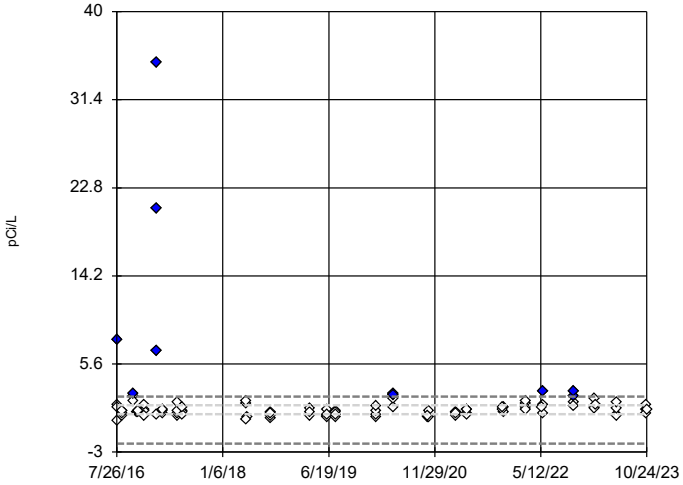
Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01081, low cutoff = -0.0102, based on IQR multiplier of 3.

Constituent: Cobalt, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 104

Outliers are drawn as solid.
Tukey's method selected by user.

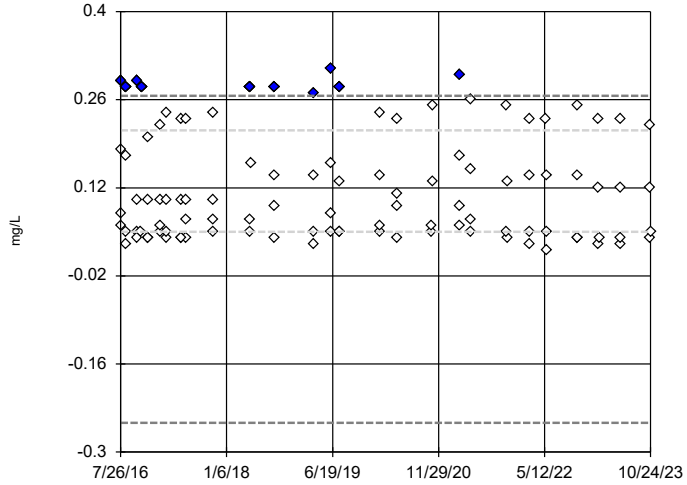
Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.425, low cutoff = -2.159, based on IQR multiplier of 3.

Constituent: Combined Radium 226 + 228 Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 106

Outliers are drawn as solid.
Tukey's method selected by user.

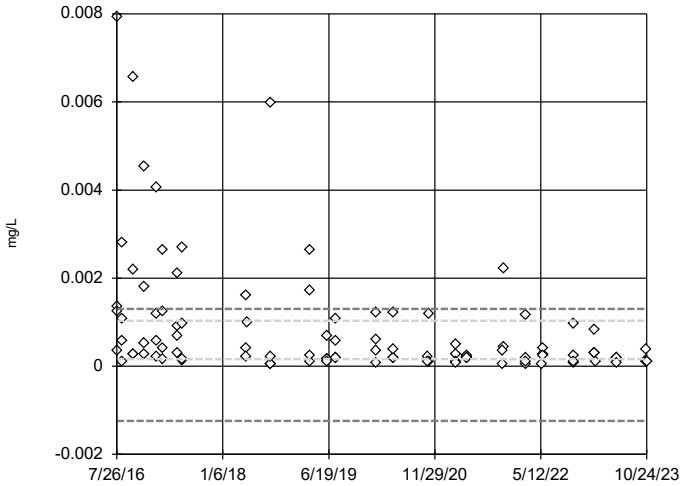
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2661, low cutoff = -0.2536, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

No outliers found.
Tukey's method selected by user.

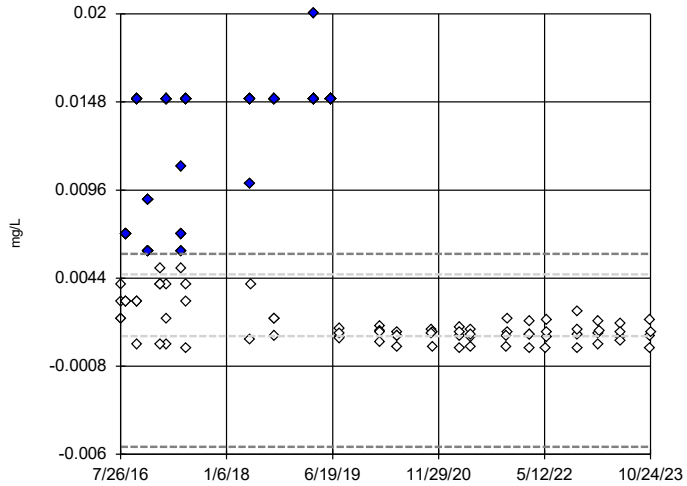
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Lead, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

Outliers are drawn as solid.
Tukey's method selected by user.

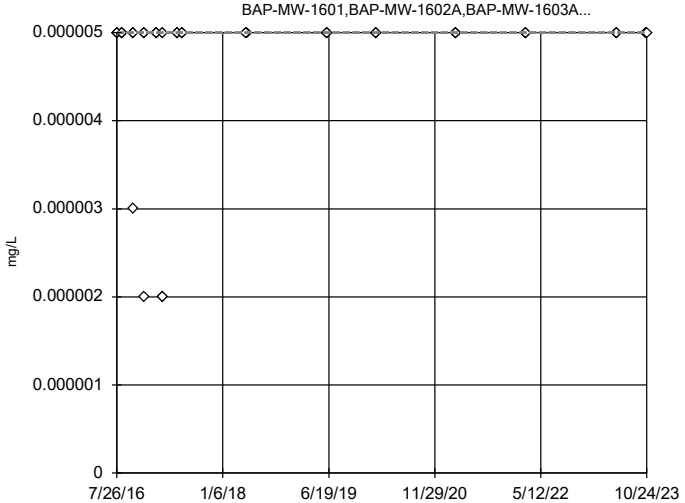
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.005834, low cutoff = -0.005561, based on IQR multiplier of 3.

Constituent: Lithium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 60

No outliers found.
Tukey's method selected by user.

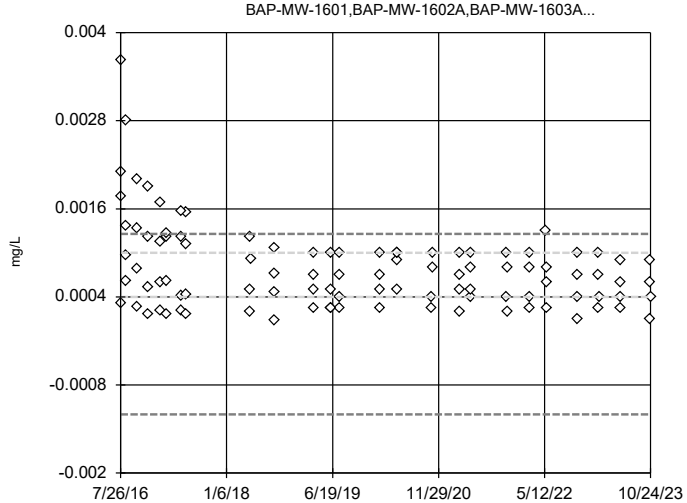
Data were square transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

No outliers found.
Tukey's method selected by user.

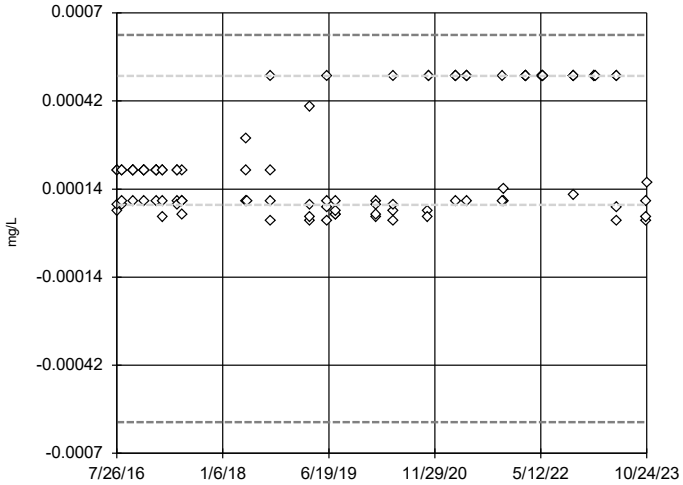
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Molybdenum, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 100

No outliers found. Tukey's method selected by user.

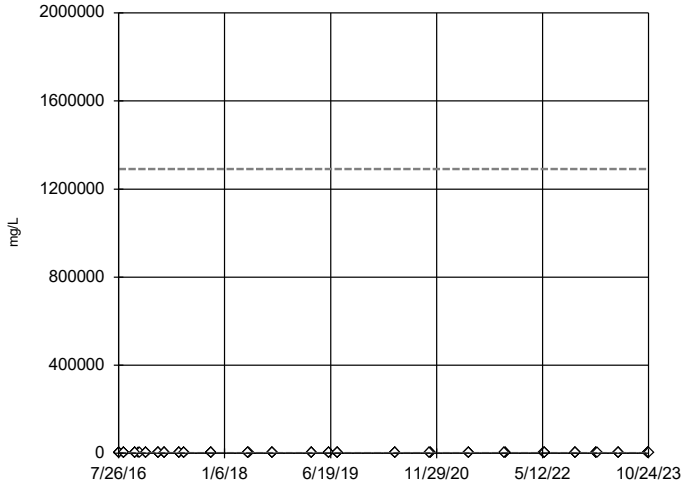
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Selenium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 94

No outliers found. Tukey's method selected by user.

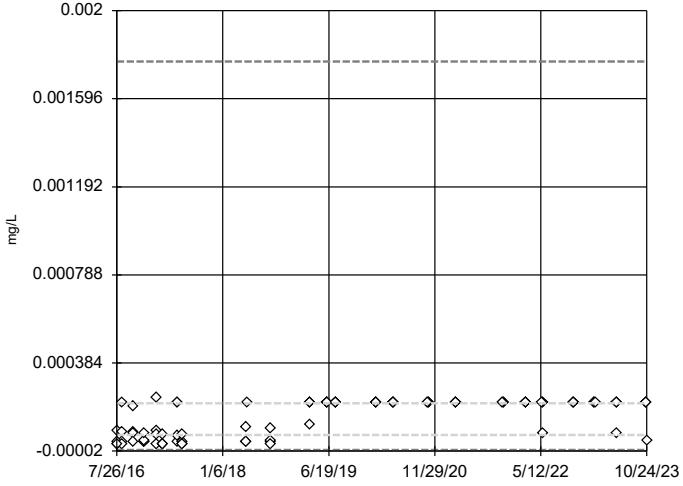
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1290669, low cutoff = 0.00001299, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 96

No outliers found. Tukey's method selected by user.

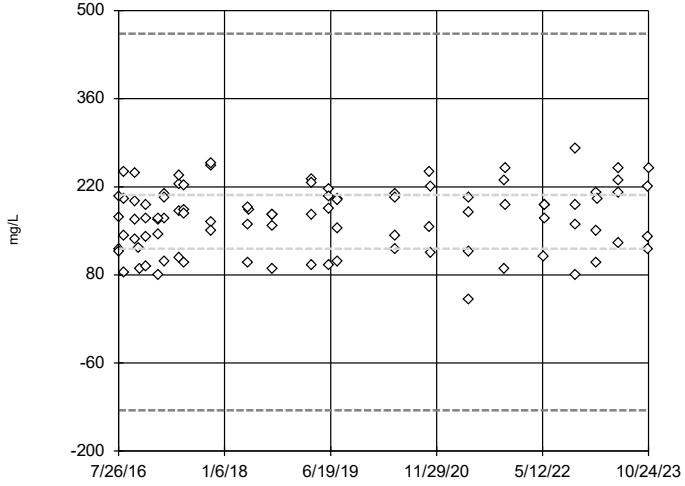
Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.001766, low cutoff = -0.00001511, based on IQR multiplier of 3.

Constituent: Thallium, total Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

Tukey's Outlier Screening, Pooled Background

BAP-MW-1601,BAP-MW-1602A,BAP-MW-1603A...



n = 94

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 463.5, low cutoff = -135, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/26/2024 11:50 AM View: Outliers - Upgradient
Amos BAP Client: Geosyntec Data: Amos BAP

FIGURE D

Intrawell PLs

Intrawell Prediction Limits - All Results

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:30 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Fluoride, total (mg/L)	BAP-MW-1	0.06	n/a	n/a	1 future	n/a	22	n/a	n/a	22.73	n/a	n/a	0.003707	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	BAP-MW-1601	0.06104	n/a	n/a	1 future	n/a	23	0.002091	0.0007914	4.348	None	x^2	0.001254	Param Intra 1 of 2
Fluoride, total (mg/L)	BAP-MW-1602A	0.187	n/a	n/a	1 future	n/a	22	0.1314	0.02678	0	None	No	0.001254	Param Intra 1 of 2
Fluoride, total (mg/L)	BAP-MW-1603A	0.3175	n/a	n/a	1 future	n/a	23	0.257	0.0293	0	None	No	0.001254	Param Intra 1 of 2
Fluoride, total (mg/L)	BAP-MW-1604	0.1604	n/a	n/a	1 future	n/a	23	0.2886	0.05417	0	None	sqrt(x)	0.001254	Param Intra 1 of 2
Fluoride, total (mg/L)	BAP-MW-1605	0.09	n/a	n/a	1 future	n/a	23	n/a	n/a	34.78	n/a	n/a	0.003415	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	BAP-MW-1606	0.06	n/a	n/a	1 future	n/a	22	n/a	n/a	54.55	n/a	n/a	0.003707	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	BAP-MW-4	0.07	n/a	n/a	1 future	n/a	22	n/a	n/a	0	n/a	n/a	0.003707	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	BAP-MW-5	0.05	n/a	n/a	1 future	n/a	22	n/a	n/a	0	n/a	n/a	0.003707	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	BAP-MW-6	0.09772	n/a	n/a	1 future	n/a	22	0.06091	0.0177	0	None	No	0.001254	Param Intra 1 of 2
pH, field (SU)	BAP-MW-1	7.31	4.82	n/a	1 future	n/a	23	n/a	n/a	0	n/a	n/a	0.006831	NP Intra (normality) 1 of 2
pH, field (SU)	BAP-MW-1601	7.76	5.54	n/a	1 future	n/a	23	n/a	n/a	0	n/a	n/a	0.006831	NP Intra (normality) 1 of 2
pH, field (SU)	BAP-MW-1602A	7.076	6.051	n/a	1 future	n/a	22	6.564	0.2466	0	None	No	0.0006268	Param Intra 1 of 2
pH, field (SU)	BAP-MW-1603A	7.249	6.31	n/a	1 future	n/a	22	6.78	0.2257	0	None	No	0.0006268	Param Intra 1 of 2
pH, field (SU)	BAP-MW-1604	7.2	5.91	n/a	1 future	n/a	22	n/a	n/a	0	n/a	n/a	0.007415	NP Intra (normality) 1 of 2
pH, field (SU)	BAP-MW-1605	6.35	5.098	n/a	1 future	n/a	24	5.724	0.3052	0	None	No	0.0006268	Param Intra 1 of 2
pH, field (SU)	BAP-MW-1606	6.81	5.19	n/a	1 future	n/a	22	n/a	n/a	0	n/a	n/a	0.007415	NP Intra (normality) 1 of 2
pH, field (SU)	BAP-MW-4	7	5.28	n/a	1 future	n/a	23	n/a	n/a	0	n/a	n/a	0.006831	NP Intra (normality) 1 of 2
pH, field (SU)	BAP-MW-5	6.322	5.226	n/a	1 future	n/a	23	1.792	0.02752	0	None	x^(1/3)	0.0006268	Param Intra 1 of 2
pH, field (SU)	BAP-MW-6	6.857	5.312	n/a	1 future	n/a	22	6.085	0.3716	0	None	No	0.0006268	Param Intra 1 of 2

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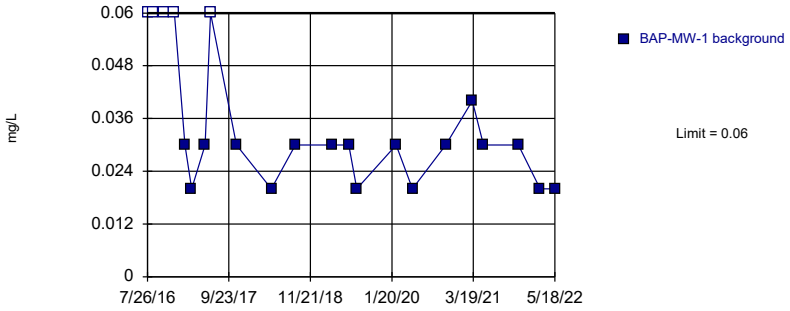
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, BAP-MW-1



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. 22.73% NDs. Well-constituent pair annual alpha = 0.007401. Individual comparison alpha = 0.003707 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:28 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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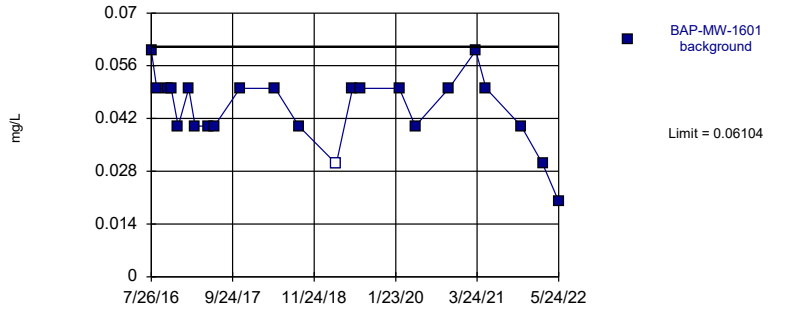
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, BAP-MW-1601 (bg)



Background Data Summary (based on square transformation): Mean=0.002091, Std. Dev.=0.0007914, n=23, 4.348% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8844, critical = 0.881. Kappa = 2.065 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:28 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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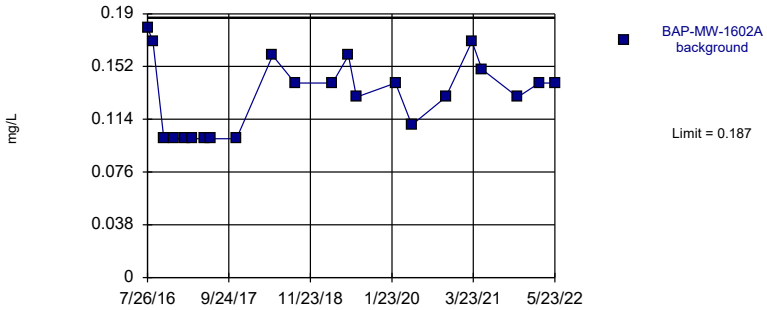
Prediction Limit

Intrawell Parametric, BAP-MW-1602A (bg)



Background Data Summary: Mean=0.1314, Std. Dev.=0.02678, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8895, critical = 0.878. Kappa = 2.079 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:28 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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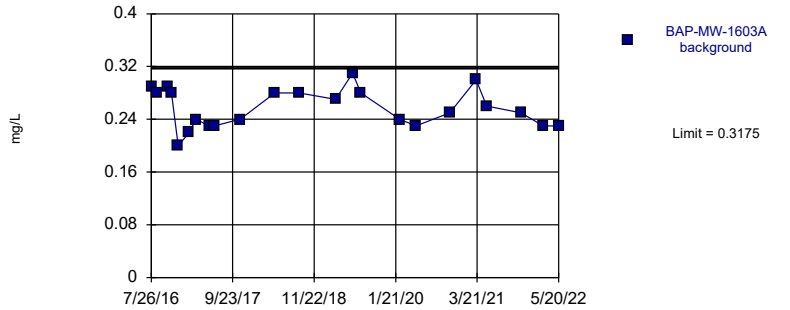
Prediction Limit

Intrawell Parametric, BAP-MW-1603A (bg)

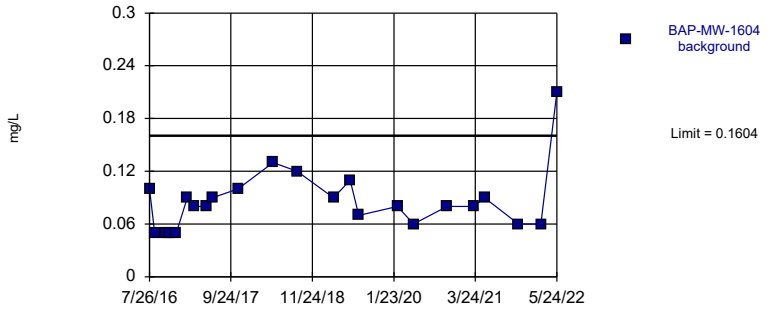


Background Data Summary: Mean=0.257, Std. Dev.=0.0293, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.881. Kappa = 2.065 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Parametric, BAP-MW-1604



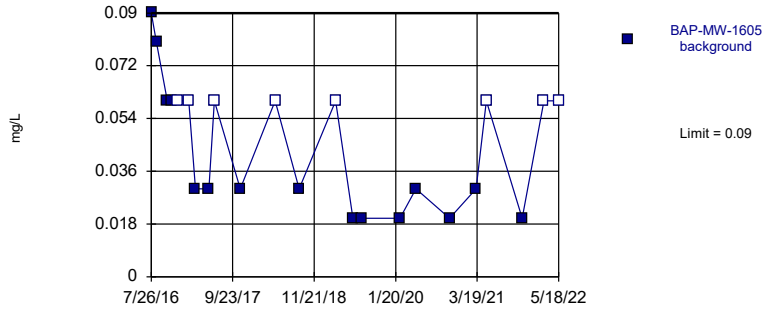
Background Data Summary (based on square root transformation): Mean=0.2886, Std. Dev.=0.05417, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8862, critical = 0.881. Kappa = 2.065 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, BAP-MW-1605



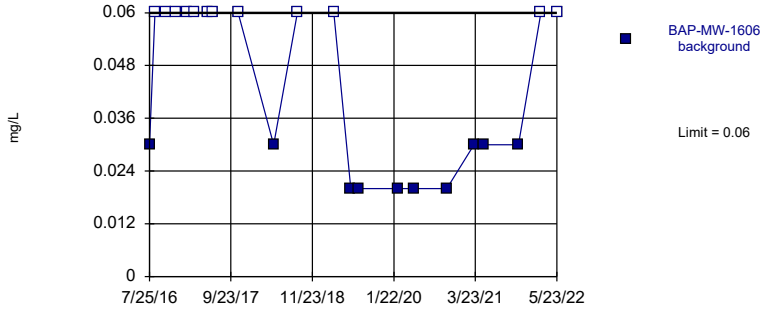
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 23 background values. 34.78% NDs. Well-constituent pair annual alpha = 0.006819. Individual comparison alpha = 0.003415 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, BAP-MW-1606

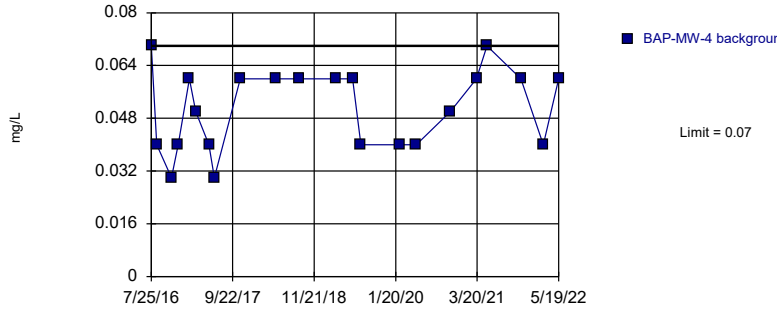


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 22 background values. 54.55% NDs. Well-constituent pair annual alpha = 0.007401. Individual comparison alpha = 0.003707 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Non-parametric, BAP-MW-4

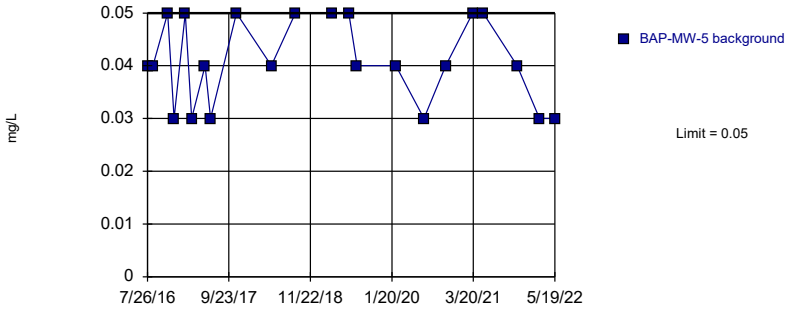


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. Well-constituent pair annual alpha = 0.007401. Individual comparison alpha = 0.003707 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Non-parametric, BAP-MW-5

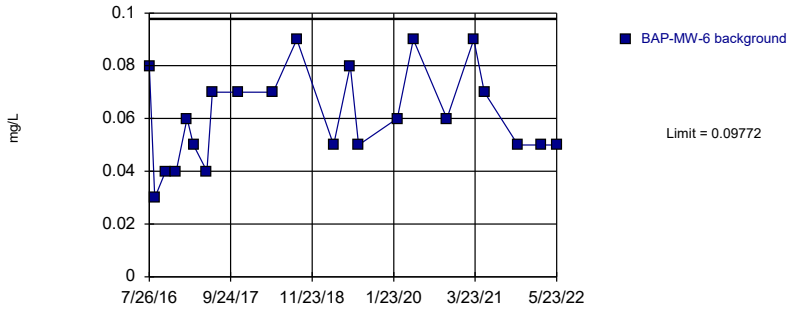


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. Well-constituent pair annual alpha = 0.007401. Individual comparison alpha = 0.003707 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Parametric, BAP-MW-6 (bg)

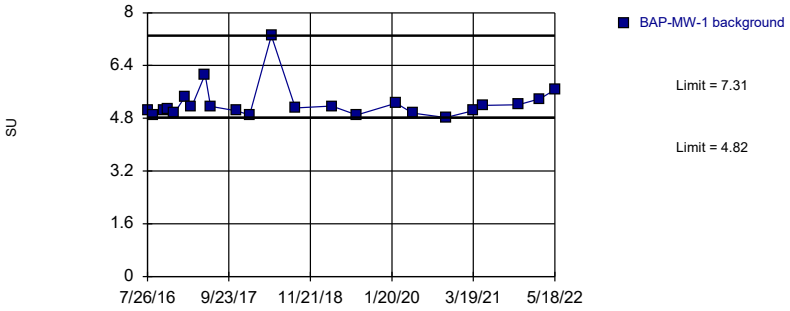


Background Data Summary: Mean=0.06091, Std. Dev.=0.0177, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9371, critical = 0.878. Kappa = 2.079 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Non-parametric, BAP-MW-1

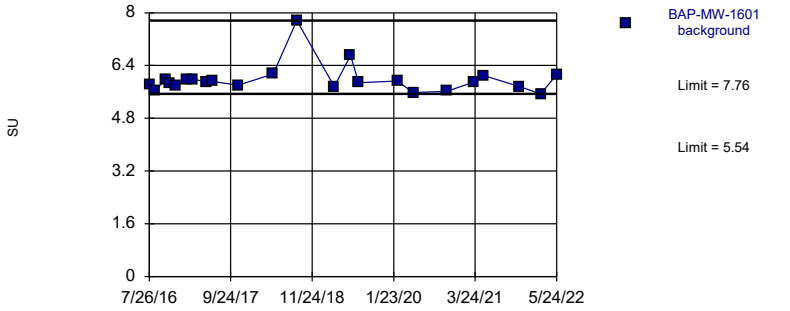


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 23 background values. Well-constituent pair annual alpha = 0.01364. Individual comparison alpha = 0.006831 (1 of 2). Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Non-parametric, BAP-MW-1601 (bg)

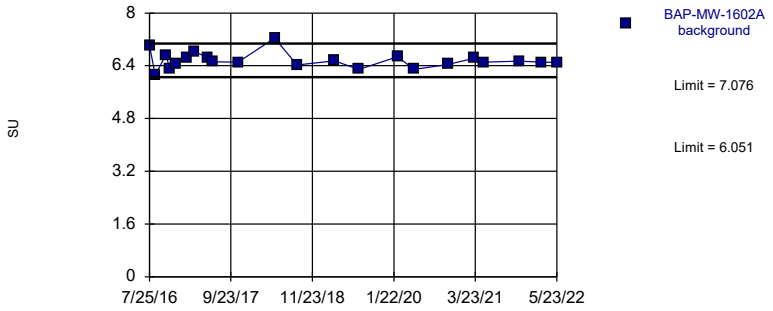


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 23 background values. Well-constituent pair annual alpha = 0.01364. Individual comparison alpha = 0.006831 (1 of 2). Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Parametric, BAP-MW-1602A (bg)



Background Data Summary: Mean=6.564, Std. Dev.=0.2466, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9321, critical = 0.878. Kappa = 2.079 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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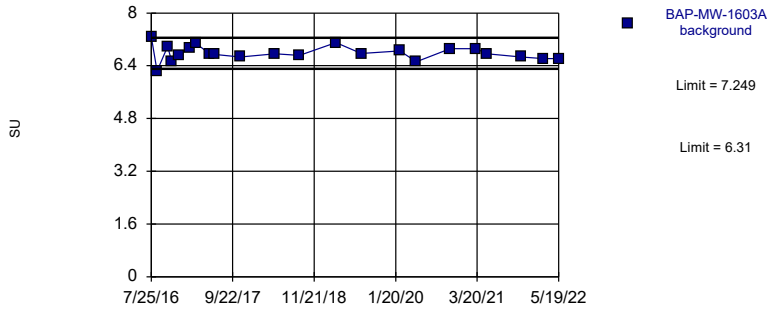
Prediction Limit

Intrawell Parametric, BAP-MW-1603A (bg)



Background Data Summary: Mean=6.78, Std. Dev.=0.2257, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9758, critical = 0.878. Kappa = 2.079 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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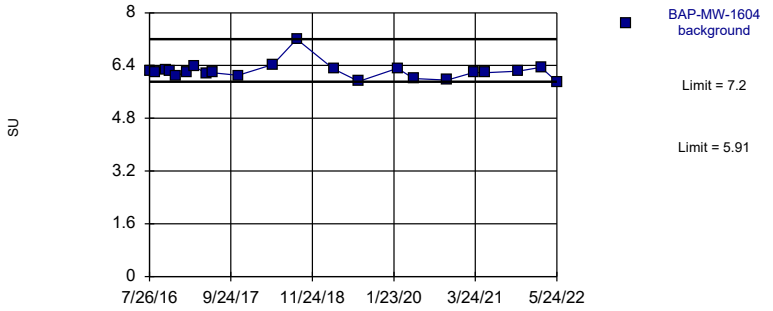
Prediction Limit

Intrawell Non-parametric, BAP-MW-1604



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 22 background values. Well-constituent pair annual alpha = 0.0148. Individual comparison alpha = 0.007415 (1 of 2). Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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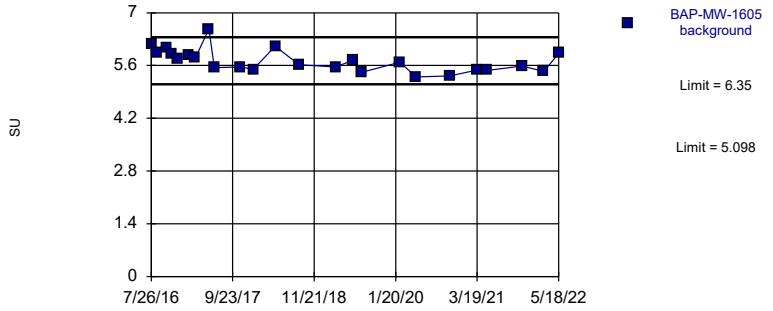
Prediction Limit

Intrawell Parametric, BAP-MW-1605

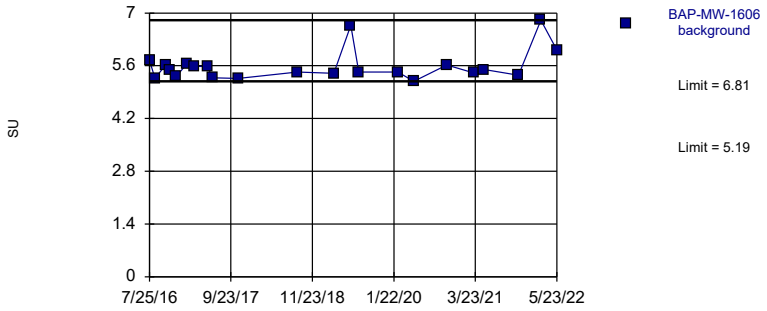


Background Data Summary: Mean=5.724, Std. Dev.=0.3052, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9374, critical = 0.884. Kappa = 2.051 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Intrawell Non-parametric, BAP-MW-1606



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 22 background values. Well-constituent pair annual alpha = 0.0148. Individual comparison alpha = 0.007415 (1 of 2). Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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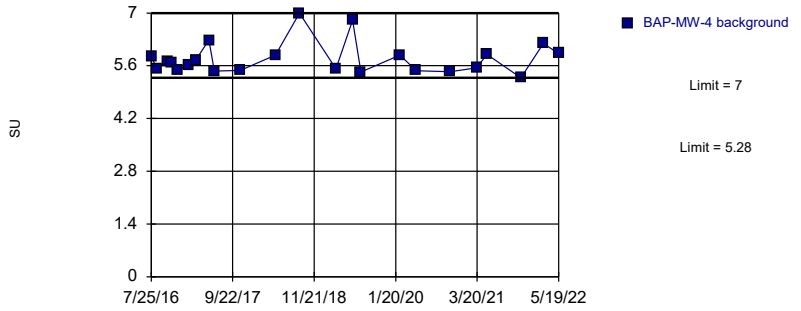
Prediction Limit

Intrawell Non-parametric, BAP-MW-4



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 23 background values. Well-constituent pair annual alpha = 0.01364. Individual comparison alpha = 0.006831 (1 of 2). Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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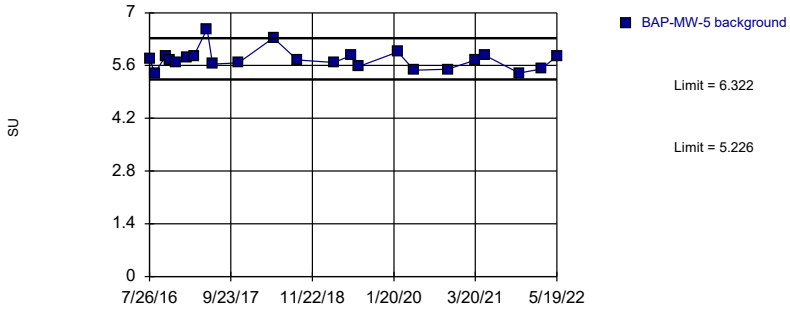
Prediction Limit

Intrawell Parametric, BAP-MW-5



Background Data Summary (based on cube root transformation): Mean=1.792, Std. Dev.=0.02752, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8839, critical = 0.881. Kappa = 2.065 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

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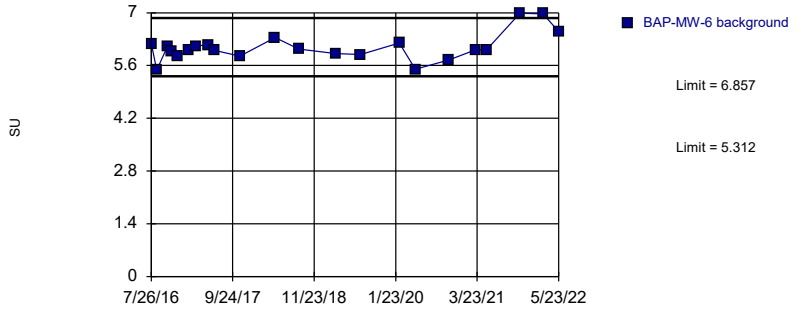
Prediction Limit

Intrawell Parametric, BAP-MW-6 (bg)



Background Data Summary: Mean=6.085, Std. Dev.=0.3716, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8884, critical = 0.878. Kappa = 2.079 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254. Assumes 1 future value.

Constituent: pH, field Analysis Run 2/1/2024 9:29 AM View: Intrawell
Amos BAP Client: Geosyntec Data: Amos BAP

FIGURE E
Upgradient Trend Tests

Trend Tests - Upgradient Wells - Significant Results

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:26 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Boron, total (mg/L)	**BAP-MW-1601 (bg)**	**-0.007528**	**-104**	**-98**	**Yes**	**23**	**34.78**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	**BAP-MW-1603A (bg)**	**-0.004261**	**-112**	**-98**	**Yes**	**23**	**30.43**	**n/a**	**0.01**	**NP**
Calcium, total (mg/L)	**BAP-MW-1603A (bg)**	**-0.3236**	**-136**	**-98**	**Yes**	**23**	**0**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**BAP-MW-1601 (bg)**	**2.267**	**199**	**105**	**Yes**	**24**	**0**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**BAP-MW-1602A (bg)**	**0.4316**	**124**	**98**	**Yes**	**23**	**0**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**BAP-MW-1603A (bg)**	**0.2619**	**192**	**105**	**Yes**	**24**	**0**	**n/a**	**0.01**	**NP**

Trend Tests - Upgradient Wells - All Results

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:26 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Boron, total (mg/L)	**BAP-MW-1601 (bg)**	**-0.007528**	**-104**	**-98**	**Yes**	**23**	**34.78**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	BAP-MW-1602A (bg)	-0.005249	-86	-98	No	23	26.09	n/a	0.01	NP
Boron, total (mg/L)	**BAP-MW-1603A (bg)**	**-0.004261**	**-112**	**-98**	**Yes**	**23**	**30.43**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	BAP-MW-6 (bg)	-0.005141	-88	-98	No	23	26.09	n/a	0.01	NP
Calcium, total (mg/L)	BAP-MW-1601 (bg)	-0.02961	-14	-98	No	23	0	n/a	0.01	NP
Calcium, total (mg/L)	BAP-MW-1602A (bg)	0.2043	87	98	No	23	0	n/a	0.01	NP
Calcium, total (mg/L)	**BAP-MW-1603A (bg)**	**-0.3236**	**-136**	**-98**	**Yes**	**23**	**0**	**n/a**	**0.01**	**NP**
Calcium, total (mg/L)	BAP-MW-6 (bg)	0.09217	47	98	No	23	0	n/a	0.01	NP
Chloride, total (mg/L)	**BAP-MW-1601 (bg)**	**2.267**	**199**	**105**	**Yes**	**24**	**0**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**BAP-MW-1602A (bg)**	**0.4316**	**124**	**98**	**Yes**	**23**	**0**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**BAP-MW-1603A (bg)**	**0.2619**	**192**	**105**	**Yes**	**24**	**0**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	BAP-MW-6 (bg)	0.2236	74	98	No	23	0	n/a	0.01	NP
Sulfate, total (mg/L)	BAP-MW-1601 (bg)	-0.4172	-24	-105	No	24	0	n/a	0.01	NP
Sulfate, total (mg/L)	BAP-MW-1602A (bg)	0.4237	52	98	No	23	0	n/a	0.01	NP
Sulfate, total (mg/L)	BAP-MW-1603A (bg)	0	-16	-105	No	24	87.5	n/a	0.01	NP
Sulfate, total (mg/L)	BAP-MW-6 (bg)	-0.05376	-22	-98	No	23	0	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BAP-MW-1601 (bg)	3.44	49	105	No	24	0	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BAP-MW-1602A (bg)	2.877	46	98	No	23	0	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BAP-MW-1603A (bg)	1.046	19	105	No	24	0	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BAP-MW-6 (bg)	2.513	44	98	No	23	0	n/a	0.01	NP

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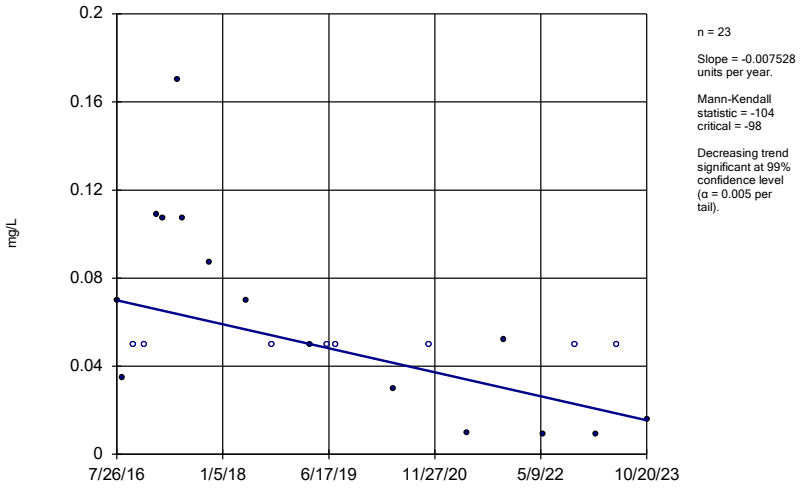
Hollow symbols indicate censored values.

Sen's Slope Estimator

BAP-MW-1601 (bg)



n = 23

Slope = -0.007528 units per year.

Mann-Kendall statistic = -104
critical = -98

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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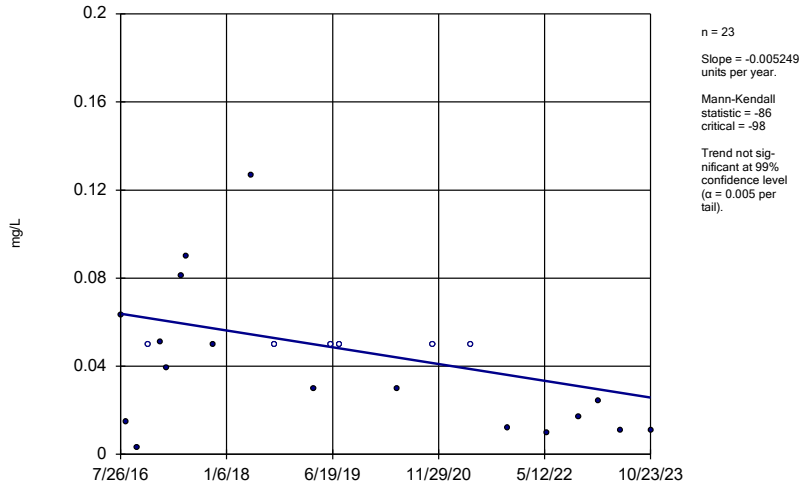
Sen's Slope Estimator

BAP-MW-1602A (bg)



n = 23

Slope = -0.005249 units per year.

Mann-Kendall statistic = -86
critical = -98

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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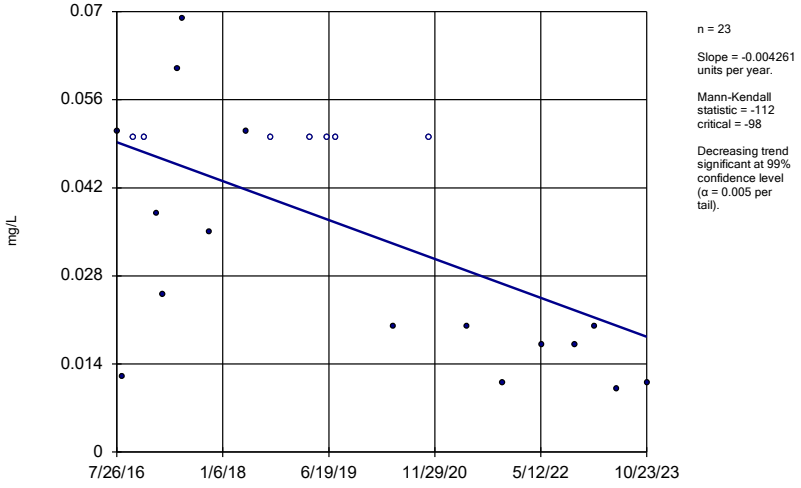
Hollow symbols indicate censored values.

Sen's Slope Estimator

BAP-MW-1603A (bg)



n = 23

Slope = -0.004261 units per year.

Mann-Kendall statistic = -112
critical = -98

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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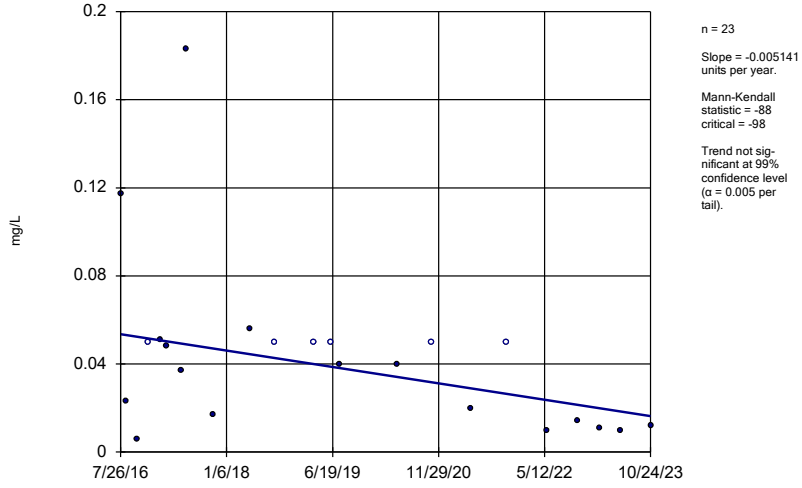
Hollow symbols indicate censored values.

Sen's Slope Estimator

BAP-MW-6 (bg)



n = 23

Slope = -0.005141 units per year.

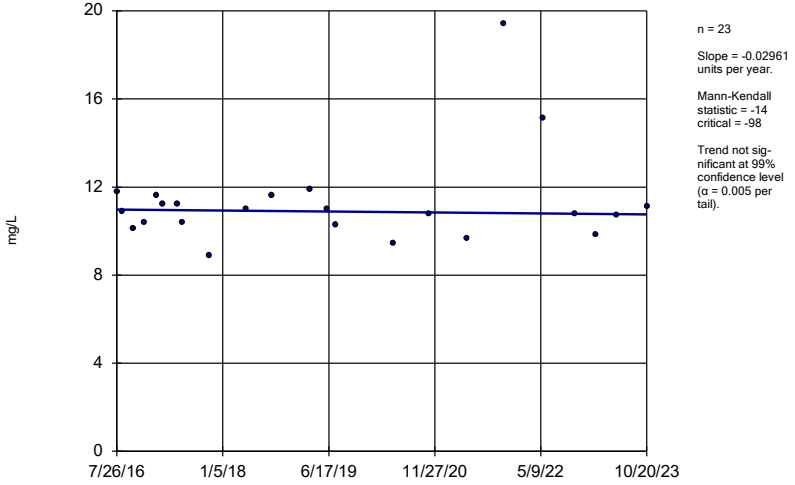
Mann-Kendall statistic = -88
critical = -98

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Sen's Slope Estimator

BAP-MW-1601 (bg)



n = 23

Slope = -0.02961 units per year.

Mann-Kendall statistic = -14
critical = -98

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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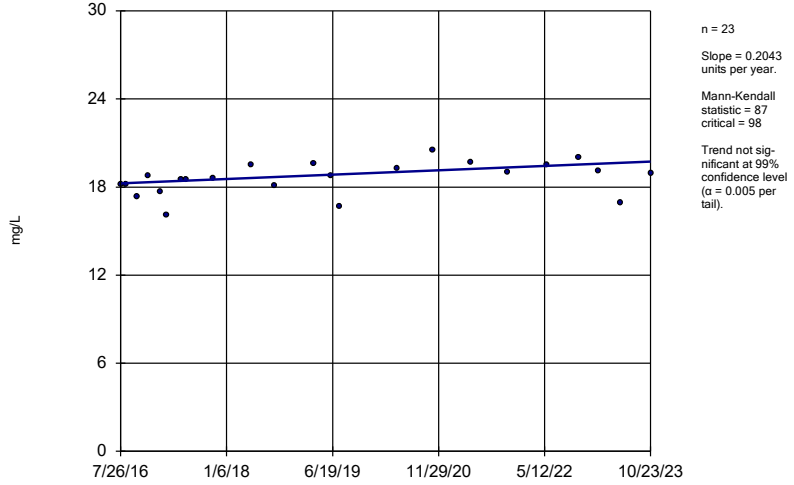
Sen's Slope Estimator

BAP-MW-1602A (bg)



n = 23

Slope = 0.2043 units per year.

Mann-Kendall statistic = 87
critical = 98

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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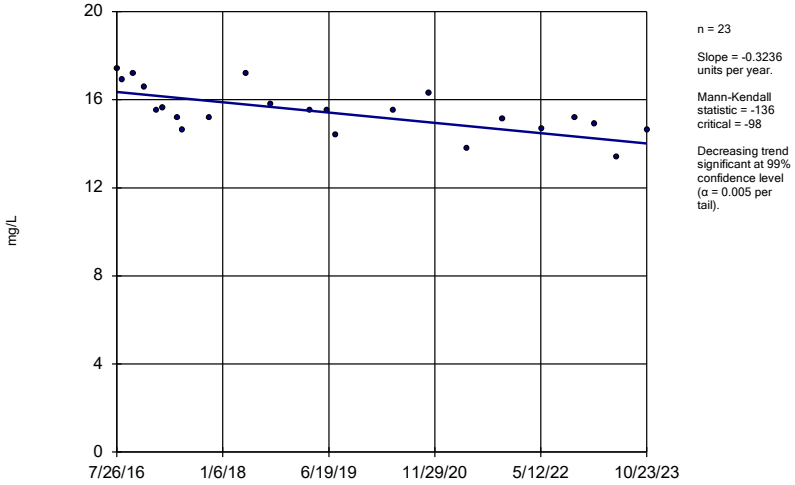
Sen's Slope Estimator

BAP-MW-1603A (bg)



n = 23

Slope = -0.3236 units per year.

Mann-Kendall statistic = -136
critical = -98

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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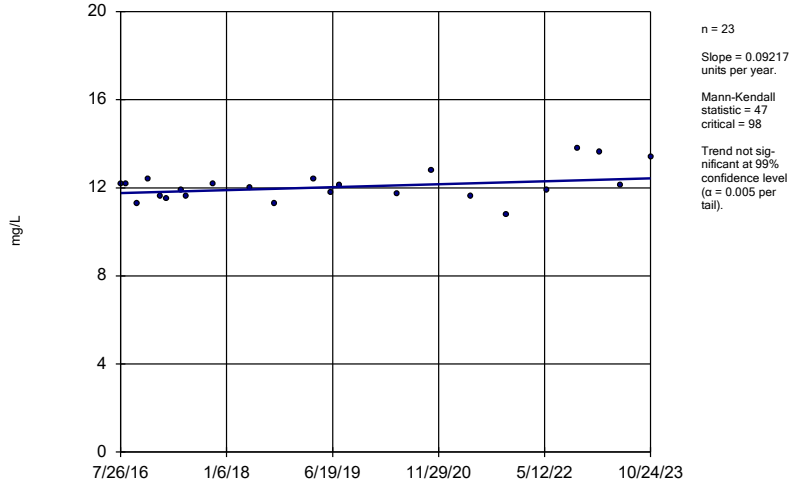
Sen's Slope Estimator

BAP-MW-6 (bg)



n = 23

Slope = 0.09217 units per year.

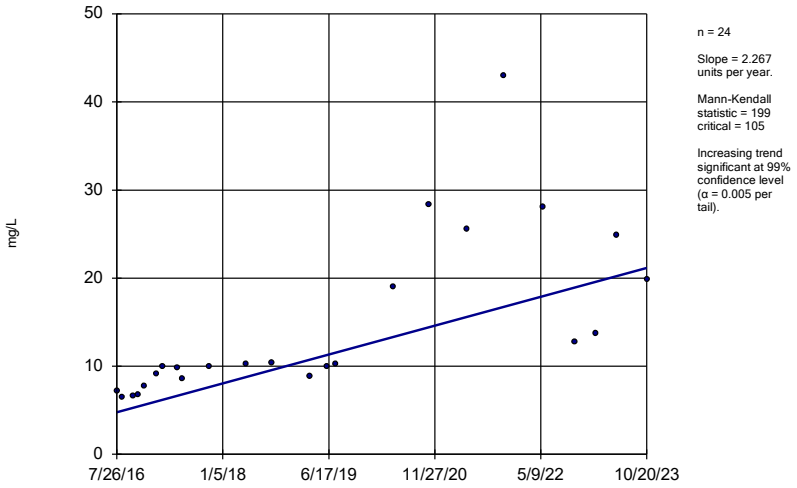
Mann-Kendall statistic = 47
critical = 98

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Sen's Slope Estimator

BAP-MW-1601 (bg)



n = 24

Slope = 2.267 units per year.

Mann-Kendall statistic = 199
critical = 105

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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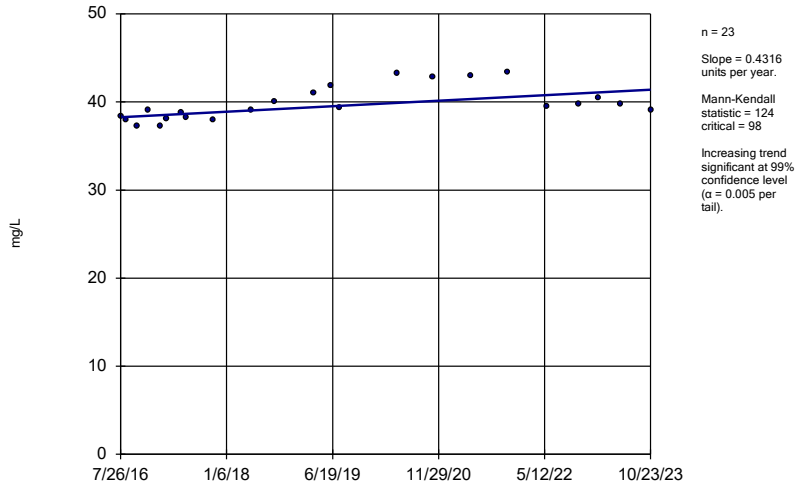
Sen's Slope Estimator

BAP-MW-1602A (bg)



n = 23

Slope = 0.4316 units per year.

Mann-Kendall statistic = 124
critical = 98

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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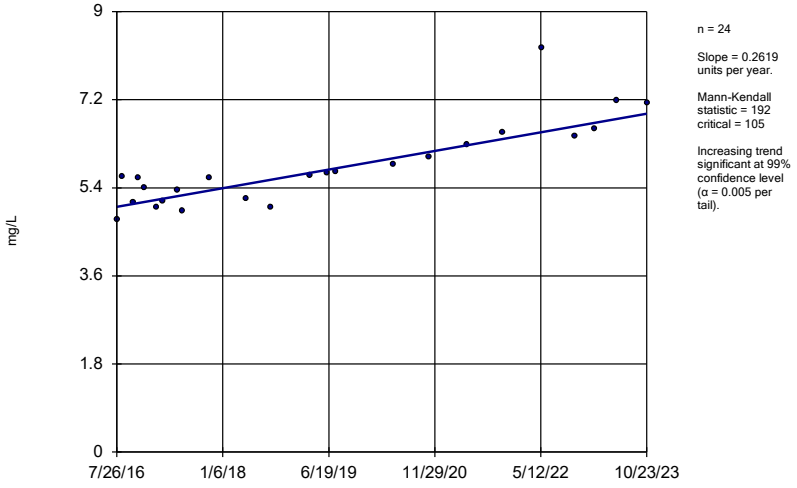
Sen's Slope Estimator

BAP-MW-1603A (bg)



n = 24

Slope = 0.2619 units per year.

Mann-Kendall statistic = 192
critical = 105

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 2/1/2024 9:25 AM View: Interwell
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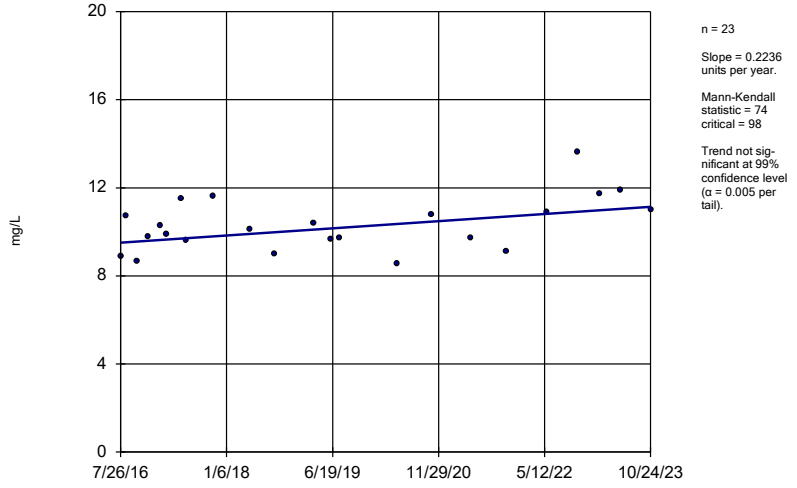
Sen's Slope Estimator

BAP-MW-6 (bg)



n = 23

Slope = 0.2236 units per year.

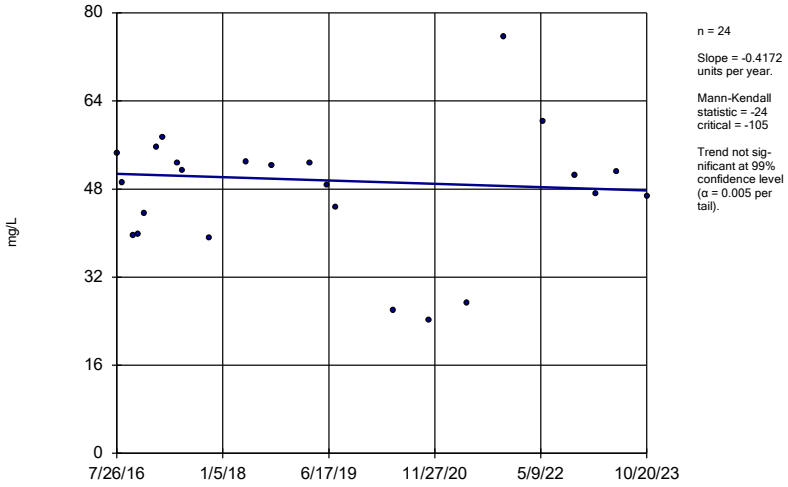
Mann-Kendall statistic = 74
critical = 98

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Sen's Slope Estimator

BAP-MW-1601 (bg)



n = 24

Slope = -0.4172 units per year.

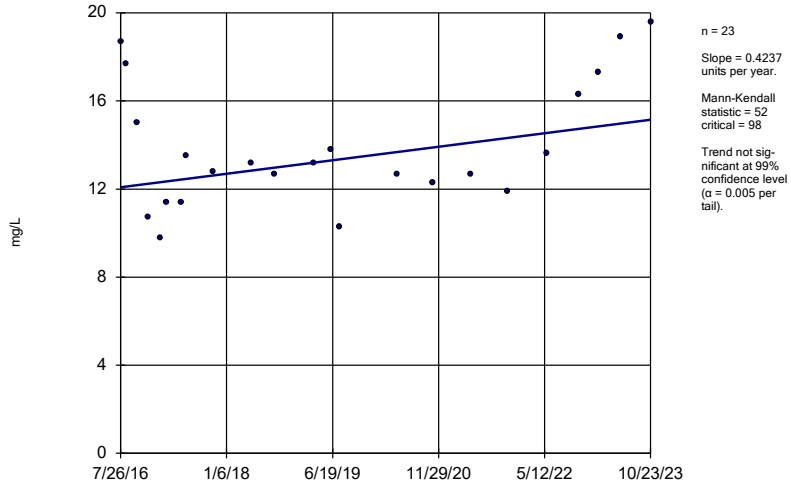
Mann-Kendall statistic = -24 critical = -105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Sen's Slope Estimator

BAP-MW-1602A (bg)



n = 23

Slope = 0.4237 units per year.

Mann-Kendall statistic = 52 critical = 98

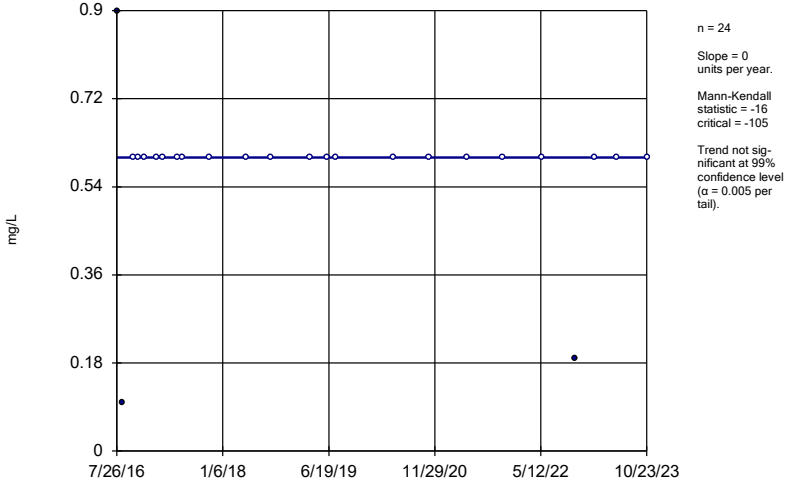
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Hollow symbols indicate censored values.

Sen's Slope Estimator

BAP-MW-1603A (bg)



n = 24

Slope = 0 units per year.

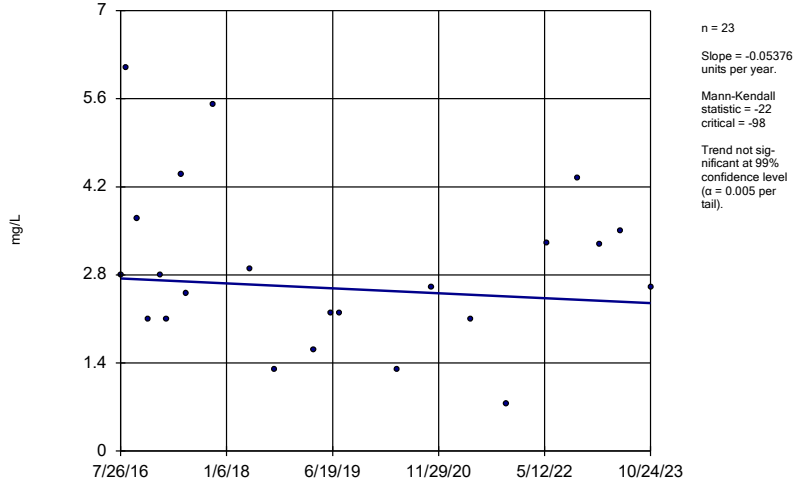
Mann-Kendall statistic = -16 critical = -105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Sen's Slope Estimator

BAP-MW-6 (bg)



n = 23

Slope = -0.05376 units per year.

Mann-Kendall statistic = -22 critical = -98

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 2/1/2024 9:25 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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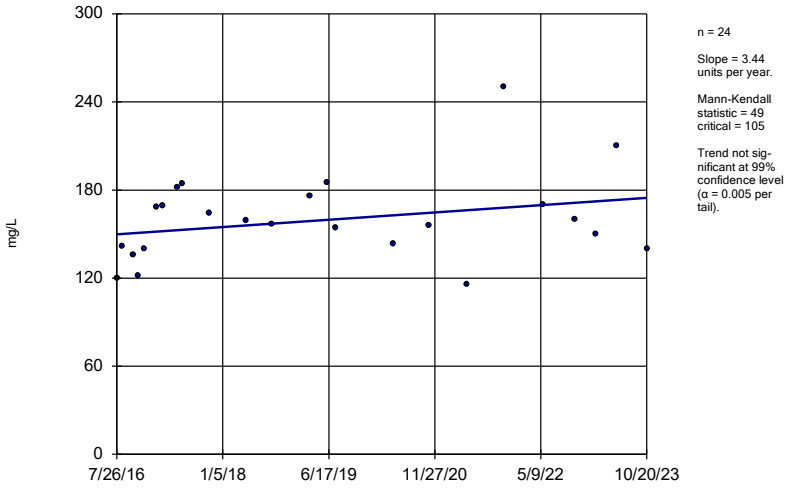
Sen's Slope Estimator

BAP-MW-1601 (bg)



n = 24

Slope = 3.44 units per year.

Mann-Kendall statistic = 49 critical = 105

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 2/1/2024 9:25 AM View: Interwell

Amos BAP Client: Geosyntec Data: Amos BAP

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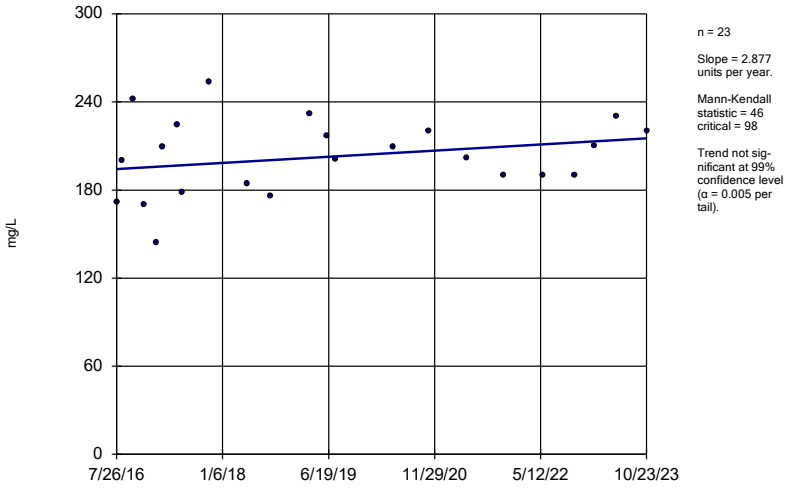
Sen's Slope Estimator

BAP-MW-1602A (bg)



n = 23

Slope = 2.877 units per year.

Mann-Kendall statistic = 46 critical = 98

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 2/1/2024 9:25 AM View: Interwell

Amos BAP Client: Geosyntec Data: Amos BAP

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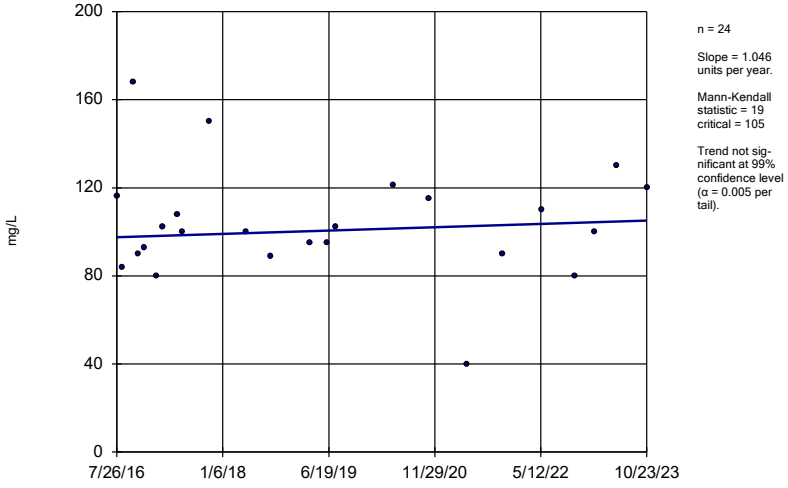
Sen's Slope Estimator

BAP-MW-1603A (bg)



n = 24

Slope = 1.046 units per year.

Mann-Kendall statistic = 19 critical = 105

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 2/1/2024 9:25 AM View: Interwell

Amos BAP Client: Geosyntec Data: Amos BAP

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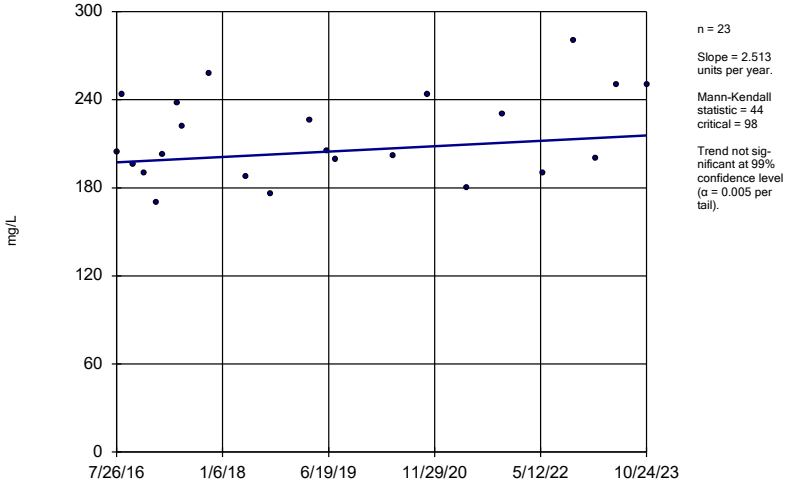
Sen's Slope Estimator

BAP-MW-6 (bg)



n = 23

Slope = 2.513 units per year.

Mann-Kendall statistic = 44 critical = 98

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 2/1/2024 9:25 AM View: Interwell

Amos BAP Client: Geosyntec Data: Amos BAP

FIGURE F

Interwell PLs

Interwell Prediction Limits - All Results

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:40 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	n/a	0.183	n/a	n/a	6 future	n/a	92	n/a	n/a	29.35	n/a	n/a	0.0002285	NP Inter (normality) 1 of 2
Calcium, total (mg/L)	n/a	20.5	n/a	n/a	6 future	n/a	92	n/a	n/a	0	n/a	n/a	0.0002285	NP Inter (normality) 1 of 2
Chloride, total (mg/L)	n/a	43.4	n/a	n/a	6 future	n/a	94	n/a	n/a	0	n/a	n/a	0.0002197	NP Inter (normality) 1 of 2
Sulfate, total (mg/L)	n/a	75.7	n/a	n/a	6 future	n/a	94	n/a	n/a	22.34	n/a	n/a	0.0002197	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	n/a	265	n/a	n/a	6 future	n/a	94	169.6	51.71	0	None	No	0.001254	Param Inter 1 of 2

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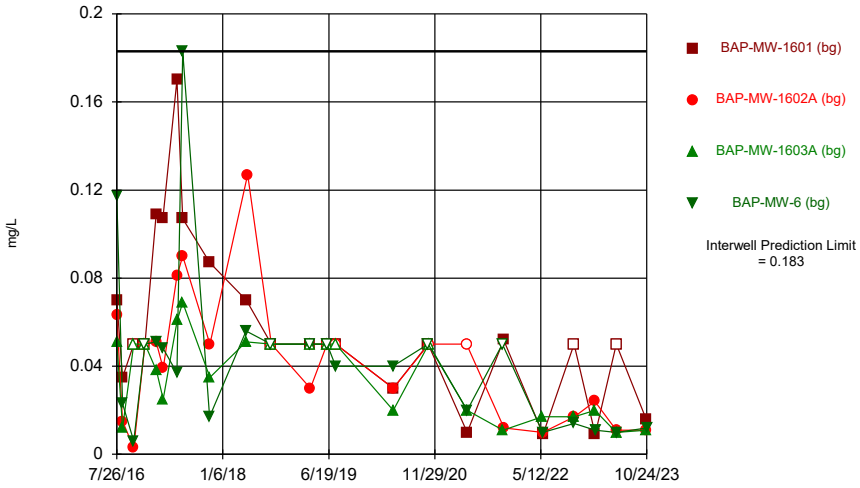
Hollow symbols indicate censored values.

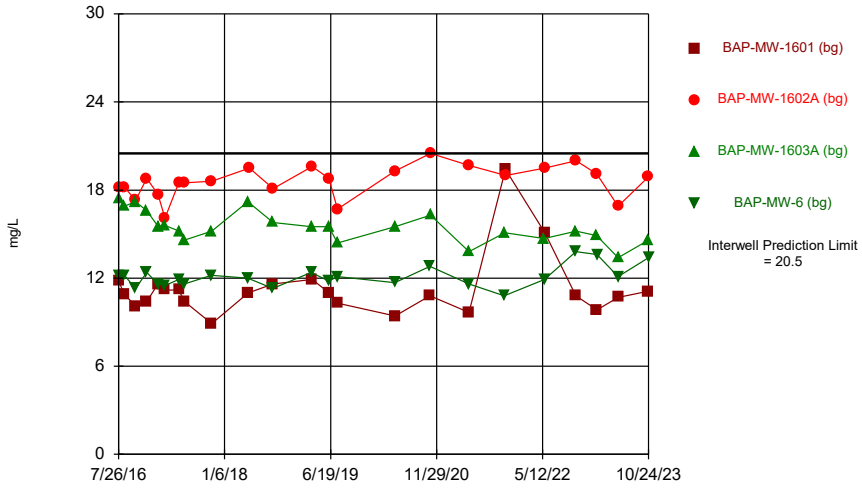
Time Series



Constituent: Boron, total Analysis Run 2/1/2024 9:40 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to . UG

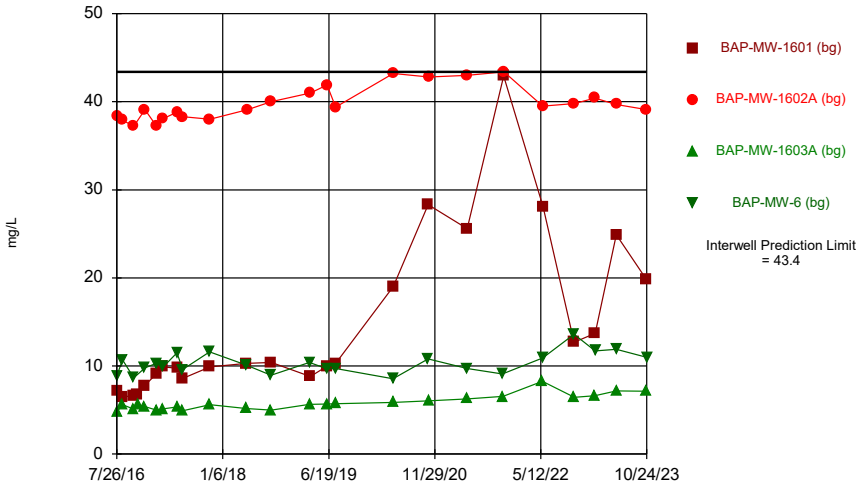
Time Series



Constituent: Calcium, total Analysis Run 2/1/2024 9:40 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.15 Software licensed to . UG

Time Series



Constituent: Chloride, total Analysis Run 2/1/2024 9:40 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

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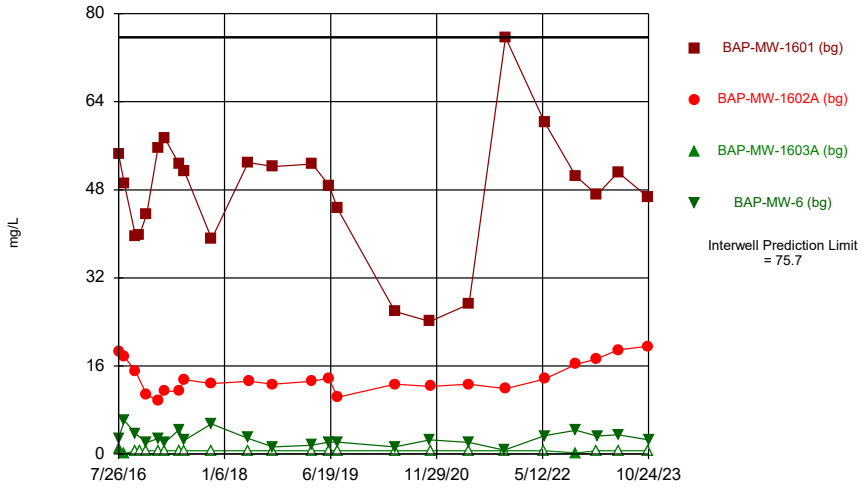
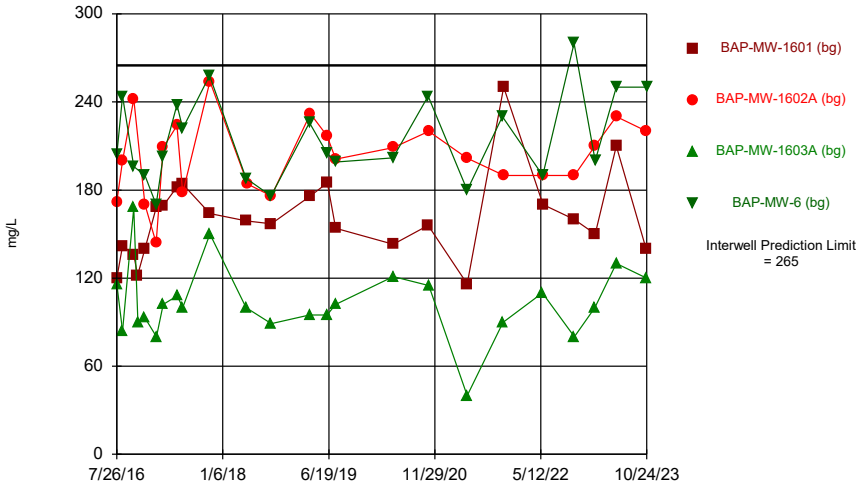
Hollow symbols indicate censored values.

Time Series



Constituent: Sulfate, total Analysis Run 2/1/2024 9:40 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

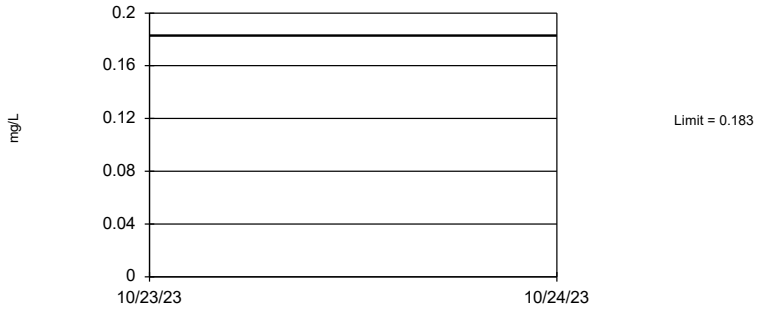
Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 2/1/2024 9:40 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Interwell Non-parametric

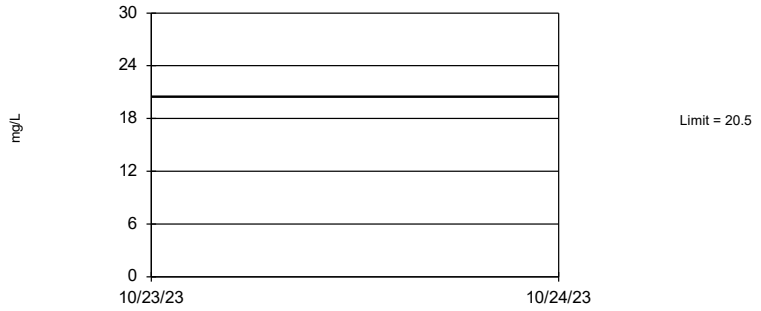


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 92 background values. 29.35% NDs. Annual per-constituent alpha = 0.002739. Individual comparison alpha = 0.0002285 (1 of 2). Assumes 6 future values.

Constituent: Boron, total Analysis Run 2/1/2024 9:33 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Interwell Non-parametric

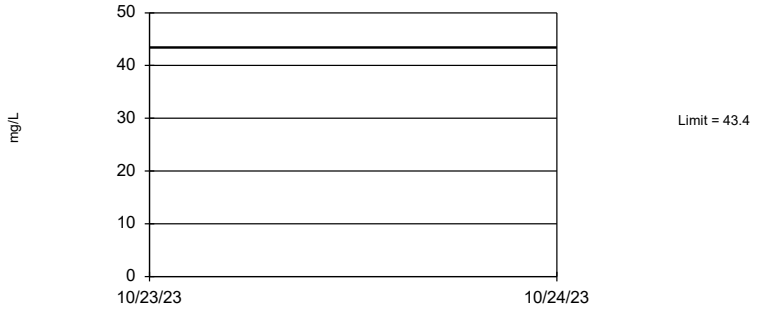


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 92 background values. Annual per-constituent alpha = 0.002739. Individual comparison alpha = 0.0002285 (1 of 2). Assumes 6 future values.

Constituent: Calcium, total Analysis Run 2/1/2024 9:33 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Interwell Non-parametric

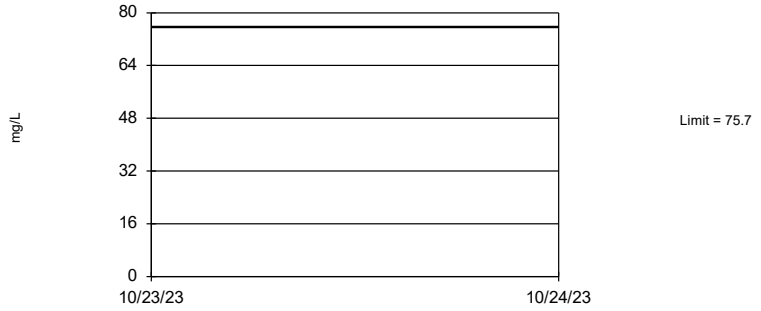


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 94 background values. Annual per-constituent alpha = 0.002633. Individual comparison alpha = 0.0002197 (1 of 2). Assumes 6 future values.

Constituent: Chloride, total Analysis Run 2/1/2024 9:33 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Interwell Non-parametric

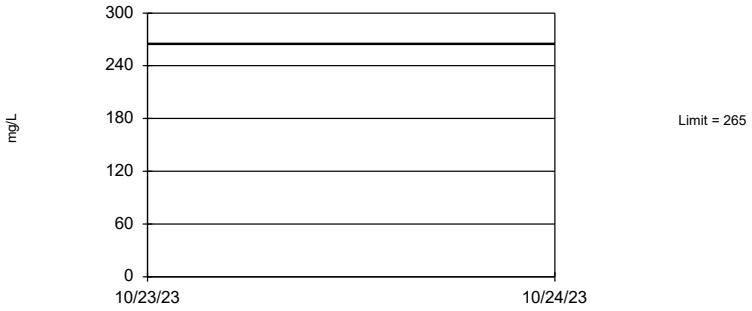


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 94 background values. 22.34% NDs. Annual per-constituent alpha = 0.002633. Individual comparison alpha = 0.0002197 (1 of 2). Assumes 6 future values.

Constituent: Sulfate, total Analysis Run 2/1/2024 9:33 AM View: Interwell
Amos BAP Client: Geosyntec Data: Amos BAP

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=169.6, Std. Dev.=51.71, n=94. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9828, critical = 0.964. Kappa = 1.846 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001254. Assumes 6 future values.

Constituent: Total Dissolved Solids [TDS] Analysis Run 2/1/2024 9:33 AM View: Interwell

Amos BAP Client: Geosyntec Data: Amos BAP

FIGURE G

UTLs

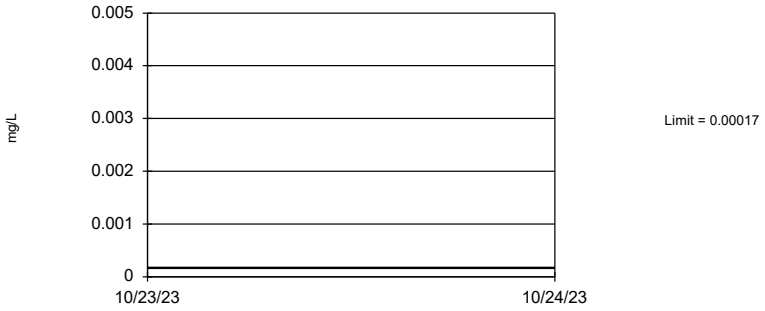
Upper Tolerance Limits Summary Table

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:46 AM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	0.00017	100	n/a	n/a	34	n/a	n/a	0.005921	NP Inter(normality)
Arsenic, total (mg/L)	0.0903	100	n/a	n/a	0	n/a	n/a	0.005921	NP Inter(normality)
Barium, total (mg/L)	0.303	100	n/a	n/a	0	n/a	n/a	0.005921	NP Inter(normality)
Beryllium, total (mg/L)	0.000106	100	n/a	n/a	15	n/a	n/a	0.005921	NP Inter(normality)
Cadmium, total (mg/L)	0.00003	100	n/a	n/a	42	n/a	n/a	0.005921	NP Inter(normality)
Chromium, total (mg/L)	0.001745	99	0.08588	0.01792	0	None	x^(1/3)	0.05	Inter
Cobalt, total (mg/L)	0.015	100	n/a	n/a	0	n/a	n/a	0.005921	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	2.509	100	1.037	0.2846	0	None	sqrt(x)	0.05	Inter
Fluoride, total (mg/L)	0.31	106	n/a	n/a	0.9434	n/a	n/a	0.004352	NP Inter(normality)
Lead, total (mg/L)	0.004066	100	-7.873	1.231	5	None	ln(x)	0.05	Inter
Lithium, total (mg/L)	0.02	100	n/a	n/a	12	n/a	n/a	0.005921	NP Inter(normality)
Mercury, total (mg/L)	0.000005	60	n/a	n/a	93.33	n/a	n/a	0.04607	NP Inter(NDs)
Molybdenum, total (mg/L)	0.002076	100	0.08676	0.02121	10	None	x^(1/3)	0.05	Inter
Selenium, total (mg/L)	0.0005	100	n/a	n/a	29	n/a	n/a	0.005921	NP Inter(normality)
Thallium, total (mg/L)	0.000224	96	n/a	n/a	58.33	n/a	n/a	0.007269	NP Inter(NDs)

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 34% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Antimony, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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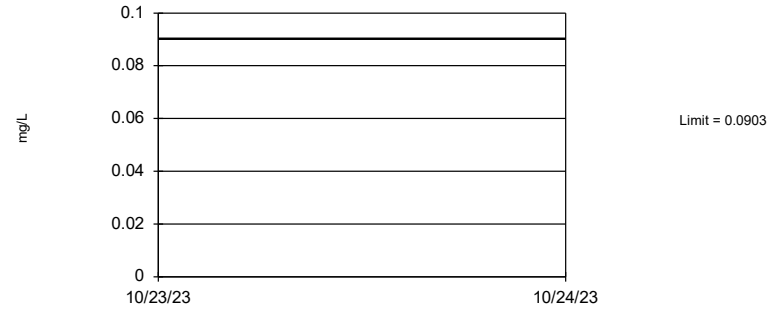
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Arsenic, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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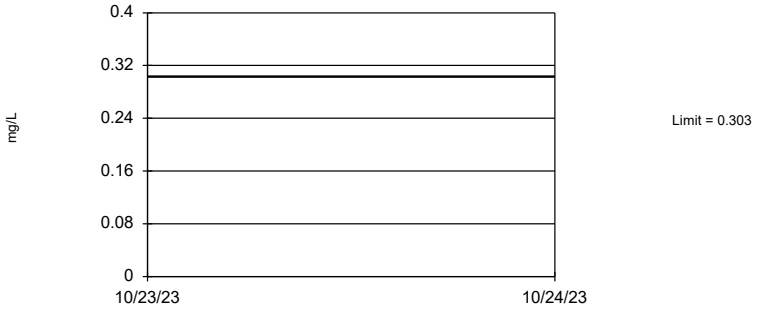
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Barium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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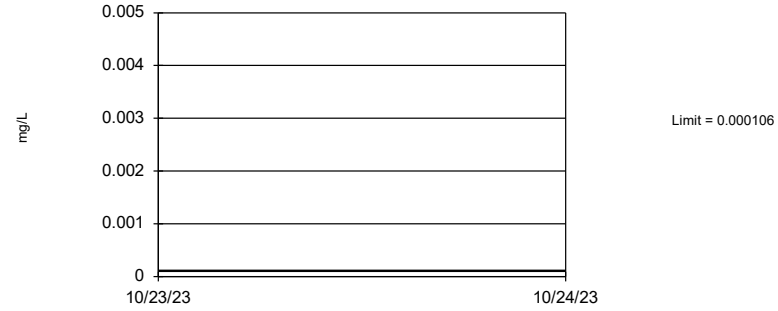
Tolerance Limit

Interwell Non-parametric

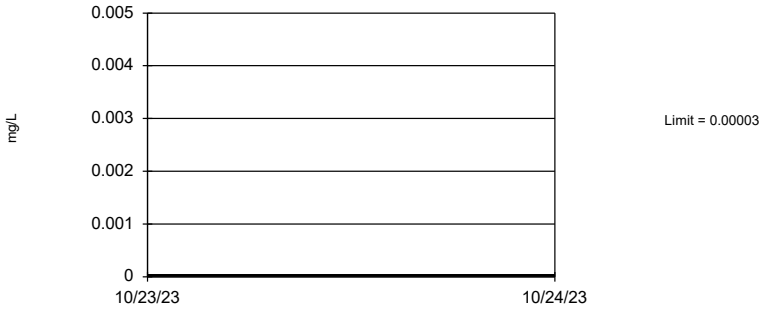


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 15% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Beryllium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

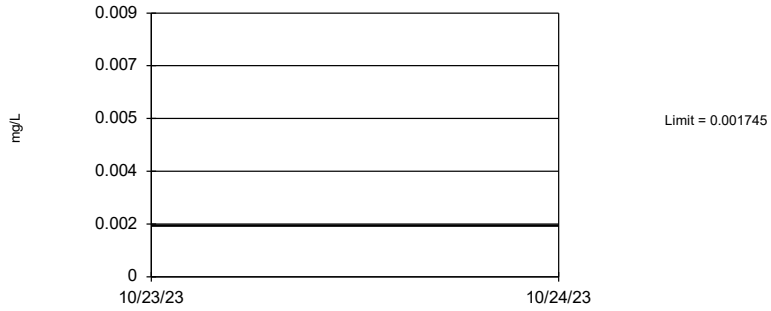


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 42% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Cadmium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric

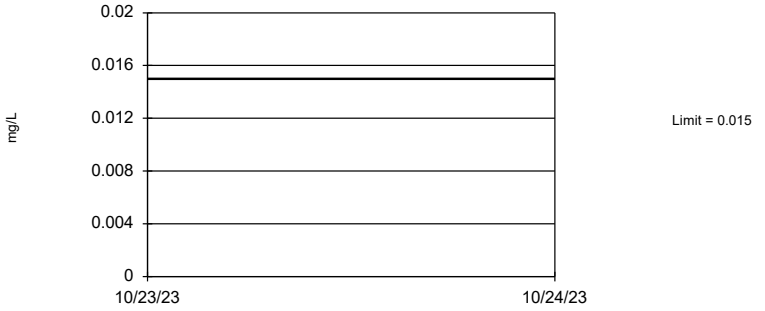


95% coverage. Background Data Summary (based on cube root transformation): Mean=0.08588, Std. Dev.=0.01792, n=99. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9724, critical = 0.967. Report alpha = 0.05.

Constituent: Chromium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

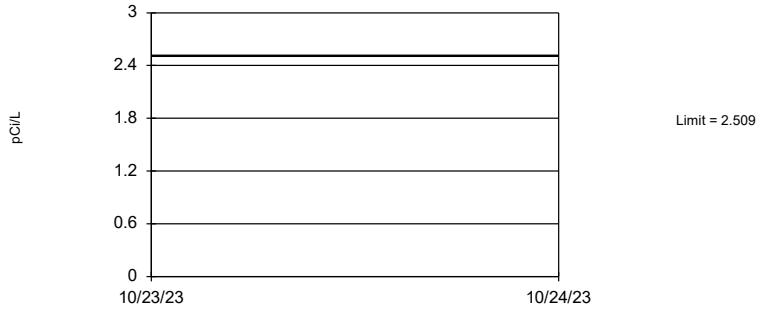


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Cobalt, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric

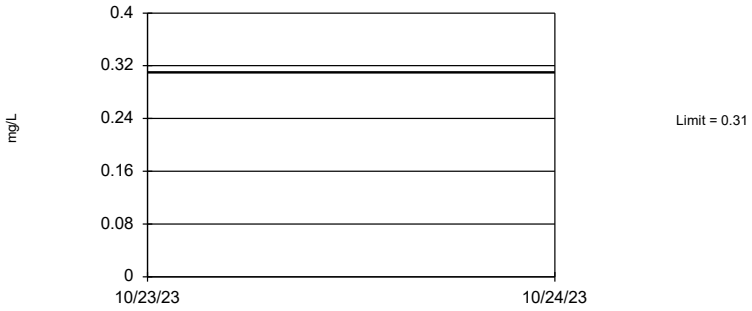


95% coverage. Background Data Summary (based on square root transformation): Mean=1.037, Std. Dev.=0.2846, n=100. Normality test: Chi Squared @alpha = 0.01, calculated = 3.6, critical = 14.07. Report alpha = 0.05.

Constituent: Combined Radium 226 + 228 Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

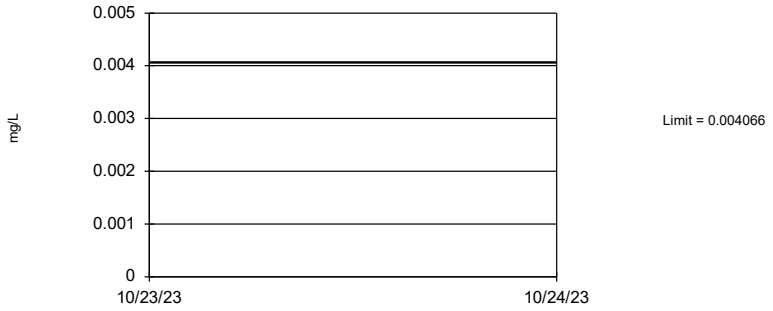


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 106 background values. 0.9434% NDs. 95.9% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.004352.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric

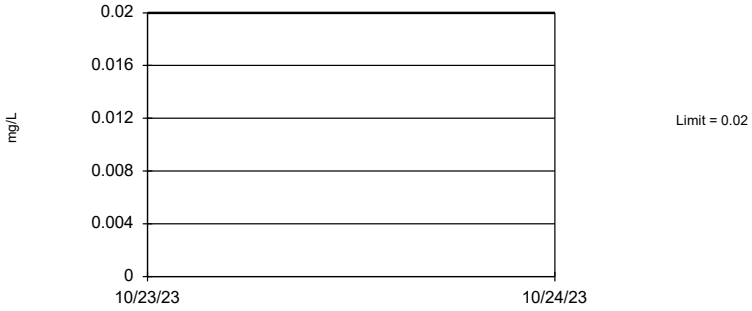


95% coverage. Background Data Summary (based on natural log transformation): Mean=-7.873, Std. Dev.=1.231, n=100, 5% NDs. Normality test: Chi Squared @alpha = 0.01, calculated = 9, critical = 14.07. Report alpha = 0.05.

Constituent: Lead, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

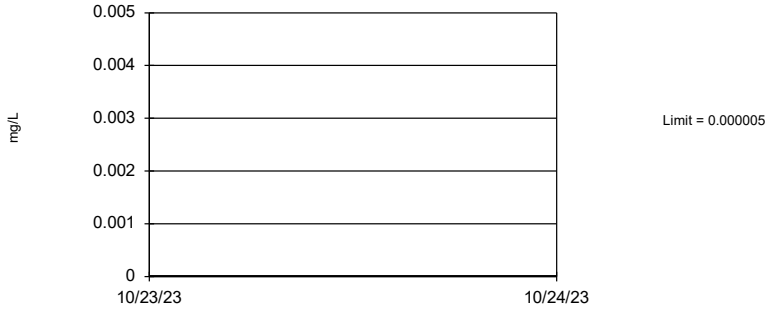


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 12% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Lithium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

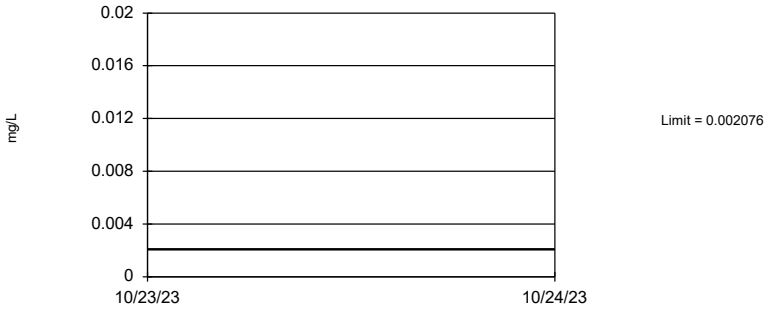


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 60 background values. 93.33% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04607.

Constituent: Mercury, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on cube root transformation): Mean=0.08676, Std. Dev.=0.02121, n=100, 10% NDs. Normality test: Chi Squared @alpha = 0.01, calculated = 6.4, critical = 14.07. Report alpha = 0.05.

Constituent: Molybdenum, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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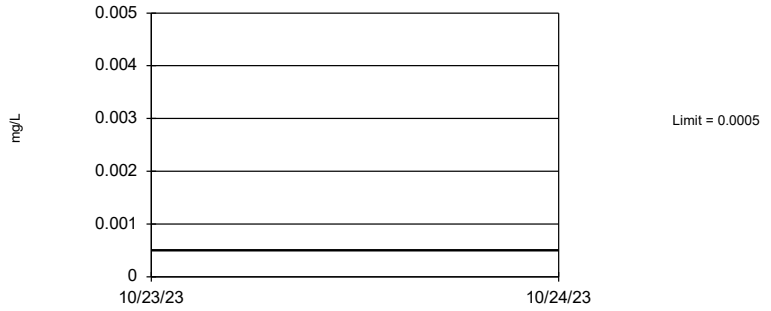
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 29% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Selenium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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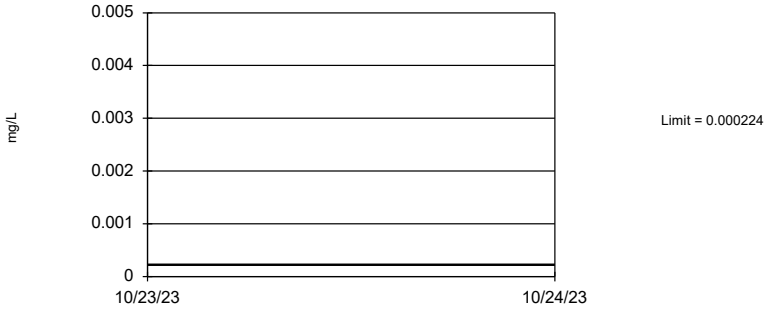
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 96 background values. 58.33% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.007269.

Constituent: Thallium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

FIGURE H

GWPS

AMOS BAP GWPS				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Background**	**GWPS**
Antimony, Total (mg/L)	0.006		0.00017	0.006
Arsenic, Total (mg/L)	0.01		0.09	0.09
Barium, Total (mg/L)	2		0.3	2
Beryllium, Total (mg/L)	0.004		0.00011	0.004
Cadmium, Total (mg/L)	0.005		0.00003	0.005
Chromium, Total (mg/L)	0.1		0.0018	0.1
Cobalt, Total (mg/L)		0.006	0.015	0.015
Combined Radium, Total (pCi/L)	5		2.5	5
Fluoride, Total (mg/L)	4		0.31	4
Lead, Total (mg/L)	0.015		0.0041	0.015
Lithium, Total (mg/L)		0.04	0.02	0.04
Mercury, Total (mg/L)	0.002		0.000005	0.002
Molybdenum, Total (mg/L)		0.1	0.0021	0.1
Selenium, Total (mg/L)	0.05		0.0005	0.05
Thallium, Total (mg/L)	0.002		0.0002	0.002

Grey cell indicates Background is higher than MCL or CCR-Rule Specified Level

MCL = Maximum Contaminant Level

CCR = Coal Combustion Residual

GWPS - Groundwater Protection Standard

FIGURE I
Confidence Intervals

Confidence Intervals Summary Table - All Results (No Significant)

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:54 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	BAP-MW-1	0.0001	0.00002	0.006	No	25	0.0000636	0.00005179	44	None	No	0.01	NP (normality)
Antimony, total (mg/L)	BAP-MW-1604	0.0001	0.00003	0.006	No	25	0.00005832	0.00003586	40	None	No	0.01	NP (normality)
Antimony, total (mg/L)	BAP-MW-1605	0.00002303	0.00001126	0.006	No	25	0.00006116	0.00005763	36	Kaplan-Meier	ln(x)	0.01	Param.
Antimony, total (mg/L)	BAP-MW-1606	0.00002348	0.00001235	0.006	No	25	0.00004456	0.00003021	20	Kaplan-Meier	ln(x)	0.01	Param.
Antimony, total (mg/L)	BAP-MW-4	0.0001	0.00004	0.006	No	25	0.00008084	0.00004354	44	None	No	0.01	NP (normality)
Antimony, total (mg/L)	BAP-MW-5	0.0001	0.00002	0.006	No	25	0.00006076	0.000038	40	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	BAP-MW-1	0.0001312	0.00009679	0.09	No	25	0.000114	0.00003452	0	None	No	0.01	Param.
Arsenic, total (mg/L)	BAP-MW-1604	0.005067	0.004214	0.09	No	25	0.004641	0.000856	0	None	No	0.01	Param.
Arsenic, total (mg/L)	BAP-MW-1605	0.0037	0.00295	0.09	No	25	0.003499	0.0008477	0	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	BAP-MW-1606	0.0035	0.00262	0.09	No	25	0.003776	0.002022	0	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	BAP-MW-4	0.007636	0.002828	0.09	No	25	0.00607	0.005692	0	None	sqrt(x)	0.01	Param.
Arsenic, total (mg/L)	BAP-MW-5	0.00341	0.00279	0.09	No	25	0.003274	0.0008528	0	None	No	0.01	NP (normality)
Barium, total (mg/L)	BAP-MW-1	0.02734	0.02503	2	No	25	0.02618	0.002319	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-1604	0.1544	0.1377	2	No	25	0.146	0.01671	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-1605	0.0961	0.08136	2	No	25	0.08873	0.01479	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-1606	0.0658	0.05425	2	No	25	0.06002	0.01158	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-4	0.09486	0.08738	2	No	25	0.09112	0.00751	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-5	0.17	0.141	2	No	25	0.17	0.05154	0	None	No	0.01	NP (normality)
Beryllium, total (mg/L)	BAP-MW-1	0.0001294	0.0001186	0.004	No	25	0.000124	0.00001089	0	None	No	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-1604	0.000059	0.00004	0.004	No	24	0.00004908	0.00001298	0	None	No	0.01	NP (normality)
Beryllium, total (mg/L)	BAP-MW-1605	0.00009489	0.00006447	0.004	No	25	0.00007968	0.00003052	0	None	No	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-1606	0.0001157	0.00008676	0.004	No	25	0.0001012	0.00002905	0	None	No	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-4	0.00006108	0.00004561	0.004	No	25	0.00005524	0.00001899	0	None	ln(x)	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-5	0.00005995	0.00004224	0.004	No	25	0.0000522	0.00001986	0	None	sqrt(x)	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-1	0.002607	0.002053	0.005	No	25	0.00233	0.000556	0	None	No	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-1604	0.00002	0.000009	0.005	No	25	0.00001844	0.00000435	84	None	No	0.01	NP (NDs)
Cadmium, total (mg/L)	BAP-MW-1605	0.00005	0.000007	0.005	No	25	0.00003328	0.00002687	44	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	BAP-MW-1606	0.0002644	0.000163	0.005	No	25	0.0002266	0.000134	0	None	x^(1/3)	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-4	0.0001419	0.00005992	0.005	No	25	0.0001377	0.0001486	0	None	ln(x)	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-5	0.00002	0.000006	0.005	No	25	0.000012	0.000006776	40	None	No	0.01	NP (normality)
Chromium, total (mg/L)	BAP-MW-1	0.0003607	0.0001613	0.1	No	25	0.0003024	0.0002635	0	None	x^(1/3)	0.01	Param.
Chromium, total (mg/L)	BAP-MW-1604	0.001118	0.000707	0.1	No	25	0.0009124	0.000412	0	None	No	0.01	Param.
Chromium, total (mg/L)	BAP-MW-1605	0.0005291	0.0002947	0.1	No	25	0.0004119	0.0002351	0	None	No	0.01	Param.
Chromium, total (mg/L)	BAP-MW-1606	0.0009741	0.0005181	0.1	No	25	0.0007461	0.0004575	0	None	No	0.01	Param.
Chromium, total (mg/L)	BAP-MW-4	0.0004583	0.0002784	0.1	No	25	0.0003914	0.0002231	0	None	x^(1/3)	0.01	Param.
Chromium, total (mg/L)	BAP-MW-5	0.0003351	0.0001994	0.1	No	25	0.000298	0.0001904	0	None	ln(x)	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-1	0.01583	0.01272	0.015	No	25	0.01427	0.003126	0	None	No	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-1604	0.0006651	0.0004299	0.015	No	25	0.0005966	0.0003603	0	None	ln(x)	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-1605	0.0107	0.00914	0.015	No	25	0.0116	0.005451	0	None	No	0.01	NP (normality)
Cobalt, total (mg/L)	BAP-MW-1606	0.01462	0.01174	0.015	No	25	0.01318	0.002891	0	None	No	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-4	0.01844	0.009444	0.015	No	25	0.01719	0.01685	0	None	ln(x)	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-5	0.001191	0.000921	0.015	No	25	0.001056	0.0002705	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1	1.182	0.6891	5	No	26	0.9857	0.5278	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1604	1.372	0.8092	5	No	26	1.147	0.6393	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1605	1.417	0.7989	5	No	26	1.293	1.031	0	None	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1606	1.32	0.7248	5	No	26	1.023	0.611	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-4	1.275	0.7024	5	No	26	1.053	0.6114	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-5	1.382	0.9144	5	No	26	1.148	0.4792	0	None	No	0.01	Param.
Fluoride, total (mg/L)	BAP-MW-1	0.04	0.02	4	No	26	0.03308	0.01436	19.23	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	BAP-MW-1604	0.094	0.06652	4	No	27	0.08296	0.03372	0	None	x^(1/3)	0.01	Param.
Fluoride, total (mg/L)	BAP-MW-1605	0.06	0.03	4	No	27	0.04667	0.02038	40.74	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	BAP-MW-1606	0.06	0.03	4	No	26	0.045	0.01817	57.69	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	BAP-MW-4	0.06	0.04	4	No	26	0.04962	0.01216	0	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	BAP-MW-5	0.05	0.03	4	No	26	0.03962	0.008237	0	None	No	0.01	NP (normality)

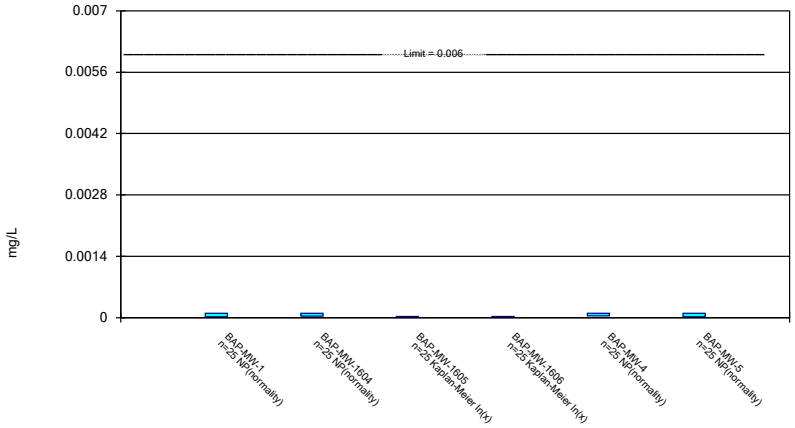
Confidence Intervals Summary Table - All Results (No Significant)

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:54 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lead, total (mg/L)	BAP-MW-1	0.000129	0.000068	0.015	No	25	0.0001404	0.0002165	8	None	No	0.01	NP (normality)
Lead, total (mg/L)	BAP-MW-1604	0.0005903	0.0002506	0.015	No	25	0.0004718	0.0003943	0	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	BAP-MW-1605	0.000336	0.0001306	0.015	No	25	0.0002674	0.0002483	0	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	BAP-MW-1606	0.0008969	0.0004714	0.015	No	25	0.0006842	0.0004269	0	None	No	0.01	Param.
Lead, total (mg/L)	BAP-MW-4	0.0004025	0.0002119	0.015	No	25	0.0003289	0.0002146	0	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	BAP-MW-5	0.0001699	0.00005926	0.015	No	25	0.0001733	0.0001798	16	Kaplan-Meier	x^(1/3)	0.01	Param.
Lithium, total (mg/L)	BAP-MW-1	0.004	0.00259	0.04	No	25	0.004434	0.003984	8	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-1604	0.004	0.000475	0.04	No	25	0.006045	0.01078	16	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-1605	0.005	0.00238	0.04	No	25	0.004582	0.003759	8	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-1606	0.006	0.00239	0.04	No	25	0.005004	0.004234	12	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-4	0.003	0.00147	0.04	No	25	0.003557	0.004315	8	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-5	0.003	0.00142	0.04	No	25	0.003522	0.004252	8	None	No	0.01	NP (normality)
Mercury, total (mg/L)	BAP-MW-1	0.000005	0.000002	0.002	No	15	0.0000048	7.7e-7	93.33	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	BAP-MW-1604	0.000005	0.000002	0.002	No	15	0.0000048	7.7e-7	93.33	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	BAP-MW-1606	0.000005	0.000002	0.002	No	15	0.0000048	7.7e-7	93.33	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	BAP-MW-1	0.0007614	0.0002568	0.1	No	25	0.0006364	0.0005514	32	Kaplan-Meier	sqrt(x)	0.01	Param.
Molybdenum, total (mg/L)	BAP-MW-1604	0.00064	0.00021	0.1	No	25	0.00065	0.0007013	20	None	No	0.01	NP (normality)
Molybdenum, total (mg/L)	BAP-MW-1605	0.0005	0.00027	0.1	No	25	0.0003908	0.0001675	56	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	BAP-MW-1606	0.0005	0.00012	0.1	No	25	0.0002976	0.0001901	44	None	No	0.01	NP (normality)
Molybdenum, total (mg/L)	BAP-MW-4	0.0004528	0.0001579	0.1	No	23	0.0008357	0.0008014	21.74	Kaplan-Meier	ln(x)	0.01	Param.
Molybdenum, total (mg/L)	BAP-MW-5	0.0005678	0.000176	0.1	No	25	0.000748	0.0008887	28	Kaplan-Meier	ln(x)	0.01	Param.
Selenium, total (mg/L)	BAP-MW-1	0.0002	0.00009	0.05	No	25	0.0001304	0.00006113	12	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-1604	0.0002	0.00012	0.05	No	25	0.0001756	0.00006145	0	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-1605	0.0001121	0.00006816	0.05	No	25	0.000094	0.0000495	4	None	sqrt(x)	0.01	Param.
Selenium, total (mg/L)	BAP-MW-1606	0.0003	0.00009	0.05	No	25	0.000232	0.0001795	28	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-4	0.0002	0.00007	0.05	No	25	0.0001864	0.0001819	24	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-5	0.0005	0.00008	0.05	No	25	0.0003576	0.0002122	68	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-1	0.0002	0.00004	0.002	No	24	0.0001138	0.0000814	45.83	None	No	0.01	NP (normality)
Thallium, total (mg/L)	BAP-MW-1604	0.0002	0.00005	0.002	No	24	0.0001475	0.00008389	70.83	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-1605	0.0002	0.000062	0.002	No	24	0.0001647	0.00007089	79.17	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-1606	0.0002	0.00002	0.002	No	24	0.0001183	0.00009111	54.17	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-4	0.0002	0.000069	0.002	No	24	0.0001445	0.00007486	41.67	None	No	0.01	NP (normality)
Thallium, total (mg/L)	BAP-MW-5	0.0002	0.00003	0.002	No	24	0.0001471	0.00008447	70.83	None	No	0.01	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Antimony, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

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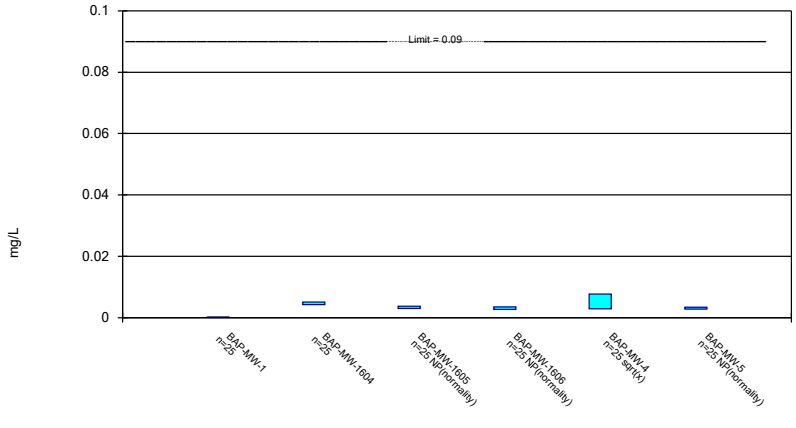
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

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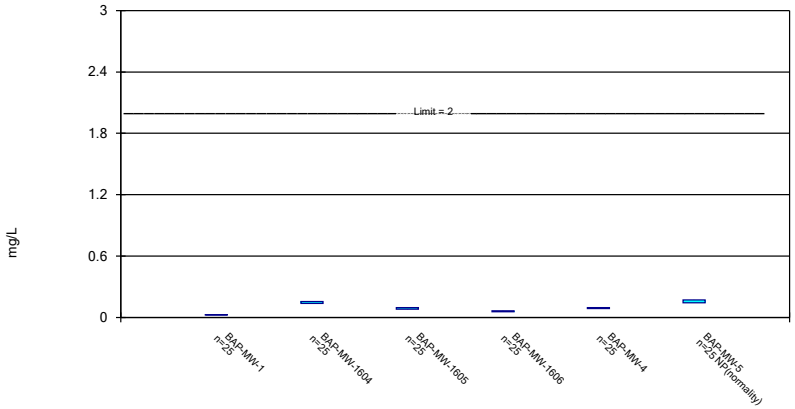
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

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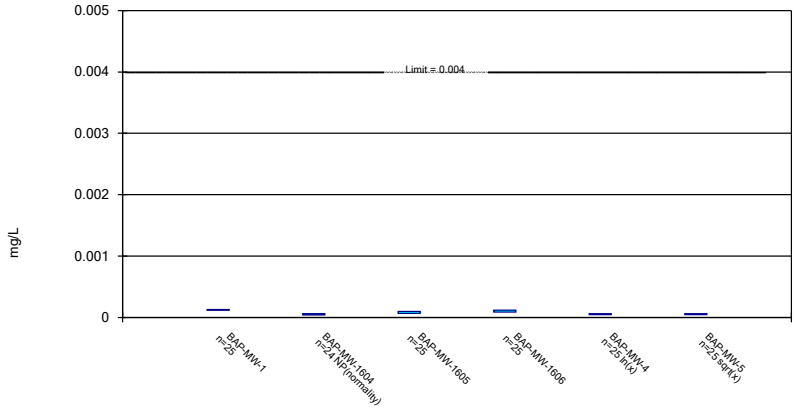
Parametric and Non-Parametric (NP) Confidence Interval

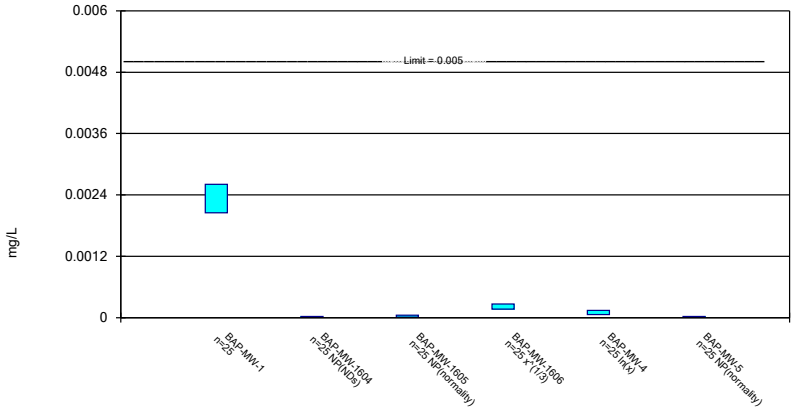
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

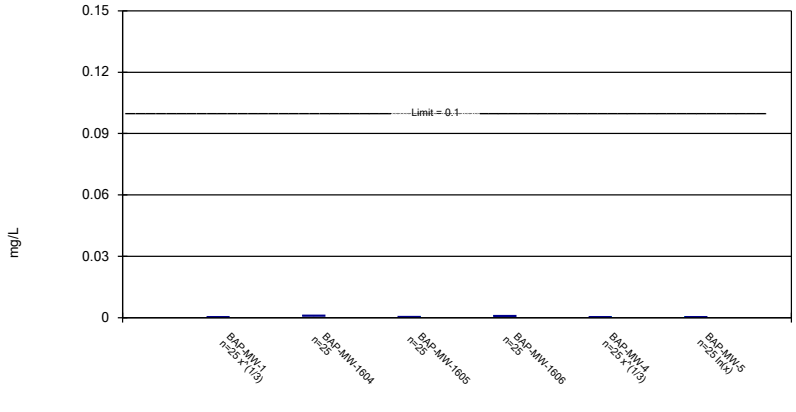
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric Confidence Interval

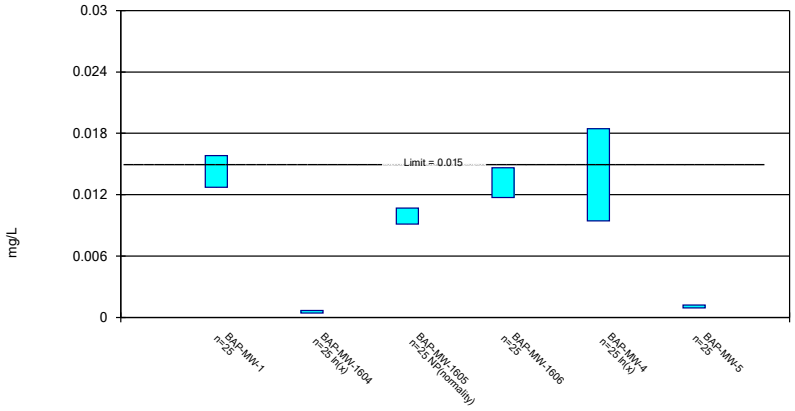
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

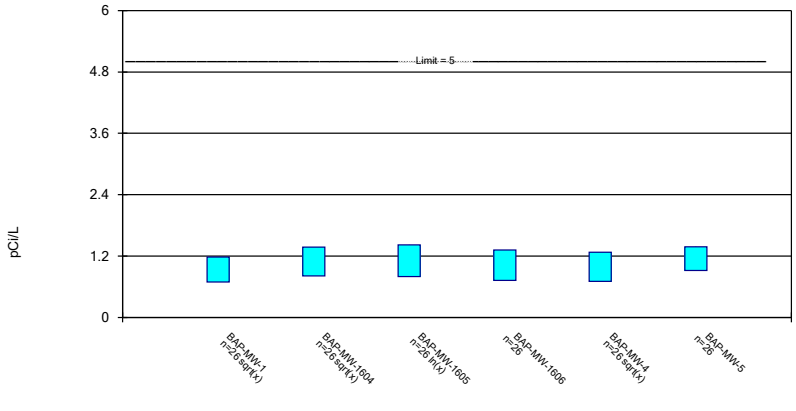
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric Confidence Interval

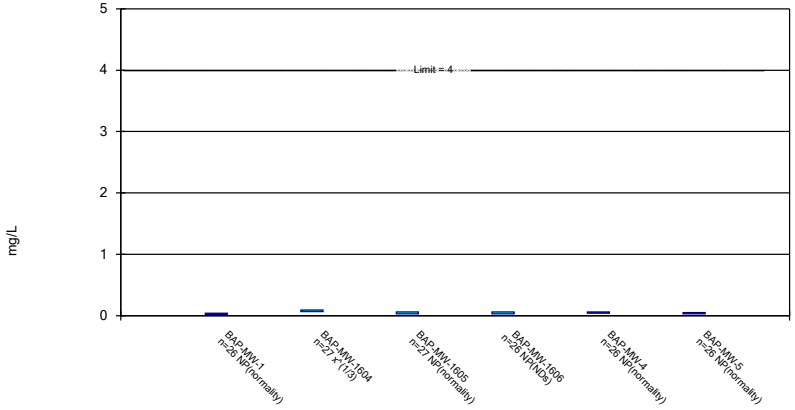
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

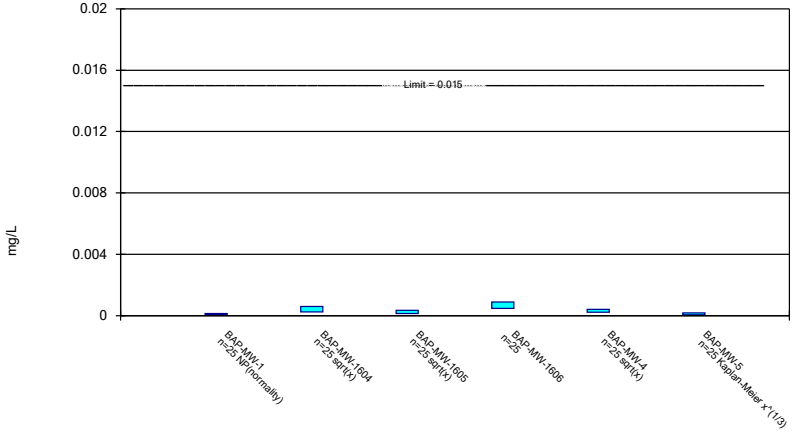
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

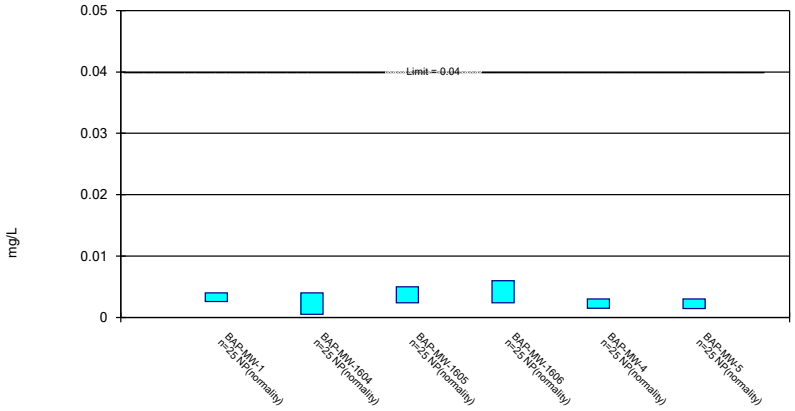
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Non-Parametric Confidence Interval

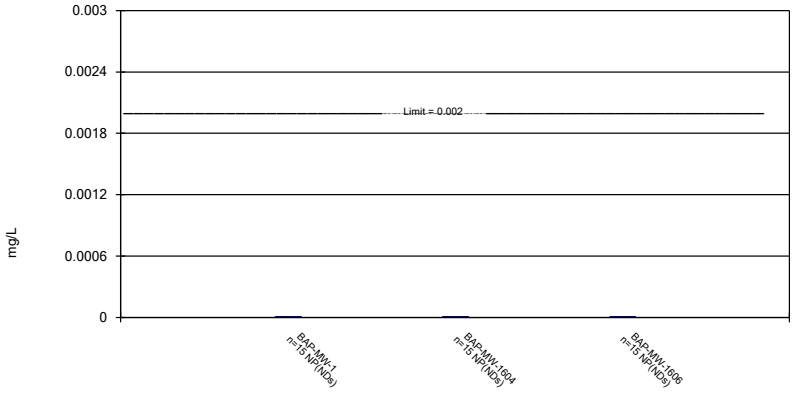
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lithium, total Analysis Run 2/1/2024 9:51 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Non-Parametric Confidence Interval

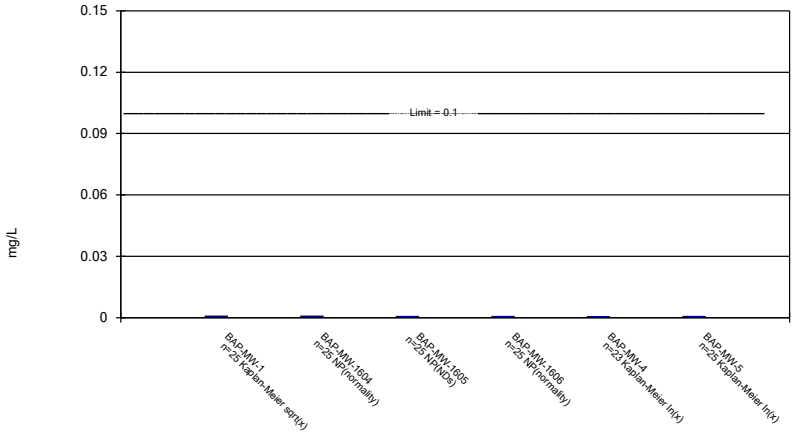
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury, total Analysis Run 2/1/2024 9:52 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, total Analysis Run 2/1/2024 9:52 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

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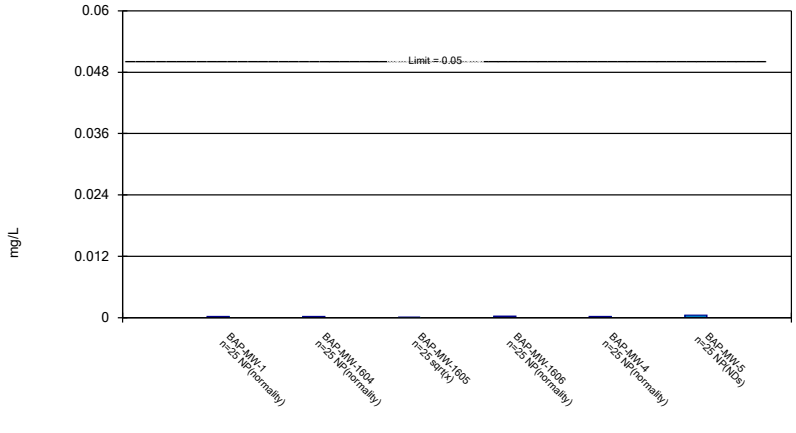
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, total Analysis Run 2/1/2024 9:52 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

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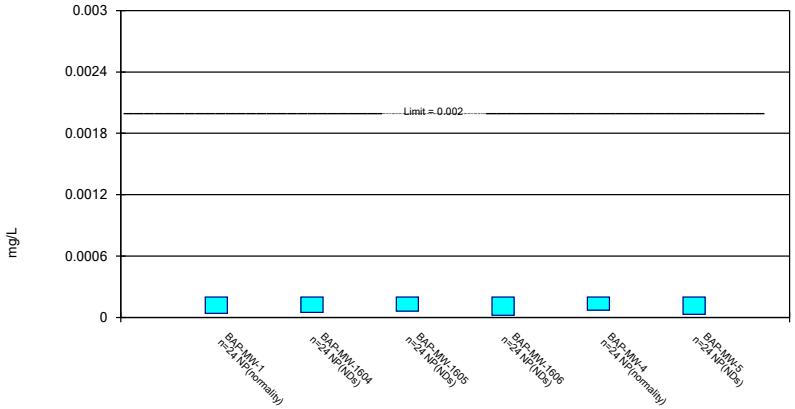
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, total Analysis Run 2/1/2024 9:52 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Geosyntec consultants

engineers | scientists | innovators

STATISTICAL ANALYSIS SUMMARY, BOTTOM ASH POND

Amos Plant

Winfield, West Virginia

Prepared for

American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215-2372

Prepared by

Geosyntec Consultants, Inc.
500 West Wilson Bridge Road, Suite 250
Worthington, Ohio 43085

Project Number: CHA8500B

September 3, 2024

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LIST OF ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

BAP	Bottom Ash Pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
GWPS	groundwater protection standard
mg/L	milligrams per liter
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
UPL	upper prediction limit

1. INTRODUCTION

In accordance with United States Environmental Protection Agency regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Code of Federal Regulations [CFR] Title 40, Section 257, Subpart D), groundwater monitoring has been conducted at the Bottom Ash Pond (BAP), an existing CCR unit at the Amos Power Plant in Winfield, West Virginia. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above site-specific groundwater protection standards (GWPSs).

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for calcium, chloride, sulfate, and total dissolved solids (TDS) at the BAP. An alternative source was not identified following the detection monitoring events; thus, the BAP has been in assessment monitoring since 2018. During the most recent assessment monitoring event, conducted in October 2023, no statistically significant levels (SSLs) were identified and the unit remained in assessment monitoring (Geosyntec 2024).

An annual sampling event at the BAP for the Appendix IV parameters required by 40 CFR 257.95(b) was completed in March 2024, and a semiannual sampling event for the Appendix III and Appendix IV parameters required by 40 CFR 257.95(d)(1) was completed in May 2024. The results of these annual and semiannual assessment monitoring events are documented in this report.

Before the statistical analyses were conducted, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues that would impact data usability were identified.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Confidence intervals were calculated from the Appendix IV parameter data at the compliance wells to assess whether any were present at SSLs above the corresponding GWPS. No SSLs were identified; however, concentrations of Appendix III parameters remained above background. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. BOTTOM ASH POND EVALUATION

2.1 Data Validation and QA/QC

Two sets of samples were collected for analysis from each upgradient and downgradient well to meet the requirements of 40 CFR 257.95(b) (March 2024) and 40 CFR 257.95(d)(1) (May 2024). Samples from the March and May 2024 events were analyzed for all Appendix III and Appendix IV parameters. A summary of data collected during these assessment monitoring events may be found in Table 1.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program–certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas v.10.0.19c statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for the BAP were conducted in accordance with the January 2021 *Statistical Analysis Plan* (Geosyntec 2021). Time series plots and results for all completed statistical tests are provided in Attachment B.

The data obtained in March and May 2024 were screened for potential outliers; however, no outliers were identified in either set of data (Attachment B).

2.2.1 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, nonparametric confidence limits were calculated in some cases (e.g., when the data were not normally distributed or when the nondetect frequency was too high). An SSL was concluded if the lower confidence limit was above the GWPS (i.e., if the entire confidence interval was above the GWPS). The calculated confidence limits (Attachment B) were compared to the GWPSs provided in Table 2. The GWPSs were established during a previous statistical analysis as either (a) the background concentration or (b) the maximum contaminant level (MCL) and risk-based levels specified in 40 CFR 257.95(h)(2), whichever was greater (Geosyntec 2024).

No SSLs were identified at the Amos BAP.

2.2.2 Evaluation of Potential Appendix III SSIs

The Appendix III results were analyzed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the May 2024 assessment monitoring event from each compliance well were compared to previously established prediction limits to assess whether the results were statistically above

background values (Table 3). The following concentrations were above the upper prediction limits (UPLs) as noted:

- Calcium concentrations were above the interwell UPL of 20.5 milligrams per liter (mg/L) at MW-1 (32.6 mg/L), MW-4 (29.2 mg/L), MW-5 (41.9 mg/L), MW-1605 (30.5 mg/L), and MW-1606 (34.7 mg/L).
- Chloride concentrations were above the interwell UPL of 43.4 mg/L at MW-1 (46.4 mg/L), MW-5 (95.9 mg/L), MW-1605 (54.0 mg/L), and MW-1606 (92.5 mg/L).
- Sulfate concentrations were above the interwell UPL of 75.7 mg/L at MW-1 (145 mg/L), MW-4 (117 mg/L), MW-5 (143 mg/L), MW-1605 (171 mg/L), and MW-1606 (193 mg/L).
- TDS concentrations were above the interwell UPL of 265 mg/L at MW-1 (350 mg/L), MW-4 (310 mg/L), MW-5 (400 mg/L), MW-1605 (400 mg/L), and MW-1606 (500 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the May 2024 sample was above the UPL or, in the case of pH, below the lower prediction limit. Based on this evaluation, concentrations of Appendix III constituents appear to be above background concentrations.

2.3 Conclusions

Annual and semiannual assessment monitoring events were conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, and no QA/QC issues that impacted data usability were identified. A review of outliers identified no potential outliers in the March and May 2024 data. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPS. No SSLs were identified.

.

3. REFERENCES

Geosyntec. 2021. *Statistical Analysis Plan – Amos Plant*. Geosyntec Consultants, Inc. January.

Geosyntec. 2024. *Statistical Analysis Summary – Bottom Ash Pond, Amos Plant, Winfield, West Virginia*. Geosyntec Consultants, Inc. February.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Amos Plant – Bottom Ash Pond

Parameter	Unit	MW-1		MW-4		MW-5		MW-6		MW-1601	
		3/20/2024	5/8/2024	3/19/2024	5/7/2024	3/19/2024	5/7/2024	3/20/2024	5/7/2024	3/18/2024	5/7/2024
Antimony	µg/L	0.012 J1	0.011 J1	0.009 J1	0.1 U1	0.1 U1	0.008 J1	0.032 J1	0.010 J1	0.1 U1	0.1 U1
Arsenic	µg/L	0.07 J1	0.09 J1	0.81	0.83	2.64	2.74	36.1	31.4	5.20	6.83
Barium	µg/L	21.7	21.6	126	107	305 M1	311	183	173	137	139
Beryllium	µg/L	0.124	0.123	0.024 J1	0.023 J1	0.065	0.062	0.014 J1	0.015 J1	0.015 J1	0.016 J1
Boron	mg/L	0.111	0.108	0.105	0.113	0.019 J1	0.021 J1	0.013 J1	0.016 J1	0.007 J1	0.011 J1
Cadmium	µg/L	1.85	1.56	0.028	0.031	0.004 J1	0.005 J1	0.02 U1	0.02 U1	0.016 J1	0.014 J1
Calcium	mg/L	30.7	32.6	30.9	29.2	44.5 M1	41.9	13.2	13.4	12.7	12.4
Chloride	mg/L	47.0	46.4	36.6	30.5	105	95.9	9.28	9.96	28.3	34.0
Chromium	µg/L	0.32	0.47	0.37	0.38	0.36	0.33	0.55	0.51	0.18 J1	0.21 J1
Cobalt	µg/L	12.6	10.3	2.05	2.44	0.780	1.03	10.6	9.32	4.60	4.16
Combined Radium	pCi/L	0.74	1.13	0.92	1.47	1.29	1.65	0.98	1.49	1.05	1.29
Fluoride	mg/L	0.03 J1	0.03 J1	0.05 J1	0.04 J1	0.03 J1	0.03 J1	0.05 J1	0.05 J1	0.04 J1	0.04 J1
Lead	µg/L	0.10 J1	0.09 J1	0.17 J1	0.14 J1	0.2 U1	0.2 U1	0.10 J1	0.2 U1	0.06 J1	0.08 J1
Lithium	mg/L	0.00266	0.00264	0.00088	0.00104	0.00207	0.00243	0.00094	0.00114	0.00173	0.00199
Mercury	µg/L	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1
Molybdenum	µg/L	0.5 U1	0.5 U1	0.1 J1	0.5 U1	0.5 U1	0.5 U1	0.6	0.4 J1	0.5 U1	0.5 U1
Selenium	µg/L	0.5 U1	0.12 J1	0.5 U1	0.5 U1	0.5 U1	0.05 J1	0.09 J1	0.09 J1	0.5 U1	0.5 U1
Sulfate	mg/L	142	145	113	117	161	143	0.6	1.1	52.3	55.9
Thallium	µg/L	0.04 J1	0.03 J1	0.2 U1	0.2 U1	0.2 U1	0.2 U1	0.07 J1	0.04 J1	0.2 U1	0.2 U1
Total Dissolved Solids	mg/L	330	350	290	310	420	400	240	220	180	190
pH	SU	5.1	5.1	5.8	5.7	5.7	5.7	6.2	6.1	5.6	5.7

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Amos Plant – Bottom Ash Pond

Parameter	Unit	MW-1602A		MW-1603A		MW-1604		MW-1605		MW-1606	
		3/18/2024	5/8/2024	3/19/2024	5/8/2024	3/20/2024	5/8/2024	3/19/2024	5/8/2024	3/19/2024	5/8/2024
Antimony	µg/L	0.011 J1	0.009 J1	0.015 J1	0.013 J1	0.029 J1	0.046 M1, J1	0.014 J1	0.023 J1	0.036 J1	0.029 J1
Arsenic	µg/L	20.0	18.6	78.9	74.2	5.05	4.79 M1	2.80	2.67	7.69	7.87
Barium	µg/L	253	236	239	217 M1	157	148 M1	71.3	75.0	50.7	43.9
Beryllium	µg/L	0.013 J1	0.009 J1	0.015 J1	0.011 J1	0.056	0.090 M1	0.089	0.111	0.088	0.094
Boron	mg/L	0.013 J1	0.014 J1	0.012 J1	0.011 J1	0.176	0.135	0.061	0.055	0.079	0.058
Cadmium	µg/L	0.02 U1	0.02 U1	0.02 U1	0.02 U1	0.006 J1	0.008 J1	0.039	0.019 J1	0.062	0.331
Calcium	mg/L	20.6	20.0	14.3	13.5	22.0	18.4 M1	37.7	30.5	34.1	34.7
Chloride	mg/L	41.4	40.8	7.43	7.13	21.5	20.5	63.4	54.0	77.6	92.5
Chromium	µg/L	0.40	0.32	0.67	0.39	1.24	2.78 M1	0.46	0.83	0.51	0.45
Cobalt	µg/L	0.186	0.149	0.277	0.197	0.807	0.971 M1	9.65	5.59	6.23	8.37
Combined Radium	pCi/L	1.33	1.48	0.77	0.98	1.64	1.19	1.27	1.71	1.64	1.21
Fluoride	mg/L	0.13	0.13	0.24	0.23	0.07	0.07	0.03 J1	0.02 J1	0.02 J1	0.03 J1
Lead	µg/L	0.38	0.22	0.22	0.11 J1	0.68	1.31 M1	0.37	0.61	0.76	0.61
Lithium	mg/L	0.00096	0.00111	0.00032	0.00031	0.00054	0.00097	0.00217	0.00224	0.00203	0.00266
Mercury	µg/L	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1
Molybdenum	µg/L	0.7	0.6	0.9	0.8	0.3 J1	0.4 J1	0.5 U1	0.5 U1	0.1 J1	0.1 J1
Selenium	µg/L	0.5 U1	0.04 J1	0.5 U1	0.04 J1	0.15 J1	0.32 J1	0.05 J1	0.15 J1	0.5 U1	0.09 J1
Sulfate	mg/L	21.1	21.0	0.6 U1	0.6 U1	1.3	0.8	189	171	196	193
Thallium	µg/L	0.2 U1	0.2 U1	0.2 U1	0.2 U1	0.2 U1	0.2 U1	0.2 U1	0.2 U1	0.2 U1	0.2 U1
Total Dissolved Solids	mg/L	220	220	100	110	240	240 P1	410	400	430	500
pH	SU	5.5	6.5	6.6	6.7	6.2	6.2	5.5	5.4	5.4	5.4

Notes:
µg/L: micrograms per liter
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
P2: The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.
pCi/L: picocuries per liter
SU: standard unit
U1: Not detected at or above method detection limit (MDL). For statistical analysis, parameters that were not detected were replaced with the reporting limit.

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Amos Plant - Bottom Ash Pond

Constituent Name	MCL	CCR Rule-Specified	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600	n/a	0.000170	0.00600
Arsenic, Total (mg/L)	0.0100	n/a	0.0903	0.0903
Barium, Total (mg/L)	2.00	n/a	0.303	2.00
Beryllium, Total (mg/L)	0.00400	n/a	0.0001060	0.00400
Cadmium, Total (mg/L)	0.00500	n/a	0.0000300	0.00500
Chromium, Total (mg/L)	0.100	n/a	0.00175	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.0150	0.0150
Combined Radium, Total (pCi/L)	5.00	n/a	2.51	5.00
Fluoride, Total (mg/L)	4.00	n/a	0.310	4.00
Lead, Total (mg/L)	0.0150	n/a	0.00407	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.0200	0.0400
Mercury, Total (mg/L)	0.00200	n/a	0.00000500	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00208	0.100
Selenium, Total (mg/L)	0.0500	n/a	0.000500	0.0500
Thallium, Total (mg/L)	0.00200	n/a	0.000224	0.00200

Notes:
1. Calculated UTL (upper tolerance limit) represents site-specific background values.
2. Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: coal combustion residuals
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/l: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 3. Appendix III Data Summary
Statistical Analysis Summary
Amos Plant – Bottom Ash Pond

Analyte	Unit	Description	MW-1	MW-4	MW-5	MW-1604	MW-1605	MW-1606
			5/8/2024	5/7/2024	5/7/2024	5/8/2024	5/8/2024	5/8/2024
Boron	mg/L	Interwell Background Value (UPL)	0.183					
		Analytical Result	0.108	0.113	0.021	0.135	0.055	0.058
Calcium	mg/L	Interwell Background Value (UPL)	20.5					
		Analytical Result	**32.6**	**29.2**	**41.9**	18.4	**30.5**	**34.7**
Chloride	mg/L	Interwell Background Value (UPL)	43.4					
		Analytical Result	**46.4**	30.5	**95.9**	20.5	**54.0**	**92.5**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.0600	0.0700	0.0500	0.160	0.0900	0.0600
		Analytical Result	0.03	0.04	0.03	0.07	0.02	0.03
pH	SU	Intrawell Background Value (UPL)	7.3	7.0	6.3	7.2	6.4	6.8
		Intrawell Background Value (LPL)	4.8	5.3	5.2	5.9	5.1	5.2
		Analytical Result	5.1	5.7	5.7	6.2	5.4	5.4
Sulfate	mg/L	Interwell Background Value (UPL)	75.7					
		Analytical Result	**145**	**117**	**143**	0.8	**171**	**193**
Total Dissolved Solids	mg/L	Interwell Background Value (UPL)	265					
		Analytical Result	**350**	**310**	**400**	240	**400**	**500**

Notes:

1. Bold values exceed the background value.

2. Background values are shaded gray.

LPL: lower prediction limit

mg/L: milligrams per liter

SU: standard units

UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Amos Bottom Ash Pond CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

Signature

22663	West Virginia	09.04.2024
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

July 1, 2024

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Suite 250
Worthington, OH 43085

Re: Amos Bottom Ash Pond
Assessment Monitoring Summary – March & May 2024

Dear Ms. Kreinberg,

Groundwater Stats Consulting (GSC), formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the Assessment Monitoring statistical analysis of groundwater data through May 2024 at American Electric Power Company's Amos Bottom Ash Pond. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015) as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the site for the CCR program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** BAP-MW-1601, BAP-MW-1602A, BAP-MW-1603A, and BAP-MW-6
- **Downgradient wells:** BAP-MW-1, BAP-MW-1604, BAP-MW-1605, BAP-MW-1606, BAP-MW-4, and BAP-MW-5

Data were sent electronically, and the statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC. The analysis was reviewed by Kristina Rayner, Senior Statistician and Founder of Groundwater Stats Consulting.

The CCR program consists of the following constituents:

- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Time series and box plots for Appendix IV parameters are provided for all wells and constituents; and are used to evaluate concentrations over the entire record (Figures A and B, respectively). Values in background, which have previously been flagged as outliers, may be seen in a lighter font and disconnected symbol on the graphs. Additionally, a summary of flagged values follows this letter (Figure C). While the reporting limits may vary from well to well, a single reporting limit substitution is used across all wells for a given parameter in the time series plots since the wells are plotted as a group.

Summary of Statistical Methods – Appendix IV Parameters

Parametric tolerance limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (USEPA, 2009), data are analyzed using either parametric or non-parametric tolerance limits as appropriate.

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric tolerance limits are used on data containing greater than 50% non-detects.

History of Initial Background Screening Conducted in December 2017

Outlier Analysis

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not conservative from a regulatory perspective, in proposed background data. Suspected outliers at all wells for Appendix IV parameters were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits.

Tukey's outlier test noted a few outliers and a summary of that report was submitted with the screening at that time. Any values flagged as outliers may be seen on the summary table following this letter and are plotted in a lighter font on the time series graph. The test identified an outlier for arsenic in well BAP-MW-1604; however, these concentrations were similar to concentrations in neighboring wells and were not flagged as outliers. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

Seasonality

No true seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

Trend Tests

While trends may be visual, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, earlier data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When the historical records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

The results of the trend analyses showed a couple statistically significant increasing trends and several statistically significant decreasing trends and a summary of those results were included with the screening. All trends were relatively low in magnitude when compared to average concentrations and data; therefore, no adjustments were required.

Background Update – Conducted in February 2024

Prior to evaluating Appendix IV parameters, background (upgradient) data are screened through visual screening and Tukey's outlier test for potential outliers and extreme trending patterns that would lead to artificially elevated statistical limits.

Outlier Analysis

Tukey's outlier test on pooled upgradient well data through October 2023 identified outliers for arsenic, barium, chromium, cobalt, combined radium 226 + 228, fluoride, and lithium. Several of the values identified by Tukey's test were either similar to concentrations from neighboring upgradient wells or were lower than the respective Maximum Contaminant Level (MCL); therefore, the values were not flagged as outliers. Tukey's outlier test and visual screening confirmed all previously flagged values and no new outliers were flagged during the update. Tukey's test results were included with the background update report.

Additionally, downgradient well data through October 2023 were screened through visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, a regulatory conservative approach is taken in that values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding the measurements. No new outliers among downgradient wells were flagged during the update. All flagged values may be seen on the Outlier Summary following this letter.

Interwell Upper Tolerance Limits

Interwell upper tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data through October 2023 for the Appendix IV constituents discussed above (Figure D). These limits are updated on an annual basis and will be updated again during the Fall 2024 sample event. Parametric tolerance limits are calculated, with a target of 95% confidence and 95% coverage, when data follow a normal or transformed-normal distribution such as for chromium, combined radium 226 + 228, lead, and molybdenum. When data contained greater than 50% non-detects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were

used. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

These limits were compared to the Maximum Contaminant Levels (MCLs) and the CCR-Rule specified levels in the Groundwater Protection Standards (GWPS) table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons (Figure E).

Evaluation of Appendix IV Parameters – March & May 2024

Time series plots were used to visually identify potential outliers in downgradient wells for the March and May 2024 sample events. When suspected outliers are identified, Tukey's outlier test is used to formally test whether measurements are statistically significant. As mentioned above, high outliers are 'cautiously' flagged in the downgradient wells when measurements are clearly much different from remaining data within a given well. This is intended to be a regulatory conservative approach in that it will reduce the variance and thus reduce the width of parametric confidence intervals; although it will also reduce the mean and thus lower the entire interval. The intent is to better represent the actual downgradient mean. No additional suspected outliers were identified or flagged during this analysis.

Confidence intervals were then constructed with data through May 2024 on downgradient wells for each of the Appendix IV parameters using the highest limit of the MCL, CCR-Rule specified levels, or background limit as the GWPS as discussed above (Figure F). These intervals were either parametric or nonparametric confidence intervals depending on the data distribution and percentage of non-detects. When data followed a normal or transformed-normal distribution, parametric confidence intervals were used for Appendix IV parameters. Nonparametric confidence intervals, which use the highest and lowest values in background as interval limits, were constructed when data did not follow a normal or transformed-normal distribution or when greater than 50% non-detects were present. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. No exceedances were noted for any of the well/constituent pairs. A summary of the confidence interval results follows this letter.

Trend Test Evaluation – Appendix IV

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable at the 95% confidence level. Utilizing the 95% confidence level for trend tests readily identifies significant trends and is more sensitive than the 99% confidence level without drastically increasing the false negative rate. Upgradient wells are included in the trend analyses for all parameters found to exceed their confidence interval in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be unrelated to practices at the site. Since no confidence interval exceedances were identified, trend tests were not required.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Amos Bottom Ash Pond. If you have any questions or comments, please feel free to contact us.

Andrew Collins
Project Manager

Kristina Rayner
Senior Statistician

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Hollow symbols indicate censored values.

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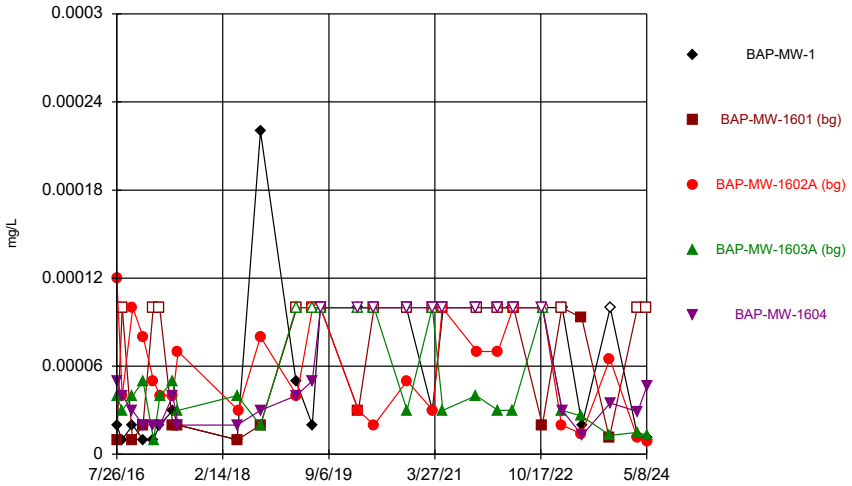

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Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

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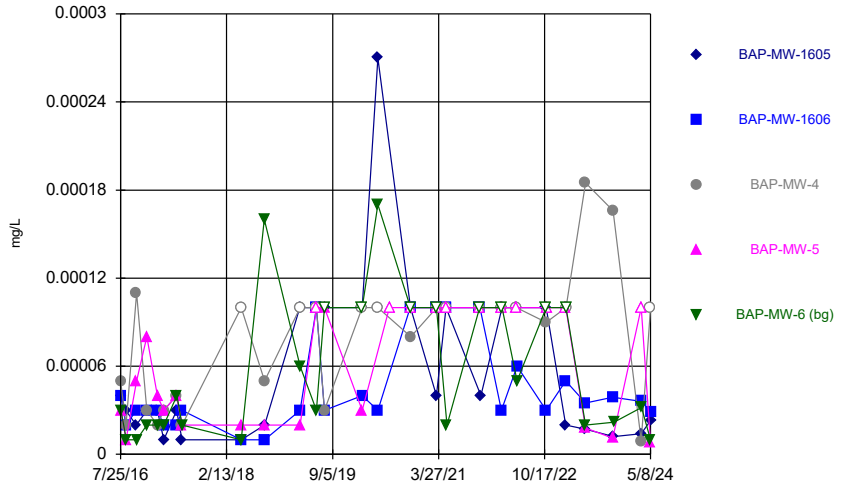

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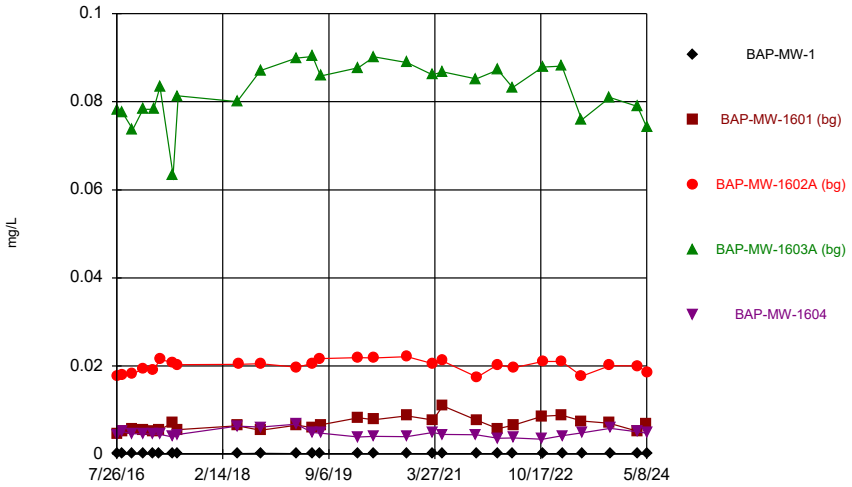

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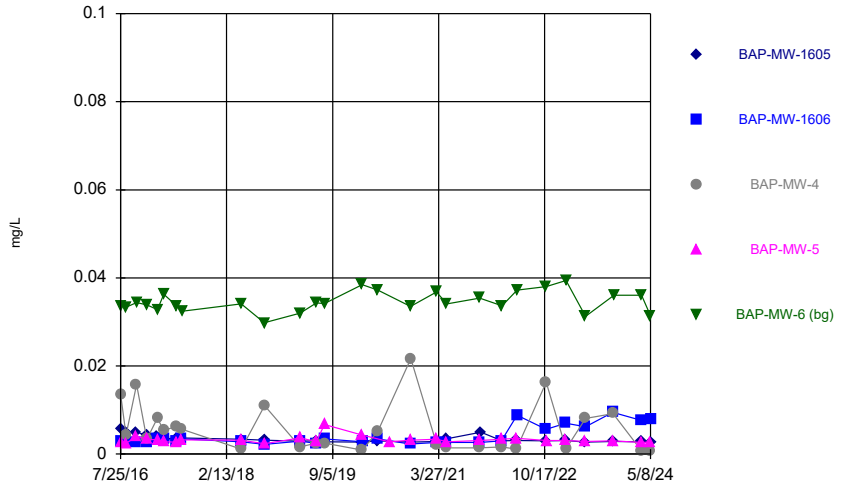

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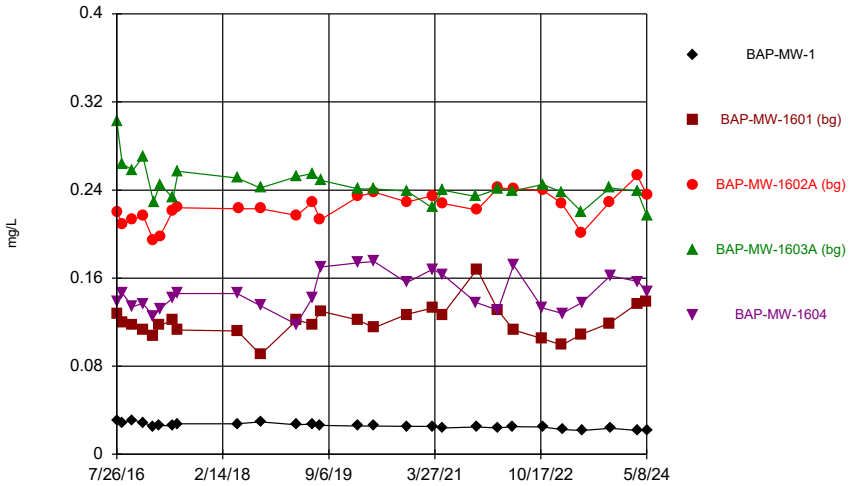

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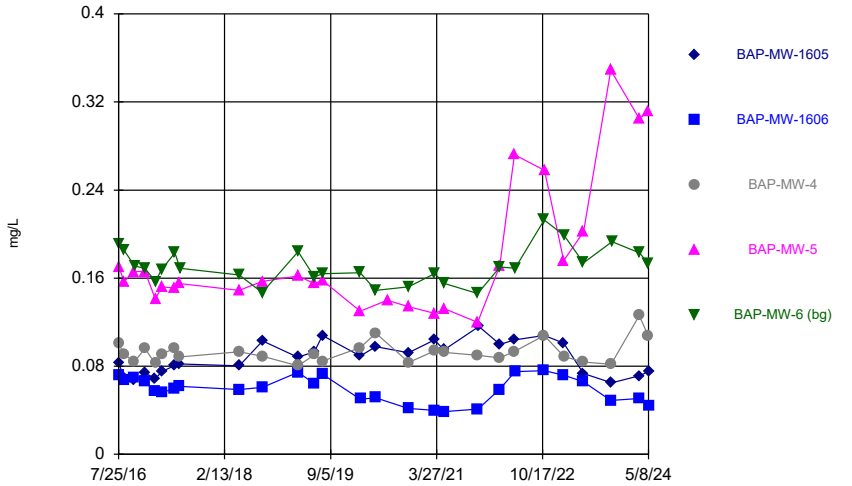

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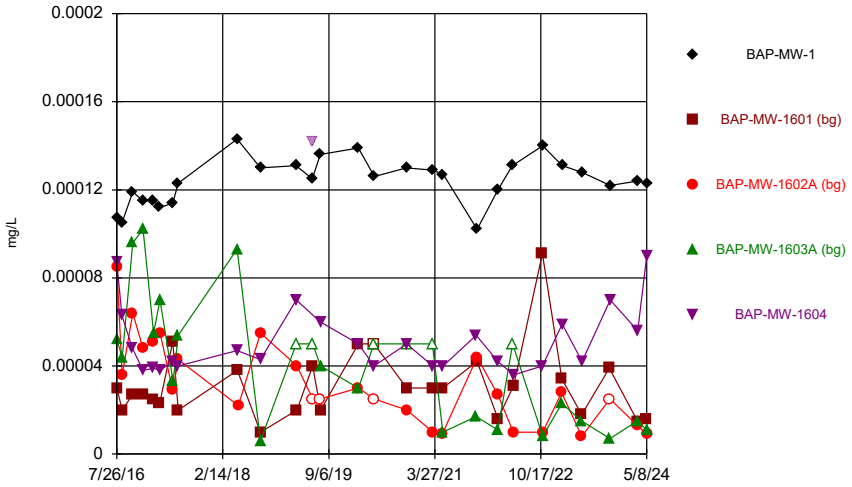

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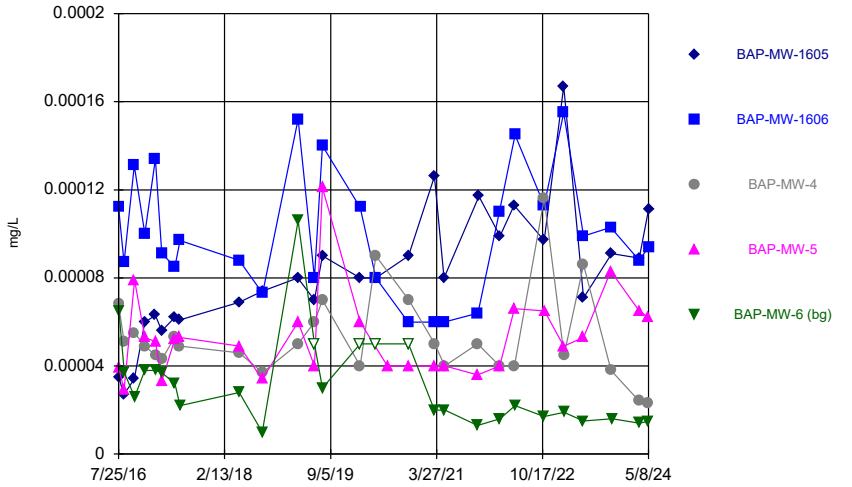

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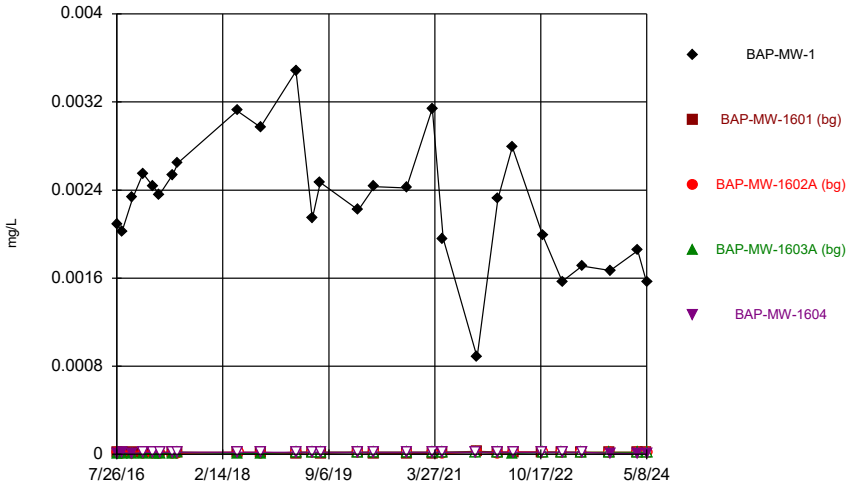

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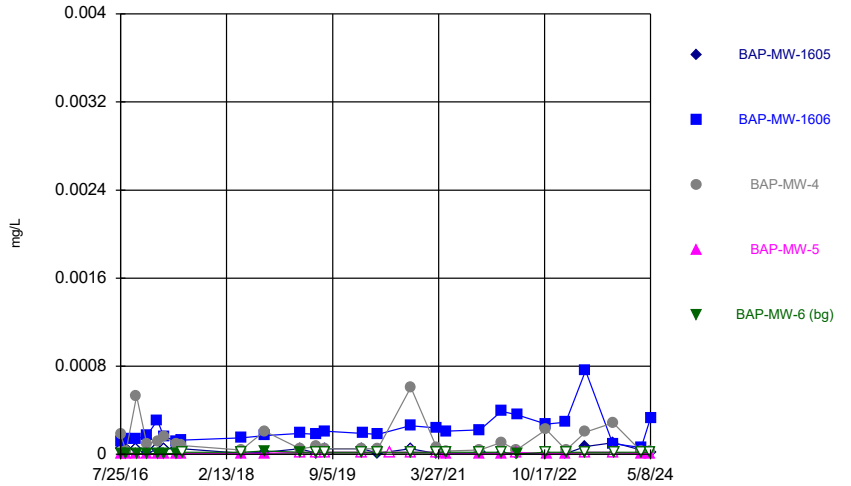

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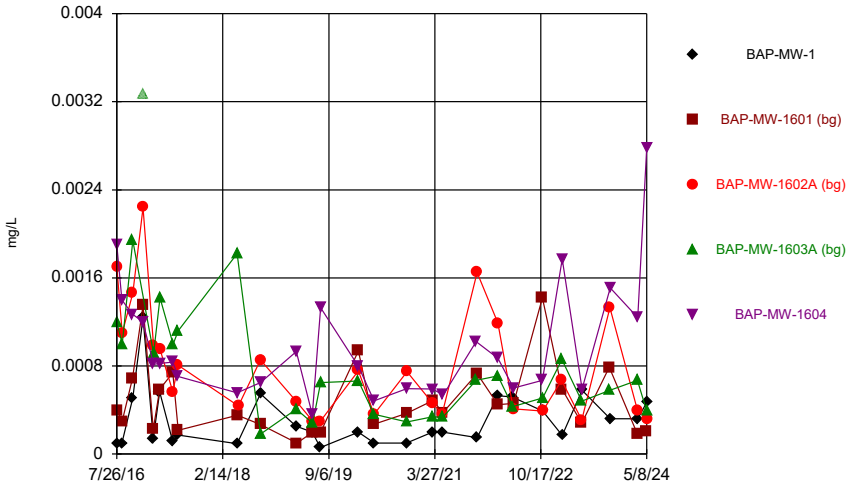

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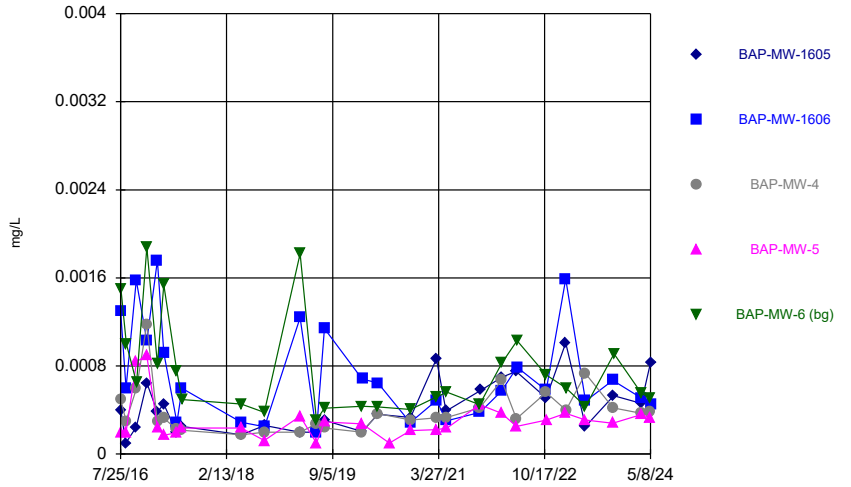

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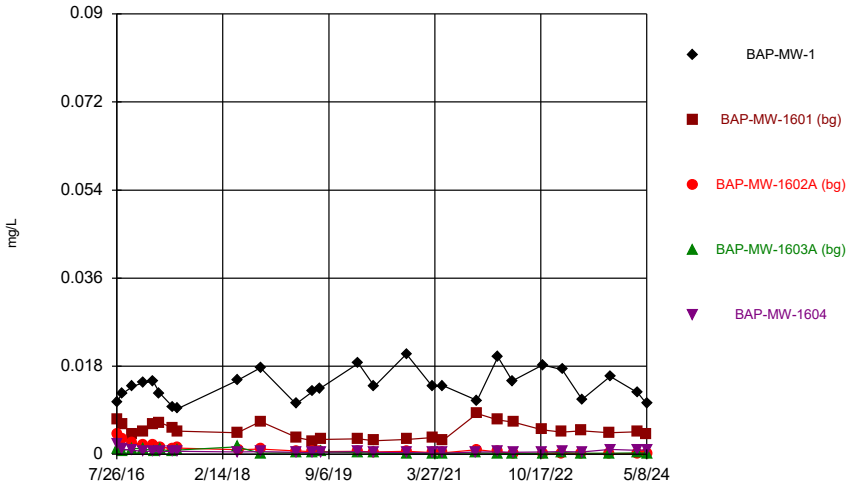

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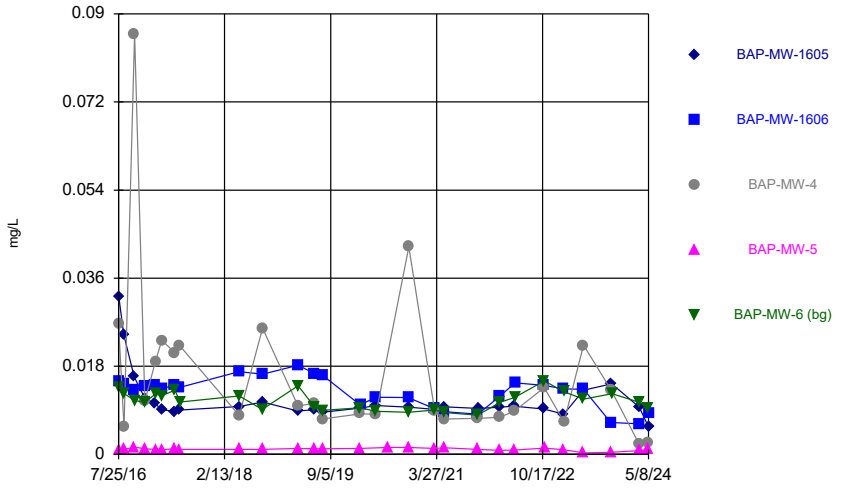
Time Series



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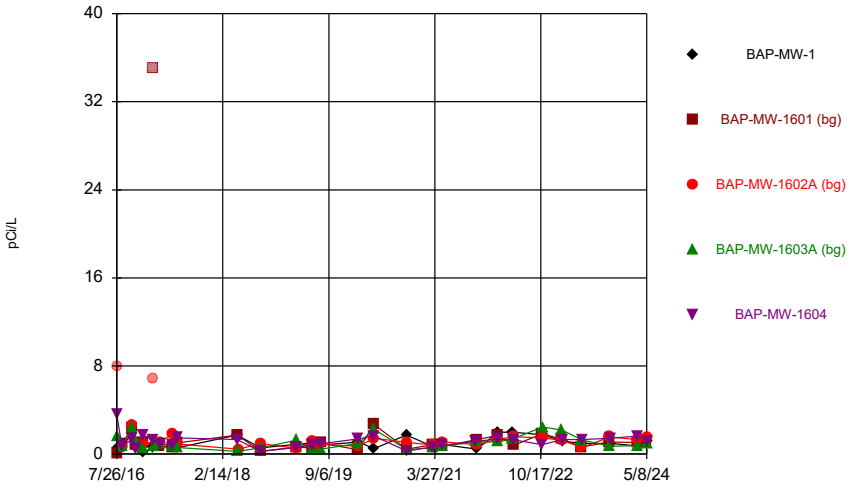

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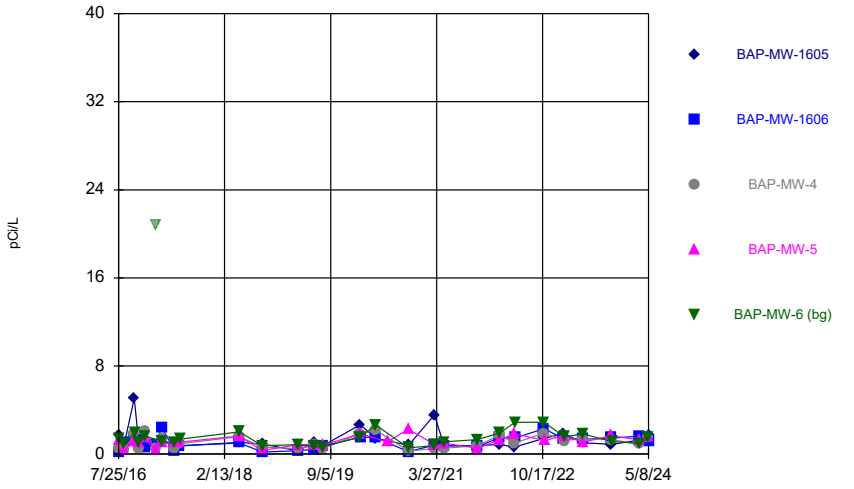
Time Series



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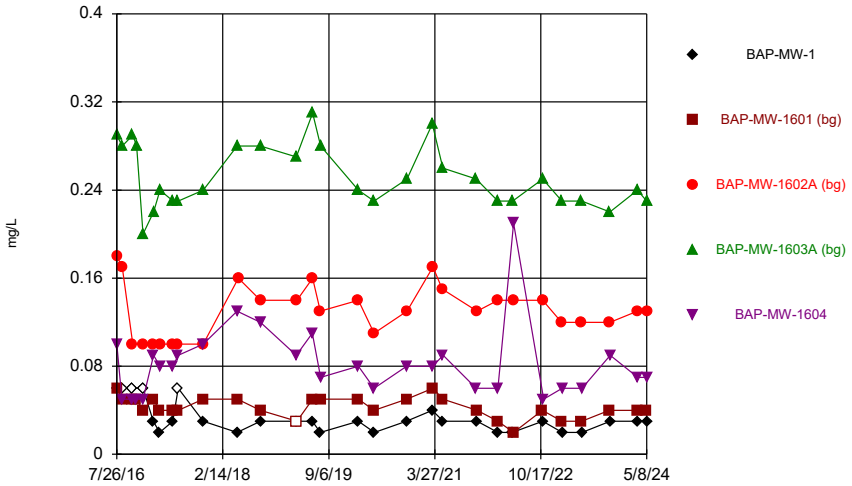

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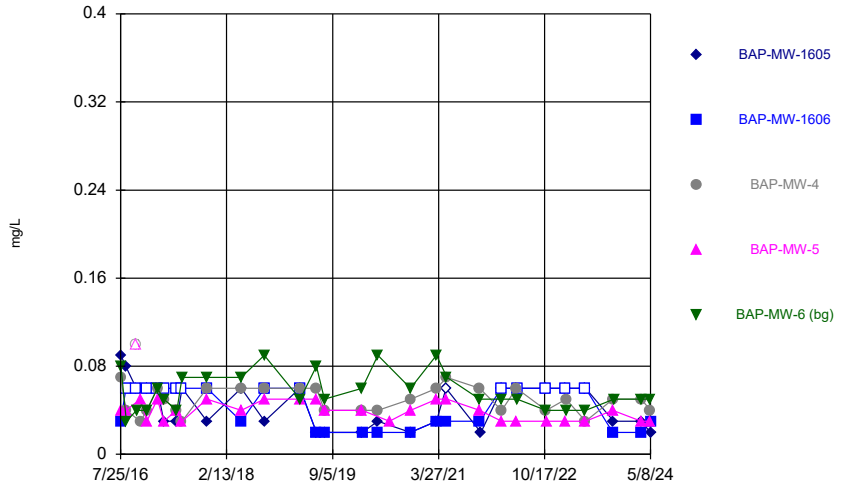

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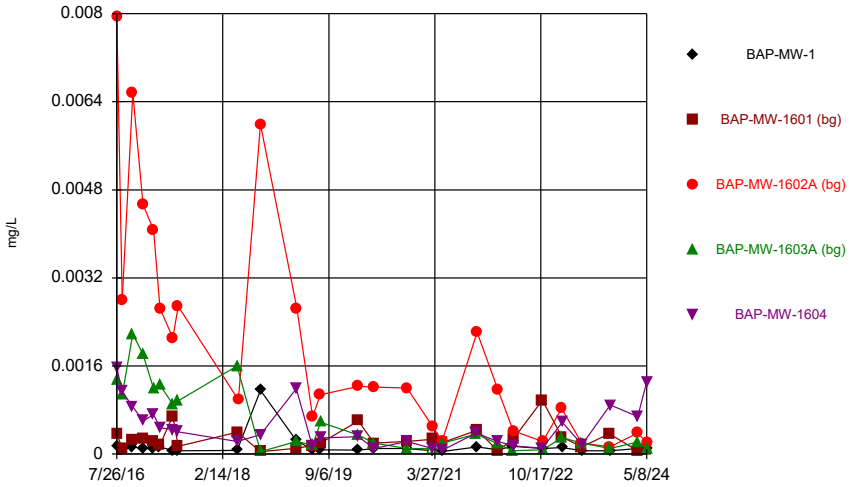

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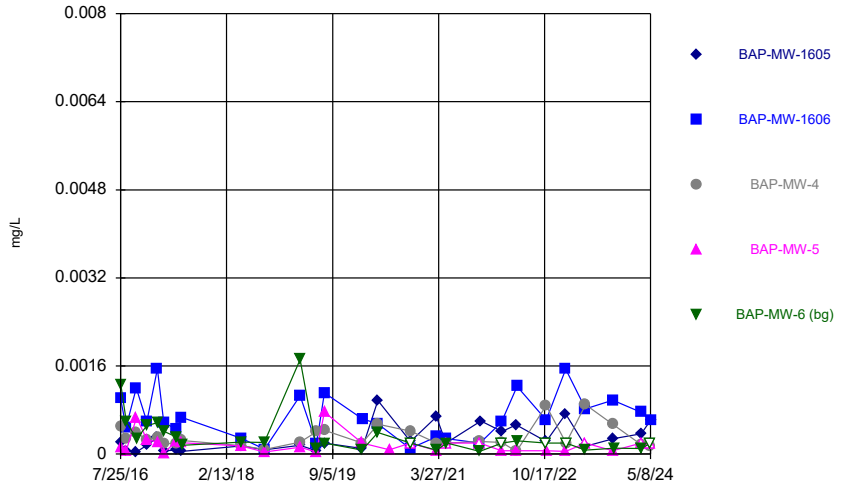

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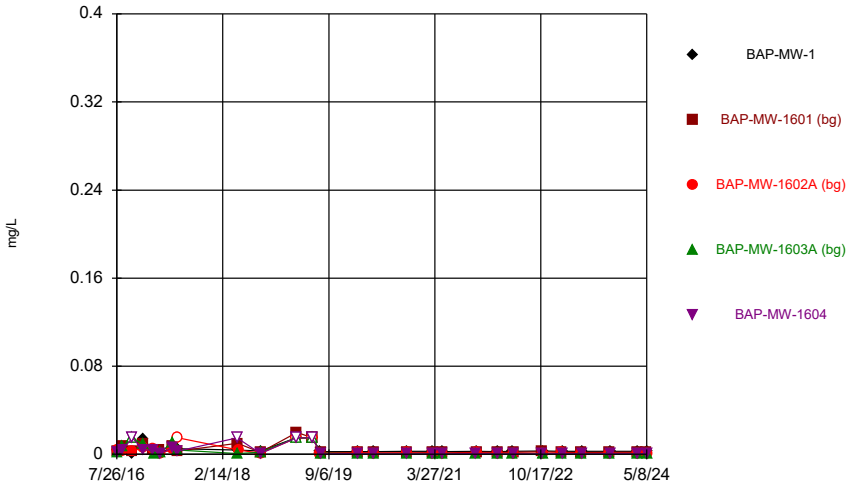
Time Series



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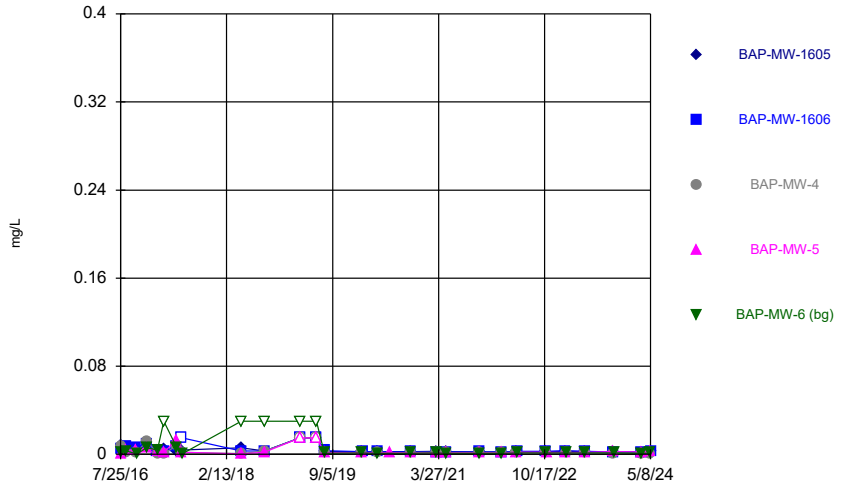
Time Series



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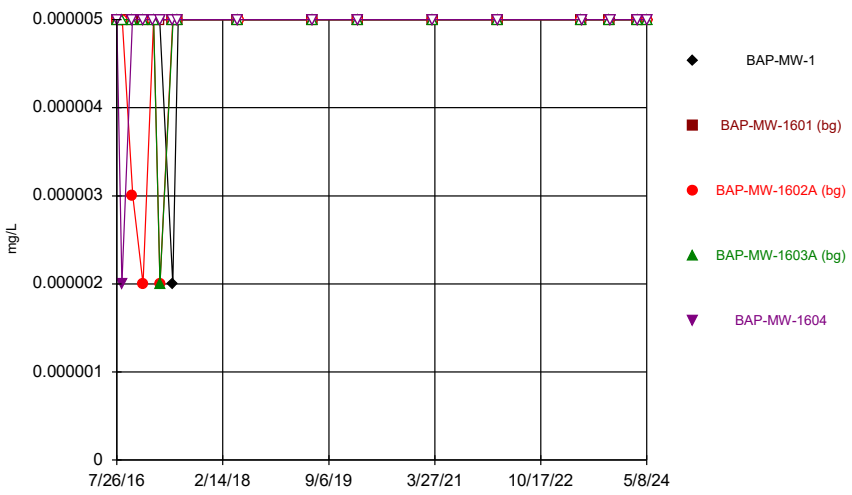
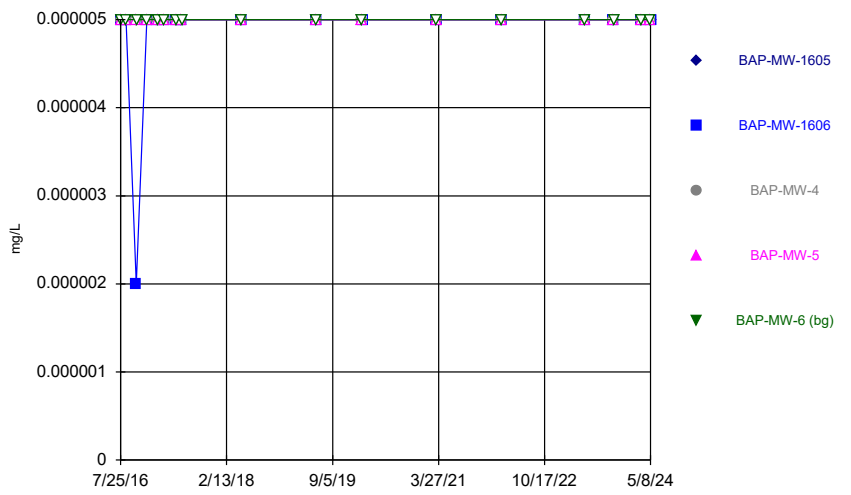
Time Series



Constituent: Mercury, total Analysis Run 6/28/2024 10:59 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



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Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG
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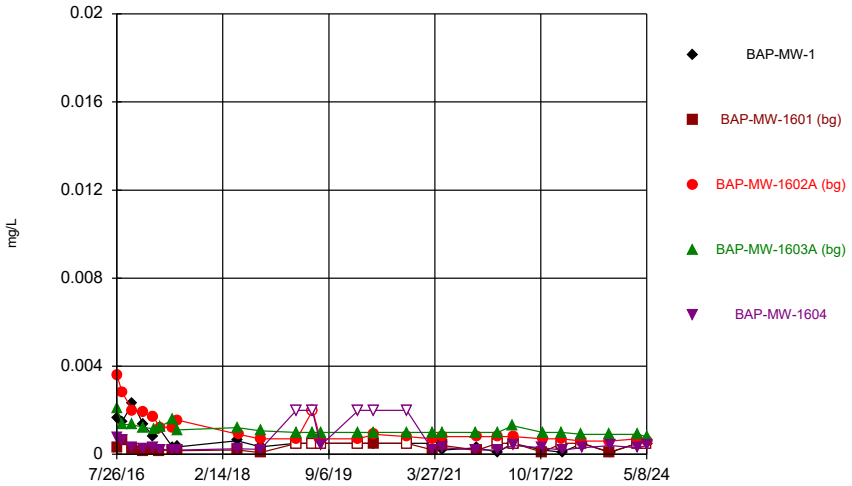
Time Series



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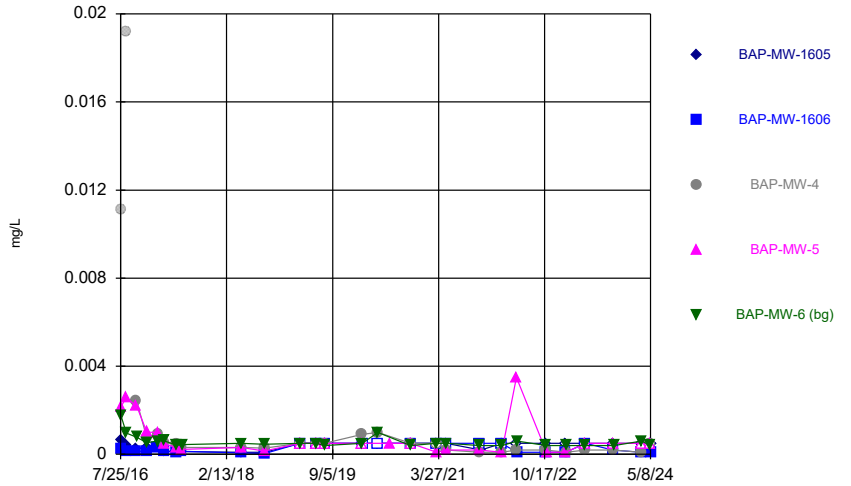
Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



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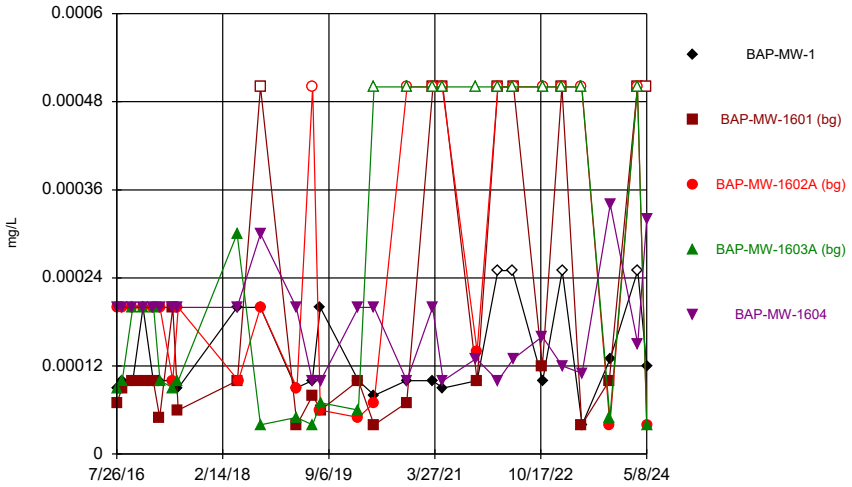

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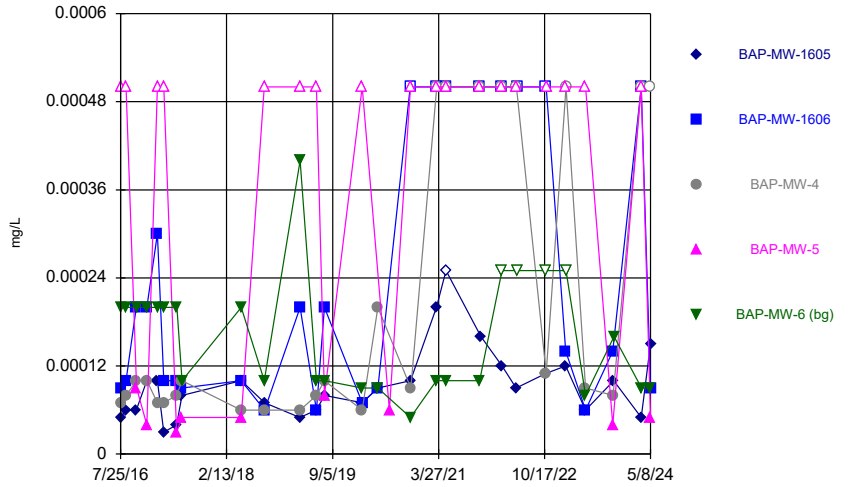

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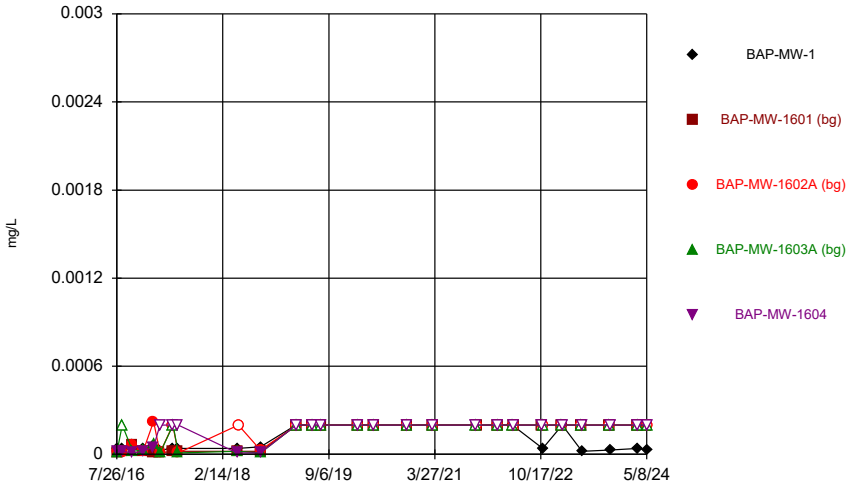
Time Series



Constituent: Thallium, total Analysis Run 6/28/2024 10:59 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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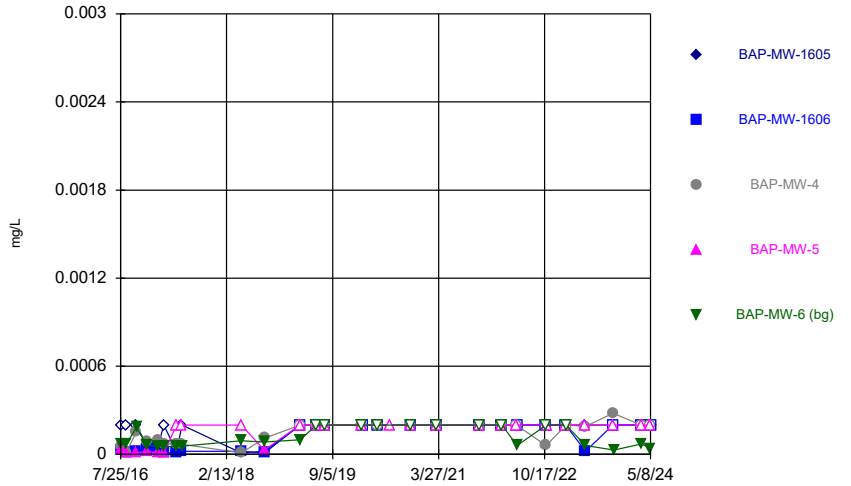
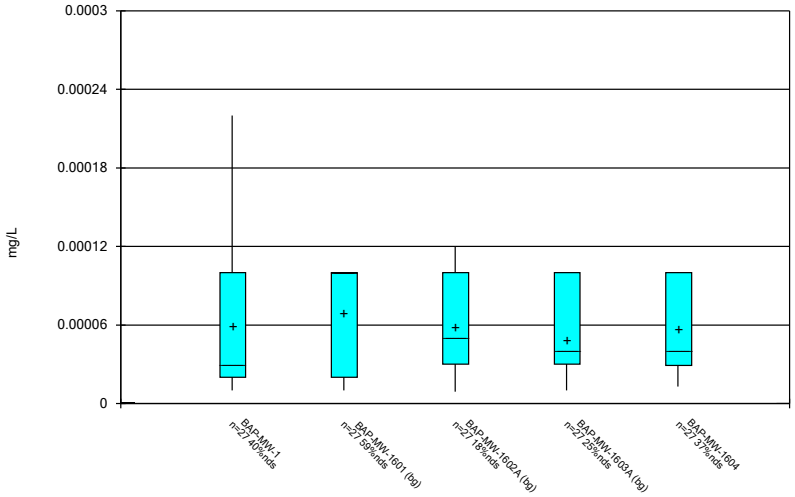
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium, total Analysis Run 6/28/2024 10:59 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Antimony, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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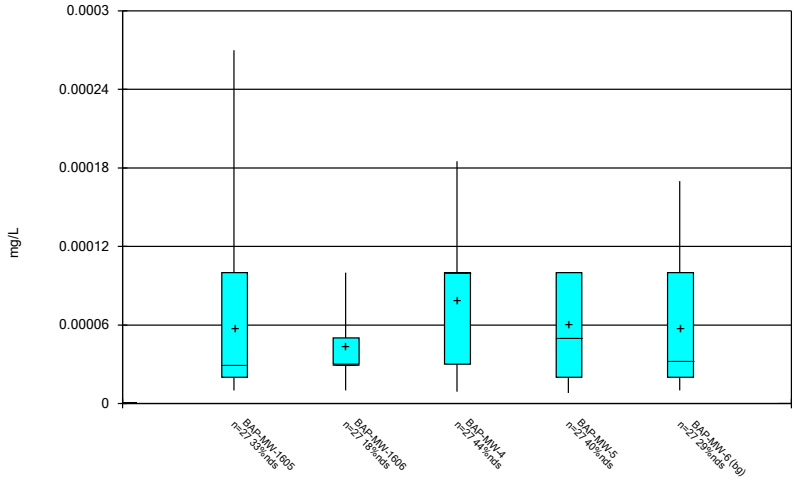
Box & Whiskers Plot

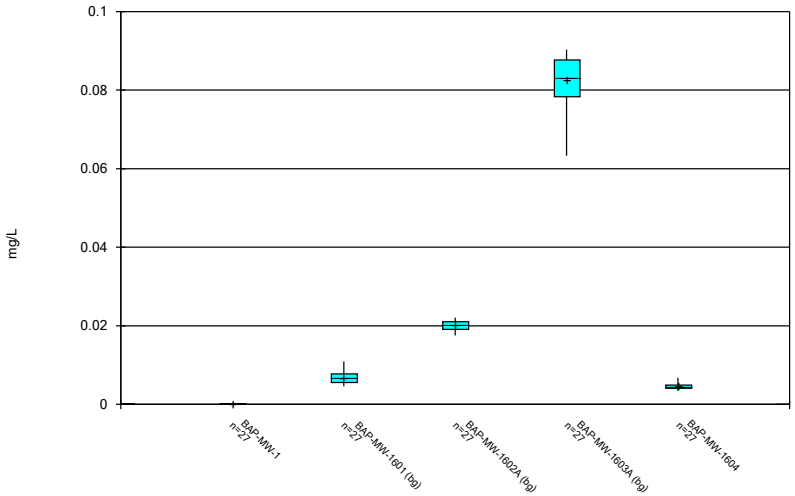


Constituent: Antimony, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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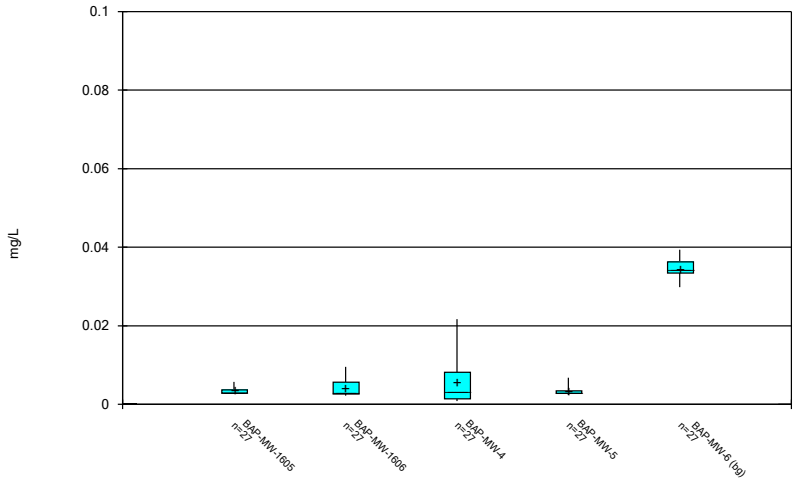
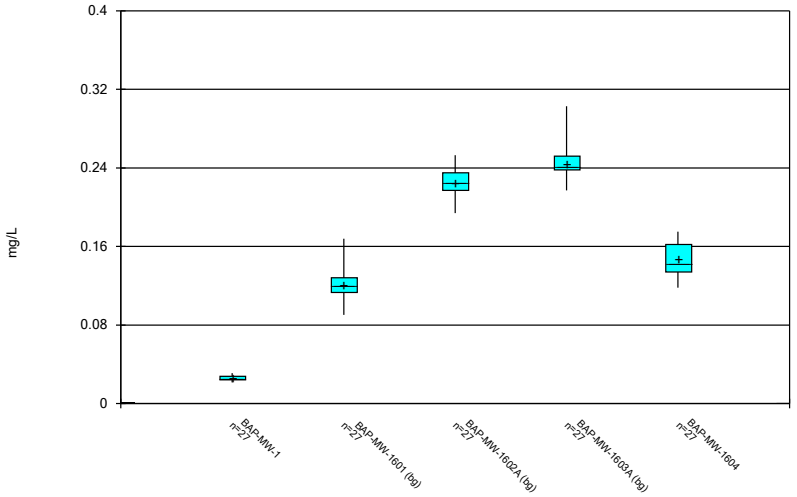
Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Barium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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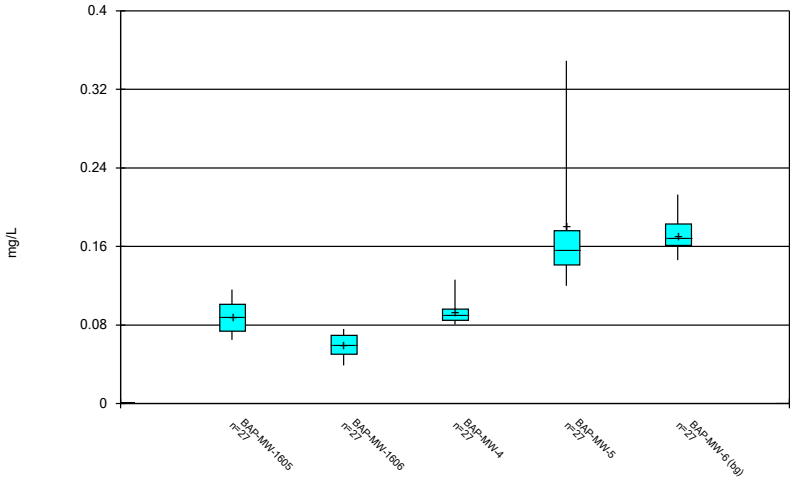
Box & Whiskers Plot

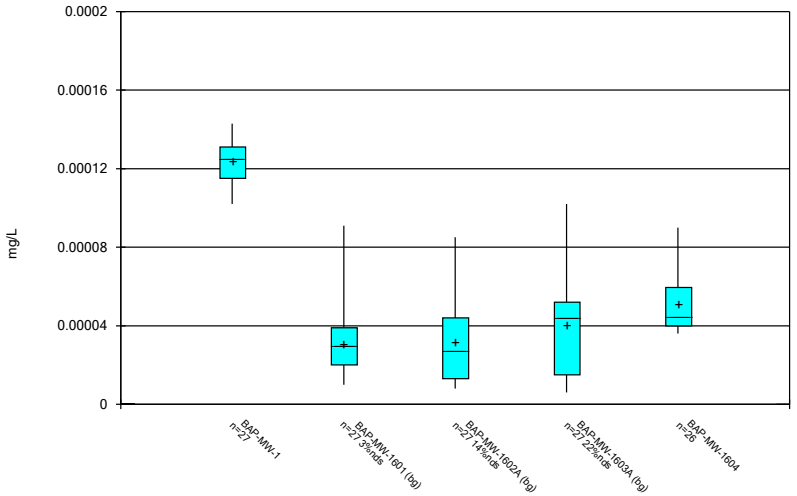


Constituent: Barium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Beryllium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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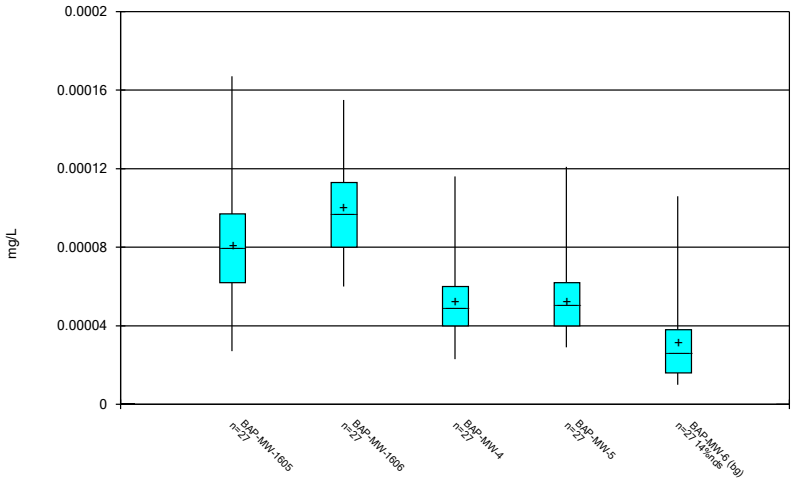
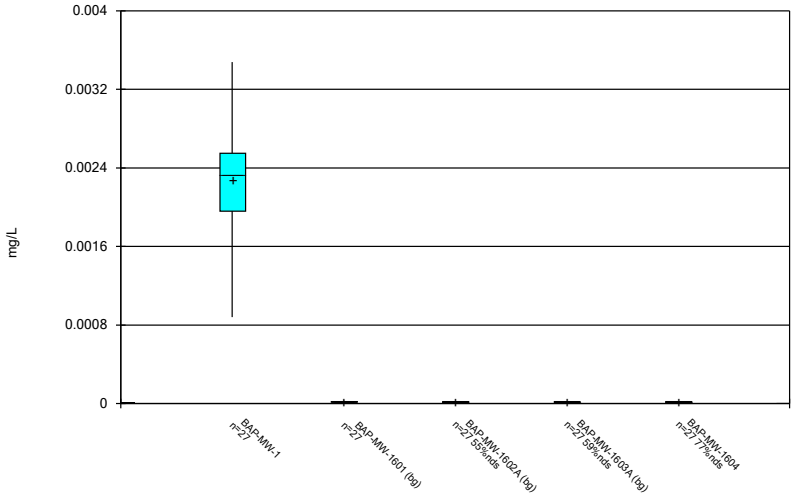
Box & Whiskers Plot



Constituent: Beryllium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot

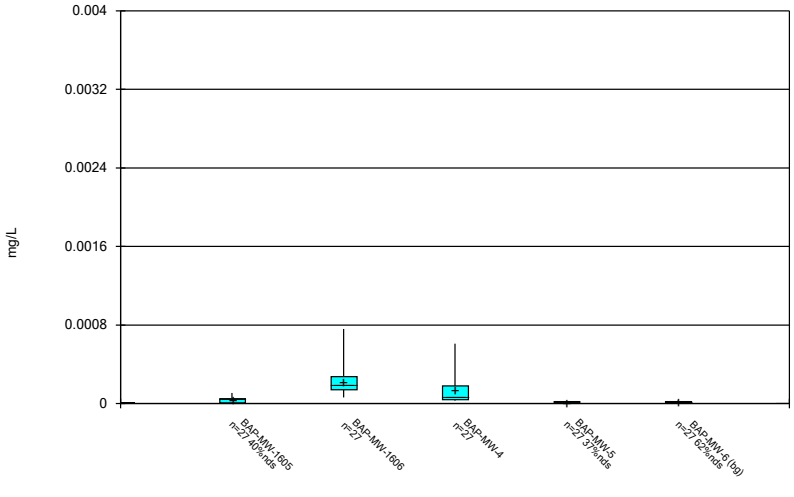


Constituent: Cadmium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot

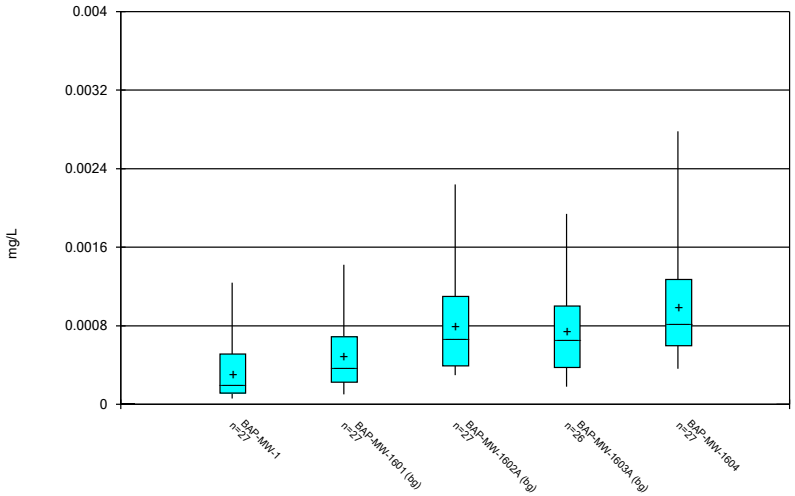


Constituent: Cadmium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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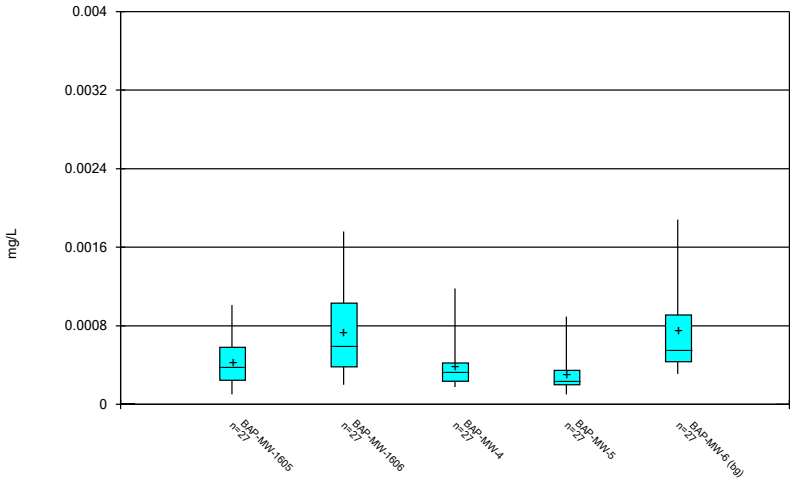
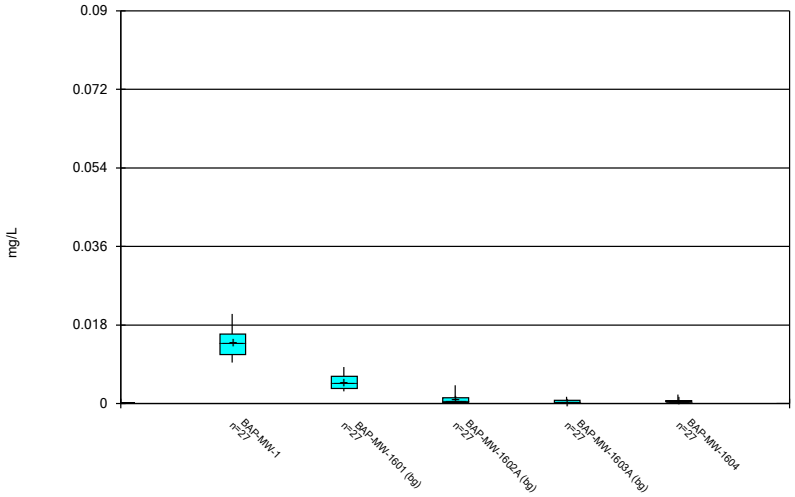
Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot

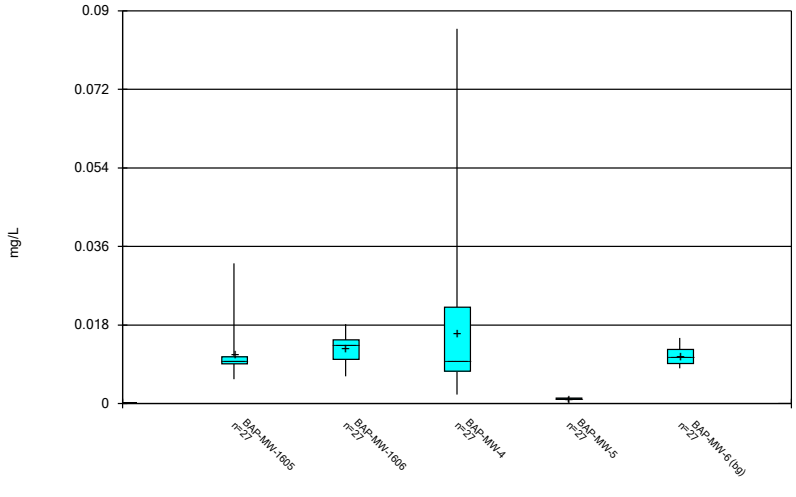


Constituent: Cobalt, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot

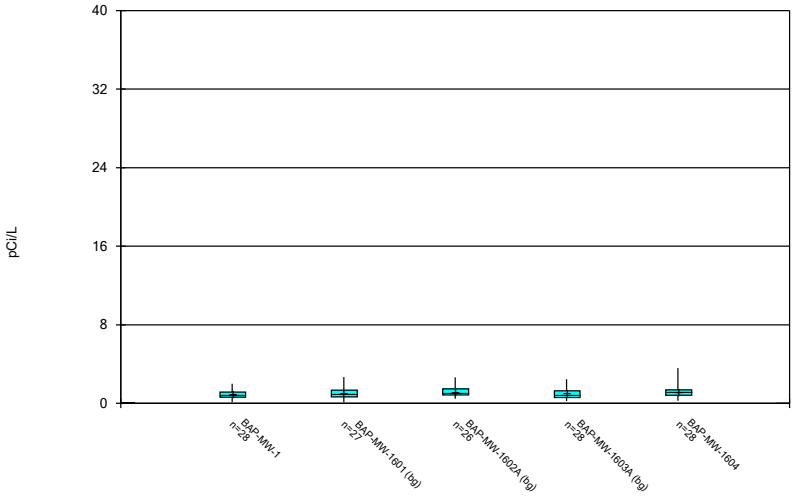


Constituent: Cobalt, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot

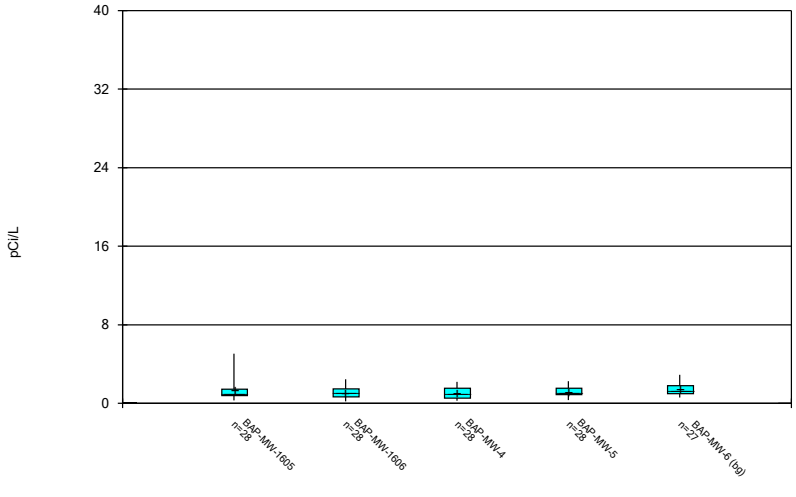


Constituent: Combined Radium 226 + 228 Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

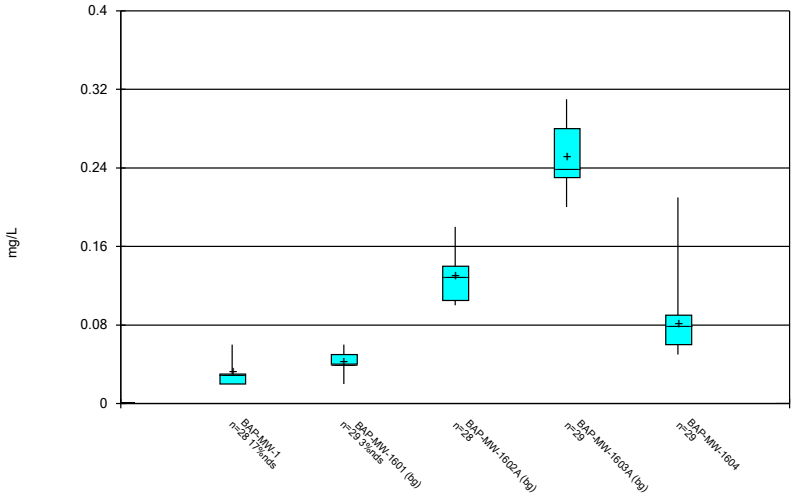
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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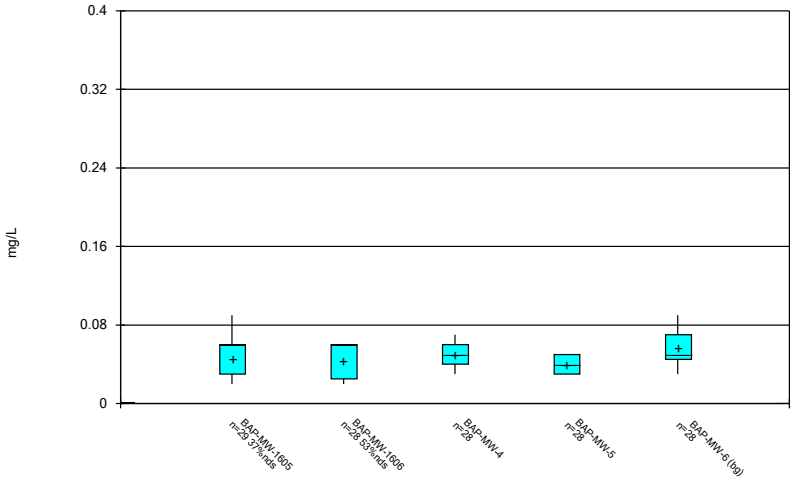
Box & Whiskers Plot

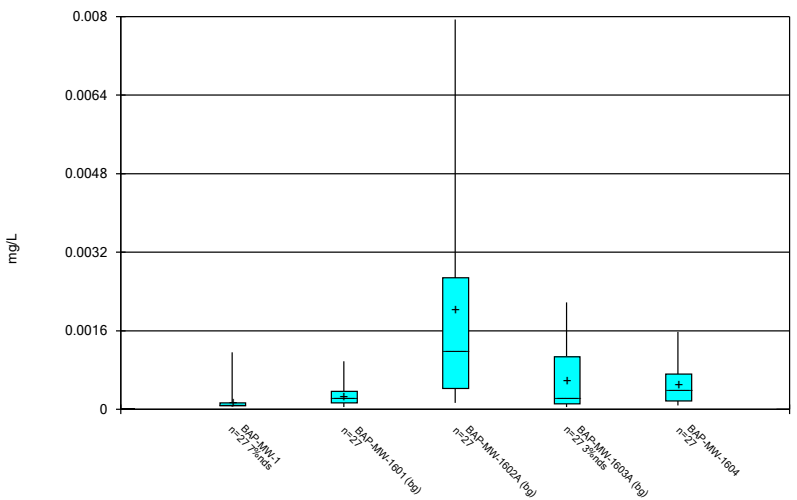


Constituent: Fluoride, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Lead, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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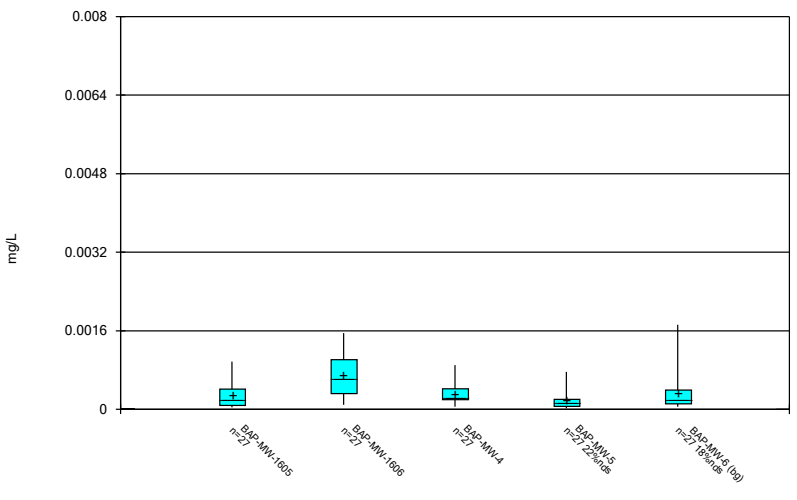
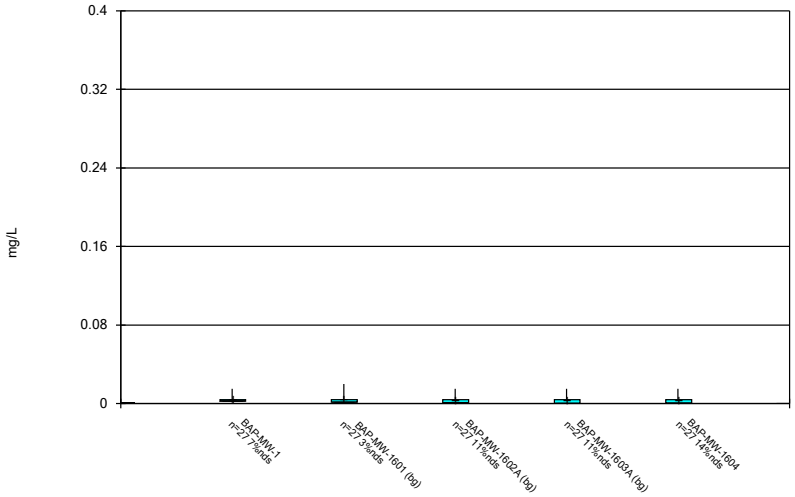
Box & Whiskers Plot



Constituent: Lead, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Lithium, total Analysis Run 6/28/2024 11:02 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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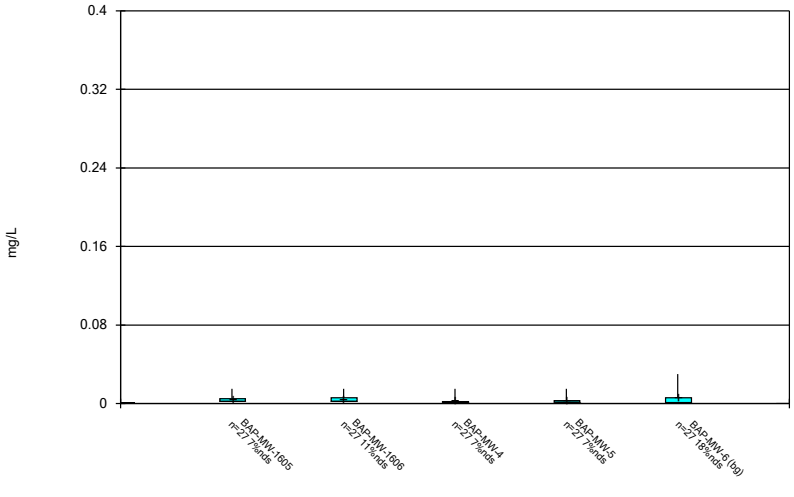
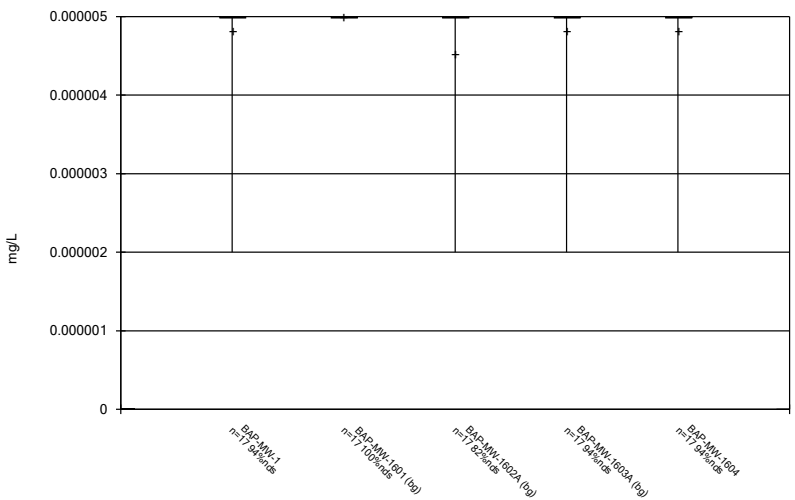
Box & Whiskers Plot



Constituent: Lithium, total Analysis Run 6/28/2024 11:02 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Mercury, total Analysis Run 6/28/2024 11:02 AM
Amos BAP Client: Geosyntec Data: Amos BAP

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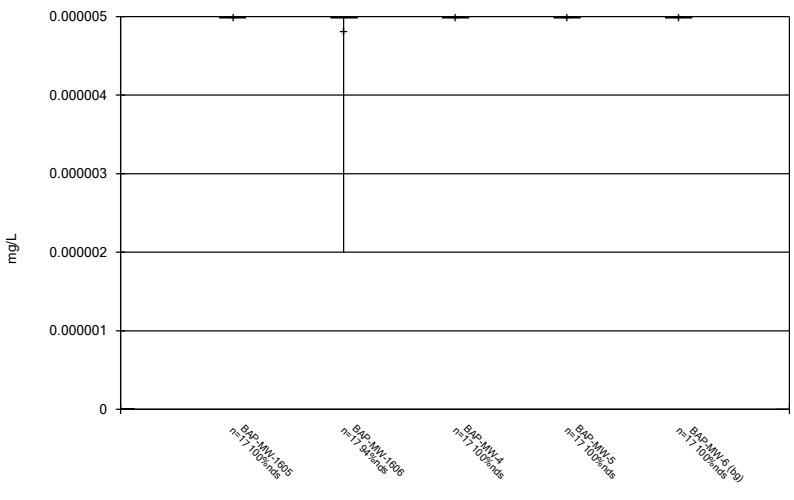
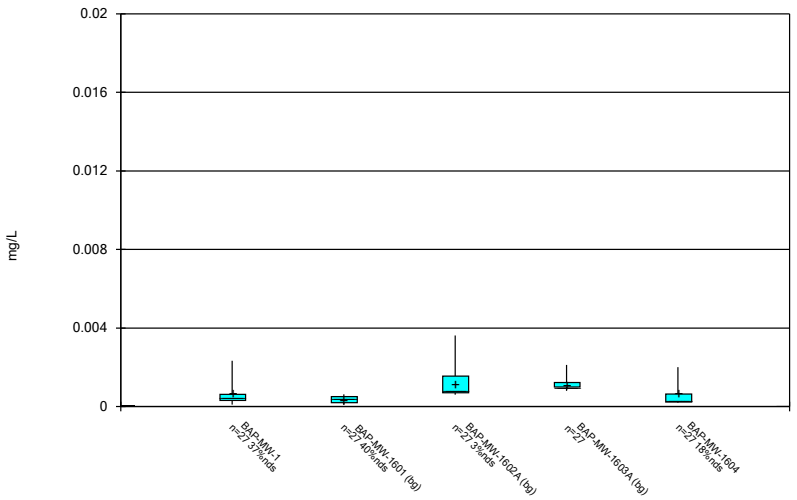
Box & Whiskers Plot



Constituent: Mercury, total Analysis Run 6/28/2024 11:02 AM
Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot



Constituent: Molybdenum, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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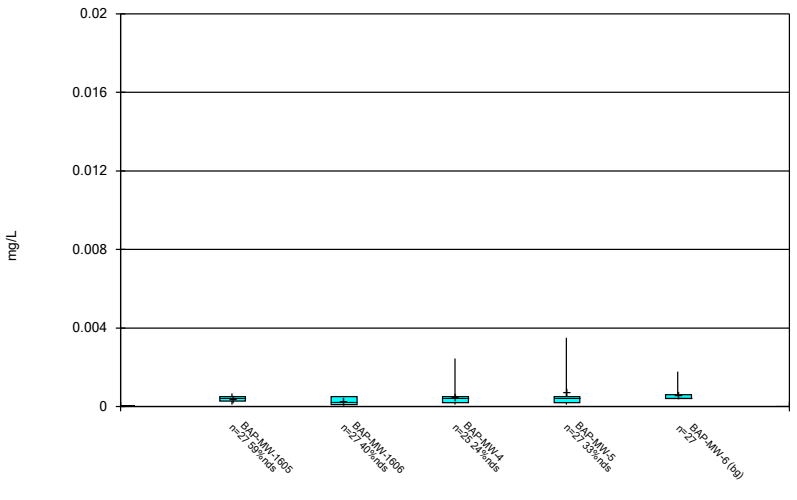
Box & Whiskers Plot

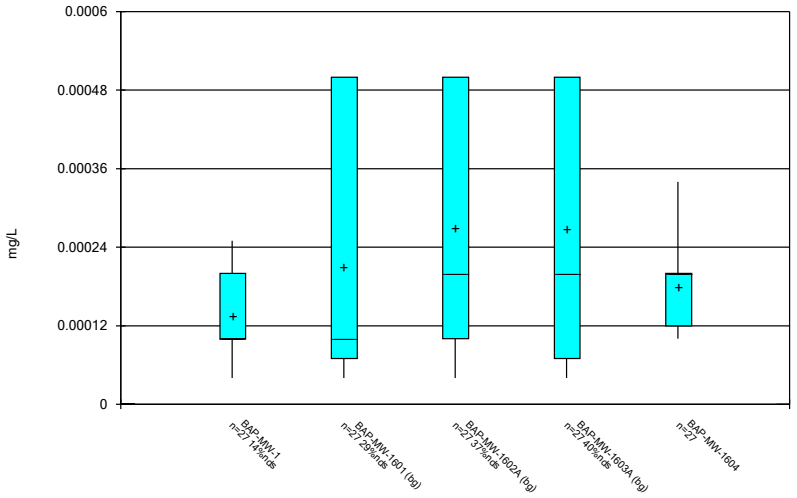


Constituent: Molybdenum, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

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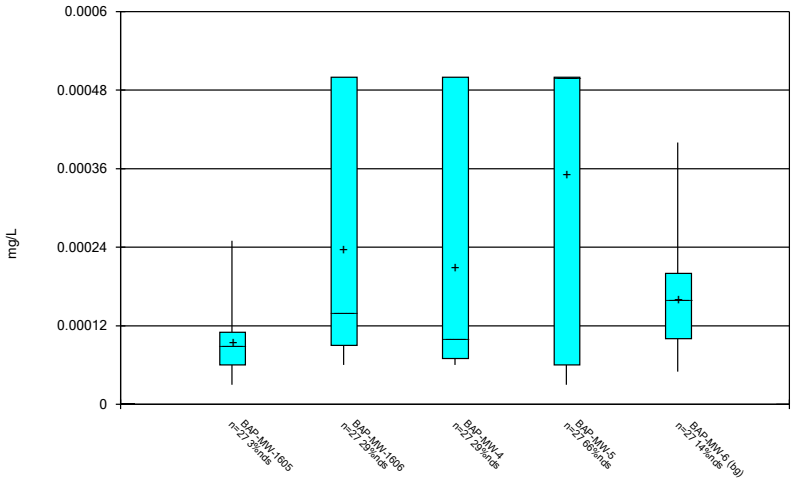
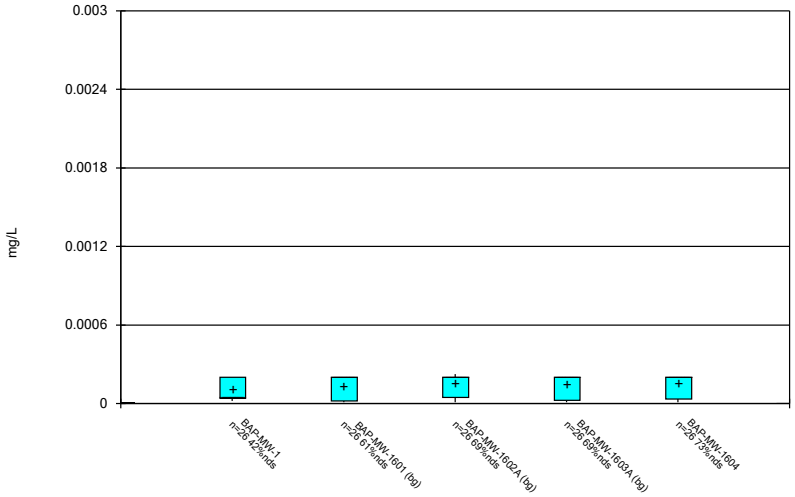
Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Box & Whiskers Plot

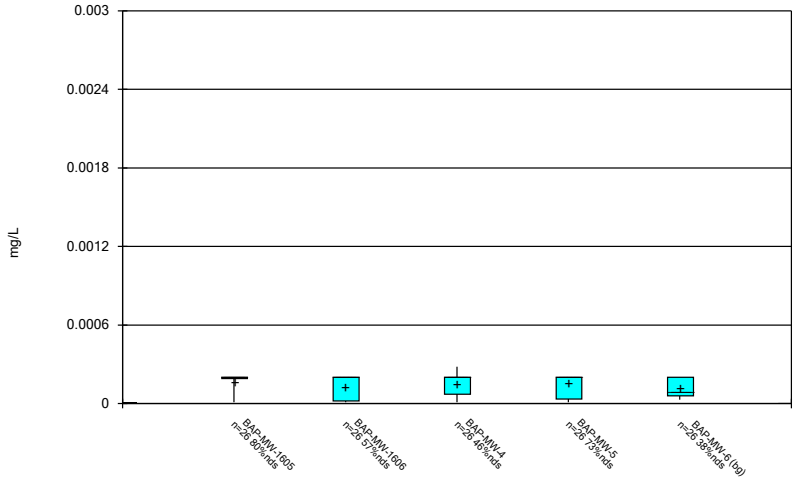


Constituent: Thallium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Sanitas™ v.10.0.19c Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 6/28/2024 11:02 AM

Amos BAP Client: Geosyntec Data: Amos BAP

Outlier Summary

Amos BAP Client: Geosyntec Data: Amos BAP Printed 6/28/2024, 11:04 AM

	BAP-MW-1604 Beryllium, total (mg/L)	BAP-MW-1603A Chromium, total (mg/L)	BAP-MW-1601 Combined Radium 226 + 228 (pCi/L)	BAP-MW-1602A Combined Radium 226 + 228 (pCi/L)	BAP-MW-6 Combined Radium 226 + 228 (pCi/L)	BAP-MW-4 Fluoride, total (mg/L)	BAP-MW-5 Fluoride, total (mg/L)	BAP-MW-4 Molybdenum, total (mg/L)
7/25/2016								0.0111 (o)
7/26/2016			7.914 (o)					
8/23/2016								0.0192 (o)
10/18/2016						<0.2 (o)	<0.2 (o)	
12/13/2016		0.00327 (o)						
2/7/2017			35.021 (o)					
2/8/2017			6.853 (o)	20.83 (o)				
6/10/2019	0.000142 (o)							

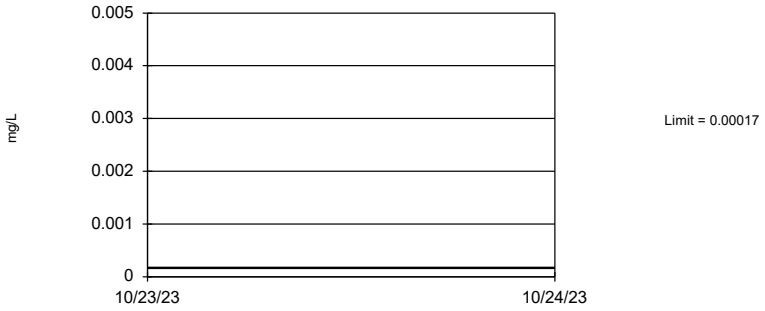
Upper Tolerance Limits Summary Table

Amos BAP Client: Geosyntec Data: Amos BAP Printed 2/1/2024, 9:46 AM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	0.00017	100	n/a	n/a	34	n/a	n/a	0.005921	NP Inter(normality)
Arsenic, total (mg/L)	0.0903	100	n/a	n/a	0	n/a	n/a	0.005921	NP Inter(normality)
Barium, total (mg/L)	0.303	100	n/a	n/a	0	n/a	n/a	0.005921	NP Inter(normality)
Beryllium, total (mg/L)	0.000106	100	n/a	n/a	15	n/a	n/a	0.005921	NP Inter(normality)
Cadmium, total (mg/L)	0.00003	100	n/a	n/a	42	n/a	n/a	0.005921	NP Inter(normality)
Chromium, total (mg/L)	0.001745	99	0.08588	0.01792	0	None	x^(1/3)	0.05	Inter
Cobalt, total (mg/L)	0.015	100	n/a	n/a	0	n/a	n/a	0.005921	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	2.509	100	1.037	0.2846	0	None	sqrt(x)	0.05	Inter
Fluoride, total (mg/L)	0.31	106	n/a	n/a	0.9434	n/a	n/a	0.004352	NP Inter(normality)
Lead, total (mg/L)	0.004066	100	-7.873	1.231	5	None	ln(x)	0.05	Inter
Lithium, total (mg/L)	0.02	100	n/a	n/a	12	n/a	n/a	0.005921	NP Inter(normality)
Mercury, total (mg/L)	0.000005	60	n/a	n/a	93.33	n/a	n/a	0.04607	NP Inter(NDs)
Molybdenum, total (mg/L)	0.002076	100	0.08676	0.02121	10	None	x^(1/3)	0.05	Inter
Selenium, total (mg/L)	0.0005	100	n/a	n/a	29	n/a	n/a	0.005921	NP Inter(normality)
Thallium, total (mg/L)	0.000224	96	n/a	n/a	58.33	n/a	n/a	0.007269	NP Inter(NDs)

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 34% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Antimony, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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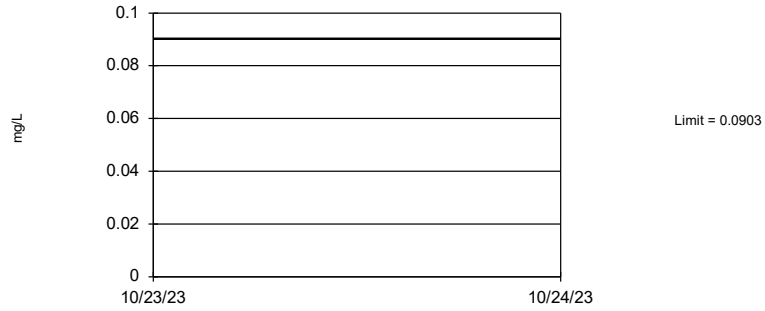
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Arsenic, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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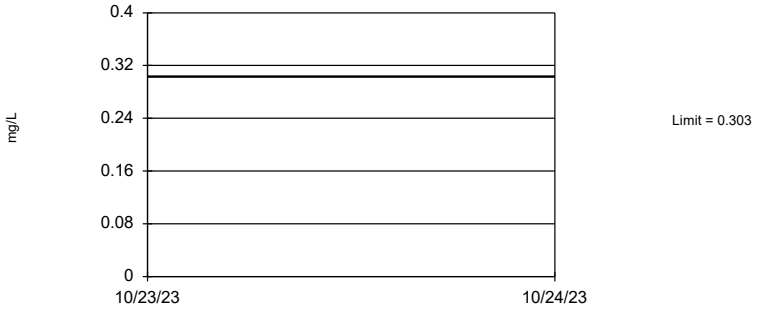
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Barium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

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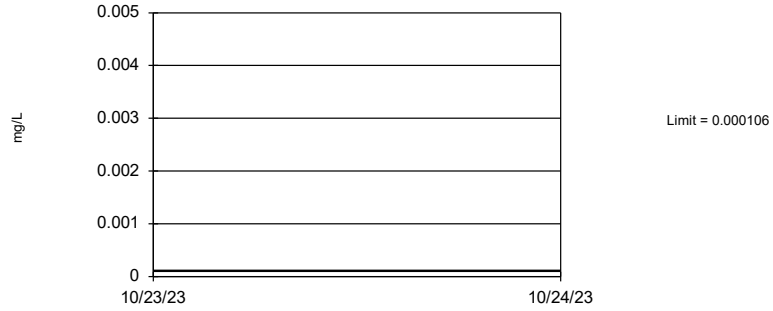
Tolerance Limit

Interwell Non-parametric

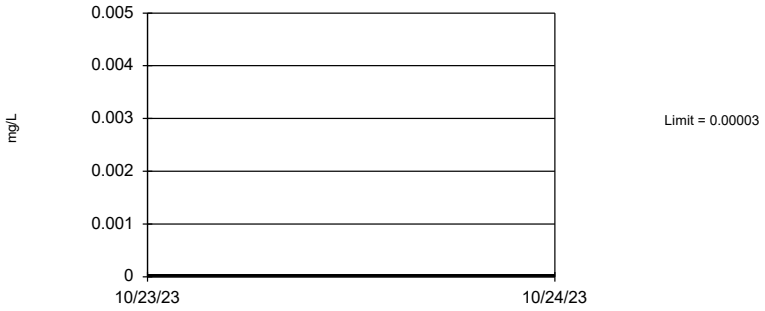


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 15% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Beryllium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

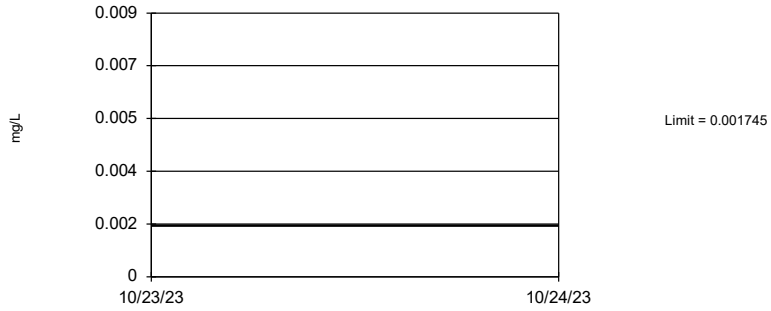


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 42% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Cadmium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric

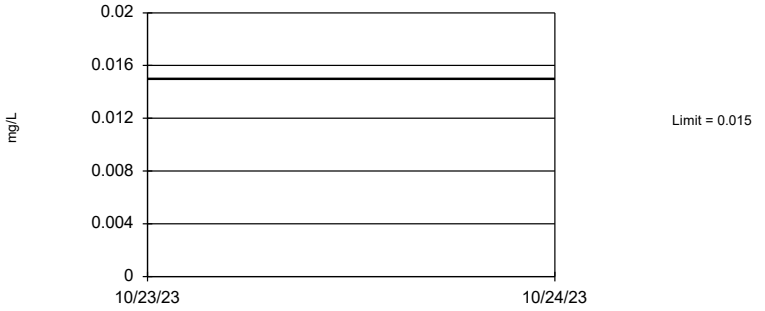


95% coverage. Background Data Summary (based on cube root transformation): Mean=0.08588, Std. Dev.=0.01792, n=99. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9724, critical = 0.967. Report alpha = 0.05.

Constituent: Chromium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

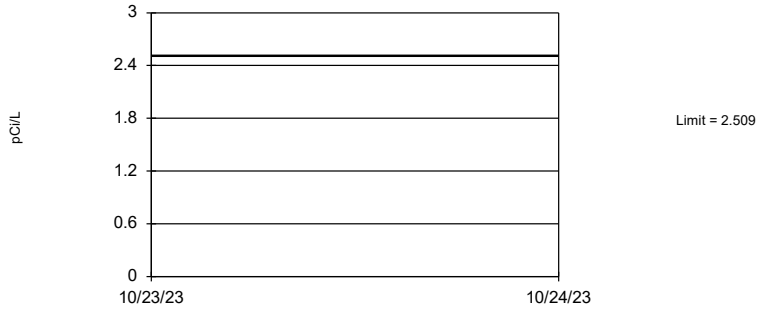


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Cobalt, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric

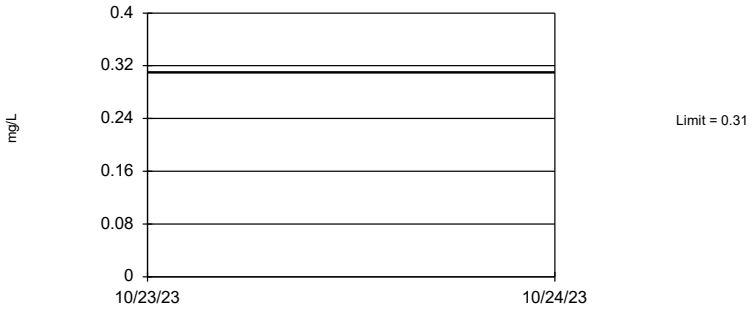


95% coverage. Background Data Summary (based on square root transformation): Mean=1.037, Std. Dev.=0.2846, n=100. Normality test: Chi Squared @alpha = 0.01, calculated = 3.6, critical = 14.07. Report alpha = 0.05.

Constituent: Combined Radium 226 + 228 Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

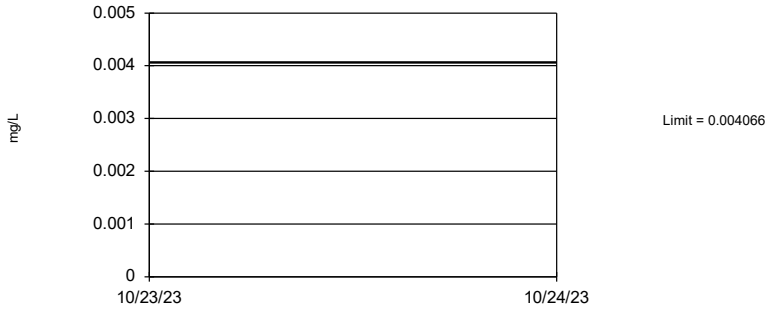


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 106 background values. 0.9434% NDs. 95.9% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.004352.

Constituent: Fluoride, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric

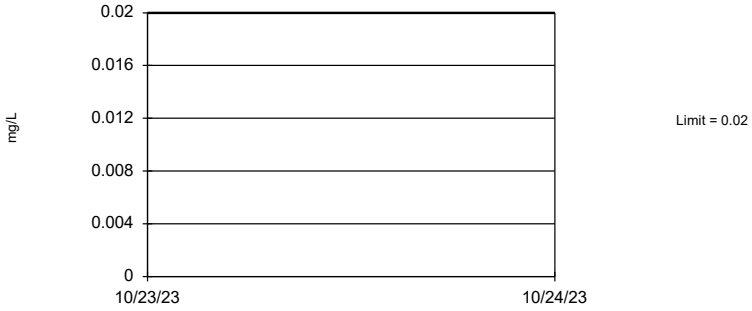


95% coverage. Background Data Summary (based on natural log transformation): Mean=-7.873, Std. Dev.=1.231, n=100, 5% NDs. Normality test: Chi Squared @alpha = 0.01, calculated = 9, critical = 14.07. Report alpha = 0.05.

Constituent: Lead, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

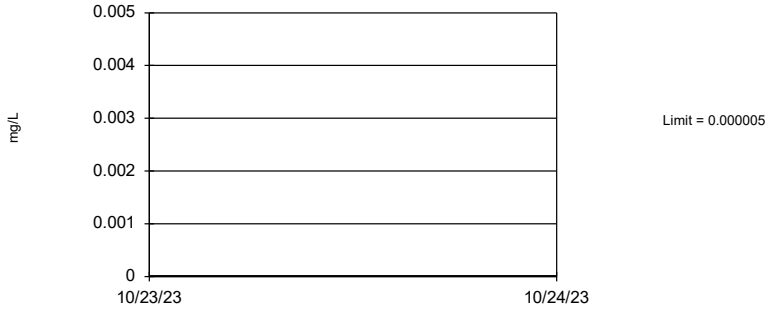


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 12% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Lithium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

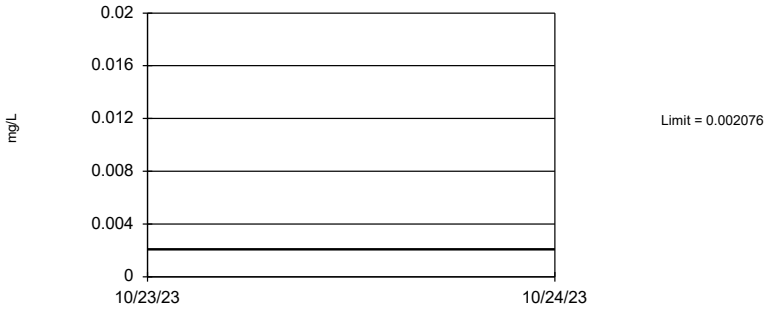


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 60 background values. 93.33% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04607.

Constituent: Mercury, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Parametric

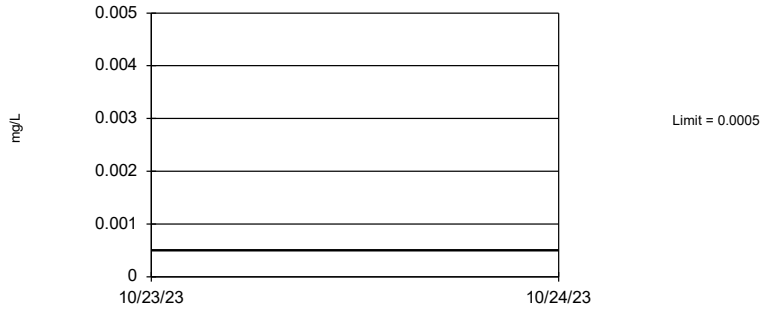


95% coverage. Background Data Summary (based on cube root transformation): Mean=0.08676, Std. Dev.=0.02121, n=100, 10% NDs. Normality test: Chi Squared @alpha = 0.01, calculated = 6.4, critical = 14.07. Report alpha = 0.05.

Constituent: Molybdenum, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric

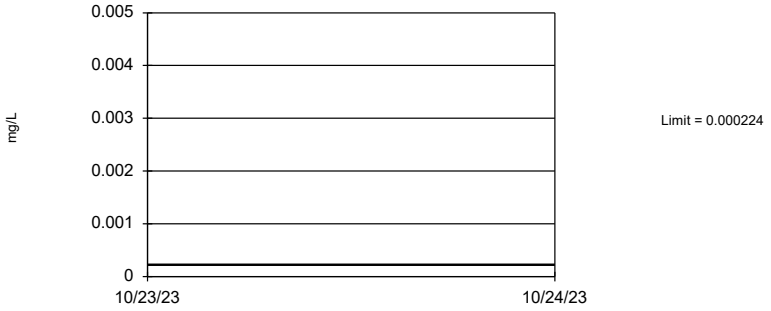


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 100 background values. 29% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.005921.

Constituent: Selenium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 96 background values. 58.33% NDs. 95.51% coverage at alpha=0.01; 97.07% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.007269.

Constituent: Thallium, total Analysis Run 2/1/2024 9:44 AM View: UTLs
Amos BAP Client: Geosyntec Data: Amos BAP

AMOS BAP GWPS				
Constituent Name	**MCL**	**CCR Rule-Specified**	**Background**	**GWPS**
Antimony, Total (mg/L)	0.006		0.00017	0.006
Arsenic, Total (mg/L)	0.01		0.09	0.09
Barium, Total (mg/L)	2		0.3	2
Beryllium, Total (mg/L)	0.004		0.00011	0.004
Cadmium, Total (mg/L)	0.005		0.00003	0.005
Chromium, Total (mg/L)	0.1		0.0018	0.1
Cobalt, Total (mg/L)		0.006	0.015	0.015
Combined Radium, Total (pCi/L)	5		2.5	5
Fluoride, Total (mg/L)	4		0.31	4
Lead, Total (mg/L)	0.015		0.0041	0.015
Lithium, Total (mg/L)		0.04	0.02	0.04
Mercury, Total (mg/L)	0.002		0.000005	0.002
Molybdenum, Total (mg/L)		0.1	0.0021	0.1
Selenium, Total (mg/L)	0.05		0.0005	0.05
Thallium, Total (mg/L)	0.002		0.0002	0.002

Grey cell indicates Background is higher than MCL or CCR-Rule Specified Level

MCL = Maximum Contaminant Level

CCR = Coal Combustion Residual

GWPS - Groundwater Protection Standard

Confidence Intervals - All Results (No Significant)

Amos BAP Client: Geosyntec Data: Amos BAP Printed 6/28/2024, 11:14 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	BAP-MW-1	0.0001	0.000012	0.006	No	27	0.00005974	0.00005167	40.74	None	No	0.01	NP (normality)
Antimony, total (mg/L)	BAP-MW-1604	0.0001	0.000029	0.006	No	27	0.00005678	0.00003498	37.04	None	No	0.01	NP (normality)
Antimony, total (mg/L)	BAP-MW-1605	0.000023260	.00001211	0.006	No	27	0.000058	0.00005654	33.33	Kaplan-Meier	ln(x)	0.01	Param.
Antimony, total (mg/L)	BAP-MW-1606	0.00005	0.000029	0.006	No	27	0.00004367	0.00002922	18.52	None	No	0.01	NP (normality)
Antimony, total (mg/L)	BAP-MW-4	0.0001	0.00004	0.006	No	27	0.00007889	0.00004426	44.44	None	No	0.01	NP (normality)
Antimony, total (mg/L)	BAP-MW-5	0.0001	0.00002	0.006	No	27	0.00006026	0.00003871	40.74	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	BAP-MW-1	0.0001279	0.00009503	0.09	No	27	0.0001115	0.0000345	0	None	No	0.01	Param.
Arsenic, total (mg/L)	BAP-MW-1604	0.005056	0.004267	0.09	No	27	0.004661	0.0008266	0	None	No	0.01	Param.
Arsenic, total (mg/L)	BAP-MW-1605	0.0037	0.00285	0.09	No	27	0.003442	0.0008398	0	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	BAP-MW-1606	0.00565	0.00262	0.09	No	27	0.004073	0.002218	0	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	BAP-MW-4	0.007021	0.00256	0.09	No	27	0.005681	0.005645	0	None	sqrt(x)	0.01	Param.
Arsenic, total (mg/L)	BAP-MW-5	0.00336	0.00277	0.09	No	27	0.00323	0.0008341	0	None	No	0.01	NP (normality)
Barium, total (mg/L)	BAP-MW-1	0.02706	0.02464	2	No	27	0.02585	0.002536	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-1604	0.1542	0.1388	2	No	27	0.1465	0.01619	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-1605	0.09464	0.08051	2	No	27	0.08757	0.01482	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-1606	0.06465	0.05351	2	No	27	0.05908	0.01167	0	None	No	0.01	Param.
Barium, total (mg/L)	BAP-MW-4	0.09741	0.08807	2	No	27	0.093	0.01024	0	None	x^(1/3)	0.01	Param.
Barium, total (mg/L)	BAP-MW-5	0.176	0.141	2	No	27	0.1803	0.06171	0	None	No	0.01	NP (normality)
Beryllium, total (mg/L)	BAP-MW-1	0.000129	0.000119	0.004	No	27	0.000124	0.00001046	0	None	No	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-1604	0.000059	0.00004	0.004	No	26	0.00005092	0.00001484	0	None	No	0.01	NP (normality)
Beryllium, total (mg/L)	BAP-MW-1605	0.000095480	.00006689	0.004	No	27	0.00008119	0.00002997	0	None	No	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-1606	0.0001139	0.0000871	0.004	No	27	0.0001005	0.00002806	0	None	No	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-4	0.000060530	.00004275	0.004	No	27	0.00005289	0.00002012	0	None	sqrt(x)	0.01	Param.
Beryllium, total (mg/L)	BAP-MW-5	0.0000603	0.00004359	0.004	No	27	0.00005304	0.00001932	0	None	sqrt(x)	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-1	0.002551	0.002016	0.005	No	27	0.002284	0.0005611	0	None	No	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-1604	0.00002	0.000009	0.005	No	27	0.00001759	0.00000518	377.78	None	No	0.01	NP (NDs)
Cadmium, total (mg/L)	BAP-MW-1605	0.00005	0.000009	0.005	No	27	0.00003296	0.00002599	40.74	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	BAP-MW-1606	0.0002667	0.0001601	0.005	No	27	0.0002243	0.0001343	0	None	sqrt(x)	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-4	0.0001292	0.00005555	0.005	No	27	0.0001297	0.0001457	0	None	ln(x)	0.01	Param.
Cadmium, total (mg/L)	BAP-MW-5	0.00002	0.000006	0.005	No	27	0.00001144	0.00000681	337.04	None	No	0.01	NP (normality)
Chromium, total (mg/L)	BAP-MW-1	0.0003796	0.0001777	0.1	No	27	0.0003092	0.0002552	0	None	sqrt(x)	0.01	Param.
Chromium, total (mg/L)	BAP-MW-1604	0.001175	0.000724	0.1	No	27	0.0009937	0.0005368	0	None	sqrt(x)	0.01	Param.
Chromium, total (mg/L)	BAP-MW-1605	0.0005436	0.0003148	0.1	No	27	0.0004292	0.0002399	0	None	No	0.01	Param.
Chromium, total (mg/L)	BAP-MW-1606	0.0008752	0.0004854	0.1	No	27	0.0007264	0.0004453	0	None	sqrt(x)	0.01	Param.
Chromium, total (mg/L)	BAP-MW-4	0.0004511	0.0002854	0.1	No	27	0.0003901	0.0002144	0	None	x^(1/3)	0.01	Param.
Chromium, total (mg/L)	BAP-MW-5	0.0003508	0.0002117	0.1	No	27	0.0003015	0.0001834	0	None	x^(1/3)	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-1	0.01555	0.01258	0.015	No	27	0.01407	0.003113	0	None	No	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-1604	0.0006855	0.0004495	0.015	No	27	0.0006182	0.0003555	0	None	ln(x)	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-1605	0.0107	0.00909	0.015	No	27	0.0113	0.005374	0	None	No	0.01	NP (normality)
Cobalt, total (mg/L)	BAP-MW-1606	0.01427	0.01121	0.015	No	27	0.01274	0.003203	0	None	No	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-4	0.01873	0.008348	0.015	No	27	0.01608	0.01667	0	None	x^(1/3)	0.01	Param.
Cobalt, total (mg/L)	BAP-MW-5	0.001171	0.0009181	0.015	No	27	0.001045	0.0002653	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1	1.162	0.7049	5	No	28	0.9821	0.5108	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1604	1.377	0.8444	5	No	28	1.166	0.6222	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1605	1.424	0.8329	5	No	28	1.307	0.9953	0	None	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-1606	1.332	0.7709	5	No	28	1.051	0.6002	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-4	1.341	0.7854	5	No	28	1.063	0.5943	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BAP-MW-5	1.391	0.9507	5	No	28	1.171	0.4713	0	None	No	0.01	Param.
Fluoride, total (mg/L)	BAP-MW-1	0.04	0.02	4	No	28	0.03286	0.01384	17.86	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	BAP-MW-1604	0.09017	0.06634	4	No	29	0.08207	0.03266	0	None	ln(x)	0.01	Param.
Fluoride, total (mg/L)	BAP-MW-1605	0.06	0.03	4	No	29	0.04517	0.02046	37.93	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	BAP-MW-1606	0.06	0.03	4	No	28	0.04357	0.0183	53.57	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	BAP-MW-4	0.06	0.04	4	No	28	0.04929	0.01184	0	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	BAP-MW-5	0.05	0.03	4	No	28	0.03893	0.008317	0	None	No	0.01	NP (normality)

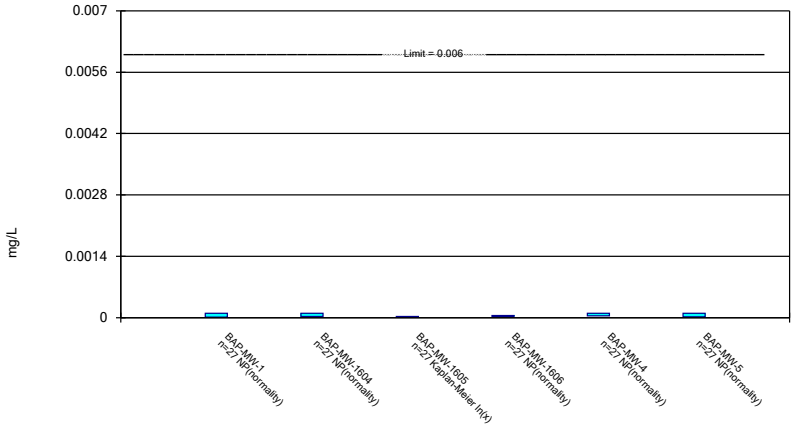
Confidence Intervals - All Results (No Significant)

Amos BAP Client: Geosyntec Data: Amos BAP Printed 6/28/2024, 11:14 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lead, total (mg/L)	BAP-MW-1	0.000129	0.000068	0.015	No	27	0.000137	0.0002084	7.407	None	No	0.01	NP (normality)
Lead, total (mg/L)	BAP-MW-1604	0.0006289	0.0002785	0.015	No	27	0.0005106	0.0004131	0	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	BAP-MW-1605	0.0003506	0.000146	0.015	No	27	0.0002839	0.0002481	0	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	BAP-MW-1606	0.0008801	0.0004883	0.015	No	27	0.0006842	0.0004107	0	None	No	0.01	Param.
Lead, total (mg/L)	BAP-MW-4	0.0003824	0.0002056	0.015	No	27	0.000316	0.0002114	0	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	BAP-MW-5	0.0001352	0.00005521	0.015	No	27	0.0001753	0.0001729	22.22	Kaplan-Meier	ln(x)	0.01	Param.
Lithium, total (mg/L)	BAP-MW-1	0.004	0.00264	0.04	No	27	0.004302	0.003857	7.407	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-1604	0.004	0.000475	0.04	No	27	0.003431	0.005133	14.81	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-1605	0.005	0.00234	0.04	No	27	0.004406	0.003667	7.407	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-1606	0.006	0.00229	0.04	No	27	0.004807	0.004131	11.11	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-4	0.002	0.00139	0.04	No	27	0.003364	0.004203	7.407	None	No	0.01	NP (normality)
Lithium, total (mg/L)	BAP-MW-5	0.003	0.00142	0.04	No	27	0.003428	0.004099	7.407	None	No	0.01	NP (normality)
Mercury, total (mg/L)	BAP-MW-1	0.000005	0.000002	0.002	No	17	0.000004824	7.3e-7	94.12	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	BAP-MW-1604	0.000005	0.000002	0.002	No	17	0.000004824	7.3e-7	94.12	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	BAP-MW-1606	0.000005	0.000002	0.002	No	17	0.000004824	7.3e-7	94.12	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	BAP-MW-1	0.0006478	0.000229	0.1	No	27	0.0006263	0.000531	37.04	Kaplan-Meier	x^(1/3)	0.01	Param.
Molybdenum, total (mg/L)	BAP-MW-1604	0.00064	0.00022	0.1	No	27	0.0006278	0.0006786	18.52	None	No	0.01	NP (normality)
Molybdenum, total (mg/L)	BAP-MW-1605	0.0005	0.00027	0.1	No	27	0.0003989	0.0001636	59.26	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	BAP-MW-1606	0.0005	0.00012	0.1	No	27	0.000283	0.0001901	40.74	None	No	0.01	NP (normality)
Molybdenum, total (mg/L)	BAP-MW-4	0.0004839	0.0001616	0.1	No	25	0.0004928	0.0004844	24	Kaplan-Meier	x^(1/3)	0.01	Param.
Molybdenum, total (mg/L)	BAP-MW-5	0.0005171	0.000172	0.1	No	27	0.0007296	0.0008564	33.33	Kaplan-Meier	ln(x)	0.01	Param.
Selenium, total (mg/L)	BAP-MW-1	0.0002	0.00009	0.05	No	27	0.0001344	0.00006314	14.81	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-1604	0.0002	0.00012	0.05	No	27	0.00018	0.00006552	0	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-1605	0.0001116	0.00006911	0.05	No	27	0.00009444	0.00004956	3.704	None	sqrt(x)	0.01	Param.
Selenium, total (mg/L)	BAP-MW-1606	0.0003	0.00009	0.05	No	27	0.0002367	0.0001824	29.63	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-4	0.0002	0.00007	0.05	No	27	0.0002096	0.0001938	29.63	None	No	0.01	NP (normality)
Selenium, total (mg/L)	BAP-MW-5	0.0005	0.00006	0.05	No	27	0.0003515	0.0002143	66.67	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-1	0.0002	0.00004	0.002	No	26	0.0001078	0.00008097	42.31	None	No	0.01	NP (normality)
Thallium, total (mg/L)	BAP-MW-1604	0.0002	0.00005	0.002	No	26	0.0001515	0.00008172	73.08	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-1605	0.0002	0.000062	0.002	No	26	0.0001674	0.00006867	80.77	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-1606	0.0002	0.00002	0.002	No	26	0.0001246	0.00009017	57.69	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	BAP-MW-4	0.0002	0.000072	0.002	No	26	0.0001488	0.00007337	46.15	None	No	0.01	NP (normality)
Thallium, total (mg/L)	BAP-MW-5	0.0002	0.00004	0.002	No	26	0.0001512	0.00008228	73.08	None	No	0.01	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

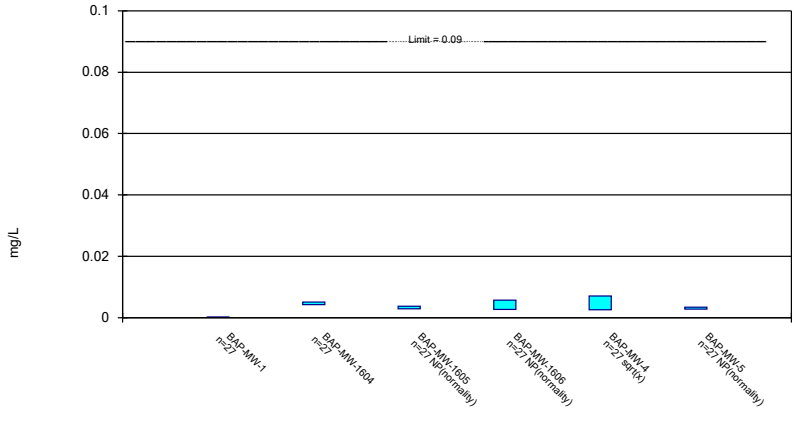
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Antimony, total Analysis Run 6/28/2024 11:12 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, total Analysis Run 6/28/2024 11:12 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

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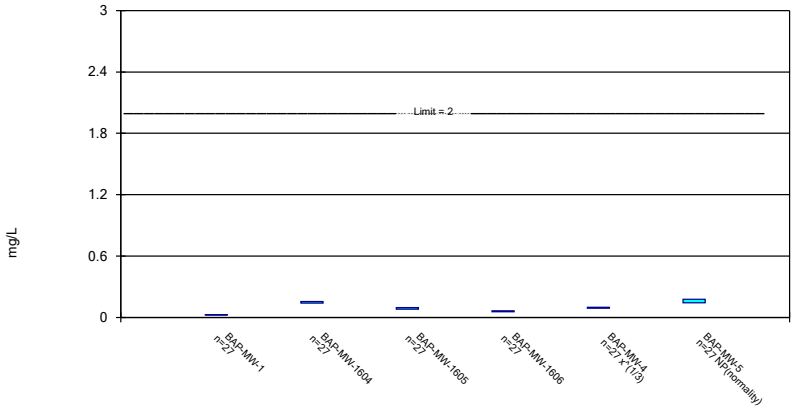
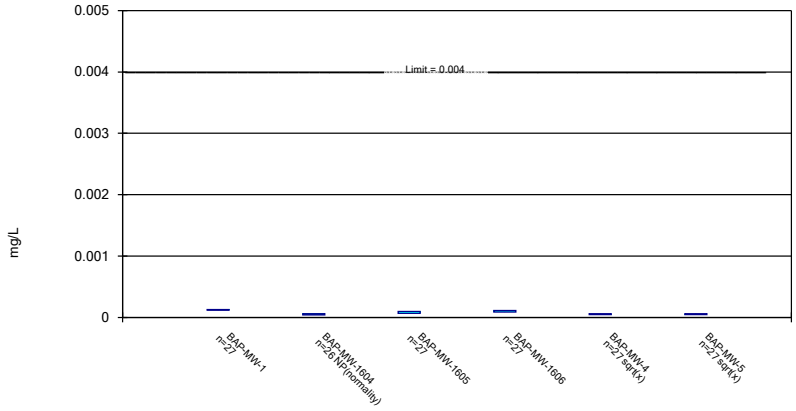


Constituent: Barium, total Analysis Run 6/28/2024 11:12 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

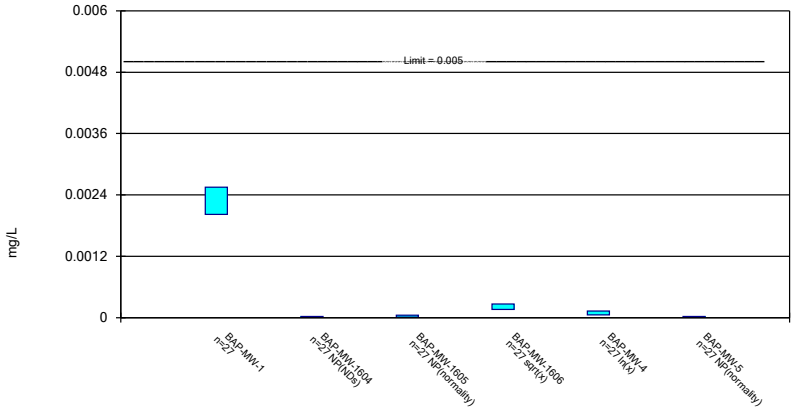
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 6/28/2024 11:12 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

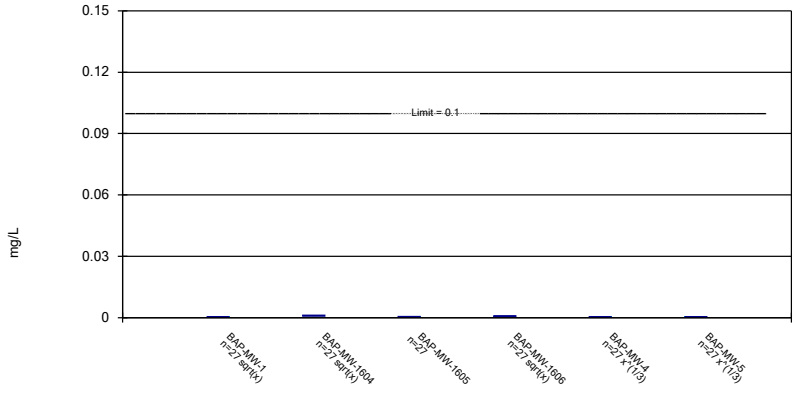
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium, total Analysis Run 6/28/2024 11:12 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric Confidence Interval

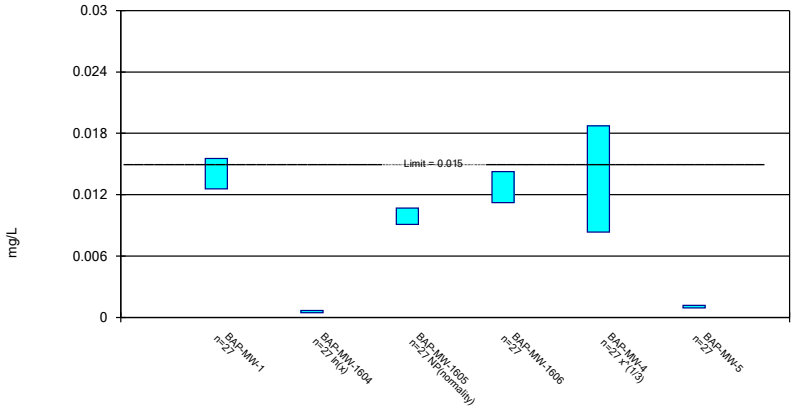
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 6/28/2024 11:12 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

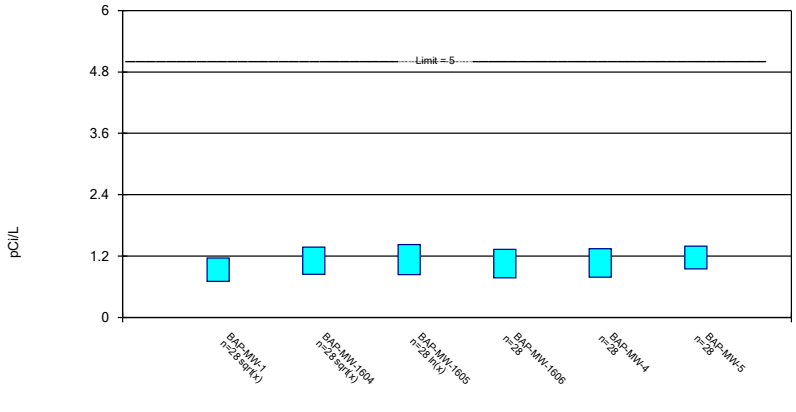
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric Confidence Interval

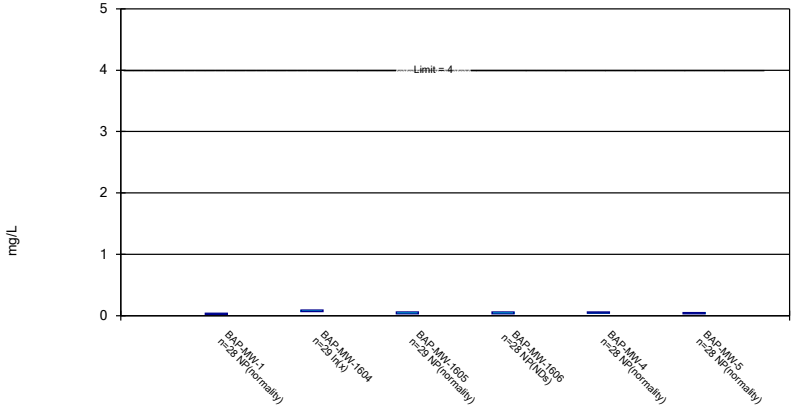
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

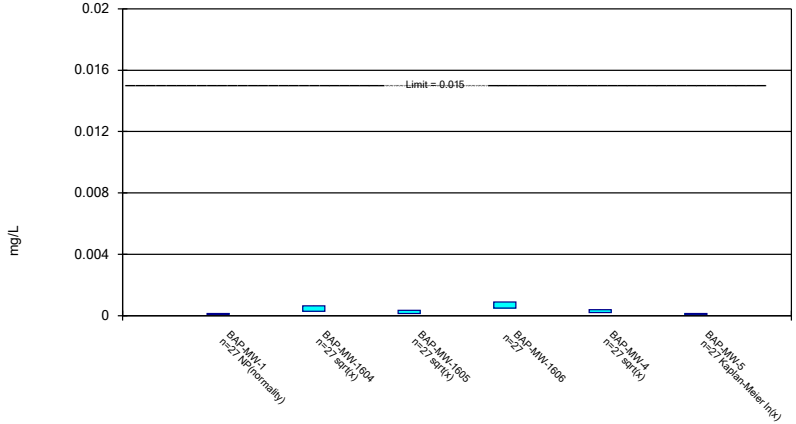
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

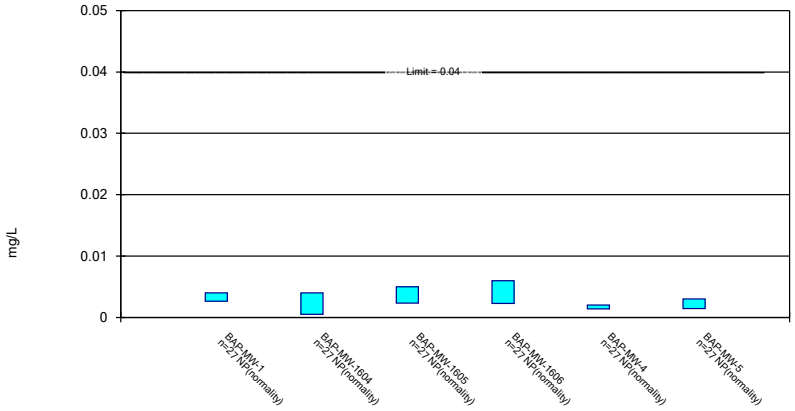
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lithium, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Non-Parametric Confidence Interval

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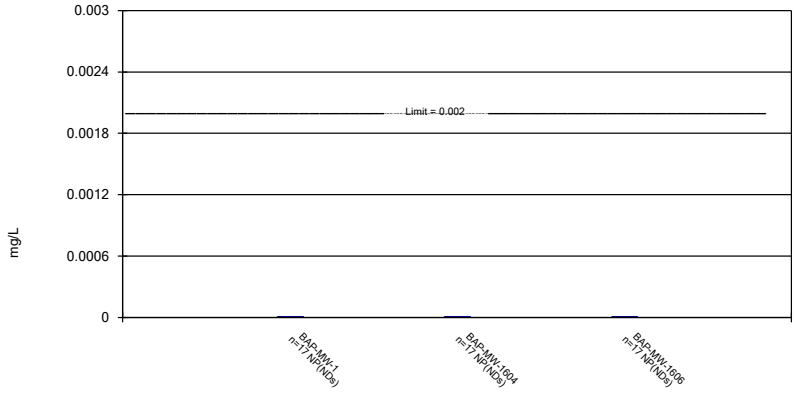
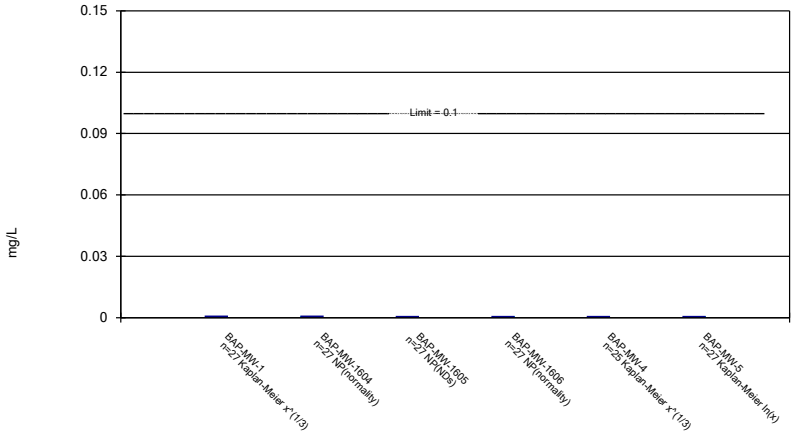


Constituent: Mercury, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

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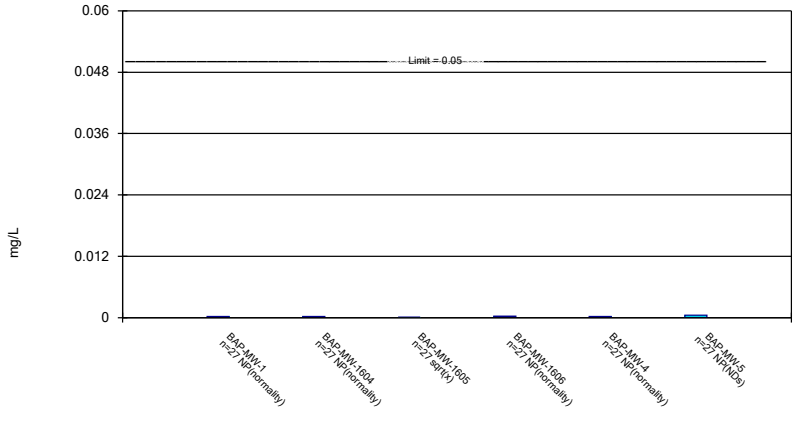
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

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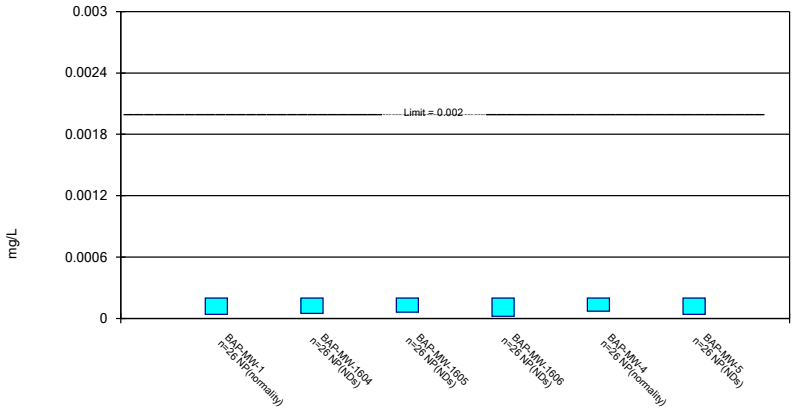
Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, total Analysis Run 6/28/2024 11:13 AM View: Confidence Intervals
Amos BAP Client: Geosyntec Data: Amos BAP

APPENDIX 3

Not applicable.

APPENDIX 4

The notification of the establishment of an assessment monitoring program follows.

John Amos Plant

Notice of Assessment Monitoring Program Establishment

Bottom Ash Pond

On January 15, 2018, it was determined that Amos Plant's Bottom Ash Pond had statistically significant increases over background for Calcium, Chloride. Sulfate, and Total Dissolved Solids (TDS). An alternative source demonstration was not successful within the 90 day period as allowed for in 257.94(e)(2) prompting the initiation of an assessment monitoring program, which was established on April 13, 2018. Therefore this notice is being placed in the operating record in accordance with the requirement of 257.94(e)(3).

APPENDIX 5

Not applicable.