

**Sikeston Power Station
2023 Annual Groundwater Monitoring Report
For Fly Ash Pond
Compliance with USEPA 40 CFR 257.90(e)**



Prepared for:



**Sikeston Power Station
1551 West Wakefield Avenue
Sikeston, Missouri 63801**

July 2023

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2023 Annual Groundwater Monitoring and
Corrective Action Report for Fly Ash Pond
Compliance with USEPA 40 CFR 257.90(e)**

Prepared for:
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July 2023

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1.0 EXECUTIVE SUMMARY

This report has been developed to fulfill the requirements of the United States Environmental Protection Agency (USEPA) 40 CFR 257 Subpart A – Classification of Solid Waste Disposal Facilities and Practices (CCR Rule), which requires owners or operators to provide an Annual Groundwater Monitoring Report. Sikeston Board of Municipal Utilities (SBMU) provides this report of groundwater sampling activities completed between April 2022 and March 2023 for the Fly Ash Pond (FAP) at the Sikeston Power Station (SPS).

Monitoring Well MW-1R was installed during the 2021 annual report cycle on September 3, 2021, and the eighth round of background sampling was completed in March 2022. Subsequently, MW-1 was removed from the FAP groundwater monitoring system, and MW-1R was sampled for compliance monitoring beginning in April 2022 during the seventh FAP CCR compliance groundwater sampling event.

At the start of the current reporting period (April 2022) the FAP was in detection monitoring status. Detection monitoring statistical evaluations are completed after each sampling event to determine if SSIs relative background data are apparent. Results from the seventh CCR compliance groundwater sampling event and subsequent verification sampling confirmed SSIs of Boron in MW-7, and pH in MW-1R and MW-3. As a result, the FAP established assessment monitoring on November 2, 2022, when the eighth CCR compliance groundwater sampling event was conducted for both detection and assessment monitoring constituents (§257 Appendix III & IV).

Since assessment monitoring was established for the FAP and verification sampling was completed in accordance with §257.95(d)(1), statistical evaluations are completed to determine if assessment monitoring constituents are present at Statistically Significant Levels (SSLs) relative to the Groundwater Protection Standards (GWPS). GWPS were established for the FAP in accordance with §257.95(h). Following the assessment monitoring conducted during the ninth CCR compliance groundwater sampling event conducted on March 12, 2023, SSLs of Molybdenum and Cobalt were confirmed. As a result of finding these SSLs:

1. A Nature and Extent Evaluation is ongoing to support an Assessment of Corrective Measures in accordance with §257.95(g)(3).
2. A notification identifying the Appendix IV constituents that have exceeded the GWPS in accordance with §257.95(g) was prepared and posted as required by §257.105(h)(8).
3. A notification stating that Assessment of Corrective Measures has been initiated was prepared in accordance with §257.95(g)(5).
4. At the time of this report, the Assessment of Corrective Measurements was initiated July 14, 2023 and is ongoing.

Table 1. Fly Ash Pond Groundwater Sampling Event Summary and Statistical Evaluations for Detection and Assessment Monitoring

Event Name and Purpose	Event Start	Final Data Received from Laboratory	Constituents Sampled	Verified SSIs Detection Monitoring Constituents	Verified SSLs Assessment Constituents over GWPS*	Statistical Analysis Results Completed
7th CCR Compliance Sampling Event (1 st 2022 Semi-annual Detection Monitoring Event) and Verification Sampling	4/9/2022	4/19/2022	Appendix III Constituents	<u>pH</u> : MW-1R, MW-3 <u>Boron</u> : MW-7	Not in Assessment Monitoring at this time	9/2/2022
	8/2/2022	8/26/2022	<u>pH</u> : all wells, <u>Boron</u> : MW-2, MW-3, & MW-7, <u>Fluoride</u> : MW-9			
8th CCR Compliance Sampling Event (2 nd 2022 Semi-annual Detection and Assessment Monitoring Event)	11/2/2022	1/2/2023	Appendix III & IV Constituents	<u>Boron</u> : MW-2 <u>TDS</u> : MW-2 <u>pH</u> : MW-3	Not Applicable at this time	1/6/2023
9th CCR Compliance Sampling Event (1 st 2023 Semi-annual Detection and Assessment Monitoring Event)	3/12/2023	4/10/2023	Appendix III & detected IV Constituents	<u>pH</u> : MW-1R, MW-2 <u>TDS</u> : MW-2 <u>Boron</u> : MW-7	<u>Molybdenum</u> : MW-1R, MW-7, MW-9 <u>Cobalt</u> : MW-1R	4/17/2023

*GWPS = Groundwater Protection Standards

2.0 INTRODUCTION

The Sikeston Power Station (SPS), owned and operated by the Sikeston Board of Municipal Utilities (SBMU), is an electric power producer and distributor located within the western city limits of Sikeston, in southern Scott County, Missouri. The SBMU-SPS began operation in 1981 and produces approximately 235 megawatts of electricity. The facility's two coal ash surface impoundments are located immediately east of the power station and are on properties owned and controlled by SBMU. The Fly Ash Pond (FAP) measures approximately 30 acres in size and borders the north edge of the Bottom Ash Pond, which measures approximately 61 acres. The FAP is subject to the alternate compliance schedule specified by the United States Environmental Protection Agency (USEPA) under 40 CFR Part 257.100(e)(5)(ii) (§257.100(e)(5)(ii)) due to its initial inactive status and the Response to Partial Vacatur (the Direct Final Rule). This report, prepared by GREDELL Engineering Resources, Inc. (GER), pertains specifically to the FAP.

Pursuant to USEPA's §257 Federal Criteria for Classification of Solid Waste Disposal Facilities and Practices, Subpart D – Standards for Disposal of Coal Combustion Residuals (CCR) in Landfills and Surface Impoundments (ponds), the establishment of a groundwater monitoring system and routine detection sampling and reporting is required at all coal ash surface impoundments. The purpose of a monitoring well system is to evaluate the quality of groundwater as it passes beneath the waste mass within an impoundment. Groundwater samples are collected and analyzed on a semi-annual basis in accordance with §257.93, or as otherwise detailed in a site-specific Groundwater Monitoring and Sampling Plan (GMSAP) (GER, 2018; 2021). Analytical data also are subjected to statistical analysis in accordance with §257.93(f), with the results included in this Annual Groundwater Monitoring Report in accordance with §257.90(e).

If detection monitoring results suggest that a statistically significant increase (SSI) in one or more constituents for detection monitoring listed in §257 Appendix III (Table 2) has occurred, a written demonstration is required to determine if the SSI is attributable to alternate causative factors. If a successful demonstration is not made, an assessment monitoring program must be initiated as required under §257.95. If assessment monitoring is required, and results suggest that one or more concentrations of the assessment monitoring constituents listed in §257 Appendix IV (Table 2) are present at a statistically significant level (SSL) above GWPS, a written demonstration is required to determine if the SSL(s) is/are attributable to alternate causative factors. If a successful demonstration is not made, nature and extent of the release must be characterized in accordance with §257.95(g)(1), to support an Assessment of Corrective Measures as required by §257.96.

This report describes the results of the following semi-annual events:

- 7th Compliance Sampling Event (1st 2022 Detection Event),
- 8th Compliance Sampling Event (2nd 2022 Detection and Assessment Event), and
- 9th Compliance Sampling Event (1st 2023 Detection and Assessment Event).

As summarized on Table 1, these events were initiated on April 9, 2022 (seventh event), November 2, 2022 (eighth event), and March 12, 2023 (ninth event). Included is a description of the sampling events, groundwater elevations, water table maps, field activity summaries, final analytical data, and statistical analysis results. Field sampling and reporting activities were conducted in accordance with the site-specific GMSAP (GER, 2018; 2021). Statistical analysis is performed in accordance with §257.93(f).

3.0 GROUNDWATER MONITORING SYSTEM

The groundwater monitoring system for the FAP consists of five wells. Well locations are depicted on Figures 1, 2, and 3. The wells are identified as MW-1R, MW-2, MW-3, MW-7, and MW-9. MW-2 and MW-3 are located hydraulically upgradient of the FAP, whereas MW-1R, MW-7, and MW-9 are located hydraulically downgradient of the FAP. Monitoring wells MW-2 and MW-3 were installed on April 26 and 27, 2016 by Smith & Company of Poplar Bluff, Missouri during hydrogeologic characterization of the site (GER, 2017). Monitoring wells MW-7 and MW-9 were installed on April 18, 2017, and November 13, 2017, respectively, by Bulldog Drilling, Inc. of Dupou, Illinois to serve as additional downgradient monitoring wells. Monitoring well MW-1R was installed on September 3, 2021, by Bulldog Drilling, Inc. to serve as a replacement for MW-1.

Table 3 presents a construction summary of the wells comprising the FAP groundwater monitoring system. Figures 1, 2, and 3 depict groundwater contour maps of the uppermost aquifer for the seventh, eighth, and ninth semi-annual CCR compliance groundwater sampling events. Groundwater elevations have been monitored regularly in each well since installation and these historical water levels are summarized on Table 4. Figures 1, 2, and 3 confirm that groundwater in the uppermost aquifer continues to move in a west-southwesterly direction, consistent with the conclusions of the Site Characterization Report (GER, 2017) and the historical data in Table 4. All groundwater wells are equipped with dedicated tubing for use with a peristaltic pump. The FAP groundwater monitoring system is described in more detail in the revised site-specific GMSAP for this facility (GER, 2018; 2021).

3.1 Installation or Decommissioning of Monitoring Wells

Monitoring well MW-1R was installed on September 3, 2021, and eight rounds of background sampling were collected from October 2021 to March 2022. Following collection of the last background sample on March 2, 2022, MW-1R replaced MW-1 in the FAP detection and assessment groundwater monitoring system (now comprised of (MW-1R, MW-2, MW-3, MW-7, and MW-9). The first compliance samples from MW-1R were collected during the seventh, eighth, and ninth CCR compliance groundwater sampling event, and the results are presented in this report. No other monitoring wells were installed or decommissioned for the FAP detection and assessment groundwater monitoring system since the 2022 Annual Groundwater Monitoring Report (GER, 2022).

4.0 DETECTION AND ASSESSMENT SAMPLING SUMMARY

The seventh, eighth, and ninth CCR compliance groundwater sampling events for the FAP were completed by SPS environmental staff. The seventh CCR compliance groundwater sampling event (1st 2022 semi-annual event) was initiated in April 2022, the eighth event (2nd 2022 semi-annual event) was initiated in November 2022, and the ninth event (1st 2023 semi-annual event) was initiated in March 2023.

Assessment Monitoring was established for the SBMU-SPS FAP in accordance with §257.94(e). Following receipt of final data for the seventh CCR compliance groundwater sampling event, statistical analysis confirmed SSIs of pH at MW-1R and MW-3, and Boron at MW-7 on September 2, 2022. Within 90 days of confirming the SSIs and in accordance with §257.95(b), assessment monitoring was initiated on November 2, 2022, concurrently with the collection of detection monitoring samples. Each of the five FAP groundwater monitoring system wells was resampled on March 12, 2023, for all parameters in §257 Appendix III and for all detected §257 Appendix IV parameters in accordance with §257.95(d)(1). While in assessment monitoring status, semiannual sampling events for the FAP will generally be conducted simultaneously for both assessment and detection monitoring.

In accordance with §257.95(d)(2), Groundwater Protection Standards (GWPS) were established as specified in §257.95(h) for all detected §257 Appendix IV constituents. Statistical results for the seventh, eighth, and ninth detection groundwater sampling events are discussed in detail in Section 5.0. Assessment monitoring statistical results for the eighth and ninth compliance groundwater sampling events are presented in Appendix 9.

Field procedures for the seventh, eighth, and ninth groundwater compliance sampling events and verification sampling events were conducted in accordance with the GMSAP for this facility (GER, 2018 & 2021). Field notes documenting the groundwater sampling and verification sampling events are presented in Appendix 1. The field sampling notes are summarized in Table 5, including initial and final water level measurements, purge volumes, and pH. Laboratory analytical reports for each sampling event, including field blank, and sample duplicate results, are included in Appendix 2. Quality Assurance/Quality Control (QA/QC) documentation is presented in Appendix 3. A summary of background and detection monitoring analytical data for each monitoring well, including field parameters, is presented in Appendix 4.

4.1 Field Quality Assurance/Quality Control

Field QA/QC during each sampling event included the collection of one field blank and one field duplicate sample. The duplicates during the seventh, eighth, and ninth events were collected at MW-1R. The sample MW-1R and its duplicate collected during the seventh sampling event were analyzed for detection monitoring constituents. The samples MW-1R and its duplicate collected during the eighth and ninth sampling events were also analyzed for assessment monitoring constituents. Duplicate results and Relative Percent Differences (RPDs) calculated to assess

laboratory reproducibility are summarized in Table 6. Rinsate blanks were not collected because dedicated sampling equipment was used. Samples were shipped to Pace Analytical Laboratories' facility located in Peoria, Illinois using standard chain-of-custody documentation/procedures.

Samples collected during the seventh event were received by the primary facility on April 12, 2022, and subsequently analyzed for the six (pH is field measured) detection monitoring constituents listed in §257 Appendix III (Table 2) and required under §257.94(b). Final hard copy analytical results were sent and received on April 19, 2022.

Samples collected during the August 2, 2022, verification sampling event were received by the primary facility on August 5, 2022, and subsequently analyzed for the requested analytes. Final hard copy analytical results were sent and received on August 26, 2022.

Samples collected during the eighth event were received by the primary facility on November 4, 2022, and subsequently analyzed for six detection monitoring and fourteen assessment monitoring constituents listed in §257 Appendix III and IV (Table 2) and required under §257.94(b). Final hard copy analytical results were sent on December 30, 2022, and received January 2, 2023.

Samples collected during the ninth event were received by the primary facility on March 15, 2022, and subsequently analyzed for the requested analytes, which included six detection monitoring and the six previously detected assessment monitoring constituents (Table 9-1 in Appendix 9). Final hard copy analytical results for most constituents were sent April 5, 2023, and Radium analytical results were sent on April 7, 2023. Both analytical reports were received on April 10, 2023.

5.0 ANALYTICAL SUMMARY

Analytical data reports for each monitoring well sampled during the seventh, eighth, and ninth compliance groundwater sampling events are provided in Appendix 2. The data pertain to groundwater quality results from the uppermost aquifer in the area bordering the FAP, along with sample duplicate and field blank results.

5.1 Laboratory Quality Control

Laboratory analyses of the groundwater samples collected during the seventh, eighth, and ninth events were completed by Pace Analytical Laboratories, Inc. The results were accompanied by appropriate QA/QC documentation. That documentation is presented in Appendix 3.

5.2 Precision and Accuracy

Precision is a measure of the reproducibility of analytical results, generally expressed as an RPD. Laboratory quality control procedures to measure precision consist of laboratory control sample (LCS) analysis and analysis of matrix spike/matrix spike duplicates (MS/MSD). These analyses are used to define analytical variability. Accuracy is defined as the degree of agreement between the measured amount of a species and the amount actually present, expressed as a percentage. It is generally determined by calculating the percent recoveries for analyses of surrogate compounds, laboratory control samples, continuing calibration check standards and matrix spike samples. Acceptable percent recoveries are established for SW-846 and USEPA methods. Field and laboratory blank analyses are also used to address measurement bias.

The analyses were performed within appropriate hold times except as noted below, and both initial and continuing calibrations met acceptance criteria for all analyses. Similarly, method blanks and LCS analyses met acceptance criteria. The case narratives for the seventh, eighth, and ninth event analytical reports indicate that quality controls met acceptance criteria with the following exceptions:

7th Compliance Sampling Event (1st 2022 Detection Monitoring Event):

- The MW-1R results for Boron and Calcium and several batch Quality Control samples for Boron are flagged “Q4” because the associated sample concentrations exceeded four times the spiked values. The associated blank spike was acceptable.
- All quality controls met for verification sampling event.

8th Compliance Sampling Event (2nd 2022 Detection and Assessment Monitoring Event):

- The MW-1R sample result for Chloride is flagged “Q4” because the associated sample concentrations exceeded four times the spiked values. The associated blank spike was acceptable.
- The MW-1R, MW-2 and MW-3 sample results for Sulfate are flagged “Q4” because the associated sample concentrations exceeded four times the spiked values. The associated blank spike was acceptable.
- The MW-3 sample result for Chloride is flagged “Q3” because the Matrix Spike/Matrix Spike Duplicate both failed % recovery acceptance limits. The associated blank spike recovery was acceptable.

9th Compliance Sampling Event (1st 2023 Detection and Assessment Monitoring Event):

- The MW-2 and MW-3 TDS concentrations are flagged “H” because the tests were performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.

Additional QA/QC comments include the following:

- *Field Duplicates:* Analyses of duplicate samples are used to define the total variability of the sampling/analytical system as a whole. One field duplicate from MW-1R was collected during each monitoring event. The RPD was calculated for all detected chemical parameters. A summary table showing the results of the RPD calculations is included as Table 6. Using a tolerance level of ± 20 percent, all calculated RPDs are within acceptable ranges for each detected parameter except:

7th Compliance Sampling Event - all RPDs less than 20 percent.

8th Compliance Sampling Event - Molybdenum (23.53%) and Radium 226/228 (combined) (92.43%), and

9th Compliance Sampling Event - Barium (44.71%), Boron (60.87%), Cobalt (59.02%), Calcium (54.55%), Molybdenum (48.28%) and TDS (22.22%).

- *Field Blank:* One field blank was incorporated into the data set for each sampling event. Results for the field blanks showed no reportable concentrations with the following exceptions:

7th Compliance Sampling Event - A Boron concentration of 45 ug/L is reported, Verification Sampling Event - A Boron concentration of 27 ug/L is reported,

8th Compliance Sampling Event - Concentrations of Boron (37 ug/L), TDS (43 mg/L), and Radium 226&228 (1.12 pCi/L) are reported, and

9th Compliance Sampling Event - Concentrations of Barium (18 ug/L), TDS (63 mg/L), and Molybdenum (9.2ug/L) are reported.

- *Laboratory Blanks:* Method blanks, artificial, and matrix-less samples are analyzed to monitor the laboratory system for interferences and contamination from glassware, reagents, etc. Method blanks are taken throughout the entire sample preparation process. They are included with each batch of extractions or digestions prepared, or with each 20 samples, whichever was more frequent. Reference to Appendix 3 should be made for comments related to these and other laboratory control samples.

5.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely reflect site conditions. Representativeness of the data is determined by comparing actual sampling procedures to those delineated in the field sampling plan, comparing results from field duplicate samples, and reviewing the results of field blanks.

Approved sampling procedures are described in the GMSAP (GER; 2018, 2021), and were followed. Approved sampling procedures should be reviewed annually. Review of field blank data and duplicate analysis results and RPDs suggests that data may have minor representativeness issues (Table 5 and Appendix 2). However, Boron concentration in MW-7 during the seventh compliance sampling event exceeded its respective prediction limit by a margin much greater than reported concentration in the field blank, and its RPD was within the 20 percent tolerance level. Groundwater sampling data are evaluated using appropriate statistical analysis methodologies and is conducted separately for each constituent in each monitoring well in accordance with §257.93(f) and the performance standards in §257.93(g).

5.4 Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured by using established and approved sample collection techniques and analytical methods, consistent basis of analysis, consistent reporting units, and analyzing standard reference materials.

5.5 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected under controlled laboratory conditions. Completeness is defined as the valid data percentage of the total tests requested. Valid data are defined as those where the sample arrived at the laboratory intact, properly preserved, in sufficient quantity to perform the requested analyses, and accompanied by a completed chain-of-custody form (Appendix 3). Furthermore, the sample must have been analyzed within the specified holding time and in such a manner that analytical QC acceptance criteria are met.

6.0 STATISTICAL ANALYSIS

As discussed in Section 3.0, the FAP is currently in assessment monitoring status, and sampling activities for detection and assessment monitoring were conducted concurrently during the eighth and ninth compliance groundwater monitoring events. The statistical analysis method used to evaluate detection monitoring data within the uppermost aquifer for the FAP monitoring system at SBMU-SPS consists of intra-well analysis using prediction limits. The statistical analysis methods for the FAP assessment monitoring data consists of intra-well analysis using prediction limits to show if any detection or assessment constituents are above background values (Appendix 9), and confidence interval comparison of assessment monitoring constituent concentrations to GWPS (Appendix 9). It is noted that confidence intervals are the recommended general statistical strategy in compliance/assessment monitoring or corrective action monitoring according to Unified Guidance (USEPA, 2009). Groundwater sampling data are evaluated using appropriate statistical analysis methodologies and is conducted separately for each constituent in each of the five monitoring wells in accordance with §257.93(f) and the performance standards in §257.93(g).

6.1 Detection Monitoring Statistical Procedures

A complete background data set has been obtained for groundwater, representing the uppermost aquifer, moving below the FAP at the SPS. The background data used to evaluate detection monitoring compliance results during the seventh, eighth, and ninth groundwater compliance sampling events were initiated at the SPS FAP in April 2022, November 2022, and March 2023, respectively. Data from each event is compared to a comprehensive background data set resulting from previous sampling events. The background data set for MW-1R is based on eight rounds of background data collected from October 2021 to March 2022. The background data sets for MW-2, MW-3, MW-7, and MW-9 are based on thirteen rounds of background data collected from March 2018 to April 2021. Updates to the background data set are permitted every two years, but SSIs will not be included in background unless they are unconfirmed in accordance with Unified Guidance (USEPA, 2009). The next background update may be conducted following the ninth groundwater compliance sampling event or later in accordance with Unified Guidance (USEPA, 2009).

Statistical analysis was performed in accordance with §257.93 using Sanitas© for Ground Water. The groundwater analytical results from the seventh, eighth, and ninth detection monitoring events were compared to the respective intra-well prediction limits at the 99 percent confidence level (Table 8) to determine if SSIs over background exist in the data sets.

6.2 Exploratory Data Analysis and Detection Data Screening

Exploratory Data Analysis (EDA) of the data refers to a collection of descriptive and graphical statistical tools used to explore and understand a data set (ITRC, 2013). Generally, EDA includes a numerical summary and graphical displays such as Time Series Plots, Box and Whisker Plots,

Histograms and Probability Plots. EDA methods were supplemented with outlier and trend analysis tools included with Sanitas© software.

6.2.1 Detection Data Outlier Screening

The detection monitoring data were initially evaluated for possible outliers using the EDA outputs, which included Time Series Plots, Box and Whisker Plots, Histograms and Probability Plots. The following procedure provides the basis for the 'statistical' evaluation of possible outliers:

1. The data well/constituent pairs sample populations were analyzed for outliers using the Sanitas© program by initially screening for possible outliers with the EPA 1989 Outlier Test (Grubb's Test).
2. The data points within the sample populations were normality tested using the Shapiro-Wilk Test. The purpose of normality testing is to determine whether the sample populations are normally distributed.
3. Data that is normally distributed or can be normalized through transformation by the Ladder of Powers methods were then further analyzed for possible outliers using Dixon's Test, which is a parametric statistical outlier identification test. If the sample populations cannot be normalized by the Shapiro-Wilk test or through Ladder of Powers transformation, Dixon's Test method is halted.
4. Some possible outliers selected during the EDA evaluation were not identified by the above procedures because the sample population was not normalizable. These possible outliers were further tested (continued even if the distribution remained not normalizable) to determine if they could be confirmed. Several of these possible outliers were confirmed with additional testing. However, it is noted that these additional outliers are not recognized as 'statistical' outliers since the sample population distribution was not normalizable.
5. Similar to the above, possible outliers selected during the EDA evaluation that were not identified by the above procedures were reanalyzed using Tukey's method for outlier analysis, which indicates possible 'extreme' low or high outliers (Tukey, 1977; USEPA, 2009), if the outlier concentrations exceed three times the interquartile range (IQR) on the Box and Whisker Plots.

Using the above-mentioned outlier analysis procedures, two outliers were confirmed in the detection monitoring background database (both associated with Fluoride in MW-2). Subsequent outlier testing was performed to identify additional outliers that may have been masked by the initial outliers, but additional outliers were not identified. In total, the two outliers represent less than one percent of the 420 data points, which include 364 data points for MW-2, MW-3, MW-7, and MW-9 (7 constituents x 4 wells x 13 sampling events), and 56 individual data points for MW-1R (7 constituents x 1 well x 8 sampling events). It is noted that Sanitas© also identified two outliers associated with MW-1R (pH and Fluoride). These data were not removed because the background data set for this well contains only eight samples, and they were collected over a period of less than one year. Because the range of natural annual/seasonal variation is almost certainly greater than the variance in this data set, it is premature to remove any data until more than eight samples are collected over a period greater than one year. Therefore, all background

data for MW-1R were retained as recommended by Unified Guidance (USEPA, 2009) when no basis for likely error or discrepancy can be identified. Following future updates to the background data set, the identification of potential outliers will be re-evaluated.

By contrast, the background data set used to evaluate the data from MW-2, MW-3, MW-7, and MW-9 are based on 13 rounds of data. Thirteen data points results in a more robust data set that includes some natural annual/seasonal variation and allows for removal potential outliers while maintaining a sample population of $n =$ eight or more. Accordingly, EDA performed with Sanitas© to conduct outlier analysis allowed for identification and screening of two outliers from the background data sets for these four wells.

6.2.2 Detection Data Trend Screening

The confirmed outliers were removed from the background data sets, as appropriate, prior to trend testing. The Sen's Slope/Mann-Kendall (non-parametric) trend test within Sanitas© was selected to identify statistically significant downward or upward trends in the detection monitoring background data for each of the five FAP groundwater monitoring system wells. Trend testing identified several trends in the data. Significant increasing trends in constituent concentrations, and both decreasing and increasing significant trends in pH are of primary interest for detection monitoring at this site. Upgradient well MW-2 displays an apparent statistically significant increasing trend in TDS at the 98% confidence level. This trend is identified by Sanitas© as significant.

Following Trend analysis, trend correction was performed for TDS in MW-2. Trend elimination is accomplished by iteratively removing early data from the set and re-checking for trend. Removed values are indicated in Appendix 4, and the data range for the resulting alternate data set is summarized in Table 7. The resulting alternate data set was tested using Sanitas© to verify successful trend elimination.

6.3 Detection Monitoring Statistical Results

The results of the statistical analysis for the detection monitoring data from the seventh, eighth, and ninth sampling events are described below. A complete database summarizing the sample results, screened data, dates of sampling, and the purpose of sampling event, as per §257.90(e)(3), is provided in Appendix 4. A statistical power curve, based on the updated background data for detection monitoring, is provided in Appendix 5. Time-series plots of background data for all detection and assessment monitoring constituents are presented in Appendix 6. Box and whiskers plots of all detection and assessment monitoring data are presented in Appendix 7. Prediction limit charts for detection monitoring data are provided in Appendix 8.

The statistical analysis for the seventh FAP groundwater sampling event confirmed three SSIs. Two are associated with pH at in MW-1R and MW-3 and one is associated with Boron in MW-7

(Table 1). The associated prediction limits for these well constituent pairs are summarized in Table 8. In accordance with §257.94(e), an Assessment Monitoring Program was established on November 2, 2022.

The statistical analysis for the eighth FAP groundwater sampling event suggests three SSIs (TDS and Boron in MW-2 and pH in MW-3), and analysis of the ninth event data suggests four SSIs (pH in MW-1R and MW-2, TDS in MW-2, and Boron in MW-7).

6.4 Assessment Monitoring Statistical Results

The §257 Appendix IV - Constituents for Assessment Monitoring were not compared to background values because at least one concentration was greater than the GWPS (Table 9). These comparisons would be performed in accordance with §257.95(e) and (f) if the possibility of returning to Detection Monitoring status appeared probable, by using Sanitas© to calculate prediction intervals based on the established background data for Appendix III and IV Constituents to determine if concentrations are below background values.

The §257 Appendix IV - Constituents for Assessment Monitoring were evaluated to determine if SSLs over GWPS (Table 9) exist using Sanitas© to calculate confidence intervals based on the monitoring data following traditional data review, quality control, and outlier testing (Appendix 9). Sanitas© identified the following five outliers in the Appendix IV database, all associated with Fluoride, which were subsequently screened from the Appendix IV database prior to calculating confidence intervals:

- (1) Fluoride at MW-1R (0.366 mg/L on November 16, 2021)
- (3) Fluoride at MW-2 sample results for (0.335 mg/L on April 15, 2016; 0.272 mg/L on November 6, 2018; and 0.336 mg/L on April 6, 2020),
- (1) Fluoride at MW-9 (1.330 mg/L on October 20, 2021).

Confidence Intervals were calculated for each well constituent pair as summarized in Appendix 9. If the lower confidence interval is greater than the GWPS, an SSL is apparent. Four SSLs were identified in the November 2022 and March 2023 data. The SSLs reported for these events are:

- Molybdenum (MW-1R, MW-7, and MW-9), and
- Cobalt (MW-1R)

Trend analysis was also conducted to determine if any of the SSLs are symptomatic of increasing concentrations of these constituents with time. Results of the trend analysis are provided in Appendix 9, and they demonstrate the following:

- Molybdenum concentrations at MW-7, and MW-9 are decreasing with a significant trend,
- Molybdenum concentrations at MW-1R do not show a significant trend with time, and
- Cobalt Concentrations at MW-1R do not show a significant trend with time.

7.0 RECOMMENDATIONS

Based on the results of the data evaluations, concentrations of several detection and assessment monitoring constituents are above background values. Therefore, assessment monitoring must continue in accordance with §257.95. Additionally, Cobalt and Molybdenum were detected at SSLs above GWPS. Therefore, the SPS prepared a notification identifying the constituents in appendix IV that exceeded the GWPS, placed it in the facility operating record as required by §257.105(h)(8). Additionally, the SPS began a Nature and Extent Evaluation and initiated an Assessment of Corrective Measures on July 14, 2023. Accordingly, the Notification that an Assessment of Corrective Measures has been initiated, was prepared in accordance with §257.95(g)(5).

In summary, GER recommends:

1. Continue Assessment and Detection Monitoring in accordance with the CCR Rule.
2. Continue Assessment of Corrective Measures for Molybdenum and Cobalt in accordance with the CCR Rule.

8.0 SUMMARY

The seventh semi-annual sampling event was conducted by SPS environmental staff for detection monitoring on April 9, 2022. Verification sampling was conducted on August 2, 2022, and three SSIs (pH in MW-1R and MW-3 and Boron in MW-7) were confirmed. As a result of the confirmed SSIs, SPS initiated assessment monitoring for the FAP.

Assessment monitoring was initiated for the FAP on November 2, 2022, as a result of the confirmed SSIs of detection monitoring parameters during the previous sampling event. The eighth detection monitoring event was conducted simultaneously with the first assessment monitoring event on this date.

Assessment resampling was conducted simultaneously with the ninth detection monitoring event on March 12, 2023. Results confirmed the presence of four SSLs above GWPS (Molybdenum in MW-1R, MW-7, and MW-9, and Cobalt in MW-1R). Accordingly, SPS initiated an evaluation of nature and extent of Molybdenum and Cobalt associated with these SSLs.

The Nature and Extent Evaluation was initiated in accordance with §257.95(g)(1) to support an Assessment of Corrective Measures that was initiated on July 14, 2023, in accordance with §257.95(g)(3). At this time, the Assessment of Corrective Measures is in development. It will include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under §257.97, and addressing the information presented in §257.96(c). In the interim, SPS will continue detection and assessment monitoring of the FAP in accordance with §257.94 & 95.

9.0 LIMITATIONS

This report has been prepared for the exclusive use of the client and GREDELL Engineering Resources, Inc. for the specific project discussed in accordance with generally accepted environmental practices common to this locale at this time. No other warranties, expressed or implied, are provided.

Interpretations of data and recommendations made in this report are based on observations of data that were available and referred to in this report unless otherwise noted. The report is applicable only to this specific project and known site conditions as they existed at the time of report preparation.

This report is not a guarantee of subsurface conditions. Variations in subsurface conditions may be present that were not identified during this or previous investigations. The use of this report and interpretations of data or conclusions developed by others are the sole responsibility of those firms or individuals.

10.0 REFERENCES

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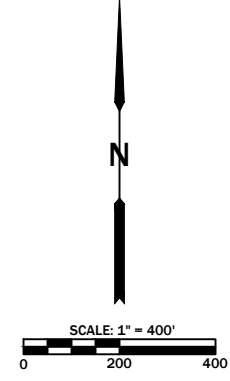
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FIGURES



LEGEND

PROPERTY LINE	— PL —
GROUNDWATER CONTOUR (DASHED WHERE INFERRED) CI = 0.5 FT	— — — — —
MONITORING WELL	⊙ MW
UP GRADIENT	↑
MONITORING LOCATION	UG
DOWN GRADIENT	DG
MONITORING LOCATION	
GENERAL FLOW DIRECTION	←

- NOTES:**
1. IMAGE PROVIDED BY BING MAPS.
 2. MONITORING WELL LOCATIONS, CASING ELEVATIONS & UNDERGROUND CULVERT ELEVATIONS SURVEYED BY BOWEN ENGINEERING & SURVEYING.
 3. GROUNDWATER ELEVATIONS MEASURED BY SIKESTON POWER STATION STAFF ON NOVEMBER 2, 2022.
 4. MAP DEVELOPMENT BASED ON CONTOURS GENERATED BY SURFER® SOFTWARE.
 5. RANGE OF GROUNDWATER FLOW GRADIENT AS DETERMINED BY SURFER® SOFTWARE 0.0001 FT./FT. TO 0.001 FT./FT.

MONITORING WELL ID	GROUNDWATER ELEVATION (FEET)	CASING ELEVATION (FEET)	NORTHING	EASTING
MW-1R	296.04	314.34	382926.45	1078801.61
MW-2	297.01	308.01	383207.42	1079751.30
MW-3	296.55	308.55	381130.00	1079946.62
MW-7	295.38	315.03	381584.50	1078847.00
MW-9	295.85	314.68	382429.94	1078825.60

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**SIKESTON POWER STATION
 FLY ASH POND
 2023 ANNUAL GROUNDWATER
 MONITORING & REPORT**

**FIGURE 2
 GROUNDWATER CONTOUR MAP
 NOVEMBER 2, 2022**

THE GEOLOGIST WHO REVIEWED AND APPROVED THIS REPORT ASSUMES RESPONSIBILITY ONLY FOR GEOLOGIC INTERPRETATIONS OF DATA APPEARING ON THIS PAGE AND DISCLAIMS RESPONSIBILITY TO SECTION 286.456 RSMO ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS NOT PREPARED UNDER THE SUPERVISION OF THE GEOLOGIST RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS FIGURE REFERS.

DESIGNED	CM	CHECKED	KE	APPROVED	MCC	SCALE	1" = 400'	PROJECT NAME	SIKESTON/GW/MAP/FAP	FILE NAME	SIKESTON/GW CONT MAP 4.22-3.23	SHEET #	2 OF 3
SURVEYED	N/A	DRAWN	KE	DRAWN	CM	DATE	06/2023						



LEGEND

PROPERTY LINE — PL —

GROUNDWATER CONTOUR (DASHED WHERE INFERRED) ————

CI = 0.5 FT

MONITORING WELL (MW) ○

UP GRADIENT MONITORING LOCATION (UG) ○

DOWN GRADIENT MONITORING LOCATION (DG) ○

GENERAL FLOW DIRECTION ←

- NOTES:**
1. IMAGE PROVIDED BY BING MAPS.
 2. MONITORING WELL LOCATIONS, CASING ELEVATIONS & UNDERGROUND CULVERT ELEVATIONS SURVEYED BY BOWEN ENGINEERING & SURVEYING.
 3. GROUNDWATER ELEVATIONS MEASURED BY SIKESTON POWER STATION STAFF ON MARCH 12, 2023.
 4. MAP DEVELOPMENT BASED ON CONTOURS GENERATED BY SURFER® SOFTWARE.
 5. RANGE OF GROUNDWATER FLOW GRADIENT AS DETERMINED BY SURFER® SOFTWARE 0.0001 FT./FT. TO 0.001 FT./FT.

MONITORING WELL ID	GROUNDWATER ELEVATION (FEET)	CASING ELEVATION (FEET)	NORTHING	EASTING
MW-1R	296.45	314.34	382926.45	1078801.61
MW-2	297.21	308.01	383207.42	1079751.30
MW-3	296.75	308.55	381130.00	1079946.62
MW-7	295.80	315.03	381584.50	1078847.00
MW-9	296.27	314.68	382429.94	1078825.60

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**SIKESTON POWER STATION
 FLY ASH POND
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**FIGURE 3
 GROUNDWATER CONTOUR MAP
 MARCH 12, 2023**

THE GEOLOGIST WHO REVIEWED AND APPROVED THIS REPORT ASSUMES RESPONSIBILITY ONLY FOR GEOLOGIC INTERPRETATIONS OF DATA APPEARING ON THIS PAGE AND DISCLAIMS PURSUANT TO SECTION 286.456 RSMO ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS NOT PREPARED UNDER THE SUPERVISION OF THE GEOLOGIST RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS FIGURE REFERS.

SURVEYED	DESIGNED	DRAWN	CHECKED	APPROVED	SCALE	DATE	PROJECT NAME	FILE NAME	SHEET #
N/A	KE	CM	KE	MCC	1" = 400'	06/2023	SIKESTON/GWMAP/FAP	SIKESTON/GW CONT MAP 4.22-3.23	3 OF 3

TABLES

**Annual Groundwater Monitoring Report for Fly Ash Pond
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Scott County, Missouri**

**Table 2
Groundwater Monitoring Constituents**

USEPA 40 CFR 257			
Appendix III - Constituents for Detection Monitoring		Appendix IV - Constituents for Assessment Monitoring	
Chemical Constituent	Method	Chemical Constituent	Method
pH (S.U.)	Field	Antimony (µg/L)	SW 6020 A
Boron (µg/L)	SW 6020 A	Arsenic (µg/L)	SW 6020 A
Calcium (mg/L)	SW 6020 A	Barium (µg/L)	SW 6020 A
Chloride (mg/L)	EPA 300.0 REV 2.1	Beryllium (µg/L)	SW 6020 A
Fluoride (mg/L)	EPA 300.0 REV 2.1	Cadmium (µg/L)	SW 6020 A
Sulfate (mg/L)	EPA 300.0 REV 2.1	Chromium (µg/L)	SW 6020 A
Total Dissolved Solids (mg/L)	SM 2540C	Cobalt (µg/L)	SW 6020 A
		Fluoride (mg/L)	EPA 300 REV 2.1
		Lead (µg/L)	SW 6020 A
		Lithium (µg/L)	SW 6010 A
		Mercury (µg/L)	SW 6020 A
		Molybdenum (µg/L)	SW 6020 A
		Selenium (µg/L)	SW 6020 A
		Thallium (µg/L)	SW 6020 A
		Radium 226 and 228 combined (pCi/L)	EPA 903.1 & 904.0

NOTES:

1. S.U. = Standard Unit.
2. µg/L = micrograms per liter.
3. mg/L = milligrams per liter.
4. pCi/L = picocurie per liter.

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Scott County, Missouri**

**Table 3
Groundwater Monitoring Well Summary - Fly Ash Pond**

Monitoring Well ID^{1,2}	Northing Location^{3,4}	Easting Location^{3,4}	Ground Surface Elevation^{3,4} (feet)	Top of Riser Elevation^{3,4} (feet)	Well Depth⁵ (feet)	Base of Well Elevation⁶ (feet)	Screen Length⁷ (feet)	Top of Screen Elevation (feet)
MW-1*	383119.51	1078467.90	310.41	312.77	37.84	274.93	10	285.1
MW-2	383207.42	1079751.30	305.53	308.01	37.42	270.59	10	280.8
MW-3	381130.00	1079946.62	306.11	308.55	37.21	271.34	10	281.5
MW-7	381584.50	1078847.00	312.70	315.03	37.37	277.66	10	287.9
MW-9	382429.94	1078825.60	311.85	314.68	37.28	277.40	10	287.6
MW-1R	382926.45	1078801.61	311.41	314.34	38.16	276.10	10	286.4

NOTES:

1. Refer to Figure 1 for monitoring well locations.
2. Refer to Sikeston Power Station On-Site Operating Record for well construction diagrams.
3. Monitoring well survey data provided by Bowen Engineering & Surveying, Inc.
4. Horizontal Datum: Missouri State Plane Coordinates - NAD 83 (Feet), Vertical Datum: NAVD 88 (Feet).
5. Depth measurements relative to surveyed point on top of well casing.
6. Sump installed at base of screen (0.2 feet length).
7. Actual screen length (9.7 feet) is the machine-slotted section of the 10-foot length of Schedule 40 PVC pipe.
8. * = MW-1 removed from Fly Ash Pond Monitoring System following installation and completion of background sampling of MW-1R on March 2, 2022.

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**Table 4
Historical Groundwater Level Summary**

Well ID	MW-1*	MW-2	MW-3	MW-7	MW-9	MW-1R
Date	Groundwater Elevation (feet MSL)					
05/12/16	297.50	298.66	298.13	NM	NM	NM
06/28/16	296.60	298.01	297.58	NM	NM	NM
07/15/16	296.57	297.86	297.37	NM	NM	NM
08/08/16	295.62	297.06	297.05	NM	NM	NM
09/08/16	296.06	297.27	296.76	NM	NM	NM
10/05/16	295.86	296.96	296.40	NM	NM	NM
11/01/16	295.47	296.66	296.10	NM	NM	NM
11/30/16	295.45	296.60	296.03	NM	NM	NM
01/24/17	NM	NM	296.35	NM	NM	NM
01/26/17	295.77	296.76	296.35	NM	NM	NM
02/22/17	NM	NM	296.00	NM	NM	NM
02/24/17	295.47	296.40	296.00	NM	NM	NM
03/20/17	296.11	296.96	296.45	NM	NM	NM
04/19/17	296.04	296.86	296.35	NM	NM	NM
04/27/17	NM	NM	296.72	NM	NM	NM
05/17/17	NM	NM	297.81	NM	NM	NM
06/08/17	NM	NM	297.81	NM	NM	NM
07/13/17	NM	NM	296.98	NM	NM	NM
10/31/17	NM	NM	295.22	NM	NM	NM
03/21/18	295.92	296.96	296.65	295.83	296.13	NM
04/15/18	297.07	297.86	297.60	296.95	297.18	NM
05/23/18	296.78	298.01	297.62	296.66	296.98	NM
06/13/18	NM	NM	297.33	NM	NM	NM
06/27/18	296.37	297.61	297.21	296.26	296.56	NM
08/01/18	295.22	296.60	296.15	295.08	295.48	NM
09/05/18	294.79	296.11	295.68	294.71	295.01	NM
11/06/18	295.01	296.21	295.74	294.85	295.17	NM
11/26/18	NM	NM	295.63	NM	NM	NM
12/12/18	295.12	296.21	295.79	295.06	295.36	NM
01/08/19	295.66	296.72	296.38	295.53	295.80	NM
02/05/19	NM	NM	296.73	NM	NM	NM
02/22/19	297.70	298.67	298.35	297.59	297.84	NM
03/27/19	297.69	298.93	298.51	297.58	297.93	NM
04/16/19	298.15	299.29	298.93	298.01	298.38	NM
05/14/19	298.27	299.66	299.25	298.15	298.52	NM
05/28/19	NM	NM	298.95	NM	NM	NM
06/12/19	297.82	299.24	298.82	297.76	298.10	NM
07/17/19	297.32	298.77	298.38	297.25	297.55	NM
07/24/19	297.40	298.80	298.41	297.33	297.65	NM
08/14/19	296.61	298.15	297.80	296.65	296.96	NM
08/28/19	NM	NM	297.55	NM	NM	NM
09/16/19	296.24	297.70	297.22	296.14	296.50	NM
09/24/19	296.09	297.53	297.05	295.98	296.33	NM
10/10/19	295.92	297.29	296.84	295.80	296.13	NM
10/22/19	295.92	297.24	296.80	295.74	296.12	NM
11/04/19	NM	NM	297.34	NM	NM	NM
01/28/20	297.61	298.73	298.34	297.42	297.80	NM
02/18/20	NM	NM	299.00	NM	NM	NM
03/30/20	NM	NM	300.09	NM	NM	NM
04/06/20	299.16	300.40	300.00	298.99	299.41	NM
05/21/20	298.50	300.02	299.55	NM	298.71	NM
09/22/20	296.53	297.97	297.47	296.33	296.78	NM
12/08/20	296.63	298.00	NM	NM	NM	NM
01/26/21	NM	NM	NM	296.51	296.82	NM
04/17/21	297.32	298.49	298.05	297.08	297.48	NM
10/20/21	295.36	296.55	296.04	295.08	295.53	295.69
04/09/22	NM	298.06	297.60	296.78	297.18	297.29
08/02/22	NM	297.01	296.55	295.38	295.85	296.04
11/02/22	NM	295.79	295.24	294.33	294.78	294.96
03/12/23	NM	297.21	296.75	295.80	296.27	296.45

NOTES:

1. Refer to Figure 1 for monitoring well locations.
2. Refer to Sikeston Power Station On-Site Operating Record for well construction diagrams.
3. NM - Not Measured.
4. Maximum and minimum groundwater elevations are shaded.
5. * = MW-1 removed from Fly Ash Pond Monitoring System following installation and completion of background sampling of MW-1R on March 2, 2022.

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**Table 5
Water Levels and Field Parameter Summary**

7th Compliance Sampling Event initiated April 9, 2022

Monitoring Well I.D.	Hydraulic Position	Initial Water Level (ft, BTOC ²)	Final Water Level (ft, BTOC ²)	Minimum ³ Purge Vol. (ml ⁴)	Actual Purge Vol. (ml ⁴)	pH (S.U. ⁵)
MW-2	Upgradient	9.95	9.95	300	3,060	6.50
MW-3	Upgradient	10.95	10.95	300	4,120	6.67
MW-7	Downgradient	18.25	18.25	300	3,300	7.45
MW-9	Downgradient	17.50	17.50	300	3,120	7.67
MW-1R	Downgradient	17.05	17.05	300	4,460	6.66

8th Compliance Sampling Event initiated November 2, 2022

Monitoring Well I.D.	Hydraulic Position	Initial Water Level (ft, BTOC ²)	Final Water Level (ft, BTOC ²)	Minimum ³ Purge Vol. (ml ⁴)	Actual Purge Vol. (ml ⁴)	pH (S.U. ⁵)
MW-2	Upgradient	12.22	12.23	300	3,360	6.23
MW-3	Upgradient	13.31	13.31	300	5,660	6.93
MW-7	Downgradient	20.70	20.71	300	3,240	7.36
MW-9	Downgradient	19.90	19.90	300	3,580	7.39
MW-1R	Downgradient	19.38	19.39	300	2,900	6.55

9th Compliance Sampling Event initiated March 12, 2023

Monitoring Well I.D.	Hydraulic Position	Initial Water Level (ft, BTOC ²)	Final Water Level (ft, BTOC ²)	Minimum ³ Purge Vol. (ml ⁴)	Actual Purge Vol. (ml ⁴)	pH (S.U. ⁵)
MW-2	Upgradient	10.80	10.81	300	5,900	6.51
MW-3	Upgradient	11.80	11.80	300	7,000	6.51
MW-7	Downgradient	19.23	19.23	300	3,780	7.40
MW-9	Downgradient	18.41	18.41	300	3,380	7.43
MW-1R	Downgradient	17.89	17.89	300	5,010	6.60

NOTES:

1. Sequence of sampling is MW-3, MW-2, MW-1R, MW-7, then MW-9.
2. BTOC: Below Top of Casing
3. Purge calculations based on 1/4" ID tubing and complete evacuation of single tubing volume.
4. ml: milliliter
5. S.U.: Standard Unit.

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**Table 6
Relative Percent Differences Summary**

7th Compliance Sampling Event initiated April 9, 2022

Chemical Parameter	Units	MW-1R	DUP	Relative Percent Difference
pH	S.U.	6.66	6.66	0.00
Chloride	µg/L	12	12	0.00
Sulfate	mg/L	150	150	0.00
Total Dissolved Solids	mg/L	300	260	14.29
Boron	µg/L	3,100	2,900	6.67
Calcium	mg/L	73	75	2.70

8th Compliance Sampling Event initiated November 2, 2022

Chemical Parameter	Units	MW-1R	DUP	Relative Percent Difference
pH	S.U.	6.55	6.55	0.00
Chloride	µg/L	14	14	0.00
Sulfate	mg/L	170	160	6.06
Total Dissolved Solids	mg/L	440	430	2.30
Boron	µg/L	2,400	2,900	18.87
Calcium	mg/L	72	87	18.87
Barium	µg/L	30	35	15.38
Cobalt	µg/L	8.5	10	16.22
Molybdenum	µg/L	150	190	23.53
Radium 226/228 (Combined)	pCi/L	0.835	2.270	92.43

9th Compliance Sampling Event initiated March 12, 2023

Chemical Parameter	Units	MW-1R	DUP	Relative Percent Difference
pH	S.U.	6.60	6.60	0.00
Chloride	µg/L	10	9.9	1.01
Sulfate	mg/L	140	120	15.38
Total Dissolved Solids	mg/L	300	240	22.22
Boron	µg/L	3,000	1,600	60.87
Calcium	mg/L	70	40	54.55
Barium	µg/L	52	33	44.71
Cobalt	µg/L	7.9	4.3	59.02
Molybdenum	µg/L	180	110	48.28

NOTES:

1. S.U. = Standard Unit.
2. µg/L = micrograms per liter.
3. mg/L = milligrams per liter.
4. pCi/L = picoCuries per liter.
5. Relative Percent Difference tolerance = 20%. Not calculated if sample or Dup is below Reporting Limit.

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**Table 7
Alternate Data Sets**

7th, 8th, and 9th Compliance Sampling Events

Constituent-Well Pair ¹		Proposed Background Data Base (to eliminate trending data) ²	Background set size (n)
Well ID	Constituent		
MW-2	TDS	August 2018 through September 2020	8

Notes:

1. Constituent-well pairs identified based on Mann-Kendall Sen's Slope Trend Analysis of data set summarized in Appendix 4.

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**Table 8
Intra-Well Prediction Limit Summaries**

7th, 8th, and 9th Compliance Sampling Events

Chemical Parameter	Units	MW-1R	MW-2	MW-3	MW-7	MW-9
40 CFR 257 Appendix III Constituents for Detection Monitoring						
pH Upper	S.U.	6.58	6.405	6.626	7.420	7.477
pH Lower	S.U.	6.48	6.013	6.359	7.148	7.237
Chloride	mg/L	21.7	7.525	1.641	14.94	22.51
Fluoride	mg/L	0.366	0.272	0.386	0.831	1.101
Sulfate	mg/L	249.2	21.42	21.29	259	279.2
Total Dissolved Solids	mg/L	512.1	171.5	166.7	584.1	653
Boron	µg/L	3,875	59.94	33.39	2,352	6,408
Calcium	mg/L	112.4	24.21	19.08	144	97.23

NOTES:

1. MW-1R prediction limits based on eight rounds of background data spanning October 2021 to March 2022.
2. Prediction limits for MW-2, MW-3, MW-7, and MW-9 based on 13 rounds of background data spanning March 2018 to April 2021, except where detrending or outlier removal was necessary (Appendix 4).
3. Prediction limits summarized from Sanitas outputs provided in Appendix 8.

**Annual Groundwater Monitoring Report for Fly Ash Pond
USEPA 40 CFR 257.90(e)
SBMU - Sikeston Power Station
Scott County, Missouri**

**Table 9
Groundwater Protection Standards for Assessment Monitoring Constituents**

Constituent	Units	MCL or Health-Based GWPS
Antimony	ug/L	6
Arsenic	ug/L	10
Barium	ug/L	2000
Beryllium	ug/L	4
Cadmium	ug/L	5
Chromium	ug/L	100
Cobalt	ug/L	6
Fluoride	mg/L	4
Lead	ug/L	15
Lithium	ug/L	40
Mercury	ug/L	2
Molybdenum	ug/L	100
Selenium	ug/L	50
Thallium	ug/L	2
Radium 226/228 (Combined)	pCi/L	5

NOTES:

1. ug/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. MCL - Maximum Contaminant Level per CFR 40 Subchapter D Part 141 subpart G Section 141.62 & 141.66, or Part 257 subpart D Section 257.95(h)(2).

APPENDICES

Appendix 1

Field Sampling Notes

Appendix 1

Field Sampling Notes
7th CCR Compliance Sampling Event
(1st 2022 Semi-annual Detection Monitoring Event)
April 9, 2022

Field Instrumentation Calibration Log

Facility: SBMU SPS CCR Groundwater Sampling

Calibrated by: Ashish Patel

Field Instruments: In-Situ smartROLL Field Meter

HF scientific, Inc. Micro TPI Field Portable Turbidimeter

SN #: 474247

SN #: 201607366

	Date	Time	pH		Specific Conductance Standard (µS/cm)	Specific Conductance Measurement (µS/cm)	Oxidation Reduction Potential Standard (mV)		Oxidation Reduction Potential Measurement (mV)	Dissolved Oxygen (%)		Turbidity Standards (NTU)	Turbidity Measurements (NTU)
			Standards	Measurements			Temperature (°C)	Standard (mV)		Temperature (°C)	Measurement		
Beginning of Day Calibration	04-09-2022	0650	4.00 =	4.00	1413	= 1411.9	Temperature (°C) =	1.92	= 229.5	Temperature (°C) =	1.75	0.02 =	0.02
			7.00 =	7.00			Standard (mV) =	229.0		Tap Water Source =	Sikeston City	10.0 =	10.0
			10.00 =	10.00			Barometric Pressure (mm/Hg) =	1002.0		Measurement =	100PS	1000 =	1000.0
							Measurement =	100PS					
End of Day Check	04-09-2022	1515	4.00 =	4.14	1413	= 1430.7	Temperature (°C) =	1.95	= 224.4	Temperature (°C) =	3.45	0.02 =	0.03
			7.00 =	7.25			Standard (mV) =	229		Tap Water Source =	Sikeston City	10.0 =	9.72
			10.00 =	10.22			Barometric Pressure (mm/Hg) =	1001.1		Measurement =	100.3	1000 =	987.3
							Measurement =	100.3					

Notes: The Multi-Probe Field Meter measures Temperature, Specific Conductance, Dissolved Oxygen, pH, and Oxidation Reduction Potential.

The HF scientific, Inc. Micro TPI Field Portable Turbidimeter measures Turbidity.

Dissolved oxygen is calibrated via % saturation method; however, field measurements are recorded as mg/L.

I certify that the aforementioned meters were calibrated within the manufacturers specifications.

Date: 04-09-2022

By: Ashish Patel

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring
Monitoring Well ID: MW 3
Name (Field Staff): A Patel D Dillingham
Date: 04-09-2022

Access:
Accessibility: Good Fair Poor
Well clear of weeds and/or debris?: Yes No
Well identification clearly visible?: Yes No
Remarks:

Concrete Pad:
Condition of Concrete Pad: Good Inadequate
Depressions or standing water around well?: Yes No
Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp
Condition of Protective Casing: Good Damaged
Condition of Locking Cap: Good Damaged
Condition of Lock: Good Damaged
Condition of Weep Hole: Good Damaged
Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded
Condition of Riser: Good Damaged
Condition of Riser Cap: Good Damaged
Measurement Reference Point: Yes No
Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing
Condition: Good Damaged Missing
Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No
Remarks:

Field Certification Ashish Patel Lab Tech 04-09-2022
Signed Title Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 3

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing Dedicated: Y / N

Water Level @ Sampling (feet btoc): 10.95

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-09-2022</u> <u>0822</u>	<u>270</u>	<u>-2.74</u>	<u>197.59</u>	<u>2.86</u>	<u>6.67</u>	<u>66.7</u>	<u>2.58</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny
39°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-09-22 By: Ashish Patel Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS -- CCR Groundwater Monitoring

Monitoring Well ID: MW 2

Name (Field Staff): A Patel D Dillingham

Date: 04-09-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification Ashish Patel Lab Tech 4-9-2022
Signed Title Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 2

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing Dedicated: Y / N

Water Level @ Sampling (feet btoc): 9.95

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-09-22</u> <u>0925</u>	<u>260</u>	<u>-1.47</u>	<u>156.38</u>	<u>1.20</u>	<u>6.50</u>	<u>71.9</u>	<u>3.31</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny
44° F

Sample Characteristics: clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-09-2022 By: Ashish Prasad Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 1A

Name (Field Staff): A. PAELI O. DILLINGHAM

Date: 04-09-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification A. PAELI
Signed

O. DILLINGHAM
Title

04-09-2022
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 1 R

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: / N

Water Level @ Sampling (feet btoc): 17.05

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-09-22</u> <u>1112</u>	<u>260</u>	<u>-1.69</u>	<u>671.15</u>	<u>1.04</u>	<u>6.66</u>	<u>52.4</u>	<u>1.59</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbiditymeter

General Information:

Weather Conditions @ time of sampling: Sunny
49°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

Collect Field Duplicate

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-09-2022 By: [Signature] Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring
Monitoring Well ID: MW 7
Name (Field Staff): A Patel O Dillingham
Date: 04-09-2022

Access:

Accessibility: Good Fair Poor
Well clear of weeds and/or debris?: Yes No
Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate
Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged
Condition of Locking Cap: Good Damaged
Condition of Lock: Good Damaged
Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged
Condition of Riser Cap: Good Damaged
Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

Ashish Pare
Signed

Lab Tech
Title

04-09-2022
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 7

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing Dedicated: Y / N

Water Level @ Sampling (feet btoc): 18.25

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-09-22</u> <u>1248</u>	<u>270</u>	<u>-1.31</u>	<u>958.32</u>	<u>0.67</u>	<u>7.45</u>	<u>17.1</u>	<u>0.60</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny

54°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

Collect Field Blank

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-09-2022 By: Ashish Patel Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring
 Monitoring Well ID: MW 9
 Name (Field Staff): A Patel O Dillingham
 Date: 04-09-2022

Access:
 Accessibility: Good Fair Poor
 Well clear of weeds and/or debris?: Yes No
 Well identification clearly visible?: Yes No
 Remarks:

Concrete Pad:
 Condition of Concrete Pad: Good Inadequate
 Depressions or standing water around well?: Yes No
 Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp
 Condition of Protective Casing: Good Damaged
 Condition of Locking Cap: Good Damaged
 Condition of Lock: Good Damaged
 Condition of Weep Hole: Good Damaged
 Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded
 Condition of Riser: Good Damaged
 Condition of Riser Cap: Good Damaged
 Measurement Reference Point: Yes No
 Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing
 Condition: Good Damaged Missing
 Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No
 Remarks:

Field Certification Ash Patel Lead Tech 04-09-2022
 Signed Title Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 9

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet bloc): 17.50

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other ()

Final Purge: Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-09-2022</u> <u>1341</u>	<u>260</u>	<u>-0.98</u>	<u>894.70</u>	<u>0.86</u>	<u>7.67</u>	<u>1.9</u>	<u>0.70</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny

56°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-09-2022 By: Ashish Patel

Title: Lab Techn

Appendix 1

Field Sampling Notes
7th CCR Compliance Sampling Event
(1st 2022 Semi-annual Detection Monitoring Event)
August 2, 2022 Verification Sampling



PACE ANALYTICAL SERVICES
WWW.PACELABS.COM

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CGDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD
STATE WHERE SAMPLE COLLECTED MO

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT		PROJECT NUMBER		PROJECT LOCATION		PURCHASE ORDER #		3 ANALYSIS REQUESTED			4 (FOR LAB USE ONLY)	
SIKESTON BMU POWER STATION				FLY ASH							LOGIN # _____	
ADDRESS 1551 W WAKEFIELD		PHONE NUMBER 573-476-3131		E-MAIL		DATE SHIPPED					LOGGED BY: _____	
CITY STAT ZIP SIKESTON, MO 63801		SAMPLER (PLEASE PRINT) Justin Lowes		SAMPLER'S SIGNATURE 		MATRIX TYPES: WV-INSTONWER GW-UNSATURATED GW-SATURATED WV-GLASS WV-LINE ADDRESS/LOC LCH/LEH/WE GL-GL SO-GL COL-GL					CLIENT: SIKESTON BMU, SIKESTON POWER STATION	
CONTACT PERSON MR LUKE ST MARY											PROJECT: SIKESTON FLY ASH APP III 2022 RESAMPLES	
											PROJ. MGR.: GJ SCHINDLER	
2 SAMPLE DESCRIPTION <small>(SAMPLE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)</small>		DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB COMP		MATRIX TYPE	BOTTLE COUNT	PRES CODE <small>(CLIENT PROVIDED)</small>	ML	IL	REMARKS	
MW-2		8/2/2022	0851	X		GW	1	3	X			
MW-3		8/2/22	0756	X		GW	1	3	X			
MW-7		8/2/22	1129	X		GW	1	3	X			
MW-9		8/2/22	1054	X		GW	1	6		X		
FIELD BLANK		8/2/22	1129	X		DI	2	3,6	X	X		
DUPLICATE 1		8/2/22		X		GW	1	6		X		
DUPLICATE 2		8/2/22		X		GW	1	3	X			
CHEMICAL PRESERVATION CODES:		1-HCL	2-H2SO4	3-BNDS	4-NAOH	5-HAZZOS	6-UNPRESERVED	7-OTHER				
5 TURNDOWN TIME REQUESTED (PLEASE CIRCLE):		NORMAL		RUSH		DATE RESULTS NEEDED		6 I understand that by building this box I give the lab permission to proceed with analysis, even though it may not meet all sample-containment requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities.				
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE								PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS)				
EMAIL IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE:												
7 RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	8 COMMENTS: (FOR LAB USE ONLY)			
		8/4/22	0800									
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	SAMPLE TEMPERATURE UPON RECEIPT _____ °C			
									CHILL PROCESS STARTED PRIOR TO RECEIPT Y OR N			
									SAMPLES RECEIVED ON ICE Y OR N			
									SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED Y OR N			
									DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____			

Field Instrumentation Calibration Log

Calibrated by: Ash. R. Patel

Station: Sikeston River Station
 Facility: Groundwater Monitoring

HF Scientific, Inc. Micro TPI Field Portable Turbidimeter

Field Instruments: In-Situ SmartTROLL MP or In-Situ AquatROLL 400

201607366

S/N #: 893508

Date	Time	pH Standards (pH)	pH Measure-ments (pH, mV)	Specific Conductance Standard (µS/cm)	Specific Conductance Measurement (µS/cm)	Oxidation Reduction Potential Standard (mV)	Oxidation Reduction Potential Measurement (mV)	Dissolved Oxygen (%)		Turbidity Standards (NTU)	Turbidity Measurements (NTU)
								Temperature (°C)	Top Water Source		
8/21/2022	0610	4.00 @ 25.00°C	4.00	1413 @ 25.00°C	1413	220 mV at 25.00°C	229.1	22.39	Sikeston	0.02	0.02
		Standard is 4 @ 25°C	140.2					City		10.0	10.0
		7.00 @ 25.00°C	7.02	1413 @ 25.00°C	1413	Standard is 220 mV @ 25°C		794.35		1000	1000.0
		Standard is 7 @ 25°C	-34.5								
8/21/2022	1905	10.00 @ 25.00°C	10.02	1413 @ 25.00°C	1413	220 mV at 25.00°C	925.8	22.19	Sikeston	0.02	0.02
		Standard is 10 @ 25°C	-207.7					City		10.0	10.04
		4.00 @ 25.00°C	4.12	1413 @ 25.00°C	1413	Standard is 220 mV @ 25°C		784.39		1000	999.2
		Standard is 4 @ 25°C	NA								
		7.00 @ 25.00°C	7.15	1413 @ 25.00°C	1413						
		Standard is 7 @ 25°C	NA								
		10.00 @ 25.00°C	10.13	1413 @ 25.00°C	1413						
		Standard is 10 @ 25°C	NA								

Beginning of Day Calibration

End of Day Check

Notes:

The In-Situ SmartTROLL MP Field Meter and In-Situ AquatROLL 400 measure Temperature, Specific Conductance, Dissolved Oxygen, pH, and Oxidation Reduction Potential. The HF Scientific, Inc. Micro TPI Field Portable Turbidimeter measures Turbidity. Dissolved oxygen is calibrated via % saturation method; however, field measurements are recorded as mg/L.

I certify that the aforementioned meters were calibrated within the manufacturers specifications.

Date: 8/21/2022 By: Ash. R. Patel

Monitoring Well Field Inspection

Facility: SBMU SPS – CCR Groundwater Monitoring		
Monitoring Well ID: MW 3		
Name (Field Staff): A Patel J Lowes		
Date: 8-2-2022		
Access:		
Accessibility:	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/> Poor <input type="checkbox"/>
Well clear of weeds and/or debris?:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Well identification clearly visible?:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:		
Concrete Pad:		
Condition of Concrete Pad:	Good <input checked="" type="checkbox"/>	Inadequate <input type="checkbox"/>
Depressions or standing water around well?:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks:		
Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp		
Condition of Protective Casing:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Locking Cap:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Lock:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Weep Hole:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Remarks:		
Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded		
Condition of Riser:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Riser Cap:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Measurement Reference Point:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:		
Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing		
Condition:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/> Missing <input type="checkbox"/>
Remarks:		
Monitoring Well Locked/Secured Post Sampling?: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:		

Field Certification A Patel Signed Cal Teah Title 8-2-2022 Date

Field Sampling Log

Monitoring Well ID: MW3 Facility: SBMU Sikeston Power Station - Groundwater Monitoring

Initial Water Level (feet btoc): 12.00 Date: 8-2-2022
 Initial Groundwater Elevation (NAVD88): _____ Air Pressure in Well? Y/N

PURGE INFORMATION

Date: 8-2-2022
 Name (Sample Collector): J Lowrey
 Method of Well Purge: Low Flow Peristaltic Pump Dedicated Tubing? Y/N
 Time Purging Initiated: 0726 One (1) Well Volume (mL): NA
 Beginning Water Level (feet btoc): 12.00 Total Volume Purged (mL): 6200
 Beginning Groundwater Elevation (NAVD88): _____ Well Purged To Dryness? Y/N
 Well Total Depth (feet btoc): 36.90 Water Level after Sampling (feet btoc): 12.00
 (i.e., pump is off)
 Casing Diameter (feet): 2" Sch 40 PVC Time Sampling Completed: 0800

PURGE STABILIZATION DATA

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Water Level (feet btoc)	Notes (e.g., opacity, color, odor)
0728		300	17.51	171.19	0.11	6.65	113.0	33.15	12.00	Clear, no odor
0730	205	710	17.76	170.20	0.85	6.63	88.4	14.22	12.00	Yellow Flock
0732	220	1150	17.29	171.23	0.73	6.64	75.5	13.82	12.00	" "
0734	315	1780	17.12	172.92	0.65	6.64	66.4	11.79	12.00	" "
0736	110	2000	17.08	169.46	0.61	6.65	63.5	11.87	12.00	" "
0738	205	2410	17.01	164.73	0.55	6.67	58.3	7.84	12.00	" "
0740	230	2870	17.06	170.35	0.52	6.69	56.8	6.25	12.00	Clear, no odor
0742	210	3290	17.17	157.58	0.5	6.71	51.2	6.90	12.00	" "
0744	205	3700	17.15	166.01	0.51	6.69	57.0	5.33	12.00	" "
0746	225	4150	17.22	159.95	0.50	6.69	54.7	5.08	12.00	" "
0748	200	4550	17.19	162.41	0.51	6.70	56.4	5.91	12.00	" "
0750	195	4940	17.28	154.75	0.50	6.71	51.5	6.18	12.00	" "
0752	205	5350	17.13	157.38	0.48	6.72	46.9	4.82	12.00	" "
0754	180	5710	16.98	159.11	0.49	6.72	53.7	4.42	12.00	" "
0756	245	6200	16.97	163.72	0.47	6.71	52.6	4.87	12.00	" "

btoc - below top of casing

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 3

Sampling Information:

Method of Sampling: Low Flow - Perstatic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 12.00

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly ()

Other Resampling

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>8-2-22</u> <u>0756</u>	<u>245</u>	<u>16.97</u>	<u>163.72</u>	<u>0.47</u>	<u>6.71</u>	<u>52.6</u>	<u>4.78</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: SUNNY, HOT

78°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 8-2-22 By: [Signature] Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 2

Name (Field Staff): A Patel J Lowes

Date: 8-2-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing:

Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

A Patel

Signed

8-2-2022

Title

Lowes

Date

Field Sampling Log

Monitoring Well ID: MW2 Facility: SBMU Sikeston Power Station - Groundwater Monitoring

Initial Water Level (feet btoc): 11.00 Date: 8-2-2022
 Initial Groundwater Elevation (NAVD88): _____ Air Pressure in Well? Y N

PURGE INFORMATION

Date: 8-2-2022
 Name (Sample Collector): Justin Lowes
 Method of Well Purge: Low Flow Peristaltic Pump Dedicated Tubing? Y N
 Time Purging Initiated: 0823 One (1) Well Volume (mL): NA
 Beginning Water Level (feet btoc): 11.00 Total Volume Purged (mL): 7980
 Beginning Groundwater Elevation (NAVD88): _____ Well Purged To: Dryness? Y N
 Well Total Depth (feet btoc): 37.13 Water Level after Sampling (feet btoc): 11.10
 (i.e., pump is off)
 Casing Diameter (feet): 2" Sch 40 PVC Time Sampling Completed: 0855

PURGE STABILIZATION DATA

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Water Level (feet btoc)	Notes (e.g., opacity, color, odor)
0825		450	20.91	176.01	0.56	6.25	127.5	10.43	11.10	clear, no odor
0827	315	1080	18.94	179.88	0.79	6.23	108.4	4.62	11.10	" "
0829	300	1680	18.54	185.68	0.94	6.25	99.4	4.33	11.10	" "
0831	270	2220	18.49	180.76	0.40	6.22	95.8	3.19	11.10	" "
0833	290	2800	18.44	185.92	0.84	6.24	91.5	2.45	11.10	" "
0835	290	3380	18.32	186.61	0.30	6.21	90.5	3.76	11.10	" "
0837	290	3960	18.30	184.36	0.37	6.23	88.5	3.50	11.10	" "
0839	285	4530	18.30	191.00	0.38	6.21	87.8	5.4	11.10	" "
0841	275	5080	18.36	187.44	0.35	6.22	86.1	4.70	11.10	" "
0843	310	5700	18.31	187.42	0.37	6.22	85.3	3.49	11.10	" "
0845	275	6250	18.32	183.55	0.41	6.24	83.5	3.34	11.10	" "
0847	305	6860	18.27	184.27	0.27	6.25	82.9	2.26	11.10	" "
0849	270	7400	18.23	184.51	0.30	6.22	83.5	2.10	11.10	" "
0851	290	7980	18.26	185.62	0.28	6.21	83.4	2.95	11.10	" "

btoc - below top of casing

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 2

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 11.10

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly ()

Other: Resampling

Final Purge/Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>8-2-2022</u> <u>0851</u>	<u>290</u>	<u>17.26</u>	<u>185.62</u>	<u>0.28</u>	<u>6.21</u>	<u>83.4</u>	<u>2.95</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny

79°F

Sample Characteristics: Clear, Colorless, Odorless

Sample Collection Order: Per SAP

Comments and Observations:

collected duplicate 1

4

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 8-2-2022 By: [Signature]

Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 1R

Name (Field Staff): A Patel J Laves

Date: 8-2-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hesp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

A Patel
Signed

Lab Tech
Title

8-2-2022
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 1R

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing Dedicated: Y / N

Water Level @ Sampling (feet bloc): 18.32

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other Sampling

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>8-2-2012</u>	<u>290</u>	<u>18.18</u>	<u>687.82</u>	<u>0.56</u>	<u>6.43</u>	<u>62.3</u>	<u>4.87</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbiditymeter

General Information:

Weather Conditions @ time of sampling: Sunny
85°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:
NO Sampling (No bottles)

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 8-2-2012 By: [Signature] Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring		
Monitoring Well ID: <u>MW 9</u>		
Name (Field Staff): <u>A. Patel J. Lowes</u>		
Date: <u>8-2-2022</u>		
Access:		
Accessibility:	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/> Poor <input type="checkbox"/>
Well clear of weeds and/or debris?:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Well identification clearly visible?:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:		
Concrete Pad:		
Condition of Concrete Pad:	Good <input checked="" type="checkbox"/>	Inadequate <input type="checkbox"/>
Depressions or standing water around well?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:		
Protective Outer Casing: Material = <u>4" x 4" Steel Hinged Casing with Hasp</u>		
Condition of Protective Casing:	Good <input checked="" type="checkbox"/> Damaged <input type="checkbox"/>	
Condition of Locking Cap:	Good <input checked="" type="checkbox"/> Damaged <input type="checkbox"/>	
Condition of Lock:	Good <input checked="" type="checkbox"/> Damaged <input type="checkbox"/>	
Condition of Weep Hole:	Good <input checked="" type="checkbox"/> Damaged <input type="checkbox"/>	
Remarks:		
Well Riser: Material = <u>2" Diameter, Schedule 40 PVC, Flush Threaded</u>		
Condition of Riser:	Good <input checked="" type="checkbox"/> Damaged <input type="checkbox"/>	
Condition of Riser Cap:	Good <input checked="" type="checkbox"/> Damaged <input type="checkbox"/>	
Measurement Reference Point:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:		
Dedicated Purging/Sampling Device: Type = <u>1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing</u>		
Condition:	Good <input checked="" type="checkbox"/> Damaged <input type="checkbox"/> Missing <input type="checkbox"/>	
Remarks:		
Monitoring Well Locked/Secured Post Sampling?: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:		

Field Certification [Signature] Signed Lu's Tan Title [Signature] Date 8-2-2022

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW9

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 18.85

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly ()

Other (w/ Resampling)

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>8-2-2017</u> <u>1054</u>	<u>290</u>	<u>18.12</u>	<u>681.81</u>	<u>2.30</u>	<u>7.39</u>	<u>27.6</u>	<u>2.29</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: SUNNY
86°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

collected field duplicate 2

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 8-2-2017 By: [Signature] Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 7

Name (Field Staff): A Patel J Lons

Date: 8-2-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing:

Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

A Patel
Signed

Colleen
Title

8-2-2022
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 7

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 19.66

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other or Resampling

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
8-2-2022 1129	290	17.54	834.97	0.23	7.31	64.1	1.77

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbiditymeter

General Information:

Weather Conditions @ time of sampling: Sunny, Hot
92 °F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:
Collected Field Blank

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 8-2-2022 By: John Rose Title: Lab Tech

Appendix 1

Field Sampling Notes
8th CCR Compliance Sampling Event
(2nd 2022 Semi-annual Detection
and Assessment Monitoring Event)
November 2, 2022



PACE ANALYTICAL SERVICES
WWW.PACELABS.COM

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD
STATE WHERE SAMPLE COLLECTED ALO

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT SIKESTON BMU POWER STATION		PROJECT NUMBER	PROJECT LOCATION FLY ASH APP III & IV		PURCHASE ORDER #		3 ANALYSIS REQUESTED				4 (FOR LAB USE ONLY)	
ADDRESS 1551 W WAKEFIELD		PHONE NUMBER 573-475-3131	E-MAIL		DATE SHIPPED		CL, F, SO4, TDS, B, CA SB, AS, BA, BE, CD, CO CR+3, PB, LI, HG, MO SE, TL, RAD 226/228	LOGIN #		LOGGED BY: SIKESTON BMU, SIKESTON POWER STATION SIKESTON FLY ASH 2022 GJ SCHINDLER		
CITY STAT ZIP	SIKESTON, MO 63801		SAMPLER (PLEASE PRINT) Justin Lowes		MATRIX TYPES: <small>WQ - WATERWORKS VW - WASTE WATER GW - GROUND WATER WML - WASTE SWS - SWM AQUIFERS SOLD LW - LEACHATE DL - DL SO - SOIL SOL - SOIL</small>			REMARKS				
CONTACT PERSON MR LUKE ST MARY		SAMPLER'S SIGNATURE Justin Lowes		BOTTLE COUNT		PRES CODE CLIENT PROVIDED						
2 SAMPLE DESCRIPTION <small>(INCLUDE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)</small>		DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB COMP		MATRIX TYPE	BOTTLE COUNT	PRES CODE CLIENT PROVIDED				
MW-1R		11-2-22	0951	X		GW	3	3,6	X	X	X	X
MW-2		11-2-22	0821	X		GW	3	3,6	X	X	X	X
MW-3		11-2-22	0736	X		GW	3	3,6	X	X	X	X
MW-7		11-2-22	1045	X		GW	3	3,6	X	X	X	X
MW-9		11-2-22	1125	X		GW	3	3,6	X	X	X	X
DUPLICATE		11-2-22		X		GW	3	3,6	X	X	X	X
FIELD BLANK		11-2-22	1045	X		GW	3	3,6	X	X	X	X
CHEMICAL PRESERVATION CODES: 1-HCL 2-H2SO4 3-HNO3 4-NAOH 5-NA2S2O3 6-UNPRESERVED 7-OTHER												
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH <small>(RUSH TAT IS SUBJECT TO PACE LABS APPROVAL AND SURCHARGE)</small>		DATE RESULTS NEEDED		6 I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample performance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may <u>NOT</u> be acceptable to report to all regulatory authorities.								
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE		EMAIL IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE:		PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS)								
7 RELINQUISHED BY: (SIGNATURE) Ashish Patel		DATE 11-3-22	TIME 0700	RECEIVED BY: (SIGNATURE)				DATE	8 COMMENTS: (FOR LAB USE ONLY)			
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	SAMPLE TEMPERATURE UPON RECEIPT _____ °C			
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	CHILL PROCESS STARTED PRIOR TO RECEIPT Y OR N			
		DATE	TIME					DATE	SAMPLE(S) RECEIVED ON ICE Y OR N			
		DATE	TIME					DATE	SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED Y OR N			
		DATE	TIME					DATE	DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____			

SBMV

Field Instrumentation Calibration Log

Facility: ~~Measure-RICE-Risk-Designs - Groundwater Monitoring~~

Calibrated by: *Bl.J.H. Pate*

Field Instruments:		In-Situ SmartTROLL MP or In-Situ AquATROLL 400		HF scientific, Inc. Micro TPI Field Portable Turbiditymeter							
Date	Time	pH Standards (S.U.)	pH Measurements (S.U./mV)	Specific Conductance Standard (µS/cm)	Specific Conductance Measurement (µS/cm)	Oxidation Reduction Potential Standard (mV)	Oxidation Reduction Potential Measurement (mV)	Temperature (°C)	Disolved Oxygen (%)	Turbidity Standards (NTU)	Turbidity Measurements (NTU)
11-2-2022	0630	4.00 @ 25.00°C	4.01	1413 @ 25.00°C	= 1413.7	220 mV at 25.00°C	= 229.1	21.85	= 21.85	0.02	= 0.02
		Standard is 4.2 @ 25°C	139.07	Standard is 229 mV @ 25°C		Tap Water Source = <i>Sikeston City</i>					
		7.00 @ 25.00°C	7.02			Barometric Pressure (mmHg) Measurement = 762.19					
		Standard is 7.0 @ 25°C	-37.4			Temperature (°C) = 24.49					
11-2-2022	1315	10.00 @ 25.00°C	10.03	1413 @ 25.00°C	= 1418.8	220 mV at 25.00°C	= 228.4	24.49	= 24.49	0.02	= 0.02
		Standard is 10 @ 25°C	-207.2	Standard is 229 mV @ 25°C		Tap Water Source = <i>Sikeston City</i>					
		4.00 @ 25.00°C	4.04			Barometric Pressure (mmHg) Measurement = 759.74					
		Standard is 4 @ 25°C	NA			Temperature (°C) = 96.89					
11-2-2022		7.00 @ 25.00°C	7.17	1413 @ 25.00°C	= 993.3	220 mV at 25.00°C	= 993.3	96.89	= 96.89	10.0	= 10.0
		Standard is 7 @ 25°C	NA	Standard is 229 mV @ 25°C		Barometric Pressure (mmHg) Measurement = 759.74					
		10.00 @ 25.00°C	10.07			Temperature (°C) = 96.89					
		Standard is 10 @ 25°C	NA			Tap Water Source = <i>Sikeston City</i>					

Beginning of Day Calibration

End of Day Check

Notes: The In-Situ SmartTROLL MP Field Meter and In-Situ AquATROLL 400 measure Temperature, Specific Conductance, Dissolved Oxygen, pH, and Oxidation Reduction Potential. The HF scientific, Inc. Micro TPI Field Portable Turbiditymeter measures Turbidity. Dissolved oxygen is calibrated via % saturation method; however, field measurements are recorded as mg/L.

I certify that the aforementioned meters were calibrated within the manufacturers specifications.

Date: 11-02-2022 By: *Bl.J.H. Pate*

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 3

Name (Field Staff): A Paul J Lowes

Date: 11-2-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

A Paul J Lowes
Signed

Las Beneman
Title

11-2-2022
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW3

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing Dedicated: Y / N

Water Level @ Sampling (feet btoc): 13.31

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>11-2-2022</u> <u>07:36</u>	<u>260</u>	<u>16.28</u>	<u>161.83</u>	<u>0.36</u>	<u>6.93</u>	<u>9.1</u>	<u>9.56</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbiditymeter

General Information:

Weather Conditions @ time of sampling: Cloudy
40°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 11-2-2022 By: Ashley Rose Title: Lead Leadman

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 2

Name (Field Staff): A. Patel J. Lowes

Date: 11-2-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification 
Signed


Title

11-2-2022
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 2

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 12.23

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>11-2-2022</u> <u>0821</u>	<u>250</u>	<u>17.64</u>	<u>218.43</u>	<u>0.74</u>	<u>6.23</u>	<u>101.7</u>	<u>6.51</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: SUNNY

51°F

Sample Characteristics: Colorless, odorless, clear

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 11-2-2022 By: Ashley Pauer Title: Lab Leadman

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 1B

Name (Field Staff): A. Puri - J. Lovas

Date: 10-2-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification


Signed

11-2-2022
Title

Lab Leader
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 1A

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 19.39

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>11-2-2022</u> <u>0951</u>	<u>220</u>	<u>17.48</u>	<u>609.26</u>	<u>0.51</u>	<u>6.55</u>	<u>7.6</u>	<u>2.79</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbiditymeter

General Information:

Weather Conditions @ time of sampling: SUNNY
60°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

Collected Field Duplicate

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 11-2-2022 By: [Signature]

Title: Lab Manager

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW7

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing Dedicated: Y / N

Water Level @ Sampling (feet btoc): 20.71

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>11-2-2022</u> <u>1045</u>	<u>250</u>	<u>18.26</u>	<u>874.21</u>	<u>0.44</u>	<u>7.36</u>	<u>56.8</u>	<u>2.60</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: SUNNY
65°F

Sample Characteristics: Clear, Colorless, Odorless

Sample Collection Order: Per SAP

Comments and Observations:

Collected Field Blank

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 11-2-2022 By: [Signature] Title: Lab Lead/Mgr

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 9

Name (Field Staff): J Lowe A Patel

Date: 11-2-2022

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

Ah-jh Patel
Signed

Las Beadman
Title

11-2-2022
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 9

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoo): 19.90

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>11-2-2022</u> <u>1125</u>	<u>260</u>	<u>19.11</u>	<u>795.31</u>	<u>0.44</u>	<u>7.39</u>	<u>6.4</u>	<u>2.67</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbiditymeter

General Information:

Weather Conditions @ time of sampling: SUNNY
67°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 11-2-22 By: Ashli Patel Title: Lab Lead/MLM

Appendix 1

Field Sampling Notes
9th CCR Compliance Sampling Event
(1st 2023 Semi-annual Detection
and Assessment Monitoring Event)
March 12, 2023



ACE ANALYTICAL SERVICES
WWW.PACELABS.COM

REGULATORY PROGRAM (CIRCLE):		NPDES
MORBCA		RCRA
CCDD		TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD
STATE WHERE SAMPLE COLLECTED IN

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT SIKESTON POWER STATION	PROJECT NUMBER	PROJECT LOCATION FLY ASH BOTTOM ASH APP #11	PURCHASE ORDER #	3 ANALYSIS REQUESTED	(FOR LAB USE ONLY) 4 LOGIN # LOGGED BY: CLIENT: SIKESTON BMU, SIKESTON POWER STATION PROJECT: SIKESTON FLY ASH 2023 PROJ. MGR.: GJ SCHINDLER					
	ADDRESS 1551 W WAKEFIELD	PHONE NUMBER 573-475-3131	E-MAIL					DATE SHIPPED		
CITY STAT ZIP SIKESTON, MO 63801	SAMPLER (PLEASE PRINT) Justin Louder	MATRIX TYPES: WW-WASTEWATER DW-DRINKING WATER SW-SWIMMING WATER TWW-TW-TOILET NWS-NON AQUEOUS SOLID LW-LEACHATE CL-CL SO-SOL SOL-SOLID		CL, F, SO4, TDS, B, CA BA, CO, LI, MO, SE RAD 226/228	REMARKS					
CONTACT PERSON MR LUKE ST MARY	SAMPLER'S SIGNATURE Justin Louder	BOTTLE COUNT	PRES CODE CLASS PROVIDED							
2 SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE CLASS PROVIDED				
MW-1R	3-12-23	1107	X	GW	3	3,6	X	X	X	
MW-2	3-12-23	0958	X	GW	3	3,6	X	X	X	
MW-3	3-12-23	0831	X	GW	3	3,6	X	X	X	
MW-7	3-12-23	1321	X	GW	3	3,6	X	X	X	
MW-9	3-12-23	1404	X	GW	3	3,6	X	X	X	
DUPLICATE	3-12-23		X	GW	3	3,6	X	X	X	
FIELD BLANK	3-12-23	0958	X	DI	3	3,6	X	X	X	
CHEMICAL PRESERVATION CODES: 1-HCL 2-H2SO4 3-HNO3 4-NAOH 5-NA2S2O3 6-UNPRESERVED 7-OTHER										
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)	DATE RESULTS NEEDED		6 I understand that by labelling this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities.							
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE	EMAIL IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE:		7 PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS)							
RELINQUISHED BY: (SIGNATURE) Ashish Patel	DATE 3-14-23	TIME 0700	RECEIVED BY: (SIGNATURE)				DATE	8 COMMENTS: (FOR LAB USE ONLY)		
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	SAMPLE TEMPERATURE UPON RECEIPT _____ °C		
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	CHILL PROCESS STARTED PRIOR TO RECEIPT Y OR N		
	DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	SAMPLE(S) RECEIVED ON ICE Y OR N		
	DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	SAMPLE ACCEPTANCE NOTICE INFORMANT REPORT IS NEEDED Y OR N		
	DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	DATE AND TIME TAKEN FROM SAMPLE BOTTLE		

Field Instrumentation Calibration Log

Facility: **SBMJ - Siftation Power Station Ash Ponds - Groundwater Monitoring**

Calibrated by: **Adhish Patel**

Field Instruments: **In-Situ SmartTROLL MP or In-Situ AquaTROLL 400**

HF scientific, Inc. Micro TPI Field Portable Turbidimeter

SN #: **893508**

201607366

Date	Time	pH Standards (B.U.)	pH Measurements (B.U./mV)	Specific Conductance Standard (µS/cm)	Specific Conductance Measurement (µS/cm)	Oxidation Reduction Potential Standard (mV)	Oxidation Reduction Potential Measurement (mV)	Dissolved Oxygen (%)		Turbidity Standards (NTU)	Turbidity Measurements (NTU)
								Temperature (°C)	Tap Water Source		
3-12-2023	1530	4.00 @ 25.00°C	4.2	1413 @ 25.00°C	1412.8	220 mV at 25.00°C	229.3	20.84	Skopston City	0.02	0.02
		7.00 @ 25.00°C	6.99	Standard is 229 mV @ 25°C				229.3	10.0	10.0	
		10.00 @ 25.00°C	-2.8								747.14
3-12-2023	1535	4.00 @ 25.00°C	4.04	1413 @ 25.00°C	1445.1	220 mV at 25.00°C	229.0	20.45	Skopston City	0.02	0.05
		7.00 @ 25.00°C	NA	Standard is 229 mV @ 25°C				229.0	10.0	1000	
		10.00 @ 25.00°C	7.07								751.76

Beginning of Day Calibration

End of Day Check

Notes: The In-Situ SmartTROLL MP Field Meter and In-Situ AquaTROLL 400 measure Temperature, Specific Conductance, Dissolved Oxygen, pH, and Oxidation Reduction Potential. The HF scientific, Inc. Micro TPI Field Portable Turbidimeter measures Turbidity. Dissolved oxygen is calibrated via % saturation method; however, field measurements are recorded as mg/L.

I certify that the aforementioned meters were calibrated within the manufacturers specifications.

Date: **3-12-2023** By: **Adhish Patel**

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW 3

Name (Field Staff): A. Patel Justin Lopez A. Ovesten

Date: 3-12-2023

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

Aswsh Patel
Signed

Lab Tech
Title

3-12-2023
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 3

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: / N

Water Level @ Sampling (feet btoc): 11.70

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge/Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>3-12-23</u> <u>0831</u>	<u>250</u>	<u>14.09</u>	<u>177.19</u>	<u>1.35</u>	<u>6.51</u>	<u>73.2</u>	<u>3.90</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Cloudy, Windy
50°F

Sample Characteristics: Clear, Colorless, Odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 3-12-23 By: [Signature] Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring

Monitoring Well ID: MW-2

Name (Field Staff): AP/JL/AD

Date: 3-12-23

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well Identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

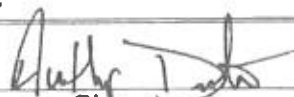
Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification


Signed

Lab Tech

Title

3-12-23

Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: AW-2

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoe): 10.81

Monitoring Event: Annual () Semi-Annual () Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>3-12-23</u> <u>0948</u>	<u>250</u>	<u>15.40</u>	<u>120.54</u>	<u>.61</u>	<u>6.51</u>	<u>54.5</u>	<u>3.33</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling:

50° F
Cloudy, Windy

Sample Characteristics:

Clear, Colorless, odorless

Sample Collection Order:

Per SAP

Comments and Observations:

Collected Field Blank

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 2-12-23

By:

Authy D...

Title:

Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS -- CCR Groundwater Monitoring

Monitoring Well ID: MW-16

Name (Field Staff): AP/AL/AD

Date: 3-12-23

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

AP/AL/AD
Signed

Lab Tech
Title

3-12-23
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW-1R

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 17.87

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge/Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>3-12-23</u> <u>1107</u>	<u>250</u>	<u>14.68</u>	<u>577.82</u>	<u>.38</u>	<u>6.60</u>	<u>31.0</u>	<u>1.06</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: cloudy, windy
47°

Sample Characteristics: clear, odorless, colorless

Sample Collection Order: Per SAP

Comments and Observations:

Collect Field Duplicate

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 3-12-23 By: Ashley Dato Title: Lab Tech

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 7

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 19.23

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>5/12/23</u> <u>1321</u>	<u>260</u>	<u>15.09</u>	<u>870.01</u> 500.02	<u>.49</u>	<u>7.40</u>	<u>35.7</u>	<u>.54</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny, Windy, 49°F

Sample Characteristics: clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 3-12-23 By: ARM Paces Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS - CCR Groundwater Monitoring
Monitoring Well ID: MW 9
Name (Field Staff): A. Patel, A. Quinter, J. Lopez
Date: 3-12-23

Access:
Accessibility: Good Fair Poor
Well clear of weeds and/or debris?: Yes No
Well identification clearly visible?: Yes No
Remarks:

Concrete Pad:
Condition of Concrete Pad: Good Inadequate
Depressions or standing water around well?: Yes No
Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp
Condition of Protective Casing: Good Damaged
Condition of Locking Cap: Good Damaged
Condition of Lock: Good Damaged
Condition of Weep Hole: Good Damaged
Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded
Condition of Riser: Good Damaged
Condition of Riser Cap: Good Damaged
Measurement Reference Point: Yes No
Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing
Condition: Good Damaged Missing
Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No
Remarks:

Field Certification A. Patel Signed Les Teoh Title 3-12-2023 Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 9

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoe): 18.41

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Date:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>3/12/23</u> <u>1404</u>	<u>240</u>	<u>16.07</u>	<u>764.38</u>	<u>.42</u>	<u>7.43</u>	<u>26.7</u>	<u>34</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, Inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny, Windy, 49°F

Sample Characteristics: clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 3-12-2023 By: [Signature] [Signature] Title: Lab Tech

Appendix 2

Laboratory Analytical Results

Appendix 2

Laboratory Analytical Results
7th CCR Compliance Sampling Event
(1st 2022 Semi-annual Detection Monitoring Event)
April 9, 2022



Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

April 19, 2022

Luke St Mary
Sikeston BMU, Sikeston Power Station
1551 W Wakefield
Sikeston, MO 63801

Dear Luke St Mary:

Please find enclosed the analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-883-1764 or lisa.grant@pacelabs.com.

Sincerely,

Gail Schindler

Gail Schindler
Project Manager
(309) 892-9688 x1716
gail.schindler@pacelabs.com



SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FD02077

<u>YES</u>	<u>Samples received within temperature compliance when applicable</u>
<u>YES</u>	<u>COC present upon sample receipt</u>
<u>YES</u>	<u>COC completed & legible</u>
<u>YES</u>	<u>Sampler name & signature present</u>
<u>YES</u>	<u>Unique sample IDs assigned</u>
<u>YES</u>	<u>Sample collection location recorded</u>
<u>YES</u>	<u>Date & time collected recorded on COC</u>
<u>YES</u>	<u>Relinquished by client signature on COC</u>
<u>YES</u>	<u>COC & labels match</u>
<u>YES</u>	<u>Sample labels are legible</u>
<u>YES</u>	<u>Appropriate bottle(s) received</u>
<u>YES</u>	<u>Sufficient sample volume received</u>
<u>YES</u>	<u>Sample containers received undamaged</u>
<u>NO</u>	<u>Zero headspace, <8 mm present in VOA vials</u>
<u>NO</u>	<u>Trip blank(s) received</u>
<u>YES</u>	<u>All non-field analyses received within holding times</u>
<u>NO</u>	<u>Short hold time analysis</u>
<u>YES</u>	<u>Current PDC COC submitted</u>
<u>NO</u>	<u>Case narrative provided</u>



ANALYTICAL RESULTS

Sample: FD02077-01
 Name: MW-1R
 Matrix: Ground Water - Regular Sample

Sampled: 04/09/22 11:12
 Received: 04/12/22 10:30
 PO #: 28382

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	12	mg/L		04/13/22 19:27	10	10	04/13/22 19:27	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/14/22 18:18	1	0.250	04/14/22 18:18	CRD	EPA 300.0 REV 2.1
Sulfate	150	mg/L		04/14/22 18:38	25	25	04/14/22 18:38	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	300	mg/L		04/13/22 10:39	1	26	04/13/22 14:51	JLC1	SM 2540C
<u>Total Metals - PIA</u>									
Boron	3100	ug/L	Q4	04/13/22 08:56	5	10	04/18/22 08:48	JMW	EPA 8020A
Calcium	73000	ug/L	Q4	04/13/22 08:56	5	200	04/14/22 15:38	JMW	EPA 8020A

Sample: FD02077-02
 Name: MW-2
 Matrix: Ground Water - Regular Sample

Sampled: 04/09/22 09:25
 Received: 04/12/22 10:30
 PO #: 28382

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	2.8	mg/L		04/13/22 19:45	1	1.0	04/13/22 19:45	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/14/22 18:54	1	0.250	04/14/22 18:54	CRD	EPA 300.0 REV 2.1
Sulfate	15	mg/L		04/13/22 20:39	10	10	04/13/22 20:39	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	150	mg/L		04/13/22 10:39	1	26	04/13/22 14:51	JLC1	SM 2540C
<u>Total Metals - PIA</u>									
Boron	81	ug/L		04/13/22 08:56	5	10	04/14/22 13:30	JMW	EPA 8020A
Calcium	18000	ug/L		04/13/22 08:56	5	200	04/14/22 13:30	JMW	EPA 8020A



ANALYTICAL RESULTS

Sample: FD02077-03
 Name: MW-3
 Matrix: Ground Water - Regular Sample

Sampled: 04/09/22 08:22
 Received: 04/12/22 10:30
 PO #: 28382

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L		04/13/22 20:57	1	1.0	04/13/22 20:57	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.260	mg/L		04/14/22 17:12	1	0.260	04/14/22 17:12	CRD	EPA 300.0 REV 2.1
Sulfate	13	mg/L		04/13/22 21:15	10	10	04/13/22 21:15	CRD	EPA 300.0 REV 2.1
General Chemistry - PIA									
Solids - total dissolved solids (TDS)	130	mg/L		04/13/22 10:39	1	26	04/13/22 14:51	JLC1	SM 2540C
Total Metals - PIA									
Boron	36	ug/L		04/13/22 08:56	5	10	04/14/22 13:33	JMW	EPA 6020A
Calcium	15000	ug/L		04/13/22 08:56	5	200	04/14/22 13:33	JMW	EPA 6020A

Sample: FD02077-04
 Name: MW-7
 Matrix: Ground Water - Regular Sample

Sampled: 04/09/22 12:48
 Received: 04/12/22 10:30
 PO #: 28382

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	4.1	mg/L		04/13/22 21:33	1	1.0	04/13/22 21:33	CRD	EPA 300.0 REV 2.1
Fluoride	0.488	mg/L		04/14/22 17:30	1	0.260	04/14/22 17:30	CRD	EPA 300.0 REV 2.1
Sulfate	240	mg/L		04/14/22 17:48	50	50	04/14/22 17:48	CRD	EPA 300.0 REV 2.1
General Chemistry - PIA									
Solids - total dissolved solids (TDS)	510	mg/L		04/13/22 10:39	1	26	04/13/22 14:51	JLC1	SM 2540C
Total Metals - PIA									
Boron	3200	ug/L		04/13/22 08:56	5	10	04/14/22 13:37	JMW	EPA 6020A
Calcium	130000	ug/L		04/13/22 08:56	5	200	04/14/22 13:37	JMW	EPA 6020A



ANALYTICAL RESULTS

Sample: FD02077-05
 Name: MW-9
 Matrix: Ground Water - Regular Sample

Sampled: 04/09/22 13:41
 Received: 04/12/22 10:30
 PO #: 28362

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	11	mg/L		04/13/22 22:27	5	5.0	04/13/22 22:27	CRD	EPA 300.0 REV 2.1
Fluoride	1.28	mg/L		04/14/22 18:08	1	0.250	04/14/22 18:08	CRD	EPA 300.0 REV 2.1
Sulfate	160	mg/L		04/13/22 22:45	50	50	04/13/22 22:45	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	330	mg/L		04/13/22 10:39	1	26	04/13/22 14:51	JLC1	SM 2540C
<u>Total Metals - PIA</u>									
Boron	3600	ug/L		04/13/22 08:56	5	10	04/14/22 13:41	JMW	EPA 6020A
Calcium	64000	ug/L		04/13/22 08:56	5	200	04/14/22 13:41	JMW	EPA 6020A

Sample: FD02077-06
 Name: DUPLICATE
 Matrix: Ground Water - Regular Sample

Sampled: 04/09/22 00:00
 Received: 04/12/22 10:30
 PO #: 28362

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	12	mg/L		04/13/22 23:22	5	5.0	04/13/22 23:22	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/14/22 18:24	1	0.250	04/14/22 18:24	CRD	EPA 300.0 REV 2.1
Sulfate	150	mg/L		04/14/22 00:16	50	50	04/14/22 00:16	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	260	mg/L		04/13/22 10:39	1	26	04/13/22 14:51	JLC1	SM 2540C
<u>Total Metals - PIA</u>									
Boron	2900	ug/L		04/13/22 08:56	5	10	04/14/22 13:44	JMW	EPA 6020A
Calcium	75000	ug/L		04/13/22 08:56	5	200	04/14/22 13:44	JMW	EPA 6020A



ANALYTICAL RESULTS

Sample: FD02077-07
Name: FIELD BLANK
Matrix: Ground Water - Regular Sample

Sampled: 04/09/22 12:48
Received: 04/12/22 10:30
PO #: 28362

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	< 1.0	mg/L		04/14/22 00:34	1	1.0	04/14/22 00:34	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/14/22 18:43	1	0.250	04/14/22 18:43	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		04/14/22 00:34	1	1.0	04/14/22 00:34	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	< 17	mg/L		04/13/22 10:39	1	17	04/13/22 14:51	JLC1	SM 2540C
<u>Total Metals - PIA</u>									
Boron	45	ug/L		04/13/22 08:58	5	10	04/14/22 13:48	JMW	EPA 6020A
Calcium	< 200	ug/L		04/13/22 08:58	5	200	04/14/22 13:48	JMW	EPA 6020A

Appendix 2

Laboratory Analytical Results
7th CCR Compliance Sampling Event
(1st 2022 Semi-annual Detection Monitoring Event)
August 2, 2022 Verification Sampling



Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

August 26, 2022

Luke St Mary
Sikeston BMU, Sikeston Power Station
1551 W Wakefield
Sikeston, MO 63801

RE: SIKESTON FLY ASH APP III & IV 2021

Dear Luke St Mary:

Please find enclosed the analytical results for the 7 sample(s) the laboratory received on 8/5/22 2:30 pm and logged in under work order FH01508. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Gail Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com



SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FH01508

<u>YES</u>	<u>Samples received within temperature compliance when applicable</u>
<u>YES</u>	<u>COC present upon sample receipt</u>
<u>YES</u>	<u>COC completed & legible</u>
<u>YES</u>	<u>Sampler name & signature present</u>
<u>YES</u>	<u>Unique sample IDs assigned</u>
<u>YES</u>	<u>Sample collection location recorded</u>
<u>YES</u>	<u>Date & time collected recorded on COC</u>
<u>YES</u>	<u>Relinquished by client signature on COC</u>
<u>YES</u>	<u>COC & labels match</u>
<u>YES</u>	<u>Sample labels are legible</u>
<u>YES</u>	<u>Appropriate bottle(s) received</u>
<u>YES</u>	<u>Sufficient sample volume received</u>
<u>YES</u>	<u>Sample containers received undamaged</u>
<u>NO</u>	<u>Zero headspace, <6 mm present in VOA vials</u>
<u>NO</u>	<u>Trip blank(s) received</u>
<u>YES</u>	<u>All non-field analyses received within holding times</u>
<u>NO</u>	<u>Short hold time analysis</u>
<u>YES</u>	<u>Current PDC COC submitted</u>
<u>NO</u>	<u>Case narrative provided</u>



ANALYTICAL RESULTS

Sample: FH01508-01
 Name: MW-2
 Matrix: Ground Water - Grab

Sampled: 08/02/22 08:51
 Received: 08/05/22 14:30
 PO #: 28361

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Total Metals - PIA									
Boron	53	ug/L		08/09/22 09:13	5	10	08/10/22 16:14	JMW	EPA 6020A

Sample: FH01508-02
 Name: MVV-3
 Matrix: Ground Water - Grab

Sampled: 08/02/22 07:56
 Received: 08/05/22 14:30
 PO #: 28361

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Total Metals - PIA									
Boron	21	ug/L		08/09/22 09:13	5	10	08/10/22 16:28	JMW	EPA 6020A

Sample: FH01508-03
 Name: MVV-7
 Matrix: Ground Water - Grab

Sampled: 08/02/22 11:29
 Received: 08/05/22 14:30
 PO #: 28361

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Total Metals - PIA									
Boron	2400	ug/L		08/09/22 09:13	5	10	08/10/22 16:33	JMW	EPA 6020A

Sample: FH01508-04
 Name: MVV-9
 Matrix: Ground Water - Grab

Sampled: 08/02/22 10:54
 Received: 08/05/22 14:30
 PO #: 28361

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Fluoride	0.860	mg/L		08/12/22 17:00	1	0.250	08/12/22 17:00	CJP	EPA 300.0 REV 2.1



ANALYTICAL RESULTS

Sample: FH01508-05
 Name: FIELD BLANK
 Matrix: Ground Water - Grab

Sampled: 08/02/22 11:29
 Received: 08/05/22 14:30
 PO #: 28361

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Fluoride	< 0.250	mg/L		08/12/22 17:19	1	0.250	08/12/22 17:19	CJP	EPA 300.0 REV 2.1
Total Metals - PIA									
Boron	27	ug/L		08/09/22 09:13	5	10	08/10/22 16:37	JMW	EPA 8020A

Sample: FH01508-06
 Name: DUPLICATE 1
 Matrix: Ground Water - Grab

Sampled: 08/02/22 00:00
 Received: 08/05/22 14:30
 PO #: 28361

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Fluoride	< 0.250	mg/L		08/12/22 17:37	1	0.250	08/12/22 17:37	CJP	EPA 300.0 REV 2.1

Sample: FH01508-07
 Name: DUPLICATE 2
 Matrix: Ground Water - Grab

Sampled: 08/02/22 00:00
 Received: 08/05/22 14:30
 PO #: 28361

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Total Metals - PIA									
Boron	2700	ug/L		08/09/22 09:13	5	10	08/10/22 16:40	JMW	EPA 8020A



ANALYTICAL RESULTS

Sample: FH01508-05
Name: FIELD BLANK
Matrix: Ground Water - Grab

Sampled: 08/02/22 11:29
Received: 08/05/22 14:30
PO #: 28381

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Fluoride	< 0.250	mg/L		08/12/22 17:19	1	0.250	08/12/22 17:19	CJP	EPA 300.0 REV 2.1
Total Metals - PIA									
Boron	27	ug/L		08/09/22 09:13	5	10	08/10/22 16:37	JMW	EPA 6020A

Sample: FH01508-06
Name: DUPLICATE 1
Matrix: Ground Water - Grab

Sampled: 08/02/22 00:00
Received: 08/05/22 14:30
PO #: 28381

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Fluoride	< 0.250	mg/L		08/12/22 17:37	1	0.250	08/12/22 17:37	CJP	EPA 300.0 REV 2.1

Sample: FH01508-07
Name: DUPLICATE 2
Matrix: Ground Water - Grab

Sampled: 08/02/22 00:00
Received: 08/05/22 14:30
PO #: 28381

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Total Metals - PIA									
Boron	2700	ug/L		08/09/22 09:13	5	10	08/10/22 16:40	JMW	EPA 6020A



NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 80050

TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17558

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615

TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1806 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Gail Schindler



Certified by: Gail Schindler, Project Manager

Appendix 2

Laboratory Analytical Results
8th CCR Compliance Sampling Event
(2nd 2022 Semi-annual Detection
and Assessment Monitoring Event)
November 2, 2022



Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

December 30, 2022

Luke St Mary
Sikeston BMU, Sikeston Power Station
1551 W Wakefield
Sikeston, MO 63801

RE: SIKESTON FLY ASH APP III & IV 2021

Dear Luke St Mary:

Please find enclosed the analytical results for the 7 sample(s) the laboratory received on 11/4/22 10:00 am and logged in under work order FK01102. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Gail Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com



SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FK01102

<u>YES</u>	<u>Samples received within temperature compliance when applicable</u>
<u>YES</u>	<u>COC present upon sample receipt</u>
<u>YES</u>	<u>COC completed & legible</u>
<u>YES</u>	<u>Sampler name & signature present</u>
<u>YES</u>	<u>Unique sample IDs assigned</u>
<u>YES</u>	<u>Sample collection location recorded</u>
<u>YES</u>	<u>Date & time collected recorded on COC</u>
<u>YES</u>	<u>Relinquished by client signature on COC</u>
<u>YES</u>	<u>COC & labels match</u>
<u>YES</u>	<u>Sample labels are legible</u>
<u>YES</u>	<u>Appropriate bottle(s) received</u>
<u>YES</u>	<u>Sufficient sample volume received</u>
<u>YES</u>	<u>Sample containers received undamaged</u>
<u>NO</u>	<u>Zero headspace, <6 mm present in VOA vials</u>
<u>NO</u>	<u>Trip blank(s) received</u>
<u>YES</u>	<u>All non-field analyses received within holding times</u>
<u>NO</u>	<u>Short hold time analysis</u>
<u>YES</u>	<u>Current PDC COC submitted</u>
<u>NO</u>	<u>Case narrative provided</u>



ANALYTICAL RESULTS

Sample: FK01102-01
 Name: MW-1R
 Matrix: Ground Water - Grab

Sampled: 11/02/22 09:51
 Received: 11/04/22 10:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.0595 U	pCi/L			1	0.27	12/15/22 15:15		904.0 903.1
Radium 228 - subcontracted	0.775	pCi/L			1	0.641	12/16/22 14:24		904.0 903.1

Sample: FK01102-02
 Name: MW-2
 Matrix: Ground Water - Grab

Sampled: 11/02/22 08:21
 Received: 11/04/22 10:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.403	pCi/L			1	0.219	12/15/22 15:15		904.0 903.1
Radium 228 - subcontracted	1.51	pCi/L			1	0.584	12/11/22 09:18		904.0 903.1

Sample: FK01102-03
 Name: MW-3
 Matrix: Ground Water - Grab

Sampled: 11/02/22 07:36
 Received: 11/04/22 10:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.0289 U	pCi/L			1	0.251	12/15/22 15:15		904.0 903.1
Radium 228 - subcontracted	1.16	pCi/L			1	0.586	12/11/22 09:18		904.0 903.1

Sample: FK01102-04
 Name: MW-7
 Matrix: Ground Water - Grab

Sampled: 11/02/22 10:45
 Received: 11/04/22 10:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	U -0.0488	pCi/L			1	0.299	12/15/22 15:15		904.0 903.1
Radium 228 - subcontracted	2.31	pCi/L			1	0.997	12/11/22 09:18		904.0 903.1



ANALYTICAL RESULTS

Sample: FK01102-05
 Name: MW-9
 Matrix: Ground Water - Grab

Sampled: 11/02/22 11:25
 Received: 11/04/22 10:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.164 J	pCi/L			1	0.196	12/15/22 15:15		904.0 903.1
Radium 228 - subcontracted	0.648	pCi/L			1	0.628	12/11/22 09:18		904.0 903.1

Sample: FK01102-06
 Name: DUPLICATE
 Matrix: Ground Water - Grab

Sampled: 11/02/22 00:00
 Received: 11/04/22 10:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.31	pCi/L			1	0.248	12/15/22 15:15		904.0 903.1
Radium 228 - subcontracted	1.96	pCi/L			1	0.87	12/11/22 09:18		904.0 903.1

Sample: FK01102-07
 Name: FIELD BLANK
 Matrix: Ground Water - Grab

Sampled: 11/02/22 10:45
 Received: 11/04/22 10:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.0492 U	pCi/L			1	0.31	12/15/22 15:15		904.0 903.1
Radium 228 - subcontracted	1.07	pCi/L			1	0.567	12/11/22 09:18		904.0 903.1

ANALYTICAL RESULTS



ANALYTICAL RESULTS

Sample: FK01102-01
Name: MW-1R
Matrix: Ground Water - Grab

Sampled: 11/02/22 09:51
Received: 11/04/22 10:00
PO #: 30964

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions (Chloride, Sulfate), General Chemistry (Fluoride, Solids), and Total Metals (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Lead, Mercury, Molybdenum, Selenium, Tellurium, Lithium).



ANALYTICAL RESULTS

Sample: FK01102-02
 Name: MW-2
 Matrix: Ground Water - Grab

Sampled: 11/02/22 08:21
 Received: 11/04/22 10:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	7.4	mg/L		11/13/22 16:42	1	1.0	11/13/22 16:42	LAM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		11/13/22 16:42	1	0.250	11/13/22 16:42	LAM	EPA 300.0 REV 2.1
Sulfate	15	mg/L	Q4	11/13/22 17:36	5	5.0	11/13/22 17:36	LAM	EPA 300.0 REV 2.1
General Chemistry - PIA									
Solids - total dissolved solids (TDS)	180	mg/L		11/07/22 14:02	1	26	11/07/22 15:09	HRF	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		11/09/22 07:40	5	3.0	11/10/22 18:21	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Barium	220	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Boron	81	ug/L		11/09/22 07:40	5	10	11/11/22 11:41	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Calcium	24000	ug/L		11/09/22 07:40	5	200	11/10/22 18:21	JMW	EPA 6020A
Chromium	< 4.0	ug/L		11/09/22 07:40	5	4.0	11/10/22 18:21	JMW	EPA 6020A
Cobalt	2.4	ug/L		11/09/22 07:40	5	2.0	11/10/22 18:21	JMW	EPA 6020A
Lead	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Mercury	< 0.20	ug/L		11/09/22 07:40	5	0.20	11/10/22 18:21	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Selenium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Thallium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:21	JMW	EPA 6020A
Lithium	< 0.020	mg/L		11/09/22 07:40	1	0.020	11/17/22 08:47	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FK01102-03
 Name: MW-3
 Matrix: Ground Water - Grab

Sampled: 11/02/22 07:36
 Received: 11/04/22 10:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L	Q3	11/13/22 18:12	1	1.0	11/13/22 18:12	LAM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		11/13/22 18:12	1	0.250	11/13/22 18:12	LAM	EPA 300.0 REV 2.1
Sulfate	10	mg/L	Q4	11/13/22 19:43	5	5.0	11/13/22 19:43	LAM	EPA 300.0 REV 2.1
General Chemistry - PIA									
Solids - total dissolved solids (TDS)	160	mg/L		11/07/22 14:02	1	26	11/07/22 15:09	HRF	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		11/09/22 07:40	5	3.0	11/10/22 18:25	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Barium	73	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Boron	29	ug/L		11/09/22 07:40	5	10	11/11/22 11:45	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Calcium	17000	ug/L		11/09/22 07:40	5	200	11/10/22 18:25	JMW	EPA 6020A
Chromium	< 4.0	ug/L		11/09/22 07:40	5	4.0	11/10/22 18:25	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		11/09/22 07:40	5	2.0	11/10/22 18:25	JMW	EPA 6020A
Lead	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Mercury	< 0.20	ug/L		11/09/22 07:40	5	0.20	11/10/22 18:25	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Selenium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Thallium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:25	JMW	EPA 6020A
Lithium	< 0.020	mg/L		11/09/22 07:40	1	0.020	11/17/22 08:50	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FK01102-04
Name: MW-7
Matrix: Ground Water - Grab

Sampled: 11/02/22 10:45
Received: 11/04/22 10:00
PO #: 30964

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Lead, Mercury, Molybdenum, Selenium, Thallium, Lithium).



ANALYTICAL RESULTS

Sample: FK01102-05
 Name: MW-9
 Matrix: Ground Water - Grab

Sampled: 11/02/22 11:25
 Received: 11/04/22 10:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	12	mg/L		11/15/22 17:10	5	5.0	11/15/22 17:10	CRD	EPA 300.0 REV 2.1
Fluoride	1.03	mg/L		11/15/22 16:51	1	0.250	11/15/22 16:51	CRD	EPA 300.0 REV 2.1
Sulfate	160	mg/L		11/15/22 17:28	50	50	11/15/22 17:28	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	540	mg/L		11/07/22 14:02	1	26	11/07/22 15:09	HRF	SM 2540C
<u>Total Metals - PIA</u>									
Antimony	< 3.0	ug/L		11/09/22 07:40	5	3.0	11/10/22 18:40	JMW	EPA 8020A
Arsenic	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:40	JMW	EPA 8020A
Barium	78	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:40	JMW	EPA 8020A
Beryllium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/11/22 11:52	JMW	EPA 8020A
Boron	3000	ug/L		11/09/22 07:40	5	10	11/11/22 11:52	JMW	EPA 8020A
Cadmium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:40	JMW	EPA 8020A
Calcium	97000	ug/L		11/09/22 07:40	5	200	11/10/22 18:40	JMW	EPA 8020A
Chromium	< 4.0	ug/L		11/09/22 07:40	5	4.0	11/10/22 18:40	JMW	EPA 8020A
Cobalt	< 2.0	ug/L		11/09/22 07:40	5	2.0	11/10/22 18:40	JMW	EPA 8020A
Lead	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:40	JMW	EPA 8020A
Mercury	< 0.20	ug/L		11/09/22 07:40	5	0.20	11/10/22 18:40	JMW	EPA 8020A
Molybdenum	210	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:40	JMW	EPA 8020A
Selenium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:40	JMW	EPA 8020A
Thallium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:40	JMW	EPA 8020A
Lithium	0.021	mg/L		11/09/22 07:40	1	0.020	11/17/22 08:55	TJJ	EPA 8010B



ANALYTICAL RESULTS

Sample: FK01102-06
 Name: DUPLICATE
 Matrix: Ground Water - Grab

Sampled: 11/02/22 00:00
 Received: 11/04/22 10:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	14	mg/L		11/15/22 18:04	5	5.0	11/15/22 18:04	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		11/15/22 17:46	1	0.250	11/15/22 17:46	CRD	EPA 300.0 REV 2.1
Sulfate	160	mg/L		11/15/22 18:22	50	50	11/15/22 18:22	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	430	mg/L		11/07/22 14:02	1	26	11/07/22 15:09	HRF	SM 2540C
<u>Total Metals - PIA</u>									
Antimony	< 3.0	ug/L		11/09/22 07:40	5	3.0	11/10/22 18:43	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:43	JMW	EPA 6020A
Barium	35	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:43	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/11/22 11:56	JMW	EPA 6020A
Boron	2900	ug/L		11/09/22 07:40	5	10	11/11/22 11:56	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:43	JMW	EPA 6020A
Calcium	87000	ug/L		11/09/22 07:40	5	200	11/10/22 18:43	JMW	EPA 6020A
Chromium	< 4.0	ug/L		11/09/22 07:40	5	4.0	11/10/22 18:43	JMW	EPA 6020A
Cobalt	10	ug/L		11/09/22 07:40	5	2.0	11/10/22 18:43	JMW	EPA 6020A
Lead	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:43	JMW	EPA 6020A
Mercury	< 0.20	ug/L		11/09/22 07:40	5	0.20	11/10/22 18:43	JMW	EPA 6020A
Molybdenum	190	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:43	JMW	EPA 6020A
Selenium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:43	JMW	EPA 6020A
Thallium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:43	JMW	EPA 6020A
Lithium	< 0.020	mg/L		11/09/22 07:40	1	0.020	11/17/22 08:58	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FK01102-07
Name: FIELD BLANK
Matrix: Ground Water - Grab

Sampled: 11/02/22 10:45
Received: 11/04/22 10:00
PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	< 1.0	mg/L		11/15/22 18:40	1	1.0	11/15/22 18:40	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		11/15/22 18:40	1	0.250	11/15/22 18:40	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		11/15/22 18:40	1	1.0	11/15/22 18:40	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	43	mg/L		11/07/22 14:02	1	17	11/07/22 15:09	HRF	SM 2540C
<u>Total Metals - PIA</u>									
Antimony	< 3.0	ug/L		11/09/22 07:40	5	3.0	11/10/22 18:47	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:47	JMW	EPA 6020A
Barium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:47	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/11/22 11:59	JMW	EPA 6020A
Boron	37	ug/L		11/09/22 07:40	5	10	11/11/22 11:59	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:47	JMW	EPA 6020A
Calcium	< 200	ug/L		11/09/22 07:40	5	200	11/10/22 18:47	JMW	EPA 6020A
Chromium	< 4.0	ug/L		11/09/22 07:40	5	4.0	11/10/22 18:47	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		11/09/22 07:40	5	2.0	11/10/22 18:47	JMW	EPA 6020A
Lead	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:47	JMW	EPA 6020A
Mercury	< 0.20	ug/L		11/09/22 07:40	5	0.20	11/10/22 18:47	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:47	JMW	EPA 6020A
Selenium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:47	JMW	EPA 6020A
Thallium	< 1.0	ug/L		11/09/22 07:40	5	1.0	11/10/22 18:47	JMW	EPA 6020A
Lithium	< 0.020	mg/L		11/09/22 07:40	1	0.020	11/17/22 09:00	TJJ	EPA 6010B

Appendix 2

Laboratory Analytical Results
9th CCR Compliance Sampling Event
(1st 2023 Semi-annual Detection
and Assessment Monitoring Event)
March 12, 2023



Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

April 05, 2023

Luke St Mary
Sikeston BMU, Sikeston Power Station
1551 W Wakefield
Sikeston, MO 63801

RE: SIKESTON FLY ASH APP III & IV 2021

Dear Luke St Mary:

Please find enclosed the analytical results for the 7 sample(s) the laboratory received on 3/15/23 3:00 pm and logged in under work order GC02820. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the General Manager, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1784 or lisa.grant@pacelabs.com.

Gail Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com



SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as In compliance

Work Order GC02820

<u>YES</u>	<u>Samples received within temperature compliance when applicable</u>
<u>YES</u>	<u>COC present upon sample receipt</u>
<u>YES</u>	<u>COC completed & legible</u>
<u>YES</u>	<u>Sampler name & signature present</u>
<u>YES</u>	<u>Unique sample IDs assigned</u>
<u>YES</u>	<u>Sample collection location recorded</u>
<u>YES</u>	<u>Date & time collected recorded on COC</u>
<u>YES</u>	<u>Relinquished by client signature on COC</u>
<u>YES</u>	<u>COC & labels match</u>
<u>YES</u>	<u>Sample labels are legible</u>
<u>YES</u>	<u>Appropriate bottle(s) received</u>
<u>YES</u>	<u>Sufficient sample volume received</u>
<u>YES</u>	<u>Sample containers received undamaged</u>
<u>NO</u>	<u>Zero headspace, <8 mm present in VOA vials</u>
<u>NO</u>	<u>Trip blank(s) received</u>
<u>YES</u>	<u>All non-field analyses received within holding times</u>
<u>NO</u>	<u>Short hold time analysis</u>
<u>YES</u>	<u>Current PDC COC submitted</u>
<u>NO</u>	<u>Case narrative provided</u>



ANALYTICAL RESULTS

Sample: GC02820-01
Name: MW-1R
Matrix: Ground Water - Grab

Sampled: 03/12/23 11:07
Received: 03/15/23 15:00
PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	10	mg/L		03/22/23 00:51	5	5.0	03/22/23 00:51	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		03/22/23 00:33	1	0.250	03/22/23 00:33	CRD	EPA 300.0 REV 2.1
Sulfate	140	mg/L		03/22/23 01:00	25	25	03/22/23 01:00	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	300	mg/L		03/16/23 11:35	1	20	03/16/23 15:00	CPS	SM 2540C
<u>Total Metals - PIA</u>									
Barium	52	ug/L		03/16/23 08:55	5	1.0	03/27/23 16:34	JMW	EPA 8020A
Boron	3000	ug/L		03/16/23 08:55	5	10	03/28/23 09:05	JMW	EPA 8020A
Calcium	70000	ug/L		03/16/23 08:55	5	200	03/27/23 16:34	JMW	EPA 8020A
Cobalt	7.9	ug/L		03/16/23 08:55	5	2.0	03/27/23 16:34	JMW	EPA 8020A
Molybdenum	180	ug/L		03/16/23 08:55	5	1.0	03/27/23 16:34	JMW	EPA 8020A
Selenium	< 1.0	ug/L		03/16/23 08:55	5	1.0	03/27/23 16:34	JMW	EPA 8020A
Lithium	< 0.020	mg/L		03/16/23 08:55	1	0.020	03/21/23 11:47	TJJ	EPA 6010B



Pace Analytical Services, LLC
 2231 W. Altorfer Drive
 Peoria, IL 61615
 (800)752-6651

ANALYTICAL RESULTS

Sample: GC02820-02
 Name: MW-2
 Matrix: Ground Water - Grab

Sampled: 03/12/23 09:58
 Received: 03/15/23 15:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	1.3	mg/L		03/23/23 17:35	1	1.0	03/23/23 17:35	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		03/23/23 17:35	1	0.250	03/23/23 17:35	CRD	EPA 300.0 REV 2.1
Sulfate	8.7	mg/L		03/23/23 17:35	1	1.0	03/23/23 17:35	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	700	mg/L	H	03/20/23 15:24	1	17	03/20/23 16:10	HRF	SM 2540C
<u>Total Metals - PIA</u>									
Barium	100	ug/L		03/21/23 09:08	5	1.0	03/24/23 09:54	JMW	EPA 8020A
Boron	28	ug/L		03/21/23 09:08	5	10	03/24/23 15:12	JMW	EPA 8020A
Calcium	12000	ug/L		03/21/23 09:08	5	200	03/24/23 09:54	JMW	EPA 8020A
Cobalt	< 2.0	ug/L		03/21/23 09:08	5	2.0	03/24/23 09:54	JMW	EPA 8020A
Molybdenum	< 1.0	ug/L		03/21/23 09:08	5	1.0	03/24/23 09:54	JMW	EPA 8020A
Selenium	< 1.0	ug/L		03/21/23 09:08	5	1.0	03/24/23 09:54	JMW	EPA 8020A
Lithium	< 0.020	mg/L		03/21/23 09:08	1	0.020	03/21/23 13:38	TJJ	EPA 8010B



ANALYTICAL RESULTS

Sample: GC02820-03
 Name: MW-3
 Matrix: Ground Water - Grab

Sampled: 03/12/23 08:31
 Received: 03/15/23 15:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	< 1.0	mg/L		03/23/23 18:29	1	1.0	03/23/23 18:29	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		03/23/23 18:29	1	0.250	03/23/23 18:29	CRD	EPA 300.0 REV 2.1
Sulfate	19	mg/L		03/23/23 18:47	5	5.0	03/23/23 18:47	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	93	mg/L	H	03/20/23 15:24	1	17	03/20/23 16:10	HRF	SM 2640C
<u>Total Metals - PIA</u>									
Barium	110	ug/L		03/21/23 09:08	5	1.0	03/24/23 09:58	JMW	EPA 8020A
Boron	31	ug/L		03/21/23 09:08	5	10	03/24/23 15:15	JMW	EPA 8020A
Calcium	14000	ug/L		03/21/23 09:08	5	200	03/24/23 09:58	JMW	EPA 8020A
Cobalt	< 2.0	ug/L		03/21/23 09:08	5	2.0	03/24/23 09:58	JMW	EPA 8020A
Molybdenum	< 1.0	ug/L		03/21/23 09:08	5	1.0	03/24/23 09:58	JMW	EPA 8020A
Selenium	< 1.0	ug/L		03/21/23 09:08	5	1.0	03/24/23 09:58	JMW	EPA 8020A
Lithium	< 0.020	mg/L		03/21/23 09:08	1	0.020	03/21/23 13:40	TJJ	EPA 8010B



ANALYTICAL RESULTS

Sample: GC02820-04
 Name: MW-7
 Matrix: Ground Water - Grab

Sampled: 03/12/23 13:21
 Received: 03/15/23 15:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	3.7	mg/L		03/22/23 01:27	1	1.0	03/22/23 01:27	CRD	EPA 300.0 REV 2.1
Fluoride	0.635	mg/L		03/22/23 01:27	1	0.250	03/22/23 01:27	CRD	EPA 300.0 REV 2.1
Sulfate	190	mg/L		03/22/23 02:03	25	25	03/22/23 02:03	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	520	mg/L		03/16/23 11:35	1	26	03/16/23 15:09	CPS	SM 2540C
<u>Total Metals - PIA</u>									
Barium	77	ug/L		03/21/23 09:08	5	1.0	03/24/23 10:02	JMW	EPA 8020A
Boron	2800	ug/L		03/21/23 09:08	5	15	03/24/23 14:22	JMW	EPA 8020A
Calcium	140000	ug/L		03/21/23 09:08	5	200	03/24/23 10:02	JMW	EPA 8020A
Cobalt	4.1	ug/L		03/21/23 09:08	5	2.0	03/24/23 10:02	JMW	EPA 8020A
Molybdenum	120	ug/L		03/21/23 09:08	5	1.0	03/24/23 10:02	JMW	EPA 8020A
Selenium	4.1	ug/L		03/21/23 09:08	5	1.0	03/24/23 10:02	JMW	EPA 8020A
Lithium	0.027	mg/L		03/21/23 09:08	1	0.020	03/21/23 13:42	TJJ	EPA 8010B



ANALYTICAL RESULTS

Sample: GC02820-05
 Name: MW-9
 Matrix: Ground Water - Grab

Sampled: 03/12/23 14:04
 Received: 03/15/23 15:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	11	mg/L		03/22/23 03:15	5	5.0	03/22/23 03:15	CRD	EPA 300.0 REV 2.1
Fluoride	1.02	mg/L		03/22/23 02:21	1	0.250	03/22/23 02:21	CRD	EPA 300.0 REV 2.1
Sulfate	160	mg/L		03/22/23 03:33	50	50	03/22/23 03:33	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	480	mg/L		03/16/23 11:35	1	26	03/16/23 15:09	CPS	SM 2540C
<u>Total Metals - PIA</u>									
Barium	85	ug/L		03/21/23 09:08	5	1.0	03/24/23 10:05	JMW	EPA 6020A
Boron	3600	ug/L		03/21/23 09:08	5	15	03/24/23 14:26	JMW	EPA 6020A
Calcium	95000	ug/L		03/21/23 09:08	5	200	03/24/23 10:05	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		03/21/23 09:08	5	2.0	03/24/23 10:05	JMW	EPA 6020A
Molybdenum	160	ug/L		03/21/23 09:08	5	1.0	03/24/23 10:05	JMW	EPA 6020A
Selenium	< 1.0	ug/L		03/21/23 09:08	5	1.0	03/24/23 10:05	JMW	EPA 6020A
Lithium	< 0.020	mg/L		03/21/23 09:08	1	0.020	03/21/23 13:43	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: GC02820-06
 Name: DUPLICATE
 Matrix: Ground Water - Field Duplicate

Sampled: 03/12/23 00:00
 Received: 03/15/23 15:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	9.9	mg/L		03/22/23 04:10	5	5.0	03/22/23 04:10	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		03/22/23 03:51	1	0.250	03/22/23 03:51	CRD	EPA 300.0 REV 2.1
Sulfate	120	mg/L		03/22/23 04:28	50	50	03/22/23 04:28	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	240	mg/L		03/16/23 11:35	1	26	03/16/23 15:09	CPS	SM 2540C
<u>Total Metals - PIA</u>									
Barium	33	ug/L		03/21/23 08:06	5	1.0	03/24/23 10:09	JMW	EPA 8020A
Boron	1600	ug/L		03/21/23 08:06	5	15	03/24/23 14:30	JMW	EPA 8020A
Calcium	40000	ug/L		03/21/23 08:06	5	200	03/24/23 10:09	JMW	EPA 8020A
Cobalt	.43	ug/L		03/21/23 08:06	5	2.0	03/24/23 10:09	JMW	EPA 8020A
Molybdenum	110	ug/L		03/21/23 08:06	5	1.0	03/24/23 10:09	JMW	EPA 8020A
Selenium	< 1.0	ug/L		03/21/23 08:06	5	1.0	03/24/23 10:09	JMW	EPA 8020A
Lithium	< 0.020	mg/L		03/21/23 08:06	1	0.020	03/21/23 13:44	TJJ	EPA 8010B



ANALYTICAL RESULTS

Sample: GC02820-07
 Name: FIELD BLANK
 Matrix: Ground Water - Field Blank

Sampled: 03/12/23 09:58
 Received: 03/15/23 15:00
 PO #: 30984

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	< 1.0	mg/L		03/22/23 04:46	1	1.0	03/22/23 04:46	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		03/22/23 04:46	1	0.250	03/22/23 04:46	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		03/22/23 04:46	1	1.0	03/22/23 04:46	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	63	mg/L		03/16/23 11:35	1	17	03/16/23 15:09	CPS	SM 2540C
<u>Total Metals - PIA</u>									
Barium	18	ug/L		03/21/23 09:06	5	1.0	03/24/23 10:27	JMW	EPA 8020A
Boron	< 10	ug/L		03/21/23 09:06	5	10	03/24/23 15:19	JMW	EPA 8020A
Calcium	3600	ug/L		03/21/23 09:06	5	200	03/24/23 10:27	JMW	EPA 8020A
Cobalt	< 2.0	ug/L		03/21/23 09:06	5	2.0	03/24/23 10:27	JMW	EPA 8020A
Molybdenum	9.2	ug/L		03/21/23 09:06	5	1.0	03/24/23 10:27	JMW	EPA 8020A
Selenium	< 1.0	ug/L		03/21/23 09:06	5	1.0	03/24/23 10:27	JMW	EPA 8020A
Lithium	< 0.020	mg/L		03/21/23 09:06	1	0.020	03/21/23 13:48	TJJ	EPA 8010B



NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050
TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis In Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230
Illinois Department of Public Health Bacterial Analysis In Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)
Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)
Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080
Illinois Department of Public Health Bacterial Analysis In Drinking Water Approved Laboratory, Registry No. 171050
Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

H Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.

Gail Schindler

Certified by: Gail Schindler, Project Manager



REGULATORY PROGRAM (CIRCLE):	MPDES
	KCRA
MOBICA	
CCDD	
TACO: RES OR IND/COMM	

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

CLIENT SIKESTON POWER STATION 1551 W WAKEFIELD CITY STAT ZIP SIKESTON, MO 63801 CONTACT PERSON MR LUKE ST MARY		PROJECT LOCATION FLY ASH BOTTOM-ASH APP III E-MAIL Justin Lowes John E. Seaman		PURCHASE ORDER # DATE SHIPPED		ANALYSIS REQUESTED BA, CO, LI, MO, SE CL, T, SO4, TDS, B, CA. RAD 226/228		(FOR LAB USE ONLY) LOGGED BY: <i>JK</i> CLIENT: SIKESTON ENVI, SIKESTON POWER STATION PROJECT: SIKESTON FLY ASH 2023 PROJ MGR: GJ SCHMIDLER	
PROJECT NUMBER PHONE NUMBER 573-475-3131		MATRIX TYPE GW GW GW GW GW GW DI		BOTTLE COUNT 3 3 3 3 3 3 3		PRES CODE PROVIDED 3,6 3,6 3,6 3,6 3,6 3,6 3,6		REMARKS	
SAMPLE DESCRIPTION (PLEASE PRINT) MW-1R MW-2 MW-3 MW-7 MW-9 DUPLICATE FIELD BLANK		DATE COLLECTED 3-12-23 3-12-23 3-12-23 3-12-23 3-12-23 3-12-23		TIME COLLECTED 1107 0958 0831 1321 1404 0958		SAMPLE TYPE X X X X X X		MATRIX TYPE GW GW GW GW GW DI	
SAMPLE DESCRIPTION (PLEASE PRINT) MW-1R MW-2 MW-3 MW-7 MW-9 DUPLICATE FIELD BLANK		DATE COLLECTED 3-12-23 3-12-23 3-12-23 3-12-23 3-12-23 3-12-23		TIME COLLECTED 1107 0958 0831 1321 1404 0958		SAMPLE TYPE X X X X X X		MATRIX TYPE GW GW GW GW GW DI	
CHEMICAL PRESERVATION CODES: 1 - HCL 2 - H2SO4 3 - HNO3 4 - NAOH 5 - MAX2003 6 - UNPRESERVED 7 - OTHER		DATE RESULT NEEDED 6		DATE RESULT NEEDED 6		COMMENTS: (FOR LAB USE ONLY) 8 SAMPLE TEMPERATURE UPON RECEIPT 3.2°C CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE RECEIVED ON ICE SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED		DATE AND TIME TAKEN FROM SAMPLE BOTTLE 1500	
TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH TRY TO SUBJECT TO PRC LABS APPROVAL AND BIERCHARGE) NORMAL RUSH RUSH RESULTS VIA PHONE PHONE # IF DIFFERENT FROM ABOVE:		DATE RECEIVED BY: (SIGNATURE) Ashish Patel 3-14-23 3700		RECEIVED BY: (SIGNATURE) [Signature]		RECEIVED BY: (SIGNATURE) [Signature]		RECEIVED BY: (SIGNATURE) [Signature]	
RELINQUISHED BY: (SIGNATURE) Ashish Patel 3-14-23 3700		RECEIVED BY: (SIGNATURE) [Signature]		RECEIVED BY: (SIGNATURE) [Signature]		RECEIVED BY: (SIGNATURE) [Signature]		RECEIVED BY: (SIGNATURE) [Signature]	



Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

April 07, 2023

Luke St Mary
Sikeston BMU, Sikeston Power Station
1551 W Wakefield
Sikeston, MO 63801

RE: SIKESTON FLY ASH APP III & IV 2021

Dear Luke St Mary:

Please find enclosed the analytical results for the 7 sample(s) the laboratory received on 3/15/23 3:00 pm and logged in under work order GC02828. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the General Manager, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Gail Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com



SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as In compliance

Work Order GC02828

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <8 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided



ANALYTICAL RESULTS

Sample: GC02828-01
 Name: MW-1R
 Matrix: Ground Water - Grab

Sampled: 03/12/23 11:07
 Received: 03/15/23 15:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - PACE Analytical - Greensburg									
Radium 226 - subcontracted	-0.0842	pCi/L			1	1.19	04/03/23 14:01	IR30	904.0 903.1
Radium 226 - subcontracted	1.03	pCi/L			1	0.742	04/03/23 12:06	IR30	904.0 903.1

Sample: GC02828-02
 Name: MW-2
 Matrix: Ground Water - Grab

Sampled: 03/12/23 09:58
 Received: 03/15/23 15:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - PACE Analytical - Greensburg									
Radium 226 - subcontracted	-0.15	pCi/L			1	1.25	04/03/23 14:01	IR30	904.0 903.1
Radium 226 - subcontracted	0.63	pCi/L			1	0.76	04/03/23 15:29	IR30	904.0 903.1

Sample: GC02828-03
 Name: MW-3
 Matrix: Ground Water - Grab

Sampled: 03/12/23 08:31
 Received: 03/15/23 15:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - PACE Analytical - Greensburg									
Radium 226 - subcontracted	0.221	pCi/L			1	1.04	04/03/23 14:01	IR30	904.0 903.1
Radium 226 - subcontracted	0.566	pCi/L			1	0.867	04/03/23 15:39	IR30	904.0 903.1

Sample: GC02828-04
 Name: MW-7
 Matrix: Ground Water - Grab

Sampled: 03/12/23 13:21
 Received: 03/15/23 15:00
 PO #: 30964

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - PACE Analytical - Greensburg									
Radium 226 - subcontracted	0.0773	pCi/L			1	1.16	04/03/23 14:01	IR30	904.0 903.1
Radium 226 - subcontracted	0.899	pCi/L			1	0.851	04/03/23 15:30	IR30	904.0 903.1



ANALYTICAL RESULTS

Sample: GC02828-05
Name: MW-9
Matrix: Ground Water - Grab

Sampled: 03/12/23 14:04
Received: 03/15/23 15:00
PO #: 30964

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Radium 226 and Radium 228 measurements.

Sample: GC02828-06
Name: DUPLICATE
Matrix: Ground Water - Field Duplicate

Sampled: 03/12/23 00:00
Received: 03/15/23 15:00
PO #: 30964

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Radium 226 and Radium 228 measurements.

Sample: GC02828-07
Name: FIELD BLANK
Matrix: Ground Water - Field Blank

Sampled: 03/12/23 09:58
Received: 03/15/23 15:00
PO #: 30964

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Radium 226 and Radium 228 measurements.

Appendix 3

Laboratory Quality Assurance/Quality Control Data

Appendix 3

Laboratory Quality Assurance/Quality Control Data
7th CCR Compliance Sampling Event
(1st 2022 Semi-annual Detection Monitoring Event)
April 9, 2022



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B229632 - SW 3015 - EPA 8020A</u>									
Blank (B229632-BLK1) Prepared: 04/13/22 Analyzed: 04/14/22									
Boron	< 10	ug/L							
Calcium	< 200	ug/L							
LCS (B229632-BS1) Prepared: 04/13/22 Analyzed: 04/14/22									
Boron	598	ug/L		555.6		108	80-120		
Calcium	5540	ug/L		5558		100	80-120		
Matrix Spike (B229632-MS1) Sample: FD02077-01 Prepared: 04/13/22 Analyzed: 04/14/22									
Boron	3450	ug/L	Q4	555.6	3080	70	75-125		
Calcium	78500	ug/L		5558	73300	94	75-125		
Matrix Spike Dup (B229632-MSD1) Sample: FD02077-01 Prepared: 04/13/22 Analyzed: 04/14/22									
Boron	3410	ug/L	Q4	555.6	3080	63	75-125	1	20
Calcium	78800	ug/L		5558	73300	99	75-125	0.4	20
<u>Batch B229655 - No Prep - SM 2540C</u>									
Blank (B229655-BLK1) Prepared & Analyzed: 04/13/22									
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B229655-BS1) Prepared & Analyzed: 04/13/22									
Solids - total dissolved solids (TDS)	927	mg/L		1000		93	84.9-109		
<u>Batch B229849 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B229849-CCB1) Prepared & Analyzed: 04/13/22									
Chloride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B229849-CCV1) Prepared & Analyzed: 04/13/22									
Chloride	4.83	mg/L		5.000		97	90-110		
Sulfate	4.90	mg/L		5.000		98	90-110		
<u>Batch B229930 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B229930-CCB1) Prepared & Analyzed: 04/14/22									
Sulfate	0.00	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B229930-CCV1) Prepared & Analyzed: 04/14/22									
Sulfate	4.73	mg/L		5.000		95	90-110		
Fluoride	5.05	mg/L		5.000		101	90-110		



NOTES

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* Not a TNI accredited analyte

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Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail Schindler



Certified by: Gail Schindler, Project Manager

Appendix 3

Laboratory Quality Assurance/Quality Control Data
8th CCR Compliance Sampling Event
(2nd 2022 Semi-annual Detection
and Assessment Monitoring Event)
November 2, 2022



NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050

TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615

TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

- Q3 Matrix Spike/Matrix Spike Duplicate both failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail Schindler

Certified by: Gail Schindler, Project Manager





ANALYTICAL REPORT

December 20, 2022

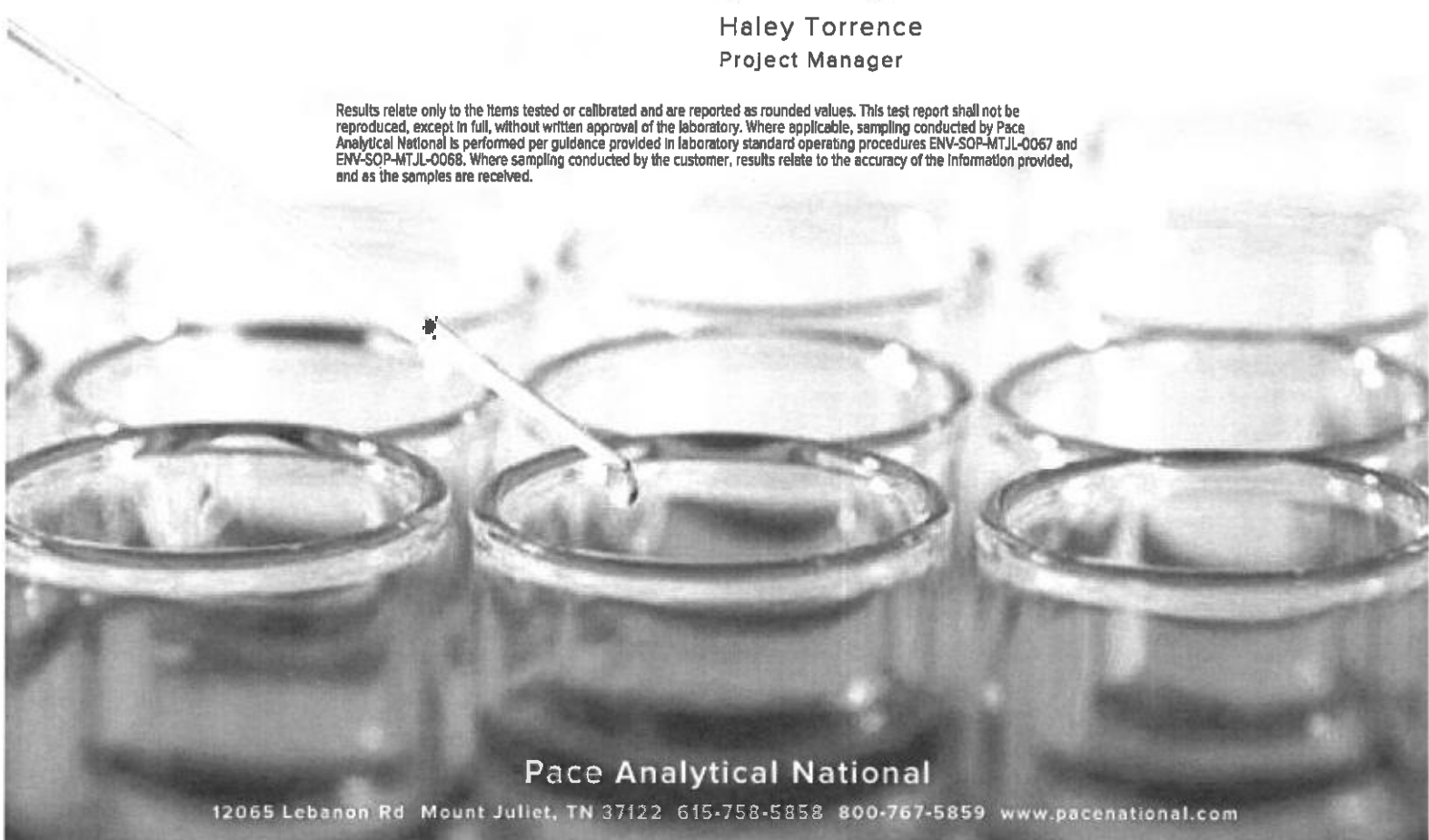
- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

Pace IR - Peoria, IL

Sample Delivery Group: L1557496
 Samples Received: 11/10/2022
 Project Number: FK01102
 Description: Sikeston
 Site: 01
 Report To: Gail Schindler
 2231 W. Altorfer Drive
 Peoria, IL 61615

Entire Report Reviewed By: *Haley Torrence*
 Haley Torrence
 Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

ACCOUNT:
Pace IR - Peoria, IL

PROJECT:
FK01102

SDG:
L1557496

DATE/TIME:
12/20/22 10:41

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SAMPLE SUMMARY

Collected by: _____ Collected date/time: 11/02/22 09:51 Received date/time: 11/10/22 10:00

MW-1R L1557496-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1967738	1	12/02/22 10:50	12/16/22 14:24	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/16/22 14:24	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

Collected by: _____ Collected date/time: 11/02/22 08:21 Received date/time: 11/10/22 10:00

MW-2 L1557496-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1967738	1	12/02/22 10:50	12/11/22 09:18	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

Collected by: _____ Collected date/time: 11/02/22 07:36 Received date/time: 11/10/22 10:00

MW-3 L1557496-03 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1967738	1	12/02/22 10:50	12/11/22 09:18	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

Collected by: _____ Collected date/time: 11/02/22 10:45 Received date/time: 11/10/22 10:00

MW-7 L1557496-04 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1967738	1	12/02/22 10:50	12/11/22 09:18	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

Collected by: _____ Collected date/time: 11/02/22 11:25 Received date/time: 11/10/22 10:00

MW-9 L1557496-05 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1967738	1	12/02/22 10:50	12/11/22 09:18	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

Collected by: _____ Collected date/time: 11/02/22 00:00 Received date/time: 11/10/22 10:00

DUPLICATE L1557496-06 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1967738	1	12/02/22 10:50	12/11/22 09:18	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gf

8 Al

9 Sc

SAMPLE SUMMARY

Collected by: _____
 Collected date/time: 11/02/22 10:45
 Received date/time: 11/10/22 10:00

FIELD BLANK L1557496-07 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1967738	1	12/02/22 10:50	12/11/22 09:18	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

Cp

Tc

Ss

⁴Cn

⁵Sr

⁶Qc

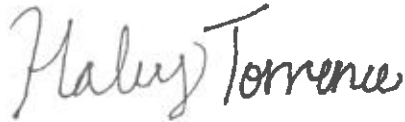
⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Haley Torrence
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

MW-1R

Collected date/time: 11/02/22 09:51

SAMPLE RESULTS - 01

L1557496

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.775		0.368	0.641	12/16/2022 14:24	WG1967738
(T) Barium	67.7			30.0-143	12/16/2022 14:24	WG1967738
(T) Yttrium	115			30.0-136	12/16/2022 14:24	WG1967738

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.835		0.399	0.696	12/16/2022 14:24	WG1971826

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0595	<u>U</u>	0.153	0.270	12/15/2022 15:15	WG1971826
(T) Barium-133	89.9			30.0-143	12/15/2022 15:15	WG1971826

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 GI
- 8 Al
- 9 Sc

MW-2

Collected date/time: 11/02/22 08:21

SAMPLE RESULTS - 02

L1557496

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.51		0.227	0.584	12/11/2022 09:18	WG1967738
(T) Barium	103			30.0-143	12/11/2022 09:18	WG1967738
(T) Yttrium	110			30.0-136	12/11/2022 09:18	WG1967738

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.91		0.331	0.624	12/15/2022 15:15	WG1971826

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.403		0.241	0.219	12/15/2022 15:15	WG1971826
(T) Barium-133	87.4			30.0-143	12/15/2022 15:15	WG1971826

- Cp
- Tc
- Ss
- Cn
- Sr
- Qc
- Gl
- Al
- Sc

MW-3

Collected date/time: 11/02/22 07:36

SAMPLE RESULTS - 03

L1557496

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.16		0.222	0.586	12/11/2022 09:18	WG1967738
(T) Barium	113			30.0-143	12/11/2022 09:18	WG1967738
(T) Yttrium	99.2			30.0-136	12/11/2022 09:18	WG1967738

Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.19		0.256	0.637	12/15/2022 15:15	WG1971826

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty +/-	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0289	U	0.127	0.251	12/15/2022 15:15	WG1971826
(T) Barium-133	82.6			30.0-143	12/15/2022 15:15	WG1971826

⁶Qc

⁷Gl

⁸Al

⁹Sc

MW-7

SAMPLE RESULTS - 04

Collected date/time: 11/02/22 10:45

L1557496

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+/-	pCi/l	date / time	
RADIUM-228	2.31		0.280	0.697	12/11/2022 09:18	WG1967738
(T) Barium	97.1			30.0-143	12/11/2022 09:18	WG1967738
(T) Yttrium	90.6			30.0-136	12/11/2022 09:18	WG1967738

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+/-	pCi/l	date / time	
Combined Radium	2.31		0.307	0.758	12/15/2022 15:15	WG1971826

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+/-	pCi/l	date / time	
RADIUM-226	-0.0488	U	0.126	0.299	12/15/2022 15:15	WG1971826
(T) Barium-133	95.1			30.0-143	12/15/2022 15:15	WG1971826

Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

MW-9

Collected date/time: 11/02/22 11:25

SAMPLE RESULTS - 05

L1557496

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.648		0.226	0.626	12/11/2022 09:18	<u>WG1967738</u>
(T) Barium	98.9			30.0-143	12/11/2022 09:18	<u>WG1967738</u>
(T) Yttrium	117			30.0-136	12/11/2022 09:18	<u>WG1967738</u>

Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.812		0.277	0.656	12/15/2022 15:15	<u>WG1971826</u>

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.164	J	0.161	0.196	12/15/2022 15:15	<u>WG1971826</u>
(T) Barium-133	87.4			30.0-143	12/15/2022 15:15	<u>WG1971826</u>

⁶Qc

⁷Gl

⁸Al

⁹Sc

DUPLICATE

SAMPLE RESULTS - 06

Collected date/time: 11/02/22 00 00

L1557496

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.96		0.266	0.670	12/11/2022 09:18	WG1967738
(T) Barium	90.9			30.0-143	12/11/2022 09:18	WG1967738
(T) Yttrium	120			30.0-136	12/11/2022 09:18	WG1967738

Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.27		0.351	0.715	12/15/2022 15:15	WG1971826

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.310		0.229	0.249	12/15/2022 15:15	WG1971826
(T) Barium-133	92.9			30.0-143	12/15/2022 15:15	WG1971826

⁶Qc

⁷Gl

⁸Al

⁹Sc

FIELD BLANK

Collected date/time: 11/02/22 10:45

SAMPLE RESULTS - 07

L1557496

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+/-	pCi/l	date / time	
RADIUM-228	1.07		0.214	0.567	12/11/2022 09:18	WG1967738
(T) Barium	106			30.0-143	12/11/2022 09:18	WG1967738
(T) Yttrium	114			30.0-136	12/11/2022 09:18	WG1967738

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+/-	pCi/l	date / time	
Combined Radium	1.12		0.278	0.646	12/15/2022 15:15	WG1971826

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+/-	pCi/l	date / time	
RADIUM-226	0.0492	U	0.177	0.310	12/15/2022 15:15	WG1971826
(T) Barium-133	90.3			30.0-143	12/15/2022 15:15	WG1971826

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

WG1967738

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1557496-01 02.03.04.05.06.07

Method Blank (MB)

(MB) R3873503-4 12/14/22 13:51

Analyte	MB Result pCi/l	MB Uncertainty +/-	MB Qualifier	MB MDA pCi/l
Radium-228	0.349	0.317		0.561
(f) Barium	66.7	66.7		
(f) Yttrium	84.7	84.7		

L1557496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1557496-01 12/16/22 14:24 • (DUP) R3873503-5 12/16/22 14:24

Analyte	Original Result pCi/l	Original Uncertainty +/-	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty +/-	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.775	0.368	0.641	-0.160	0.471	0.641	1	200	1.56	U	20	3
(f) Barium	67.7			74.0								
(f) Yttrium	115			112								

Laboratory Control Sample (LCS)

(LCS) R3873503-1 12/11/22 09:18

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.00	100	80.0-120	
(f) Barium		94.6			
(f) Yttrium		113			

L1556623-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1556623-01 12/11/22 09:18 • (MS) R3873503-2 12/11/22 09:18 • (MSD) R3873503-3 12/11/22 09:18

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MS RER	RPD Limits %
Radium-228	10.0	2.20	10.1	10.6	79.3	83.9	1	70.0-130			20
(f) Barium		106		107	106	107					4.44
(f) Yttrium		94.9		113	113	113					

WG1971826

Radiochemistry by Method SM7500Ra B M

QUALITY CONTROL SUMMARY

L1557496-01.02.03.04.05.06.07

Method Blank (MB)

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty +/-	MB MDA pCi/l
Radium-226	0.0202	U	0.0434	0.0720
(f) Barium-133	94.6		94.6	

L1557485-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1557485-01 12/15/22 15:15 • (DUP) R3873527-5 12/15/22 15:15

Analyte	Original Result pCi/l	Original Uncertainty +/-	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty +/-	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.241	0.203	0.227	0.0398	0.174	0.227	1	143	0.753	U	20	3
(f) Barium-133	88.0			82.2								

Laboratory Control Sample (LCS)

(LCS) R3873527-2 12/15/22 15:15

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.69	93.4	80.0-120	
(f) Barium-133			94.4		

L1556664-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1556664-01 12/15/22 15:15 • (MS) R3873527-3 12/15/22 15:15 • (MSD) R3873527-4 12/15/22 15:15

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.0615	18.8	18.3	93.5	91.3	1	75.0-125			2.37		20
(f) Barium-133		83.0			82.8	87.8							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec	Recovery
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

ACCREDITATIONS & LOCATIONS

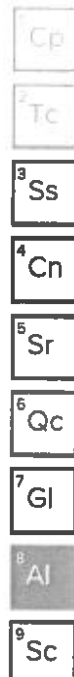
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-05-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	89-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	1742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ²	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ¹ ⁶	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ¹ ⁴	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁶	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA - ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA - ISO 17025 ⁶	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

⁶ Not all certifications held by the laboratory are applicable to the results reported in the attached report.

⁶ Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Internal Transfer Chain of Custody

H1160



State of Origin: **IL**
 Cert. Needed: YES NO

Owner Received: **11/4/2022**
 Date: **12/5/2022**

Results Requested By: **12/5/2022**

Workorder Name: **Sikeston**
 Subcontract To:

Workorder: **FK01102**

Pace Analytical Services, LLC
 12065 Lebanon Rd
 Mt Juliet, TN
 (615)759-5858

Pace Analytical - IL/MO
 2231 W. Altoner Drive
 Peoria, IL 61615
 800-752-6651

U55796

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Container	LAB USE ONLY
1	MM-1R	GRAB	11/2/2022 9:51	FK01102-01	GW		01
2	MM-2	GRAB	11/2/2022 8:21	FK01102-02	GW		02
3	MM-3	GRAB	11/2/2022 7:36	FK01102-03	GW		03
4	MM-7	GRAB	11/2/2022 10:45	FK01102-04	GW		04
5	MM-9	GRAB	11/2/2022 11:25	FK01102-05	GW		05
6	DUPLICATE	GRAB	11/2/2022 0:00	FK01102-06	GW		06
7	FIELD BLANK	GRAB	11/2/2022 10:45	FK01102-07	GW		07
8							
9							
10							

Radium 226/228

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	11/4/2022	<i>[Signature]</i>	11/02/2022	
2					
3					

Cooler Temperature on Receipt: _____ °C Custody Seal Y or N _____ Received on Ice Y or N _____ Sample Intact Y or N _____

In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1

Coal
7000
18.6 to 18.6 MPA

Sample Receipt Checklist

COC Seal Present/Intact: Y N If Applicable

COC Signed/Accurate: Y N

Bottles arrive intact: Y N VOA Zero Headpace: Y N

Correct bottles used: Y N Pres. Correct/Check: Y N

Sufficient volume sent: Y N

RAD Screen <0.5 mB/hit: Y N



PACE ANALYTICAL SERVICES
 WWW.PACE-LABS.COM

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES or IND/COMM

CHAIN OF CUSTODY RECORD
 STATE WHERE SAMPLE COLLECTED **MO**

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT SIKESTON BMU POWER STATION ADDRESS: 1551 W WAKEFIELD CITY: SIKESTON, MO 63801 CONTACT PERSON: MR LUKE ST MARY	PROJECT NUMBER PHONE NUMBER: 573-475-3131	PROJECT LOCATION FLY ASH APP III & IV E-MAIL	PURCHASE ORDER # DATE SHIPPED	3 ANALYSIS REQUESTED CL, F, SO4, TDS, B, CA SB, AS, BA, BE, CD, CO CR+3, PB, LI, HG, MO SE, TL, RAD 226/228	4 (FOR LAB USE ONLY) LOGIN: FK0102-7 LOGGED BY: [Signature] SIKESTON BMU, SIKESTON POWER STATION SIKESTON FLY ASH 2022 GJ SCHINDLER						
	SAMPLER (PLEASE PRINT) Justin Lowes	SAMPLER'S SIGNATURE [Signature]	MATRIX TYPES: WA- WASTEWATER DW- DOMESTIC WATER CW- COUNTRY WATER WW- WASTE MS- NON AQUEOUS SOLID LNT-LEACHATE OL- OIL SO- SOL SOL- SOLID								
	2 SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)		DATE COLLECTED TIME COLLECTED SAMPLE TYPE GRAB COMP MATRIX TYPE BOTTLE COUNT PRES CODE QUANTITY PROVIDED			REMARKS					
MW-1R	11-2-22 0951	X		GW	3	3,6	X	X	X	X	
MW-2	11-2-22 0821	X		GW	3	3,6	X	X	X	X	
MW-3	11-2-22 0736	X		GW	3	3,6	X	X	X	X	
MW-7	11-2-22 1045	X		GW	3	3,6	X	X	X	X	
MW-9	11-2-22 1125	X		GW	3	3,6	X	X	X	X	
DUPLICATE	11-2-22	X		GW	3	3,6	X	X	X	X	
FIELD BLANK	11-2-22 1045	X		GW	3	3,6	X	X	X	X	
CHEMICAL PRESERVATION CODES: 1-HCL 2-H2SO4 3-HNO3 4-NAOH 6-NA2S2O3 8-UNPRESERVED 7-OTHER											
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH (RUSH TAX IS SUBJECT TO PACE LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE EMAIL IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE:				6 I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may [X] be acceptable to report to all regulatory authorities. PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS)							
7 RELINQUISHED BY: (SIGNATURE) Ashish Patel		DATE TIME		RECEIVED BY: (SIGNATURE)		DATE TIME		8 COMMENTS: (FOR LAB USE ONLY)			
RELINQUISHED BY: (SIGNATURE)		DATE TIME		RECEIVED BY: (SIGNATURE)		DATE TIME		SAMPLE TEMPERATURE UPON RECEIPT: 51.4 °C CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE(S) RECEIVED ON ICE SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED YES DATE AND TIME TAKEN FROM SAMPLE BOTTLE: 11/4/22			
RELINQUISHED BY: (SIGNATURE)		DATE TIME		RECEIVED BY: (SIGNATURE)		DATE TIME		COMMENTS: (FOR LAB USE ONLY)			

Appendix 3

Laboratory Quality Assurance/Quality Control Data
9th CCR Compliance Sampling Event
(1st 2023 Semi-annual Detection
and Assessment Monitoring Event)
March 12, 2023



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

(800)752-6651

NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050

TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17558

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615

TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Gail Schindler



Certified by: Gail Schindler, Project Manager



April 04, 2023

Gail J. Schindler
PDC Laboratories
2231 W. Altorfer Drive
Peoria, IL 61615

RE: Project: GC02828
Pace Project No.: 30572868

Dear Gail Schindler:

Enclosed are the analytical results for sample(s) received by the laboratory on March 23, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
• Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carla Cmar
carla.cmar@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Valerie Bennett, PDC Laboratories
Ms. Janet Clutters, PDC Laboratories
Chenise Lambert-Sykes, PDC Laboratories, Inc.
Margie Nobiling, PDC Laboratories



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: GC02828
Pace Project No.: 30572868

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42708
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C888
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: GC02828
Pace Project No.: 30572868

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30572868001	MW-1R	Water	03/12/23 11:07	03/23/23 09:40
30572868002	MW-2	Water	03/12/23 09:58	03/23/23 09:40
30572868003	MW-3	Water	03/12/23 08:31	03/23/23 09:40
30572868004	MW-7	Water	03/12/23 13:21	03/23/23 09:40
30572868005	MW-9	Water	03/12/23 14:04	03/23/23 09:40
30572868006	DUPLICATE	Water	03/12/23 00:00	03/23/23 09:40
30572868007	FIELD BLANK	Water	03/12/23 09:58	03/23/23 09:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: GC02828
 Pace Project No.: 30572868

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30572868001	MW-1R	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30572868002	MW-2	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30572868003	MW-3	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30572868004	MW-7	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30572868005	MW-9	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30572868006	DUPLICATE	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30572868007	FIELD BLANK	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: GC02828
Pace Project No.: 30572868

Method: EPA 903.1
Description: 903.1 Radium 226
Client: PDC/Pace Analytical Services (Peoria, IL)
Date: April 04, 2023

General Information:

7 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: GC02828
Pace Project No.: 30572868

Method: EPA 904.0
Description: 904.0 Radium 228
Client: PDC/Pace Analytical Services (Peoria, IL)
Date: April 04, 2023

General Information:

7 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: GC02828
Pace Project No.: 30572868

Method: Total Radium Calculation
Description: Total Radium 228+226
Client: PDC/Pace Analytical Services (Peoria, IL)
Date: April 04, 2023

General Information:

7 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GC02828
Pace Project No.: 30572868

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-1R Lab ID: 30572868001 Collected: 03/12/23 11:07 Received: 03/23/23 09:40 Matrix: Water						
PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0842 ± 0.548 (1.19) C:NA T:93%	pCi/L	04/03/23 14:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.03 ± 0.454 (0.742) C:75% T:88%	pCi/L	04/03/23 12:06	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.03 ± 1.00 (1.93)	pCi/L	04/04/23 15:51	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-2 Lab ID: 30572868002 Collected: 03/12/23 09:58 Received: 03/23/23 09:40 Matrix: Water						
PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.150 ± 0.587 (1.25) C:NA T:101%	pCi/L	04/03/23 14:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.630 ± 0.406 (0.760) C:72% T:87%	pCi/L	04/03/23 15:29	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.630 ± 0.993 (2.01)	pCi/L	04/04/23 15:51	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-3 Lab ID: 30572868003 Collected: 03/12/23 08:31 Received: 03/23/23 09:40 Matrix: Water						
PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.221 ± 0.559 (1.04) C:NA T:99%	pCi/L	04/03/23 14:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.558 ± 0.359 (0.667) C:79% T:87%	pCi/L	04/03/23 15:39	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.779 ± 0.918 (1.71)	pCi/L	04/04/23 15:51	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GC02828
Pace Project No.: 30572868

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-7 Lab ID: 30572868004 Collected: 03/12/23 13:21 Received: 03/23/23 09:40 Matrix: Water						
PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0773 ± 0.687 (1.16) C:NA T:93%	pCi/L	04/03/23 14:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.899 ± 0.402 (0.651) C:80% T:88%	pCi/L	04/03/23 15:30	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.976 ± 0.989 (1.81)	pCi/L	04/04/23 15:51	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-9 Lab ID: 30572868005 Collected: 03/12/23 14:04 Received: 03/23/23 09:40 Matrix: Water						
PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.461 ± 0.554 (0.903) C:NA T:98%	pCi/L	04/03/23 14:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.05 ± 0.465 (0.771) C:80% T:87%	pCi/L	04/03/23 15:30	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.50 ± 1.02 (1.67)	pCi/L	04/04/23 15:51	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DUPLICATE Lab ID: 30572868006 Collected: 03/12/23 00:00 Received: 03/23/23 09:40 Matrix: Water						
PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0795 ± 0.412 (0.954) C:NA T:97%	pCi/L	04/03/23 14:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.947 ± 0.408 (0.652) C:82% T:90%	pCi/L	04/03/23 15:30	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.947 ± 0.820 (1.61)	pCi/L	04/04/23 15:51	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GC02828
Pace Project No.: 30572868

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.409 ± 0.737 (1.30) C:NA T:101%	pCi/L	04/03/23 14:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.353 ± 0.301 (0.601) C:85% T:90%	pCi/L	04/03/23 15:31	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.762 ± 1.04 (1.90)	pCi/L	04/04/23 15:51	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: GC02828
 Pace Project No.: 30572868

QC Batch:	577101	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 30572868001, 30572868002, 30572868003, 30572868004, 30572868005, 30572868006, 30572868007

METHOD BLANK: 2801909 Matrix: Water
 Associated Lab Samples: 30572868001, 30572868002, 30572868003, 30572868004, 30572868005, 30572868006, 30572868007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.178 ± 0.350 (0.639) C:NA T:101%	pCi/L	04/03/23 13:46	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: GC02828
Pace Project No.: 30572868

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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Internal Transfer Chain of Custody

State of Origin: IL YES NO
 Cert. Needed: YES NO



Owner Received: Gail Schindler
 Date: 3/15/2023
 Results Requested By: 4/20/2023

Requested Analysis: Radium 226/228

Workorder Name: SIKESTON

Workorder: GC02828

Report To: Gail Schindler

Subcontractor: Pace Analytical Services, LLC
 1638 Roseytown Rd - Suites 2,3,4
 Greensburg, PA 15601
 (724)850-5600

Item	Sample ID	Sample Type	Collected Date/Time	Lab ID	Matrix	Preserved Containers	LAB USE ONLY
1	MW-1R	GRAB	3/12/2023 11:07	GC02828-01	GW		001
2	MW-2	GRAB	3/12/2023 9:58	GC02828-02	GW		002
3	MW-3	GRAB	3/12/2023 8:31	GC02828-03	GW		003
4	MW-7	GRAB	3/12/2023 13:21	GC02828-04	GW		004
5	MW-9	GRAB	3/12/2023 14:04	GC02828-05	GW		005
6	DUPLICATE	GRAB	3/12/2023 0:00	GC02828-06	GW		006
7	FIELD BLANK	GRAB	3/12/2023 9:58	GC02828-07	GW		007
8							
9							
10							

Transfers	Received By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	3/13/23 11:12	<i>[Signature]</i>		Needs reported as 226, 228 and also combined 226/228 include QC summary
2					
3					

Cooler Temperature on Receipt: _____ °C
 Custody Seal Y or N: Y N
 Received on Ice Y or N: Y N
 Sample Intact Y or N: Y N
 ***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1

WO#: 30572868

30572868



DC#_TRIE: ENV-FRM-GBUR-0088 V04_Sample Condition Upon Receipt-
Pittsburgh

Effective Date: 02/03/2023

WO#: 30572868

PH: CMC

Due Date: 04/07/23

CLIENT: PDC

Client Name: Pace / PDC

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking Number: 1Z6472960370245177

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Thermometer Used: _____ Type of Ice: Wet Blue None

Examined By	PS
Labeled By	PS
Temped By	

Cooler Temperature: Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C
Temp should be above freezing to 5°C

Comments:				pH paper Lot#	D.P.D. Residual Chlorine Lot #
	Yes	No	NA		
Chain of Custody Present	/			1003121	
Chain of Custody Filled Out: -Were client corrections present on COC	/	/			
Chain of Custody Relinquished	/				
Sampler Name & Signature on COC:	/	/			
Sample Labels match COC: -Includes date/time/ID	/				
Matrix:	WT				
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):		/			
Rush Turn Around Time Requested:		/			
Sufficient Volume:	/				
Correct Containers Used: -Pace Containers Used	/	/			
Containers Intact:	/				
Orthophosphate field filtered:			/		
Hex Cr Aqueous samples field filtered:			/		
Organic Samples checked for dechlorination			/		
Filtered volume received for dissolved tests:			/		
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	/				
All containers meet method preservation requirements:	/			PH=2 Initial when completed PS	Date/Time of Preservation
8260C/D: Headspace in VOA Vials (> 6mm)			/	Lot# of added Preservative	
624.1: Headspace in VOA Vials (0mm)			/		
Trip Blank Present:			/		Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mrem/hr.	/			Initial when completed PS	Date: 3/24/23 Survey Meter SN: 1563
Comments:					

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Client

Site GC02828

Page 1 of 1

Profile Number 18843

Notes

Sample Line Item	Matrix	Amber Glass										Plastic										Vials					Other				
		AG1H	AG3S	AG3U	AG5U	AG5T	BP1N	BP1U	BP2S	BP2U	BP3G	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WG7U	WGKU	ZPLC	GCUB	GJN	12GN	GN	BGU				
001	WT																														
002																															
003																															
004																															
005																															
006																															
007																															

WO#: 30572868

PH: CHC Due Date: 04/07/23

CLIENT: PDC

Container Codes

Glass	
GJN	1 Gallon Jug with HNO3
AG5U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
GJN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass NA Thiosulfate
BP1U	1L clear glass unpreserved
3S	250mL amber glass H2SO4
3U	250mL amber glass unpreserved

Plastic/Misc.	
GCUB	1 gallon cubtainer
12GN	1/2 gallon cubtainer
SP5T	120mL collform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic NAOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

Appendix 4

Fly Ash Pond Groundwater Quality Data Base

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Fly Ash Pond Scott County, Missouri
CCR Groundwater Data Base**

Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)							Appendix IV Monitoring Constituents (Assessment)														
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride ^{6,7} mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Fluoride ^{6,7} mg/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226/228 (Combined) pCi/L
MW-1 (DG)	3/21/2018	Background	249.6	16.33	-108.8	0.32	28.35	7.31	3.0	<0.250	22	150	360	21	<3.0	<1.0	120	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.353 (ND)
	4/15/2018	Background	233.8	15.17	-122.7	0.60	14.46	7.36	2.8	0.316	22	120	450	29	<3.0	<1.0	120	<1.0	<1.0	<4.0	<2.0	0.316	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.478 (ND)
	5/23/2018	Background	220.0	18.42	-133.3	0.54	12.11	7.35	3.3	<0.250	20	140	420	25	<3.0	<1.0	120	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.378 (ND)
	6/27/2018	Background	227.4	18.59	-149.3	0.30	11.07	7.27	6.9	<0.250	20	120	470	28	<3.0	<1.0	140	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.065 (ND)
	8/1/2018	Background	264.3	18.26	-138.0	0.56	7.52	7.16	5.6	<0.250	23	190	440	30	<3.0	<1.0	140	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.893(ND)
	9/5/2018	Background	281.3	18.70	-132.1	0.41	3.20	7.14	7.0	0.252	24	140	490	34	<3.0	<1.0	150	<1.0	<1.0	<4.0	<2.0	0.252	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.100
	11/6/2018	Background	311.8	17.86	-128.8	1.00	1.30	7.11	9.0	0.262	26	200	480	38	<3.0	<1.0	170	<1.0	<1.0	<4.0	<2.0	0.262	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.282
	12/12/2018	Background	317.5	16.30	-96.3	0.45	2.27	7.06	9.1	0.256	30	140	440	38	<3.0	<1.0	180	<1.0	<1.0	<4.0	<2.0	0.256	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.423 (ND)
	3/27/2019	Detection 1	361.2	16.60	-101.9	0.36	53.91	7.13	7.9	<0.250	27	210	440	41	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/24/2019	Detection 2	372.9	18.22	-127.5	0.56	0.53	7.0	4.3	0.260	35	(NA)	500	47	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.260	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	10/22/2019		418.0	17.10	-113.4	0.32	0.96	(NA)	(NA)	(NA)	(NA)	180	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/6/2020	Detection 3	416.5	17.32	-117.7	0.31	4.38	7.1	5.4	0.255	39	230	520	48	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.255	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	5/21/2020		524.7	16.56	-125.2	3.25	3.32	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/22/2020	Detection 4	556.9	17.67	-95.2	4.23	0.51	7.2	5.9	<0.250	67	310	(NA)	67	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	12/8/2020		462.1	15.90	80.1	4.19	2.44	(NA)	(NA)	(NA)	(NA)	(NA)	440	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/17/2021	Detection 5	431.1	15.61	-77.5	17.90	10.92	7.3	3.5	<0.250	37	200	500	53	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	6/15/2021		407.8	16.83	-58.6	3.71	4.30	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	10/20/2021	Detection 6	362.8	14.43	-91.5	4.51	1.31	7.33	3.1	<0.250	28	230	410	41	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

Notes:

- All data transcribed from analytical lab data sheets or field notes.
- Less than (<) symbol denotes concentration not detected at or above reportable limits. Bold values indicate analyte detected above reporting limit.
- (ND) denotes Radium 226 and 228 (combined) concentration not detected above minimum detectable concentration.
- (NA) denotes analysis not conducted, not available at time of report, or not confirmed/replaced by resampling.
- Background monitoring per USEPA 40 CFR 257.93.
- Detection monitoring per USEPA 40 CFR 257.94. Detection Monitoring database comprised of analytical results for pH, Chloride, Fluoride, Sulfate, TDS, Boron, and Calcium.
- Assessment monitoring per USEPA 40 CFR 257.95. Note Fluoride included in both Assessment and Detection Monitoring Constituents, but data screening is conducted over a different range.
- Shaded cells indicate resampling occurred. Censored data (not confirmed or replaced by resample data) indicated with (NA) in shaded cell.
- Red text with black border represent outlier values identified by Sanitas (Dixon's Test; n<25).
- Blue shaded cells with black border indicate data censored for removal of trend identified by Sanitas (Sen's Slope / Mann-Kendall).
- Red Cells with thick outline denote Statistically Significant Increase over background.

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Fly Ash Pond Scott County, Missouri
CCR Groundwater Data Base**

Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)							Appendix IV Monitoring Constituents (Assessment)														
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride ^{6,7} mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Fluoride ^{6,7} mg/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226/228 (Combined) pCi/L
MW-1R (DG)	10/20/2021	Background	511.3	15.25	32.2	6.41	4.62	6.55	11	<0.250	130	330	2200	64	<3.0	1.3	40	<1.0	<1.0	<4.0	6.3	<0.250	<1.0	10	<0.20	160	<1.0	<1.0	0.184 (ND)
	11/1/2021	Background	532.4	12.98	16.9	0.60	5.38	6.55	12	0.286	110	330	2100	58	<3.0	1.5	38	<1.0	<1.0	<4.0	5.4	0.286	<1.0	<10	<0.20	160	<1.0	<1.0	0.600(ND)
	11/16/2021	Background	540.4	11.47	41.9	0.94	1.27	6.54	15	0.366	150	360	2800	73	<3.0	<1.0	49	<1.0	<1.0	<4.0	8.5	0.366	<1.0	10	<0.20	170	<1.0	<1.0	1.065(ND)
	12/7/2021	Background	576.3	9.14	11.2	0.98	0.91	6.58	13	<0.250	140	400	2300	61	<3.0	<1.0	37	<1.0	<1.0	<4.0	7.1	<0.250	<1.0	11	<0.20	190	<1.0	<1.0	0.53(ND)
	12/27/2021	Background	757.3	8.40	21.7	1.28	1.32	6.48	17	<0.250	210	390	3100	97	<3.0	<1.0	52	<1.0	<1.0	<4.0	9.6	<0.250	<1.0	19	<0.20	200	<1.0	<1.0	0.430(ND)
	1/17/2022	Background	707.3	4.56	-0.3	1.02	1.46	6.56	17	<0.250	190	440	2800	89	<3.0	<1.0	44	<1.0	<1.0	<4.0	7.9	<0.250	<1.0	17	<0.20	200	<1.0	<1.0	0.556(ND)
	2/7/2022	Background	794.4	3.14	21.9	0.84	1.04	6.55	19	<0.250	200	450	3500	90	<3.0	<1.0	51	<1.0	<1.0	<4.0	13	<0.250	<1.0	11	<0.20	210	<1.0	<1.0	0.364(MD)
	3/2/2022	Background	515.0	2.07	36.1	0.91	4.31	6.57	12	<0.250	130	290	2800	78	<3.0	<1.0	41	<1.0	<1.0	<4.0	8.6	<0.250	<1.0	<10	<0.20	190	<1.0	<1.0	1.300
	4/9/2022	Detection 1	671.2	-1.69	52.4	1.04	1.59	6.66	12	<0.250	150	300	3,100	73	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/2/2022		687.8	18.18	60.3	0.56	4.87	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/2/2022	Det 2/ Ass 1	609.3	17.48	7.6	0.51	2.79	6.55	14	<0.250	170	440	2,400	72	<3.0	<1.0	30	<1.0	<1.0	<4.0	8.5	<0.250	<1.0	<10	<0.20	150	<1.0	<1.0	0.853
	3/12/2023	Det 3/ Ass 2	577.8	14.68	31.0	0.38	1.06	6.60	10	<0.250	140	300	3,000	70	(NA)	(NA)	52	(NA)	(NA)	(NA)	7.9	<0.250	(NA)	<20	(NA)	180	<1.0	(NA)	1.03(ND)

Notes:

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2. Less than (<) symbol denotes concentration not detected at or above reportable limits. Bold values indicate analyte detected above reporting limit.
3. (ND) denotes Radium 226 and 228 (combined) concentration not detected above minimum detectable concentration.
4. (NA) denotes analysis not conducted, not available at time of report, or not confirmed/replaced by resampling.
5. Background monitoring per USEPA 40 CFR 257.93.
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8. Shaded cells indicate resampling occurred. Censored data (not confirmed or replaced by resample data) indicated with (NA) in shaded cell.
9. Red text with black border represent outlier values identified by Sanitas (Dixon's Test; n<25).
10. Blue shaded cells with black border indicate data censored for removal of trend identified by Sanitas (Sen's Slope / Mann-Kendall).
11. Red Cells with thick outline denote Statistically Significant Increase over background.

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Fly Ash Pond Scott County, Missouri
CCR Groundwater Data Base**

Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)							Appendix IV Monitoring Constituents (Assessment)																
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride ^{6,7} mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Fluoride ^{6,7} mg/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226/228 (Combined) pCi/L		
MW-2 (UG)	3/21/2018	Background	157.8	15.86	65.3	2.72	3.41	6.35	3.4	<0.250	16	110	28	16	<3.0	<1.0	130	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.896 (ND)		
	4/15/2018	Background	159.8	14.04	64.7	0.87	4.05	6.36	2.3	0.335	18	63	23	14	<3.0	<1.0	120	<1.0	<1.0	<4.0	<2.0	0.335	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.483 (ND)		
	5/23/2018	Background	175.3	17.40	121.7	0.58	1.72	6.18	4.2	<0.250	20	100	36	18	<3.0	<1.0	170	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.199 (ND)		
	6/27/2018	Background	172.1	18.38	243.8	0.27	5.30	6.16	4.7	<0.250	18	87	42	19	<3.0	<1.0	180	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	1.4	<1.0	1.006 (ND)		
	8/1/2018	Background	184.2	18.48	80.7	0.75	2.61	6.11	5.9	<0.250	19	140	43	20	<3.0	<1.0	200	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	2.0	<1.0	0.751(ND)		
	9/5/2018	Background	187.9	19.26	83.8	0.68	2.58	6.09	6.8	<0.250	18	110	46	22	<3.0	<1.0	220	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	2.2	<1.0	1.734		
	11/6/2018	Background	174.3	17.77	79.7	0.60	1.19	6.19	4.2	0.272	19	100	43	20	<3.0	<1.0	170	<1.0	<1.0	<4.0	<2.0	0.272	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.583		
	12/12/2018	Background	186.3	16.78	82.3	0.67	5.78	6.13	5.5	0.254	21	140	48	21	<3.0	<1.0	210	<1.0	<1.0	<4.0	2.0	0.254	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.18 (ND)		
	3/27/2019	Bkg / Det 1	165.9	15.87	70.4	0.72	2.60	6.25	3.3	<0.250	20	130	31	17	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/24/2019	Bkg / Det 2	189.4	18.75	71.3	0.61	1.16	6.1	6.6	<0.250	17	130	58	22	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/6/2020	Bkg / Det 3	148.7	16.04	58.2	1.36	4.70	6.3	2.1	0.336	16	140	(NA)	15	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	5/21/2020		168.1	16.47	-0.8	6.90	2.76	(NA)	(NA)	(NA)	(NA)	(NA)	36	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/22/2020	Bkg / Det 4	189.8	18.34	-9.6	6.52	0.62	6.2	4.8	<0.250	17	150	(NA)	21	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	12/8/2020		186.5	16.90	223.4	5.56	0.79	(NA)	(NA)	(NA)	(NA)	(NA)	49	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/17/2021	Bkg / Det 5	178.9	14.70	21.7	12.02	1.68	6.3	3.8	<0.250	17	(NA)	41	19	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	6/15/2021		165.4	17.03	55.1	18.10	1.55	(NA)	(NA)	(NA)	(NA)	(NA)	350	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	10/20/2021	Detection 6	188.0	14.85	19.6	5.97	1.36	6.25	4.2	<0.250	15	140	(NA)	19	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	12/27/2021		161.0	8.90	17.7	0.88	1.53	(NA)	(NA)	(NA)	(NA)	(NA)	43	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/9/2022	Detection 7	156.4	-1.47	71.9	1.20	3.31	(NA)	2.9	<0.250	15	150	(NA)	16	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/2/2022		185.6	18.26	83.4	0.28	2.95	6.21	(NA)	(NA)	(NA)	(NA)	53	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
11/2/2022	Det 8/ Ass 1	218.4	17.64	101.7	0.74	6.51	6.23	7.4	<0.250	15	180	81	24	<3.0	<1.0	220	<1.0	<1.0	<4.0	2.4	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.913			
3/12/2023	Det 9/ Ass 2	120.5	15.40	54.5	0.61	3.33	6.51	1.3	<0.250	8.7	700	29	12	(NA)	(NA)	100	(NA)	(NA)	(NA)	<2.0	<0.250	(NA)	<20	(NA)	<1.0	<1.0	(NA)	0.630(ND)			

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Well ID	Date	Monitoring Purpose	Field Parameters						Appendix III Monitoring Constituents (Detection)						Appendix IV Monitoring Constituents (Assessment)															
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride ^{6,7} mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Fluoride ^{6,7} mg/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226/228 (Combined) pCi/L	
MW-3 (UG)	3/21/2018	Background	220.7	15.22	40.7	0.38	14.88	6.57	1.4	0.274	18	120	17	19	<3.0	<1.0	96	<1.0	<1.0	<4.0	<2.0	0.274	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.240 (ND)	
	4/15/2018	Background	224.7	14.05	39.2	0.45	10.81	6.48	1.5	0.386	20	120	25	18	<3.0	<1.0	100	<1.0	<1.0	<4.0	<2.0	0.386	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.475 (ND)	
	5/23/2018	Background	221.3	17.77	43.2	0.39	13.39	6.49	1.4	<0.250	20	100	20	18	<3.0	<1.0	100	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.994 (ND)	
	6/27/2018	Background	198.7	17.81	123.8	0.45	17.03	6.45	1.2	<0.250	17	110	27	18	<3.0	<1.0	100	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.214 (ND)	
	8/1/2018	Background	209.2	16.74	41.4	0.43	10.96	6.55	1.3	<0.250	17	150	21	18	<3.0	<1.0	91	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.315(ND)	
	9/5/2018	Background	196.8	17.62	56.8	0.46	6.21	6.51	1.2	0.308	15	100	22	17	<3.0	<1.0	98	<1.0	<1.0	<4.0	<2.0	0.308	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.860(ND)	
	11/6/2018	Background	206.7	16.84	63.3	0.49	2.37	6.49	1.3	0.313	16	130	26	17	<3.0	<1.0	100	<1.0	<1.0	<4.0	<2.0	0.313	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.339	
	12/12/2018	Background	195.6	15.39	48.7	0.40	3.10	6.50	1.4	0.334	18	160	28	17	<3.0	<1.0	99	<1.0	<1.0	<4.0	<2.0	0.334	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.8 (ND)	
	3/27/2019	Bkg / Det 1	196.0	15.07	52.2	0.84	12.50	6.36	1.5	<0.250	19	140	22	16	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/24/2019	Bkg / Det 2	191.4	17.07	58.1	0.53	2.28	6.5	1.2	0.332	16	130	26	17	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.332	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/6/2020	Bkg / Det 3	198.4	14.94	61.3	1.17	7.37	6.4	(NA)	0.371	20	(NA)	29	16	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.371	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	5/21/2020		205.5	15.25	14.9	13.48	7.29	(NA)	1.5	(NA)	(NA)	130	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/22/2020	Bkg / Det 4	194.1	16.65	36.7	8.29	2.13	6.5	1.1	<0.250	17	120	31	17	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/17/2021	Bkg / Det 5	196.8	14.04	34.3	12.04	3.47	6.6	<1.0	<0.250	15	150	16	17	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	10/20/2021	Detection 6	189.0	12.85	33.6	10.32	1.35	6.52	<1.0	<0.250	13	130	30	14	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/9/2022	Detection 7	197.6	-2.74	66.7	2.86	2.58	6.67	<1.0	<0.250	13	130	(NA)	15	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	<0.250	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/2/2022		163.7	16.97	52.6	0.47	4.88	(NA)	(NA)	(NA)	(NA)	(NA)	21	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/2/2022	Det 8/ Ass 1	161.8	16.28	9.1	0.36	9.56	6.93	<1.0	<0.250	10	160	29	17	<3.0	<1.0	73	<1.0	<1.0	<4.0	<2.0	<0.250	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.16	
3/12/2023	Det 9/ Ass 2	177.2	14.09	73.2	1.35	3.90	6.51	<1.0	<0.250	13	93 H	31	14	(NA)	(NA)	110	(NA)	(NA)	(NA)	<2.0	<0.250	(NA)	<20	(NA)	<1.0	<1.0	(NA)	0.779(ND)		

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			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride ^{6,7} mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Fluoride ^{6,7} mg/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226/228 (Combined) pCi/L	
MW-7 (DG)	3/21/2018	Background	901.8	14.85	41.8	0.58	1.61	7.30	12	0.752	190	440	1900	110	<3.0	<1.0	41	<1.0	<1.0	<4.0	<2.0	0.752	<1.0	25	<0.20	160	5.4	<1.0	0.883 (ND)	
	4/15/2018	Background	936.4	14.04	40.0	0.51	0.96	7.24	12	0.794	210	420	1900	110	<3.0	<1.0	43	<1.0	<1.0	<4.0	2.0	0.794	<1.0	19	<0.20	170	2.3	<1.0	0.0619 (ND)	
	5/23/2018	Background	899.1	18.05	46.5	0.38	0.25	7.25	11	0.650	220	480	1800	120	<3.0	<1.0	44	<1.0	<1.0	<4.0	<2.0	0.650	<1.0	22	<0.20	170	28	<1.0	0.896 (ND)	
	6/27/2018	Background	891.4	17.91	66.4	0.22	5.84	7.22	11	0.592	220	500	2000	140	<3.0	<1.0	48	<1.0	<1.0	<4.0	2.1	0.592	<1.0	26	<0.20	160	53	<1.0	1.153 (ND)	
	8/1/2018	Background	958.3	18.03	53.0	0.28	1.77	7.22	9.1	0.608	230	590	2300	140	<3.0	<1.0	47	<1.0	<1.0	<4.0	2.2	0.608	<1.0	30	<0.20	160	54	<1.0	0.884(ND)	
	9/5/2018	Background	873.3	19.46	69.3	0.28	2.29	7.29	10	0.700	220	520	2100	130	<3.0	<1.0	47	<1.0	<1.0	<4.0	2.0	0.700	<1.0	27	<0.20	150	42	<1.0	0.652(ND)	
	11/6/2018	Background	787.9	18.12	344.4	0.44	0.44	7.35	6.3	0.693	170	450	2000	120	<3.0	<1.0	43	<1.0	<1.0	<4.0	2.0	0.693	<1.0	26	<0.20	150	15	<1.0	1.478	
	12/12/2018	Background	784.8	17.26	51.6	1.05	0.41	7.27	6.8	0.746	180	440	1800	120	<3.0	<1.0	44	<1.0	<1.0	<4.0	2.1	0.746	<1.0	26	<0.20	150	11	<1.0	0.975 (ND)	
	3/27/2019	Bkg / Det 1	797.4	16.39	52.6	0.32	2.37	7.25	6.6	0.670	170	480	1800	110	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.670	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/24/2019	Bkg / Det 2	751.7	18.88	119.0	0.31	0.59	7.3	3.9	0.684	150	470	1900	120	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.684	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/6/2020	Bkg / Det 3	865.6	16.34	68.3	0.24	1.62	7.2	4.0	0.737	200	540	2200	120	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.737	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/22/2020	Bkg / Det 4	720.5	17.40	-80.8	3.63	0.50	(NA)	3.1	0.628	110	460	1700	100	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.628	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	1/26/2021		823.6	16.40	-49.2	0.27	0.41	7.4	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/17/2021	Bkg / Det 5	870.0	15.17	-19.6	3.40	0.85	7.4	1.8	0.522	160	520	2200	120	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.522	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	10/20/2021	Bkg / Det 6	855.3	14.58	-44.0	3.75	0.75	7.35	3.7	0.375	160	520	1900	120	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.375	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/9/2022	Detection 7	958.3	-1.31	17.1	0.67	0.60	(NA)	4.1	0.488	240	510	3,200	130	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.488	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/2/2022		835.0	17.59	64.1	0.23	1.77	7.31	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/2/2022	Det 8/ Ass 1	874.2	18.26	56.8	0.44	2.60	7.36	3.1	0.476	130	500	2,300	120	<3.0	<1.0	62	<1.0	<1.0	<4.0	3.5	0.476	<1.0	33	<0.20	100	4.7	<1.0	2.31	
3/12/2023	Det 9/ Ass 2	880.0	15.09	35.7	0.49	0.54	7.40	3.7	0.635	190	520	2,600	140	(NA)	(NA)	77	(NA)	(NA)	(NA)	4.1	0.635	(NA)	27	(NA)	120	4.1	(NA)	0.976(ND)		

Notes:

- All data transcribed from analytical lab data sheets or field notes.
- Less than (<) symbol denotes concentration not detected at or above reportable limits. Bold values indicate analyte detected above reporting limit.
- (ND) denotes Radium 226 and 228 (combined) concentration not detected above minimum detectable concentration.
- (NA) denotes analysis not conducted, not available at time of report, or not confirmed/replaced by resampling.
- Background monitoring per USEPA 40 CFR 257.93.
- Detection monitoring per USEPA 40 CFR 257.94. Detection Monitoring database comprised of analytical results for pH, Chloride, Fluoride, Sulfate, TDS, Boron, and Calcium.
- Assessment monitoring per USEPA 40 CFR 257.95. Note Fluoride included in both Assessment and Detection Monitoring Constituents, but data screening is conducted over a different range.
- Shaded cells indicate resampling occurred. Censored data (not confirmed or replaced by resample data) indicated with (NA) in shaded cell.
- Red text with black border represent outlier values identified by Sanitas (Dixon's Test; n<25).
- Blue shaded cells with black border indicate data censored for removal of trend identified by Sanitas (Sen's Slope / Mann-Kendall).
- Red Cells with thick outline denote Statistically Significant Increase over background.

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Fly Ash Pond Scott County, Missouri
CCR Groundwater Data Base**

Well ID	Date	Monitoring Purpose	Field Parameters						Appendix III Monitoring Constituents (Detection)							Appendix IV Monitoring Constituents (Assessment)															
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride ^{6,7} mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Fluoride ^{6,7} mg/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226/228 (Combined) pCi/L		
MW-9 (DG)	3/21/2018	Background	979.8	14.98	25.1	0.52	1.60	7.35	17	0.929	230	480	4700	65	<3.0	<1.0	49	<1.0	<1.0	<4.0	<2.0	0.929	<1.0	19	<0.20	630	<1.0	<1.0	0.491 (ND)		
	4/15/2018	Background	972.7	14.63	24.9	1.73	2.32	7.37	21	1.09	240	460	5100	57	<3.0	1.2	49	<1.0	<1.0	<4.0	<2.0	1.09	<1.0	11	<0.20	680	<1.0	<1.0	0.982 (ND)		
	5/23/2018	Background	1020.5	18.70	25.9	0.48	0.64	7.34	17	1.05	240	520	5800	55	<3.0	<1.0	45	<1.0	<1.0	8.1	<2.0	1.05	<1.0	15	<0.20	840	<1.0	<1.0	0.359 (ND)		
	6/27/2018	Background	902.9	19.33	25.2	0.42	4.97	7.32	15	0.910	220	520	4600	73	<3.0	<1.0	47	<1.0	<1.0	<4.0	<2.0	0.910	<1.0	15	<0.20	560	<1.0	<1.0	0.327 (ND)		
	8/1/2018	Background	942.6	19.10	20.7	0.47	2.03	7.28	16	0.916	220	560	4500	76	<3.0	<1.0	47	<1.0	<1.0	<4.0	<2.0	0.916	<1.0	18	<0.20	500	<1.0	<1.0	0.418(ND)		
	9/5/2018	Background	829.2	19.85	20.9	0.45	2.68	7.31	16	0.957	180	420	4400	80	<3.0	<1.0	48	<1.0	<1.0	<4.0	<2.0	0.957	<1.0	17	<0.20	460	<1.0	<1.0	0.707(ND)		
	11/6/2018	Background	732.8	18.19	428.8	0.60	0.45	7.34	11	0.885	130	410	3800	79	<3.0	<1.0	47	<1.0	<1.0	<4.0	<2.0	0.885	<1.0	13	<0.20	420	<1.0	<1.0	1.473(ND)		
	12/12/2018	Background	742.9	16.95	36.5	0.48	0.63	7.33	12	0.972	170	360	3700	78	<3.0	<1.0	53	<1.0	<1.0	<4.0	<2.0	0.972	<1.0	17	<0.20	420	<1.0	<1.0	1.232 (ND)		
	3/27/2019	Bkg / Det 1	673.2	16.74	22.1	0.51	0.96	7.40	11	0.827	120	440	3100	70	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	9/24/2019	Bkg / Det 2	891.5	19.25	38.3	0.41	0.62	7.4	16	0.847	220	540	5000	87	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.847	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/6/2020	Bkg / Det 3	967.5	17.60	61.6	0.34	0.92	7.3	18	0.816	250	(NA)	4900	92	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.816	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	5/21/2020		1024.4	17.09	-51.1	4.95	0.59	(NA)	(NA)	(NA)	(NA)	560	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
	9/22/2020	Bkg / Det 4	891.9	17.59	-70.4	4.18	0.64	7.5	15	0.832	210	550	5000	80	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.832	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	1/26/2021		971.7	16.07	-69.1	0.34	0.47	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/17/2021	Bkg / Det 5	1098.1	15.16	-19.7	7.52	0.91	7.4	21	0.775	250	630	6200	57	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.775	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
	10/20/2021	Detection 6	1020.5	15.70	13.1	6.16	0.87	7.52	18	1.330	240	(NA)	5500	57	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	1.330	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
	12/27/2021		886.0	8.57	-21.5	0.70	0.87	(NA)	(NA)	(NA)	(NA)	520	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
	4/9/2022	Detection 7	894.7	-0.98	1.9	0.86	0.70	(NA)	11	(NA)	160	330	3,800	64	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
	8/2/2022		681.8	18.12	27.6	0.30	2.29	7.39	(NA)	0.860	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	0.860	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
	11/2/2022	Det 8/ Ass 1	785.3	19.11	6.4	0.44	2.67	7.39	12	1.03	160	540	3,000	97	<3.0	<1.0	78	<1.0	<1.0	<4.0	<2.0	1.03	<1.0	21	<0.20	210	<1.0	<1.0	0.812 (ND)		
3/12/2023	Det 9/ Ass 2	764.4	16.07	26.7	0.42	0.34	7.43	11	1.02	160	480	3,600	95	(NA)	(NA)	85	(NA)	(NA)	(NA)	<2.0	1.02	(NA)	<20	(NA)	160	<1.0	(NA)	1.50(ND)			

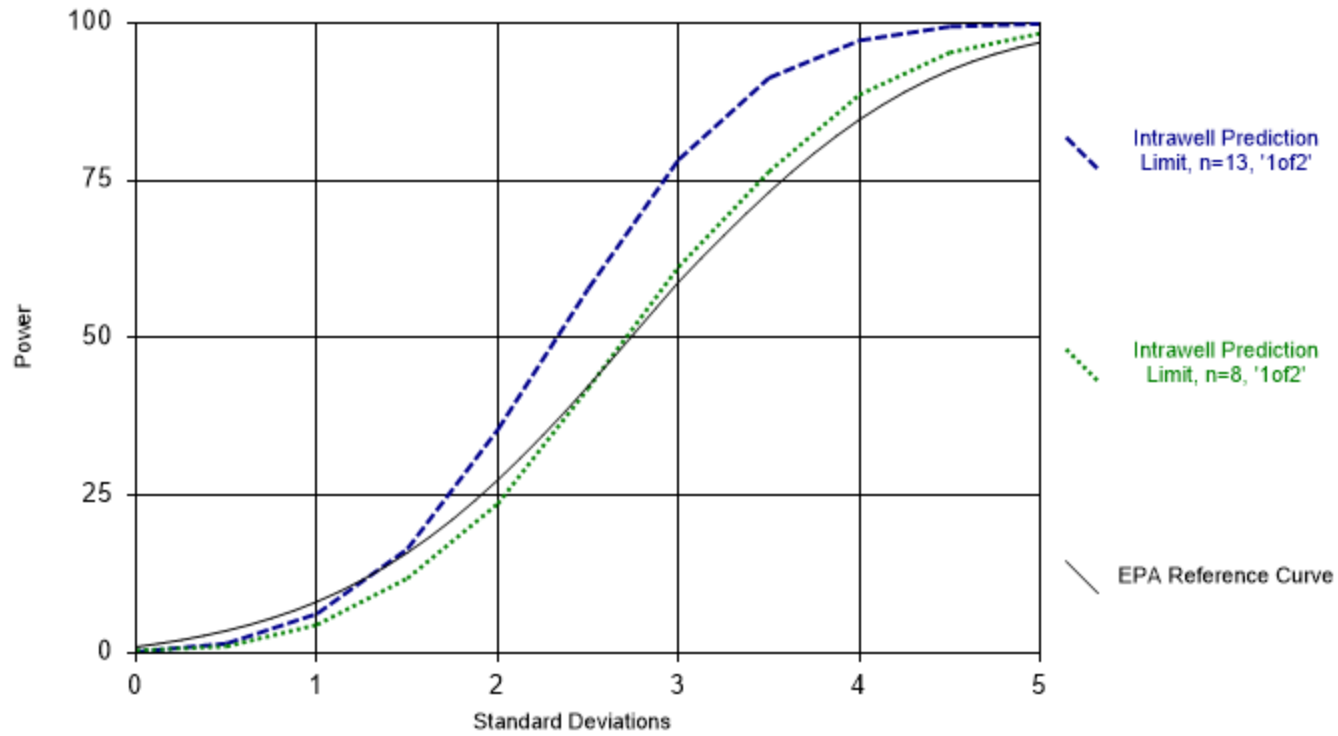
Notes:

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- Less than (<) symbol denotes concentration not detected at or above reportable limits. Bold values indicate analyte detected above reporting limit.
- (ND) denotes Radium 226 and 228 (combined) concentration not detected above minimum detectable concentration.
- (NA) denotes analysis not conducted, not available at time of report, or not confirmed/replaced by resampling.
- Background monitoring per USEPA 40 CFR 257.93.
- Detection monitoring per USEPA 40 CFR 257.94. Detection Monitoring database comprised of analytical results for pH, Chloride, Fluoride, Sulfate, TDS, Boron, and Calcium.
- Assessment monitoring per USEPA 40 CFR 257.95. Note Fluoride included in both Assessment and Detection Monitoring Constituents, but data screening is conducted over a different range.
- Shaded cells indicate resampling occurred. Censored data (not confirmed or replaced by resample data) indicated with (NA) in shaded cell.
- Red text with black border represent outlier values identified by Sanitas (Dixon's Test; n<25).
- Blue shaded cells with black border indicate data censored for removal of trend identified by Sanitas (Sen's Slope / Mann-Kendall).
- Red Cells with thick outline denote Statistically Significant Increase over background.

Appendix 5

Statistical Power Curves

Power Curve



Analysis Run 7/24/2023 2:53 PM View: AppIII&IV

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Appendix 6

Time Series Plots

100% Non-Detects

Analysis Run 6/26/2023 2:17 PM View: ApplI&IV

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Antimony (ug/L)
MW-1R

Beryllium (ug/L)
MW-1R

Cadmium (ug/L)
MW-1R

Chromium (ug/L)
MW-1R

Lead (ug/L)
MW-1R

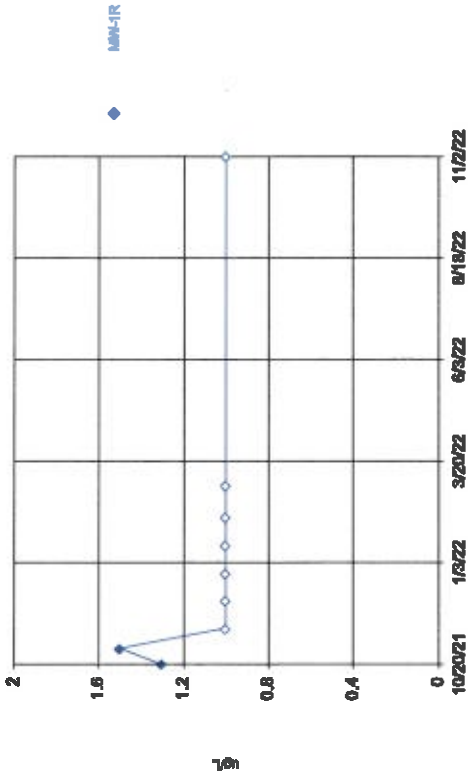
Mercury (ug/L)
MW-1R

Selenium (ug/L)
MW-1R

Thallium (ug/L)
MW-1R

Number 10.6127 Reference Element is GREDELL Engineering, US
 Hollow symbols indicate censored values.

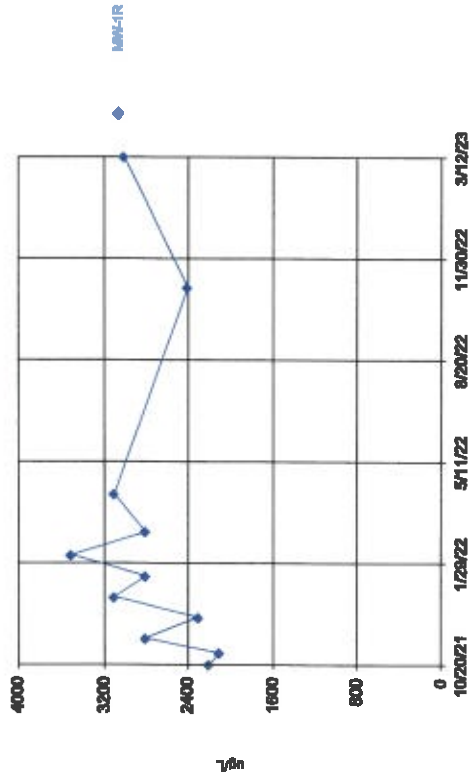
Arsenic



Time Series Analysis Run 6/26/2023 2:17 PM View: App1181V
 SRMU-Sitestation Power Station Client: GREDELL Engineering Data: SitestationFAP Background

Number 10.6127 Reference Element is GREDELL Engineering, US

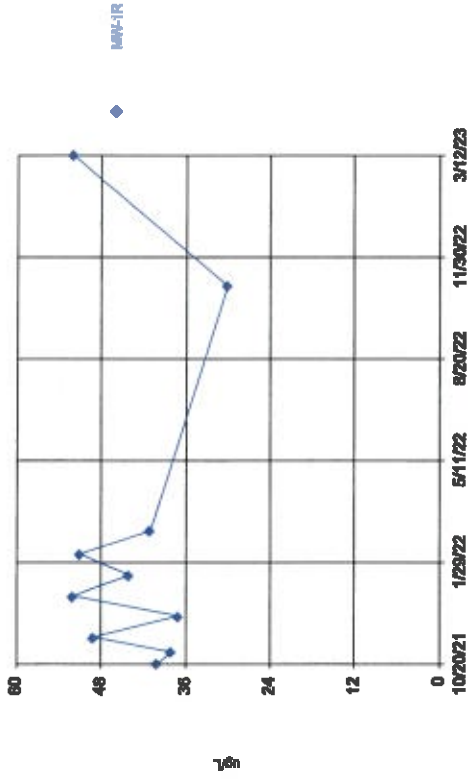
Boron



Time Series Analysis Run 6/26/2023 2:17 PM View: App1181V
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Number 10.6127 Reference Element is GREDELL Engineering, US

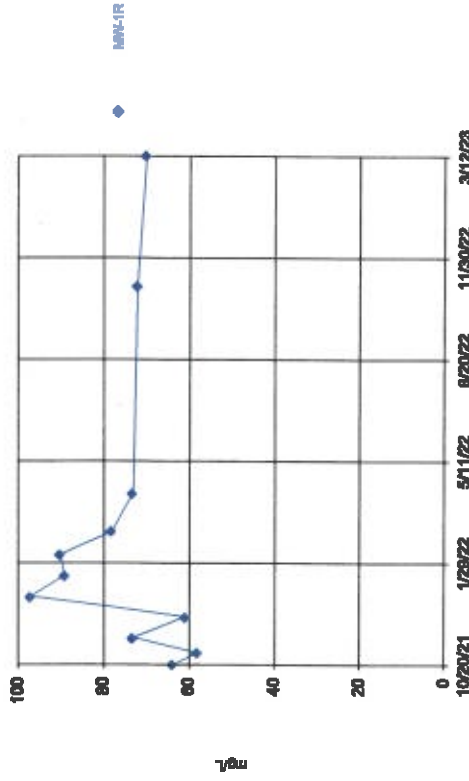
Barium



Time Series Analysis Run 6/26/2023 2:17 PM View: App1181V
 SRMU-Sitestation Power Station Client: GREDELL Engineering Data: SitestationFAP Background

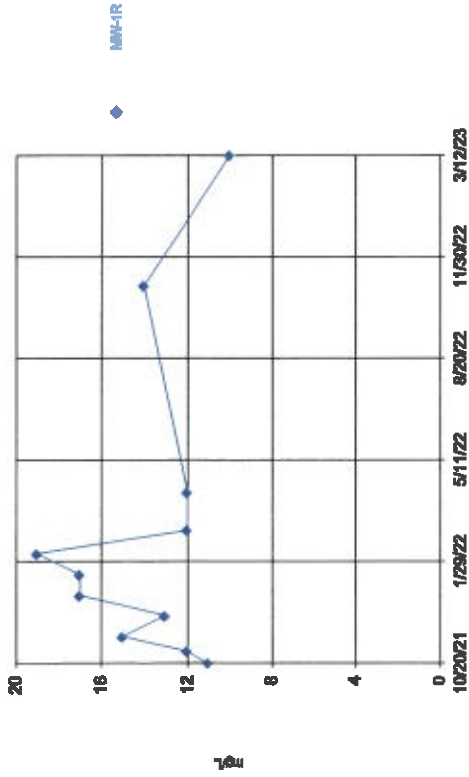
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Calcium



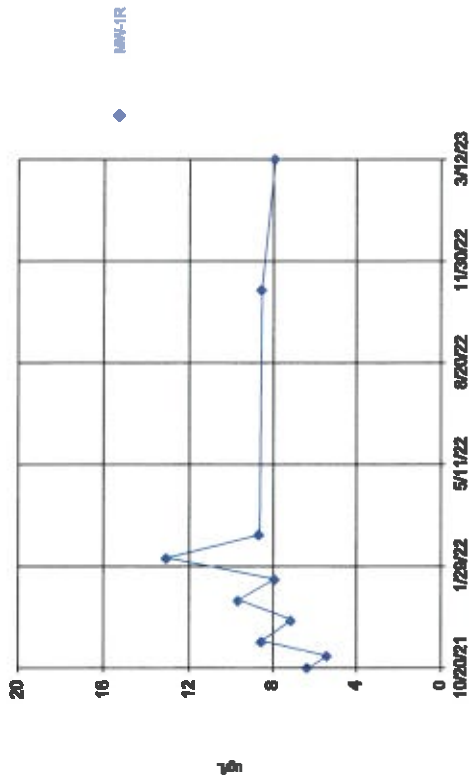
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 SRMU-Sitestation Power Station Client: GREDELL Engineering Data: SitestationFAP Background

Chloride



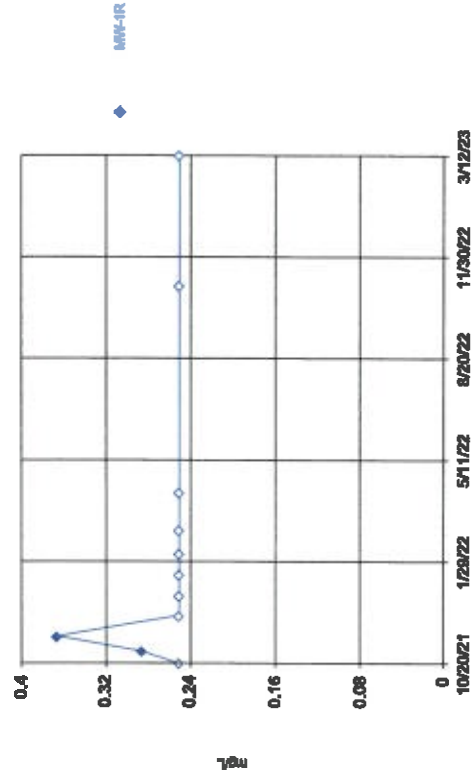
Time Series Analysis Run 6/26/2023 2:17 PM View: App11614V
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Cobalt



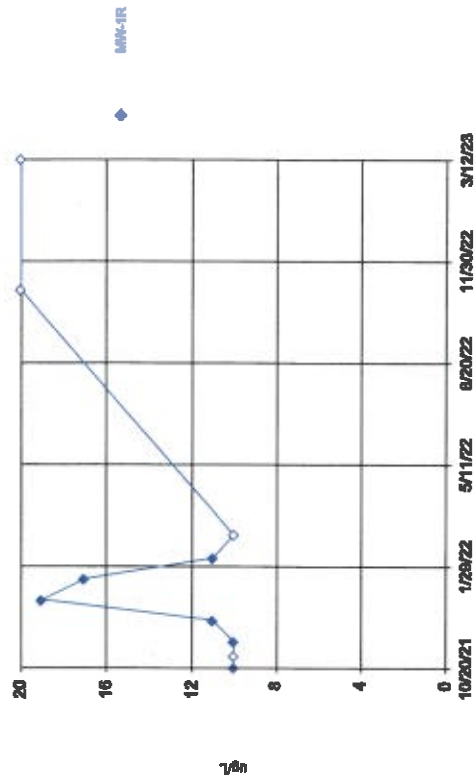
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Fluoride



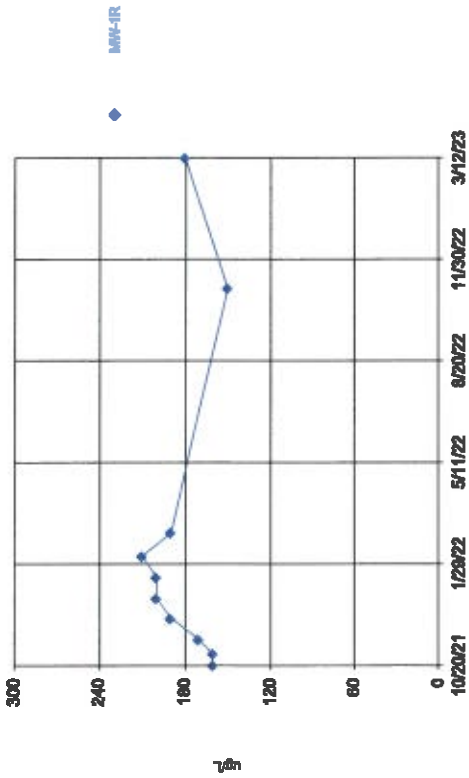
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Lithium



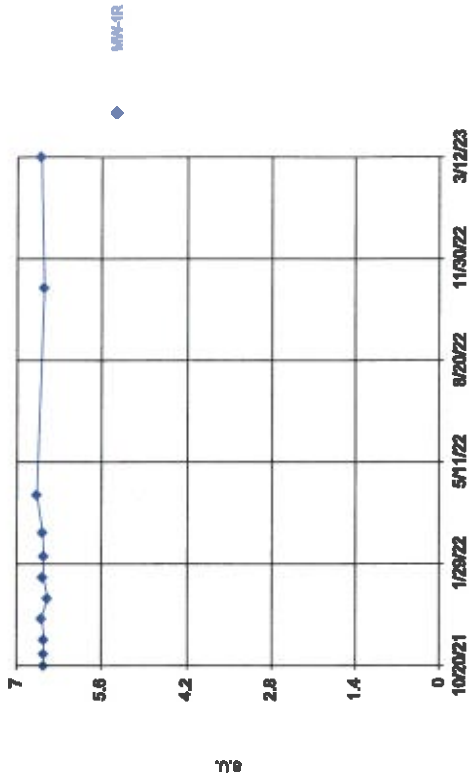
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Molybdenum



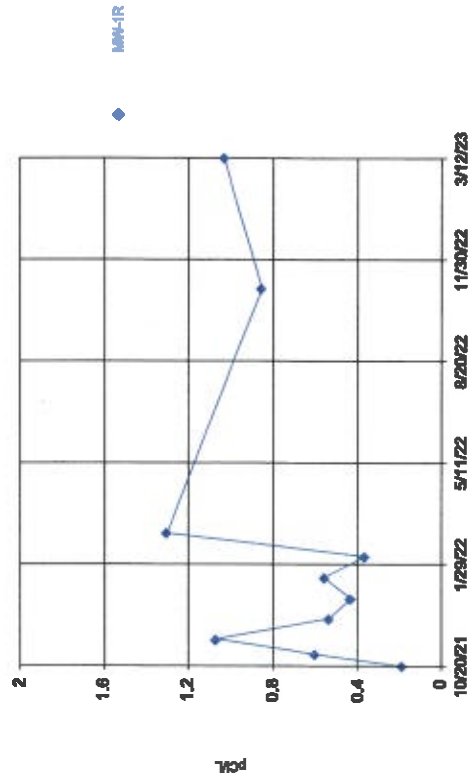
Time Series Analysis Run 6/26/2023 2:17 PM View: Appl1&1V
 SSMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

pH



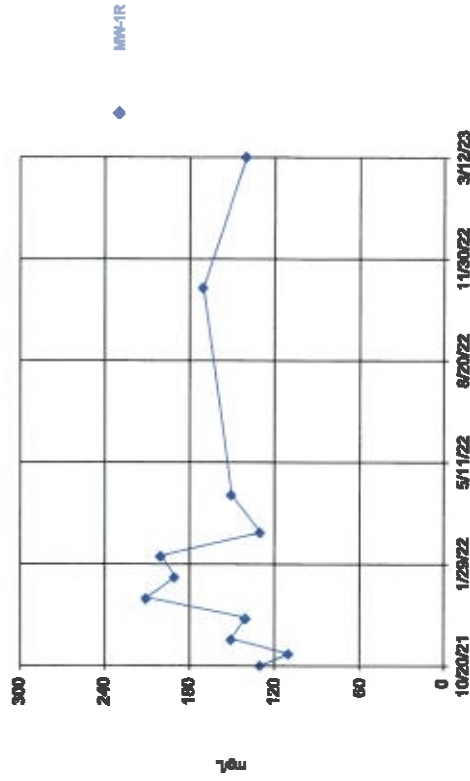
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 SSMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Radium



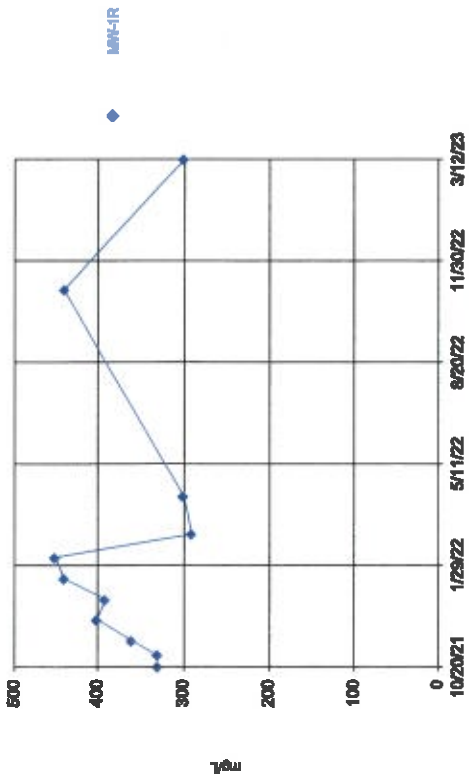
Time Series Analysis Run 6/26/2023 2:17 PM View: Appl1&1V
 SSMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Sulfate



Time Series Analysis Run 6/26/2023 2:17 PM View: Appl1&1V
 SSMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Total Dissolved Solids



Time Series Analysis Run 6/26/2023 2:17 PM View: App3634V

SBMU-Sitoketon Power Station Client: GREDELL Engineering Data: SitoketonFAP Background

100% Non-Detects

Analysis Run 6/26/2023 2:15 PM View: AppIII&IV

SBMU-Sikeston Power Station Client: GREDELL Engineering Date: SikestonFAP Background

Antimony (ug/L)
MW-2, MW-3, MW-7, MW-9

Arsenic (ug/L)
MW-2, MW-3, MW-7

Beryllium (ug/L)
MW-2, MW-3, MW-7, MW-9

Cadmium (ug/L)
MW-2, MW-3, MW-7, MW-9

Chromium (ug/L)
MW-2, MW-3, MW-7

Cobalt (ug/L)
MW-3, MW-9

Lead (ug/L)
MW-2, MW-3, MW-7, MW-9

Lithium (ug/L)
MW-2, MW-3

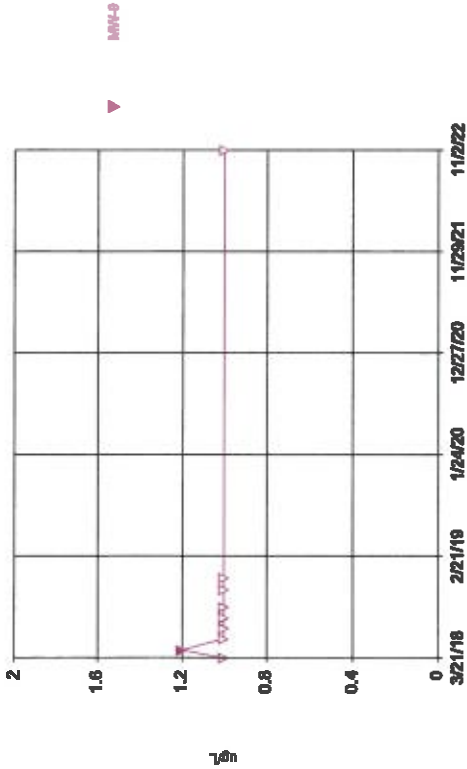
Mercury (ug/L)
MW-2, MW-3, MW-7, MW-9

Molybdenum (ug/L)
MW-2, MW-3

Selenium (ug/L)
MW-3, MW-9

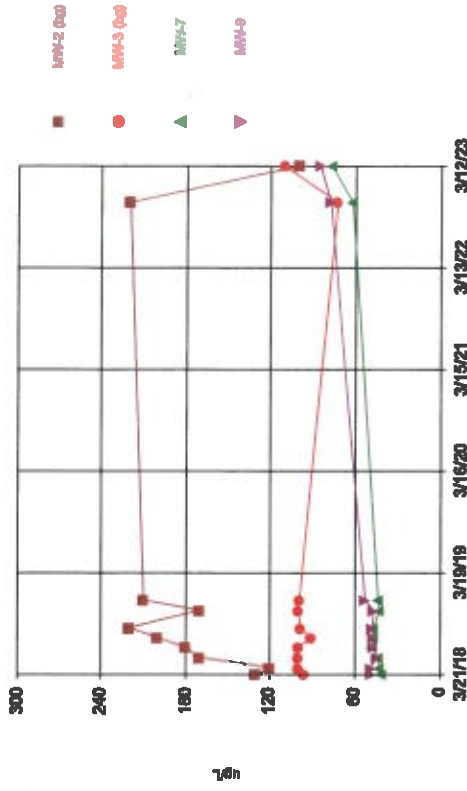
Thallium (ug/L)
MW-2, MW-3, MW-7, MW-9

Arsenic



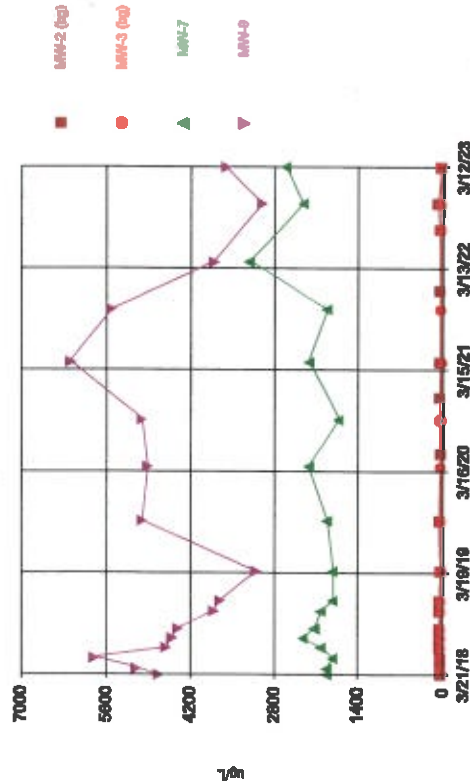
Time Series Analysis Run 6/26/2023 2:15 PM View: AppAllEV
 SBMU-Sitestation Power Station Client: GREDELL Engineering Data: Sitestation Background

Barium



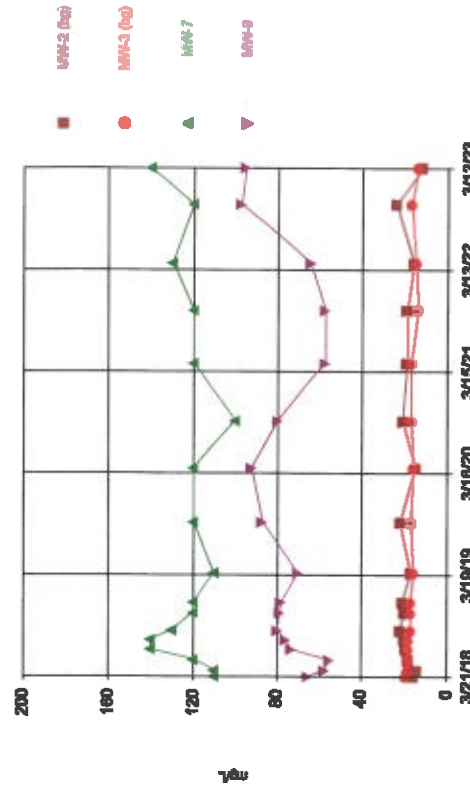
Time Series Analysis Run 6/26/2023 2:15 PM View: AppAllEV
 SBMU-Sitestation Power Station Client: GREDELL Engineering Data: SitestationFAP Background

Boron



Time Series Analysis Run 6/26/2023 2:15 PM View: AppAllEV
 SBMU-Sitestation Power Station Client: GREDELL Engineering Data: SitestationFAP Background

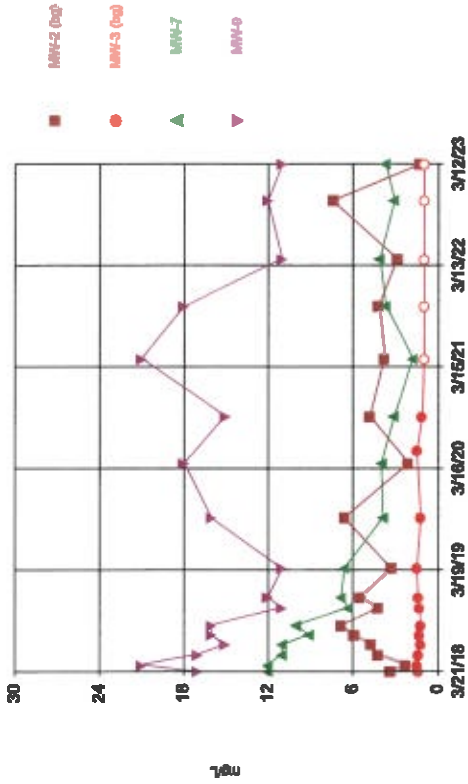
Calcium



Time Series Analysis Run 6/26/2023 2:15 PM View: AppAllEV
 SBMU-Sitestation Power Station Client: GREDELL Engineering Data: SitestationFAP Background

StdOut™ v3.0.0.77 Software licensed to GREDELL Engineering, US
 Hollow symbols indicate censored values.

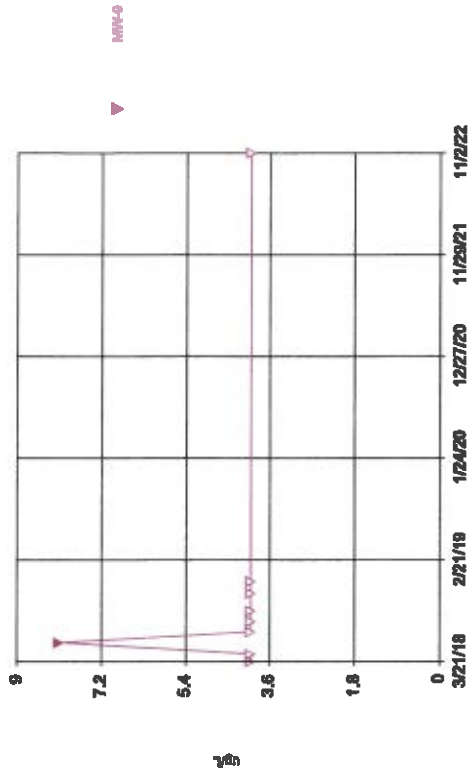
Chloride



Time Series Analysis Run 6/26/2023 2:15 PM View: App1818IV
 SSMU-Silvoston Power Station Client: GREDELL Engineering Data: SilvostonFAP Background

StdOut™ v3.0.0.77 Software licensed to GREDELL Engineering, US
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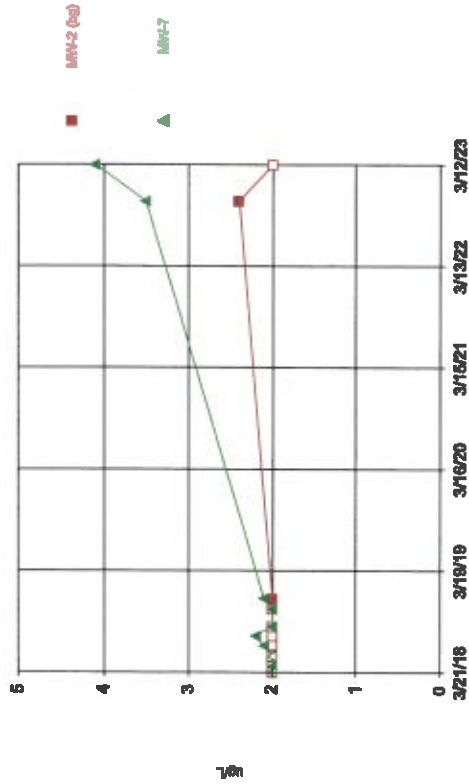
Chromium



Time Series Analysis Run 6/26/2023 2:15 PM View: App1818IV
 SSMU-Silvoston Power Station Client: GREDELL Engineering Data: SilvostonFAP Background

StdOut™ v3.0.0.77 Software licensed to GREDELL Engineering, US
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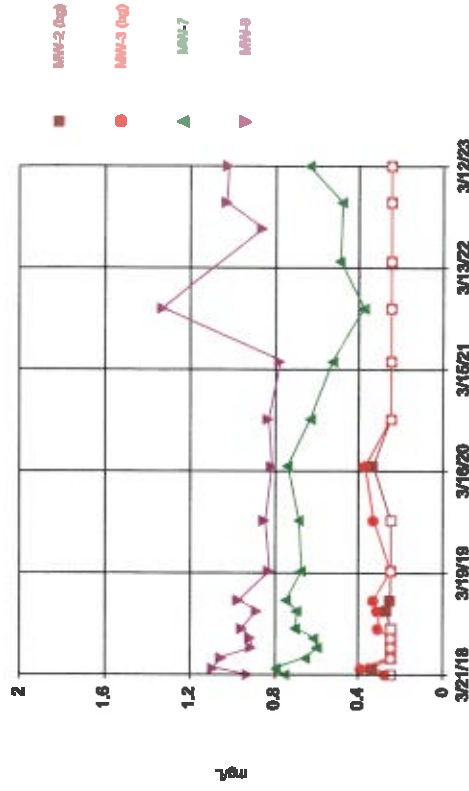
Cobalt



Time Series Analysis Run 6/26/2023 2:15 PM View: App1818IV
 SSMU-Silvoston Power Station Client: GREDELL Engineering Data: SilvostonFAP Background

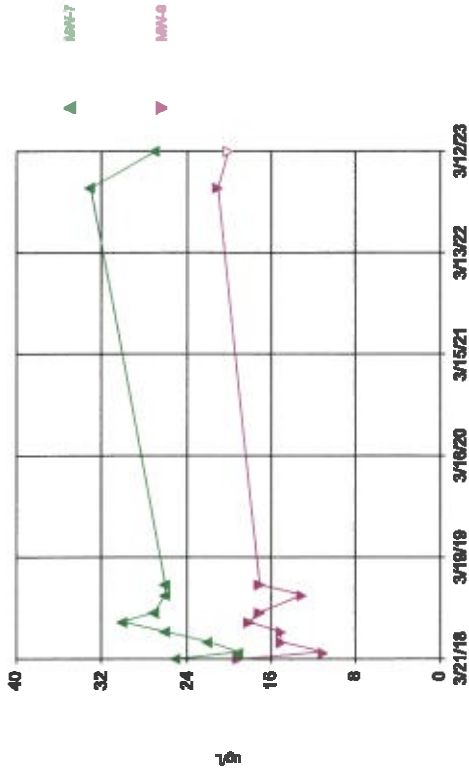
StdOut™ v3.0.0.77 Software licensed to GREDELL Engineering, US
 Hollow symbols indicate censored values.

Fluoride



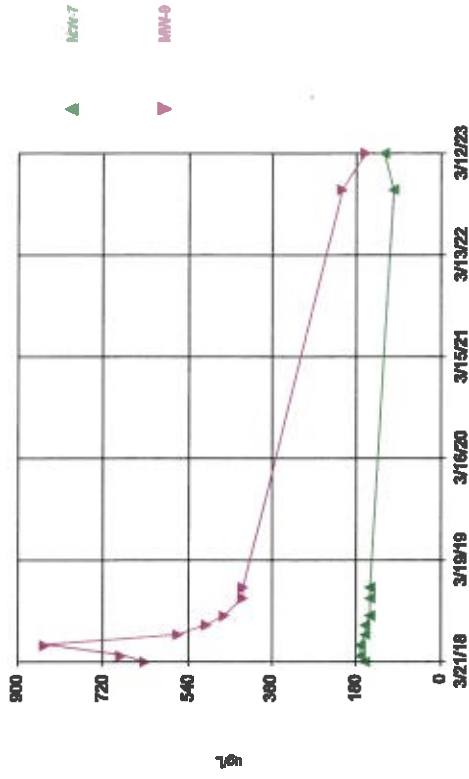
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 SSMU-Silvoston Power Station Client: GREDELL Engineering Data: SilvostonFAP Background

Lithium



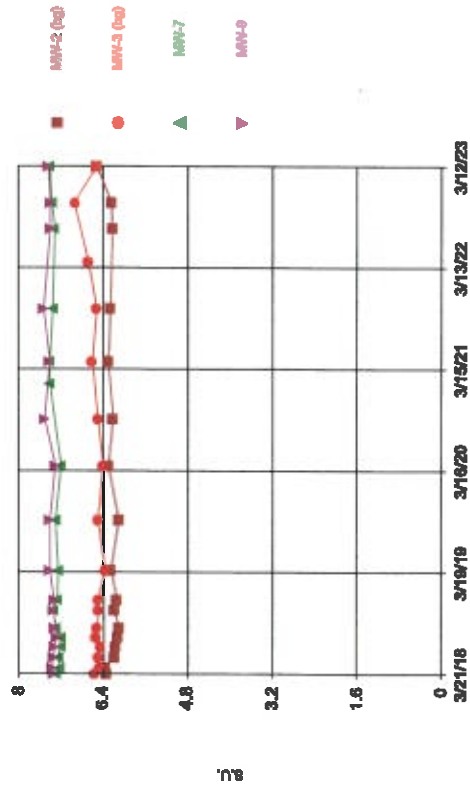
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Molybdenum



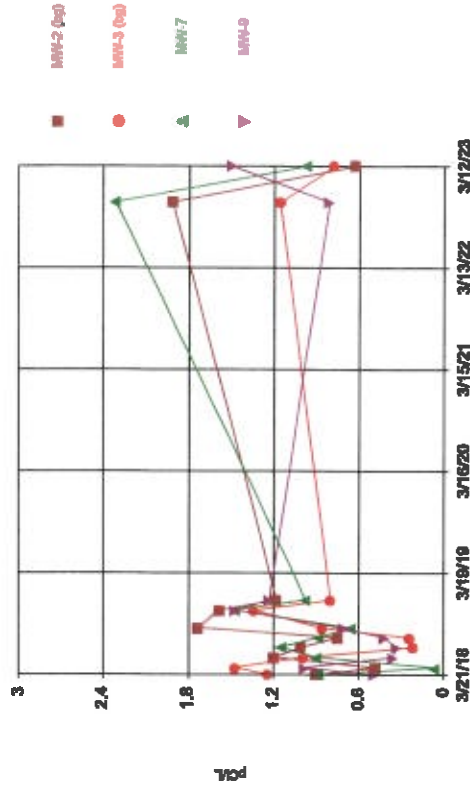
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 SBMU-Silvoston Power Station Client: GREDELL Engineering Data: SilvostonFAP Background

pH



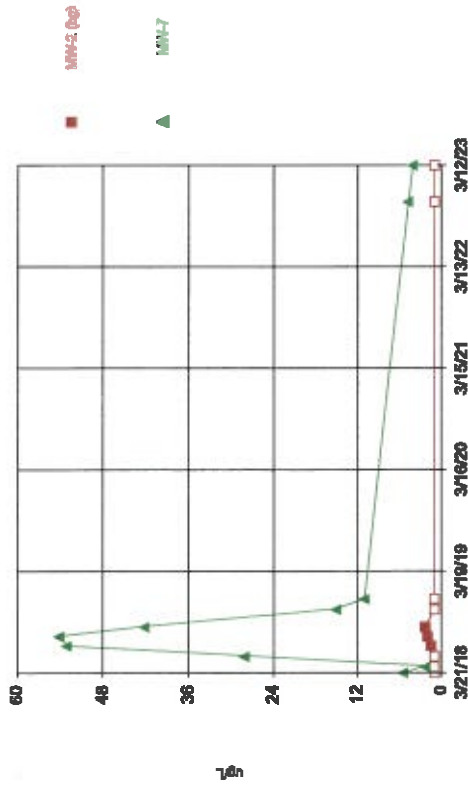
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Radium



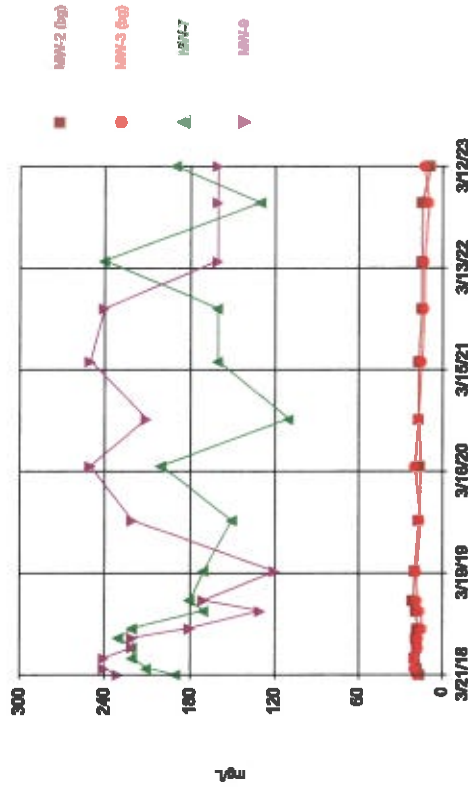
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Selenium



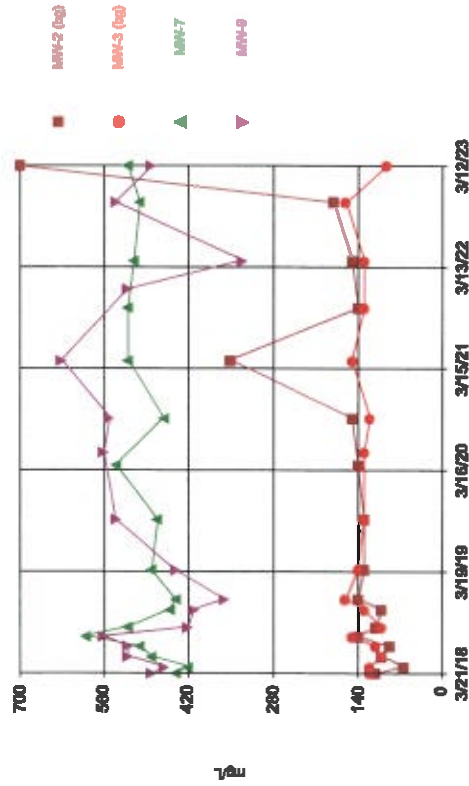
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 SBMU-Silverson Power Station Client: GREDELL Engineering Data: SilversonFAP Background

Sulfate



Time Series Analysis Run 6/26/2023 2:15 PM View: App1818V
 SBMU-Silverson Power Station Client: GREDELL Engineering Data: SilversonFAP Background

Total Dissolved Solids



Time Series Analysis Run 6/26/2023 2:15 PM View: App1818V
 SBMU-Silverson Power Station Client: GREDELL Engineering Data: SilversonFAP Background

Appendix 7

Box and Whiskers Plots

Box & Whiskers Plot

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 6/26/2023, 2:31 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Antimony (ug/L)	MW-2 (bg)	9	3	0	0	3	3	3	100
Antimony (ug/L)	MW-3 (bg)	9	3	0	0	3	3	3	100
Antimony (ug/L)	MW-7	9	3	0	0	3	3	3	100
Antimony (ug/L)	MW-9	9	3	0	0	3	3	3	100
Antimony (ug/L)	MW-1R	9	3	0	0	3	3	3	100
Arsenic (ug/L)	MW-2 (bg)	9	1	0	0	1	1	1	100
Arsenic (ug/L)	MW-3 (bg)	9	1	0	0	1	1	1	100
Arsenic (ug/L)	MW-7	9	1	0	0	1	1	1	100
Arsenic (ug/L)	MW-9	9	1.022	0.06667	0.02222	1	1	1.2	88.89
Arsenic (ug/L)	MW-1R	9	1.089	0.1833	0.06111	1	1	1.5	77.78
Barium (ug/L)	MW-2 (bg)	10	172	42.9	13.56	175	100	220	0
Barium (ug/L)	MW-3 (bg)	10	96.7	9.557	3.022	99.5	73	110	0
Barium (ug/L)	MW-7	10	49.6	11.28	3.566	45.5	41	77	0
Barium (ug/L)	MW-9	10	54.8	14.32	4.528	48.5	45	85	0
Barium (ug/L)	MW-1R	10	43.4	7.486	2.367	42.5	30	52	0
Beryllium (ug/L)	MW-2 (bg)	9	1	0	0	1	1	1	100
Beryllium (ug/L)	MW-3 (bg)	9	1	0	0	1	1	1	100
Beryllium (ug/L)	MW-7	9	1	0	0	1	1	1	100
Beryllium (ug/L)	MW-9	9	1	0	0	1	1	1	100
Beryllium (ug/L)	MW-1R	9	1	0	0	1	1	1	100
Boron (ug/L)	MW-2 (bg)	17	42.94	13.48	3.269	43	23	81	0
Boron (ug/L)	MW-3 (bg)	17	24.76	4.764	1.155	26	16	31	0
Boron (ug/L)	MW-7	17	2094	368.2	89.31	2000	1700	3200	0
Boron (ug/L)	MW-9	17	4512	911.6	221.1	4600	3000	6200	0
Boron (ug/L)	MW-1R	11	2736	438.8	132.3	2800	2100	3500	0
Cadmium (ug/L)	MW-2 (bg)	9	1	0	0	1	1	1	100
Cadmium (ug/L)	MW-3 (bg)	9	1	0	0	1	1	1	100
Cadmium (ug/L)	MW-7	9	1	0	0	1	1	1	100
Cadmium (ug/L)	MW-9	9	1	0	0	1	1	1	100
Cadmium (ug/L)	MW-1R	9	1	0	0	1	1	1	100
Calcium (mg/L)	MW-2 (bg)	17	18.53	3.184	0.7723	19	12	24	0
Calcium (mg/L)	MW-3 (bg)	17	16.76	1.393	0.3379	17	14	19	0
Calcium (mg/L)	MW-7	17	121.8	11.31	2.743	120	100	140	0
Calcium (mg/L)	MW-9	17	74.24	13.7	3.324	76	55	97	0
Calcium (mg/L)	MW-1R	11	75	12.5	3.768	73	58	97	0
Chloride (mg/L)	MW-2 (bg)	17	4.318	1.722	0.4176	4.2	1.3	7.4	0
Chloride (mg/L)	MW-3 (bg)	17	1.235	0.1935	0.04692	1.2	1	1.5	29.41
Chloride (mg/L)	MW-7	17	6.6	3.532	0.8567	6.3	1.8	12	0
Chloride (mg/L)	MW-9	17	15.18	3.377	0.8191	16	11	21	0
Chloride (mg/L)	MW-1R	11	13.82	2.857	0.8615	13	10	19	0
Chromium (ug/L)	MW-2 (bg)	9	4	0	0	4	4	4	100
Chromium (ug/L)	MW-3 (bg)	9	4	0	0	4	4	4	100
Chromium (ug/L)	MW-7	9	4	0	0	4	4	4	100
Chromium (ug/L)	MW-9	9	4.456	1.367	0.4556	4	4	8.1	88.89
Chromium (ug/L)	MW-1R	9	4	0	0	4	4	4	100
Cobalt (ug/L)	MW-2 (bg)	10	2.04	0.1265	0.04	2	2	2.4	80
Cobalt (ug/L)	MW-3 (bg)	10	2	0	0	2	2	2	100
Cobalt (ug/L)	MW-7	10	2.4	0.7542	0.2385	2.05	2	4.1	20
Cobalt (ug/L)	MW-9	10	2	0	0	2	2	2	100
Cobalt (ug/L)	MW-1R	10	8.28	2.058	0.6508	8.2	5.4	13	0

Box & Whiskers Plot

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 6/26/2023, 2:31 PM

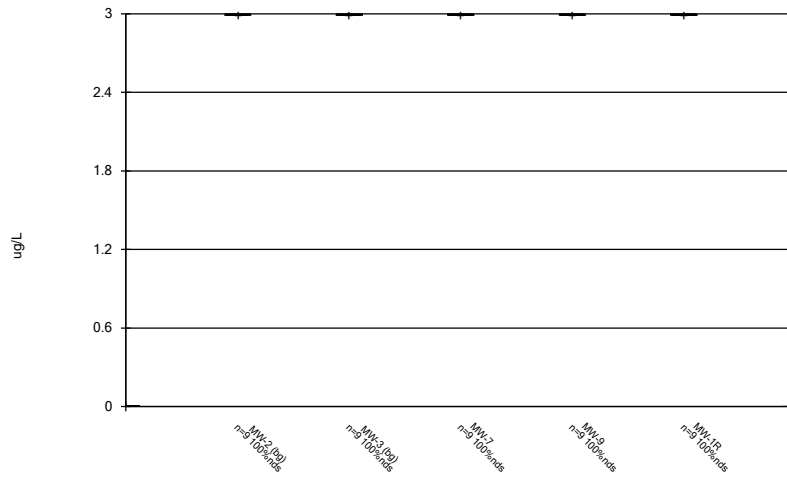
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Fluoride (mg/L)	MW-2 (bg)	17	0.2616	0.02833	0.00687	0.25	0.25	0.336	76.47
Fluoride (mg/L)	MW-3 (bg)	17	0.2834	0.04733	0.01148	0.25	0.25	0.386	58.82
Fluoride (mg/L)	MW-7	17	0.6324	0.1126	0.02731	0.65	0.375	0.794	0
Fluoride (mg/L)	MW-9	17	0.9439	0.1344	0.03259	0.916	0.775	1.33	0
Fluoride (mg/L)	MW-1R	11	0.2638	0.03557	0.01072	0.25	0.25	0.366	81.82
Lead (ug/L)	MW-2 (bg)	9	1	0	0	1	1	1	100
Lead (ug/L)	MW-3 (bg)	9	1	0	0	1	1	1	100
Lead (ug/L)	MW-7	9	1	0	0	1	1	1	100
Lead (ug/L)	MW-9	9	1	0	0	1	1	1	100
Lead (ug/L)	MW-1R	9	1	0	0	1	1	1	100
Lithium (ug/L)	MW-2 (bg)	10	12	4.216	1.333	10	10	20	100
Lithium (ug/L)	MW-3 (bg)	10	12	4.216	1.333	10	10	20	100
Lithium (ug/L)	MW-7	10	26.1	3.843	1.215	26	19	33	0
Lithium (ug/L)	MW-9	10	16.6	3.134	0.9911	17	11	21	10
Lithium (ug/L)	MW-1R	10	13.8	4.566	1.444	11	10	20	40
Mercury (ug/L)	MW-2 (bg)	9	0.2	0	0	0.2	0.2	0.2	100
Mercury (ug/L)	MW-3 (bg)	9	0.2	0	0	0.2	0.2	0.2	100
Mercury (ug/L)	MW-7	9	0.2	0	0	0.2	0.2	0.2	100
Mercury (ug/L)	MW-9	9	0.2	0	0	0.2	0.2	0.2	100
Mercury (ug/L)	MW-1R	9	0.2	0	0	0.2	0.2	0.2	100
Molybdenum (ug/L)	MW-2 (bg)	10	1	0	0	1	1	1	100
Molybdenum (ug/L)	MW-3 (bg)	10	1	0	0	1	1	1	100
Molybdenum (ug/L)	MW-7	10	149	22.34	7.063	155	100	170	0
Molybdenum (ug/L)	MW-9	10	488	205.8	65.08	480	160	840	0
Molybdenum (ug/L)	MW-1R	10	181	20.25	6.403	185	150	210	0
pH (S.U.)	MW-2 (bg)	17	6.231	0.1094	0.02653	6.21	6.09	6.51	0
pH (S.U.)	MW-3 (bg)	17	6.531	0.1245	0.03019	6.5	6.36	6.93	0
pH (S.U.)	MW-7	17	7.301	0.06666	0.01617	7.3	7.2	7.4	0
pH (S.U.)	MW-9	17	7.375	0.06568	0.01593	7.37	7.28	7.52	0
pH (S.U.)	MW-1R	11	6.563	0.04384	0.01322	6.55	6.48	6.66	0
Radium (pCi/L)	MW-2 (bg)	10	1.138	0.4798	0.1517	1.093	0.483	1.913	0
Radium (pCi/L)	MW-3 (bg)	10	0.91	0.428	0.1353	0.927	0.214	1.475	0
Radium (pCi/L)	MW-7	10	1.027	0.5775	0.1826	0.9345	0.062	2.31	0
Radium (pCi/L)	MW-9	10	0.8301	0.4499	0.1423	0.7595	0.327	1.5	0
Radium (pCi/L)	MW-1R	10	0.6912	0.3553	0.1124	0.578	0.184	1.3	0
Selenium (ug/L)	MW-2 (bg)	10	1.26	0.4624	0.1462	1	1	2.2	70
Selenium (ug/L)	MW-3 (bg)	10	1	0	0	1	1	1	100
Selenium (ug/L)	MW-7	10	21.95	20.75	6.561	13	2.3	54	0
Selenium (ug/L)	MW-9	10	1	0	0	1	1	1	100
Selenium (ug/L)	MW-1R	10	1	0	0	1	1	1	100
Sulfate (mg/L)	MW-2 (bg)	17	17.04	2.827	0.6856	17	8.7	21	0
Sulfate (mg/L)	MW-3 (bg)	17	16.29	2.867	0.6954	17	10	20	0
Sulfate (mg/L)	MW-7	17	185.3	36.42	8.833	190	110	240	0
Sulfate (mg/L)	MW-9	17	200	42.87	10.4	220	120	250	0
Sulfate (mg/L)	MW-1R	11	156.4	32.02	9.655	150	110	210	0
Thallium (ug/L)	MW-2 (bg)	9	1	0	0	1	1	1	100
Thallium (ug/L)	MW-3 (bg)	9	1	0	0	1	1	1	100
Thallium (ug/L)	MW-7	9	1	0	0	1	1	1	100
Thallium (ug/L)	MW-9	9	1	0	0	1	1	1	100
Thallium (ug/L)	MW-1R	9	1	0	0	1	1	1	100

Box & Whiskers Plot

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 6/26/2023, 2:31 PM

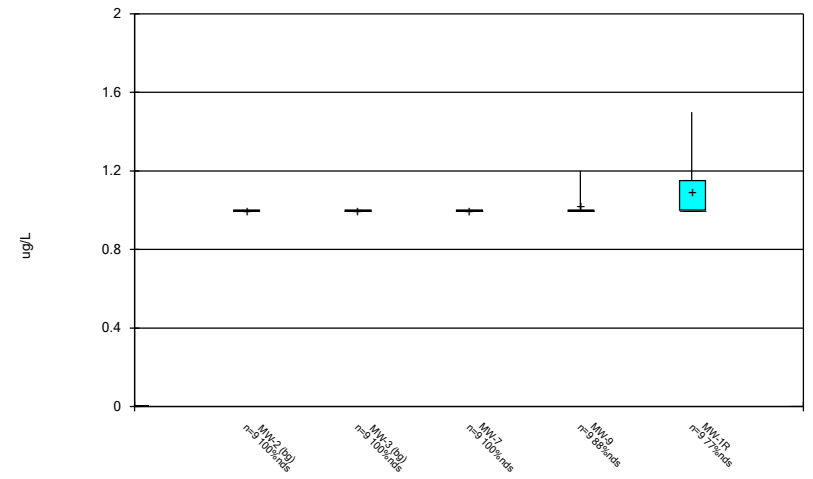
<u>Constituent</u>	<u>Well</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Std. Err.</u>	<u>Median</u>	<u>Min.</u>	<u>Max.</u>	<u>%NDs</u>
Total Dissolved Solids (mg/L)	MW-2 (bg)	17	171.8	149.2	36.19	140	63	700	0
Total Dissolved Solids (mg/L)	MW-3 (bg)	17	127.8	20.14	4.884	130	93	160	0
Total Dissolved Solids (mg/L)	MW-7	17	491.8	43.05	10.44	500	420	590	0
Total Dissolved Solids (mg/L)	MW-9	17	489.4	78.3	18.99	520	330	630	0
Total Dissolved Solids (mg/L)	MW-1R	11	366.4	60.71	18.3	360	290	450	0

Antimony



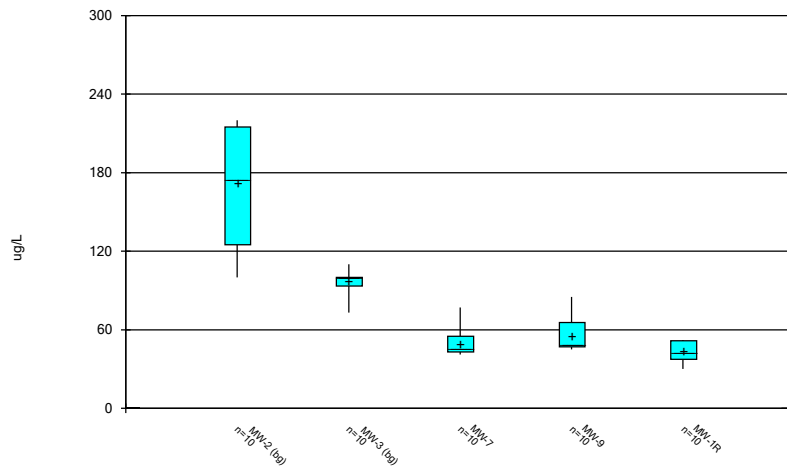
Box & Whiskers Plot Analysis Run 6/26/2023 2:29 PM View: AppIII&IV
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Arsenic



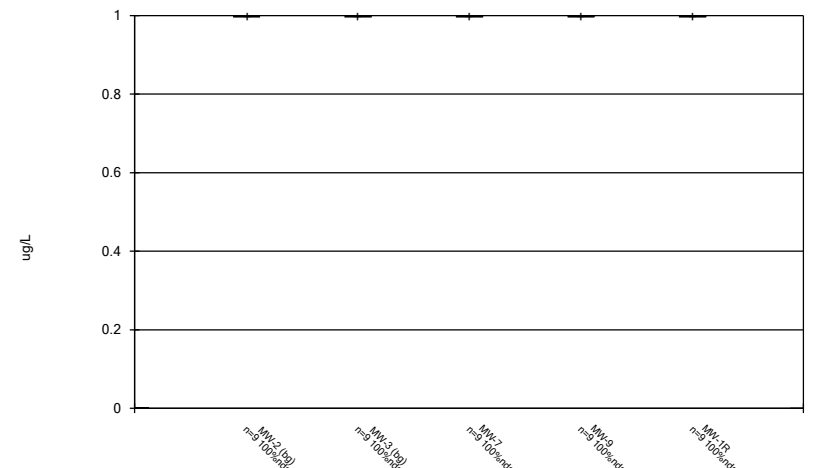
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Barium



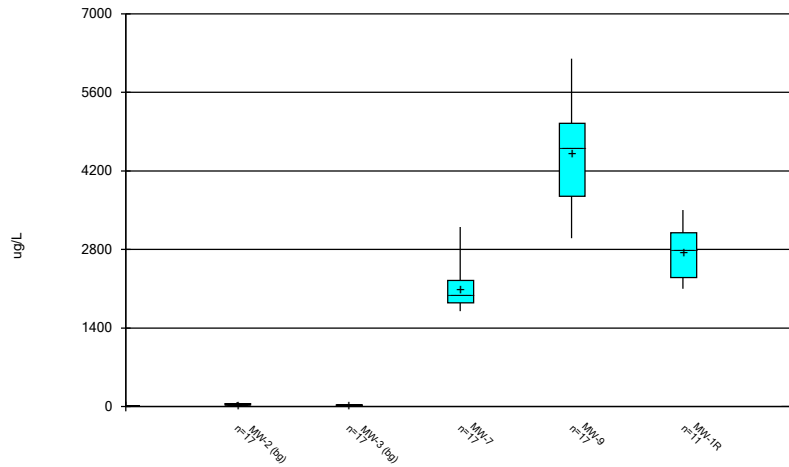
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Beryllium



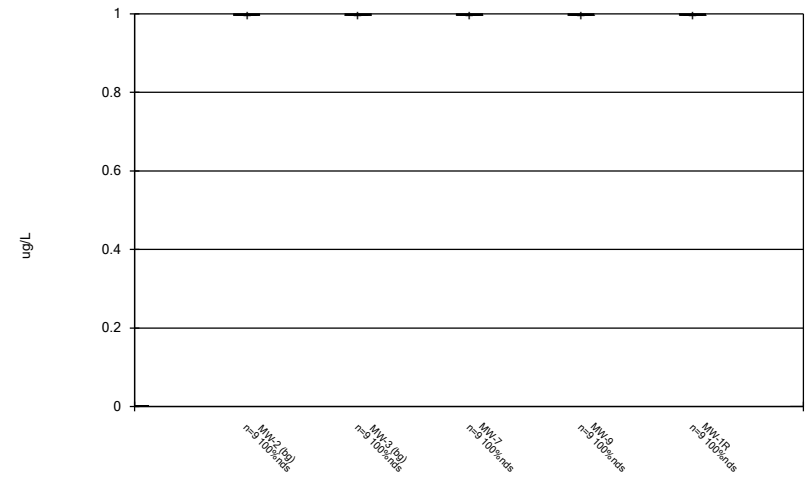
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Boron



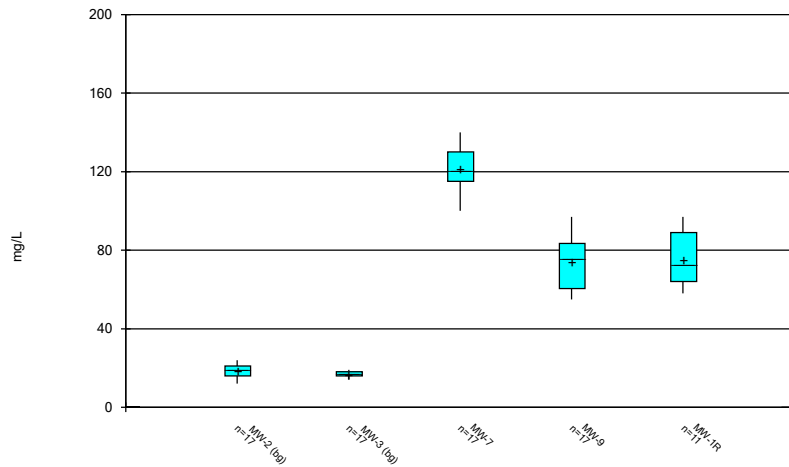
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Cadmium



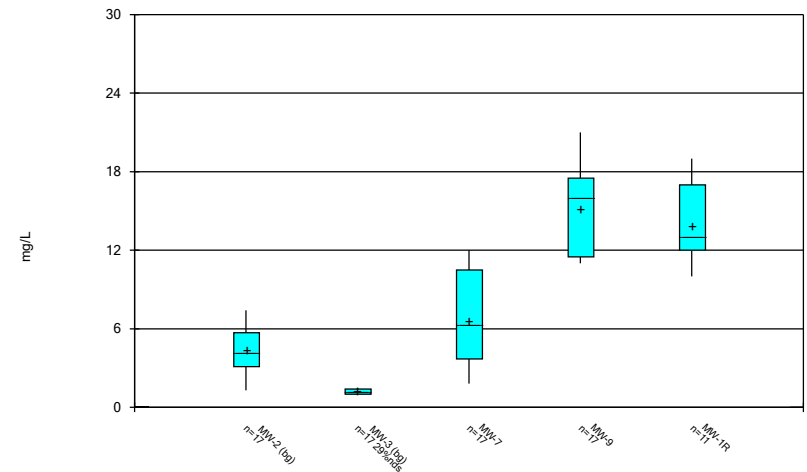
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Calcium



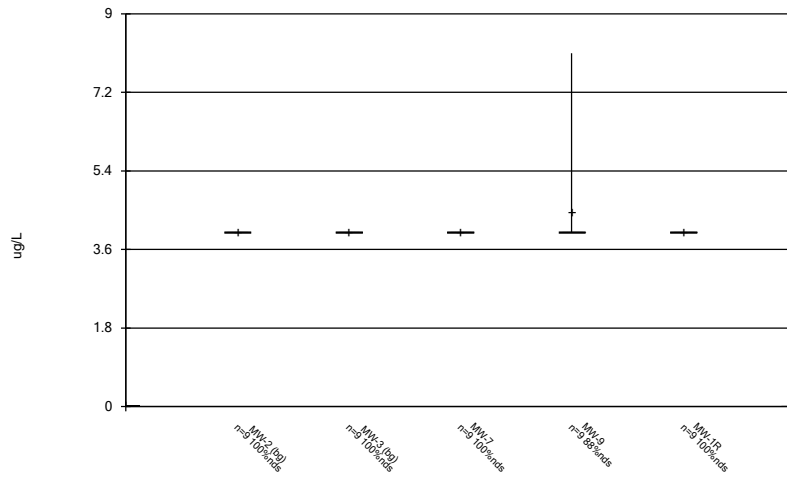
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Chloride



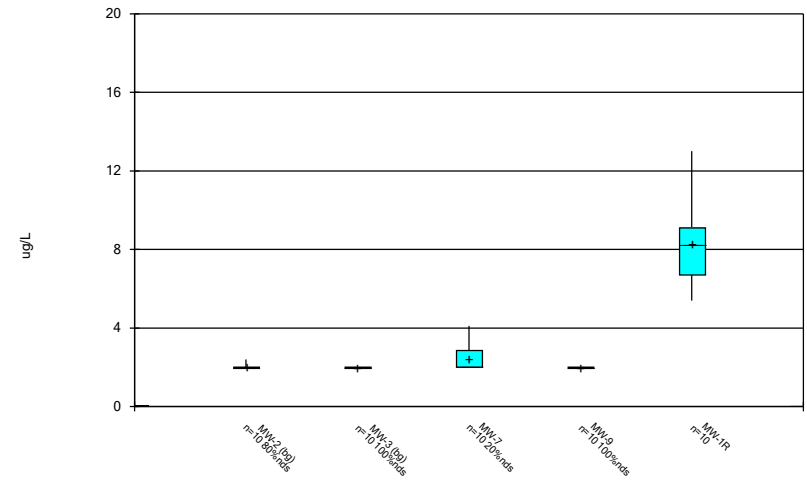
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Chromium



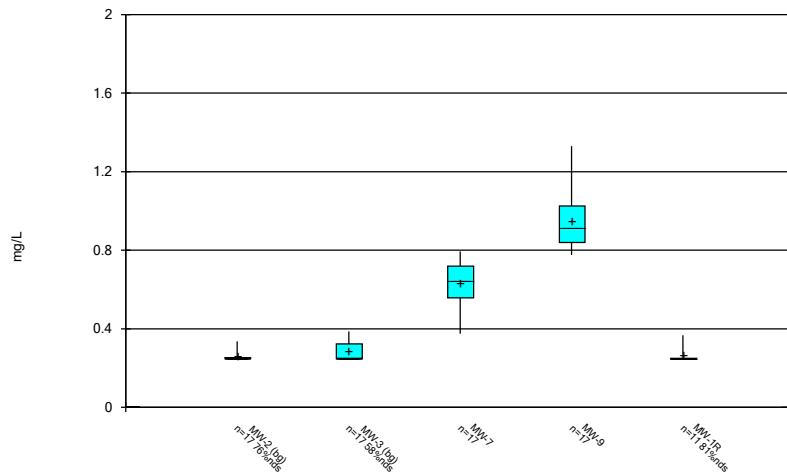
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Cobalt



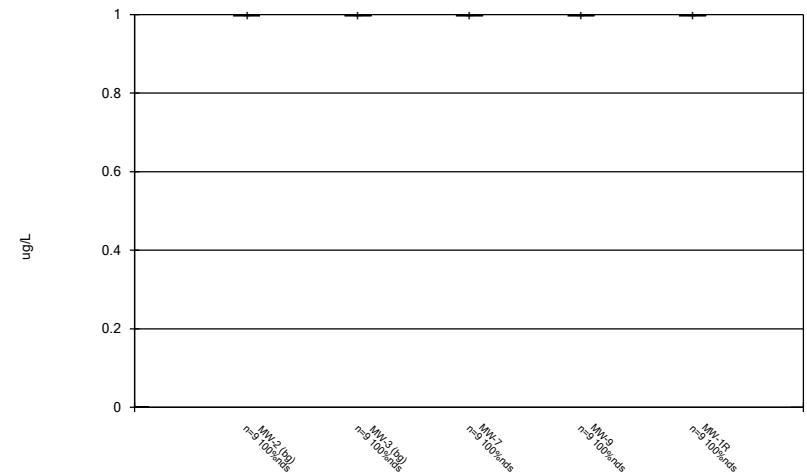
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Fluoride



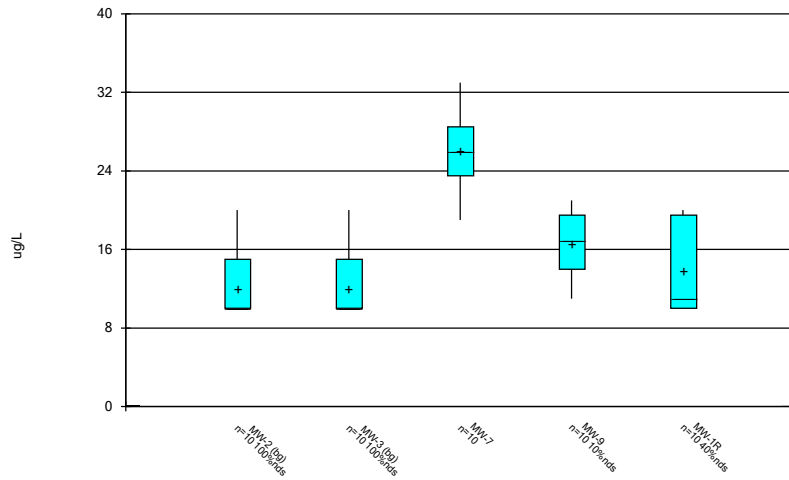
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Lead



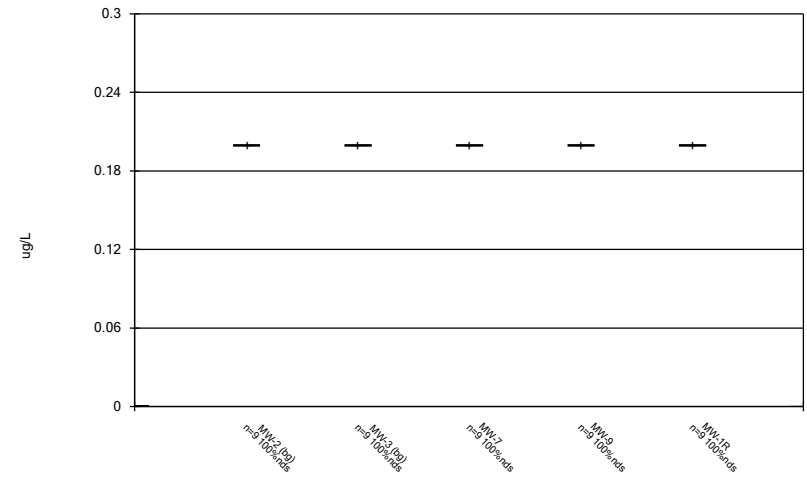
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Lithium



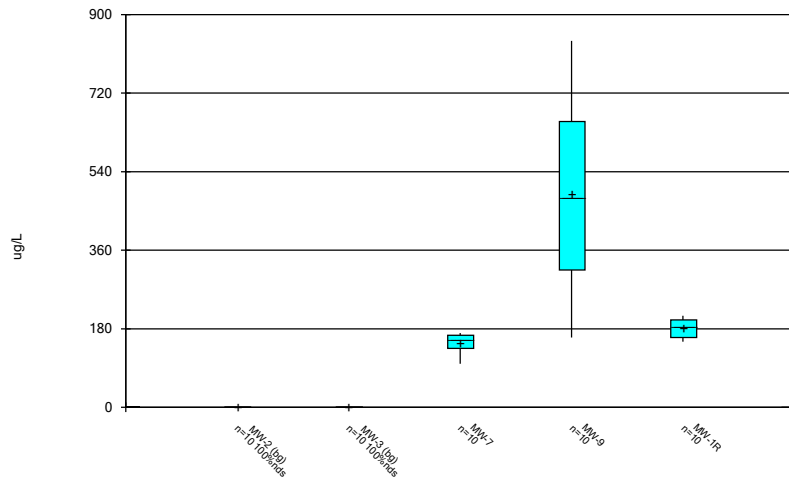
Box & Whiskers Plot Analysis Run 6/26/2023 2:30 PM View: AppIII&IV
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Mercury



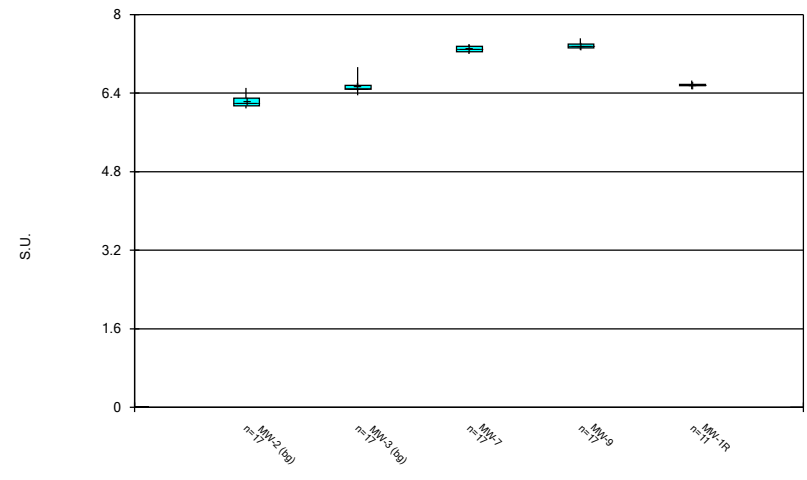
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Molybdenum



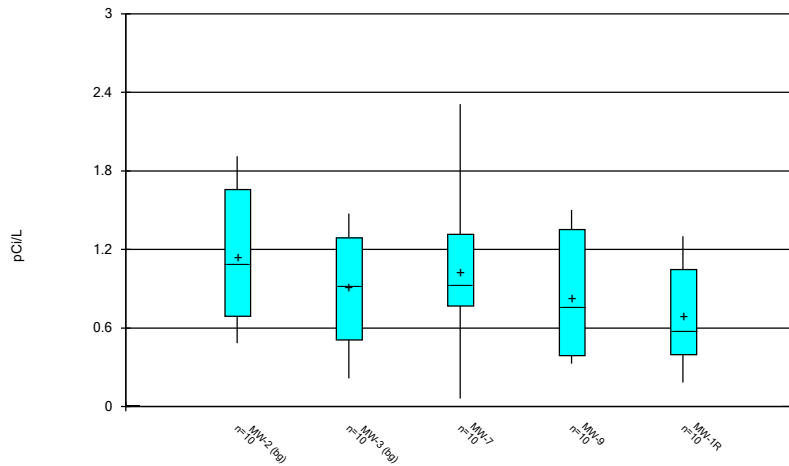
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

pH



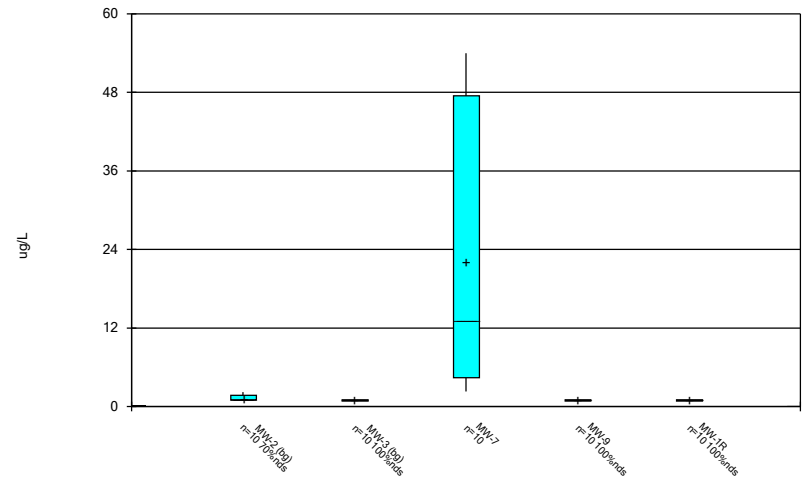
Box & Whiskers Plot Analysis Run 6/26/2023 2:30 PM View: AppIII&IV
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Radium



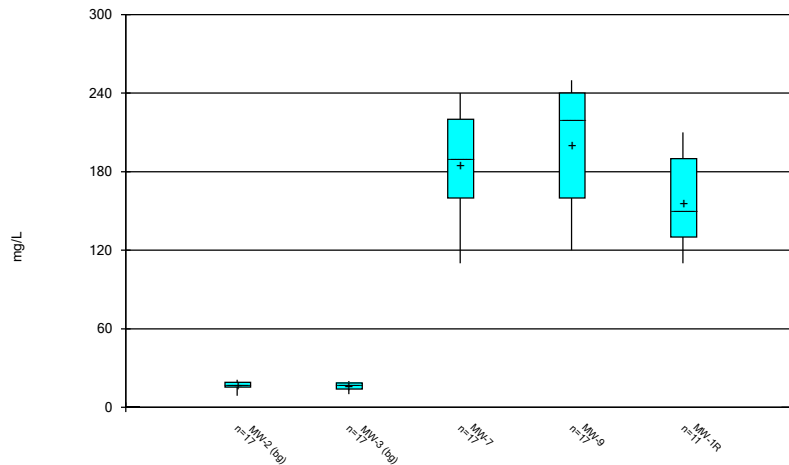
Box & Whiskers Plot Analysis Run 6/26/2023 2:30 PM View: AppIII&IV
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Selenium



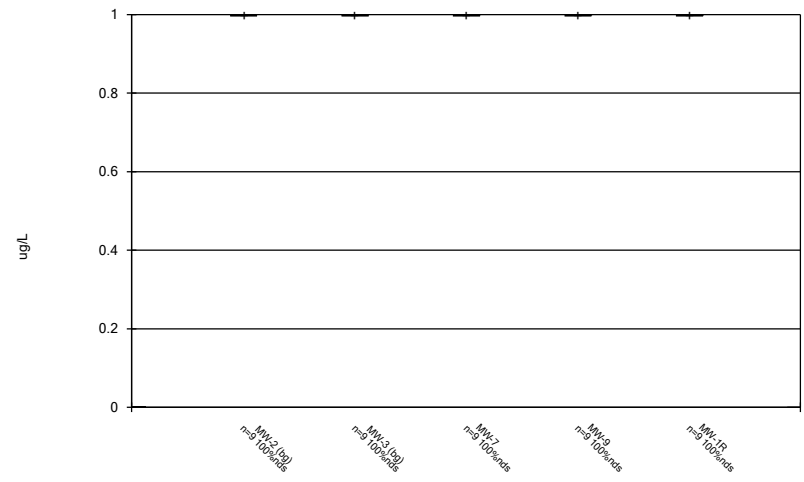
Box & Whiskers Plot Analysis Run 6/26/2023 2:30 PM View: AppIII&IV
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Sulfate



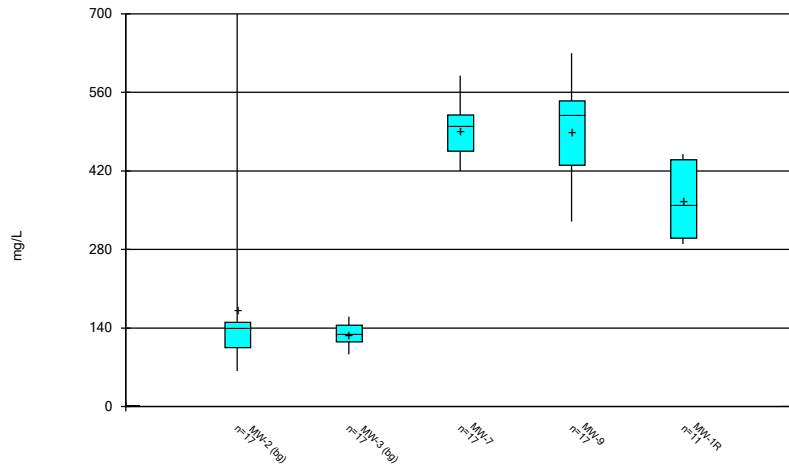
Box & Whiskers Plot Analysis Run 6/26/2023 2:30 PM View: AppIII&IV
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Thallium



Box & Whiskers Plot Analysis Run 6/26/2023 2:30 PM View: AppIII&IV
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Total Dissolved Solids



Box & Whiskers Plot Analysis Run 6/26/2023 2:30 PM View: ApplII&IV
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Appendix 8

Prediction Limit Charts – Detection Constituents

Appendix 8

Prediction Limit Charts – Detection Constituents
7th CCR Compliance Sampling Event
(1st 2022 Semi-annual Detection Monitoring Event)
(April 9, 2022 and August 2, 2022)

Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/11/2023, 1:00 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
pH (S.U.)	MW-1R	6.58	6.48	4/9/2022	6.66	Yes	8	0	n/a	0.04288	NP Intra (normality) ...

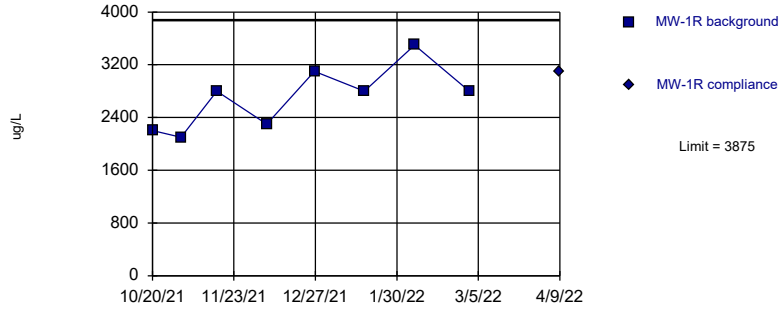
Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/11/2023, 1:00 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-1R	3875	n/a	4/9/2022	3100	No	8	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-1R	112.4	n/a	4/9/2022	73	No	8	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-1R	21.7	n/a	4/9/2022	12	No	8	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-1R	0.366	n/a	4/9/2022	0.25ND	No	8	75	n/a	0.02144	NP Intra (NDs) 1 of 2
pH (S.U.)	MW-1R	6.58	6.48	4/9/2022	6.66	Yes	8	0	n/a	0.04288	NP Intra (normality) ...
Sulfate (mg/L)	MW-1R	249.2	n/a	4/9/2022	150	No	8	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1R	512.1	n/a	4/9/2022	300	No	8	0	No	0.002505	Param Intra 1 of 2

Within Limit

Boron
Intrawell Parametric

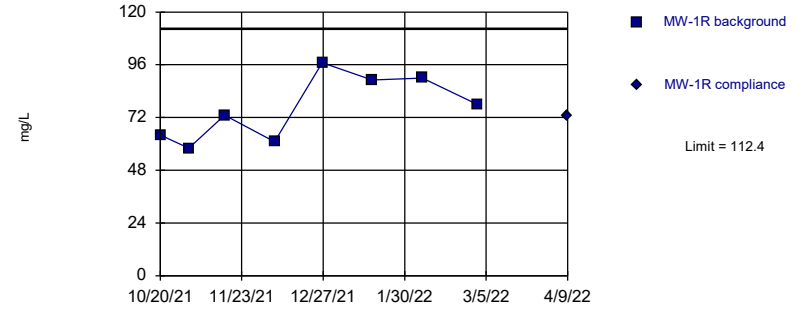


Background Data Summary: Mean=2700, Std. Dev.=478.1, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.929, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 12:59 PM View: Confirmed Results Outliers Removed - 3-16-202
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Calcium
Intrawell Parametric

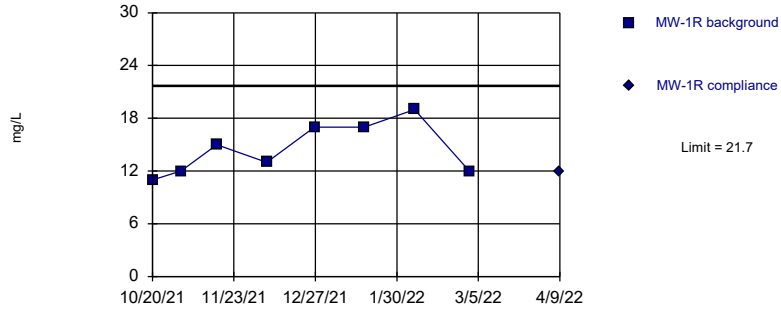


Background Data Summary: Mean=76.25, Std. Dev.=14.69, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9262, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 12:59 PM View: Confirmed Results Outliers Removed - 3-16-202
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride
Intrawell Parametric



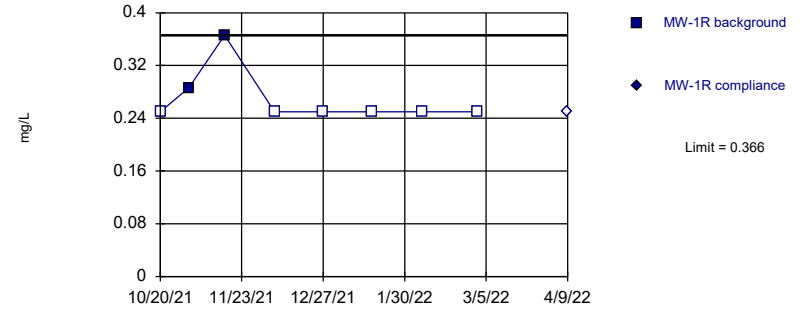
Background Data Summary: Mean=14.5, Std. Dev.=2.928, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9145, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 12:59 PM View: Confirmed Results Outliers Removed - 3-16-202
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Hollow symbols indicate censored values.

Within Limit

Fluoride
Intrawell Non-parametric

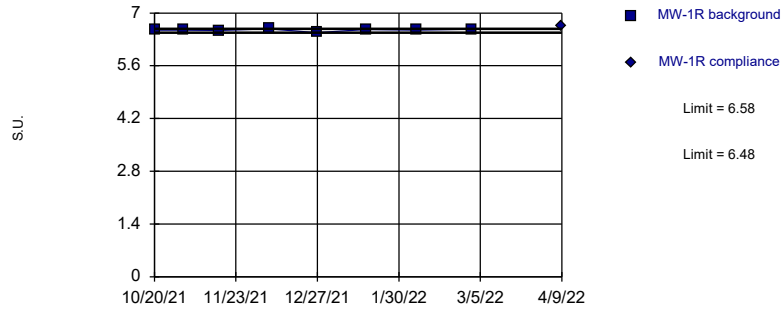


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Prediction Limit Analysis Run 4/11/2023 12:59 PM View: Confirmed Results Outliers Removed - 3-16-202
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Exceeds Limits

pH
Intrawell Non-parametric

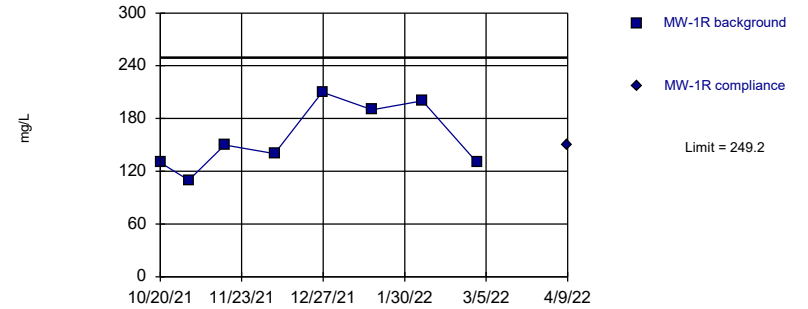


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.08484. Individual comparison alpha = 0.04288 (1 of 2).

Prediction Limit Analysis Run 4/11/2023 12:59 PM View: Confirmed Results Outliers Removed - 3-16-202
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate
Intrawell Parametric

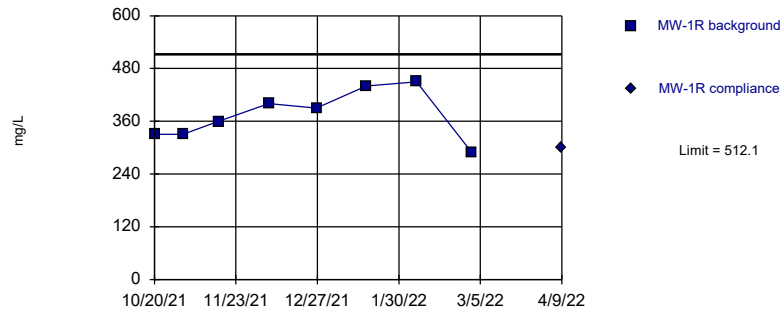


Background Data Summary: Mean=157.5, Std. Dev.=37.32, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9002, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 12:59 PM View: Confirmed Results Outliers Removed - 3-16-202
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids
Intrawell Parametric



Background Data Summary: Mean=373.8, Std. Dev.=56.3, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9544, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 12:59 PM View: Confirmed Results Outliers Removed - 3-16-202
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/20/2023, 1:39 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-7	2352	n/a	4/9/2022	3200	Yes	13	0	No	0.002505	Param Intra 1 of 2
pH (S.U.)	MW-3	6.626	6.359	4/9/2022	6.67	Yes	13	0	No	0.001253	Param Intra 1 of 2

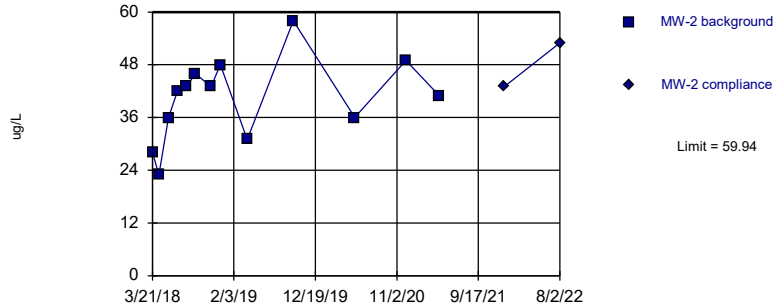
Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/20/2023, 1:39 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-2	59.94	n/a	8/2/2022	53	No	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-3	33.39	n/a	8/2/2022	21	No	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-7	2352	n/a	4/9/2022	3200	Yes	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-9	6408	n/a	4/9/2022	3800	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-2	24.21	n/a	4/9/2022	16	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-3	19.08	n/a	4/9/2022	15	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-7	144	n/a	4/9/2022	130	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-9	97.23	n/a	4/9/2022	64	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-2	7.525	n/a	4/9/2022	2.9	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-3	1.641	n/a	4/9/2022	1ND	No	13	7.692	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-7	14.94	n/a	4/9/2022	4.1	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-9	22.51	n/a	4/9/2022	11	No	13	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-2	0.272	n/a	4/9/2022	0.25ND	No	11	81.82	n/a	0.01276	NP Intra (NDs) 1 of 2
Fluoride (mg/L)	MW-3	0.386	n/a	4/9/2022	0.25ND	No	13	46.15	n/a	0.009692	NP Intra (normality) ...
Fluoride (mg/L)	MW-7	0.831	n/a	4/9/2022	0.488	No	13	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-9	1.101	n/a	8/2/2022	0.86	No	13	0	No	0.002505	Param Intra 1 of 2
pH (S.U.)	MW-2	6.405	6.013	8/2/2022	6.21	No	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-3	6.626	6.359	4/9/2022	6.67	Yes	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-7	7.42	7.148	8/2/2022	7.31	No	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-9	7.477	7.237	8/2/2022	7.39	No	13	0	No	0.001253	Param Intra 1 of 2
Sulfate (mg/L)	MW-2	21.42	n/a	4/9/2022	15	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-3	21.29	n/a	4/9/2022	13	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-7	259	n/a	4/9/2022	240	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-9	279.2	n/a	4/9/2022	160	No	13	0	x^2	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-3	166.7	n/a	4/9/2022	130	No	13	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-7	584.1	n/a	4/9/2022	510	No	13	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-9	653	n/a	4/9/2022	330	No	13	0	No	0.002505	Param Intra 1 of 2

Within Limit

Boron
Intrawell Parametric

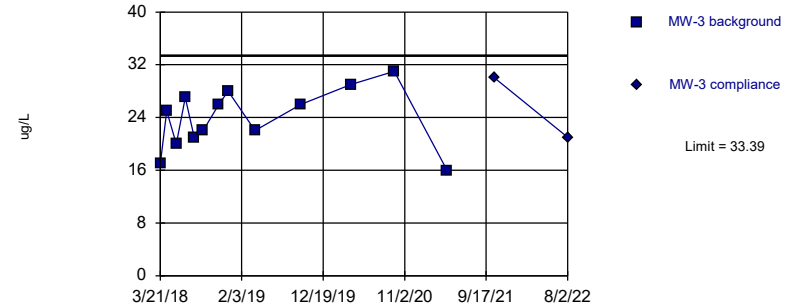


Background Data Summary: Mean=40.31, Std. Dev.=9.455, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.98, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Boron
Intrawell Parametric

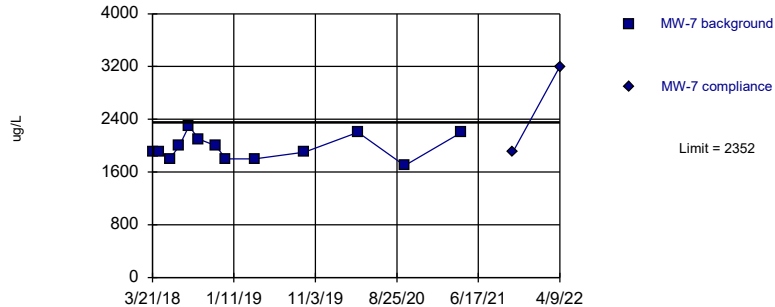


Background Data Summary: Mean=23.85, Std. Dev.=4.598, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9639, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Exceeds Limit

Boron
Intrawell Parametric

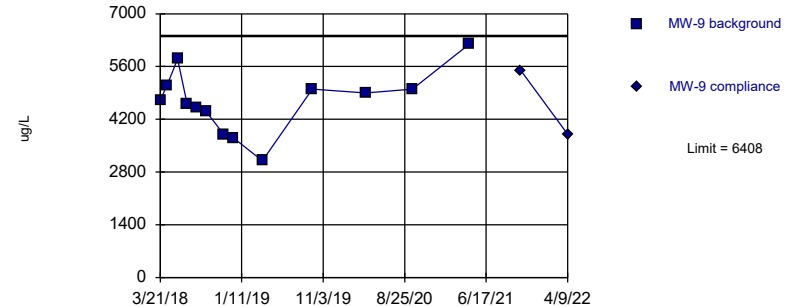


Background Data Summary: Mean=1969, Std. Dev.=184.3, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9386, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Boron
Intrawell Parametric

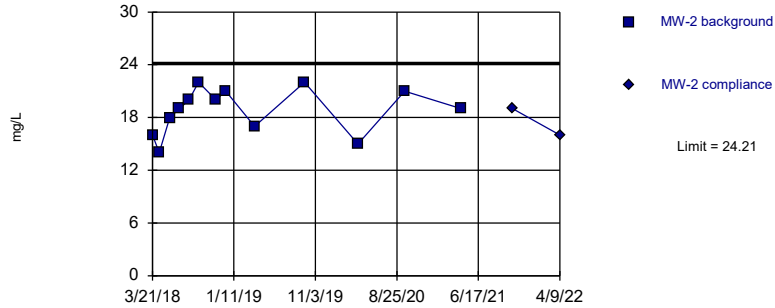


Background Data Summary: Mean=4677, Std. Dev.=833.8, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9713, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

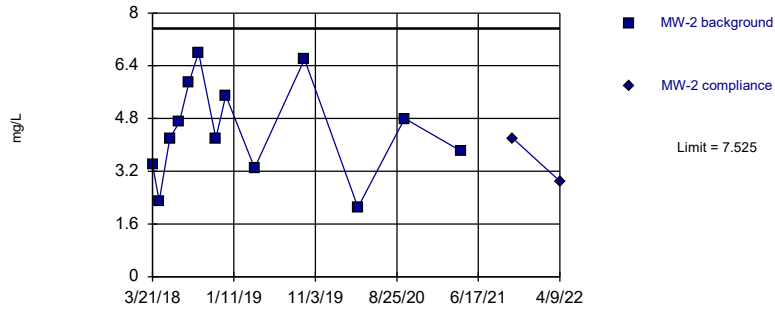
Within Limit

Calcium
Intrawell Parametric



Within Limit

Chloride Intrawell Parametric

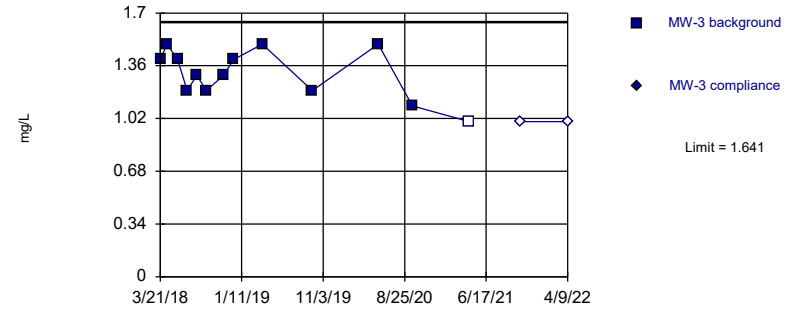


Background Data Summary: Mean=4.431, Std. Dev.=1.49, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.965, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride Intrawell Parametric

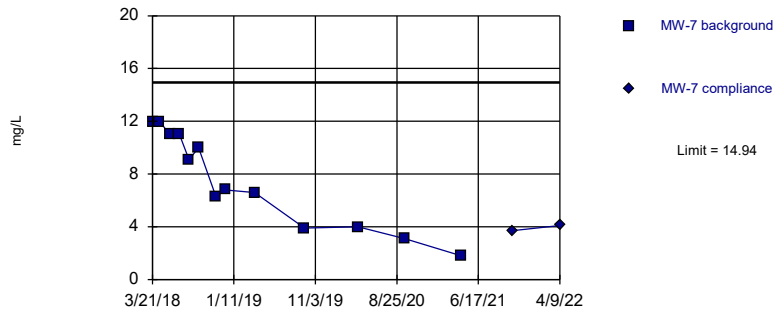


Background Data Summary: Mean=1.308, Std. Dev.=0.1605, n=13, 7.692% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.925, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride Intrawell Parametric

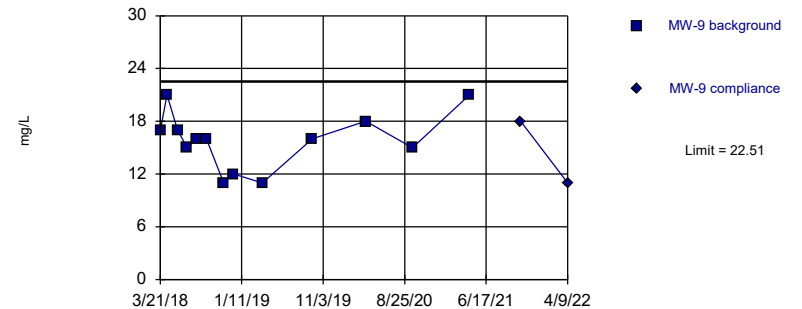


Background Data Summary: Mean=7.508, Std. Dev.=3.578, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9179, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride Intrawell Parametric

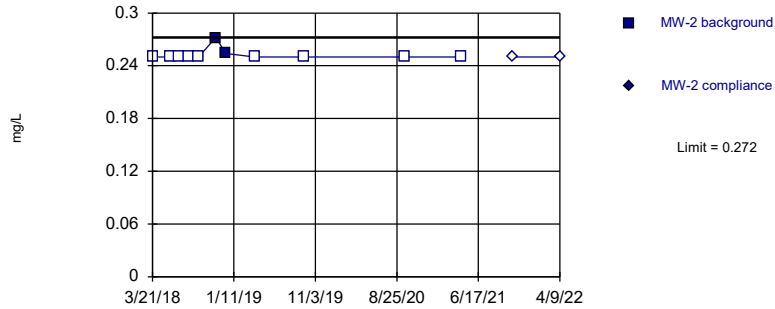


Background Data Summary: Mean=15.85, Std. Dev.=3.211, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9243, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Non-parametric

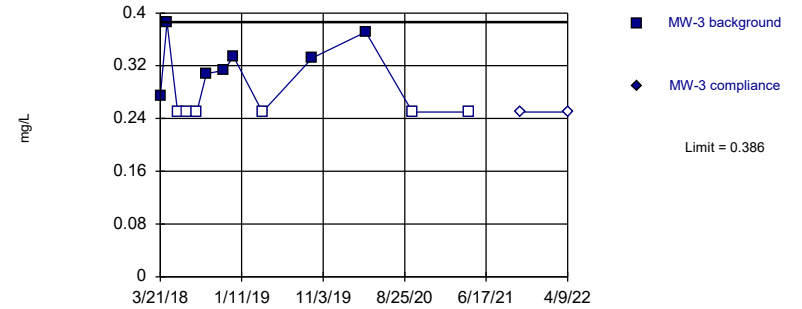


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 81.82% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Non-parametric

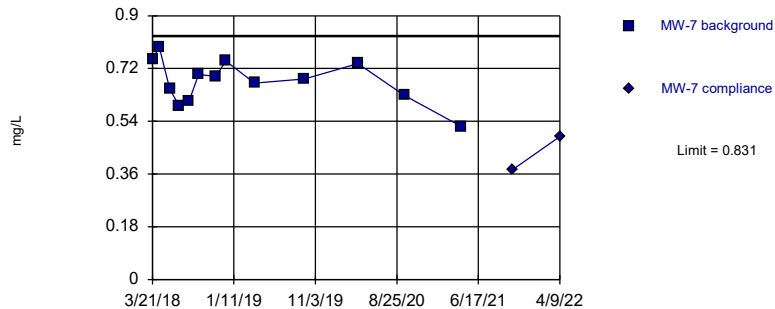


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 13 background values. 46.15% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Parametric

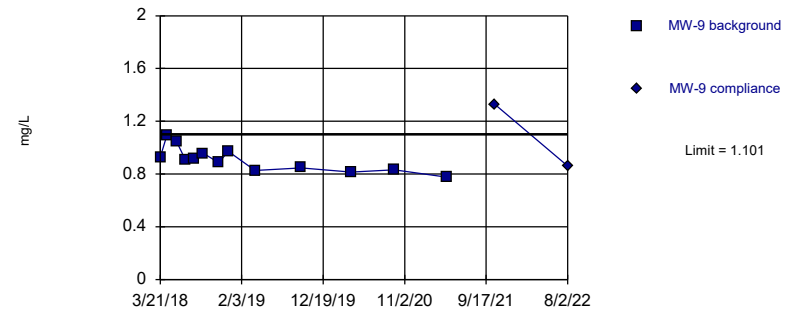


Background Data Summary: Mean=0.6751, Std. Dev.=0.07508, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9808, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Parametric

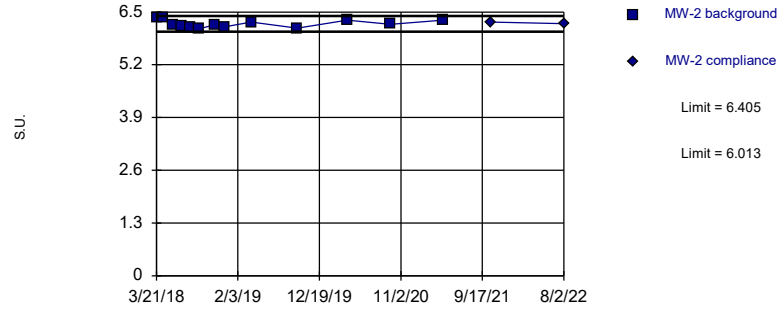


Background Data Summary: Mean=0.9082, Std. Dev.=0.09266, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9545, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH
Intrawell Parametric

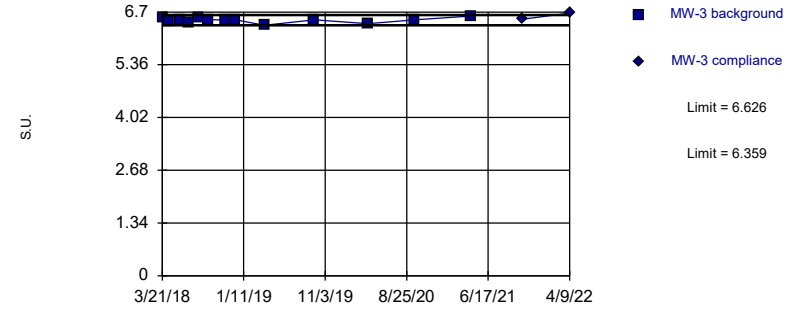


Background Data Summary: Mean=6.209, Std. Dev.=0.09429, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.922, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Exceeds Limits

pH
Intrawell Parametric

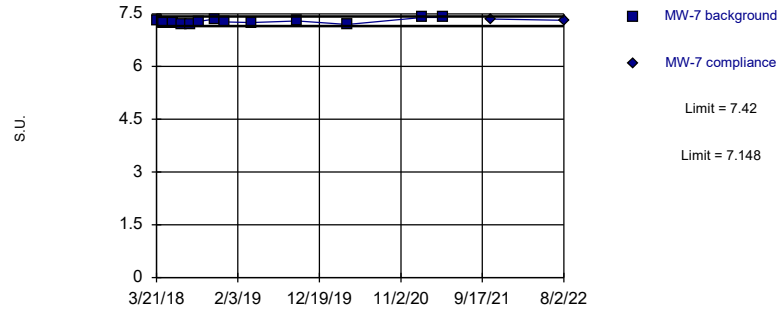


Background Data Summary: Mean=6.492, Std. Dev.=0.06418, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.944, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH
Intrawell Parametric

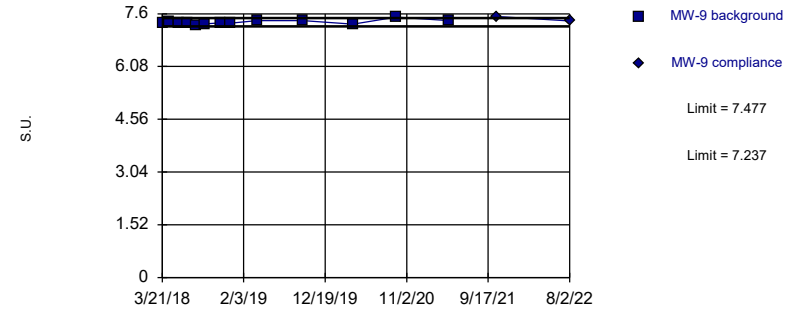


Background Data Summary: Mean=7.284, Std. Dev.=0.06552, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9081, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH
Intrawell Parametric

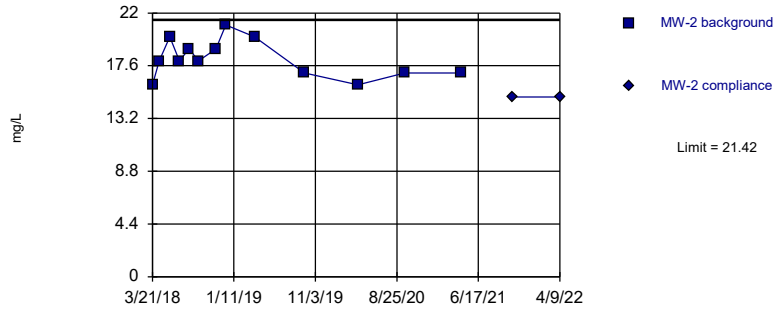


Background Data Summary: Mean=7.357, Std. Dev.=0.05793, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.91, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate Intrawell Parametric

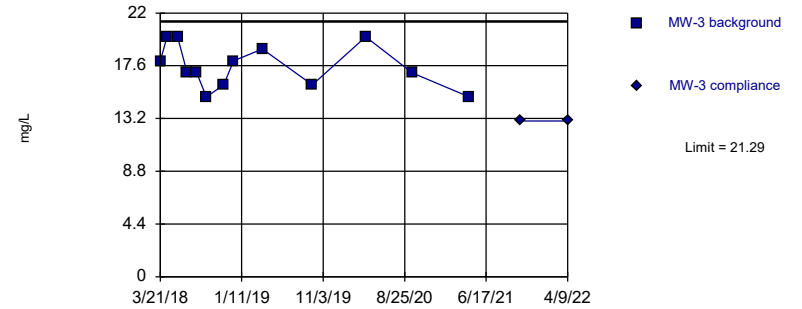


Background Data Summary: Mean=18.15, Std. Dev.=1.573, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.944, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate Intrawell Parametric

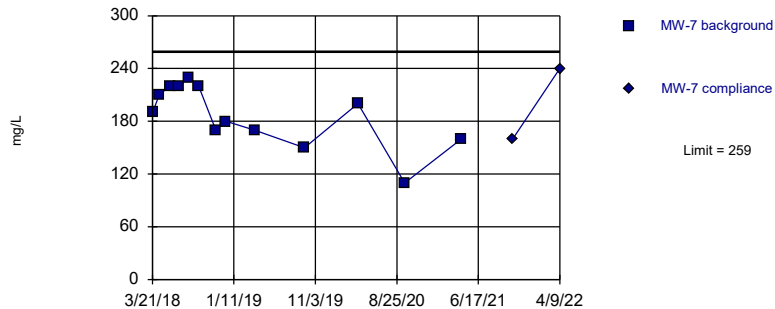


Background Data Summary: Mean=17.54, Std. Dev.=1.808, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9124, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate Intrawell Parametric

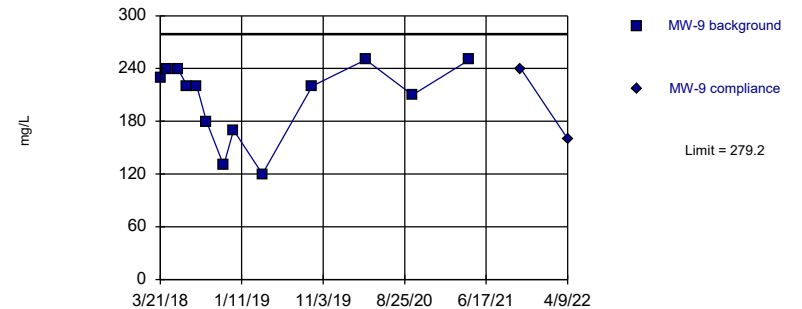


Background Data Summary: Mean=186.9, Std. Dev.=34.73, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9305, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate Intrawell Parametric



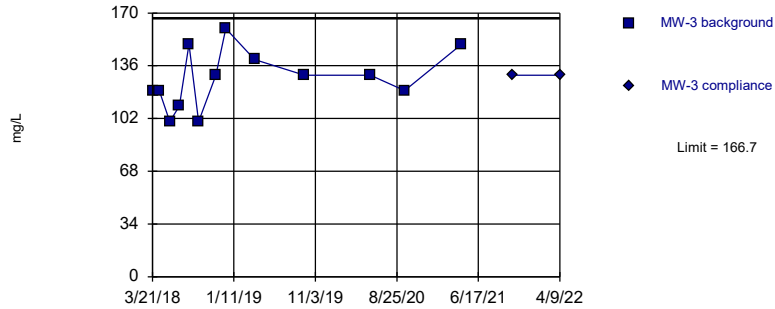
Background Data Summary (based on square transformation): Mean=44231, Std. Dev.=16238, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8921, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids

Intrawell Parametric



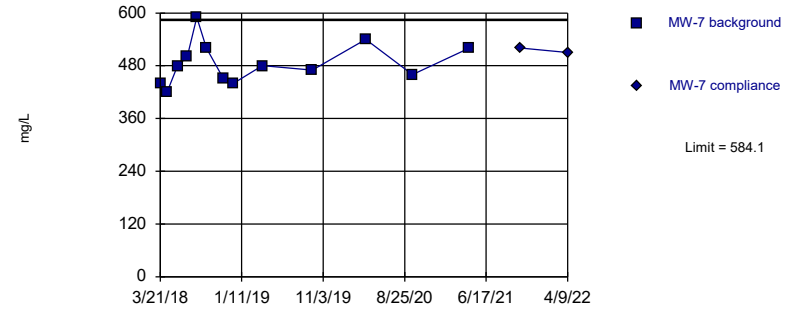
Background Data Summary: Mean=127.7, Std. Dev.=18.78, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9524, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids

Intrawell Parametric



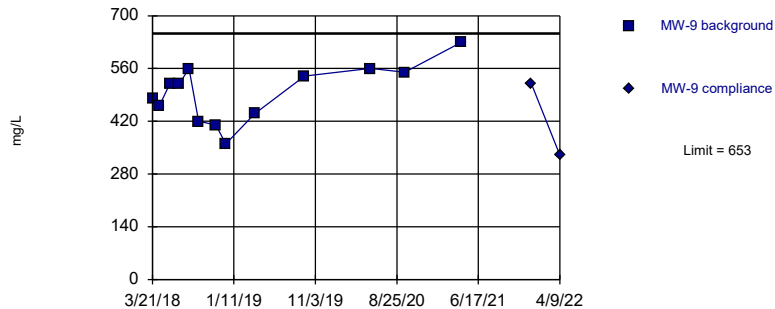
Background Data Summary: Mean=485.4, Std. Dev.=47.54, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9501, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids

Intrawell Parametric



Background Data Summary: Mean=496.2, Std. Dev.=75.56, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9721, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:38 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Prediction Limit

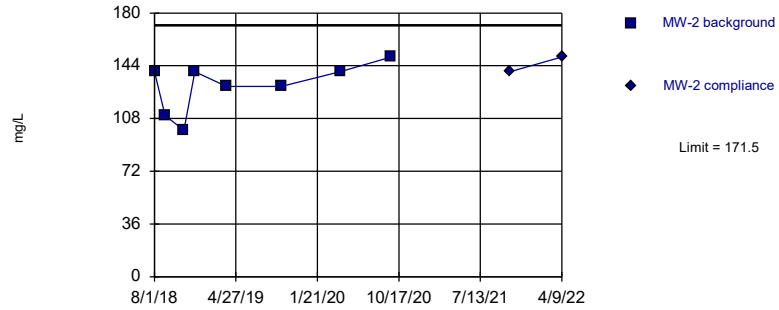
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/11/2023, 1:21 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Dissolved Solids (mg/L)	MW-2	171.5	n/a	4/9/2022	150	No	8	0	No	0.002505	Param Intra 1 of 2

Within Limit

Total Dissolved Solids

Intrawell Parametric



Background Data Summary: Mean=130, Std. Dev.=16.9, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8844, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 1:20 PM View: MW-2 TDS Detrending
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Appendix 8

Prediction Limit Charts – Detection Constituents
8th CCR Compliance Sampling Event
(2nd 2022 Semi-annual Detection
and Assessment Monitoring Event)
November 2, 2022

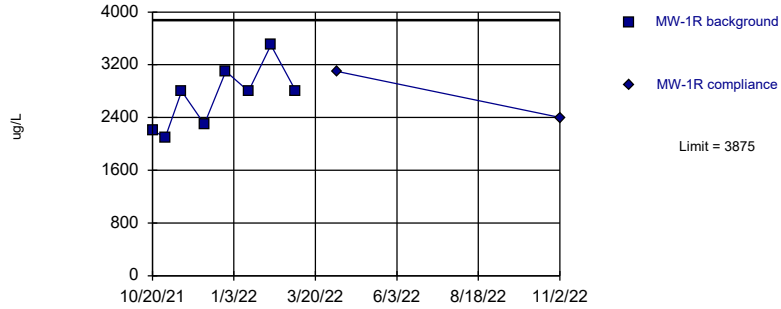
Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/11/2023, 1:43 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-1R	3875	n/a	11/2/2022	2400	No	8	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-1R	112.4	n/a	11/2/2022	72	No	8	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-1R	21.7	n/a	11/2/2022	14	No	8	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-1R	0.366	n/a	11/2/2022	0.25ND	No	8	75	n/a	0.02144	NP Intra (NDs) 1 of 2
pH (S.U.)	MW-1R	6.58	6.48	11/2/2022	6.55	No	8	0	n/a	0.04288	NP Intra (normality) ...
Sulfate (mg/L)	MW-1R	249.2	n/a	11/2/2022	170	No	8	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1R	512.1	n/a	11/2/2022	440	No	8	0	No	0.002505	Param Intra 1 of 2

Within Limit

Boron
Intrawell Parametric

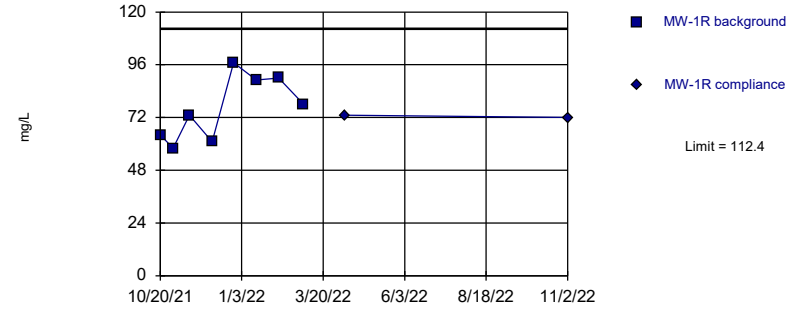


Background Data Summary: Mean=2700, Std. Dev.=478.1, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.929, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 1:42 PM View: 4-11-2023 confirmed results MW-1R only
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Calcium
Intrawell Parametric

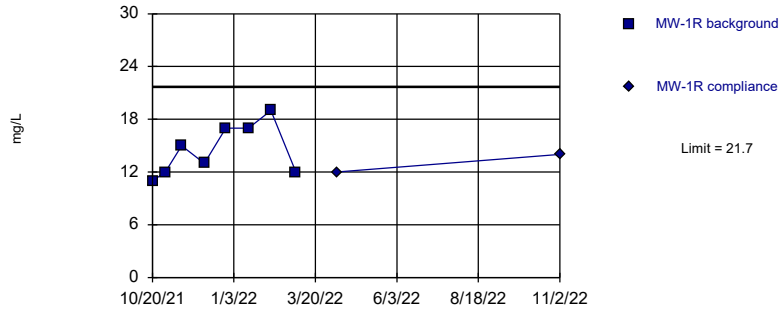


Background Data Summary: Mean=76.25, Std. Dev.=14.69, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9262, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 1:42 PM View: 4-11-2023 confirmed results MW-1R only
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride
Intrawell Parametric

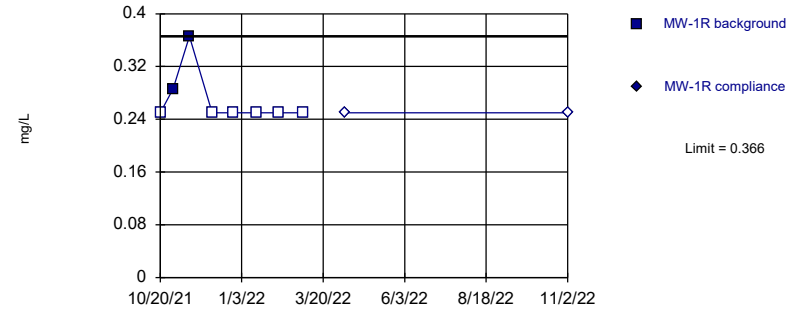


Background Data Summary: Mean=14.5, Std. Dev.=2.928, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9145, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 1:42 PM View: 4-11-2023 confirmed results MW-1R only
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride
Intrawell Non-parametric



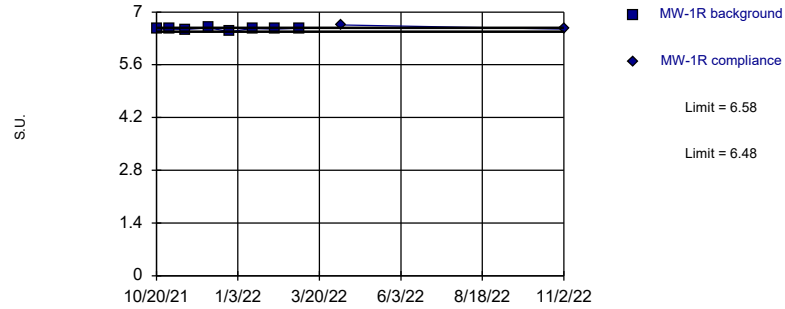
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Prediction Limit Analysis Run 4/11/2023 1:42 PM View: 4-11-2023 confirmed results MW-1R only
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH

Intrawell Non-parametric



Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/20/2023, 1:42 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-2	59.94	n/a	11/2/2022	81	Yes	13	0	No	0.002505	Param Intra 1 of 2
pH (S.U.)	MW-3	6.626	6.359	11/2/2022	6.93	Yes	13	0	No	0.001253	Param Intra 1 of 2

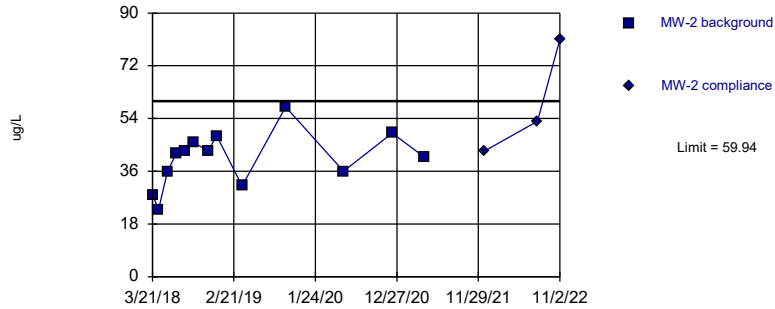
Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/20/2023, 1:42 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-2	59.94	n/a	11/2/2022	81	Yes	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-3	33.39	n/a	11/2/2022	29	No	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-7	2352	n/a	11/2/2022	2300	No	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-9	6408	n/a	11/2/2022	3000	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-2	24.21	n/a	11/2/2022	24	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-3	19.08	n/a	11/2/2022	17	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-7	144	n/a	11/2/2022	120	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-9	97.23	n/a	11/2/2022	97	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-2	7.525	n/a	11/2/2022	7.4	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-3	1.641	n/a	11/2/2022	1ND	No	13	7.692	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-7	14.94	n/a	11/2/2022	3.1	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-9	22.51	n/a	11/2/2022	12	No	13	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-2	0.272	n/a	11/2/2022	0.25ND	No	11	81.82	n/a	0.01276	NP Intra (NDs) 1 of 2
Fluoride (mg/L)	MW-3	0.386	n/a	11/2/2022	0.25ND	No	13	46.15	n/a	0.009692	NP Intra (normality) ...
Fluoride (mg/L)	MW-7	0.831	n/a	11/2/2022	0.476	No	13	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-9	1.101	n/a	11/2/2022	1.03	No	13	0	No	0.002505	Param Intra 1 of 2
pH (S.U.)	MW-2	6.405	6.013	11/2/2022	6.23	No	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-3	6.626	6.359	11/2/2022	6.93	Yes	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-7	7.42	7.148	11/2/2022	7.36	No	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-9	7.477	7.237	11/2/2022	7.39	No	13	0	No	0.001253	Param Intra 1 of 2
Sulfate (mg/L)	MW-2	21.42	n/a	11/2/2022	15	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-3	21.29	n/a	11/2/2022	10	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-7	259	n/a	11/2/2022	130	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-9	279.2	n/a	11/2/2022	160	No	13	0	x^2	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-3	166.7	n/a	11/2/2022	160	No	13	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-7	584.1	n/a	11/2/2022	500	No	13	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-9	653	n/a	11/2/2022	540	No	13	0	No	0.002505	Param Intra 1 of 2

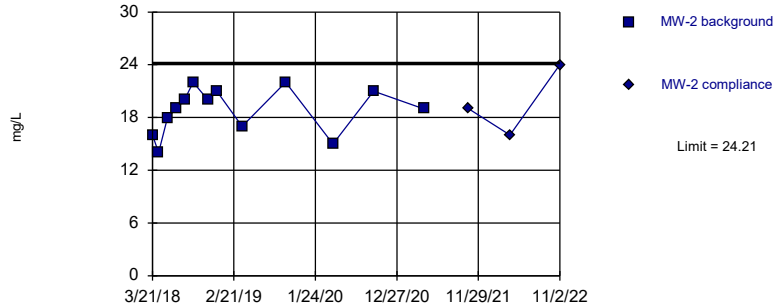
Exceeds Limit

Boron Intrawell Parametric



Within Limit

Calcium Intrawell Parametric

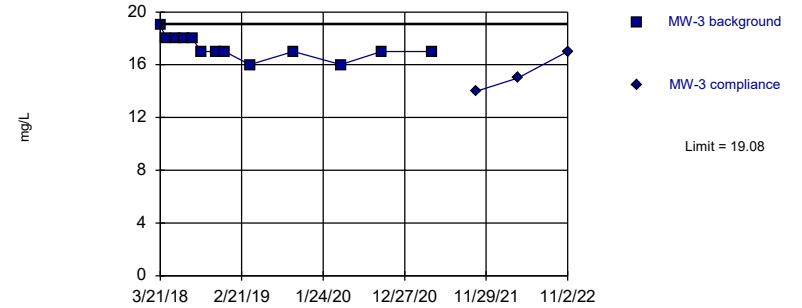


Background Data Summary: Mean=18.77, Std. Dev.=2.619, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.936, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Calcium Intrawell Parametric

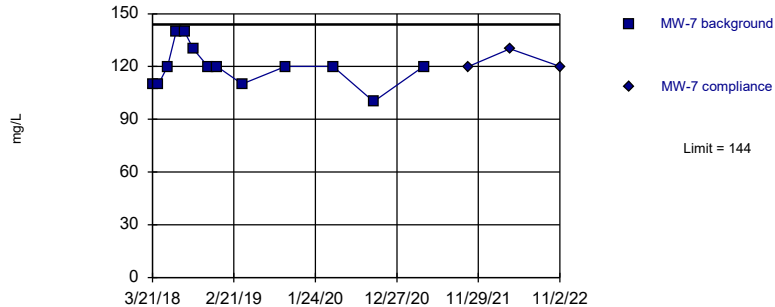


Background Data Summary: Mean=17.31, Std. Dev.=0.8549, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8905, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Calcium Intrawell Parametric

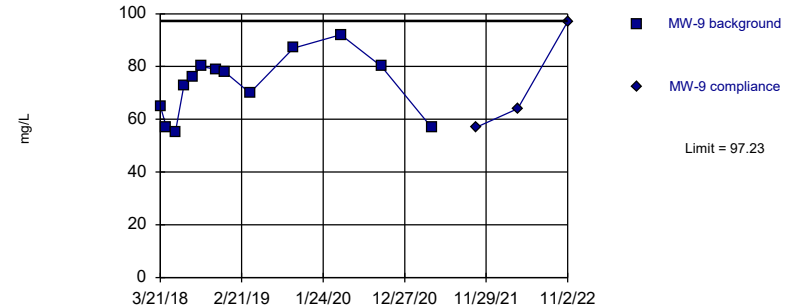


Background Data Summary: Mean=120, Std. Dev.=11.55, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8997, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Calcium Intrawell Parametric

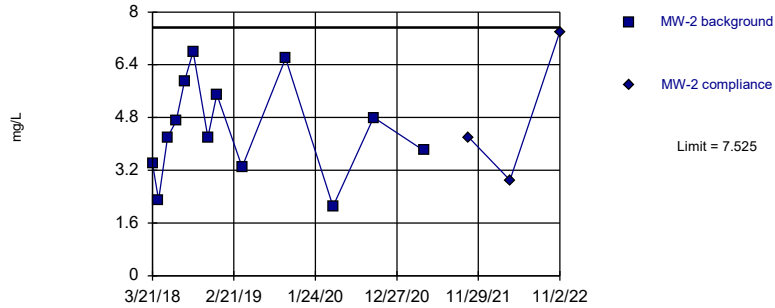


Background Data Summary: Mean=73, Std. Dev.=11.67, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.939, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride Intrawell Parametric

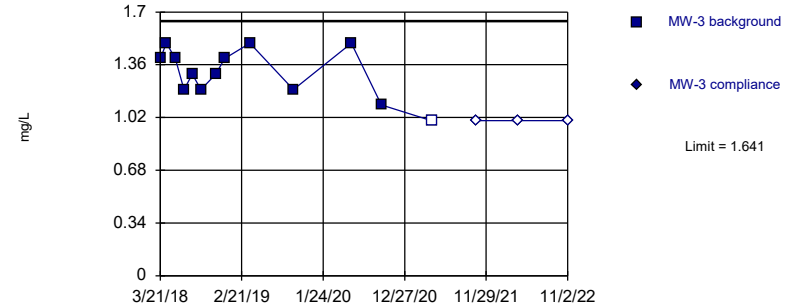


Background Data Summary: Mean=4.431, Std. Dev.=1.49, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.965, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride Intrawell Parametric

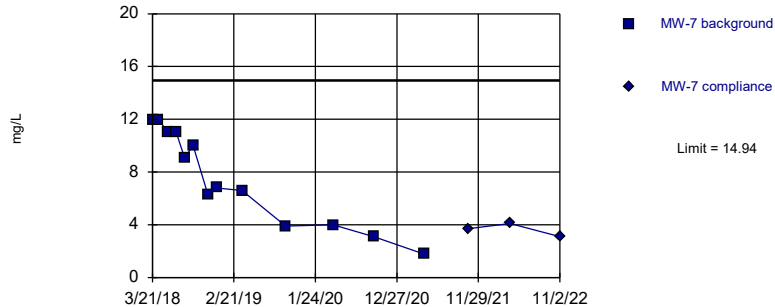


Background Data Summary: Mean=1.308, Std. Dev.=0.1605, n=13, 7.692% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.925, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride Intrawell Parametric

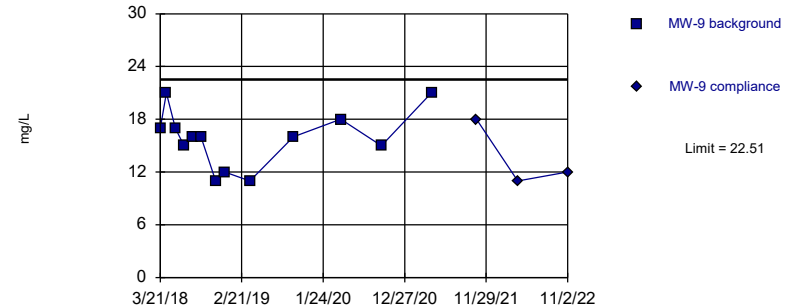


Background Data Summary: Mean=7.508, Std. Dev.=3.578, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9179, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride Intrawell Parametric

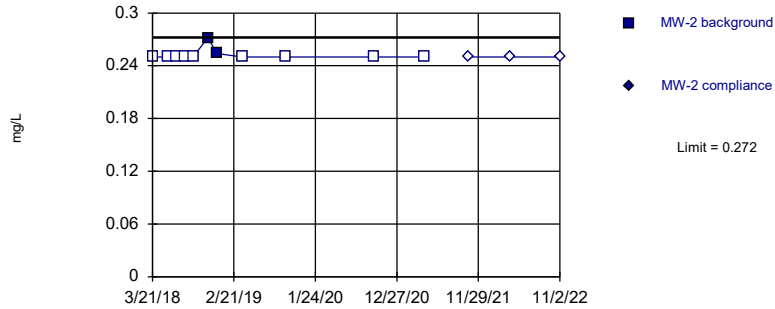


Background Data Summary: Mean=15.85, Std. Dev.=3.211, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9243, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Non-parametric

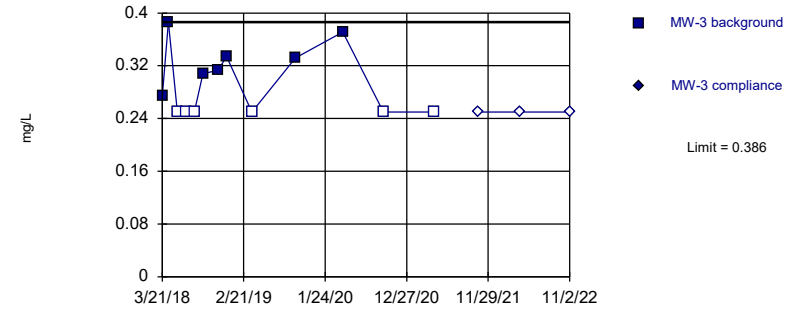


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 81.82% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Non-parametric

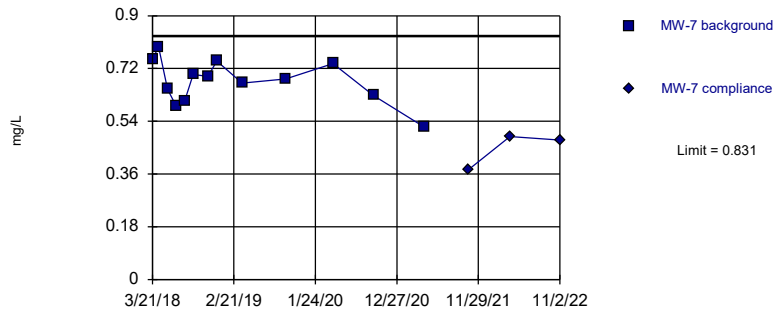


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 13 background values. 46.15% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Parametric

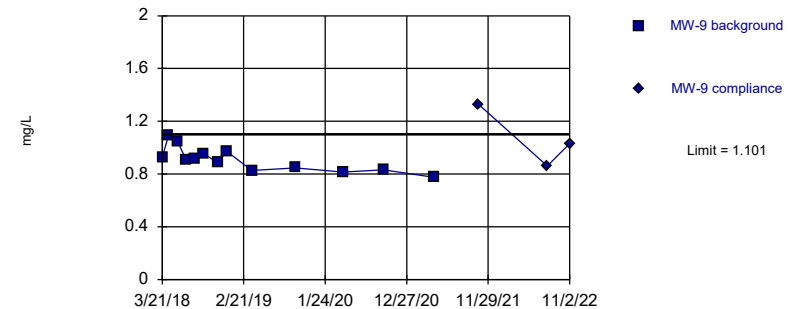


Background Data Summary: Mean=0.6751, Std. Dev.=0.07508, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9808, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Parametric

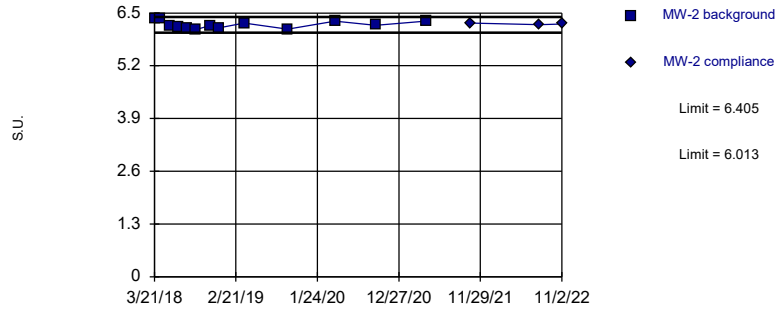


Background Data Summary: Mean=0.9082, Std. Dev.=0.09266, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9545, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH
Intrawell Parametric

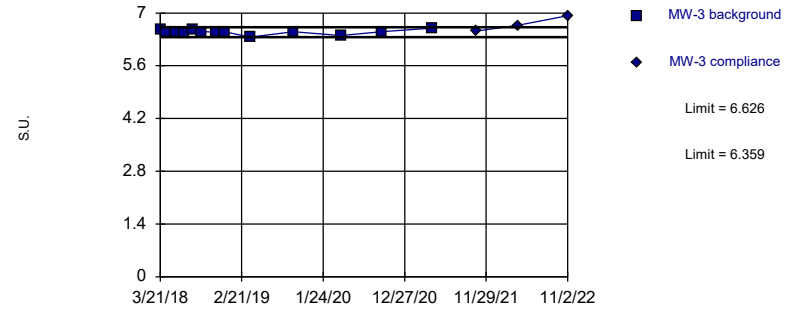


Background Data Summary: Mean=6.209, Std. Dev.=0.09429, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.922, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Exceeds Limits

pH
Intrawell Parametric

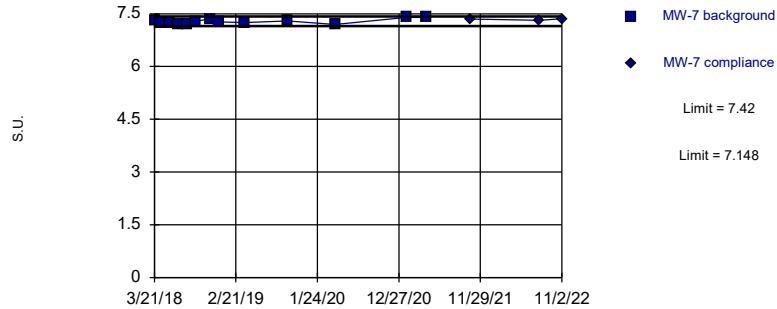


Background Data Summary: Mean=6.492, Std. Dev.=0.06418, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.944, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH
Intrawell Parametric

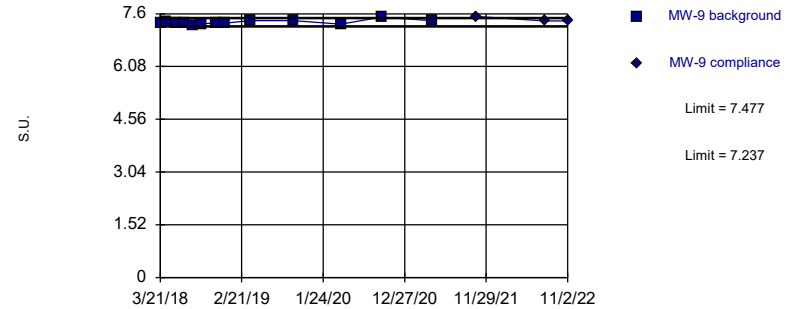


Background Data Summary: Mean=7.284, Std. Dev.=0.06552, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9081, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH
Intrawell Parametric

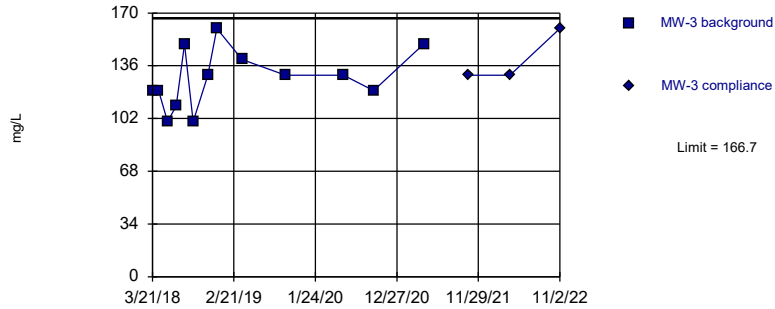


Background Data Summary: Mean=7.357, Std. Dev.=0.05793, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.91, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids
Intrawell Parametric

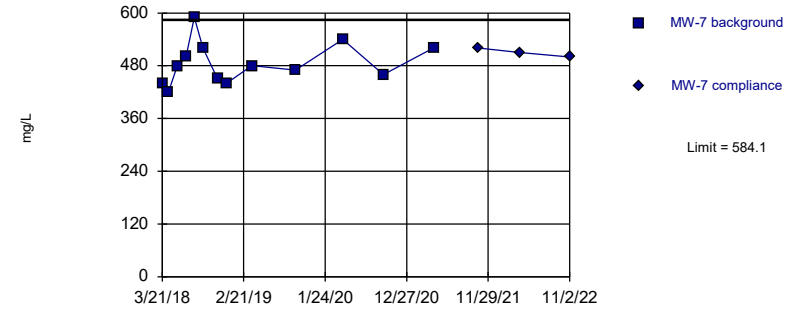


Background Data Summary: Mean=127.7, Std. Dev.=18.78, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9524, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids
Intrawell Parametric

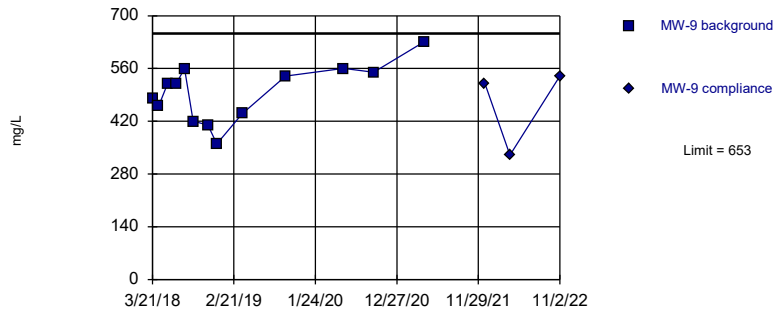


Background Data Summary: Mean=485.4, Std. Dev.=47.54, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9501, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids
Intrawell Parametric



Background Data Summary: Mean=496.2, Std. Dev.=75.56, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9721, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:40 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Prediction Limit

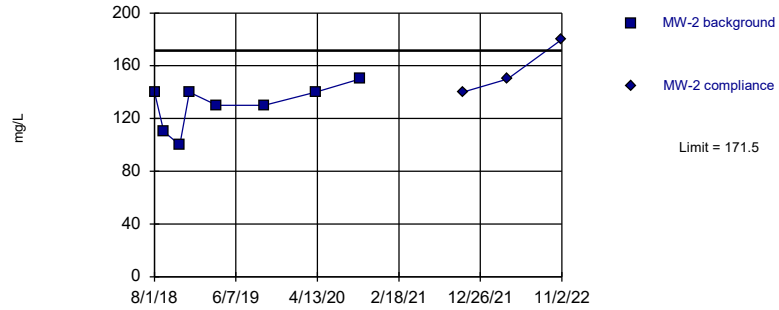
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/13/2023, 9:32 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Dissolved Solids (mg/L)	MW-2	171.5	n/a	11/2/2022	180	Yes	8	0	No	0.002505	Param Intra 1 of 2

Exceeds Limit

Total Dissolved Solids

Intrawell Parametric



Background Data Summary: Mean=130, Std. Dev.=16.9, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8844, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/13/2023 9:31 AM View: MW-2 TDS Detrending
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Appendix 8

Prediction Limit Charts – Detection Constituents
9th CCR Compliance Sampling Event
(1st 2023 Semi-annual Detection
and Assessment Monitoring Event)
March 12, 2023

Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/6/2023, 2:50 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
pH (S.U.)	MW-1R	6.58	6.48	3/12/2023	6.6	Yes	8	0	n/a	0.04288	NP Intra (normality) ...

Prediction Limit

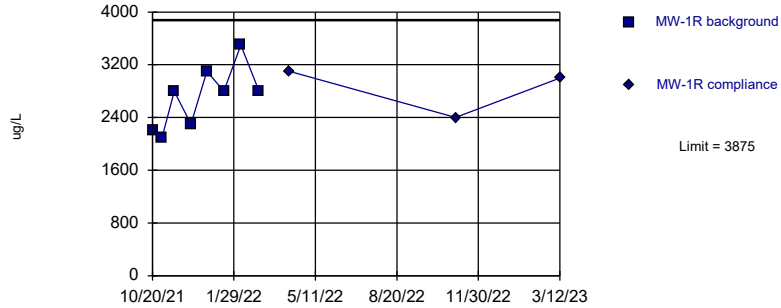
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/6/2023, 2:50 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-1R	3875	n/a	3/12/2023	3000	No	8	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-1R	112.4	n/a	3/12/2023	70	No	8	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-1R	21.7	n/a	3/12/2023	10	No	8	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-1R	0.366	n/a	3/12/2023	0.25ND	No	8	75	n/a	0.02144	NP Intra (NDs) 1 of 2
pH (S.U.)	MW-1R	6.58	6.48	3/12/2023	6.6	Yes	8	0	n/a	0.04288	NP Intra (normality) ...
Sulfate (mg/L)	MW-1R	249.2	n/a	3/12/2023	140	No	8	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1R	512.1	n/a	3/12/2023	300	No	8	0	No	0.002505	Param Intra 1 of 2

Within Limit

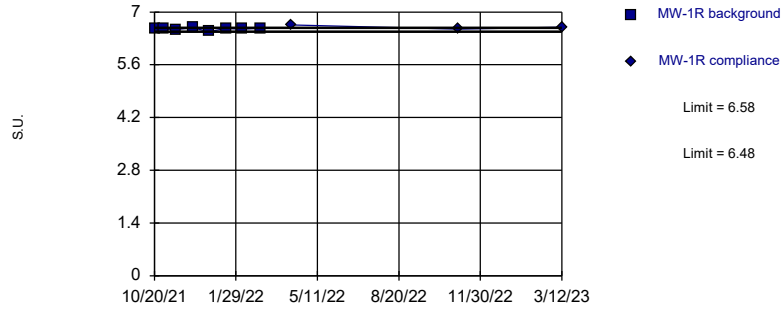
Boron

Intrawell Parametric



Exceeds Limits

pH
Intrawell Non-parametric

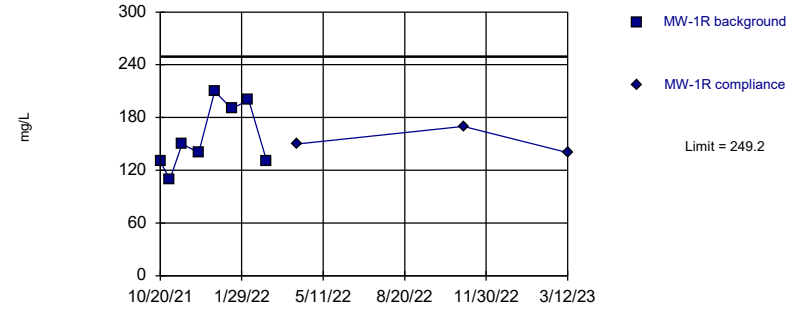


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.08484. Individual comparison alpha = 0.04288 (1 of 2).

Prediction Limit Analysis Run 4/6/2023 2:49 PM View: CONFIRMED RESULTS With MW-1R SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate
Intrawell Parametric



Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/20/2023, 1:44 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-7	2352	n/a	3/12/2023	2600	Yes	13	0	No	0.002505	Param Intra 1 of 2
pH (S.U.)	MW-2	6.405	6.013	3/12/2023	6.51	Yes	13	0	No	0.001253	Param Intra 1 of 2

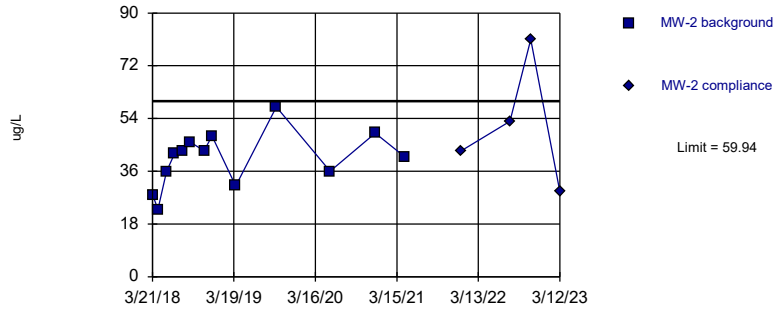
Prediction Limit

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/20/2023, 1:44 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/L)	MW-2	59.94	n/a	3/12/2023	29	No	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-3	33.39	n/a	3/12/2023	31	No	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-7	2352	n/a	3/12/2023	2600	Yes	13	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-9	6408	n/a	3/12/2023	3600	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-2	24.21	n/a	3/12/2023	12	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-3	19.08	n/a	3/12/2023	14	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-7	144	n/a	3/12/2023	140	No	13	0	No	0.002505	Param Intra 1 of 2
Calcium (mg/L)	MW-9	97.23	n/a	3/12/2023	95	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-2	7.525	n/a	3/12/2023	1.3	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-3	1.641	n/a	3/12/2023	1ND	No	13	7.692	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-7	14.94	n/a	3/12/2023	3.7	No	13	0	No	0.002505	Param Intra 1 of 2
Chloride (mg/L)	MW-9	22.51	n/a	3/12/2023	11	No	13	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-2	0.272	n/a	3/12/2023	0.25ND	No	11	81.82	n/a	0.01276	NP Intra (NDs) 1 of 2
Fluoride (mg/L)	MW-3	0.386	n/a	3/12/2023	0.25ND	No	13	46.15	n/a	0.009692	NP Intra (normality) ...
Fluoride (mg/L)	MW-7	0.831	n/a	3/12/2023	0.635	No	13	0	No	0.002505	Param Intra 1 of 2
Fluoride (mg/L)	MW-9	1.101	n/a	3/12/2023	1.02	No	13	0	No	0.002505	Param Intra 1 of 2
pH (S.U.)	MW-2	6.405	6.013	3/12/2023	6.51	Yes	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-3	6.626	6.359	3/12/2023	6.51	No	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-7	7.42	7.148	3/12/2023	7.4	No	13	0	No	0.001253	Param Intra 1 of 2
pH (S.U.)	MW-9	7.477	7.237	3/12/2023	7.43	No	13	0	No	0.001253	Param Intra 1 of 2
Sulfate (mg/L)	MW-2	21.42	n/a	3/12/2023	8.7	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-3	21.29	n/a	3/12/2023	13	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-7	259	n/a	3/12/2023	190	No	13	0	No	0.002505	Param Intra 1 of 2
Sulfate (mg/L)	MW-9	279.2	n/a	3/12/2023	160	No	13	0	x^2	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-3	166.7	n/a	3/12/2023	93	No	13	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-7	584.1	n/a	3/12/2023	520	No	13	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-9	653	n/a	3/12/2023	480	No	13	0	No	0.002505	Param Intra 1 of 2

Within Limit

Boron
Intrawell Parametric

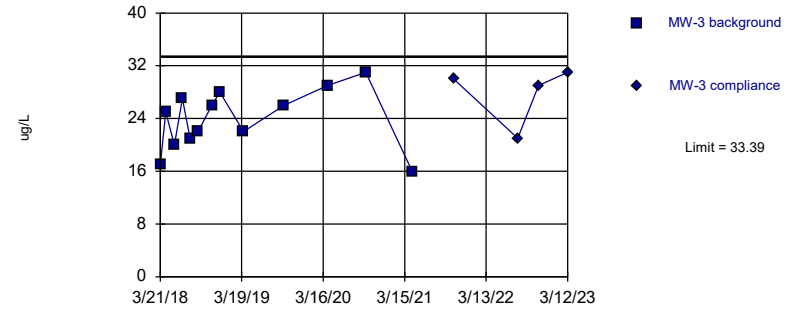


Background Data Summary: Mean=40.31, Std. Dev.=9.455, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.98, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Boron
Intrawell Parametric

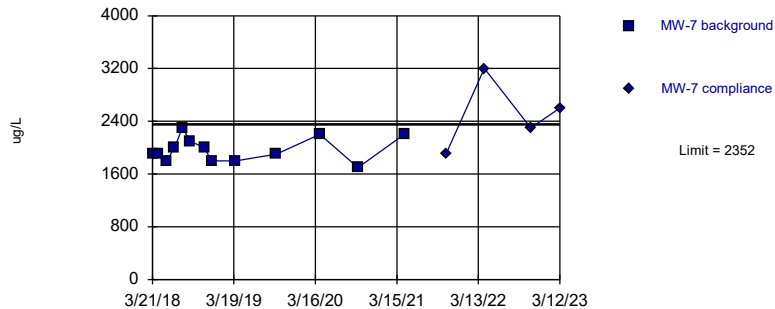


Background Data Summary: Mean=23.85, Std. Dev.=4.598, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9639, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

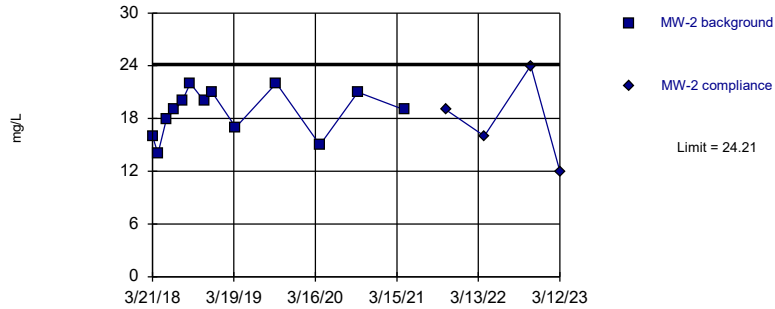
Exceeds Limit

Boron
Intrawell Parametric



Within Limit

Calcium Intrawell Parametric

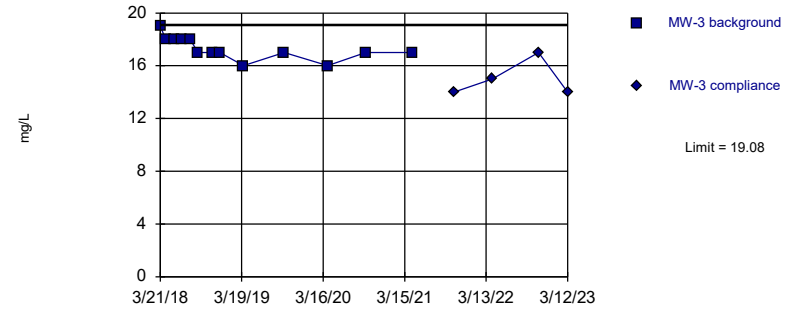


Background Data Summary: Mean=18.77, Std. Dev.=2.619, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.936, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Calcium Intrawell Parametric

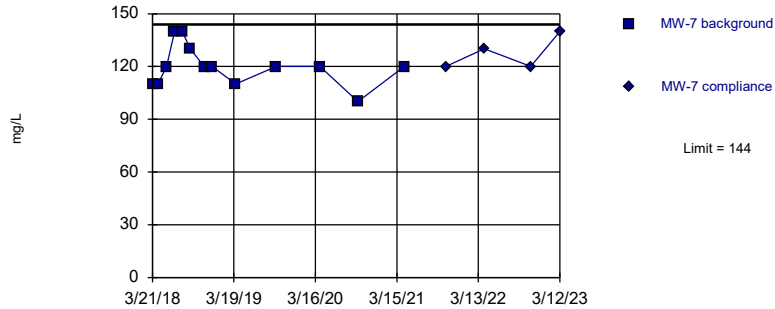


Background Data Summary: Mean=17.31, Std. Dev.=0.8549, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8905, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

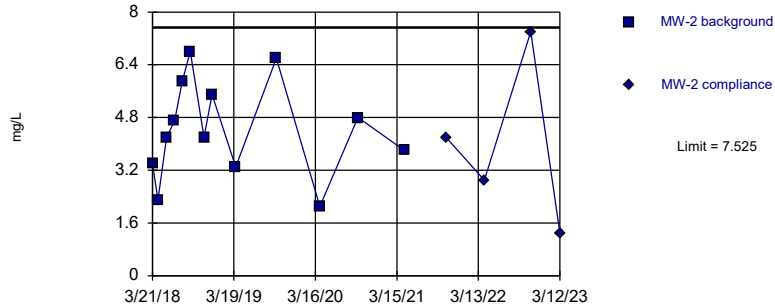
Within Limit

Calcium Intrawell Parametric



Within Limit

Chloride
Intrawell Parametric

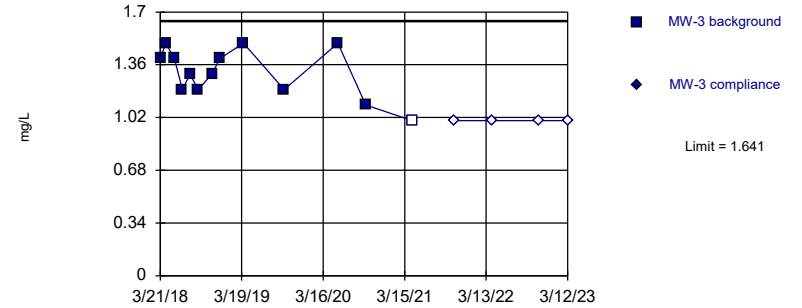


Background Data Summary: Mean=4.431, Std. Dev.=1.49, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.965, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride
Intrawell Parametric

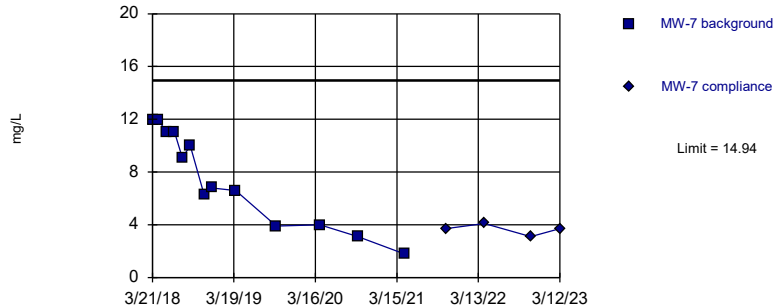


Background Data Summary: Mean=1.308, Std. Dev.=0.1605, n=13, 7.692% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.925, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride
Intrawell Parametric

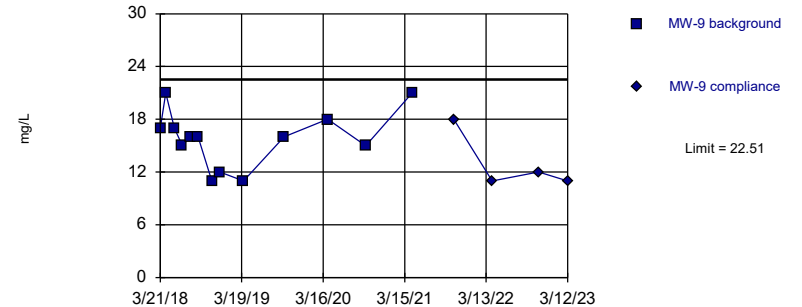


Background Data Summary: Mean=7.508, Std. Dev.=3.578, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9179, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Chloride
Intrawell Parametric

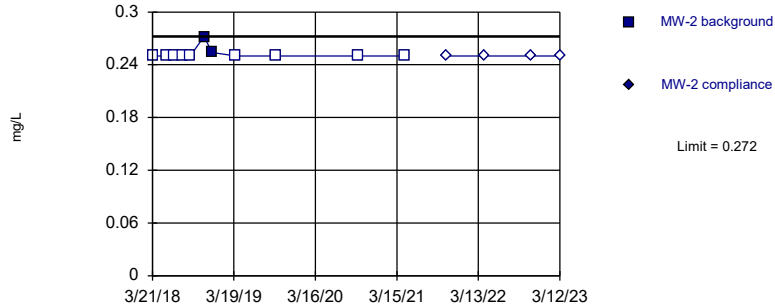


Background Data Summary: Mean=15.85, Std. Dev.=3.211, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9243, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Non-parametric

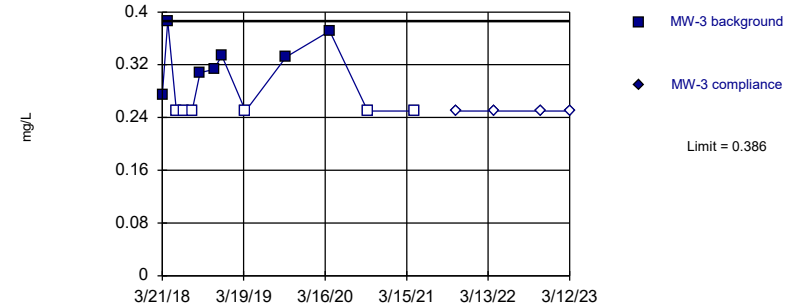


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 81.82% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Fluoride Intrawell Non-parametric

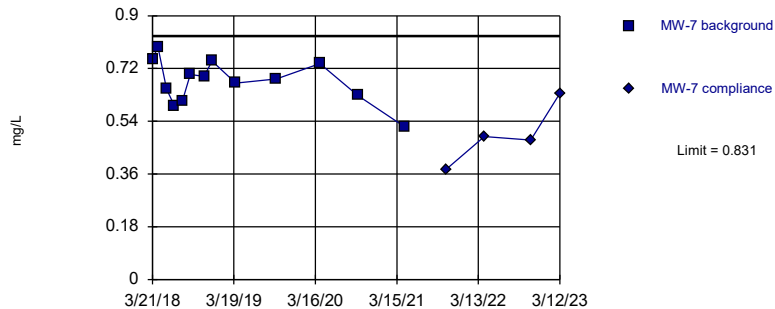


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 13 background values. 46.15% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

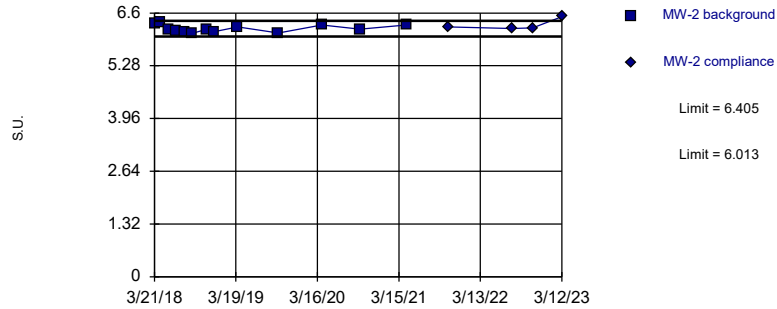
Within Limit

Fluoride Intrawell Parametric



Exceeds Limits

pH Intrawell Parametric

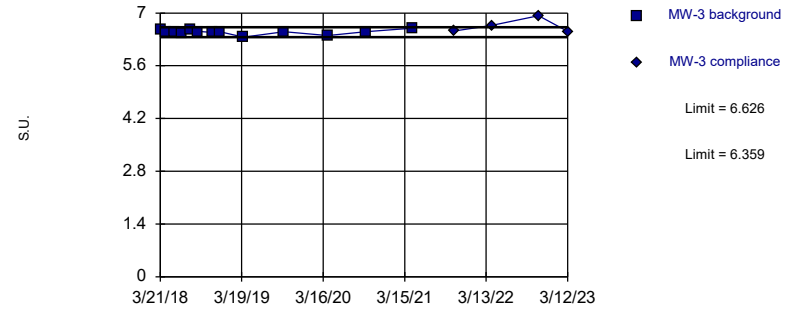


Background Data Summary: Mean=6.209, Std. Dev.=0.09429, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.922, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH Intrawell Parametric

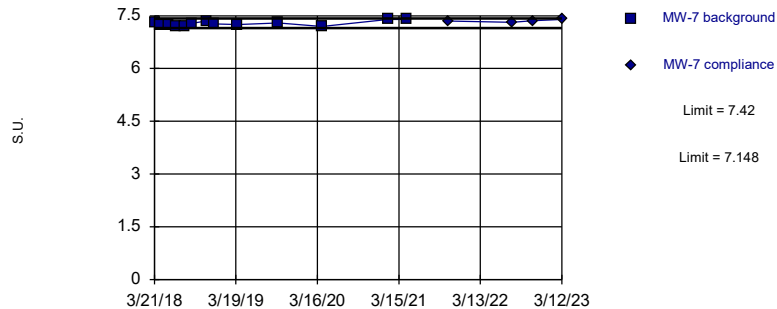


Background Data Summary: Mean=6.492, Std. Dev.=0.06418, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.944, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH Intrawell Parametric

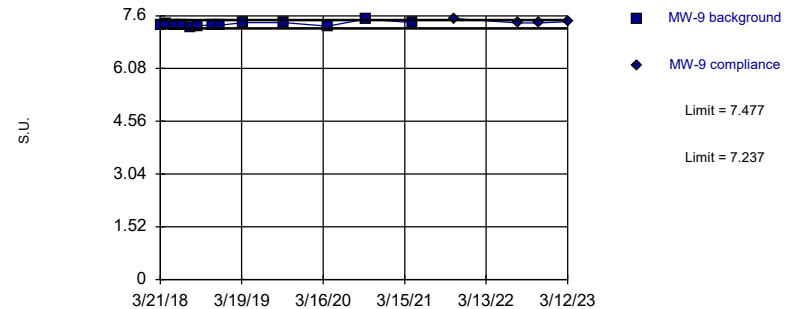


Background Data Summary: Mean=7.284, Std. Dev.=0.06552, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9081, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limits

pH Intrawell Parametric

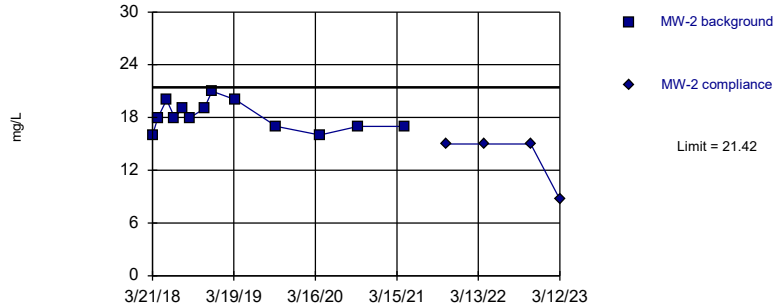


Background Data Summary: Mean=7.357, Std. Dev.=0.05793, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.91, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate
Intrawell Parametric

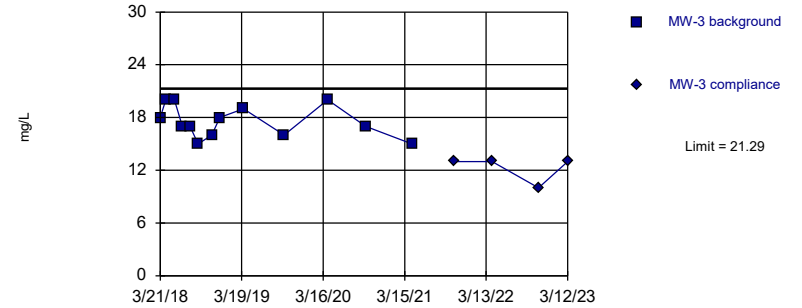


Background Data Summary: Mean=18.15, Std. Dev.=1.573, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.944, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Sulfate
Intrawell Parametric

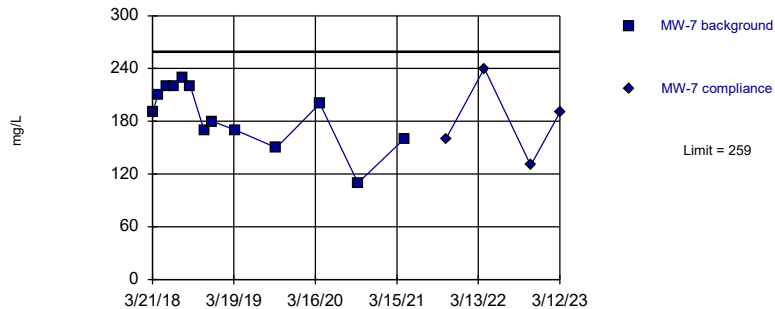


Background Data Summary: Mean=17.54, Std. Dev.=1.808, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9124, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

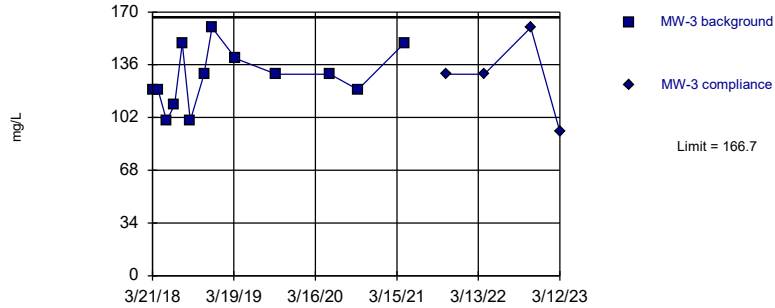
Within Limit

Sulfate
Intrawell Parametric



Within Limit

Total Dissolved Solids
Intrawell Parametric

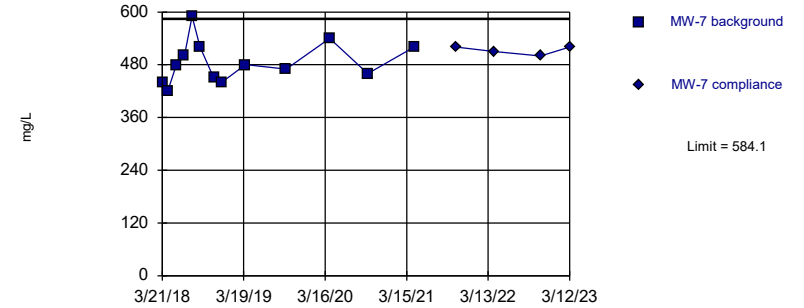


Background Data Summary: Mean=127.7, Std. Dev.=18.78, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9524, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids
Intrawell Parametric

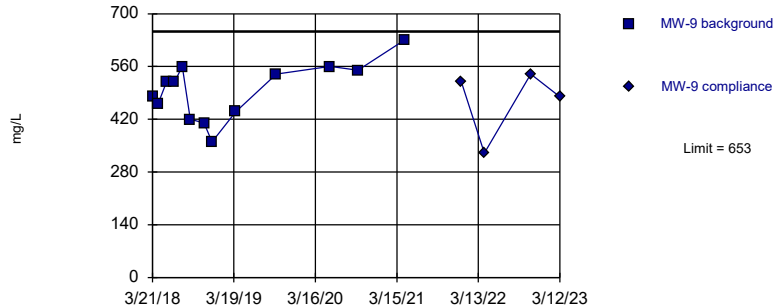


Background Data Summary: Mean=485.4, Std. Dev.=47.54, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9501, critical = 0.866. Kappa = 2.077 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/20/2023 1:43 PM View: Confirmed Results Outliers Removed - 3-16-2022
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Within Limit

Total Dissolved Solids
Intrawell Parametric



Prediction Limit

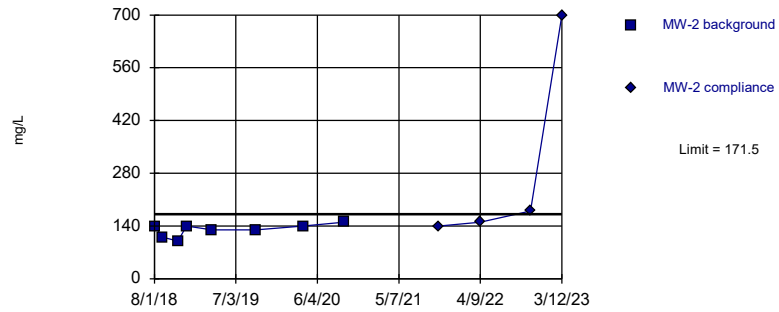
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/11/2023, 1:14 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Dissolved Solids (mg/L)	MW-2	171.5	n/a	3/12/2023	700	Yes	8	0	No	0.002505	Param Intra 1 of 2

Exceeds Limit

Total Dissolved Solids

Intrawell Parametric



Background Data Summary: Mean=130, Std. Dev.=16.9, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8844, critical = 0.851. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 4/11/2023 1:13 PM View: MW-2 TDS Detrending
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Appendix 9

Assessment Monitoring Statistical Evaluation Summaries

Appendix 9

Assessment Monitoring Statistical Evaluation Summary

For SBMU – Sikeston Power Station Fly Ash Pond

April 20, 2023, Revised June 30, 2023

The following summarizes the results of the Assessment Monitoring Statistical Evaluation for the November 2022 and March 2023 sampling events for 40 CFR (§) 257 (CCR Rule) compliance for the Fly Ash Pond at the Sikeston Board of Municipal Utilities – Sikeston Power Station. Included are the following Tables and Statistical Analysis Summary Reports:

Table 9-1 – Confidence Interval Summary (for each Assessment Monitoring Constituent Well Pairs)

Appendix 9-1 – Outlier Analysis Summary (Sanitas* Output Summary)

Appendix 9-2 – Confidence Interval Summary (Sanitas* Output Summary)

Appendix 9-3 – Trend Tests with Confidence Bands (Sanitas* Output Summary)

Outlier Removal (data evaluation and screening) The §257 Appendix IV - Constituents for Assessment Monitoring were evaluated for SSLs over GWPS using Sanitas* to calculate confidence intervals based on the monitoring data following traditional data review, quality control, and outlier testing (Appendix 9-1). Sanitas* identified five outliers in the assessment monitoring database (Appendix 9-1). These outliers were screened from the assessment monitoring database prior to calculating confidence intervals.

Confidence Intervals/ SSLs Confidence Intervals were calculated for each well constituent pair as summarized in Table 9-1 and Appendix 9-2. If the lower confidence interval is greater than its respective GWPS, an SSL is apparent. Four SSLs were identified in the November 2022 and March 2023 data and are indicated on Table 9-1. The SSLs reported for these events are:

- Molybdenum (MW-1R, MW-7, and MW-9), and
- Cobalt (MW-1R)

Trend Analysis Trend analysis was also conducted to determine if the SSLs are symptomatic of increasing concentrations of these constituents. Results of the trend analysis are provided in Appendix 3, and they demonstrate the following:

- Molybdenum concentrations at MW-7, and MW-9 are decreasing with statistically significant trends, and
- Cobalt and Molybdenum concentrations at MW-1R do not show statistically significant trends.

Note: * = Sanitas© Statistical Software, © 1992-2023 SANITAS TECHNOLOGIES, Alamosa Colorado 81101-0012.

Table 9-1

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Fly Ash Pond Assessment Monitoring Statistical Evaluation
Sikeston, Missouri**

Table 9-1 - Confidence Interval Summary

		Monitoring Well ID									
		MW-1R		MW-2		MW-3		MW-7		MW-9	
40 CFR 257 Appendix IV Constituents for Assessment Monitoring	Units ^{1,2,3}	Lower Confidence Limit ⁴	Upper Confidence Limit ⁵	Lower Confidence Limit ⁴	Upper Confidence Limit ⁵	Lower Confidence Limit ⁴	Upper Confidence Limit ⁵	Lower Confidence Limit ⁴	Upper Confidence Limit ⁵	Lower Confidence Limit ⁴	Upper Confidence Limit ⁵
Antimony	ug/L	3	3	3	3	3	3	3	3	3	3
Arsenic	ug/L	1	1.5	1	1	1	1	1	1	1	1.2
Barium	ug/L	36.72	50.08	133.7	210.3	89.42	104.4	43	62	47	78
Beryllium	ug/L	1	1	1	1	1	1	1	1	1	1
Cadmium	ug/L	1	1	1	1	1	1	1	1	1	1
Chromium	ug/L	4	4	4	4	4	4	4	4	4	8.1
Cobalt	ug/L	6.444	10.12	2	2	2	2	2	3.5	2	2
Fluoride	mg/L	0.25	0.286	0.25	0.254	0.25	0.332	0.5618	0.7029	0.8605	1.022
Lead	ug/L	1	1	1	1	1	1	1	1	1	1
Lithium	ug/L	10	20	10	20	10	20	22.67	29.53	13.8	19.4
Mercury	ug/L	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Molybdenum	ug/L	162.9	199.1	1	1	1	1	131.3	167.5	304.4	671.6
Selenium	ug/L	1	1	1	2	1	1	4.579	38.23	1	1
Thallium	ug/L	1	1	1	1	1	1	1	1	1	1
Radium 226/228 (Combined)	pCi/L	0.3742	1.008	0.7094	1.566	0.5281	1.292	0.5114	1.542	0.4287	1.232

NOTES:

1. ug/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. Assessment Monitoring determines compliance with the Lower Confidence Limit.
5. Corrective Action Monitoring determines compliance with the Upper Confidence Limit.
6. Shaded cells indicate Lower Confidence Limit greater than Groundwater Protection Standards.

Appendix 9-1

Outlier Analysis
(Sanitas* Output Summary)

Outlier Analysis

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Antimony (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	3	0	unknown	ShapiroWilk
Antimony (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	3	0	unknown	ShapiroWilk
Antimony (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	3	0	unknown	ShapiroWilk
Antimony (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	3	0	unknown	ShapiroWilk
Antimony (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	3	0	unknown	ShapiroWilk
Arsenic (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Arsenic (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Arsenic (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Arsenic (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	1.025	0.07071	unknown	ShapiroWilk
Arsenic (ug/L)	MW-1R	No	n/a	n/a	NP (nrm)	NaN	8	1.1	0.1927	unknown	ShapiroWilk
Barium (ug/L)	MW-2 (bg)	No	n/a	n/a	EPA 1989	0.05	8	175	35.86	normal	ShapiroWilk
Barium (ug/L)	MW-3 (bg)	No	n/a	n/a	NP (nrm)	NaN	8	98	3.162	unknown	ShapiroWilk
Barium (ug/L)	MW-7	No	n/a	n/a	EPA 1989	0.05	8	44.63	2.446	normal	ShapiroWilk
Barium (ug/L)	MW-9	No	n/a	n/a	EPA 1989	0.05	8	48.13	2.357	normal	ShapiroWilk
Barium (ug/L)	MW-1R	No	n/a	n/a	EPA 1989	0.05	8	44	5.952	normal	ShapiroWilk
Beryllium (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Beryllium (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Beryllium (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Beryllium (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Beryllium (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Cadmium (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Cadmium (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Cadmium (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Cadmium (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Cadmium (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Chromium (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	4	0	unknown	ShapiroWilk
Chromium (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	4	0	unknown	ShapiroWilk
Chromium (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	4	0	unknown	ShapiroWilk
Chromium (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	4.513	1.45	unknown	ShapiroWilk
Chromium (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	4	0	unknown	ShapiroWilk
Cobalt (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	2	0	unknown	ShapiroWilk
Cobalt (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	2	0	unknown	ShapiroWilk
Cobalt (ug/L)	MW-7	No	n/a	n/a	NP (nrm)	NaN	8	2.05	0.07559	unknown	ShapiroWilk
Cobalt (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	2	0	unknown	ShapiroWilk
Cobalt (ug/L)	MW-1R	No	n/a	n/a	EPA 1989	0.05	8	8.3	2.327	normal	ShapiroWilk
Fluoride (mg/L)	MW-2 (bg)	Yes	0.335,0.272,0.336	4/15/2018...	NP (nrm)	NaN	15	0.2631	0.02992	unknown	ShapiroWilk
Fluoride (mg/L)	MW-3 (bg)	No	n/a	n/a	NP (nrm)	NaN	15	0.2879	0.04878	unknown	ShapiroWilk
Fluoride (mg/L)	MW-7	No	n/a	n/a	Dixon's	0.05	15	0.6426	0.1124	normal	ShapiroWilk
Fluoride (mg/L)	MW-9	Yes	1.33	10/20/2021	Dixon's	0.05	15	0.9331	0.1399	normal	ShapiroWilk
Fluoride (mg/L)	MW-1R	Yes	0.366	11/16/2021	NP (nrm)	NaN	9	0.2669	0.03903	unknown	ShapiroWilk
Lead (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Lead (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Lead (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Lead (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Lead (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Lithium (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	10	0	unknown	ShapiroWilk
Lithium (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	10	0	unknown	ShapiroWilk
Lithium (ug/L)	MW-7	No	n/a	n/a	EPA 1989	0.05	8	25.13	3.314	normal	ShapiroWilk
Lithium (ug/L)	MW-9	No	n/a	n/a	EPA 1989	0.05	8	15.63	2.669	normal	ShapiroWilk
Lithium (ug/L)	MW-1R	No	n/a	n/a	NP (nrm)	NaN	8	12.25	3.615	unknown	ShapiroWilk

Outlier Analysis

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Mercury (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	0.2	0	unknown	ShapiroWilk
Mercury (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	0.2	0	unknown	ShapiroWilk
Mercury (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	0.2	0	unknown	ShapiroWilk
Mercury (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	0.2	0	unknown	ShapiroWilk
Mercury (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	0.2	0	unknown	ShapiroWilk
Molybdenum (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Molybdenum (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Molybdenum (ug/L)	MW-7	No	n/a	n/a	NP (nrm)	NaN	8	158.8	8.345	unknown	ShapiroWilk
Molybdenum (ug/L)	MW-9	No	n/a	n/a	EPA 1989	0.05	8	563.8	146.6	normal	ShapiroWilk
Molybdenum (ug/L)	MW-1R	No	n/a	n/a	EPA 1989	0.05	8	185	19.27	normal	ShapiroWilk
Radium (pCi/L)	MW-2 (bg)	No	n/a	n/a	EPA 1989	0.05	8	1.104	0.4148	normal	ShapiroWilk
Radium (pCi/L)	MW-3 (bg)	No	n/a	n/a	EPA 1989	0.05	8	0.8951	0.4732	normal	ShapiroWilk
Radium (pCi/L)	MW-7	No	n/a	n/a	Dixon`s	0.05	8	0.8729	0.4075	normal	ShapiroWilk
Radium (pCi/L)	MW-9	No	n/a	n/a	EPA 1989	0.05	8	0.7486	0.4342	normal	ShapiroWilk
Radium (pCi/L)	MW-1R	No	n/a	n/a	EPA 1989	0.05	8	0.6286	0.3711	normal	ShapiroWilk
Selenium (ug/L)	MW-2 (bg)	No	n/a	n/a	NP (nrm)	NaN	8	1.325	0.5007	unknown	ShapiroWilk
Selenium (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Selenium (ug/L)	MW-7	No	n/a	n/a	EPA 1989	0.05	8	26.34	21.06	normal	ShapiroWilk
Selenium (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Selenium (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Thallium (ug/L)	MW-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Thallium (ug/L)	MW-3 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Thallium (ug/L)	MW-7	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Thallium (ug/L)	MW-9	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk
Thallium (ug/L)	MW-1R	n/a	n/a	n/a	NP (nrm)	NaN	8	1	0	unknown	ShapiroWilk

Outlier Analysis

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Fluoride (mg/L)	MW-2 (bg)	Yes	0.335,0.272,0.336	4/15/2018...	NP (nrm)	NaN	15	0.2631	0.02992	unknown	ShapiroWilk
Fluoride (mg/L)	MW-9	Yes	1.33	10/20/2021	Dixon's	0.05	15	0.9331	0.1399	normal	ShapiroWilk
Fluoride (mg/L)	MW-1R	Yes	0.366	11/16/2021	NP (nrm)	NaN	9	0.2669	0.03903	unknown	ShapiroWilk

Appendix 9-2

Confidence Intervals
(Sanitas* Output Summary)

Confidence Interval

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:15 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (ug/L)	MW-1R	10.12	6.444	6	Yes	10	0	No	0.01	Param.
Molybdenum (ug/L)	MW-7	167.5	131.3	100	Yes	10	0	x^2	0.01	Param.
Molybdenum (ug/L)	MW-9	671.6	304.4	100	Yes	10	0	No	0.01	Param.
Molybdenum (ug/L)	MW-1R	199.1	162.9	100	Yes	10	0	No	0.01	Param.

Confidence Interval

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:15 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (ug/L)	MW-2 (bg)	3	3	6	No	9	100	No	0.002	NP (NDs)
Antimony (ug/L)	MW-3 (bg)	3	3	6	No	9	100	No	0.002	NP (NDs)
Antimony (ug/L)	MW-7	3	3	6	No	9	100	No	0.002	NP (NDs)
Antimony (ug/L)	MW-9	3	3	6	No	9	100	No	0.002	NP (NDs)
Antimony (ug/L)	MW-1R	3	3	6	No	9	100	No	0.002	NP (NDs)
Arsenic (ug/L)	MW-2 (bg)	1	1	10	No	9	100	No	0.002	NP (NDs)
Arsenic (ug/L)	MW-3 (bg)	1	1	10	No	9	100	No	0.002	NP (NDs)
Arsenic (ug/L)	MW-7	1	1	10	No	9	100	No	0.002	NP (NDs)
Arsenic (ug/L)	MW-9	1.2	1	10	No	9	88.89	No	0.002	NP (NDs)
Arsenic (ug/L)	MW-1R	1.5	1	10	No	9	77.78	No	0.002	NP (NDs)
Barium (ug/L)	MW-2 (bg)	210.3	133.7	2000	No	10	0	No	0.01	Param.
Barium (ug/L)	MW-3 (bg)	104.4	89.42	2000	No	10	0	x^3	0.01	Param.
Barium (ug/L)	MW-7	62	43	2000	No	10	0	No	0.011	NP (normality)
Barium (ug/L)	MW-9	78	47	2000	No	10	0	No	0.011	NP (normality)
Barium (ug/L)	MW-1R	50.08	36.72	2000	No	10	0	No	0.01	Param.
Beryllium (ug/L)	MW-2 (bg)	1	1	4	No	9	100	No	0.002	NP (NDs)
Beryllium (ug/L)	MW-3 (bg)	1	1	4	No	9	100	No	0.002	NP (NDs)
Beryllium (ug/L)	MW-7	1	1	4	No	9	100	No	0.002	NP (NDs)
Beryllium (ug/L)	MW-9	1	1	4	No	9	100	No	0.002	NP (NDs)
Beryllium (ug/L)	MW-1R	1	1	4	No	9	100	No	0.002	NP (NDs)
Cadmium (ug/L)	MW-2 (bg)	1	1	5	No	9	100	No	0.002	NP (NDs)
Cadmium (ug/L)	MW-3 (bg)	1	1	5	No	9	100	No	0.002	NP (NDs)
Cadmium (ug/L)	MW-7	1	1	5	No	9	100	No	0.002	NP (NDs)
Cadmium (ug/L)	MW-9	1	1	5	No	9	100	No	0.002	NP (NDs)
Cadmium (ug/L)	MW-1R	1	1	5	No	9	100	No	0.002	NP (NDs)
Chromium (ug/L)	MW-2 (bg)	4	4	100	No	9	100	No	0.002	NP (NDs)
Chromium (ug/L)	MW-3 (bg)	4	4	100	No	9	100	No	0.002	NP (NDs)
Chromium (ug/L)	MW-7	4	4	100	No	9	100	No	0.002	NP (NDs)
Chromium (ug/L)	MW-9	8.1	4	100	No	9	88.89	No	0.002	NP (NDs)
Chromium (ug/L)	MW-1R	4	4	100	No	9	100	No	0.002	NP (NDs)
Cobalt (ug/L)	MW-2 (bg)	2	2	6	No	10	80	No	0.011	NP (NDs)
Cobalt (ug/L)	MW-3 (bg)	2	2	6	No	10	100	No	0.011	NP (NDs)
Cobalt (ug/L)	MW-7	3.5	2	6	No	10	20	No	0.011	NP (normality)
Cobalt (ug/L)	MW-9	2	2	6	No	10	100	No	0.011	NP (NDs)
Cobalt (ug/L)	MW-1R	10.12	6.444	6	Yes	10	0	No	0.01	Param.
Fluoride (mg/L)	MW-2 (bg)	0.254	0.25	4	No	17	76.47	No	0.01	NP (NDs)
Fluoride (mg/L)	MW-3 (bg)	0.332	0.25	4	No	17	58.82	No	0.01	NP (normality)
Fluoride (mg/L)	MW-7	0.7029	0.5618	4	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-9	1.022	0.8605	4	No	17	0	sqrt(x)	0.01	Param.
Fluoride (mg/L)	MW-1R	0.286	0.25	4	No	11	81.82	No	0.006	NP (NDs)
Lead (ug/L)	MW-2 (bg)	1	1	15	No	9	100	No	0.002	NP (NDs)
Lead (ug/L)	MW-3 (bg)	1	1	15	No	9	100	No	0.002	NP (NDs)
Lead (ug/L)	MW-7	1	1	15	No	9	100	No	0.002	NP (NDs)
Lead (ug/L)	MW-9	1	1	15	No	9	100	No	0.002	NP (NDs)
Lead (ug/L)	MW-1R	1	1	15	No	9	100	No	0.002	NP (NDs)
Lithium (ug/L)	MW-2 (bg)	20	10	40	No	10	100	No	0.011	NP (NDs)
Lithium (ug/L)	MW-3 (bg)	20	10	40	No	10	100	No	0.011	NP (NDs)
Lithium (ug/L)	MW-7	29.53	22.67	40	No	10	0	No	0.01	Param.
Lithium (ug/L)	MW-9	19.4	13.8	40	No	10	10	No	0.01	Param.
Lithium (ug/L)	MW-1R	20	10	40	No	10	40	No	0.011	NP (normality)

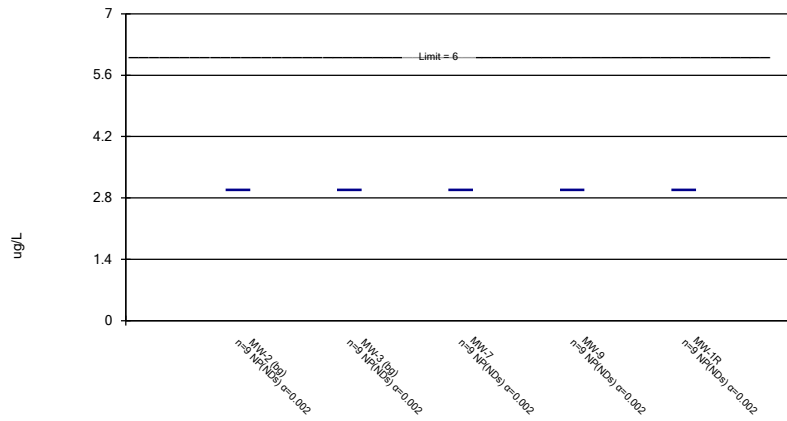
Confidence Interval

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:15 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Mercury (ug/L)	MW-2 (bg)	0.2	0.2	2	No	9	100	No	0.002	NP (NDs)
Mercury (ug/L)	MW-3 (bg)	0.2	0.2	2	No	9	100	No	0.002	NP (NDs)
Mercury (ug/L)	MW-7	0.2	0.2	2	No	9	100	No	0.002	NP (NDs)
Mercury (ug/L)	MW-9	0.2	0.2	2	No	9	100	No	0.002	NP (NDs)
Mercury (ug/L)	MW-1R	0.2	0.2	2	No	9	100	No	0.002	NP (NDs)
Molybdenum (ug/L)	MW-2 (bg)	1	1	100	No	10	100	No	0.011	NP (NDs)
Molybdenum (ug/L)	MW-3 (bg)	1	1	100	No	10	100	No	0.011	NP (NDs)
Molybdenum (ug/L)	MW-7	167.5	131.3	100	Yes	10	0	x^2	0.01	Param.
Molybdenum (ug/L)	MW-9	671.6	304.4	100	Yes	10	0	No	0.01	Param.
Molybdenum (ug/L)	MW-1R	199.1	162.9	100	Yes	10	0	No	0.01	Param.
Radium (pCi/L)	MW-2 (bg)	1.566	0.7094	5	No	10	0	No	0.01	Param.
Radium (pCi/L)	MW-3 (bg)	1.292	0.5281	5	No	10	0	No	0.01	Param.
Radium (pCi/L)	MW-7	1.542	0.5114	5	No	10	0	No	0.01	Param.
Radium (pCi/L)	MW-9	1.232	0.4287	5	No	10	0	No	0.01	Param.
Radium (pCi/L)	MW-1R	1.008	0.3742	5	No	10	0	No	0.01	Param.
Selenium (ug/L)	MW-2 (bg)	2	1	50	No	10	70	No	0.011	NP (normality)
Selenium (ug/L)	MW-3 (bg)	1	1	50	No	10	100	No	0.011	NP (NDs)
Selenium (ug/L)	MW-7	38.25	4.579	50	No	10	0	sqrt(x)	0.01	Param.
Selenium (ug/L)	MW-9	1	1	50	No	10	100	No	0.011	NP (NDs)
Selenium (ug/L)	MW-1R	1	1	50	No	10	100	No	0.011	NP (NDs)
Thallium (ug/L)	MW-2 (bg)	1	1	2	No	9	100	No	0.002	NP (NDs)
Thallium (ug/L)	MW-3 (bg)	1	1	2	No	9	100	No	0.002	NP (NDs)
Thallium (ug/L)	MW-7	1	1	2	No	9	100	No	0.002	NP (NDs)
Thallium (ug/L)	MW-9	1	1	2	No	9	100	No	0.002	NP (NDs)
Thallium (ug/L)	MW-1R	1	1	2	No	9	100	No	0.002	NP (NDs)

Non-Parametric Confidence Interval

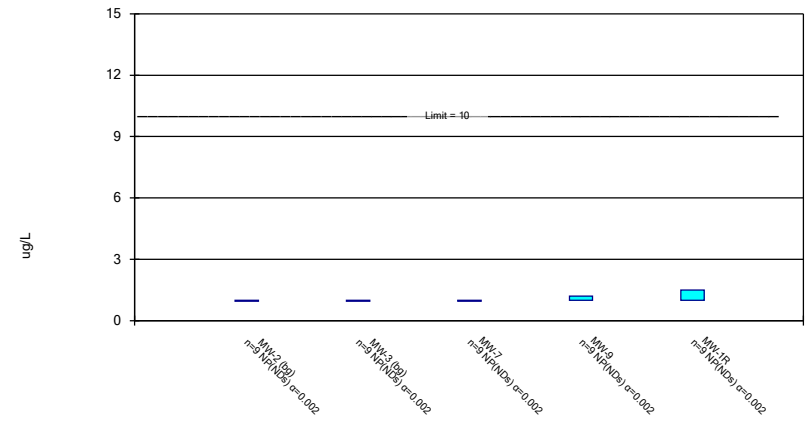
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Non-Parametric Confidence Interval

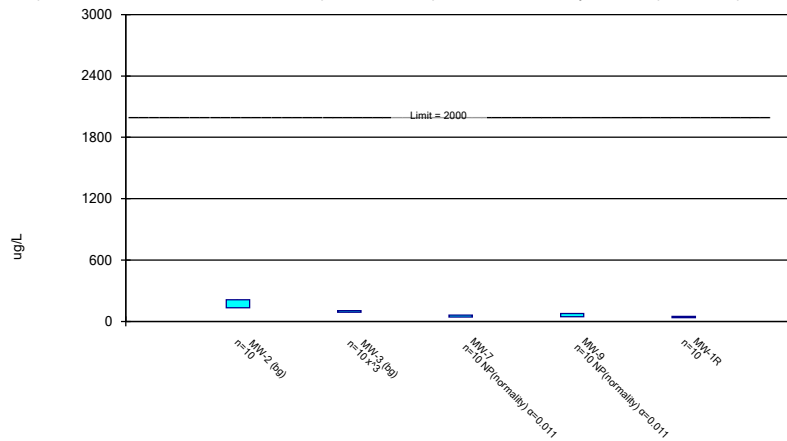
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Parametric and Non-Parametric (NP) Confidence Interval

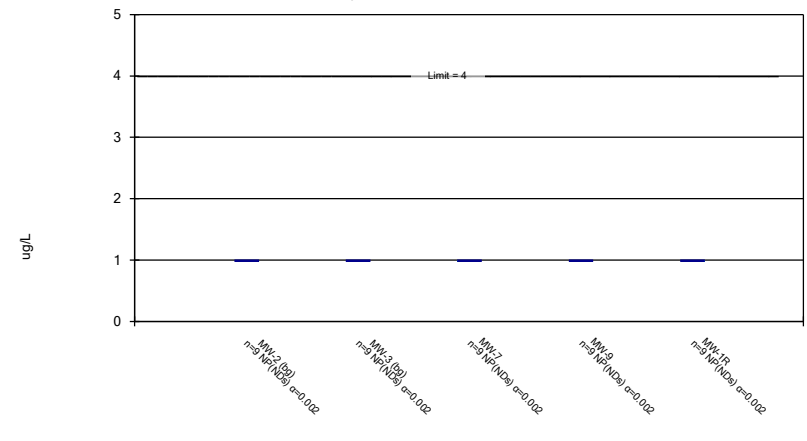
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Non-Parametric Confidence Interval

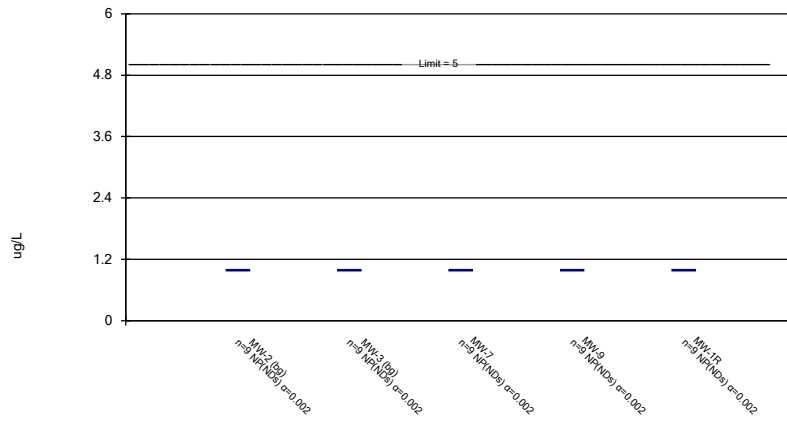
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Non-Parametric Confidence Interval

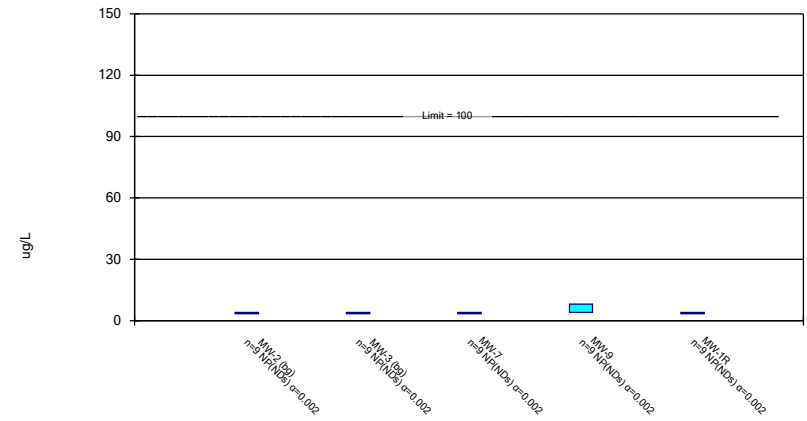
Compliance Limit is not exceeded.



Constituent: Cadmium Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Non-Parametric Confidence Interval

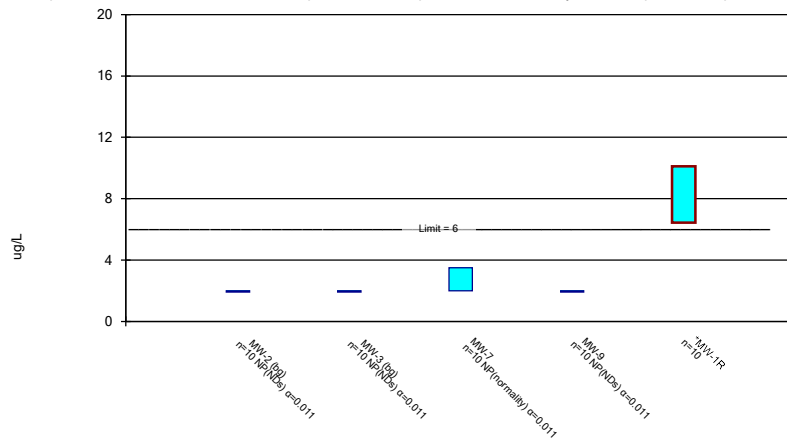
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Parametric and Non-Parametric (NP) Confidence Interval

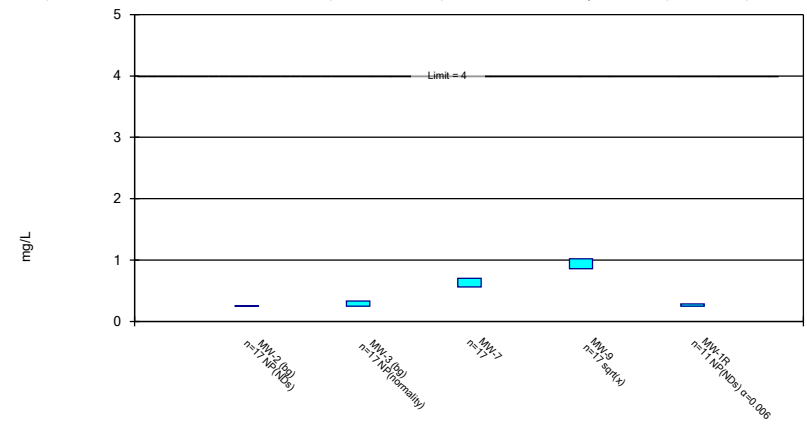
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Parametric and Non-Parametric (NP) Confidence Interval

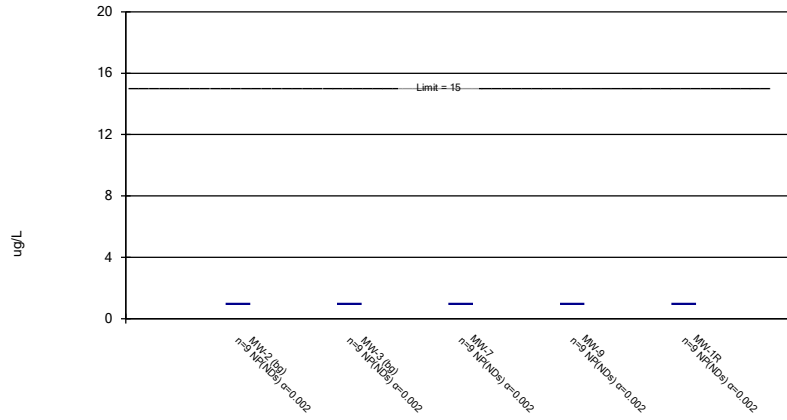
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Non-Parametric Confidence Interval

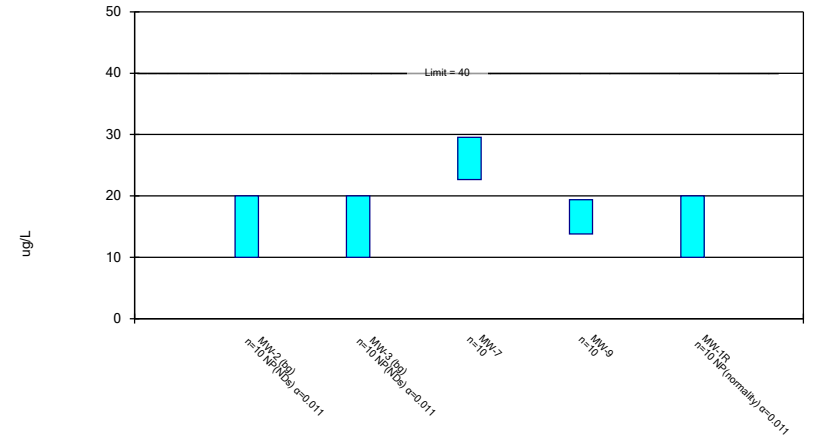
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Parametric and Non-Parametric (NP) Confidence Interval

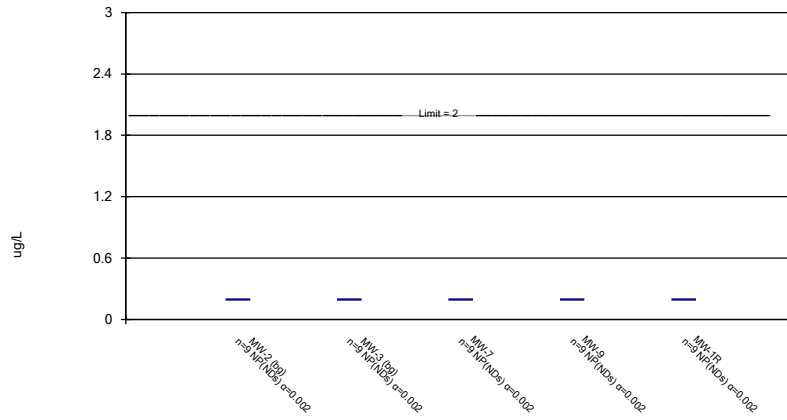
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Non-Parametric Confidence Interval

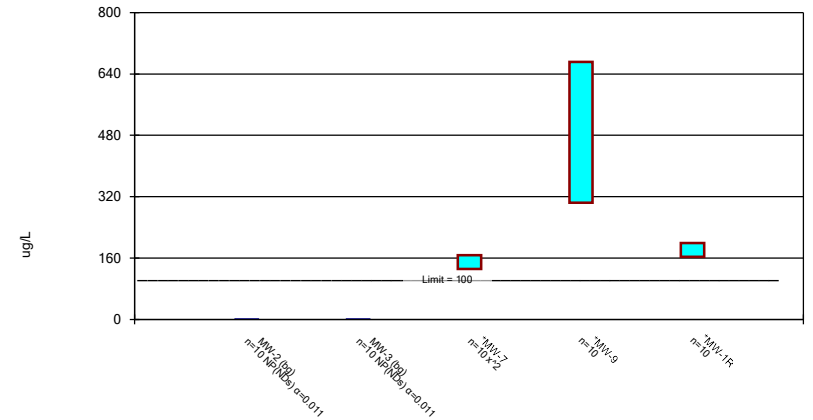
Compliance Limit is not exceeded.



Constituent: Mercury Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Parametric and Non-Parametric (NP) Confidence Interval

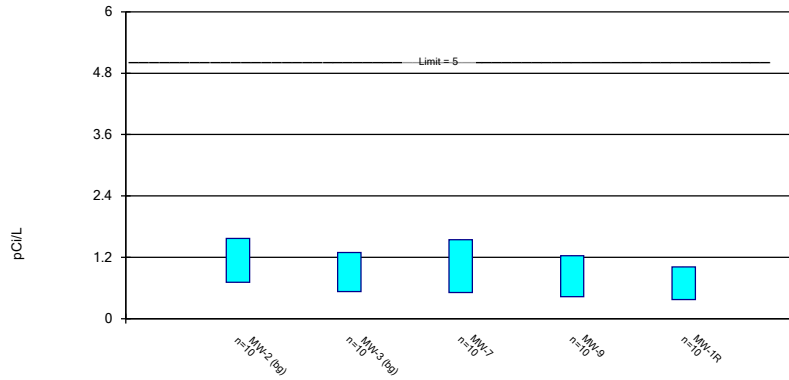
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 4/12/2023 2:12 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Parametric Confidence Interval

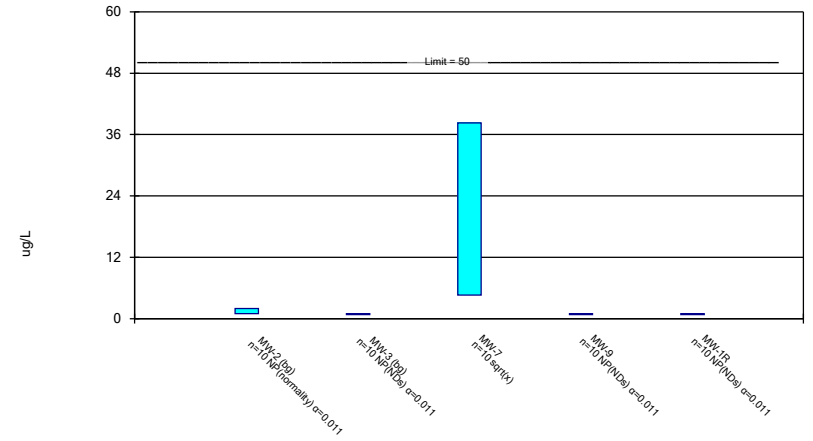
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Radium Analysis Run 4/12/2023 2:13 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Parametric and Non-Parametric (NP) Confidence Interval

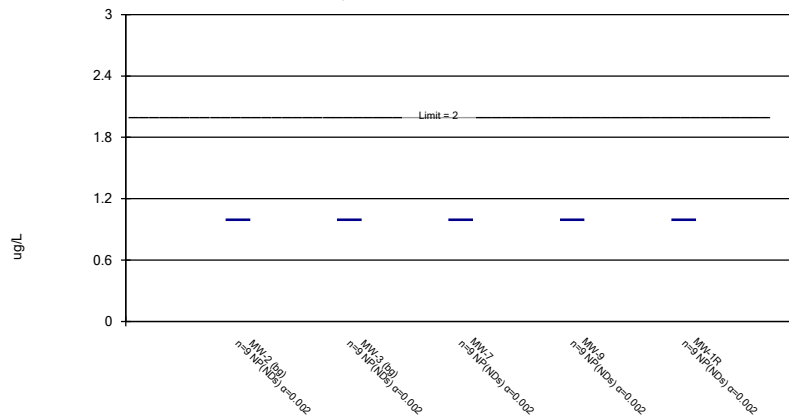
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 4/12/2023 2:13 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 4/12/2023 2:13 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Appendix 9-3

Trend Tests with Confidence Bands
(Sanitas* Output Summary)

Trend Test

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:17 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Fluoride (mg/L)	MW-7	-0.04147	-60	-58	Yes	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-7	-13.72	-32	-27	Yes	10	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-9	-219.5	-38	-27	Yes	10	0	n/a	n/a	0.02	NP

Trend Test

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:17 PM

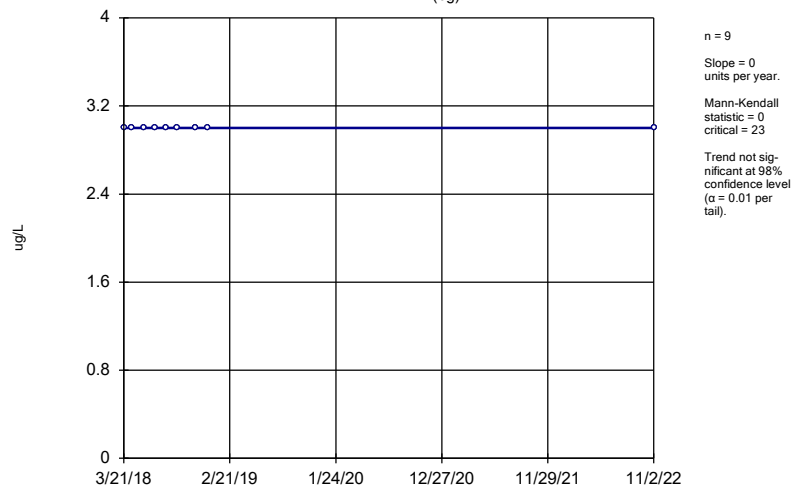
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Antimony (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Antimony (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Antimony (ug/L)	MW-9	0	0	23	No	9	100	n/a	n/a	0.02	NP
Antimony (ug/L)	MW-1R	0	0	23	No	9	100	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-9	0	-6	-23	No	9	88.89	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-1R	0	-13	-23	No	9	77.78	n/a	n/a	0.02	NP
Barium (ug/L)	MW-2 (bg)	21.96	15	27	No	10	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-3 (bg)	0	1	27	No	10	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-7	4.76	24	27	No	10	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-9	7.121	19	27	No	10	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-1R	2.744	6	27	No	10	0	n/a	n/a	0.02	NP
Beryllium (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Beryllium (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Beryllium (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Beryllium (ug/L)	MW-9	0	0	23	No	9	100	n/a	n/a	0.02	NP
Beryllium (ug/L)	MW-1R	0	0	23	No	9	100	n/a	n/a	0.02	NP
Cadmium (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Cadmium (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Cadmium (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Cadmium (ug/L)	MW-9	0	0	23	No	9	100	n/a	n/a	0.02	NP
Cadmium (ug/L)	MW-1R	0	0	23	No	9	100	n/a	n/a	0.02	NP
Chromium (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Chromium (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Chromium (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Chromium (ug/L)	MW-9	0	-4	-23	No	9	88.89	n/a	n/a	0.02	NP
Chromium (ug/L)	MW-1R	0	0	23	No	9	100	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-2 (bg)	0	7	27	No	10	80	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-3 (bg)	0	0	27	No	10	100	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-7	0.3294	24	27	No	10	20	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-9	0	0	27	No	10	100	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-1R	2.124	15	27	No	10	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-2 (bg)	0	-16	-58	No	17	76.47	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-3 (bg)	0	-27	-58	No	17	58.82	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-7	-0.04147	-60	-58	Yes	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-9	-0.02666	-24	-58	No	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-1R	0	-13	-31	No	11	81.82	n/a	n/a	0.02	NP
Lead (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Lead (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Lead (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Lead (ug/L)	MW-9	0	0	23	No	9	100	n/a	n/a	0.02	NP
Lead (ug/L)	MW-1R	0	0	23	No	9	100	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-2 (bg)	0	16	27	No	10	100	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-3 (bg)	0	16	27	No	10	100	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-7	1.608	23	27	No	10	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-9	0.9612	15	27	No	10	10	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-1R	7.141	23	27	No	10	40	n/a	n/a	0.02	NP

Trend Test

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background Printed 4/12/2023, 2:17 PM

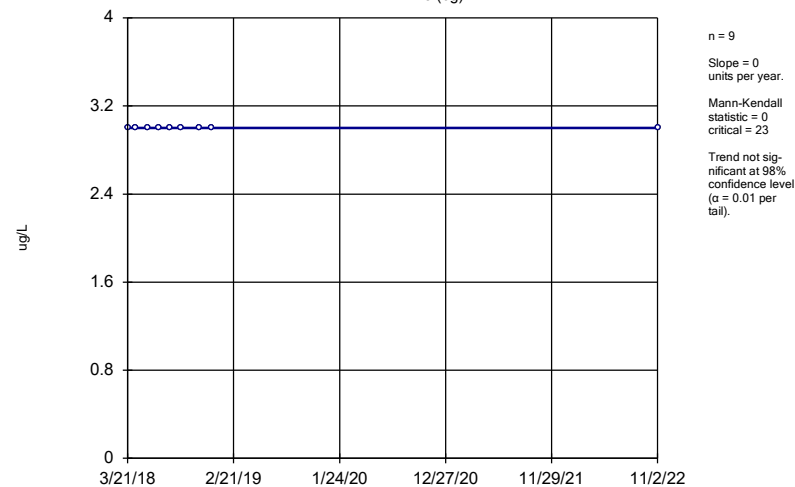
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Mercury (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-9	0	0	23	No	9	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-1R	0	0	23	No	9	100	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-2 (bg)	0	0	27	No	10	100	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-3 (bg)	0	0	27	No	10	100	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-7	-13.72	-32	-27	Yes	10	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-9	-219.5	-38	-27	Yes	10	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-1R	68.87	10	27	No	10	0	n/a	n/a	0.02	NP
Radium (pCi/L)	MW-2 (bg)	0.2083	11	27	No	10	0	n/a	n/a	0.02	NP
Radium (pCi/L)	MW-3 (bg)	-0.04484	-9	-27	No	10	0	n/a	n/a	0.02	NP
Radium (pCi/L)	MW-7	0.2084	19	27	No	10	0	n/a	n/a	0.02	NP
Radium (pCi/L)	MW-9	0.2345	21	27	No	10	0	n/a	n/a	0.02	NP
Radium (pCi/L)	MW-1R	0.4129	13	27	No	10	0	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-2 (bg)	0	0	27	No	10	70	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-3 (bg)	0	0	27	No	10	100	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-7	-1.685	-9	-27	No	10	0	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-9	0	0	27	No	10	100	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-1R	0	0	27	No	10	100	n/a	n/a	0.02	NP
Thallium (ug/L)	MW-2 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Thallium (ug/L)	MW-3 (bg)	0	0	23	No	9	100	n/a	n/a	0.02	NP
Thallium (ug/L)	MW-7	0	0	23	No	9	100	n/a	n/a	0.02	NP
Thallium (ug/L)	MW-9	0	0	23	No	9	100	n/a	n/a	0.02	NP
Thallium (ug/L)	MW-1R	0	0	23	No	9	100	n/a	n/a	0.02	NP

Antimony MW-2 (bg)



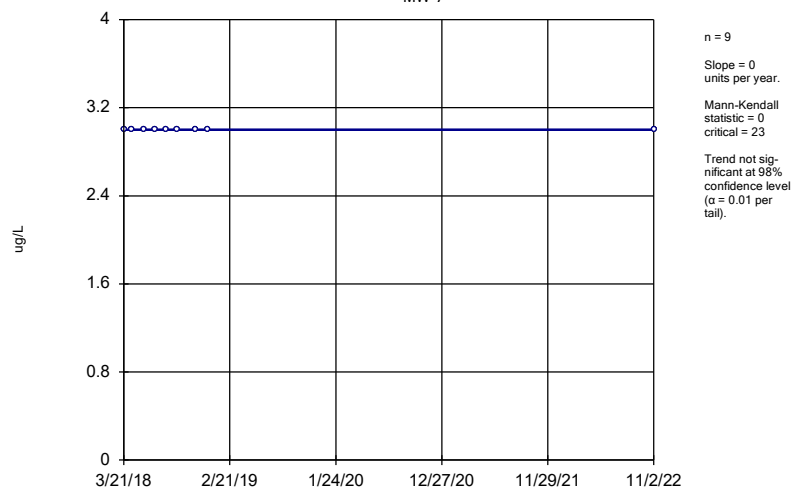
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:15 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Antimony MW-3 (bg)



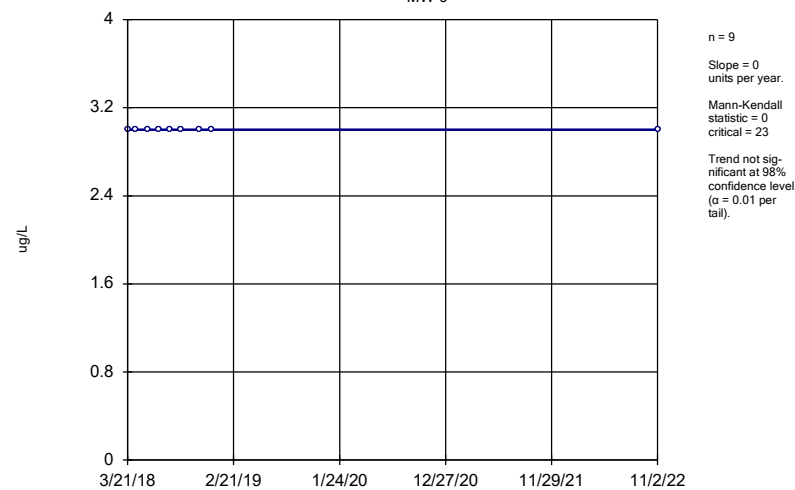
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Antimony MW-7



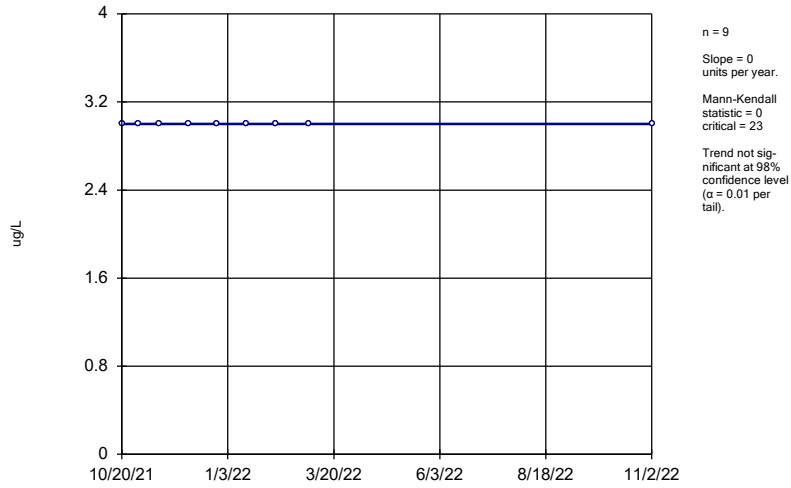
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Antimony MW-9



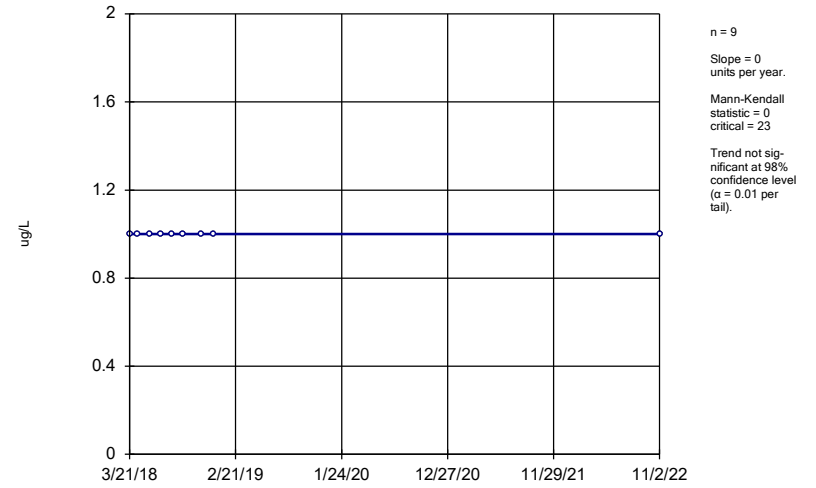
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Antimony
MW-1R



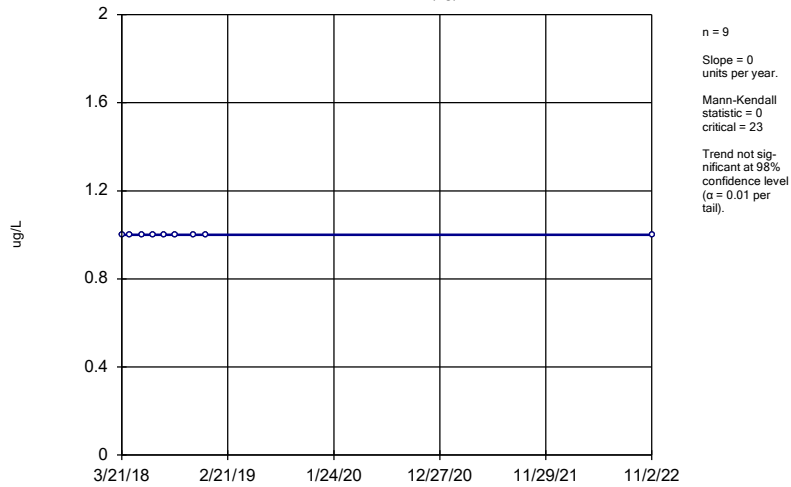
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Arsenic
MW-2 (bg)



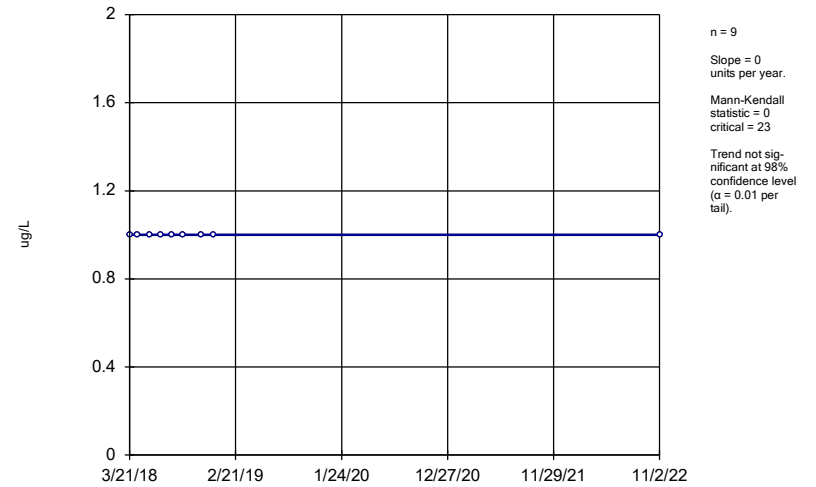
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Arsenic
MW-3 (bg)



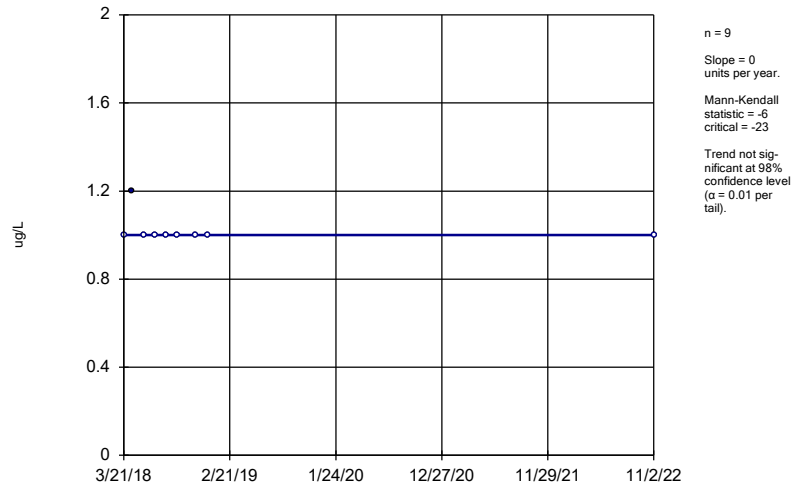
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Arsenic
MW-7



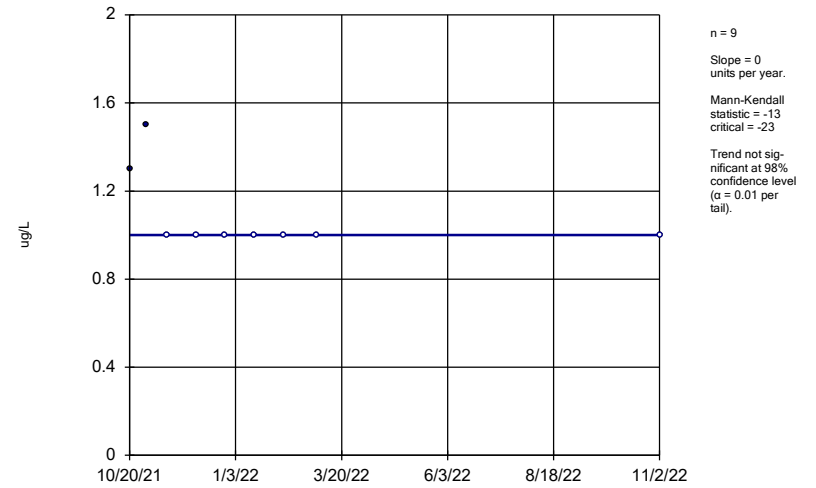
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Arsenic
MW-9



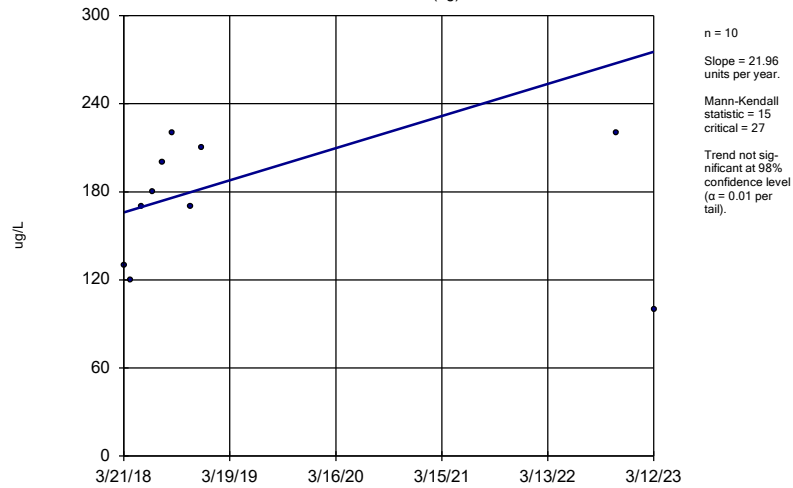
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Arsenic
MW-1R



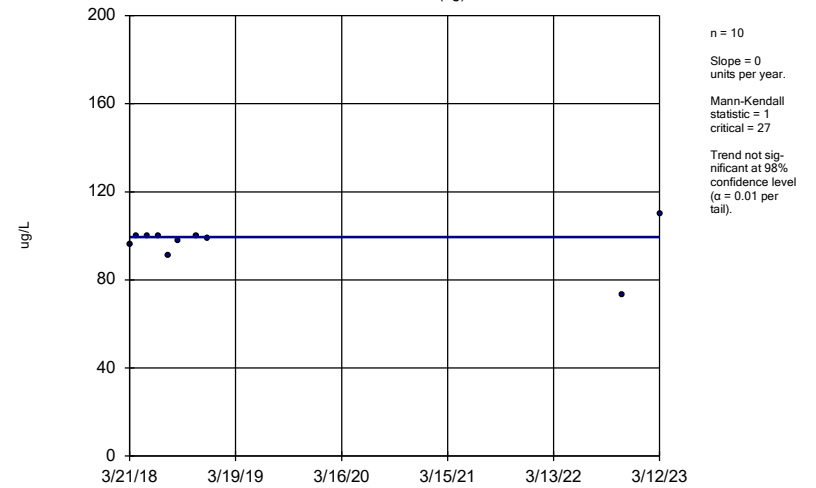
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Barium
MW-2 (bg)



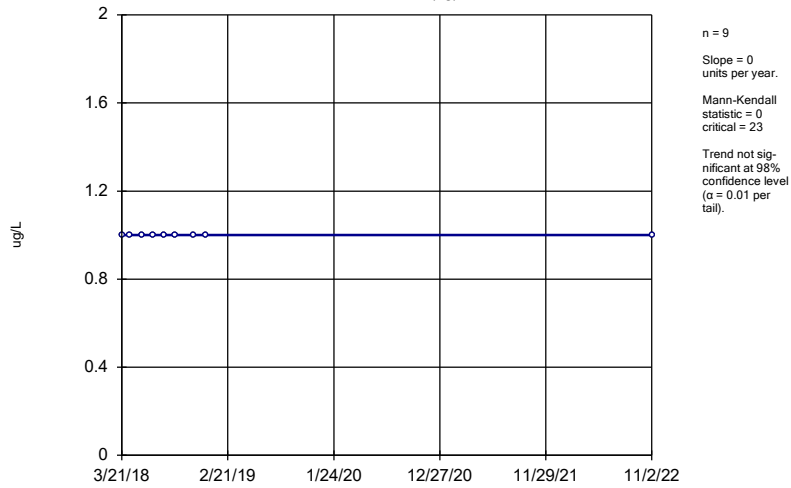
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Barium
MW-3 (bg)



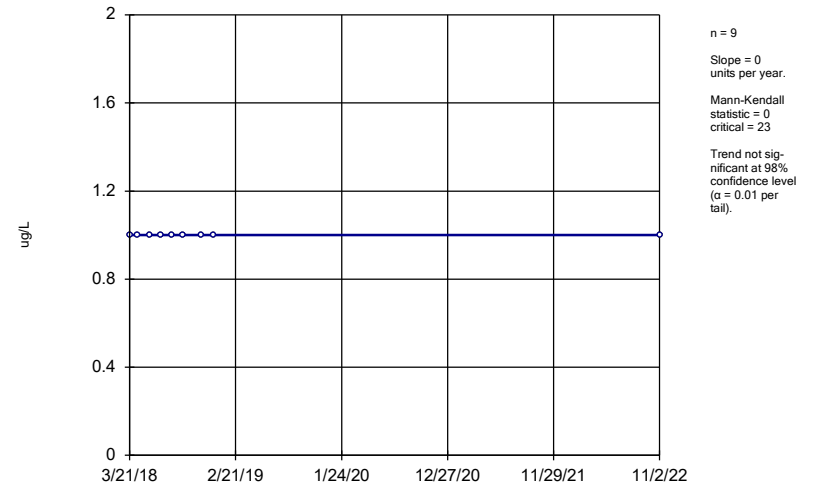
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Beryllium MW-3 (bg)



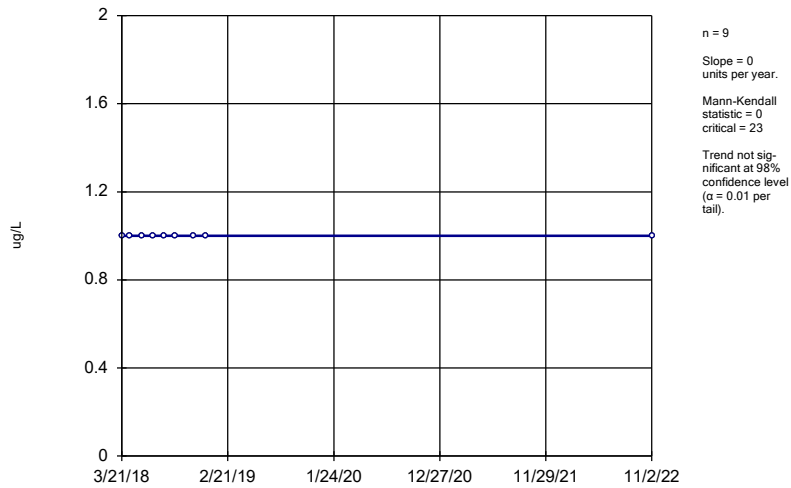
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Beryllium MW-7



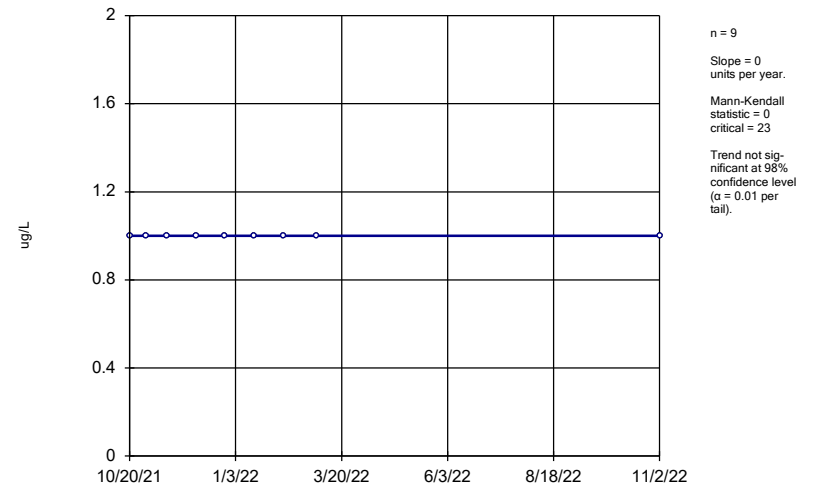
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Beryllium MW-9



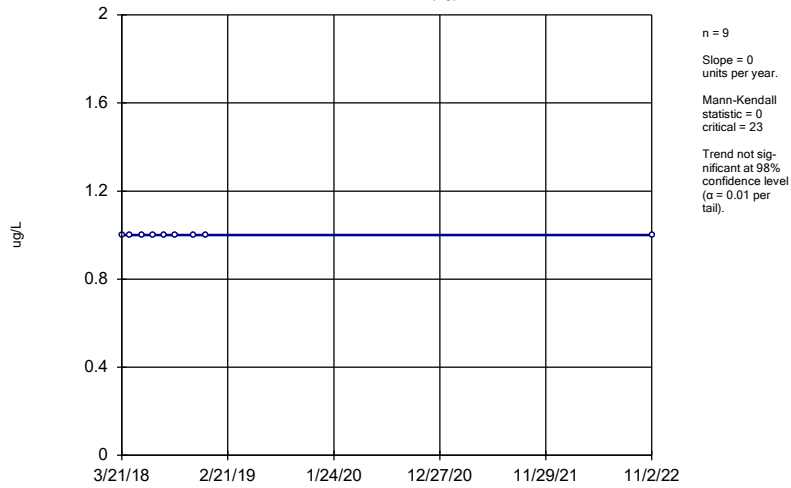
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Beryllium MW-1R



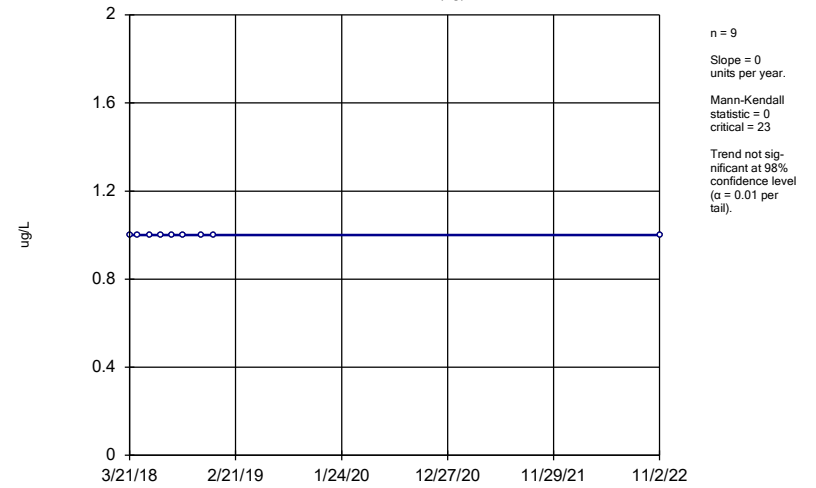
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Cadmium MW-2 (bg)



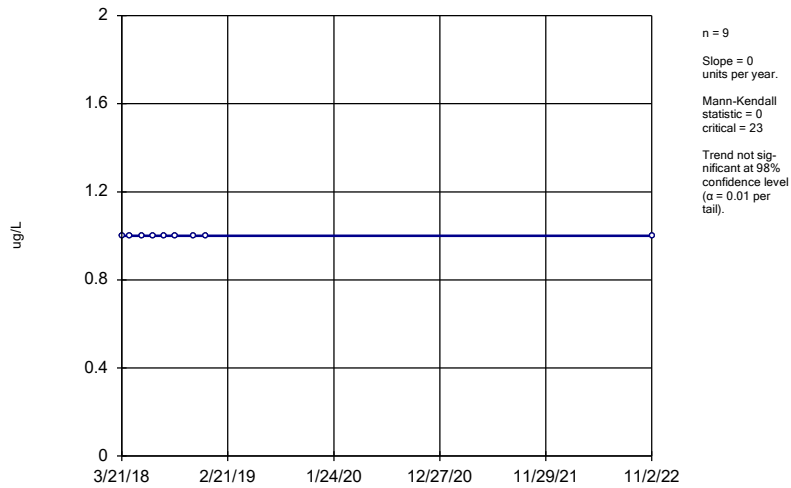
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Cadmium MW-3 (bg)



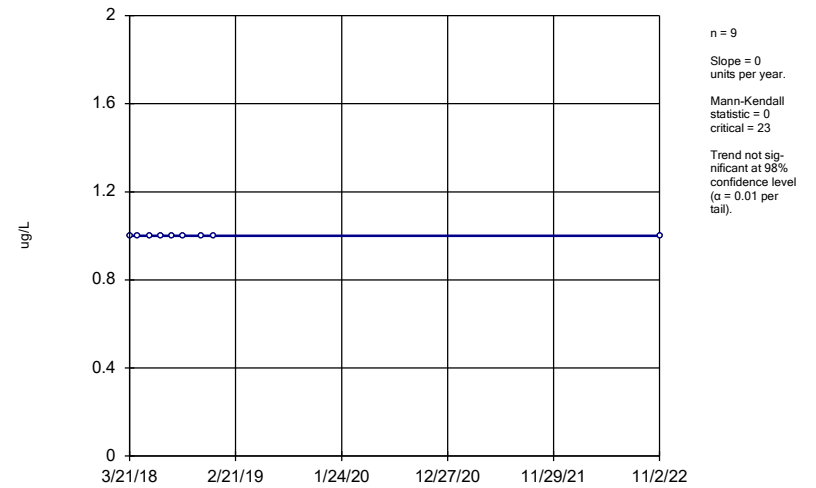
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Cadmium MW-7



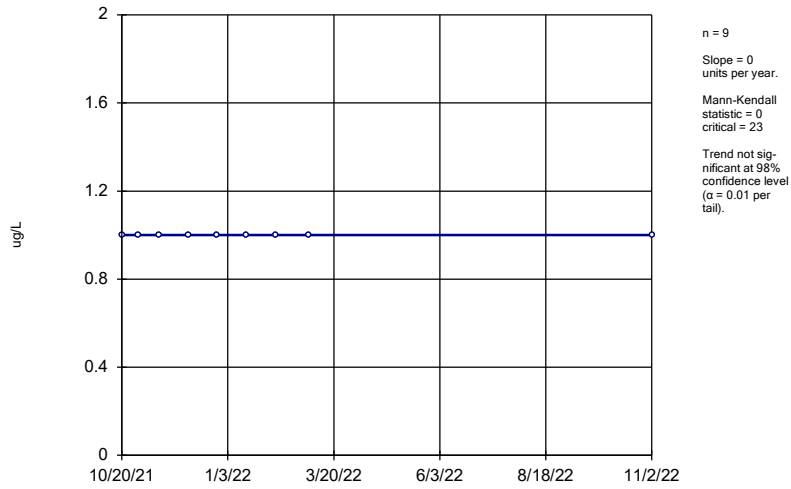
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Cadmium MW-9



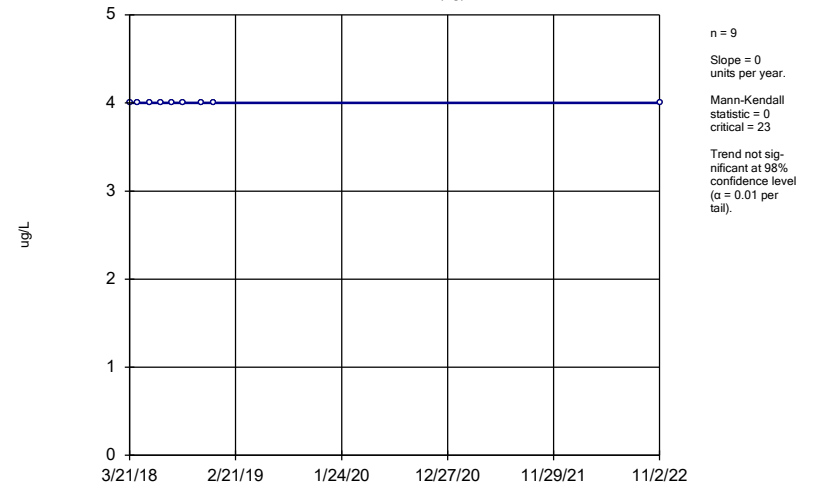
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Cadmium MW-1R



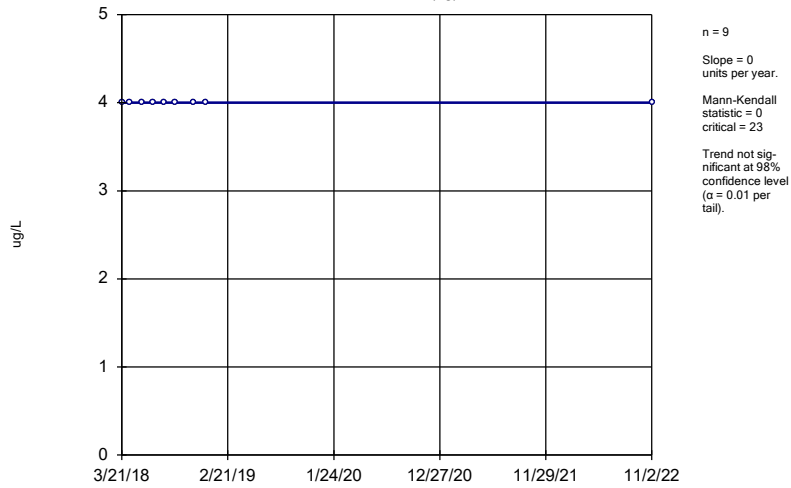
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Chromium MW-2 (bg)



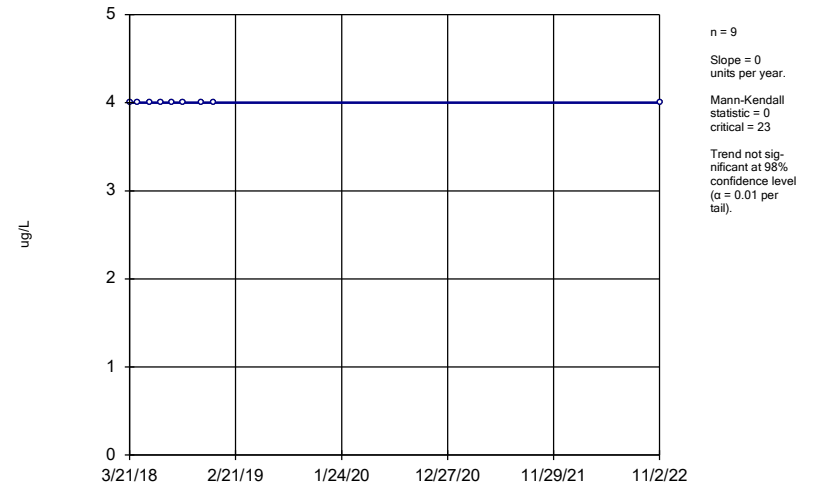
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Chromium MW-3 (bg)



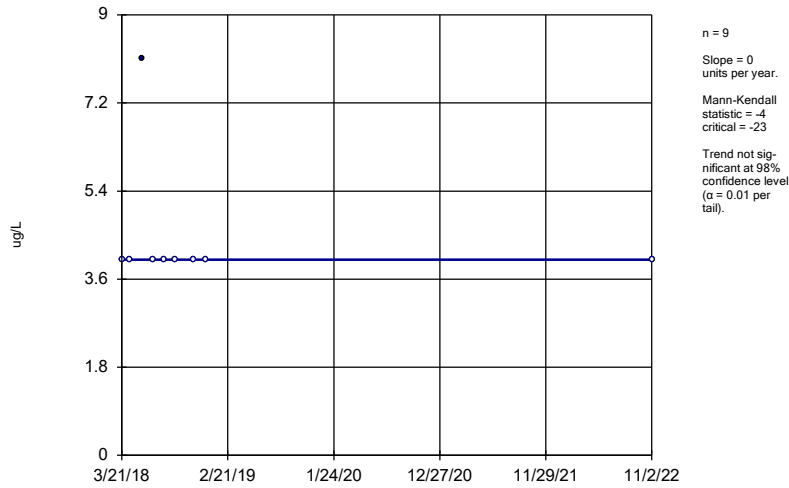
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Chromium MW-7



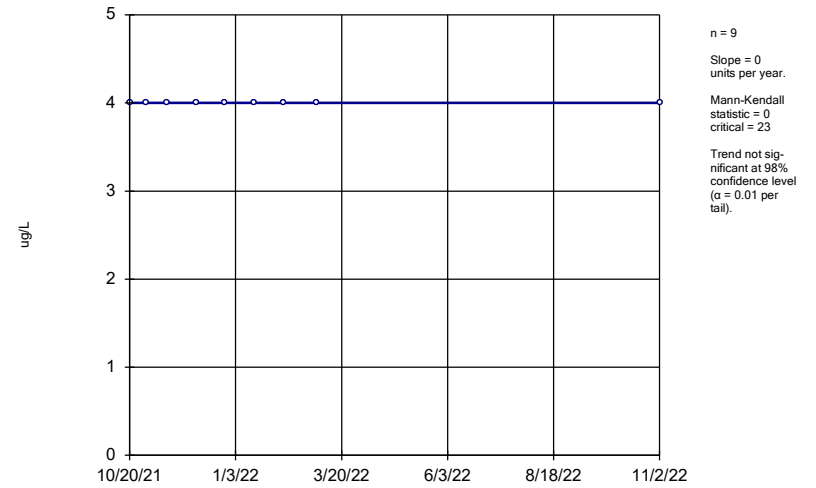
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Chromium MW-9



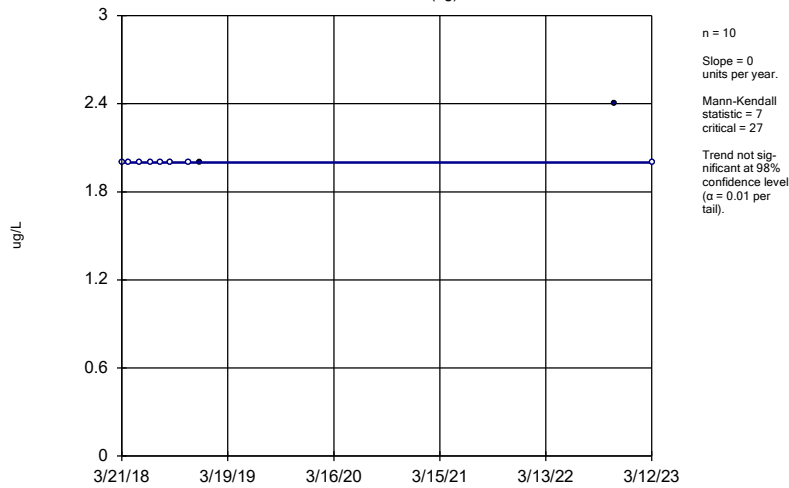
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Chromium MW-1R



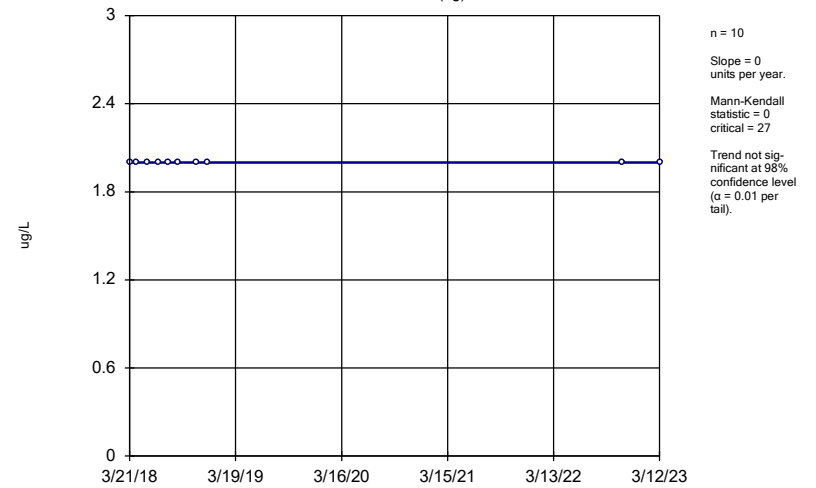
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Cobalt MW-2 (bg)

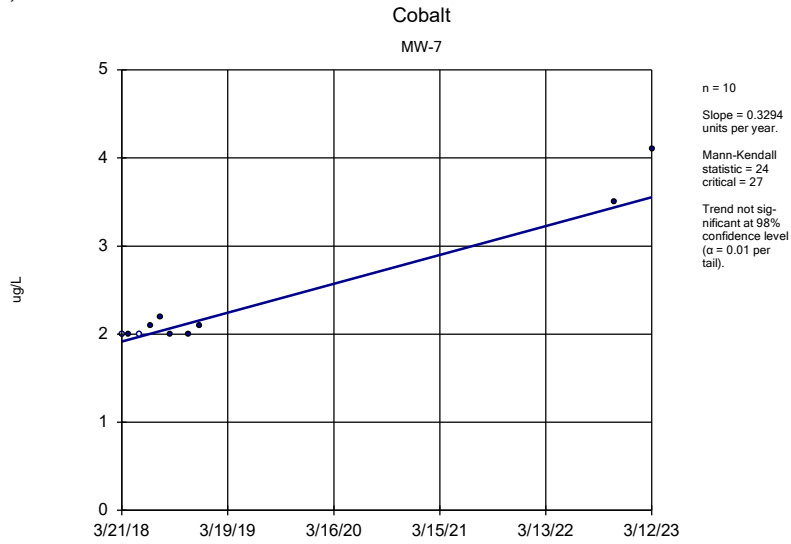


Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
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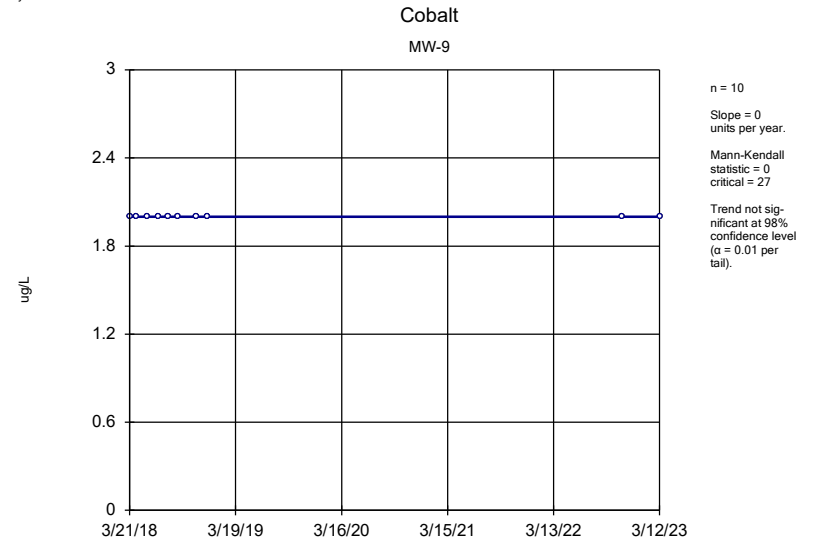
Cobalt MW-3 (bg)



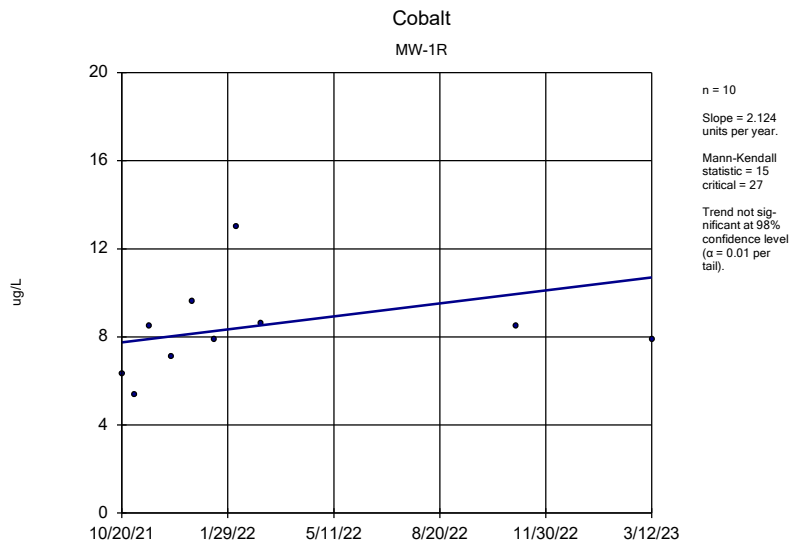
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background



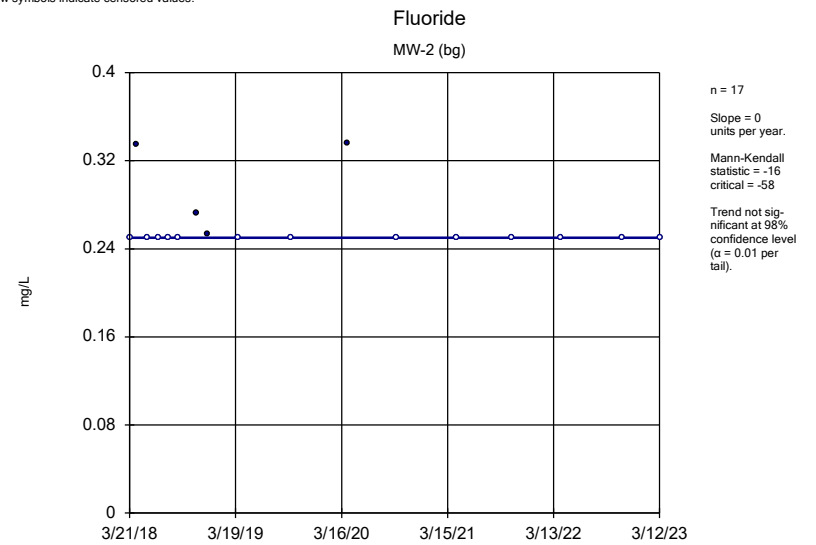
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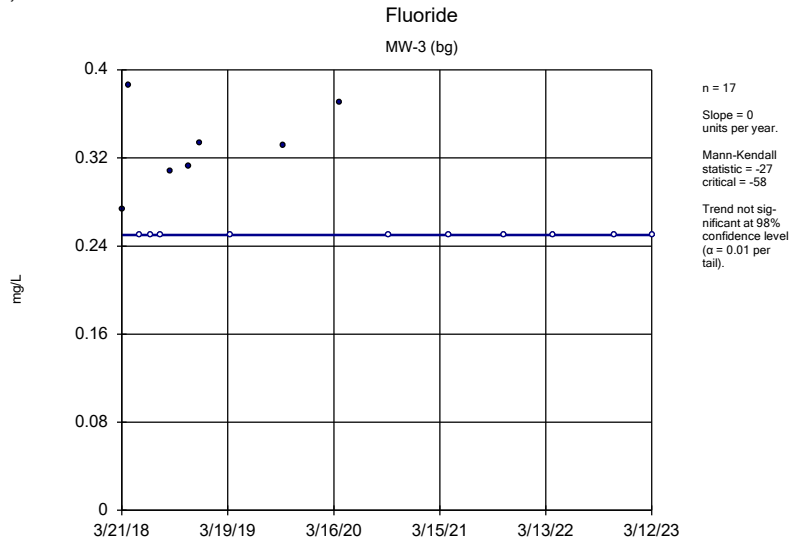
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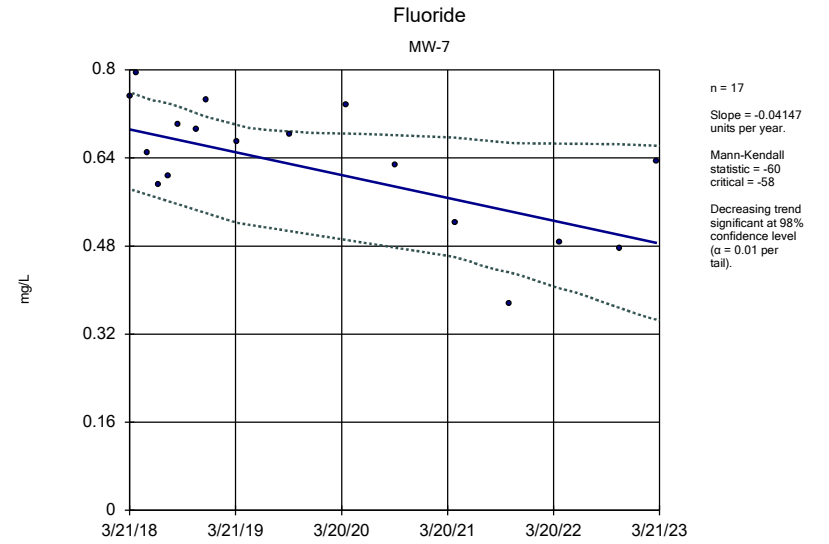
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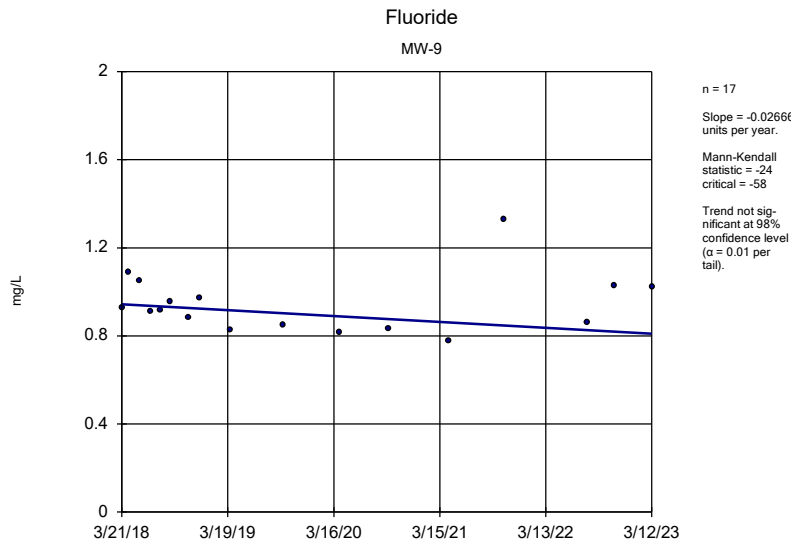
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background



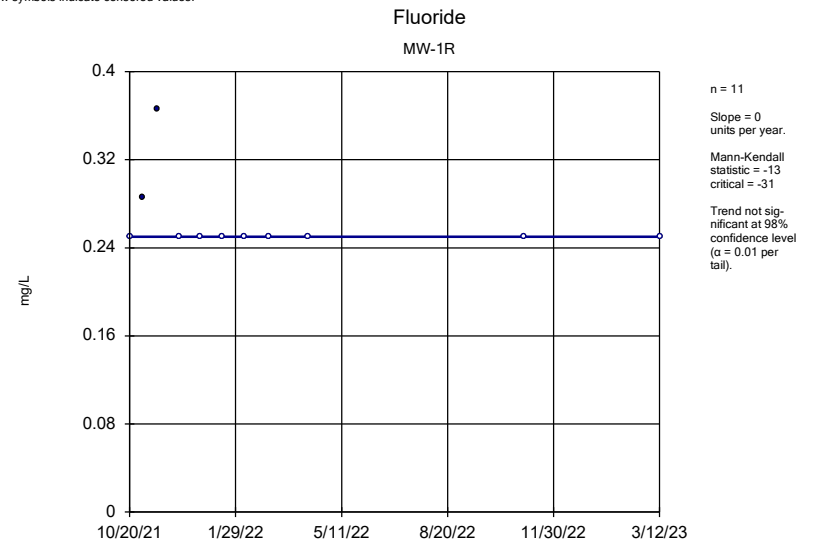
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
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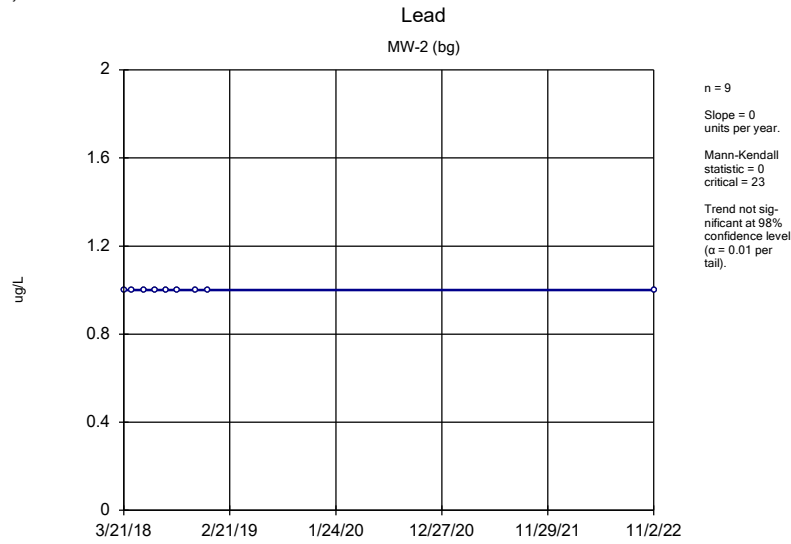
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
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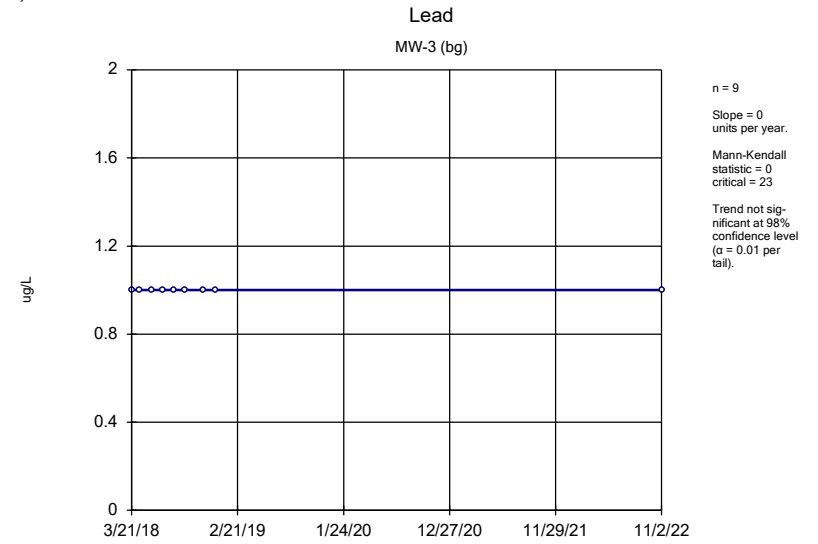
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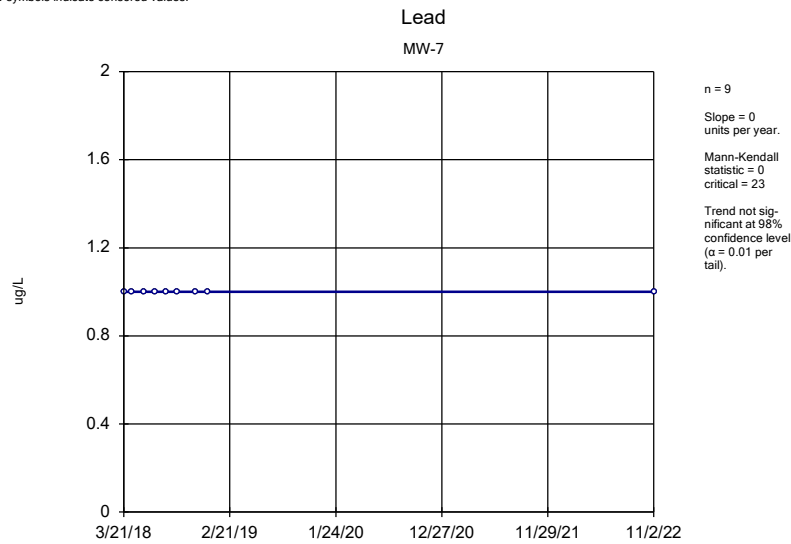
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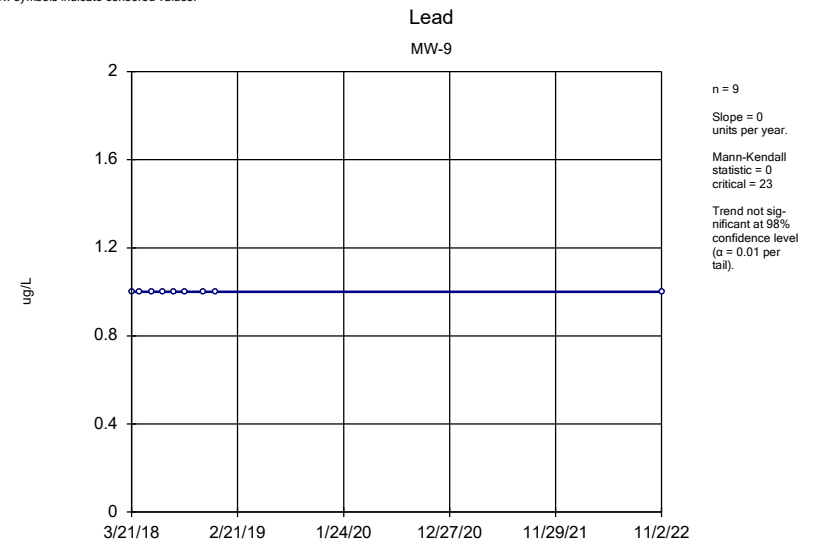
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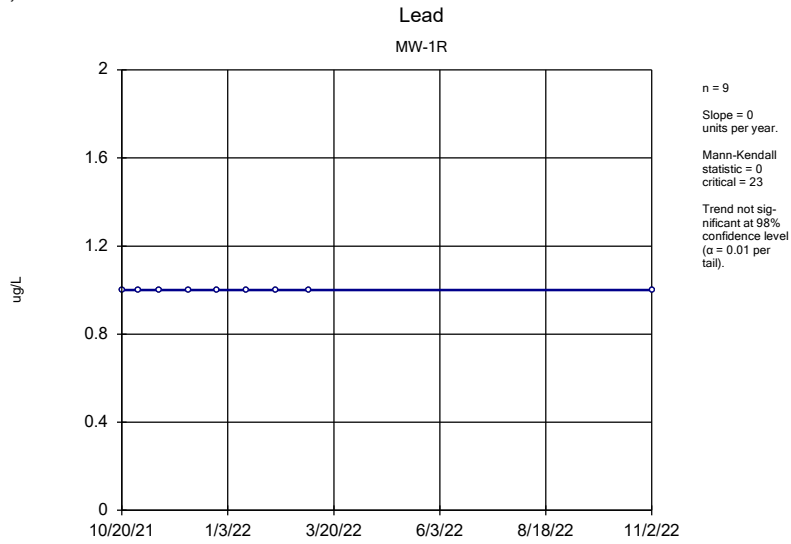
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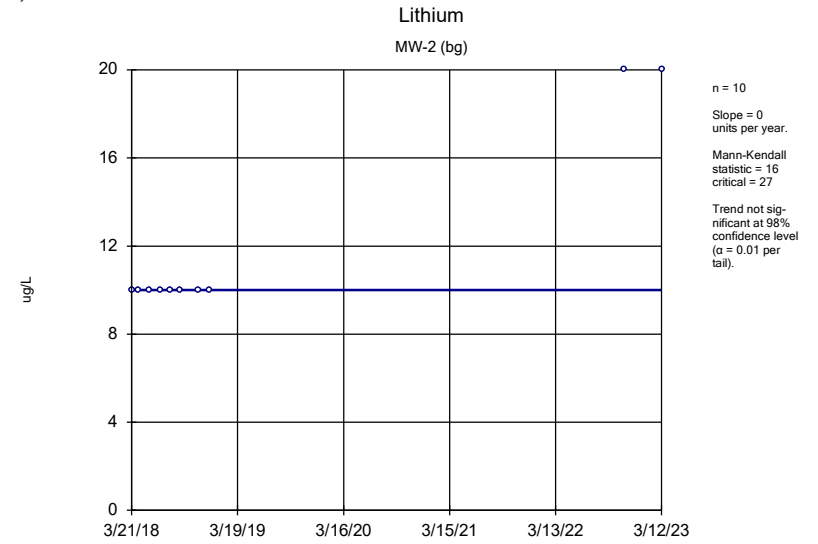
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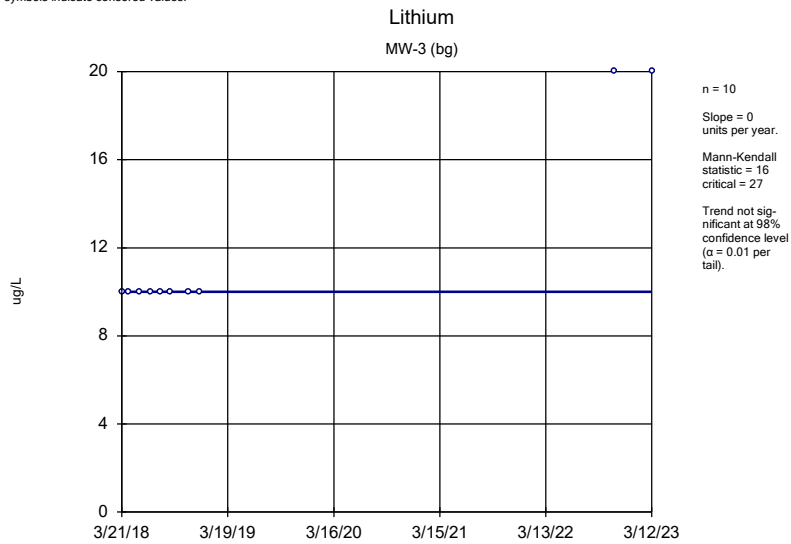
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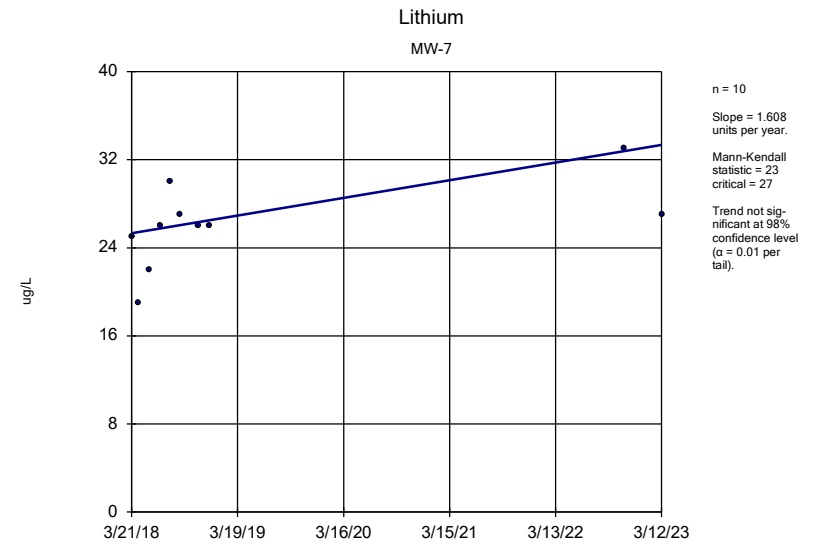
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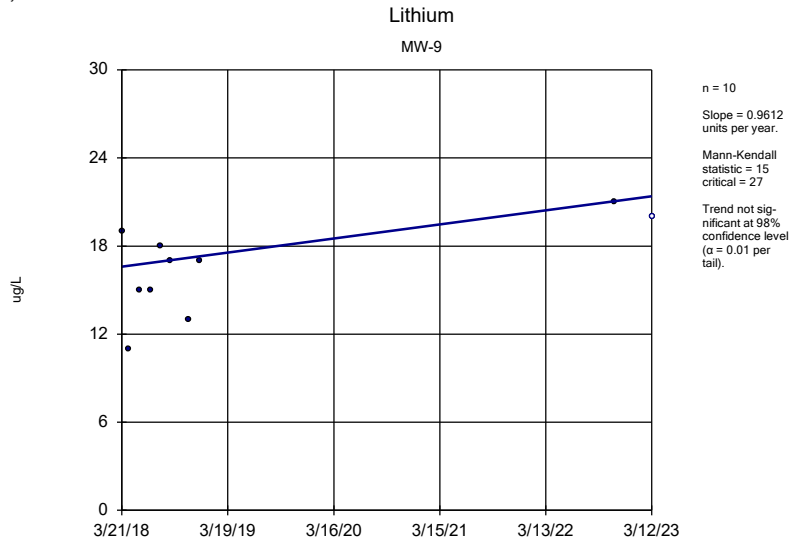
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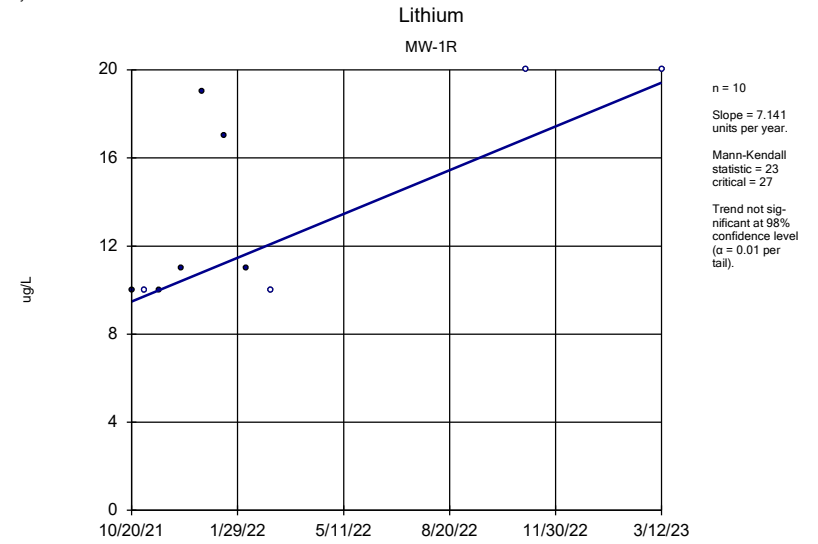
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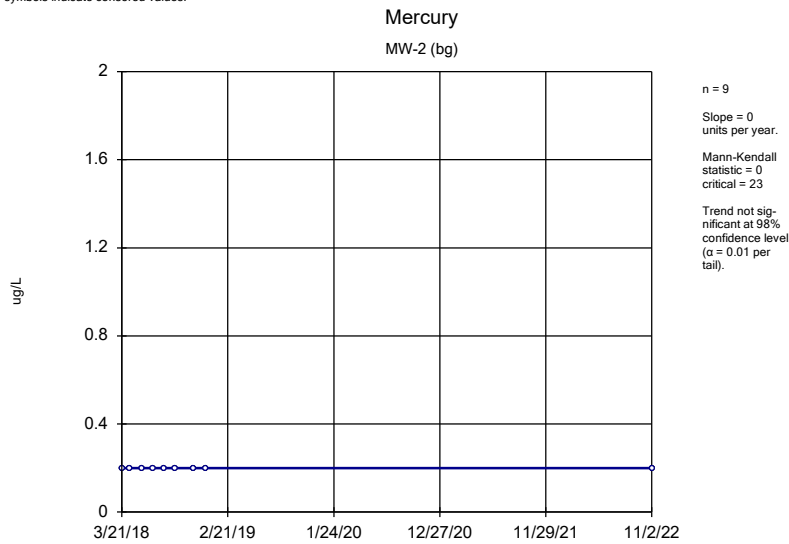
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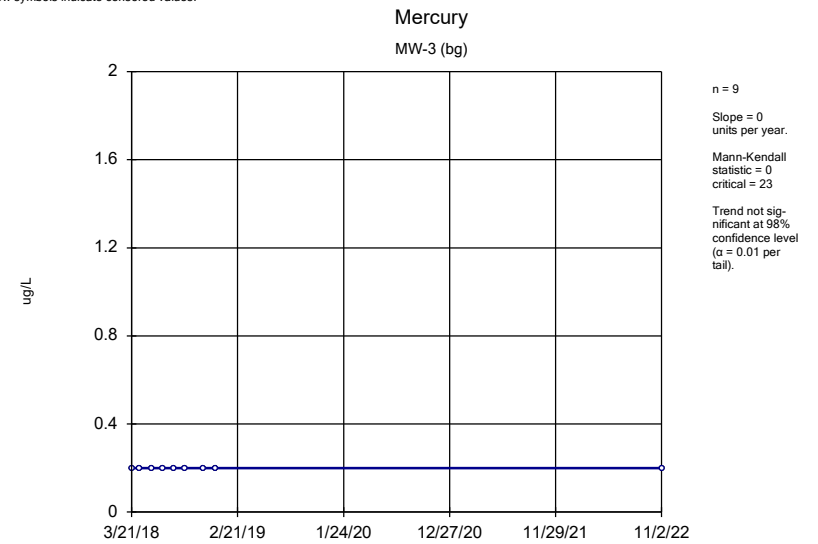
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

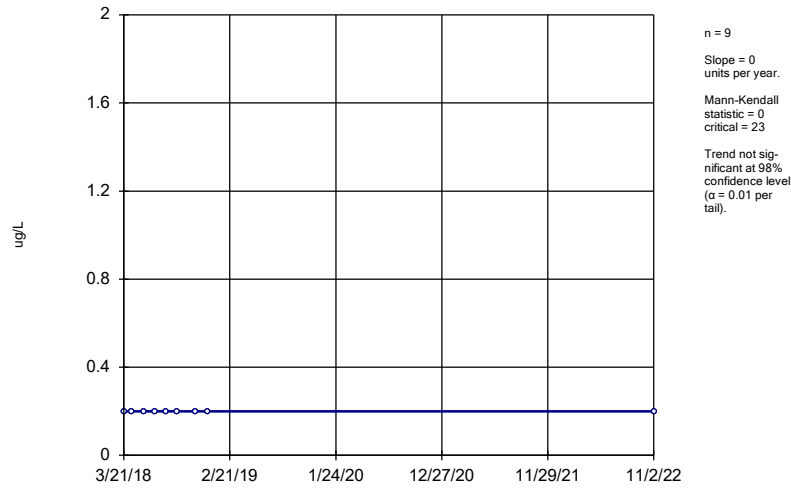


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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background



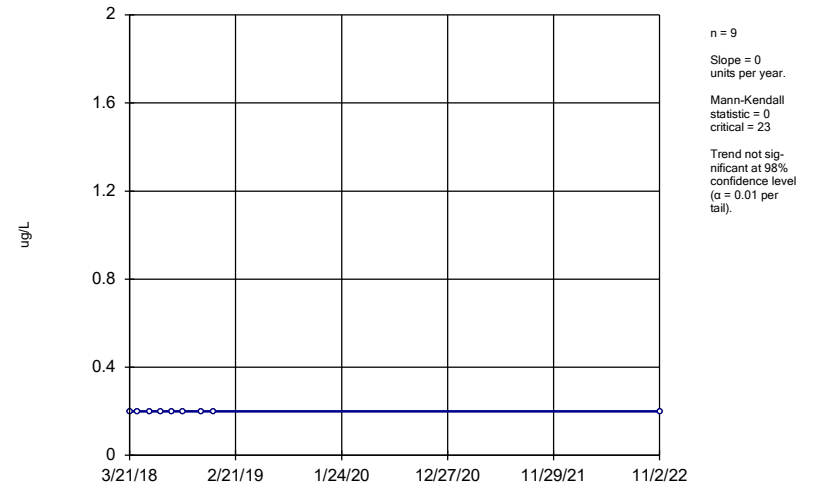
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Mercury
MW-7



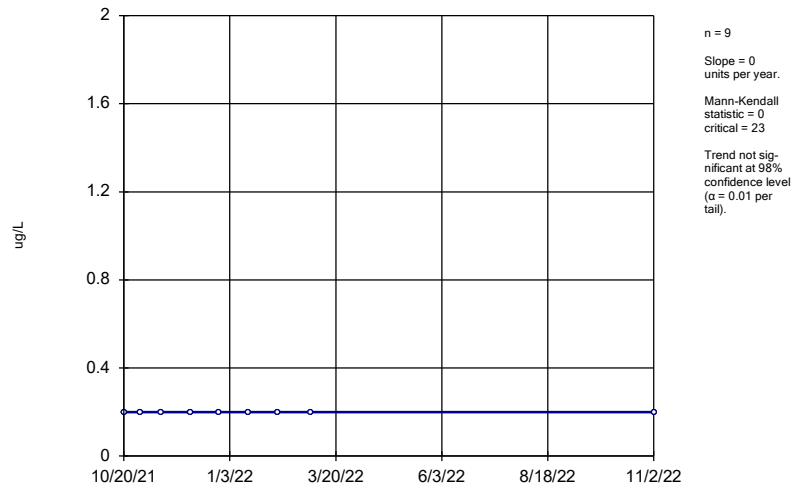
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Mercury
MW-9



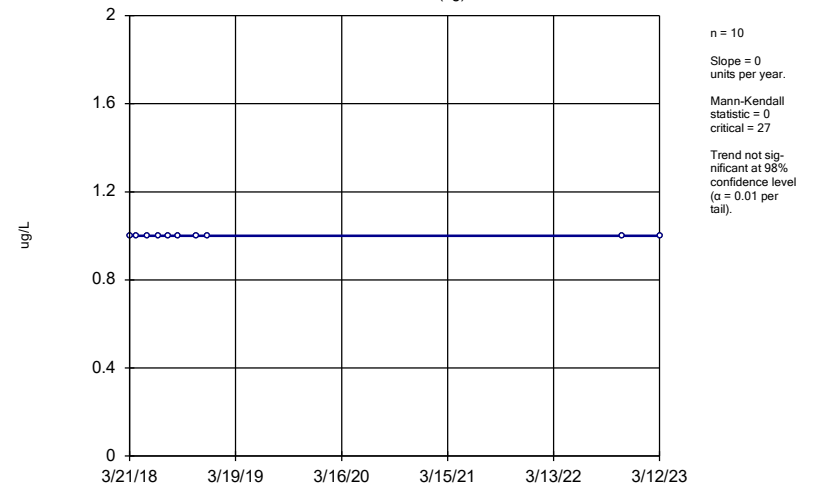
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Mercury
MW-1R



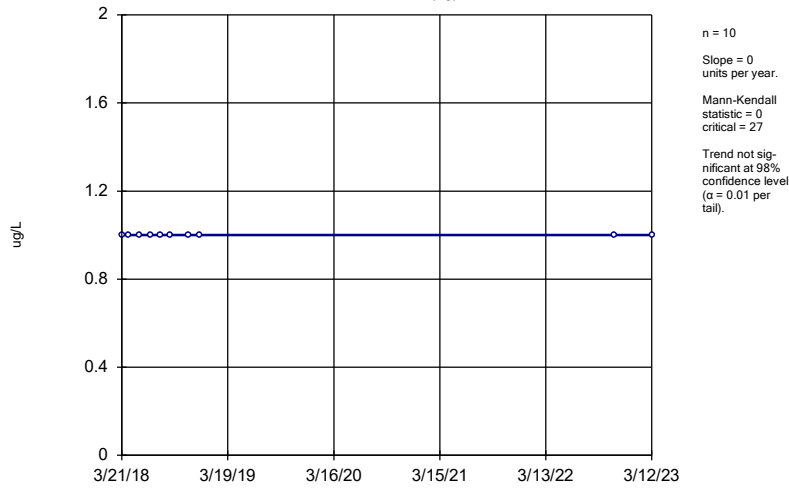
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Molybdenum
MW-2 (bg)



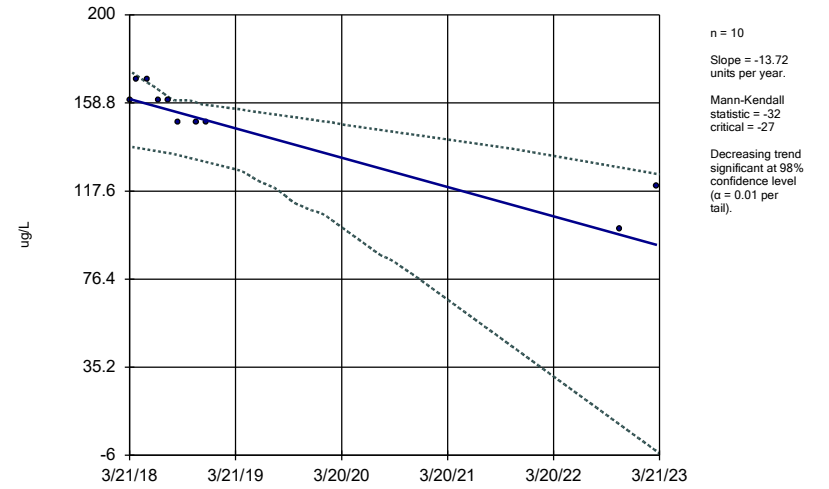
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Molybdenum
 MW-3 (bg)



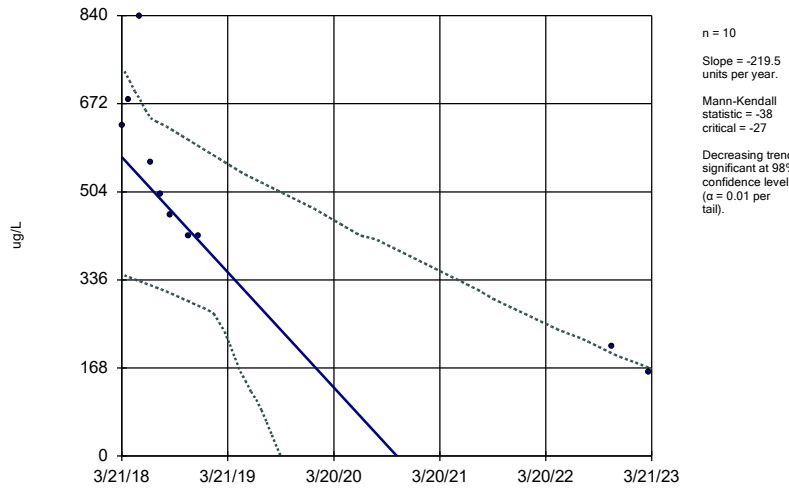
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Molybdenum
 MW-7



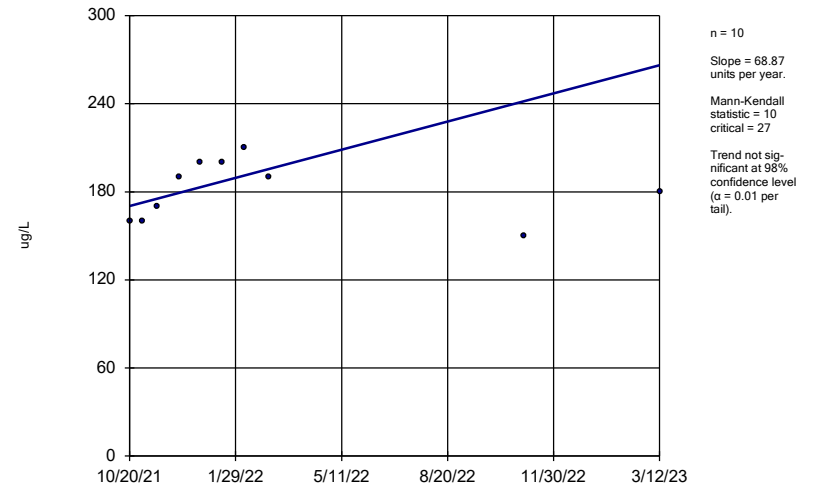
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Molybdenum
 MW-9

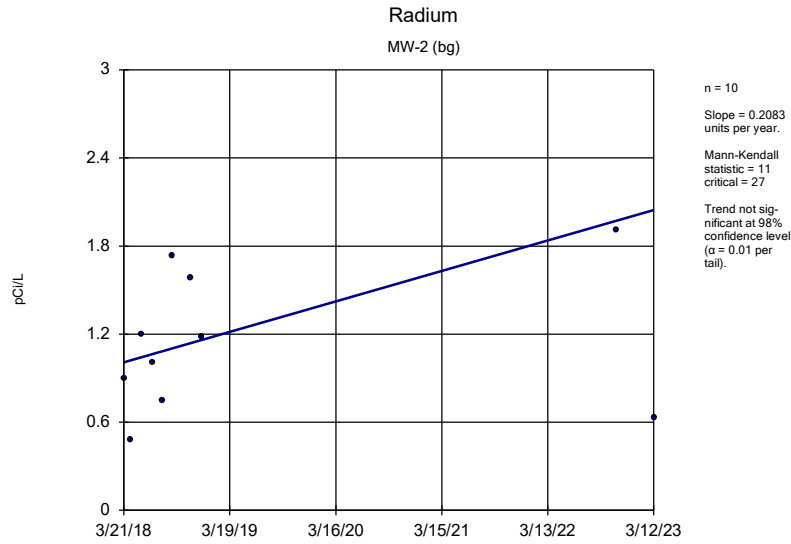


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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

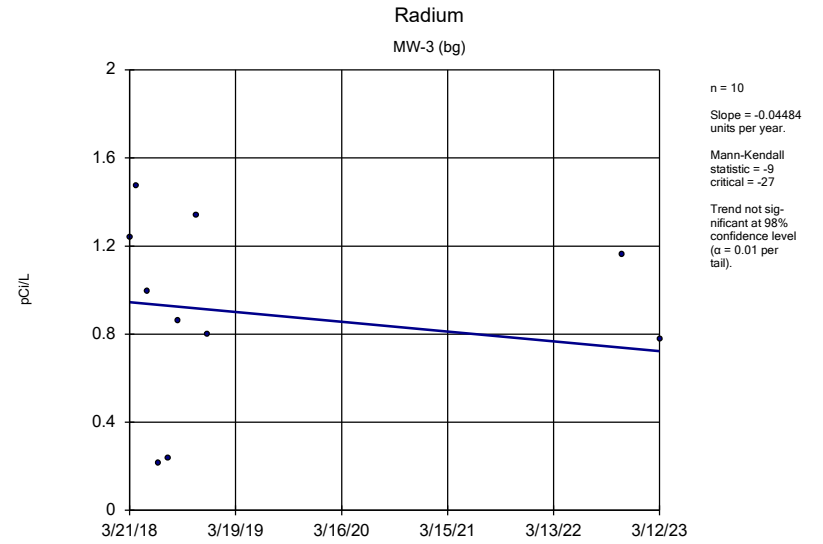
Molybdenum
 MW-1R



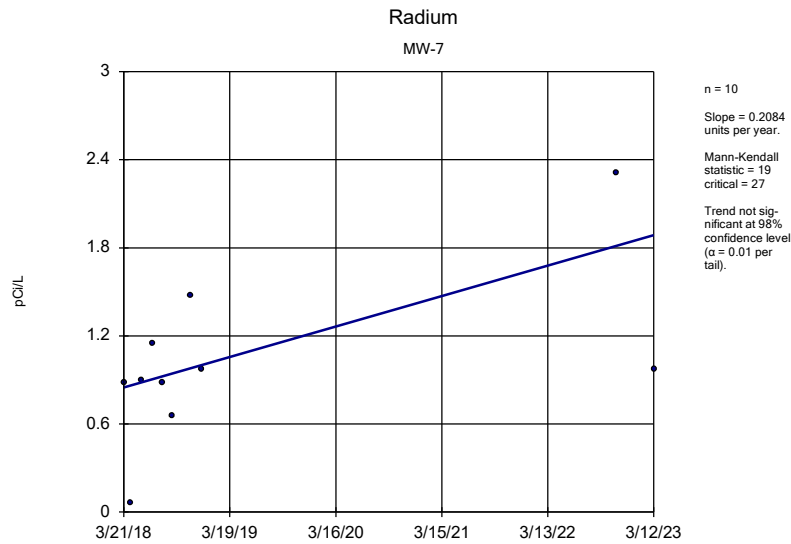
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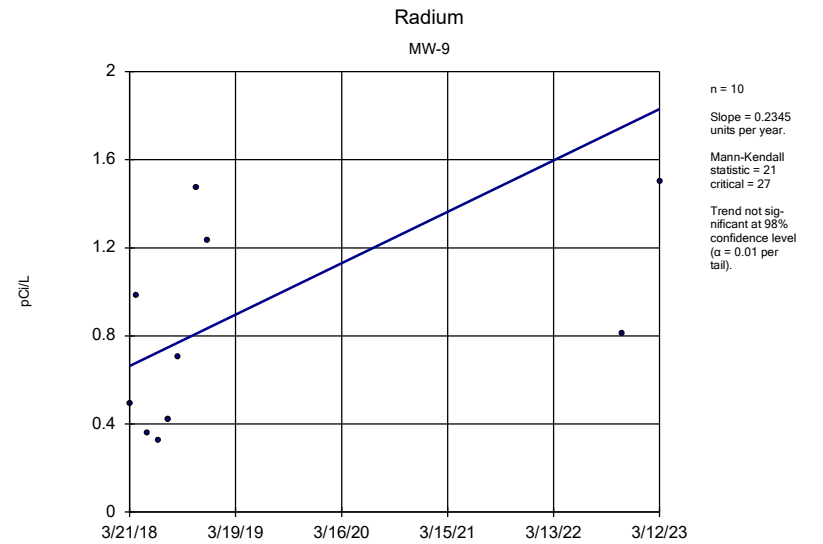
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background



Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

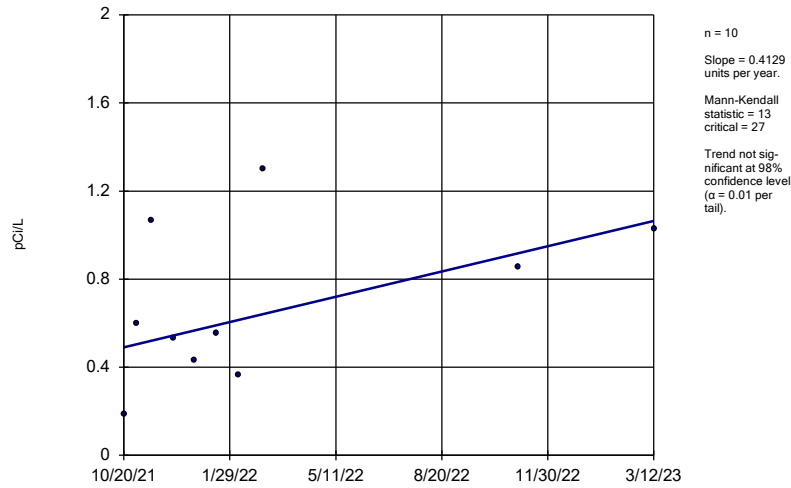


Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background



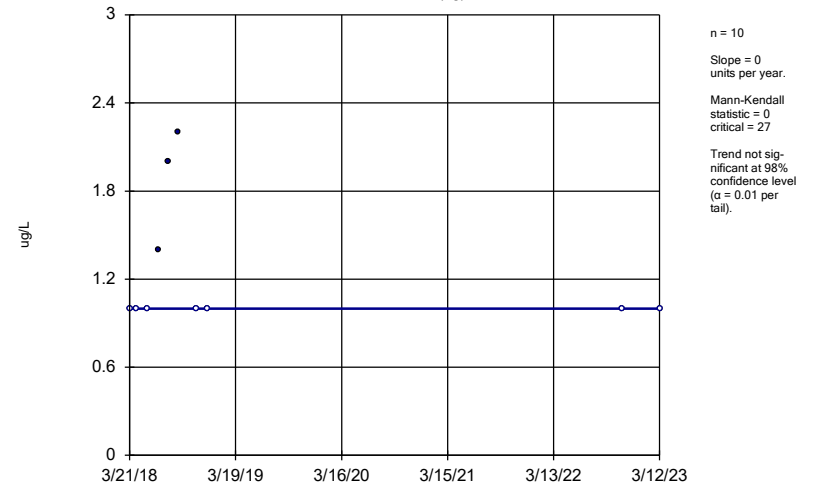
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 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Radium
MW-1R



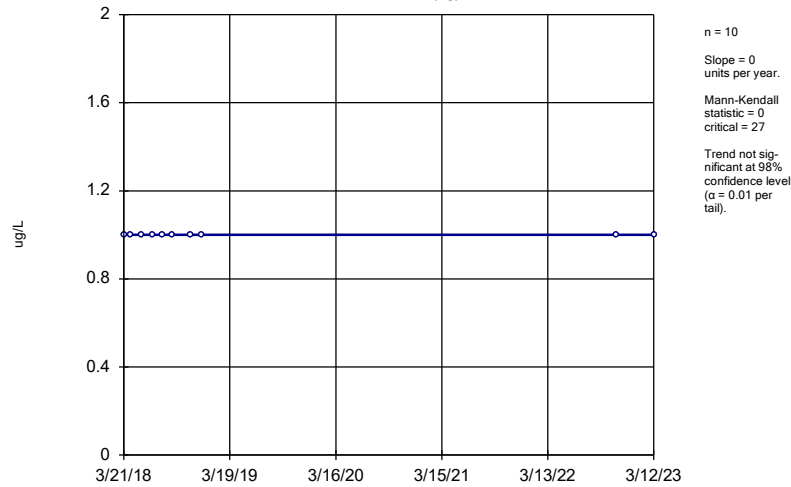
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Selenium
MW-2 (bg)



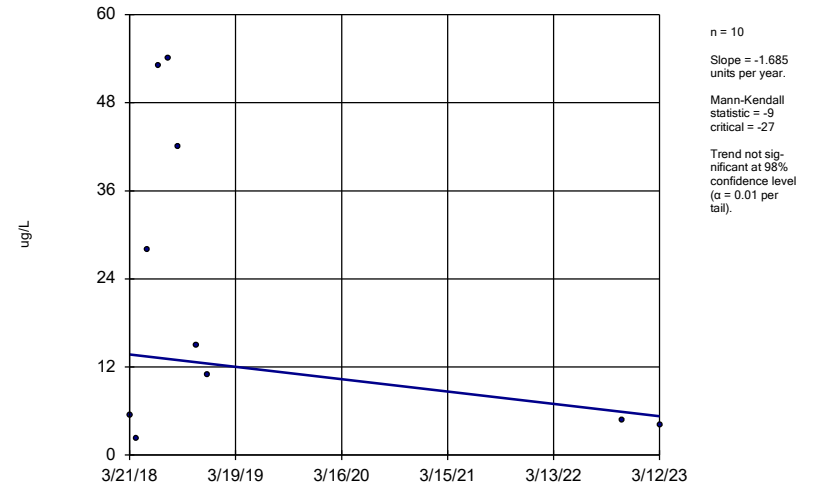
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Selenium
MW-3 (bg)



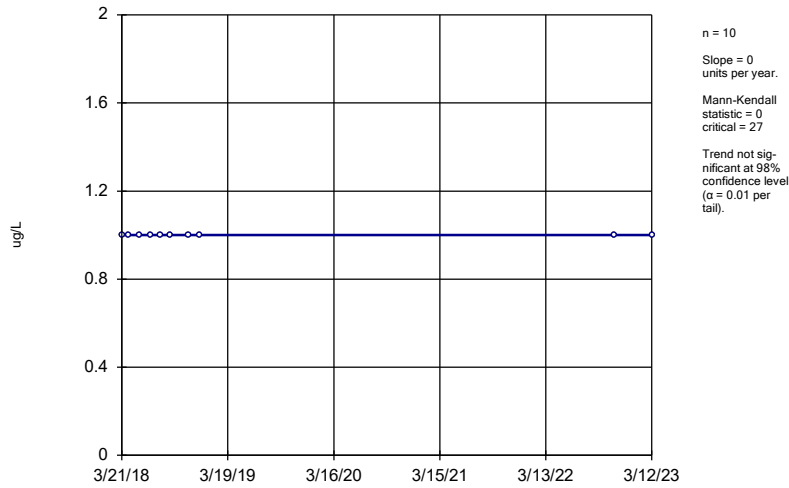
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:16 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Selenium
MW-7



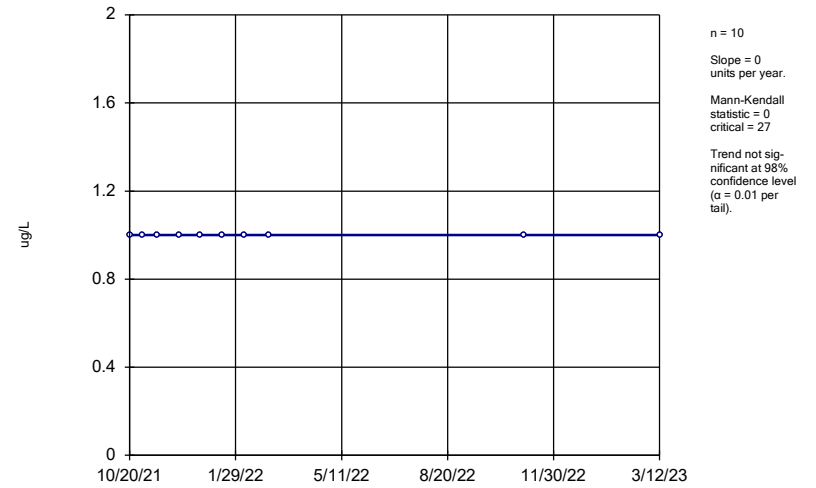
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Selenium MW-9



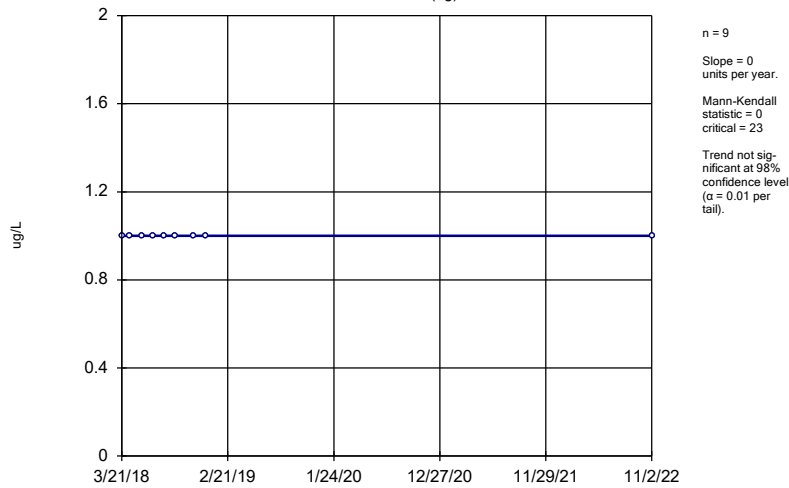
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Selenium MW-1R



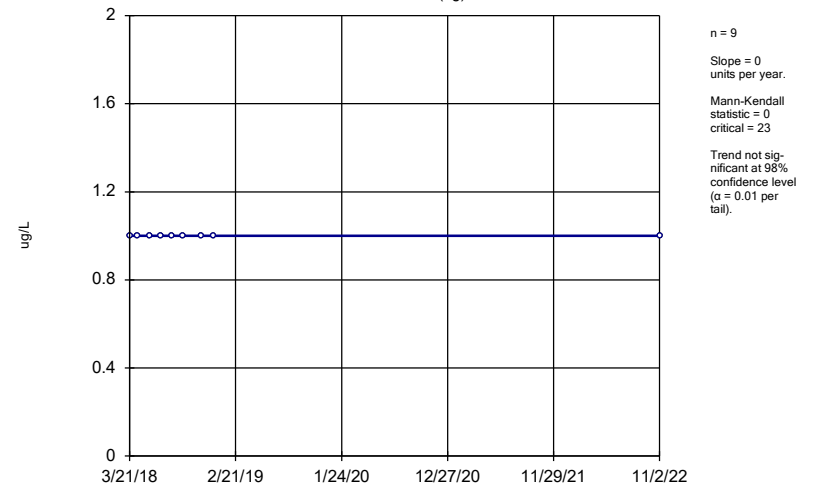
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SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Thallium MW-2 (bg)



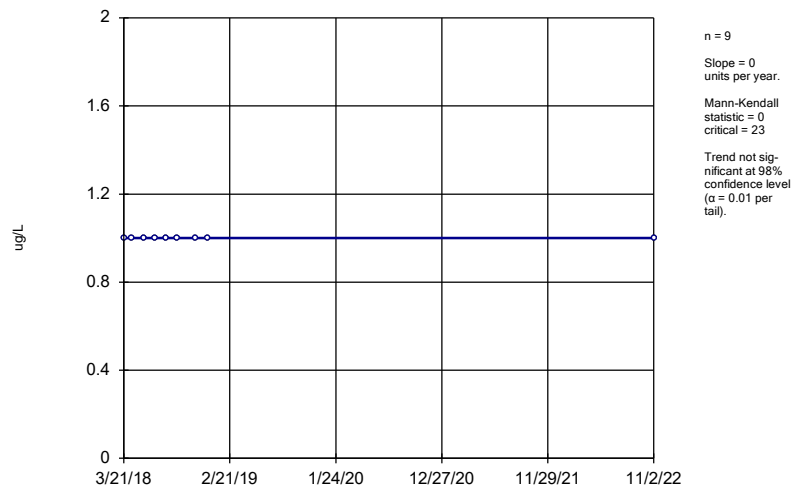
Sen's Slope and 95% Confidence Band Analysis Run 4/12/2023 2:17 PM View: Appendix IV 3-12-2023
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SikestonFAP Background

Thallium MW-3 (bg)



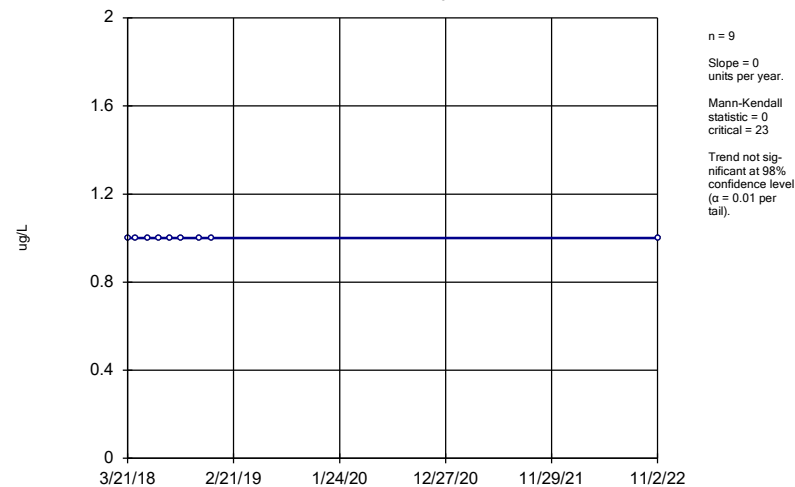
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Thallium MW-7



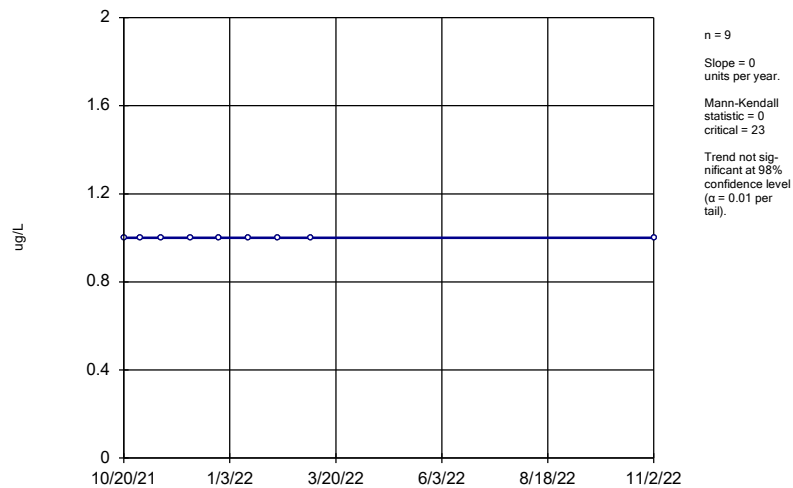
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Thallium MW-9



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Thallium MW-1R



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