Annual Groundwater Monitoring Report

Southwestern Electric Power Company

H. W. Pirkey Power Plant

FGD Stackout Area CCR Unit

CN600126767; RN100214287

Registration No: CCR104

Hallsville, Texas

January 31, 2026

Prepared by:
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Columbus, Ohio 43215

SOUTHWESTERN ELECTRIC POWER COMPANY℠

An AEP Company

BOUNDLESS ENERGY℠

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Abbreviations:
ASD - Alternate Source Demonstration
CCR – Coal Combustion Residual
GWPS - Groundwater protection standards
SSI - Statistically Significant Increase
SSL - Statistically Significant Level
TCEQ – Texas Commission on Environmental Quality

I. Summary

This *Annual Groundwater Monitoring Report* (Report) has been prepared to report the status of activities for the preceding year at the Flue-Gas Desulfurization Stackout Area (FGDSA) Coal Combustion Residual (CCR) unit at Pirkey Power Plant. Southwestern Electric Power Company is wholly-owned subsidiary of American Electric Power Company (AEP). The Texas Commission on Environmental Quality's (TCEQ's) CCR rules require that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31, 2026.

In general, the following activities were completed:

- At the start of the current annual reporting period, the FGDSA was operating under the Assessment monitoring program.
- At the end of the current annual reporting period, the FGDSA was operating under the Assessment monitoring program.
- The FGDSA initiated an assessment monitoring program on April 3, 2018.
- Groundwater samples were collected for AD-7R, AD-12, AD-13, AD-22, and AD-33 in February, April, and September 2025 analyzed for 30 TAC §352 Appendix III and Appendix IV constituents, as specified in 30 TAC §352.951 *et seq.* and AEP's *Groundwater Sampling and Analysis Plan (2021)*;
- Groundwater data underwent various validation tests, including tests for completeness, valid values, transcription errors, and consistent units;
- A successful ASD for the 2nd semi-annual 2024 potential SSLs cobalt, beryllium, lead, and mercury was certified on March 21, 2025, and submitted to TCEQ March 21, 2025, for approval.
- During the 1st semi-annual sampling event held in April 2025:

  The following Appendix IV parameters exceeded established GWPS on September 26, 2025:

  - Cobalt at AD-22
  - Beryllium at AD-22
  - Lead at AD-33
  - Mercury at AD-33

  The following Appendix III parameters exceeded background:

  - Boron at AD-7R and AD-33
  - Calcium at AD-33

- Chloride at AD-22
- Fluoride at AD-22
- Sulfate at AD-22

- A successful ASD for 1st semi-annual 2025 potential SSLs for cobalt, beryllium, lead, and mercury was certified December 23, 2025, and submitted to TCEQ December 24, 2025, for approval.
- During the 2nd semi-annual sampling event held in September 2025:

  The following Appendix IV parameters exceeded established GWPS on December 29, 2025:

  - Cobalt at AD-22
  - Beryllium at AD-22
  - Lead at AD-33
  - Mercury at AD-33

  The following Appendix III parameters exceeded background:

  - Boron at AD-7R and AD-33
  - Chloride at AD-22
  - Sulfate at AD-22

- Pirkey Power Plant submitted a Notice of SSL above GWPS to TCEQ January 5, 2026, which indicated an alternative source demonstration would be conducted. An alternative source demonstration report will be prepared and certified and submitted to TCEQ's Executive Director for review within 90 days of the SSL determination.
- Because an alternate source for the SSL(s) was identified, but no alternate source for the SSI(s) was identified, FGDSA remained in Assessment Monitoring.
- A statistical process in accordance with 30 TAC §352.931 to evaluate groundwater data was updated, certified, and posted to AEP's CCR website in 2021 titled: AEP's *Statistical Analysis Plan (*Geosyntec 2021). The statistical process was guided by USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* ("Unified Guidance," USEPA, 2009).
- On September 1, 2023, FGD Stackout Area removed the last known final volume of CCR from the CCR unit for the purpose of beneficial reuse and commenced closure by removal for this CCR Unit in accordance with the certified closure plan.

- An additional 12 inches of soil was then removed, finishing in September of 2023. The last inspection for the removal was completed on September 18, 2023.
- On March 6, 2024, the FGDSA was closed by removal in accordance with 30 TAC §352.1221 (40 CFR 257.102) and the most recent Written Closure Plan. A Closure Completion Notification that was certified by a Professional engineer was submitted to TCEQ. Groundwater monitoring will continue until TCEQ's Executive Director issues a closure certification.

The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:

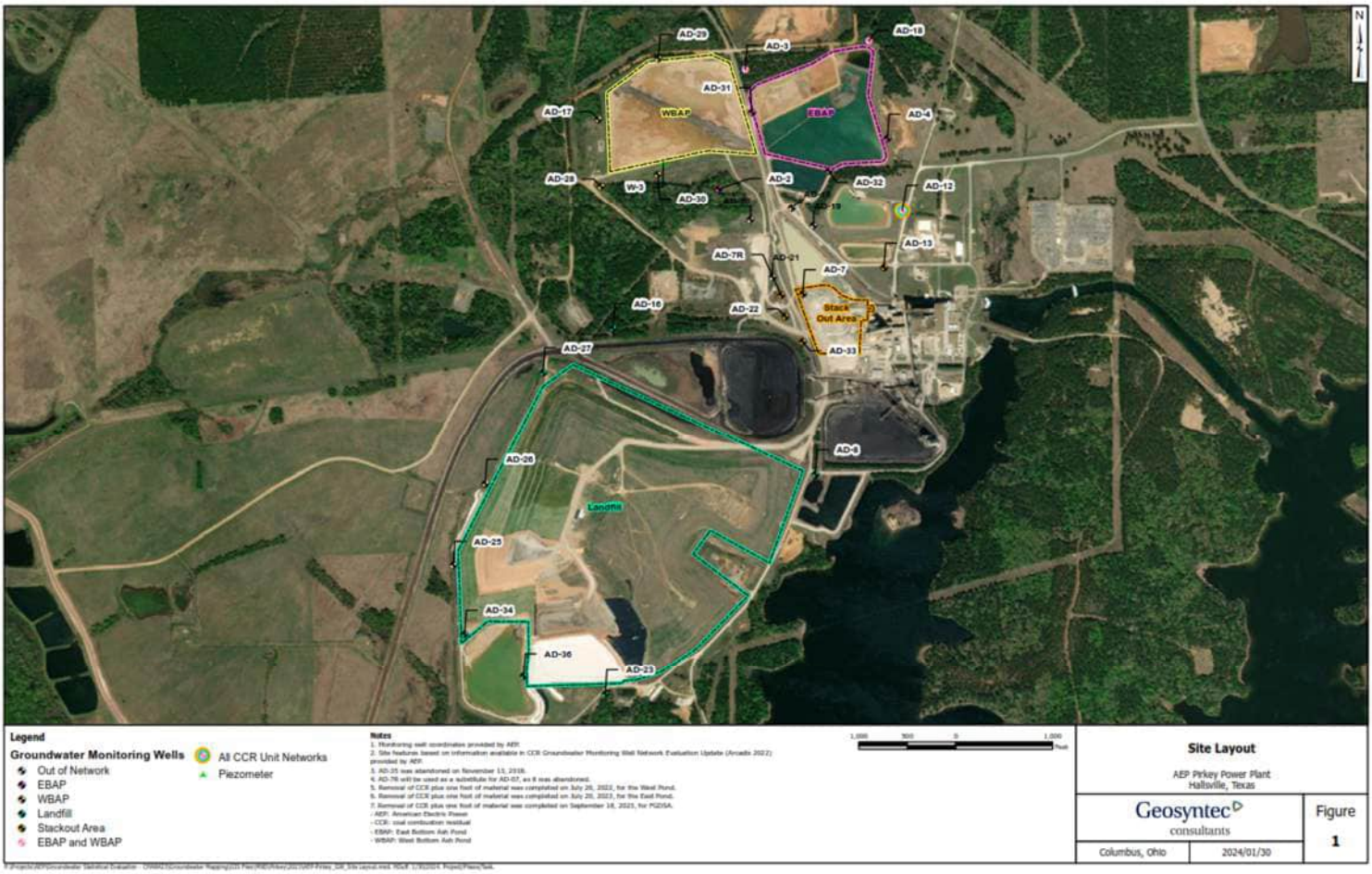
- A map, aerial photograph or a drawing showing the FGDSA CCR unit, all groundwater monitoring wells and monitoring well identification numbers;
- All of the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected and whether the sample was collected as part of detection monitoring or assessment monitoring programs (Attached as **Appendix 1**);
- Statistical comparison of monitoring data to determine if there have been SSI(s) or SSL(s) (Attached as **Appendix 2**);
- A discussion of whether any alternate source demonstrations were performed, and the conclusions (Attached as **Appendix 3**);
- A summary of any transition between monitoring programs, or an alternate monitoring frequency, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring, in addition to identifying the constituents detected at a SSI over background concentrations (Attached as **Appendix 4**);
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a statement as to why that happened (Attached as **Appendix 5**);
- Other information required to be included in the annual report such as field sheets, analytical reports, etc. (Attached as **Appendix 6**)

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

II. Groundwater Monitoring Well Locations and Identification Numbers

The figure that follows depicts the PE-certified groundwater monitoring network, the monitoring well locations and their corresponding identification numbers.

FGD Stackout Area Monitoring Wells	
Upgradient	Downgradient
AD-12	AD-7 (Plugged Sept 2023)
AD-13	AD-7R
	AD-22
	AD-33



III. Monitoring Wells Installed or Decommissioned

There were no new groundwater monitoring wells installed during 2025. The network design, as summarized in the *Groundwater Monitoring Network Design Report* (May 25, 2016) and as posted

at the CCR website for Pirkey Power Plant's FGDSA, was updated to include AD-7R as a replacement for AD-7. That network design report *Groundwater Monitoring Network Design Report* (December 11, 2023), viewable on the AEP CCR web site, discusses the facility location, the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, downgradient monitoring well locations and the upgradient monitoring well locations.

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

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

The sampling event conducted February 2025 satisfies the annual screening sampling requirements of 30 TAC §352.951.

V. Groundwater Quality Data Statistical Analysis

Appendix 2 contains the statistical analysis report(s).

During the 1st semi-annual sampling event held in April 2025:

The following Appendix IV parameters exceeded established GWPS on September 26, 2025:

- Cobalt at AD-22
- Beryllium at AD-22
- Lead at AD-33
- Mercury at AD-33

The following Appendix III parameters exceeded background:

- Boron at AD-7R and AD-33
- Calcium at AD-33
- Chloride at AD-22
- Fluoride at AD-22
- Sulfate at AD-22

During the 2nd semi-annual sampling event held in September 2025:

The following Appendix IV parameters exceeded established GWPS on December 29, 2025:

- Cobalt at AD-22
- Beryllium at AD-22
- Lead at AD-33
- Mercury at AD-33

The following Appendix III parameters exceeded background:

- Boron at AD-7R and AD-33
- Chloride at AD-22
- Sulfate at AD-22

VI. Alternate Source Demonstration

A successful ASD for the 2nd semi-annual 2024 potential SSLs cobalt, beryllium, lead, and mercury was certified on March 21, 2925, and submitted to TCEQ March 21, 2025, for approval.

A successful ASD for 1st semi-annual 2025 potential SSLs for cobalt, beryllium, lead, and mercury was certified December 23, 2025, and submitted to TCEQ December 23, 2025, for approval.

Pirkey Power Plant submitted a Notice of SSLs above GWPS (Cobalt, beryllium, lead, and mercury) to TCEQ January 5, 2026, which indicated an alternative source demonstration would be conducted. An alternative source demonstration report will be prepared and certified and submitted to TCEQ's Executive Director for review within 90 days of the SSL determination.

The successful ASDs are found in **Appendix 3**.

Because an alternate source for the SSL(s) was identified, but no alternate source for the SSI(s) was identified, FGDSA remained in Assessment Monitoring.

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

The FGDSA will remain in assessment monitoring unless all Appendix III and IV parameters are below background values for two consecutive monitoring events (return to detection monitoring) as prescribed by 30 TAC §352.951(c). If an Appendix IV parameter exceeds its respective GWPS due to a release from the FGDSA, an assessment of corrective measures will be undertaken as required by 30 TAC §352.961.

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

VIII. Other Information Required

As required by the CCR assessment monitoring rules in 30 TAC §352.951, sampling all CCR wells for the required Appendix III and IV parameters was completed in 2025.

A statistical process in accordance with 30 TAC §352.931 to evaluate groundwater data was updated, certified, and posted to AEP's CCR website in 2021 titled: AEP's *Statistical Analysis Plan (*Geosyntec 2021). The statistical process was guided by USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* ("Unified Guidance," USEPA, 2009).

On September 1, 2023, FGD Stackout Area removed the last known final volume of CCR from the CCR unit for the purpose of beneficial reuse and commenced closure by removal for this CCR Unit in accordance with the certified closure plan.

An additional 12 inches of soil was then removed, finishing in September of 2023. The last inspection for the removal was completed on September 18, 2023.

On March 6, 2024, the FGDSA was closed by removal in accordance with 30 TAC §352.1221 (40 CFR 257.102) and the most recent Written Closure Plan. A Closure Completion Notification that was certified by a Professional engineer was submitted to TCEQ. Groundwater monitoring will continue until TCEQ's Executive Director issues a closure certification.

IX. Description of Any Problems Encountered in 2025 and Actions Taken

No significant problems were encountered. The low flow sampling effort went smoothly, and the schedule was met to support the annual groundwater report preparation covering the year 2025 groundwater monitoring activities.

X. A Projection of Key Activities for the Upcoming Year

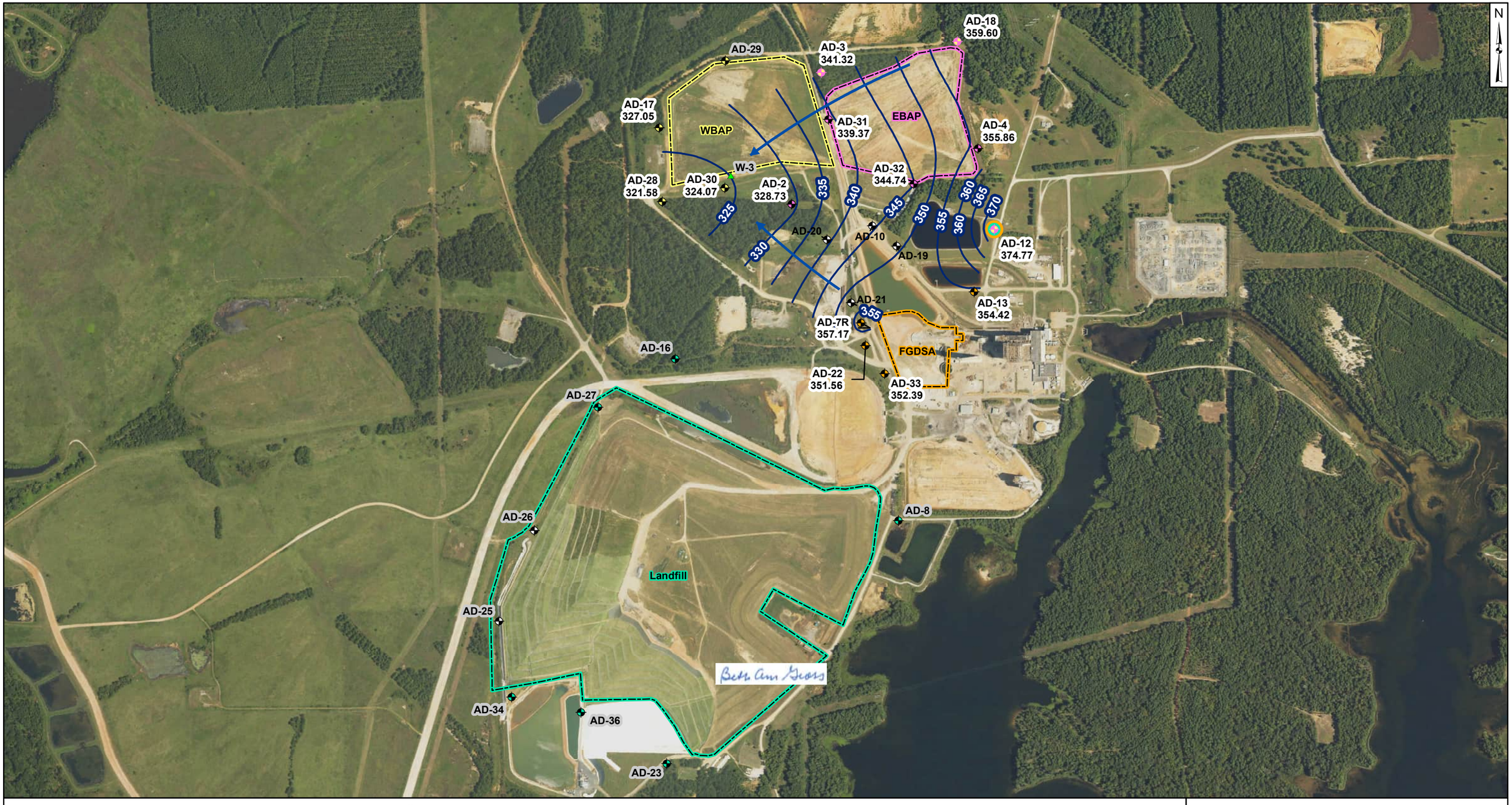
Key activities for next year will include:

- Assessment monitoring sampling will be conducted.
- Conduct the annual groundwater sampling event for all constituents listed in 30 TAC §352 Appendix III and IV as required by 30 TAC §352.951.
- Perform statistical analysis on the sampling results for the 30 TAC §352 Appendix III and Appendix IV parameters as required by 30 TAC §352.951.
- Determine applicable GWPSs for the 30 TAC §352 Appendix IV parameters and compare the calculated confidence limits for the Appendix IV constituents to the GWPSs.
- If no GWPSs are exceeded, the FGDSA will remain in assessment monitoring.
- If any SSL are identified, then an alternate source demonstration will be completed.

- Responding to any new data received in light of TCEQ CCR rule requirements.
- Preparation of the next annual groundwater report until TCEQ's Executive Director issues a closure certification.

APPENDIX 1

Potentiometric Maps and Tables follow, showing the groundwater monitoring data collected, the rate and direction of groundwater flow, and a summary showing the number of samples collected per monitoring well. The dates that the samples were collected also is shown.



Legend

Groundwater Monitoring Wells

- Out of Network
- East Bottom Ash Pond (EBAP)
- West Bottom Ash Pond (WBAP)
- Landfill
- Flue Gas Desulfurization Stackout Area (FGDSA)
- EBAP and WBAP
- All CCR Unit Networks
- Piezometer
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water levels (collected on February 3 and 4, 2025) provided by AEP.
2. Site features based on information available in coal combustion residuals (CCR) Groundwater Monitoring Well Network Evaluation Update (Arcadis 2022) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft msl).
4. Wells AD-8, AD-10, AD-16, AD-19, AD-20, AD-21, AD-23, AD-27, AD-29, AD-34, AD-35, AD-36 and W-3 were not gauged during the February 2025 event.
5. AD-7R replaced AD-7, which was abandoned on September 12, 2023.
6. AD-25 and AD-26 were gauged during the February 2025 event but were not used for contouring.
7. Wells shaded in gray were not used for contouring.
8. Landfill wells were not gauged during the February 2025 event. Contours are representative of the EBAP, WBAP and FGDSA.
9. AD-35 was abandoned on November 13, 2018 and is not shown on the map.
10. Removal of CCR plus one foot of material for the WBAP was completed for on July 26, 2022.
11. Removal of CCR plus one foot of material for the EBAP was completed on July 20, 2023.
12. Removal of CCR plus one foot of material for the FGDSA was completed on September 18, 2023.
13. Map is updated to incorporate Landfill survey data collected on May 1, 2024.
14. Aerial imagery provided by the TxGIO DataHub (dated 2024).

1,000 500 0 1,000 Feet

Beth Ann Gross

January 26, 2026
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Texas Firm Registration No. 1182

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Potentiometric Contours: Uppermost Aquifer February 2025

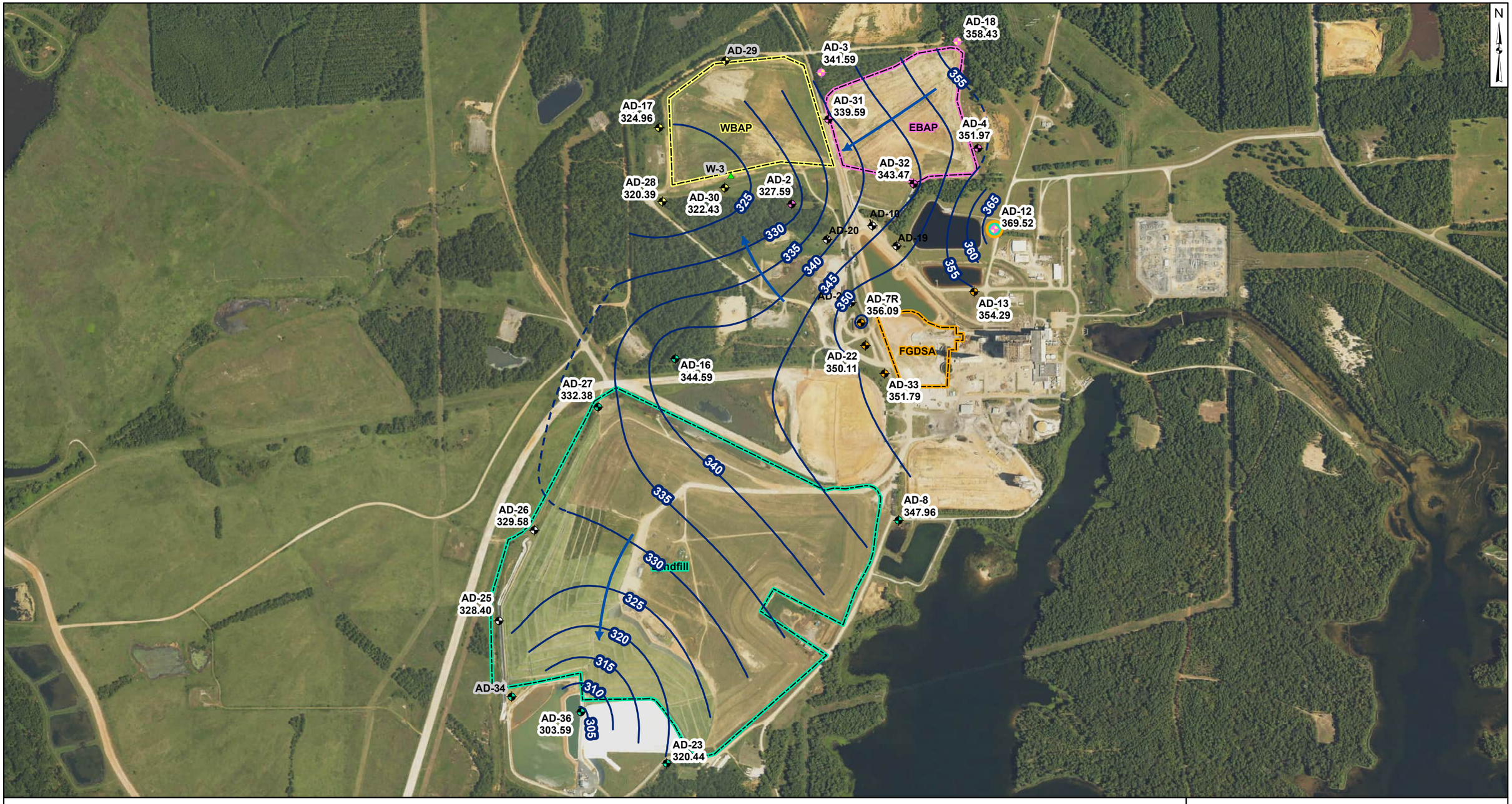
AEP Pirkey Power Plant
Hallsville, Texas

Geosyntec consultants

Columbus, Ohio | 2025/10/30

Figure 1

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Pirkey\2025\AEP-Pirkey_GW_2025-02Pirkey.mxd. okiemute.commander. 10/30/2025. CHA8500B/12/01_04.



Legend

Groundwater Monitoring Wells

- Out of Network
- East Bottom Ash Pond (EBAP)
- West Bottom Ash Pond (WBAP)
- Landfill
- Flue Gas Desulfurization Stackout Area (FGDSA)
- EBAP and WBAP
- All CCR Unit Networks
- Piezometer
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water levels (collected on April 21, 22, and 23, 2025) provided by AEP.
2. Site features based on information available in coal combustion residuals (CCR) Groundwater Monitoring Well Network Evaluation Update (Arcadis 2022) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft msl).
4. Wells AD-10, AD-19, AD-20, AD-21, AD-29, and W-3 were not gauged during the April 2025 event.
5. AD-7R replaced AD-7, which was abandoned on September 12, 2023.
6. Wells shaded in gray are within the network but not used for contouring.
7. Well AD-34 had artesian characteristics during this event and was not used for contouring.
8. AD-35 was abandoned on November 13, 2018 and is not shown on the map.
9. Removal of CCR plus one foot of material for the WBAP was completed for on July 26, 2022.
10. Removal of CCR plus one foot of material for the EBAP was completed on July 20, 2023.
11. Removal of CCR plus one foot of material for the FGDSA was completed on September 18, 2023.
12. Map is updated to incorporate Landfill survey data collected on May 1, 2024.
13. Aerial imagery provided by the TxGIO DataHub (dated 2024).

1,000 500 0 1,000 Feet

Beth Ann Gross

December 23, 2025
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BETH ANN GROSS
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Potentiometric Contours: Uppermost Aquifer April 2025

AEP Pirkey Power Plant
Hallsville, Texas

Geosyntec consultants

Columbus, Ohio | 2025/10/28

Figure 2

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Pirkey\2025\AEP-Pirkey_GW_2025-04Pirkey.mxd. okiemute.commander. 10/28/2025. CHA8500B/12/01_04.

AD-18
355.43
AD-29
AD-3
338.88
AD-17
323.55
WBAP
EBAP
AD-31
337.33
AD-4
348.93
W-3
AD-32
342.15
AD-28
320.07
AD-30
321.84
AD-2
327.52
AD-10
AD-19
AD-12
368.12
AD-20
AD-21
AD-13
352.08
AD-7R
354.66
FGDSA
AD-22
348.23
AD-33
350.45
AD-16
341.40
AD-27
330.93
AD-8
347.13
AD-26
329.60
Landfill
AD-25
326.78
AD-34
AD-36
303.71
AD-23
320.74
350
355
360
365
345
340
335
330
325
320
315
310
305

N

Legend

Groundwater Monitoring Wells

- Out of Network
- East Bottom Ash Pond (EBAP)
- West Bottom Ash Pond (WBAP)
- Landfill
- Flue Gas Desulfurization Stackout Area (FGDSA)
- EBAP and WBAP
- All CCR Unit Networks
- Piezometer
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water levels (collected from September 8-10, 2025) provided by AEP.
2. Site features based on information available in coal combustion residuals (CCR) Groundwater Monitoring Well Network Evaluation Update (Arcadis 2022) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft msl).
4. Wells AD-29 and W-3 were not gauged during the September 2025 event.
5. AD-7R replaced AD-7, which was abandoned on September 12, 2023.
6. Wells shaded in gray are within the network but not used for contouring.
7. Well AD-34 had artesian characteristics during this event and was not used for contouring.
8. AD-35 was abandoned on November 13, 2018 and is not shown on the map.
9. Removal of CCR plus one foot of material for the WBAP was completed for on July 26, 2022.
10. Removal of CCR plus one foot of material for the EBAP was completed on July 20, 2023.
11. Removal of CCR plus one foot of material for the FGDSA was completed on September 18, 2023.
12. Map is updated to incorporate Landfill survey data collected on May 1, 2024.
13. Aerial imagery provided by the TxGIO DataHub (dated 2024).

1,000 500 0 1,000
Feet

Beth Ann Gross

January 19, 2026
Geosyntec Consultants, Inc.
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Potentiometric Contours: Uppermost Aquifer September 2025

AEP Pirkey Power Plant
Hallsville, Texas

Geosyntec consultants

Columbus, Ohio | 2026/01/15

Figure 3

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Pirkey\2025\AEP-Pirkey_GW_2025-09Pirkey.mxd. okiemute.commander. 1/15/2026. CHA8500B/12/01_04.

Table 1. Groundwater Elevation Data Summary
Pirkey Power Plant

Geosyntec Consultants

Unit	All Units	East Bottom Ash Pond					West Bottom Ash Pond				
Gradient	Upgradient	Upgradient		Downgradient			Upgradient		Downgradient		
Well	AD-12	AD-4	AD-18	AD-2	AD-31	AD-32	AD-3	AD-18	AD-17	AD-28	AD-30
Jan-2016	371.05	359.16	360.52	328.55	346.60	352.32	347.03	360.52	--	321.39	323.70
May-2016	372.17	360.07	359.26	328.35	348.21	352.74	348.04	359.26	329.38	321.82	324.26
Jul-2016	365.68	352.34	356.99	327.46	345.46	348.53	346.00	356.99	325.93	320.44	322.49
Jan-2017	365.11	353.27	357.06	327.65	343.78	347.44	344.19	357.06	324.70	320.27	322.23
Feb-2017	368.79	355.32	359.21	327.96	344.53	348.44	345.53	359.21	326.27	320.59	322.88
Apr-2017	372.97	356.62	358.63	329.09	344.58	349.09	345.53	358.63	326.27	320.69	322.88
Aug-2017	367.68	353.58	358.23	327.63	343.57	349.73	343.49	358.23	324.18	320.07	322.04
Mar-2018	370.57	359.04	360.00	328.36	344.10	351.42	344.56	360.00	327.13	321.79	323.29
Aug-2018	357.99	350.39	355.99	326.99	342.73	347.58	343.28	355.99	324.12	319.93	321.70
Feb-2019	372.43	360.40	354.61	329.21	348.31	352.86	348.36	354.61	331.11	321.86	324.54
May-2019	373.12	361.18	360.74	328.91	349.68	354.14	349.37	360.74	331.66	322.61	325.21
Aug-2019	361.90	354.10	357.09	327.60	346.63	353.12	346.08	357.09	326.45	320.40	322.63
Mar-2020	373.10	360.56	360.58	329.23	346.95	352.55	347.22	360.58	336.07	321.98	323.94
Jun-2020	381.55	360.25	359.98	328.06	347.95	352.87	347.76	359.98	328.04	321.28	323.40
Nov-2020	361.86	349.70	354.98	327.57	342.84	346.13	342.89	354.98	324.36	319.99	321.90
Mar-2021	373.52	359.14	359.99	329.00	346.24	350.30	346.58	359.99	329.37	322.06	324.19
May-2021	375.56	360.45	360.46	329.57	347.27	351.28	347.46	360.46	329.03	323.10	324.94
Jul-2021	--	--	--	--	--	--	--	--	--	--	--
Nov-2021	358.32	351.40	355.55	327.36	342.79	348.72	342.60	355.55	323.77	319.98	321.80
Jan-2022	--	--	--	--	--	--	--	--	--	--	--
Mar-2022	373.28	359.58	359.17	328.17	344.58	351.73	344.19	359.17	325.80	321.05	323.14
Jun-2022	360.55	351.31	356.01	327.07	342.36	349.94	342.22	356.01	323.48	320.11	321.54
Aug-2022	--	--	--	--	--	--	341.84	--	--	--	--
Nov-2022	363.46	351.15	355.11	327.52	341.97	348.00	340.85	355.11	322.61	319.73	321.81
Feb-2023	368.74	356.04	359.57	328.12	344.34	349.48	--	359.57	--	--	--
Mar-2023	--	--	--	--	--	--	--	--	--	--	--
Jun-2023	369.17	352.66	357.96	327.55	340.46	343.36	341.82	357.96	325.13	320.45	322.07
Aug-2023	362.47	347.25	354.17	326.59	337.74	341.46	--	354.17	--	--	--
Oct-2023	360.29	--	352.80	--	--	--	338.07	352.80	322.93	319.77	321.28
Feb-2024	373.17	355.11	358.88	328.15	339.09	343.76	340.74	358.88	325.69	321.50	323.96
Apr-2024	375.35	356.26	360.33	330.10	340.14	344.98	342.34	360.33	329.88	323.20	324.88
Jun-2024	--	--	--	--	--	--	--	--	--	--	--
Sep-2024	365.57	347.56	354.66	327.11	337.52	342.02	339.08	354.66	323.59	320.21	321.42
Nov-2024	--	--	--	--	--	--	--	--	--	--	--
Feb-2025	374.77	355.86	359.60	328.73	339.37	344.74	341.32	359.60	327.05	321.58	324.07
Apr-2025	369.52	351.97	358.43	327.59	339.59	343.47	341.59	358.43	324.96	320.39	322.43
Jun-2025	370.19	--	359.21	327.90	340.09	344.67	342.35	359.21	325.30	320.84	322.81
Sep-2025	368.12	348.93	355.43	327.52	337.33	342.15	338.88	355.43	323.55	320.07	321.84
Nov-2025	362.12	349.09	353.39	327.21	336.54	341.97	338.69	353.39	323.12	319.83	321.21

Table 1. Groundwater Elevation Data Summary
Pirkey Power Plant

Unit	FGD Stackout Area					Landfill					
Gradient	Upgradient	Downgradient				Upgradient			Downgradient		
Well	AD-13	AD-7	AD-7R	AD-22	AD-33	AD-8	AD-16	AD-27	AD-23	AD-34	AD-36
Jan-2016	354.15	349.31		350.29	351.13	347.21	347.68	--	321.23	307.61	--
May-2016	355.11	349.98		350.83	351.62	348.03	350.97	335.29	321.98	307.61	--
Jul-2016	352.31	347.54		347.55	349.88	347.10	343.32	331.47	321.97	307.61	--
Jan-2017	352.01	347.04		347.20	348.56	345.74	343.09	330.04	320.99	307.61	--
Feb-2017	352.81	347.96		348.52	349.32	346.00	344.54	331.59	321.00	307.61	--
Apr-2017	352.68	347.87		348.45	349.25	345.81	344.69	331.24	320.85	307.61	--
Aug-2017	352.62	347.40		347.37	349.31	346.31	342.71	330.05	320.77	307.61	--
Mar-2018	353.25	348.46		349.62	350.10	346.11	344.63	332.49	320.17	307.61	--
Aug-2018	349.14	344.57		344.05	347.23	345.24	340.03	328.61	320.31	306.66	--
Feb-2019	355.63	350.21		350.90	351.99	348.05	351.21	335.03	320.88	307.61	--
May-2019	355.87	350.82		351.99	352.95	348.60	351.92	336.53	320.99	307.61	--
Aug-2019	350.87	346.85		346.70	349.96	347.33	343.92	330.71	321.29	305.87	303.16
Mar-2020	355.71	350.64		351.80	352.68	--	--	--	--	307.61	303.21
Jun-2020	355.17	350.25		350.95	352.54	348.61	349.39	--	320.79	307.61	303.78
Nov-2020	350.93	346.45		346.12	348.71	346.63	343.07	329.77	320.83	307.00	302.88
Mar-2021	355.22	350.13		351.33	351.84	--	--	--	--	--	--
May-2021	356.42	350.97		352.31	352.95	348.58	350.52	337.25	320.32	307.61	302.22
Jul-2021	--	--		--	--	--	--	--	--	307.61	302.42
Nov-2021	349.43	345.08		345.25	348.40	346.48	341.99	329.69	320.49	307.20	301.66
Jan-2022	--	--		--	--	--	--	--	320.00	307.61	--
Mar-2022	353.99	348.66		349.66	350.15	--	--	--	--	307.61	--
Jun-2022	349.75	345.35		345.49	348.35	346.27	342.41	330.10	319.87	307.00	301.49
Aug-2022	--	--		--	--	--	--	--	319.81	306.84	301.35
Nov-2022	349.93	345.56		345.20	347.43	344.23	341.65	328.48	319.72	307.61	301.35
Feb-2023	353.36	348.68		349.47	350.18	--	--	--	319.56	307.61	301.51
Mar-2023	354.24	--		350.03	350.48	--	--	--	--	--	--
Jun-2023	352.47	347.83		348.29	349.81	346.88	342.44	332.67	320.13	307.61	299.99
Aug-2023	--	--		--	--	--	--	--	320.39	307.61	302.91
Oct-2023	348.85	--		344.70	346.93	345.07	339.45	328.43	320.35	307.61	300.48
Feb-2024	354.43	--	355.99	350.17	350.60	347.86	--	--	--	--	302.62
Apr-2024	356.13	--	357.60	351.90	352.28	347.98	347.96	336.50	319.87	--	303.95
Jun-2024	--	--	--	--	--	--	--	--	320.44	--	303.81
Sep-2024	351.47	--	354.12	347.55	349.73	347.02	342.00	329.87	320.82	--	303.37
Nov-2024	--	--	353.57	346.93	--	--	--	--	320.61	--	303.31
Feb-2025	354.42	--	357.17	351.56	352.29	--	--	--	--	--	--
Apr-2025	354.29	--	356.09	350.11	351.79	347.96	344.59	332.38	320.44	307.61	303.59
Jun-2025	--	--	357.37	351.59	352.99	348.68	--	--	320.72	307.61	303.90
Sep-2025	352.08	--	354.66	348.23	350.45	347.13	341.40	330.93	320.74	307.61	303.71
Nov-2025	350.47	--	354.38	346.70	348.61	346.04	340.99	330.07	320.53	307.61	303.59

Notes:
1. Groundwater elevation measured in feet below ground surface.
2. AD-7R added to the FGD Stackout Area in certified monitoring network in December 2023.

Table 1: Residence Time Calculation Summary
Pirkey Plant - Stackout Area

Geosyntec Consultants, Inc.

			2025-02		2025-04		2025-06[3]		2025-09	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Stack Out Area	AD-7R [2]	4.0	35.0	3.5	24.0	5.1	36.6	3.3	32.1	3.8
	AD-12 [1]	4.0	45.3	2.7	38.7	3.1	29.8	4.1	31.3	3.9
	AD-13 [1]	4.0	14.9	8.2	14.9	8.2	NC	NC	29.9	4.1
	AD-22 [2]	2.0	25.3	2.4	29.4	2.1	26.5	2.3	25.4	2.4
	AD-33 [2]	2.0	6.4	9.6	7.9	7.7	14.5	4.2	8.8	6.9

Notes:
[1] - Background Well
[2] - Downgradient Well
[3] - Verification event
NC - Not Calculated

Table 1. Groundwater Data Summary: AD-7
Pirkey - Stackout
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
5/11/2016	Background	2.39	6.58	28	0.6493 J1	4.0	92	302
7/13/2016	Background	0.716	2.97	16	< 0.083 U1	3.6	40	204
9/07/2016	Background	0.978	3.15	18	< 0.083 U1	4.1	42	208
10/13/2016	Background	0.67	2.81	17	< 0.083 U1	3.8	38	212
11/14/2016	Background	0.682	2.63	16	< 0.083 U1	4.0	38	216
1/11/2017	Background	1.39	3.92	19	< 0.083 U1	3.5	46	204
2/28/2017	Background	1.51	4.78	20	< 0.083 U1	3.7	46	240
4/10/2017	Background	3.24	5.06	28	0.4117 J1	3.6	65	322
8/24/2017	Detection	0.943	2.99	18	2.994	3.7	51	176
12/21/2017	Detection	0.718	3.26	19	< 0.083 U1	--	39	176
3/21/2018	Assessment	2.47	5.37	20	< 0.083 U1	3.6	90	266
8/20/2018	Assessment	1.36	3.76	33	< 0.083 U1	4.3	54	180
2/27/2019	Assessment	2.10	5.20	29.9	0.50	2.9	69.1	268
5/22/2019	Assessment	0.195	5.77	28.0	0.58	3.4	91.6	334
8/12/2019	Assessment	3.54	4.20	36.7	0.30	4.0	59.6	266
3/10/2020	Assessment	1.99	4.86	28.7	0.57	3.5	88.5	254
6/02/2020	Assessment	1.93	4.98	29.1	0.58	3.3	74.4	303
11/03/2020	Assessment	4.19	4.10	38.2	0.27	3.3	60.2	236
3/09/2021	Assessment	2.12	4.54	29.3	0.55	3.6	71.5	283
5/25/2021	Assessment	1.84	4.4	28.4	0.54	3.2	64.6	250
11/16/2021	Assessment	2.24	4.56	33.6	0.44	3.1	62.6	260
3/28/2022	Assessment	3.78	4.33	40.8	0.36	3.6	49.9	230 L1
6/21/2022	Assessment	6.13	5.4	53.1	0.30	3.5	71.1	290
11/16/2022	Assessment	9.38	5.20	69.7	0.23	3.6	60.5	300
2/28/2023	Assessment	1.90	5.06	30.9	0.53	3.6	77.5	270
6/27/2023	Assessment	2.02	5.73	31.2	0.40	3.8	74.6	290

Table 1. Groundwater Data Summary: AD-7
Pirkey - Stackout
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/11/2016	Background	< 0.93 U1	1.38216 J1	37	8	0.87394 J1	0.766043 J1	52	4.344	0.6493 J1	< 0.68 U1	0.044	0.309	< 0.29 U1	1.04661 J1	< 0.86 U1
7/13/2016	Background	< 0.93 U1	1.18444 J1	50	3	0.66774 J1	1	24	0.942	< 0.083 U1	< 0.68 U1	0.099	0.261	< 0.29 U1	< 0.99 U1	1.03212 J1
9/07/2016	Background	< 0.93 U1	< 1.05 U1	50	4	0.730872 J1	0.316008 J1	27	3.132	< 0.083 U1	< 0.68 U1	0.099	0.059	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/13/2016	Background	< 0.93 U1	1.08028 J1	61	4	0.858417 J1	1	23	3.81	< 0.083 U1	< 0.68 U1	0.101	0.154	< 0.29 U1	< 0.99 U1	< 0.86 U1
11/14/2016	Background	< 0.93 U1	< 1.05 U1	60	4	1	< 0.23 U1	22	3.538	< 0.083 U1	< 0.68 U1	0.099	0.039	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/11/2017	Background	< 0.93 U1	< 1.05 U1	58	5	0.756968 J1	< 0.23 U1	31	3.77	< 0.083 U1	< 0.68 U1	0.101	0.02275 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/28/2017	Background	< 0.93 U1	< 1.05 U1	53	5	0.838869 J1	< 0.23 U1	34	3.92	< 0.083 U1	< 0.68 U1	0.101	0.185	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/10/2017	Background	< 0.93 U1	< 1.05 U1	51	7	0.723565 J1	0.295188 J1	44	4.35	0.4117 J1	< 0.68 U1	0.111	0.191	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/21/2018	Assessment	< 0.93 U1	< 1.05 U1	40.31	6.81	0.82 J1	< 0.23 U1	45.34	3.99	< 0.083 U1	< 0.68 U1	0.108	0.117	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/20/2018	Assessment	0.01 J1	0.47	51.6	2.07	0.68	0.075	25.6	0.787	< 0.083 U1	0.362	0.0877	0.006 J1	< 0.02 U1	1.0	0.179
2/27/2019	Assessment	< 0.4 U1	2.12	42.9	7.01	0.73	0.225	41.0	4.75	0.50	1 J1	0.106	0.201	< 0.4 U1	7.1	< 2 U1
5/22/2019	Assessment	< 0.4 U1	2 J1	37.8	6.47	0.6 J1	< 0.8 U1	46.0	4.72	0.58	0.8 J1	0.0975	0.26	< 8 U1	3 J1	< 0.1 U1
8/12/2019	Assessment	< 0.02 U1	0.64	41.9	3.24	0.75	0.1 J1	29.7	3.278	0.30	0.529	0.102	0.09	< 0.4 U1	1.7	0.2 J1
3/10/2020	Assessment	< 0.02 U1	1.54	31.0	5.29	0.72	0.212	42.1	5.283	0.57	0.943	0.0781	0.179	< 0.4 U1	5.5	0.2 J1
6/02/2020	Assessment	< 0.02 U1	1.29	38.9	5.14	0.69	0.241	39.6	4.10	0.58	0.876	0.0720	0.349	< 0.4 U1	5.0	0.2 J1
11/03/2020	Assessment	< 0.02 U1	0.61	47.9	2.97	0.78	0.236	31.5	2.957	0.27	0.783	0.0752	0.085	< 0.4 U1	2.1	0.2 J1
3/09/2021	Assessment	< 0.02 U1	1.32	44.1	4.80	0.65	0.402	37.5	3.099	0.55	0.997	0.0684	0.341	< 0.1 U1	4.9	0.2 J1
5/25/2021	Assessment	< 0.02 U1	0.82	36.1	4.11	0.642	0.40	36.1	3.30	0.54	0.92	0.0634	0.300 J1	0.1 J1	2.91	0.23
11/16/2021	Assessment	< 0.02 U1	1.05	37.3	4.86	0.734	0.37	38.3	5.59	0.44	0.80	0.0760	0.480	< 0.1 U1	3.47	0.26
3/28/2022	Assessment	< 0.04 U1	1.08	58.8	5.59	0.998	4.78	33.6	4.59	0.36	0.8	0.0967	0.400 J1	< 0.2 U1	3.5	0.20 J1
6/21/2022	Assessment	< 0.1 U1	1.3	58.7	4.66	0.95	0.4 J1	36.4	4.82	0.30	1.0	0.113	< 0.400 U1	< 0.5 U1	2.3 J1	0.2 J1
11/16/2022	Assessment	< 0.02 U1	0.43	55.2	2.49	0.880	0.35	31.8	4.13	0.23	0.27	0.110	0.037	< 0.1 U1	1.49	0.19 J1
2/28/2023	Assessment	< 0.02 U1	1.09	44.6	5.41	0.704	0.37	41.1	4.93	0.53	0.85	0.0804	1.520	< 0.1 U1	3.46	0.20
6/27/2023	Assessment	< 0.008 U1	1.14	40.3	5.11	0.691	0.47	39.3	4.69	0.40	0.88	0.0780	1.220	< 0.1 U1	4.53	0.20

Table 1. Groundwater Data Summary: AD-7R
Pirkey - Stackout
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/02/2020	Assessment	0.04 J1	3.97	15.6	0.18	5.1	85.6	254
11/02/2020	Assessment	0.04 J1	4.01	20.8	0.14	4.8	40.5	183
5/24/2021	Assessment	0.037 J1	4.0	15.3	0.20	4.3	81.6	240
11/15/2021	Assessment	< 0.05 U1	3.6	23.7	0.15	4.4	43.3	180
6/20/2022	Assessment	0.025 J1	2.80	24.2	0.16	4.6	44.7	200
11/15/2022	Assessment	0.022 J1	2.81	26.1	0.15	4.9	37.2	180
6/26/2023	Assessment	0.029 J1	3.38	20.0	0.10	4.9	60.7	220
10/17/2023	Assessment	0.089	2.70	24.1	0.16	5.6	39.9	190
2/19/2024	Assessment	0.066	3.32	21.3	0.15	5.4	57.8	210
4/22/2024	Assessment	0.049 J1	3.37	20.6	0.16	4.5	73.6	220
9/16/2024	Assessment	0.241	2.68	24.5	0.12	4.7	43.3	190
2/03/2025	Assessment	0.217	3.19	23.0	0.18	5.3	48.4	190
4/21/2025	Assessment	0.293	3.05	24.2	0.17	4.2	49.5	190
9/08/2025	Assessment	0.566	2.46	27.5	0.14	4.8	34.1	180

Table 1. Groundwater Data Summary: AD-7R
Pirkey - Stackout
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/02/2020	Assessment	0.05 J1	1.95	34.0	1.71	0.23	1.37	18.8	0.939	0.18	0.308	0.0722	0.012	< 0.4 U1	0.5	< 0.1 U1
11/02/2020	Assessment	0.02 J1	0.37	71.5	2.11	0.33	0.200	19.7	3.114	0.14	< 0.05 U1	0.0563	0.020	< 0.4 U1	0.4	< 0.1 U1
5/24/2021	Assessment	< 0.02 U1	0.63	42.2	1.73 M1	0.217	0.29	21.3	3.83	0.20	< 0.05 U1	0.0635 M1	0.002 J1	< 0.1 U1	0.22 J1	0.10 J1
11/15/2021	Assessment	< 0.1 U1	1.4	65.4	2.35	0.34	0.4 J1	18.5	2.70	0.15	< 0.3 U1	0.0547	0.182	< 0.5 U1	1 J1	< 0.2 U1
6/20/2022	Assessment	0.03 J1	2.59	61.4	2.28	0.393	2.92	17.8	3.41	0.16	0.68	0.0437	0.042	0.1 J1	1.36	0.14 J1
11/15/2022	Assessment	< 0.02 U1	0.72	67.2	1.77	0.378	0.39	16.3	3.19	0.15	0.25	0.0424	0.011	< 0.1 U1	2.15	0.14 J1
6/26/2023	Assessment	0.009 J1	0.53	36.8	1.05	0.213	0.36	19.3	1.83	0.10	0.07 J1	0.0558	0.039	< 0.1 U1	0.68	0.13 J1
10/17/2023	Assessment	0.009 J1	1.22	64.2	1.64	0.324	0.64	14.2	3.25	0.16	0.22	0.0402	0.041	< 0.1 U1	2.90	0.14 J1
2/19/2024	Assessment	< 0.008 U1	0.29	50.7	1.93	0.330	0.23 J1	19.4	3.26	0.15	0.07 J1	0.0616	0.126	< 0.1 U1	0.73	0.15 J1
4/22/2024	Assessment	< 0.008 U1	0.38	41.3	2.37	0.310	0.23 J1	20.9	2.62	0.16	< 0.05 U1	0.0790	< 0.004 U1	< 0.1 U1	1.00	0.14 J1
9/16/2024	Assessment	< 0.008 U1	0.66	57.9	2.0 J1	0.336	0.30	16.0	4.77	0.12	0.08 J1	0.053	0.023	< 0.1 U1	0.64	0.11 J1
2/03/2025	Assessment	< 0.008 U1	0.46	51.4	2.04	0.370	0.25 J1	18.9	2.66	0.18	0.38	0.0519	0.131	< 0.1 U1	1.92	0.15 J1
4/21/2025	Assessment	< 0.008 U1	0.39	45.7	1.53	0.379	0.29 J1	18.9	2.13	0.17	0.09 J1	0.0506	0.005	< 0.1 U1	1.39	0.16 J1
9/08/2025	Assessment	< 0.02 U1	0.99	60.1	1.35	0.336	0.27 J1	15.2	4.79	0.14	0.22	0.0358	0.101	< 0.05 U1	4.10	0.13 J1

Table 1. Groundwater Data Summary: AD-12
Pirkey - Stackout
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
5/11/2016	Background	0.03	0.362	5	< 0.083 U1	4.4	4	94
7/13/2016	Background	0.03	0.26	6	< 0.083 U1	3.1	4	75
9/07/2016	Background	0.04	0.343	6	< 0.083 U1	3.9	7	63
10/12/2016	Background	0.03	0.271	7	1	3.4	8	92
11/14/2016	Background	0.04	0.331	8	< 0.083 U1	2.6	6	80
1/11/2017	Background	0.03	0.315	7	< 0.083 U1	4.8	6	76
2/28/2017	Background	0.04	0.434	5	< 0.083 U1	3.6	4	50
4/11/2017	Background	0.05	0.299	6	0.2565 J1	4.7	7	72
8/23/2017	Detection	0.0495	0.245	6	0.213 J1	4.8	6	52
3/21/2018	Assessment	0.01397	0.269	5	< 0.083 U1	4.2	3	< 2 U1
8/20/2018	Assessment	0.017	0.338	10	< 0.083 U1	4.4	4	94
2/27/2019	Assessment	0.03 J1	0.4 J1	6.08	0.09	5.2	3.6	36
5/21/2019	Assessment	0.020	0.3 J1	6.30	0.09	4.1	4.0	80
8/12/2019	Assessment	< 0.02 U1	0.278	7.24	0.06 J1	4.9	2.6	90
3/10/2020	Assessment	0.02 J1	0.3 J1	6.08	0.10	4.9	3.7	62
6/02/2020	Assessment	< 0.02 U1	0.2 J1	5.63	0.10	4.0	3.9	91
11/02/2020	Assessment	0.03 J1	0.3 J1	4.65	0.08	4.3	3.3	74
3/08/2021	Assessment	0.01 J1	0.2 J1	6.46	0.11	4.1	3.8	68
5/24/2021	Assessment	0.032 J1	0.2 J1	5.54	0.12	4.2	5.46	70
11/15/2021	Assessment	0.012 J1	0.28	8.03	0.07	3.5	2.90	90
3/28/2022	Assessment	0.021 J1	0.20	6.10	0.07	3.9	3.80	60 L1
6/20/2022	Assessment	0.042 J1	0.32	7.59	0.09	4.3	4.81	80
11/15/2022	Assessment	0.013 J1	0.36	8.03	0.08	4.7	3.39	70
2/27/2023	Assessment	0.021 J1	0.34	6.51	0.07	3.8	3.90	70
6/26/2023	Assessment	0.019 J1	0.21	4.68	0.06	4.6	2.9	80
8/23/2023	Assessment	0.017 J1	0.22	4.74	0.07	3.8	3.5	75
10/17/2023	Assessment	0.015 J1	0.27	6.74	0.07	3.8	2.7	58
2/19/2024	Assessment	0.016 J1	0.27	5.87	0.11	3.2	3.1	60
4/22/2024	Assessment	0.015 J1	0.18	4.86	0.08	3.4	4.2	60
9/16/2024	Assessment	0.018 J1	0.23	4.45	0.07	3.0	3.1	60
2/03/2025	Assessment	0.029 J1	0.23	4.94	0.08	3.2	3.1	80
4/21/2025	Assessment	0.020 J1	0.17	4.58	0.08	3.2	2.7	70
9/08/2025	Assessment	0.081	0.18	4.61	0.07	3.5	3.11	70

Table 1. Groundwater Data Summary: AD-12
Pirkey - Stackout
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/11/2016	Background	< 0.93 U1	< 1.05 U1	26	0.219521 J1	< 0.07 U1	0.710981 J1	1.58207 J1	0.2073	< 0.083 U1	< 0.68 U1	< 0.00013 U1	< 0.005 U1	< 0.29 U1	1.73953 J1	< 0.86 U1
7/13/2016	Background	< 0.93 U1	< 1.05 U1	23	0.190337 J1	< 0.07 U1	0.68835 J1	1.29444 J1	2.909	< 0.083 U1	< 0.68 U1	0.008	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
9/07/2016	Background	< 0.93 U1	< 1.05 U1	30	0.232192 J1	< 0.07 U1	0.353544 J1	1.66591 J1	0.881	< 0.083 U1	< 0.68 U1	0.01	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/12/2016	Background	< 0.93 U1	< 1.05 U1	27	0.149553 J1	< 0.07 U1	0.529033 J1	1.56632 J1	0.257	1	< 0.68 U1	0.012	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
11/14/2016	Background	< 0.93 U1	< 1.05 U1	28	0.152375 J1	< 0.07 U1	0.32826 J1	1.47282 J1	0.767	< 0.083 U1	< 0.68 U1	0.013	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/11/2017	Background	< 0.93 U1	< 1.05 U1	23	0.126621 J1	< 0.07 U1	0.650158 J1	1.09495 J1	1.536	< 0.083 U1	< 0.68 U1	0.01	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/28/2017	Background	< 0.93 U1	< 1.05 U1	26	0.149219 J1	< 0.07 U1	0.325811 J1	1.29984 J1	0.416	< 0.083 U1	< 0.68 U1	0.009	< 0.005 U1	< 0.29 U1	< 0.99 U1	0.994913 J1
4/11/2017	Background	< 0.93 U1	< 1.05 U1	24	0.159412 J1	< 0.07 U1	0.416007 J1	1.33344 J1	0.3895	0.2565 J1	< 0.68 U1	0.008	0.01364 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/21/2018	Assessment	< 0.93 U1	< 1.05 U1	25.82	0.16 J1	< 0.07 U1	1.05	1.49 J1	0.784	< 0.083 U1	< 0.68 U1	0.00722	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/20/2018	Assessment	< 0.01 U1	0.11	27.8	0.159	0.01 J1	0.330	1.72	1.128	< 0.083 U1	0.089	0.0143	< 0.005 U1	0.04 J1	0.1	0.04 J1
2/27/2019	Assessment	< 0.4 U1	< 0.6 U1	22.5	< 0.4 U1	< 0.2 U1	< 0.8 U1	1.37	0.225	0.09	< 0.4 U1	0.00688	< 0.005 U1	< 8 U1	< 0.6 U1	< 2 U1
5/21/2019	Assessment	< 0.4 U1	< 0.6 U1	21.7	< 0.4 U1	< 0.2 U1	< 0.8 U1	1.15	0.201	0.09	< 0.4 U1	0.00576	< 0.005 U1	< 8 U1	< 0.6 U1	< 0.1 U1
8/12/2019	Assessment	< 0.02 U1	0.07 J1	23.8	0.154	< 0.01 U1	0.204	1.30	0.237	0.06 J1	0.08 J1	0.00829	< 0.005 U1	< 0.4 U1	0.2 J1	< 0.1 U1
3/10/2020	Assessment	< 0.02 U1	0.09 J1	21.7	0.139	0.01 J1	0.2 J1	1.21	3.0706	0.10	0.09 J1	0.00547	< 0.002 U1	< 0.4 U1	0.2	< 0.1 U1
6/02/2020	Assessment	< 0.02 U1	0.09 J1	19.0	0.132	< 0.01 U1	0.208	1.02	0.799	0.10	0.09 J1	0.00505	< 0.002 U1	< 0.4 U1	0.3	< 0.1 U1
11/02/2020	Assessment	0.05 J1	0.09 J1	18.9	0.122	< 0.01 U1	0.204	1.04	0.929	0.08	0.09 J1	0.00510	< 0.002 U1	< 0.4 U1	0.3	< 0.1 U1
3/08/2021	Assessment	< 0.02 U1	0.07 J1	22.9	0.150	0.007 J1	0.2 J1	1.19	0.214	0.11	0.07 J1	0.00570	< 0.002 U1	< 0.1 U1	0.2 J1	< 0.04 U1
5/24/2021	Assessment	< 0.02 U1	0.08 J1	23.1	0.136	0.005 J1	0.24	1.19	0.60	0.12	0.07 J1	0.00500	< 0.002 U1	< 0.1 U1	0.31 J1	< 0.04 U1
11/15/2021	Assessment	< 0.02 U1	0.05 J1	26.5	0.148	0.01 J1	0.30	1.38	1.76	0.07	0.07 J1	0.0110	< 0.002 U1	< 0.1 U1	0.10 J1	< 0.04 U1
3/28/2022	Assessment	< 0.02 U1	0.09 J1	20.2	0.127	0.009 J1	0.35	1.01	0.76	0.07	0.09 J1	0.00604	< 0.002 U1	< 0.1 U1	0.33 J1	< 0.04 U1
6/20/2022	Assessment	< 0.02 U1	0.08 J1	24.2	0.135	0.008 J1	0.63	1.35	0.63	0.09	0.08 J1	0.00949	< 0.002 U1	< 0.1 U1	0.16 J1	< 0.04 U1
11/15/2022	Assessment	< 0.02 U1	0.06 J1	30.6	0.153	0.007 J1	0.45	1.59	1.46	0.08	0.08 J1	0.0119	< 0.002 U1	< 0.1 U1	0.23 J1	< 0.04 U1
2/27/2023	Assessment	< 0.02 U1	0.07 J1	27.5	0.155	0.013 J1	0.36	1.50	1.17	0.07	0.1 J1	0.00885	< 0.002 U1	< 0.1 U1	0.35 J1	< 0.04 U1
6/26/2023	Assessment	0.015 J1	0.11	16.3	0.110	0.007 J1	0.45	0.932	0.45	0.06	0.11 J1	0.00487	< 0.002 U1	0.7	0.23 J1	< 0.02 U1
8/23/2023	Assessment	0.013 J1	0.10	15.6	0.129	0.007 J1	0.45	0.855	1.34	0.07	0.11 J1	0.00494	< 0.002 U1	0.5	0.23 J1	< 0.02 U1
10/17/2023	Assessment	0.01 J1	0.06 J1	23.6	0.142	0.006 J1	0.31	1.19	1.08	0.07	0.07 J1	0.00891	< 0.002 U1	< 0.1 U1	0.21 J1	< 0.02 U1
2/19/2024	Assessment	0.010 J1	0.07 J1	21.7	0.127	0.009 J1	0.50	1.13	1.00	0.11	0.06 J1	0.00547	0.002 J1	< 0.1 U1	0.19 J1	< 0.02 U1
4/22/2024	Assessment	0.009 J1	0.09 J1	19.3	0.121	0.007 J1	0.34	1.08	2.62	0.08	0.08 J1	0.00462	< 0.002 U1	< 0.1 U1	0.31 J1	< 0.02 U1
9/16/2024	Assessment	0.011 J1	0.09 J1	16.6	< 0.4 U1	0.007 J1	0.43	1.06	2.84	0.07	0.08 J1	0.006 J1	0.002 J1	< 0.1 U1	0.19 J1	0.02 J1
2/03/2025	Assessment	0.016 J1	0.09 J1	19.1	0.129	0.012 J1	0.29 J1	1.14	0.90	0.08	0.10 J1	0.00579	0.004 J1	< 0.1 U1	0.31 J1	< 0.02 U1
4/21/2025	Assessment	0.010 J1	0.09 J1	15.0	0.108	0.005 J1	0.52	0.900	1.32	0.08	0.10 J1	0.00514	0.002 J1	< 0.1 U1	0.20 J1	< 0.02 U1
9/08/2025	Assessment	< 0.02 U1	0.09 J1	17.2	0.12	0.006 J1	0.81	0.95	1.90	0.07	0.10 J1	0.00589	0.005	< 0.05 U1	0.20 J1	0.02 J1

Table 1. Groundwater Data Summary: AD-13
Pirkey - Stackout
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
5/11/2016	Background	0.06	8.77	28	0.748 J1	5.6	52	236
7/13/2016	Background	0.06	9.08	32	0.3474 J1	5.6	59	192
9/07/2016	Background	0.05	8.48	23	< 0.083 U1	5.2	41	228
10/13/2016	Background	0.06	7.53	26	0.6297 J1	5.8	47	236
11/14/2016	Background	0.06	7.21	26	0.3114 J1	6.1	47	250
1/11/2017	Background	0.04	6.14	22	< 0.083 U1	5.8	37	188
2/28/2017	Background	0.07	7.88	28	< 0.083 U1	5.9	56	172
4/11/2017	Background	0.08	9.11	32	0.4278 J1	5.2	58	200
8/23/2017	Detection	0.07408	9.5	21	0.344 J1	6.0	38	160
3/21/2018	Assessment	0.07169	10.3	25	< 0.083 U1	5.9	48	176
8/20/2018	Assessment	0.065	8.40	39	0.0845 J1	5.9	66	210
2/27/2019	Assessment	0.08 J1	11.0	40.8	0.25	5.2	80.8	176
5/21/2019	Assessment	0.061	10.1	34.8	0.40	5.3	69.5	190
8/12/2019	Assessment	0.064	8.68	42.3	0.39	5.9	73.6	310
3/10/2020	Assessment	0.067	10.7	41.1	0.32	6.4	82.7	216
6/02/2020	Assessment	0.065	10.9	41.4	0.45	6.4	83.4	322
11/02/2020	Assessment	0.052	5.90	22.6	0.38	6.4	39.1	204
3/08/2021	Assessment	0.067	13.2	41.2	0.36	4.9	74.6	229
5/24/2021	Assessment	0.078	13.6	41.6	0.48	5.5	78.6	60
11/15/2021	Assessment	0.063	8.61	42.3	0.26	5.5	70.8	220
3/28/2022	Assessment	0.065	13.3	46.5	0.34	5.3	79.2	230 L1
6/20/2022	Assessment	0.075	11.1	54.5	0.26	5.7	138	270
11/15/2022	Assessment	0.095	8.57	41.3	0.36	5.8	69.6	260
2/27/2023	Assessment	0.080	15.1	51.8	0.26	4.8	98.5	250
6/26/2023	Assessment	0.067	10.6	48.7	0.23	5.5	112	280
10/17/2023	Assessment	0.068	9.49	42.9	0.45	5.5	86.9	280
2/19/2024	Assessment	0.068	10.6	35.5	0.42	5.7	70.5	210
4/22/2024	Assessment	0.066	10.6	42.2	0.34	6.0	84.9	220
9/16/2024	Assessment	0.052	8.21	29.0	0.35	5.8	54.1	210
2/03/2025	Assessment	0.061	19.5 M1	35.2	0.31	5.7	54.2	180
4/21/2025	Assessment	0.072	10.2	42.1	0.31	5.5	78.8	240
9/08/2025	Assessment	0.058	6.11	26.1	0.39	5.8	44.5	210

Table 1. Groundwater Data Summary: AD-13
Pirkey - Stackout
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/11/2016	Background	< 0.93 U1	4.25914 J1	38	0.586539 J1	0.293832 J1	< 0.23 U1	42	0.989	0.748 J1	< 0.68 U1	0.081	0.00969 J1	< 0.29 U1	< 0.99 U1	1.11268 J1
7/13/2016	Background	< 0.93 U1	9	44	2	0.0875208 J1	< 0.23 U1	47	2.332	0.3474 J1	< 0.68 U1	0.158	0.01928 J1	< 0.29 U1	3.63671 J1	0.928756 J1
9/07/2016	Background	< 0.93 U1	< 1.05 U1	47	0.631177 J1	0.219799 J1	< 0.23 U1	38	1.219	< 0.083 U1	< 0.68 U1	0.139	< 0.005 U1	< 0.29 U1	< 0.99 U1	1.44332 J1
10/13/2016	Background	< 0.93 U1	7	43	0.963478 J1	< 0.07 U1	< 0.23 U1	42	2.422	0.6297 J1	< 0.68 U1	0.142	< 0.005 U1	< 0.29 U1	2.59885 J1	< 0.86 U1
11/14/2016	Background	< 0.93 U1	2.07189 J1	39	0.717704 J1	0.310257 J1	< 0.23 U1	42	1.723	0.3114 J1	< 0.68 U1	0.136	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/11/2017	Background	< 0.93 U1	2.73936 J1	39	0.302907 J1	0.11238 J1	< 0.23 U1	32	1.844	< 0.083 U1	< 0.68 U1	0.133	0.00732 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/28/2017	Background	< 0.93 U1	1.64435 J1	34	0.290018 J1	< 0.07 U1	< 0.23 U1	44	1.728	< 0.083 U1	< 0.68 U1	0.153	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/11/2017	Background	< 0.93 U1	4.43115 J1	45	0.736525 J1	2	< 0.23 U1	56	1.309	0.4278 J1	< 0.68 U1	0.156	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/21/2018	Assessment	< 0.93 U1	3.23 J1	42.23	0.46 J1	0.86 J1	< 0.23 U1	39.91	2.093	< 0.083 U1	< 0.68 U1	0.145	< 0.005 U1	< 0.29 U1	3.86 J1	< 0.86 U1
8/20/2018	Assessment	0.01 J1	5.79	40.9	0.648	< 0.005 U1	0.103	48.8	1.735	0.0845 J1	0.01 J1	0.146	< 0.005 U1	< 0.02 U1	0.2	0.03 J1
2/27/2019	Assessment	< 0.4 U1	2.17	38.5	< 0.4 U1	< 0.2 U1	< 0.8 U1	48.7	0.909	0.25	< 0.4 U1	0.165	< 0.005 U1	< 8 U1	< 0.6 U1	< 2 U1
5/21/2019	Assessment	< 0.4 U1	2 J1	35.0	< 0.4 U1	< 0.2 U1	< 0.8 U1	44.7	0.875	0.40	< 0.4 U1	0.153	< 0.005 U1	< 8 U1	< 0.6 U1	< 0.1 U1
8/12/2019	Assessment	< 0.02 U1	1.64	35.0	0.235	< 0.01 U1	0.06 J1	44.5	1.642	0.39	< 0.05 U1	0.139	< 0.005 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
3/10/2020	Assessment	< 0.02 U1	1.58	38.4	0.327	< 0.01 U1	0.06 J1	44.7	1.382	0.32	< 0.05 U1	0.145	< 0.002 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
6/02/2020	Assessment	< 0.02 U1	1.39	35.6	0.222	< 0.01 U1	0.07 J1	43.7	1.116	0.45	< 0.05 U1	0.140	< 0.002 U1	< 0.4 U1	0.04 J1	< 0.1 U1
11/02/2020	Assessment	< 0.02 U1	3.40	34.5	0.270	< 0.01 U1	0.2 J1	35.4	1.729	0.38	< 0.05 U1	0.109	< 0.002 U1	< 0.4 U1	0.07 J1	< 0.1 U1
3/08/2021	Assessment	< 0.02 U1	0.44	56.7	1.20	< 0.004 U1	0.2 J1	46.3	1.354	0.36	< 0.05 U1	0.132	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
5/24/2021	Assessment	< 0.02 U1	0.89	36.6	0.119	< 0.004 U1	0.24	43.9	1.44	0.48	< 0.05 U1	0.134	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
11/15/2021	Assessment	< 0.02 U1	4.39	41.7	0.344	< 0.004 U1	0.34	45.9 M1	1.56	0.26	< 0.05 U1	0.135 M1	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
3/28/2022	Assessment	< 0.02 U1	2.18	52.1	0.579	< 0.004 U1	0.52	46.9	2.95	0.34	< 0.05 U1	0.138	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
6/20/2022	Assessment	< 0.02 U1	4.30	41.4	0.409	< 0.004 U1	0.31	56.2 M1	2.22	0.26	< 0.05 U1	0.150 M1	< 0.002 U1	1.1	0.1 J1	< 0.04 U1
11/15/2022	Assessment	< 0.02 U1	1.62	44.2	0.131	< 0.004 U1	0.35	45.9	1.55	0.36	< 0.05 U1	0.141	< 0.002 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
2/27/2023	Assessment	< 0.02 U1	0.39	66.8	1.23	< 0.004 U1	0.26	60.0	3.76	0.26	< 0.05 U1	0.161	< 0.02 U1	< 0.1 U1	< 0.09 U1	< 0.04 U1
6/26/2023	Assessment	< 0.008 U1	1.56	39.8	0.234	< 0.004 U1	0.31	51.5	1.61	0.23	< 0.05 U1	0.142	< 0.002 U1	< 0.1 U1	< 0.04 U1	0.03 J1
10/17/2023	Assessment	< 0.008 U1	5.71	41.2	0.559	< 0.004 U1	0.22 J1	47.6	1.05	0.45	< 0.05 U1	0.137	< 0.002 U1	< 0.1 U1	0.13 J1	0.02 J1
2/19/2024	Assessment	< 0.008 U1	0.74	45.1	0.290	< 0.004 U1	0.29 J1	41.9	1.97	0.42	< 0.05 U1	0.134	< 0.002 U1	< 0.1 U1	< 0.04 U1	0.02 J1
4/22/2024	Assessment	< 0.008 U1	0.54	34.9	0.163	< 0.004 U1	0.22 J1	46.2	2.67	0.34	< 0.05 U1	0.135	< 0.002 U1	< 0.1 U1	< 0.04 U1	0.03 J1
9/16/2024	Assessment	< 0.008 U1	1.53	34.0	< 0.4 U1	< 0.004 U1	0.28 J1	35.6	2.13	0.35	< 0.05 U1	0.155	< 0.002 U1	< 0.1 U1	< 0.04 U1	< 0.02 U1
2/03/2025	Assessment	< 0.008 U1	0.29	68.9	0.194	0.009 J1	0.31	28.1	1.92	0.31	0.11 J1	0.123	< 0.002 U1	< 0.1 U1	< 0.04 U1	0.02 J1
4/21/2025	Assessment	< 0.008 U1	2.15	37.5	0.327	< 0.004 U1	0.26 J1	49.9	1.91	0.31	< 0.05 U1	0.129	< 0.002 U1	< 0.1 U1	< 0.04 U1	0.03 J1
9/08/2025	Assessment	< 0.02 U1	1.85	36.8	0.14	< 0.004 U1	0.27 J1	34.8	3.00	0.39	< 0.05 U1	0.140	0.003 J1	< 0.05 U1	< 0.04 U1	< 0.02 U1

Table 1. Groundwater Data Summary: AD-22
Pirkey - Stackout
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
5/11/2016	Background	0.08	15.3	76	1.266	4.0	284	672
7/14/2016	Background	0.04	9.5	52	0.3891 J1	3.9	162	412
9/07/2016	Background	0.04	6.95	42	< 0.083 U1	4.1	114	341
10/12/2016	Background	0.03	7.68	52	0.473 J1	4.7	148	388
11/14/2016	Background	0.04	7.55	48	0.2834 J1	4.4	177	362
1/12/2017	Background	0.02	6.47	51	< 0.083 U1	4.2	137	344
3/01/2017	Background	0.05	13.6	69	< 0.083 U1	4.1	266	624
4/11/2017	Background	0.04	10.8	72	0.5041 J1	4.1	215	446
8/23/2017	Detection	0.05075	7.77	54	1.196	4.6	121	350
12/21/2017	Detection	0.06278	7.29	61	< 0.083 U1	--	120	344
3/21/2018	Assessment	0.0818	15.2	79	< 0.083 U1	3.9	377	656
8/20/2018	Assessment	0.031	9.43	92	< 0.083 U1	4.2	184	476
2/27/2019	Assessment	0.07 J1	15.2	76.7	1.33	4.9	337	584
5/22/2019	Assessment	0.073	16.5	63.3	1.06	5.1	360	506
8/12/2019	Assessment	0.03 J1	8.96	79.6	0.45	4.8	198	484
3/10/2020	Assessment	0.067	12.7	73.6	1.25	3.8	364	654
6/02/2020	Assessment	0.062	13.1	74.0	1.25	3.6	369	682
11/02/2020	Assessment	0.03 J1	8.60	84.0	0.28	4.8	190	468
3/08/2021	Assessment	0.069	12.5	71.1	1.03	4.0	337	692
5/24/2021	Assessment	0.076	12.7	60.6	1.24	3.5	327	290
11/15/2021	Assessment	0.030 J1	11.7	108	0.35	4.4	236	570
3/28/2022	Assessment	0.068	16.4	88.8	0.96	4.3	385	720 L1
6/20/2022	Assessment	0.028 J1	11.9	107	0.32	4.5	293	580
11/14/2022	Assessment	0.021 J1	10.5	101	0.28	4.8	251	570
2/27/2023	Assessment	0.068	14.9	--	--	4.1	--	--
3/22/2023	Assessment	--	--	72.4	0.90	3.8	357	680 S7
6/26/2023	Assessment	0.06 J1	15.5	93.9	0.63	4.1	350	680
10/17/2023	Assessment	0.020 J1	9.26	80.5	0.26	4.0	212	480
2/19/2024	Assessment	0.050	13.7	87.7	0.55	4.1	291	620
4/22/2024	Assessment	0.064	13.5	70.5	0.75	4.0	360	610
9/16/2024	Assessment	0.028 J1	12.3 M1	108	0.22	4.3	276	620
2/03/2025	Assessment	0.070	11.2	63.2	0.85	4.2	246	520
4/21/2025	Assessment	0.069	14.0	82.6	1.07	3.9	294	610
9/08/2025	Assessment	0.023 J1	9.16	84.9	0.21	4.3	221	530

Table 1. Groundwater Data Summary: AD-22
Pirkey - Stackout
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/11/2016	Background	< 0.93 U1	23	71	13	2	24	129	6.994	1.266	0.97266 J1	0.139	13.41	< 0.29 U1	1.97127 J1	1.16089 J1
7/14/2016	Background	< 0.93 U1	12	48	6	0.674427 J1	12	67	2.325	0.3891 J1	< 0.68 U1	0.169	17	< 0.29 U1	< 0.99 U1	0.895409 J1
9/07/2016	Background	< 0.93 U1	23	108	5	0.833408 J1	33	54	3.412	< 0.083 U1	2.72959 J1	0.131	19.829	< 0.29 U1	< 0.99 U1	1.25036 J1
10/12/2016	Background	< 0.93 U1	10	54	4	0.333745 J1	7	54	3.39	0.473 J1	< 0.68 U1	0.14	7.984	< 0.29 U1	< 0.99 U1	< 0.86 U1
11/14/2016	Background	< 0.93 U1	3.69822 J1	66	4	0.596378 J1	2	47	3.63	0.2834 J1	< 0.68 U1	0.115	8.634	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/12/2017	Background	< 0.93 U1	6	67	4	0.385609 J1	2	43	3.173	< 0.083 U1	< 0.68 U1	0.104	13.32	< 0.29 U1	1.09664 J1	< 0.86 U1
3/01/2017	Background	< 0.93 U1	1.61319 J1	29	10	1	< 0.23 U1	105	4.385	< 0.083 U1	< 0.68 U1	0.218	0.22	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/11/2017	Background	< 0.93 U1	11	130	6	2	5	78	3.045	0.5041 J1	1.89388 J1	0.176	7.201	< 0.29 U1	1.86563 J1	< 0.86 U1
3/21/2018	Assessment	< 0.93 U1	3.56 J1	24.13	12.1	1.87	< 0.23 U1	121	6.22	< 0.083 U1	< 0.68 U1	0.277	1.206	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/20/2018	Assessment	0.02 J1	5.18	22.7	3.30	0.46	0.829	62.9	3.088	< 0.083 U1	0.386	0.132	1.448	0.07 J1	2.5	0.162
2/27/2019	Assessment	< 0.4 U1	6.30	17.0	13.3	1.55	0.8 J1	123	5.99	1.33	0.5 J1	0.269	0.642	< 8 U1	16.7	< 2 U1
5/22/2019	Assessment	< 0.4 U1	5.89	16.7	12.5	1.52	< 0.8 U1	129	6.71	1.06	< 0.4 U1	0.288	0.837	< 8 U1	5.9	0.2 J1
8/12/2019	Assessment	< 0.02 U1	2.19	15.3	3.38	0.44	0.2 J1	57.5	3.088	0.45	0.1 J1	0.151	0.325	< 0.4 U1	2.0	0.2 J1
3/10/2020	Assessment	< 0.02 U1	4.26	18.2	10.1	1.41	0.398	108	7.68	1.25	0.346	0.222	1.58	< 0.4 U1	10.5	0.2 J1
6/02/2020	Assessment	< 0.02 U1	3.53	14.4	8.00	1.43	0.376	101	4.334	1.25	0.261	0.185	0.171	< 0.4 U1	10.7	0.3 J1
11/02/2020	Assessment	< 0.02 U1	1.92	20.4	2.39	0.47	0.2 J1	60.0	3.338	0.28	0.2 J1	0.101	0.184	< 0.4 U1	2.4	0.1 J1
3/08/2021	Assessment	< 0.02 U1	3.05	19.2	8.52	1.42	0.395	107	6.007	1.03	0.277	0.164	0.045	< 0.1 U1	11.7	0.2 J1
5/24/2021	Assessment	< 0.02 U1	2.05	16.0	6.83	1.25	0.56	99.1	5.27	1.24	0.24	0.166	0.084	< 0.1 U1	7.43	0.21
11/15/2021	Assessment	< 0.02 U1	1.85	17.9	2.50	0.502	0.27	69.9	2.88	0.35	0.09 J1	0.122	0.056	< 0.1 U1	1.92	0.14 J1
3/28/2022	Assessment	< 0.02 U1	3.21	19.3	8.78	1.27	0.43	109	4.24	0.96	0.15 J1	0.170	< 0.004 U1	< 0.1 U1	9.20	0.19 J1
6/20/2022	Assessment	< 0.02 U1	3.02	16.2	2.11	0.587	0.66	69.6	3.95	0.32	0.18 J1	0.110	0.460	0.1 J1	2.01	0.15 J1
11/14/2022	Assessment	< 0.02 U1	2.40	20.8	2.16	0.494	0.47	60.3	2.70	0.28	0.22	0.0905	0.410	< 0.1 U1	1.93	0.14 J1
2/27/2023	Assessment	< 0.02 U1	3.66	18.0	10.2	1.37	0.46	113	4.86	--	0.21	0.194	0.040 J1	< 0.1 U1	7.39	0.24
3/22/2023	Assessment	--	--	--	--	--	--	--	--	0.90	--	--	--	--	--	--
6/26/2023	Assessment	< 0.04 U1	3.4	13.5	7.71	1.09	0.7 J1	109	3.77	0.63	< 0.3 U1	0.236	0.029	< 0.5 U1	7.0	0.2 J1
10/17/2023	Assessment	< 0.008 U1	1.57	19.1	2.65	0.551	0.33	55.3	2.61	0.26	0.18 J1	0.0772	0.301	< 0.1 U1	4.78	0.15 J1
2/19/2024	Assessment	< 0.008 U1	1.20	20.1	4.23	0.922	0.39	86.9	3.29	0.55	0.23	0.128	0.262	< 0.1 U1	4.57	0.18 J1
4/22/2024	Assessment	< 0.008 U1	3.54	16.2	7.53 M1	1.22	0.43	99.3 M1	3.02	0.75	0.23	0.146 M1	0.066	< 0.1 U1	11.9	0.20
9/16/2024	Assessment	< 0.008 U1	1.11	17.0	2.56	0.531	0.40	74.3 M1	2.76	0.22	0.08 J1	0.125 M1	0.093	< 0.1 U1	2.37	0.16 J1
2/03/2025	Assessment	< 0.04 U1	1.75	18.6	6.25	0.989	0.45	77.9	2.88	0.85	0.4 J1	0.110	1.060	< 0.1 U1	7.61	0.2 J1
4/21/2025	Assessment	< 0.04 U1	2.06	14.8	8.00	1.50	0.51	104	2.55	1.07	0.3 J1	0.135	1.700	< 0.1 U1	10.0	0.2 J1
9/08/2025	Assessment	< 0.02 U1	0.80	17.3	1.81	0.465	0.54	54.0	2.60	0.21	0.08 J1	0.101	0.100	< 0.05 U1	2.61	0.13 J1

Table 1. Groundwater Data Summary: AD-33
Pirkey - Stackout
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
5/11/2016	Background	0.126	2.44	8	< 0.083 U1	4.1	56	326
7/14/2016	Background	0.173	1.69	16	< 0.083 U1	3.1	108	176
9/07/2016	Background	0.152	1.81	10	< 0.083 U1	3.6	64	176
10/12/2016	Background	0.162	1.39	9	0.357 J1	3.4	46	180
11/14/2016	Background	0.182	1.63	8	< 0.083 U1	3.1	54	190
1/12/2017	Background	0.144	1.26	10	< 0.083 U1	4.3	58	168
2/28/2017	Background	0.14	1.25	7	< 0.083 U1	3.9	51	146
4/10/2017	Background	0.114	1.29	9	< 0.083 U1	3.4	49	178
8/23/2017	Detection	0.07952	1.06	9	0.67 J1	4.4	40	132
12/21/2017	Detection	0.09993	0.946	--	--	--	--	--
3/21/2018	Assessment	0.115	1.42	7	< 0.083 U1	4.4	58	160
8/21/2018	Assessment	0.098	1.09	12	< 0.083 U1	3.6	48	156
2/27/2019	Assessment	0.134	1.73	8.89	0.25	3.3	62.8	146
5/22/2019	Assessment	0.111	1.65	8.57	0.23	4.1	60.4	204
8/12/2019	Assessment	0.097	1.03	8.85	0.19	4.2	44.3	156
3/10/2020	Assessment	0.132	1.61	8.81	0.25	4.0	64.5	172
6/02/2020	Assessment	0.112	1.49	8.89	0.28	3.9	63.1	206
11/02/2020	Assessment	0.115	0.980	8.49	0.16	3.9	44.8	162
3/08/2021	Assessment	0.159	1.96	8.65	0.42	4.1	70.1	213
5/24/2021	Assessment	0.121	1.5	8.56	0.29	4.0	60.4	100
11/15/2021	Assessment	0.093	0.98	8.60	0.17	3.6	41.9	150
3/28/2022	Assessment	0.146	2.28	8.88	0.30	4.0	67.0	190 L1
6/20/2022	Assessment	0.093	1.06	8.49	0.19	4.4	57.7	150
11/15/2022	Assessment	0.086	0.90	9.18	0.16	4.0	42.7	140
2/27/2023	Assessment	0.179	2.48	10.9	0.34	4.1	74.5	190
6/26/2023	Assessment	0.114	1.73	9.50	0.21	4.1	58.4	200
10/17/2023	Assessment	0.094	1.15	9.03	0.18	4.0	41.7	130
2/19/2024	Assessment	0.158	2.35	9.41	0.30	4.1	58.6	160
4/22/2024	Assessment	0.141	2.08	9.97	0.27	4.2	65.7	180
9/16/2024	Assessment	0.122	1.54	10.1	0.20	4.0	54.4	170
2/04/2025	Assessment	0.224	3.02	11.7	0.47	4.1	69.2	200
4/22/2025	Assessment	0.211	3.04	12.7	0.50	3.7	68.5	190
9/08/2025	Assessment	0.135	1.69	11.3	0.31	4.1	49.1	170

Table 1. Groundwater Data Summary: AD-33
Pirkey - Stackout
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/11/2016	Background	< 0.93 U1	2.53645 J1	60	2	< 0.07 U1	4	12	1.303	< 0.083 U1	< 0.68 U1	< 0.00013 U1	0.288	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/14/2016	Background	< 0.93 U1	4.91616 J1	64	2	< 0.07 U1	9	12	4.28	< 0.083 U1	< 0.68 U1	0.029	0.707	< 0.29 U1	< 0.99 U1	1.19199 J1
9/07/2016	Background	< 0.93 U1	67	163	4	0.984692 J1	125	33	3.461	< 0.083 U1	14	0.048	1.826	0.736517 J1	1.61343 J1	< 0.86 U1
10/12/2016	Background	< 0.93 U1	2.15866 J1	59	1	< 0.07 U1	4	10	2.208	0.357 J1	< 0.68 U1	0.027	0.145	< 0.29 U1	< 0.99 U1	1.56738 J1
11/14/2016	Background	< 0.93 U1	1.46353 J1	52	1	< 0.07 U1	1	9	1.953	< 0.083 U1	< 0.68 U1	0.024	0.197	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/12/2017	Background	< 0.93 U1	1.12979 J1	56	1	< 0.07 U1	2	9	2.596	< 0.083 U1	< 0.68 U1	0.027	0.36	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/28/2017	Background	< 0.93 U1	1.069 J1	55	1	< 0.07 U1	< 0.23 U1	9	0.942	< 0.083 U1	< 0.68 U1	0.026	0.41	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/10/2017	Background	< 0.93 U1	< 1.05 U1	55	1	< 0.07 U1	3	10	9.024	< 0.083 U1	< 0.68 U1	0.027	0.341	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/21/2018	Assessment	< 0.93 U1	1.78 J1	57.26	1.4	0.15 J1	4.64	10.42	1.643	< 0.083 U1	< 0.68 U1	0.02669	0.825	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/21/2018	Assessment	0.01 J1	0.65	43.8	0.905	0.04	0.147	7.72	6.32	< 0.083 U1	0.151	0.0178	0.745	< 0.02 U1	1.7	0.05 J1
2/27/2019	Assessment	< 0.4 U1	1 J1	49.5	1 J1	< 0.2 U1	< 0.8 U1	10.5	2.235	0.25	< 0.4 U1	0.0262	0.464	< 8 U1	3 J1	< 2 U1
5/22/2019	Assessment	< 0.4 U1	< 0.6 U1	52.4	1 J1	< 0.2 U1	< 0.8 U1	10.5	1.178	0.23	< 0.4 U1	0.0245	0.481	< 8 U1	1 J1	< 0.1 U1
8/12/2019	Assessment	< 0.02 U1	0.41	38.6	1.00	0.04 J1	0.1 J1	7.02	1.141	0.19	0.1 J1	0.0233	0.564	< 0.4 U1	1.1	< 0.1 U1
3/10/2020	Assessment	< 0.02 U1	0.63	45.3	1.18	0.06	0.1 J1	9.67	2.479	0.25	0.208	0.0197	2.45	< 0.4 U1	2.0	< 0.1 U1
6/02/2020	Assessment	< 0.02 U1	0.61	41.3	1.15	0.05 J1	0.2 J1	8.78	1.477	0.28	0.2 J1	0.0188	2.52	< 0.4 U1	2.1	< 0.1 U1
11/02/2020	Assessment	< 0.02 U1	0.39	45.1	0.858	0.04 J1	0.1 J1	7.86	1.443	0.16	0.2 J1	0.0175	4.30	< 0.4 U1	1.1	< 0.1 U1
3/08/2021	Assessment	< 0.02 U1	1.01	47.5	1.51	0.06	0.373	12.4	1.312	0.42	0.286	0.0232	3.13	< 0.1 U1	3.4	< 0.04 U1
5/24/2021	Assessment	< 0.02 U1	0.43	43.8	1.04	0.048	0.28	9.85	1.40	0.29	0.22	0.0188	2.000	< 0.1 U1	1.39	0.05 J1
11/15/2021	Assessment	< 0.02 U1	0.40	45.1	0.916	0.043	0.28	6.75	1.65	0.17	0.23	0.0177	14.600	< 0.1 U1	1.0	< 0.04 U1
3/28/2022	Assessment	< 0.02 U1	0.87	45.0	1.35	0.057	0.47	9.82	2.28	0.30	0.32	0.0219	4.600	< 0.1 U1	2.68	< 0.04 U1
6/20/2022	Assessment	0.04 J1	1.19	42.0	0.939	0.039	0.64	7.81	3.37	0.19	0.27	0.0166	3.000	< 0.1 U1	1.27	< 0.04 U1
11/15/2022	Assessment	< 0.02 U1	0.37	49.4	0.945	0.038	0.44	6.83	3.66	0.16	0.22	0.0185	5.900	< 0.1 U1	0.96	< 0.04 U1
2/27/2023	Assessment	< 0.02 U1	0.76	44.4	1.50	0.064	0.31	12.4	2.85	0.34	0.32	0.0233	6.000	< 0.1 U1	2.54	0.04 J1
6/26/2023	Assessment	0.021 J1	1.08	41.4	1.48	0.056	0.39	10.7	1.96	0.21	0.48	0.0246	5.610	< 0.1 U1	4.21	0.03 J1
10/17/2023	Assessment	0.009 J1	0.58	45.9	1.00	0.037	0.33	7.51	1.79	0.18	0.22	0.0194	6.120	< 0.1 U1	1.97	0.04 J1
2/19/2024	Assessment	< 0.008 U1	0.67	46.5	1.28	0.059	0.38	11.1	3.10	0.30	0.27	0.0205	7.100	< 0.1 U1	2.65	0.04 J1
4/22/2024	Assessment	< 0.008 U1	1.00	42.2	1.31	0.058	0.23 J1	11.0	1.61	0.27	0.27	0.0199	6.600	< 0.1 U1	3.18	0.04 J1
9/16/2024	Assessment	< 0.008 U1	0.54	43.2	1.30	0.049	0.39	9.82	2.34	0.20	0.28	0.0224	6.500	< 0.1 U1	1.73	0.06 J1
2/04/2025	Assessment	< 0.04 U1	1.43	51.1	2.01	0.078	0.38	15.0	3.88	0.47	0.4 J1	0.0293	5.700	< 0.1 U1	5.62	< 0.1 U1
4/22/2025	Assessment	< 0.04 U1	1.13	48.8	2.04	0.083	0.38	15.8	2.30	0.50	0.3 J1	0.0246	6.300	< 0.1 U1	4.93	< 0.1 U1
9/08/2025	Assessment	< 0.02 U1	0.93	40.9	1.23	0.052	0.28 J1	10.0	1.79	0.31	0.31	0.0212	6.000	< 0.05 U1	3.79	0.05 J1

Table 1. Groundwater Data Summary
Pirkey Stackout Pad

Notes:
1. Combined radium values were calculated from the sum of the reported radium-226 and radium-228 results.
Radium data quality flags were not included. Reported negative radium-226 or radium-228 results were replaced with zero.
--: Not analyzed
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits
S7: Sample did not achieve constant weight.
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
µg/L: micrograms per liter

APPENDIX 2

Where applicable, shown in this appendix are the results from statistical analyses, and a description of the statistical analysis method chosen.

Geosyntec consultants

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STATISTICAL ANALYSIS SUMMARY, 2025 1ST SEMIANNUAL EVENT FLUE GAS DESULFURIZATION (FGD) STACKOUT AREA

H.W. Pirkey Power Plant

Hallsville, Texas

Prepared for

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September 2025

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ACRONYMS AND ABBREVIATIONS

ASD	alternative source demonstration
CCR	coal combustion residuals
FGD	flue gas desulfurization
GWPS	groundwater protection standard
LCL	lower confidence limit
mg/L	milligrams per liter
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
TCEQ	Texas Commission on Environmental Quality
UPL	upper prediction limit

1. INTRODUCTION

In accordance with Texas Commission on Environmental Quality (TCEQ) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Texas Administrative Code Title 30, Chapter 352), groundwater monitoring has been conducted at the Flue Gas Desulfurization (FGD) Stackout Area, an existing CCR unit at the Pirkey Power Plant in Hallsville, Texas. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above site-specific groundwater protection standards (GWPSs).

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for boron, chloride, and sulfate at the FGD Stackout Area (Geosyntec 2018). An alternative source was not identified at the time, so assessment monitoring was initiated and GWPSs were set in accordance with § 352.951(b). Two assessment monitoring events were conducted at the FGD Stackout Area in February and April 2025 in accordance with § 352.951(a). The results of these annual and semiannual assessment events are documented in this report.

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

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Confidence intervals were calculated for Appendix IV parameters at the compliance wells to assess whether Appendix IV parameters were present at statistically significant levels (SSLs) above previously established GWPSs. SSLs were identified for beryllium, cobalt, lead, and mercury. Therefore, either the unit will move to an assessment of corrective measures or an alternative source demonstration (ASD) will be conducted to evaluate if the unit can remain in assessment monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. FGD STACKOUT AREA EVALUATION

2.1 Data Validation and QA/QC

Samples were collected for analysis from each background and compliance well to meet the requirements of § 352.951(a) in February and April 2025. Samples from both sampling events were analyzed for all Appendix III and Appendix IV parameters. A summary of data collected during these assessment monitoring events are presented in Table 1.

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

A data quality review was completed to assess if the data met the objectives outlined in TCEQ Draft Technical Guidance No. 32 related to groundwater sampling and analysis (TCEQ 2020). The data were determined usable for supporting project objectives, as documented in the review memoranda provided in Attachment B. The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.10.0.27 statistics software. The export file was checked against the analytical data for transcription errors and completeness.

2.2 Statistical Analysis

Statistical analyses for the FGD Stackout Area were conducted in accordance with the November 2021 *Statistical Analysis Plan* (Geosyntec 2021). Time series plots and results for all completed statistical tests are provided in Attachment C. The data obtained in February and April 2025 were screened for potential outliers. No outliers were identified for these events.

2.2.1 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$). However, nonparametric confidence limits were calculated in some cases (e.g., when the data did not appear to be normally distributed or when the nondetect frequency was too high).

Seasonal patterns were observed for several parameters at AD-22 based on the time series graphs (Attachment C). Kruskal Wallis tests were performed during the previous statistical evaluation to test whether differences between the results from different seasons were statistically significant for all Appendix IV constituents at AD-22 (Geosyntec 2024). Statistically significant differences were found for beryllium, cadmium, cobalt, combined radium, fluoride, lithium, and selenium at AD-22. Where the Kruskal-Wallis test found significant seasonal effects and at least one reported result was above the GWPS, the data for these well/parameter pairs were deseasonalized so that the resulting confidence limits correctly account for seasonality as a predictable pattern rather than a random variation or a release. The results of the Kruskal-Wallis tests are provided in Attachment

C. The tests will be rerun on an annual basis if apparent seasonal patterns continue to be observed in the data.

An SSL was concluded if the lower confidence limit (LCL) was above the GWPS (i.e., if the entire confidence interval was above the GWPS). The calculated confidence limits (Attachment C) were compared to the GWPSs provided in Table 2. The GWPSs were established during a previous statistical analysis as either the greater value of the background concentration or the maximum contaminant level (Geosyntec 2024).

The following SSLs were identified at the Pirkey FGD Stackout Area:

- The deseasonalized LCL for beryllium was above the GWPS of 0.00400 milligrams per liter (mg/L) at AD-22 (0.00542 mg/L).
- The deseasonalized LCL for cobalt was above the GWPS of 0.0600 mg/L at AD-22 (0.0779 mg/L).
- The LCL for lead was above the GWPS of 0.000200 mg/L at AD-33 (0.000230 mg/L).
- The LCL for mercury was above the GWPS of 0.00200 mg/L at AD-33 (0.00362 mg/L).

As a result, the Pirkey FGD Stackout Area will either move to an assessment of corrective measures or an ASD will be conducted to evaluate if the unit can remain in assessment monitoring.

2.2.2 Evaluation of Potential Appendix III SSIs

While SSLs were identified, a review of the Appendix III results were also completed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the April 2025 assessment monitoring event from each compliance well were compared to previously established prediction limits to assess whether the results are above background values (Table 3).

The following concentrations were above the upper prediction limits (UPLs):

- Boron concentrations were above the interwell UPL of 0.0857 mg/L at AD-7R (0.293 mg/L) and AD-33 (0.211 mg/L).
- The calcium concentration was above the intrawell UPL of 2.38 mg/L at AD-33 (3.04 mg/L).
- The chloride concentration was above the interwell UPL of 54.5 mg/L at AD-22 (82.6 mg/L).
- The fluoride concentration was above the interwell UPL of 0.748 mg/L at AD-22 (1.07 mg/L).
- The sulfate concentration was above the interwell UPL of 138 mg/L at AD-22 (294 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the April 2025 sample was above the UPL or, in the case of pH, below the lower prediction limit.

2.3 Conclusions

Annual and semiannual assessment monitoring events were conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, and no QA/QC issues that impacted data usability were identified. A review of outliers identified no potential outliers in the February and April 2025 data. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPS. SSLs were identified for beryllium, cobalt, lead, and mercury. Appendix III parameters were compared to calculated prediction limits, with exceedances identified for boron, calcium, chloride, fluoride, and sulfate.

Based on this evaluation, the Pirkey FGD Stackout Area CCR unit will either move to an assessment of corrective measures or an ASD will be conducted to evaluate if the unit can remain in assessment monitoring.

3. REFERENCES

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TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Pirkey Plant – Flue Gas Desulfurization Stackout Pad

Parameter	Unit	AD-7R		AD-12		AD-13		AD-22		AD-33	
		Compliance		Background		Background		Compliance		Compliance	
		2/3/2025	4/21/2025	2/3/2025	4/21/2025	2/3/2025	4/21/2025	2/3/2025	4/21/2025	2/4/2025	4/22/2025
Antimony	µg/L	0.1 U1	0.1 U1	0.016 J1	0.010 J1	0.1 U1	0.1 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1
Arsenic	µg/L	0.46	0.39	0.09 J1	0.09 J1	0.29	2.15	1.75	2.06	1.43	1.13
Barium	µg/L	51.4	45.7	19.1	15.0	68.9	37.5	18.6	14.8	51.1	48.8
Beryllium	µg/L	2.04	1.53	0.129	0.108	0.194	0.327	6.25	8.00	2.01	2.04
Boron	mg/L	0.217	0.293	0.029 J1	0.020 J1	0.061	0.072	0.070	0.069	0.224	0.211
Cadmium	µg/L	0.370	0.379	0.012 J1	0.005 J1	0.009 J1	0.02 U1	0.989	1.50	0.078	0.083
Calcium	mg/L	3.19	3.05	0.23	0.17	19.5 M1	10.2	11.2	14.0	3.02	3.04
Chloride	mg/L	23.0	24.2	4.94	4.58	35.2	42.1	63.2	82.6	11.7	12.7
Chromium	µg/L	0.25 J1	0.29 J1	0.29 J1	0.52	0.31	0.26 J1	0.45	0.51	0.38	0.38
Cobalt	µg/L	18.9	18.9	1.14	0.900	28.1	49.9	77.9	104	15.0	15.8
Combined Radium	pCi/L	2.66	2.13	0.9	1.32	1.92	1.91	2.88	2.55	3.88	2.3
Fluoride	mg/L	0.18	0.17	0.08	0.08	0.31	0.31	0.85	1.07	0.47	0.50
Lead	µg/L	0.38	0.09 J1	0.10 J1	0.10 J1	0.11 J1	0.2 U1	0.4 J1	0.3 J1	0.4 J1	0.3 J1
Lithium	mg/L	0.0519	0.0506	0.00579	0.00514	0.123	0.129	0.110	0.135	0.0293	0.0246
Mercury	µg/L	0.131	0.005	0.004 J1	0.002 J1	0.005 U1	0.005 U1	1.060	1.700	5.700	6.300
Molybdenum	µg/L	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1
Selenium	µg/L	1.92	1.39	0.31 J1	0.20 J1	0.5 U1	0.5 U1	7.61	10.0	5.62	4.93
Sulfate	mg/L	48.4	49.5	3.1	2.7	54.2	78.8	246	294	69.2	68.5
Thallium	µg/L	0.15 J1	0.16 J1	0.2 U1	0.2 U1	0.02 J1	0.03 J1	0.2 J1	0.2 J1	1 U1	1 U1
Total Dissolved Solids	mg/L	190	190	80	70	180	240	520	610	200	190
pH	SU	5.3	4.2	3.2	3.2	5.7	5.5	4.2	3.9	4.1	3.7

Notes:
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Pirkey Plant – Flue Gas Desulfurization Stackout Area

Constituent Name	MCL	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600	0.000100	0.00600
Arsenic, Total (mg/L)	0.0100	0.00900	0.0100
Barium, Total (mg/L)	2.00	0.0544	2.00
Beryllium, Total (mg/L)	0.00400	0.00200	0.00400
Cadmium, Total (mg/L)	0.00500	0.000860	0.00500
Chromium, Total (mg/L)	0.100	0.00400	0.100
Cobalt, Total (mg/L)	n/a	0.0600	0.0600
Combined Radium, Total (pCi/L)	5.00	3.11	5.00
Fluoride, Total (mg/L)	4.00	0.748	4.00
Lead, Total (mg/L)	n/a	0.00020	0.00020
Lithium, Total (mg/L)	n/a	0.165	0.165
Mercury, Total (mg/L)	0.00200	0.0000193	0.00200
Molybdenum, Total (mg/L)	n/a	0.00110	0.00110
Selenium, Total (mg/L)	0.0500	0.00386	0.0500
Thallium, Total (mg/L)	0.00200	0.00144	0.00200

Notes:
1. Calculated UTL (Upper Tolerance Limit) represents site-specific background values.
2. Gray cells indicate the GWPS is based on the calculated UTL. Either the UTL is higher than the MCL or an MCL does not exist.
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 3. Appendix III Data Summary
Statistical Analysis Summary
Pirkey – Flue Gas Desulfurization Stackout Pad

Analyte	Unit	Description	AD-7R	AD-22	AD-33
			4/21/2025	4/21/2025	4/22/2025
Boron	mg/L	Interwell Background Value (UPL)	0.0857		
		Analytical Result	**0.293**	0.069	**0.211**
Calcium	mg/L	Intrawell Background Value (UPL)	4.53	15.2	2.38
		Analytical Result	3.05	14.0	**3.04**
Chloride	mg/L	Interwell Background Value (UPL)	54.5		
		Analytical Result	24.2	**82.6**	12.7
Fluoride	mg/L	Interwell Background Value (UPL)	0.748		
		Analytical Result	0.17	**1.07**	0.50
pH	SU	Intrawell Background Value (UPL)	5.8	4.9	4.6
		Intrawell Background Value (LPL)	3.9	3.6	3.2
		Analytical Result	4.2	3.9	3.7
Sulfate	mg/L	Interwell Background Value (UPL)	138		
		Analytical Result	49.5	**294**	68.5
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	266	721	215
		Analytical Result	190	610	190

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

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Pirkey FGD Stackout Area CCR management area and that the requirements of § 352.931(a) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

112498	Texas	09.26.2025
License Number	Licensing State	Date

ATTACHMENT B
Data Quality Review Memoranda

Geosyntec consultants

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Worthington, Ohio 43085
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Memorandum

Date:	August 29, 2025
To:	David Miller (AEP)
Copies to:	Pryce Warren (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Data Quality Review – Pirkey Power Plant February 2025 Sampling Event

This memorandum summarizes the findings of a data quality review for groundwater samples collected at the Pirkey Power Plant, located in Hallsville, Texas in February 2025. The groundwater samples were collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). 40 CFR 257 Appendix III and IV constituents were analyzed.

The following sample data groups (SDGs) were associated with the groundwater samples collected during the February 2025 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 250367
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 250394

The data included in these SDGs were reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32[1] prior to submittal of this data to TCEQ.

The following data quality issues were identified:

- As reported in SDG 250394, chromium and lithium were detected in the field blank sample "Field Blank" collected on 2/4/25. The estimated detected chromium concentration in the field blank (0.19 µg/L) was more than 10% of the detected values for chromium in all

[1] TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

groundwater samples, which could result in high bias in the chromium results for all groundwater samples.

- As reported in SDG 250394, antimony, barium, calcium, chromium, cobalt, and lithium were detected in the equipment blank sample "Equipment Blank" collected on 2/3/25. The estimated detected antimony concentration (0.008 µg/L) and detected chromium concentration (0.50 µg/L) in the equipment blank were more than 10% of the detected values for antimony and chromium in all groundwater samples, which could result in high bias in the antimony and chromium results for all groundwater samples. The detected calcium concentration (0.05 mg/L) in the equipment blank was more than 10% of the detected values for calcium in samples AD-12, AD-17, AD-18, and AD-30, which could result in high bias in the calcium results for these samples.

- As reported in SDG 250394, the relative percent difference (RPD) for cadmium concentrations from parent sample "AD-13" and duplicate sample "DUPLICATE" was 25%. The RPD for chromium was 51%, and the RPD for thallium was 40%. The antimony result for AD-13 was nondetect (<0.008 µg/L), and the antimony result for the duplicate sample was a detection (0.018 µg/L). The lead result for AD-13 was a detection (0.11 µg/L), and the lead result for the duplicate sample was nondetect (<0.05 µg/L). Therefore, RPDs could not be calculated for antimony or lead. The AD-13 results for antimony, cadmium, chromium, lead, and thallium should be considered estimated.

- As reported in SDG 250367, sample "AD-2" collected on 2/4/2025 for total dissolved solids (TDS) was flagged S7: sample did not achieve constant weight.

- As reported in SDG 250394, matrix spike duplicate (MSD) recovery for calcium (71.7%) was below the acceptable limit of 75%. The associated sample (AD-13) was flagged M1: the associated matrix spike (MS) or MSD recovery was outside acceptance limits. The AD-13 calcium result should be considered estimated.

- As reported in SDG 250394, MSD recovery for calcium (72.1%) was below the acceptable limit of 75%, and MSD recovery for lithium (151%) was above the acceptable limit of 125%. The associated sample (AD-32) was flagged M1: the associated MS or MSD recovery was outside acceptance limits. The AD-32 calcium and lithium results should be considered estimated.

- The RPD for beryllium (23.6%) and lithium (24.7%) in the ICPMS MSD sample "PB25021012" was above the acceptable limit of 20%. The recovery for lithium (143%) in the MSD sample was above the acceptable limit of 125%. Samples associated with that

QC batch on SDG 250394 were flagged M1: the associated MS or MSD recovery was outside acceptance limits.

- The RPD for radium-226 in the laboratory control spike duplicate (LCSD) sample "PB25021403" (35.6%) was above the acceptable limit of 25%. Samples associated with that QC batch on SDG 250394 were flagged P2: the precision on the LCSD was above acceptance limits.

Based on these findings, the majority of the data reported in these SDGs are considered accurate and complete. Although the QC failures mentioned above will result in some limitations of data use since the affected results are considered estimated or have elevated reporting limits, the data are considered usable for supporting project objectives.

Geosyntec consultants

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Memorandum

Date:	September 2, 2025
To:	David Miller (AEP)
Copies to:	Pryce Warren (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Data Quality Review – Pirkey Power Plant April 2025 Sampling Event

This memorandum summarizes the findings of a data quality review for groundwater samples collected at the Pirkey Power Plant in Hallsville, Texas in April 2025. The groundwater samples were collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). 40 CFR 257 Appendix III and IV constituents were analyzed.

The following sample data groups (SDGs) were associated with the groundwater samples collected during the April 2025 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 251095
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 251109

The data included in these SDGs were reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32[1] prior to submittal of this data to TCEQ.

The following data quality issues were identified:

- As reported in SDG 251109, antimony, calcium, and chromium were detected in the field blank sample "Field Blank" collected on 4/23/25. The estimated detected antimony concentration (0.0.067 µg/L) and estimated detected chromium concentration (0.23 µg/L)

[1] TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

in the field blank were more than 10% of the detected values for antimony and chromium in all groundwater samples that had detectable levels of those constituents, which could result in high bias in the antimony and chromium results for those groundwater samples. The estimated detected calcium concentration in the field blank (0.02 mg/L) was more than 10% of the detected value for calcium in sample AD-12, which could result in high bias in the calcium result for sample AD-12.

- As reported in SDG 251109, barium, calcium, chromium, and lithium were detected in the equipment blank sample "Equipment Blank" collected on 4/22/25. The estimated detected calcium concentration in the equipment blank (0.02 mg/L) was more than 10% of the detected value for calcium in sample AD-12, which could result in high bias in the calcium result for sample AD-12. The detected chromium concentration in the equipment blank (0.36 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias in the chromium results for all groundwater samples.

- As reported in SDG 251109, the relative percent difference (RPD) for lead concentrations from parent sample "AD-33" and duplicate sample "Duplicate 1" was 29%. The AD-33 result for lead should be considered estimated.

- As reported in SDG 251095, samples "AD-30" and "AD-34" collected on 4/22/2025 and 4/23/2025, respectively, for total dissolved solids (TDS) were flagged S7: sample did not achieve constant weight. Sample "AD-36" collected on 4/23/2025 for TDS was flagged S12: residue weight is below the method criteria but was already analyzed with 100 mL.

- As reported in SDG 251109, laboratory QC sample ICPMS MS had a MS recovery for lithium above the acceptable limit of 125%. Samples associated with this laboratory QC sample were flagged M1: the associated MS or MSD recovery was outside acceptance limits.

- Radium-226 in the laboratory control sample (LCS) sample "PB25043002" was outside acceptance limits. Samples associated with that QC batch on SDG 251109 were flagged L1: the associated LCS or laboratory control sample (LCSD) recovery was outside acceptance limits. Duplicates were not available for analysis with this batch. Samples associated with this QC batch on SDG 251109 were flagged O3: insufficient sample was received to perform duplicate analysis with this sample batch. The associated results should be considered estimated.

- The percent recovery for radium-228 in the LCSD sample "PB25050106" (74.5%) was below the acceptable limit of 75%. Samples associated with that QC batch on SDG 251109 were flagged L1: the associated LCS or LCSD recovery was outside acceptance limits.

Based on these findings, the majority of the data reported in these SDGs are considered accurate and complete. Although the QC failures mentioned above will result in some limitations of data use since the affected results are considered estimated or have elevated reporting limits, the data are considered usable for supporting project objectives.

ATTACHMENT C
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

August 18, 2025

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

Re: Pirkey Stackout
Assessment Monitoring Event – February & April 2025

Dear Ms. Kreinberg,

Groundwater Stats Consulting (GSC), formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical analysis of groundwater data for the February and April 2025 Assessment Monitoring sample events for American Electric Power Inc.'s Pirkey Stackout. The analysis complies with the Texas Commission of Environmental Quality rule 30 TAC 352 as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

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

- **Upgradient wells:** AD-12 and AD-13
- **Downgradient wells:** AD-22, AD-33, and AD-7R

Downgradient well AD-7 was previously in the well network but has been removed, and replacement well AD-7R has been sampled since June 2020. Appendix IV constituents are evaluated using confidence intervals, which require a minimum of 4 samples.

Data were sent electronically to GSC, and the statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC. Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting.

The CCR Assessment Monitoring program consists of the following constituents:

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

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

Due to varying reporting limits over time, generally as a result of improved laboratory practices, a substitution of the most recent reporting limit is used for non-detect data. In some cases, the reporting limits provided by the laboratory contain varying limits for a given parameter; therefore, the substitution may differ from well to well. Reporting limit changes may occur depending on laboratory capabilities. In the case of fluoride and lead, elevated historic reporting limits were replaced by the most recent reporting limit of 0.06 mg/L and 0.0002 mg/L substituted across all non-detects for all wells. The computed statistical limits, both background and compliance limits, were not adversely affected by these substitutions.

Summary of Statistical Methods

Assessment monitoring for Appendix IV parameters involves the comparison of confidence intervals for parameters at each downgradient well against the corresponding Groundwater Protection Standard (GWPS). The GWPS is determined for each parameter as the highest limit of the Maximum Contaminant Levels (MCLs) or background limits determined from tolerance limits constructed from pooled upgradient well data.

Prior to computing tolerance limits on pooled upgradient well data or constructing confidence intervals on downgradient well data, the distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric tolerance limits and confidence intervals as appropriate, based on the following criteria.

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, the reporting limit utilized for non-detects is the practical quantification limit (PQL) as reported by the laboratory. For several constituents, the most recent reporting limits are significantly lower than those reported historically.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric tolerance limits and confidence intervals are used on data containing greater than 50% non-detects or data sets which do not follow a normal or transformed-normal distribution.

Background Update Summary – Conducted in Fall 2024

Outlier Analysis

Prior to evaluating Appendix IV parameters, background data were screened during the update through visual screening and Tukey's outlier test for potential outliers and extreme trending patterns that would lead to artificially elevated statistical limits. Tukey's outlier test on pooled upgradient well data only identified values for cadmium. However, none of the measurements were flagged as all identified observations were low-level concentrations below the MCL. Visual screening confirmed previously flagged non-detect observations from 2019 with elevated reporting limits for molybdenum and thallium in both upgradient and downgradient wells. These elevated reporting limits are more than an order of magnitude higher than the current reporting limits.

Additionally, downgradient well data through September 2024 were screened through visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding the measurements. Several observations among the 2016 events for multiple Appendix IV constituents for downgradient wells AD-13 and AD-33 remain flagged as outliers since the measurements were inconsistent with remaining concentrations within each respective record. The flagged non-detect observations with elevated reporting limits from 2019 for molybdenum and thallium were discussed above. No changes were made to previously flagged data.

Seasonality

When seasonal patterns are observed, data are deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release. This procedure includes subtracting the seasonal mean from each value within a given season and adding the overall mean to each observation. Several Appendix IV constituents appear to have seasonal patterns for well AD-22. Therefore, all constituents evaluated with confidence intervals at this well were tested for seasonality using the Kruskal-Wallis test during the update. Appendix IV constituents with significant seasonality were beryllium, cadmium, cobalt, combined radium 226 + 228, fluoride, lithium, and selenium.

Interwell Upper Tolerance Limits

Upper tolerance limits were used to calculate background limits from pooled upgradient well data through September 2024 for Appendix IV parameters (Figure D). These limits are updated on an annual basis and will be updated again during the Fall 2025 sample event. Parametric tolerance limits are calculated, with a target of 95% confidence and 95% coverage, when data follow a normal or transformed-normal distribution. When data contained greater than 50% non-detects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were constructed using the highest background measurement. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

Background limits were compared to the MCLs in the GWPS table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons (Figure E). The higher of the two limits is used as the GWPS.

Evaluation of Appendix IV Parameters – February & April 2025

Time series plots were used to visually identify potential outliers in downgradient wells through the February and April 2025 sample events. When suspected outliers are identified, Tukey's outlier test is used to formally test whether measurements are statistically significant. As mentioned above, high outliers are cautiously flagged in the downgradient wells when measurements are clearly much different from remaining data within a given well. Although flagging values will also reduce the mean and thus lower the entire interval, the intent is to reduce the variance and thus reduce the width of

parametric confidence intervals to better represent the actual downgradient mean. No additional suspected outliers were identified.

Confidence Intervals

When data followed a normal or transformed-normal distribution, parametric confidence intervals were used for Appendix IV parameters. Nonparametric confidence intervals, which use the appropriate large and small order statistics depending on the sample size as interval limits, were constructed when data did not follow a normal or transformed-normal distribution or when there were greater than 50% non-detects. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

Note that a change in reported concentrations of more recent data was identified for lead in well AD-33 and mercury in wells AD-22 and AD-33 relative to historical concentrations. The Sen's Slope/Mann Kendall trend test was previously used to evaluate the entire record of data for lead and mercury at these wells to identify whether data are stable or have either statistically significant increasing or decreasing trends at the 95% confidence level. A statistically significant increasing trend was identified for mercury and lead in well AD-33, and a statistically significant decreasing trend was identified for mercury in well AD-22. In order to construct confidence intervals that better represent current groundwater quality conditions and eliminate the influence of the trend, earlier concentrations were truncated from the records and plotted as disconnected points on the time series graph (USEPA Unified Guidance, 2009, Chapter 7). A list of well/constituent pairs using truncated records follows this report. Note that a lead outlier that was included in the previous summary table lies within the truncated segment, and is not included in the current summary table.

Confidence intervals were constructed on downgradient wells with data through April 2025 for each of the Appendix IV parameters using either parametric or nonparametric intervals depending on the data distribution and percentage of non-detects (Figure F). Each confidence interval was compared to the corresponding GWPS from Figure E. Only when the entire confidence interval is above the GWPS is the well/constituent pair considered to exceed its respective standard. Exceedances were noted for the following well/constituent pairs:

- Beryllium: AD-22
- Cobalt: AD-22

- Lead: AD-33
- Mercury: AD-33

Deseasonalized Confidence Intervals

Confidence intervals were also constructed on deseasonalized data for constituents with detected seasonality in well AD-22 when at least one reported measurement was higher than the established GWPS for a given parameter. The constituents that met these criteria at well AD-22 are beryllium, cobalt, combined radium 226 + 228, and lithium. The results are included with the confidence intervals provided in Figure F. The following confidence interval exceedances were identified:

- Beryllium: AD-22
- Cobalt: AD-22

Trend Test Evaluation – Appendix IV

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable at the 95% confidence level (Figure G). The 95% confidence level rapidly identifies statistically significant trends and is recommended in cases with limited sample sizes as well as new downgradient wells. Upgradient wells are included in the trend analyses for all parameters found to exceed their confidence interval in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be unrelated to practices at the site. Statistically significant trends were identified for the following well/constituent pairs:

Increasing

- Lead: AD-33
- Mercury: AD-33

Decreasing

- Beryllium: AD-12 and AD-13 (both upgradient)
- Cobalt: AD-12 (upgradient)
- Lead: AD-12 (upgradient)

Note that the decreasing trend in lead at upgradient well AD-12 results from non-detects early in the record compared to observations below the most recent reporting limit (0.0002 mg/L) in the later part of the record.

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

For Groundwater Stats Consulting,

Easton Rayner
Groundwater Analyst

Andrew T. Collins
Project Manager

Date Ranges

Date: 7/28/2025 10:44 AM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Lead, total (mg/L)
- AD-33 overall:3/10/2020-4/22/2025

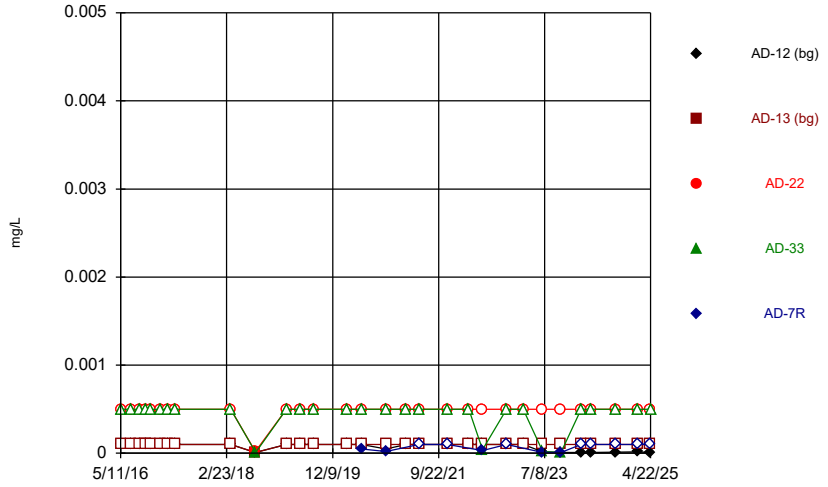
Mercury, total (mg/L)
- AD-22 overall:3/10/2020-4/21/2025
- AD-33 overall:3/10/2020-4/22/2025

FIGURE A

Time Series

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

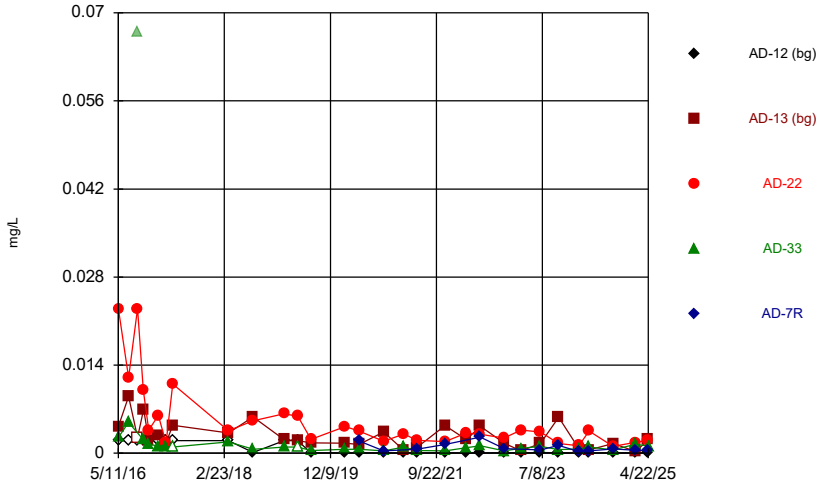
Time Series



Constituent: Antimony, total Analysis Run 7/28/2025 2:00 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

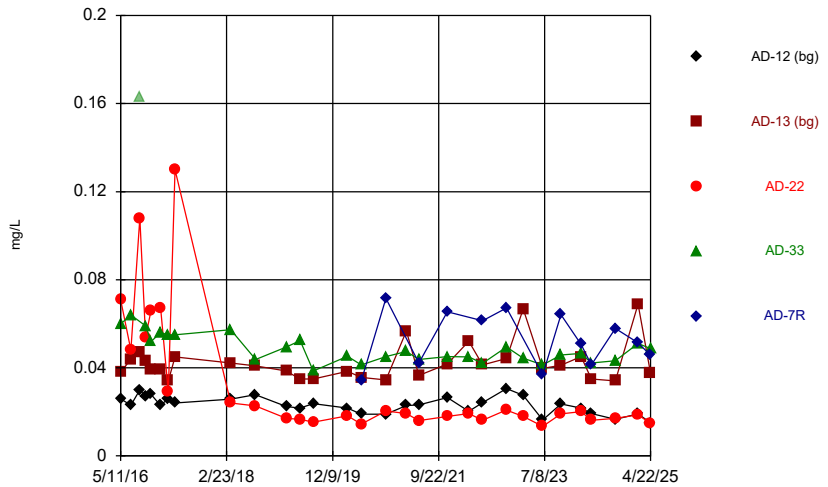
Time Series



Constituent: Arsenic, total Analysis Run 7/28/2025 2:00 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

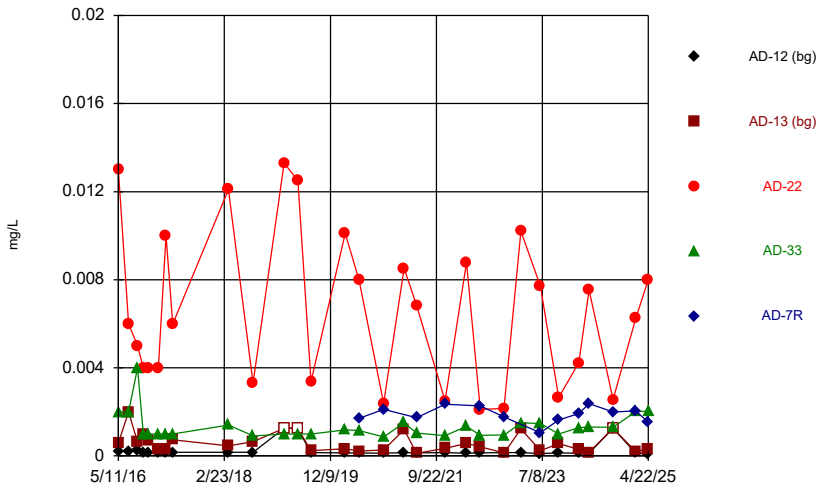
Time Series



Constituent: Barium, total Analysis Run 7/28/2025 2:00 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

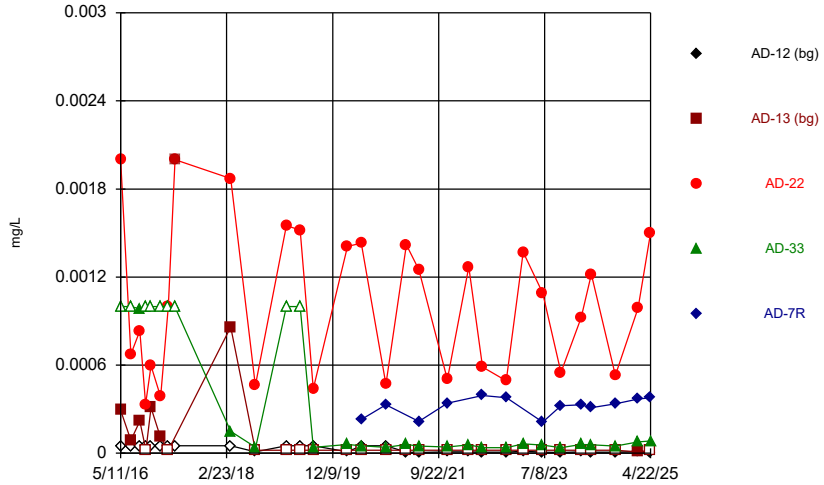
Time Series



Constituent: Beryllium, total Analysis Run 7/28/2025 2:00 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
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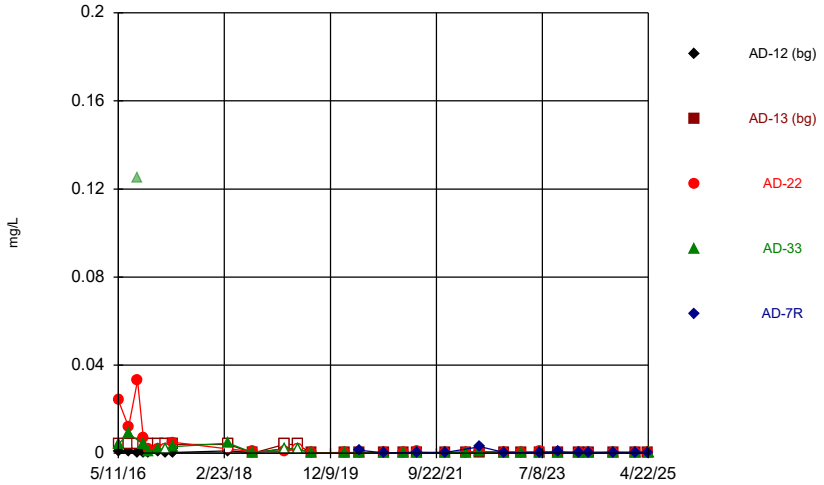
Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
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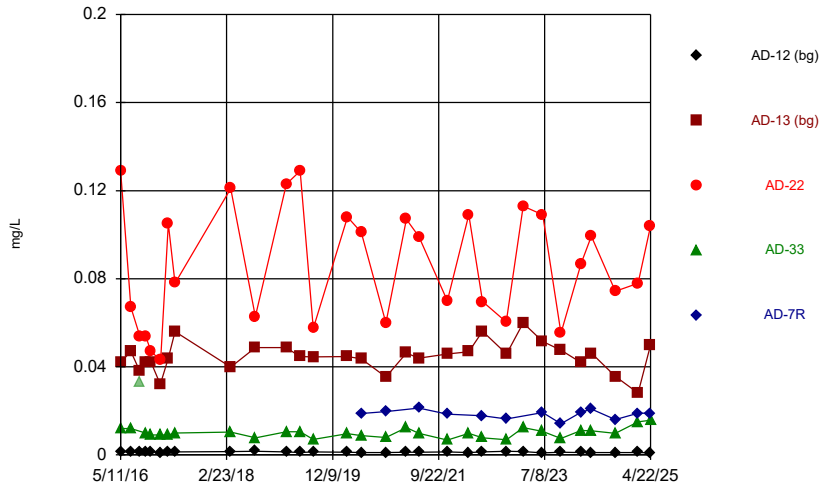
Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Cobalt, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
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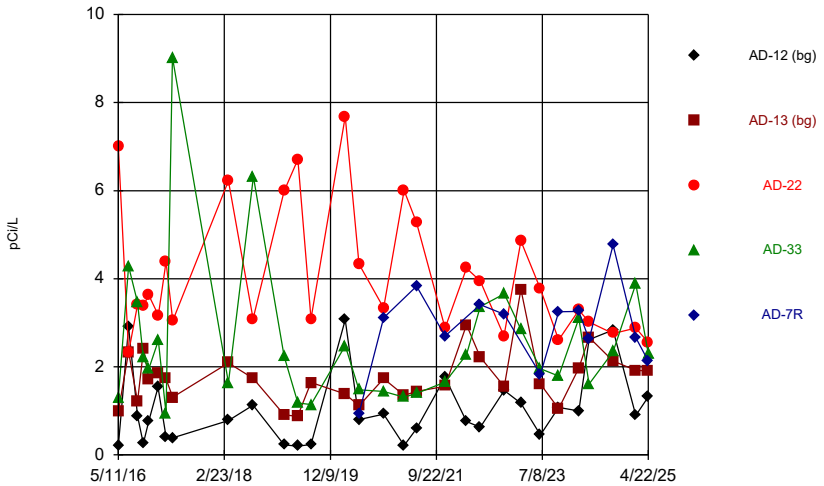
Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

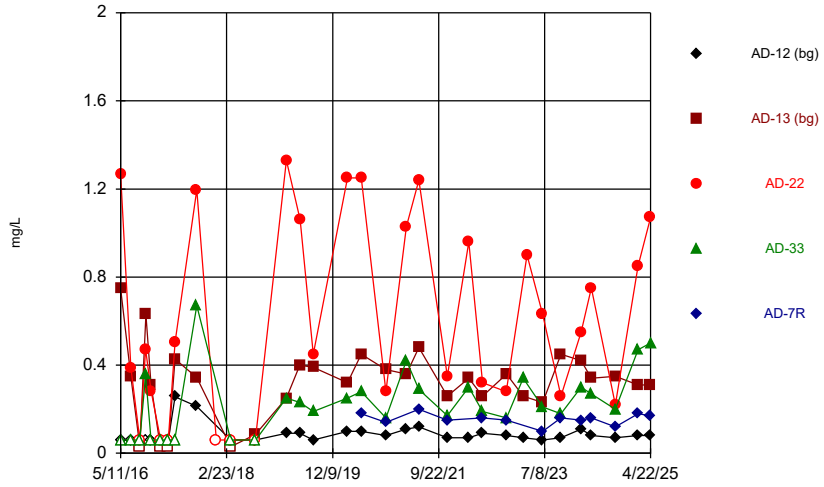
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

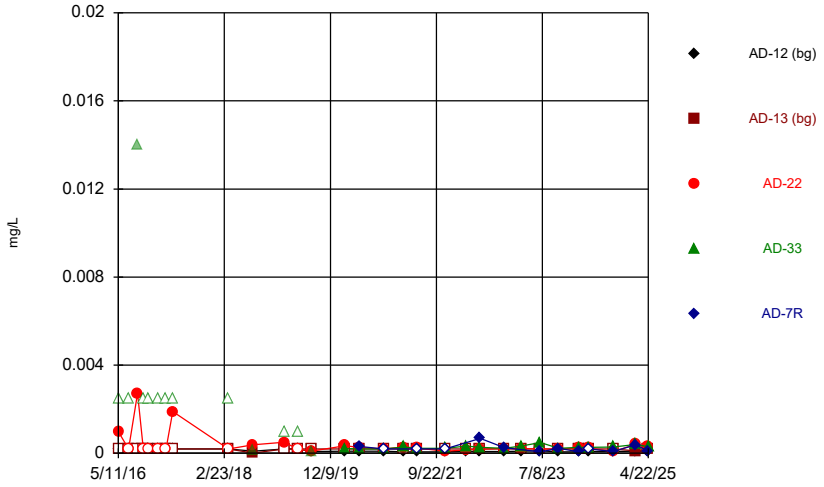
Time Series



Constituent: Fluoride, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

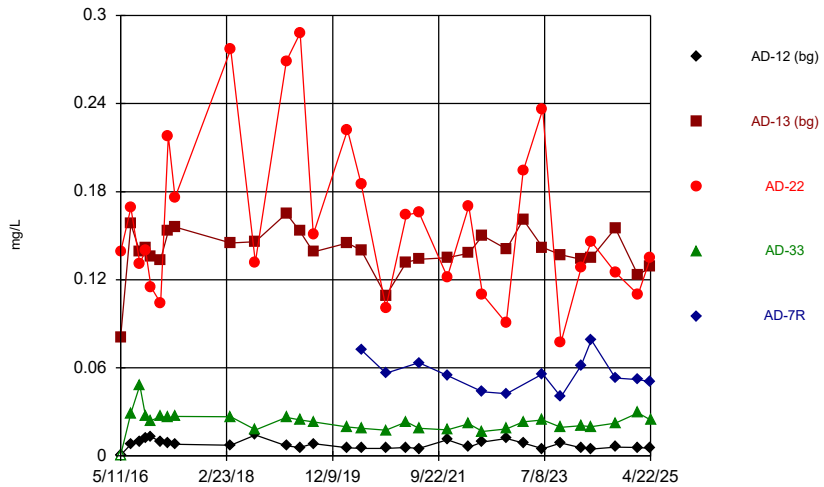
Time Series



Constituent: Lead, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

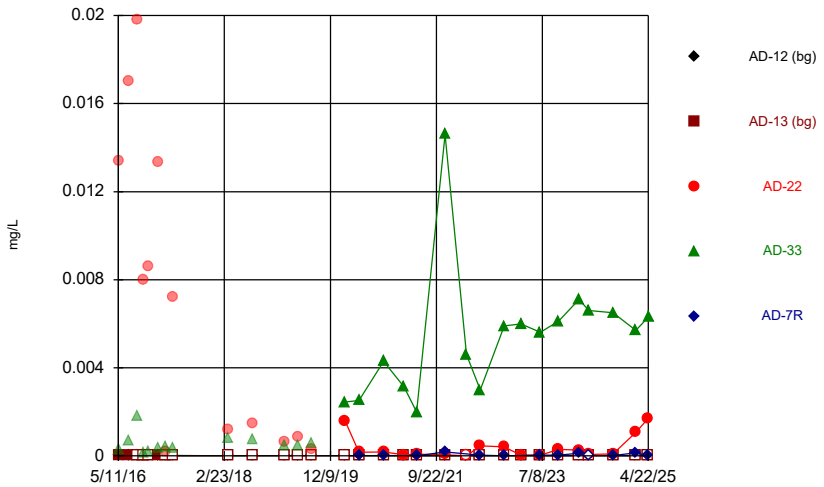
Time Series



Constituent: Lithium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

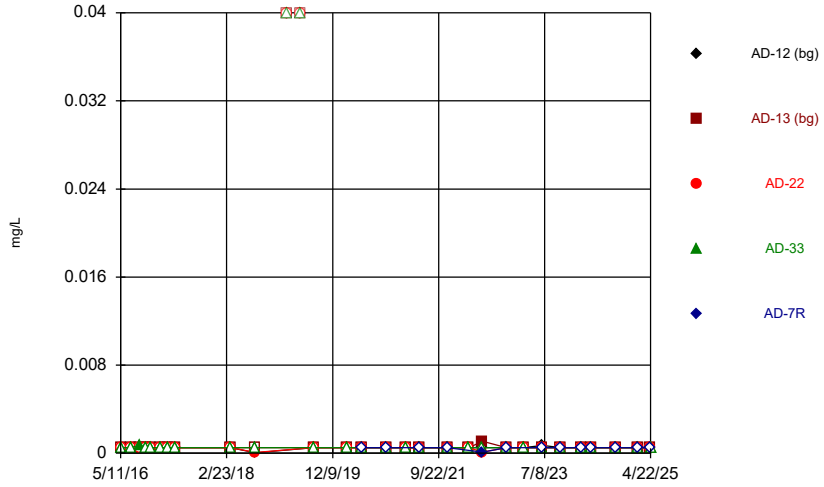
Time Series



Constituent: Mercury, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

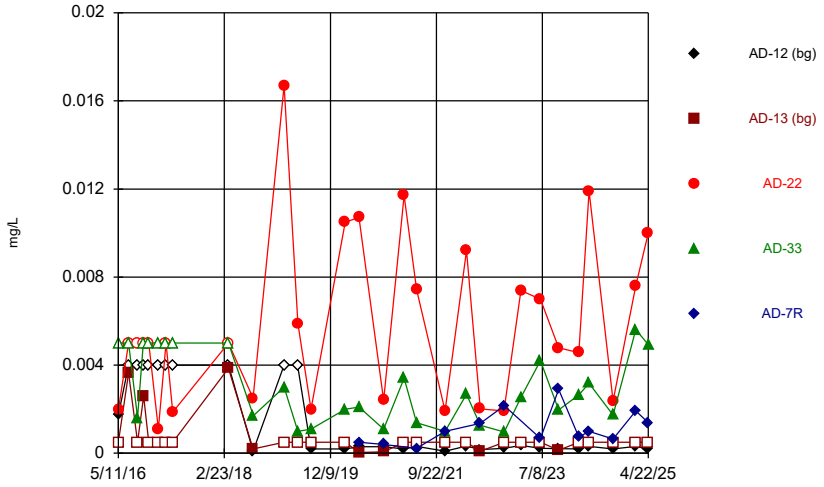
Time Series



Constituent: Molybdenum, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
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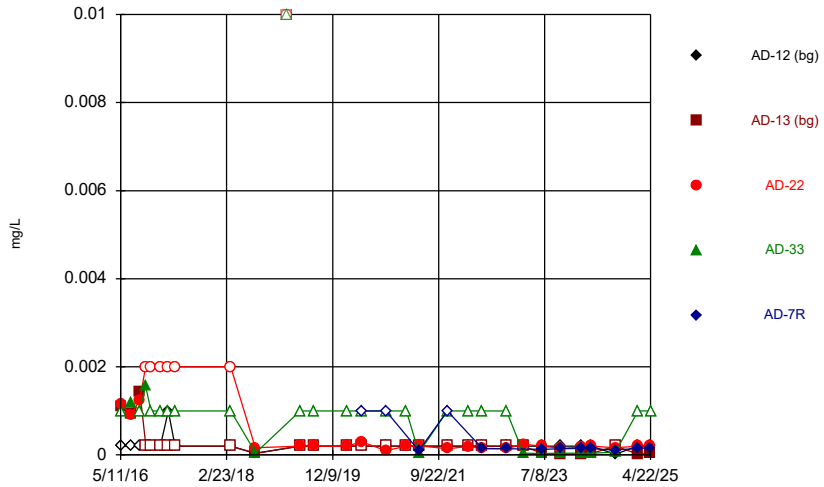
Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series

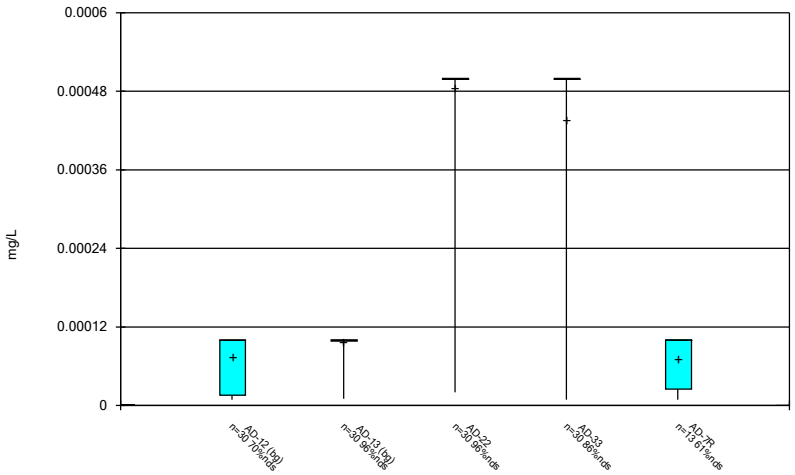


Constituent: Thallium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE B

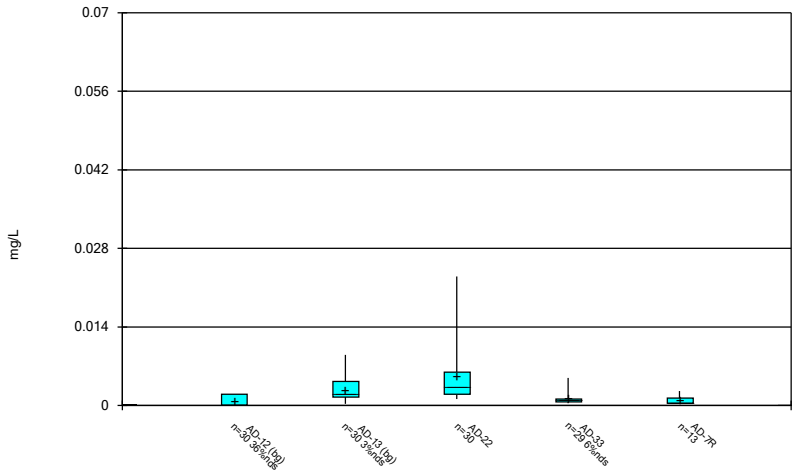
Box Plots

Box & Whiskers Plot



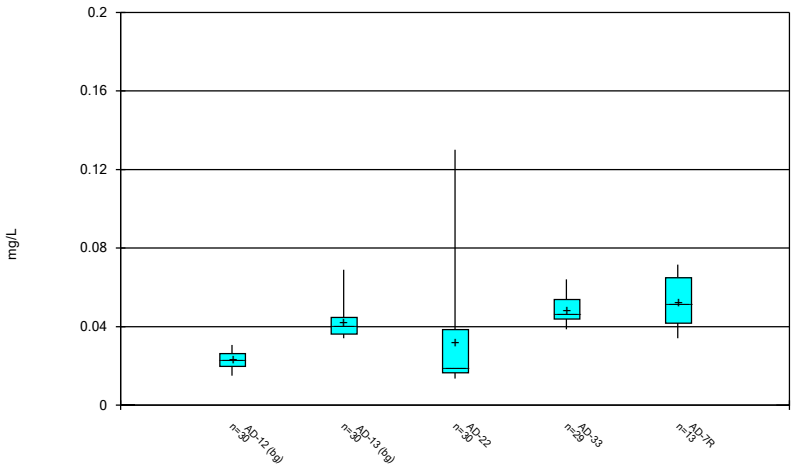
Constituent: Antimony, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



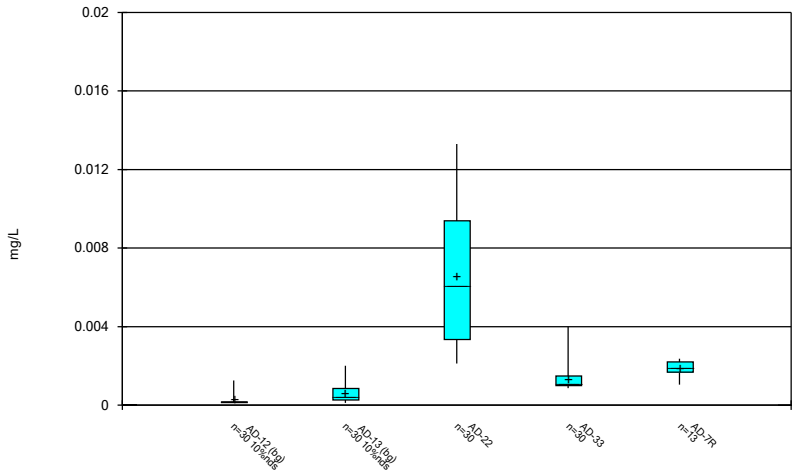
Constituent: Arsenic, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



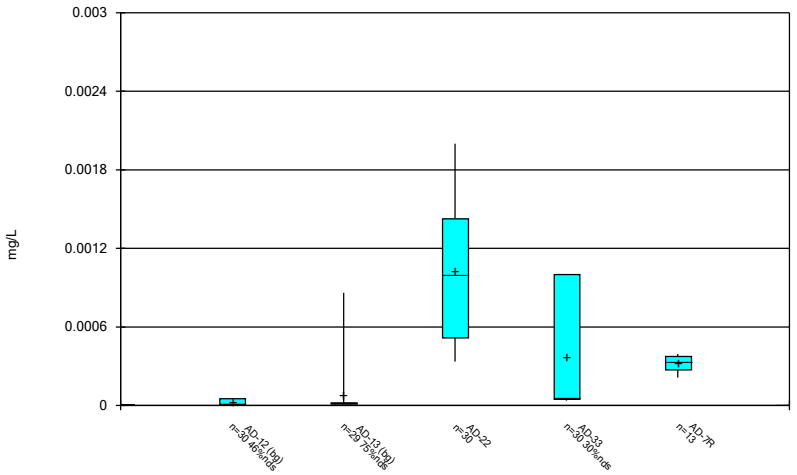
Constituent: Barium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



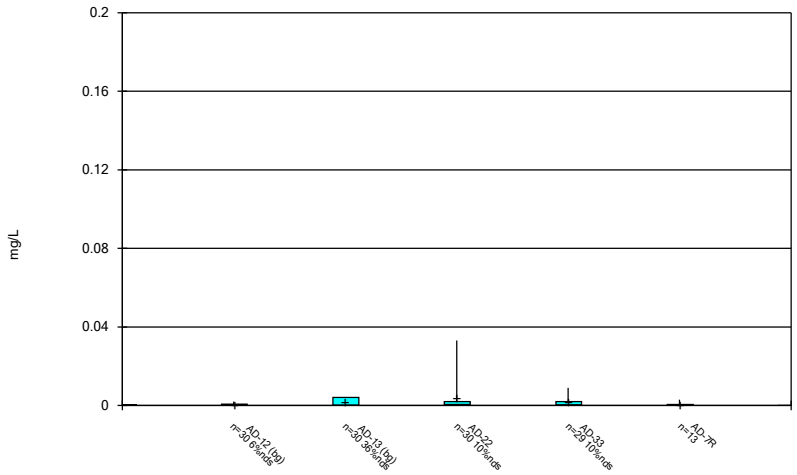
Constituent: Beryllium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



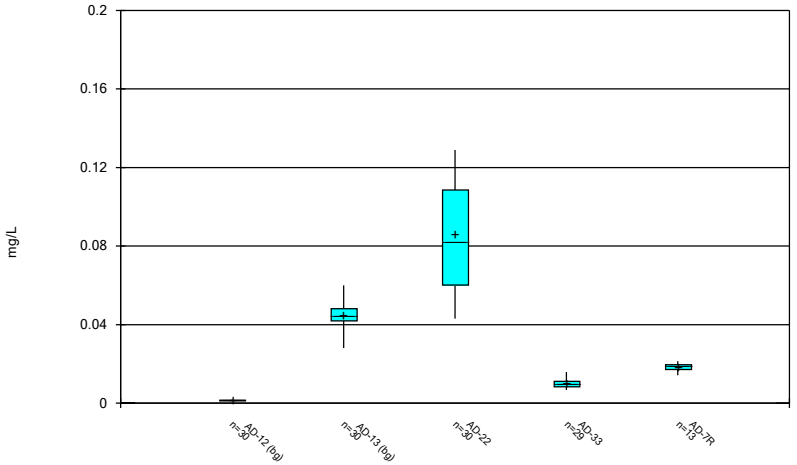
Constituent: Cadmium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



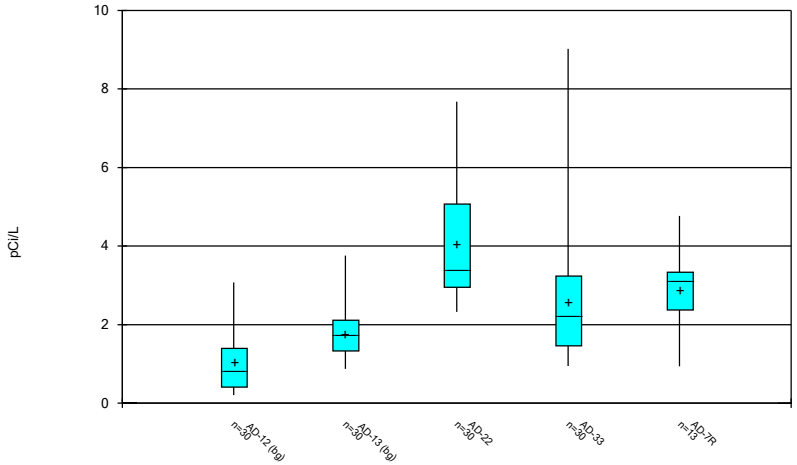
Constituent: Chromium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



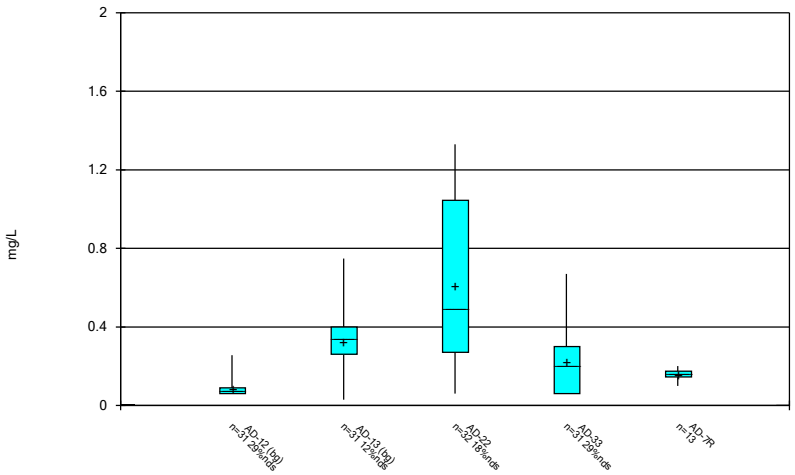
Constituent: Cobalt, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



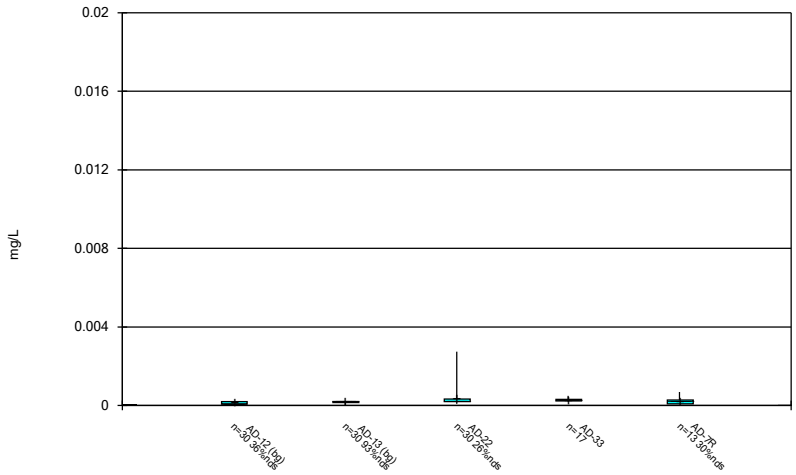
Constituent: Combined Radium 226 + 228 Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



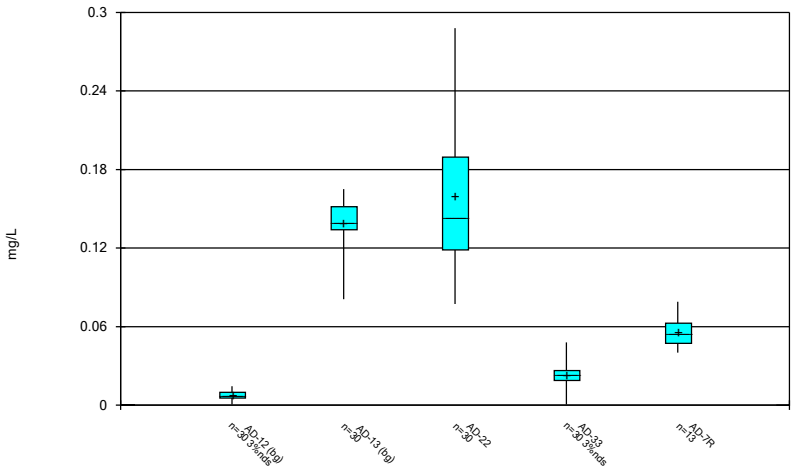
Constituent: Fluoride, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



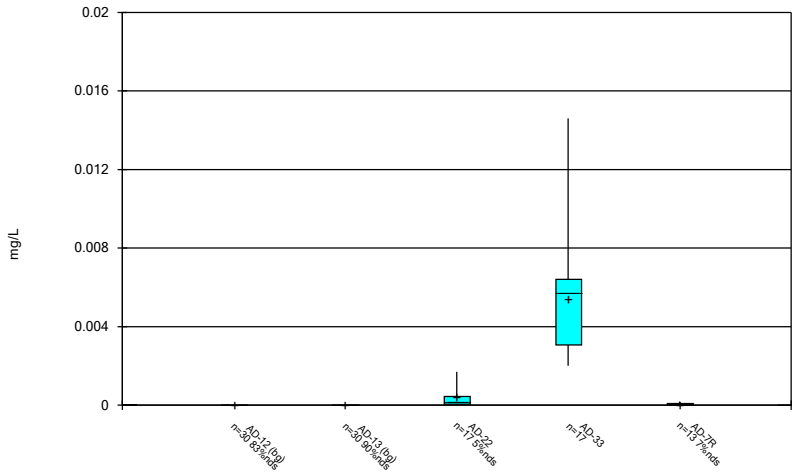
Constituent: Lead, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



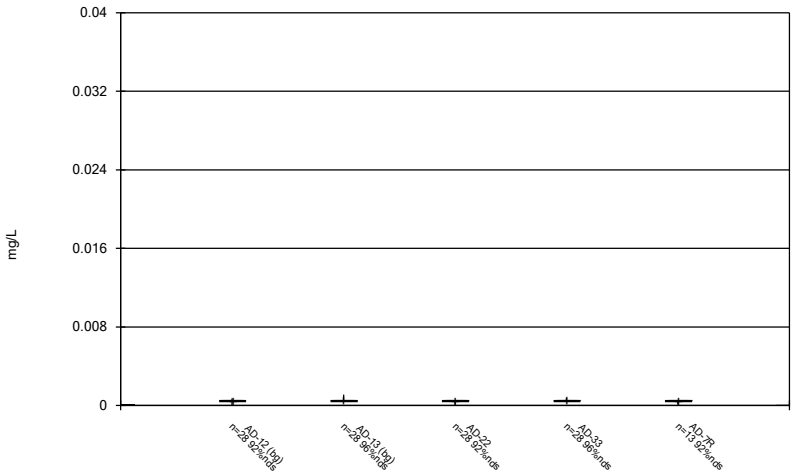
Constituent: Lithium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



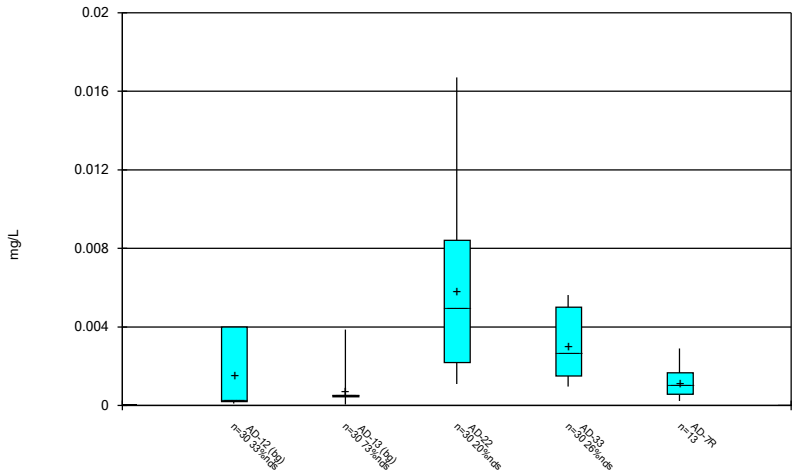
Constituent: Mercury, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



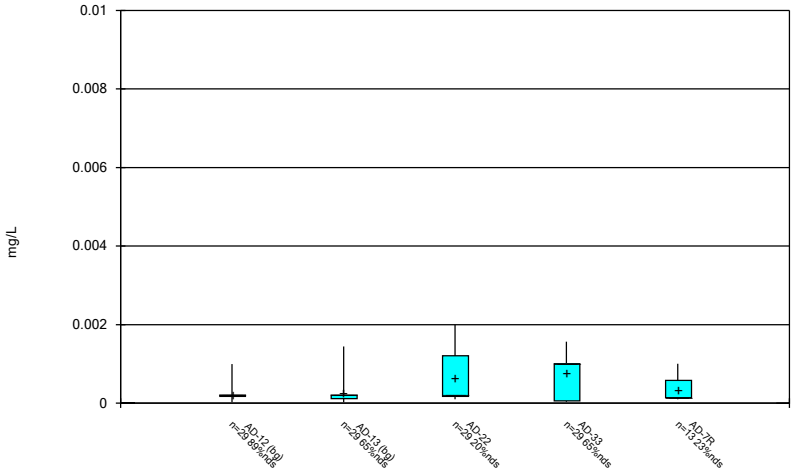
Constituent: Molybdenum, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 7/28/2025 2:01 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE C
Outlier Summary

Outlier Summary

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 7/28/2025, 2:51 PM

	AD-33 Arsenic, total (mg/L)	AD-33 Barium, total (mg/L)	AD-13 Cadmium, total (mg/L)	AD-33 Chromium, total (mg/L)	AD-33 Cobalt, total (mg/L)	AD-12 Molybdenum, total (mg/L)	AD-13 Molybdenum, total (mg/L)	AD-22 Molybdenum, total (mg/L)	AD-33 Molybdenum, total (mg/L)	AD-12 Thallium, total (mg/L)
9/7/2016	0.067 (o)	0.163 (o)		0.125 (o)	0.033 (o)					
4/11/2017			0.002 (o)							
2/27/2019						<0.0005 (o)	<0.0005 (o)	<0.0005 (o)	<0.0005 (o)	<0.0002 (o)
5/21/2019						<0.0005 (o)	<0.0005 (o)			
5/22/2019								<0.0005 (o)	<0.0005 (o)	

	AD-13 Thallium, total (mg/L)	AD-22 Thallium, total (mg/L)	AD-33 Thallium, total (mg/L)
9/7/2016			
4/11/2017			
2/27/2019	<0.0002 (o)	<0.01 (o)	<0.001 (o)
5/21/2019			
5/22/2019			

FIGURE D

UTLs

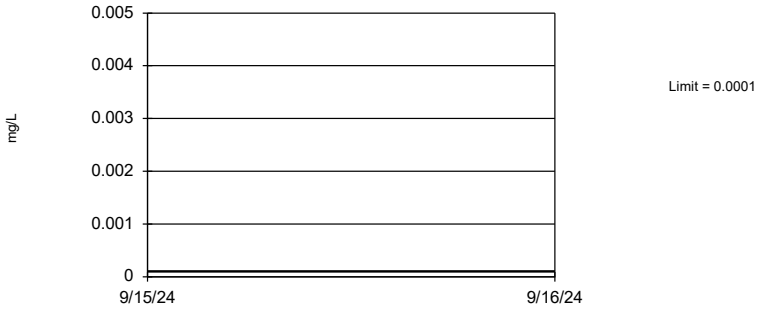
Upper Tolerance Limits

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 12/5/2024, 12:59 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	0.0001	56	n/a	n/a	85.71	n/a	n/a	0.05656	NP Inter(NDs)
Arsenic, total (mg/L)	0.009	56	n/a	n/a	21.43	n/a	n/a	0.05656	NP Inter(normality)
Barium, total (mg/L)	0.05439	56	0.03258	0.01073	0	None	No	0.05	Inter
Beryllium, total (mg/L)	0.002	56	n/a	n/a	10.71	n/a	n/a	0.05656	NP Inter(normality)
Cadmium, total (mg/L)	0.00086	55	n/a	n/a	63.64	n/a	n/a	0.05954	NP Inter(NDs)
Chromium, total (mg/L)	0.004	56	n/a	n/a	23.21	n/a	n/a	0.05656	NP Inter(normality)
Cobalt, total (mg/L)	0.06	56	n/a	n/a	0	n/a	n/a	0.05656	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	3.112	56	1.404	0.8406	0	None	No	0.05	Inter
Fluoride, total (mg/L)	0.748	58	n/a	n/a	22.41	n/a	n/a	0.05105	NP Inter(normality)
Lead, total (mg/L)	0.0002	56	n/a	n/a	67.86	n/a	n/a	0.05656	NP Inter(NDs)
Lithium, total (mg/L)	0.165	56	n/a	n/a	1.786	n/a	n/a	0.05656	NP Inter(normality)
Mercury, total (mg/L)	0.00001928	56	n/a	n/a	89.29	n/a	n/a	0.05656	NP Inter(NDs)
Molybdenum, total (mg/L)	0.0011	52	n/a	n/a	94.23	n/a	n/a	0.06944	NP Inter(NDs)
Selenium, total (mg/L)	0.00386	56	n/a	n/a	53.57	n/a	n/a	0.05656	NP Inter(NDs)
Thallium, total (mg/L)	0.001443	54	n/a	n/a	79.63	n/a	n/a	0.06267	NP Inter(NDs)

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 56 background values. 85.71% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Antimony, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. 21.43% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Arsenic, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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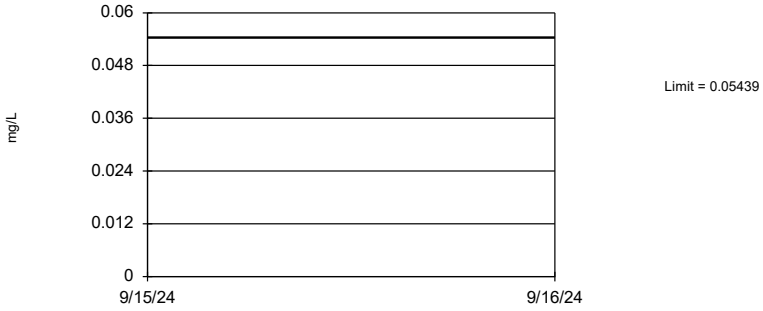
Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary: Mean=0.03258, Std. Dev.=0.01073, n=56. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9429, critical = 0.942. Report alpha = 0.05.

Constituent: Barium, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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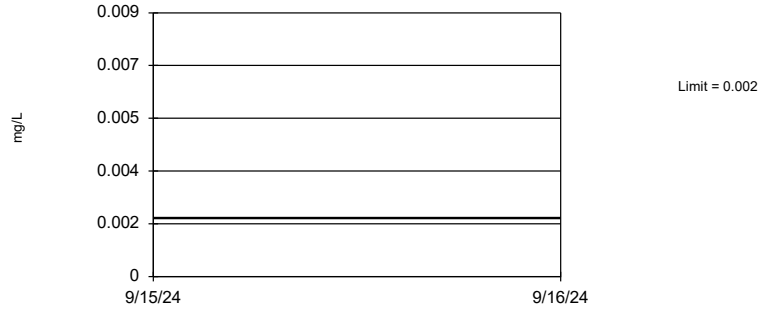
Tolerance Limit

Interwell Non-parametric

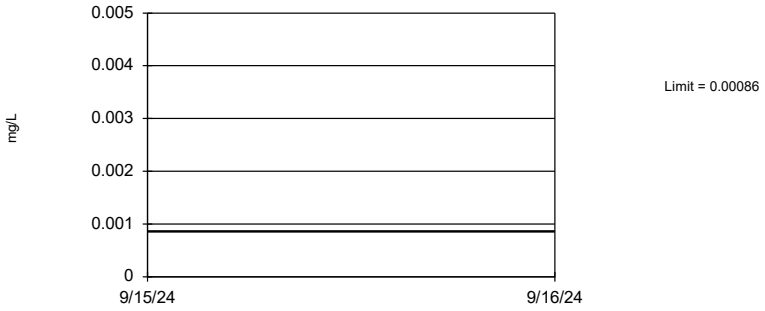


Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. 10.71% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Beryllium, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

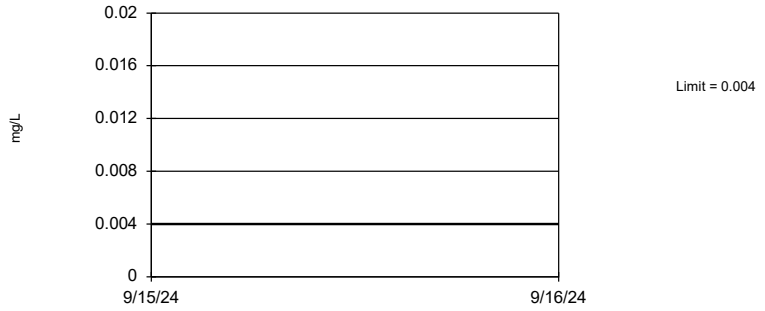


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 55 background values. 63.64% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05954.

Constituent: Cadmium, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. 23.21% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Chromium, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

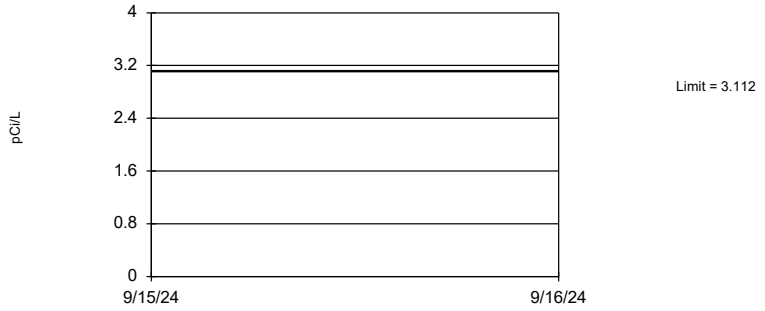
Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Cobalt, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Parametric

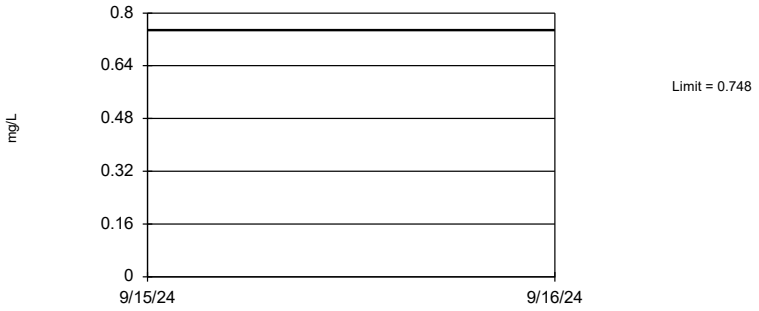


95% coverage. Background Data Summary: Mean=1.404, Std. Dev.=0.8406, n=56. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9629, critical = 0.942. Report alpha = 0.05.

Constituent: Combined Radium 226 + 228 Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limit
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

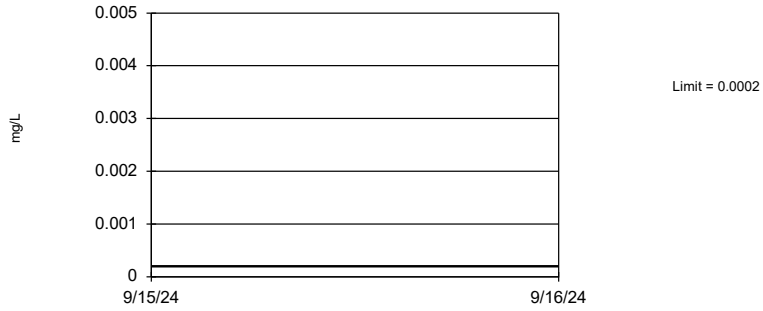


Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 58 background values. 22.41% NDs. 92.38% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05105.

Constituent: Fluoride, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

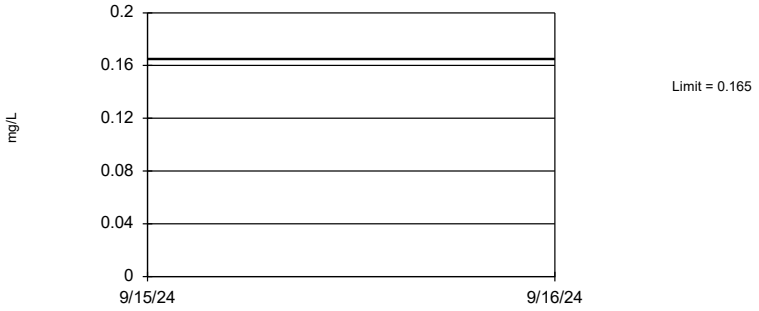


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 56 background values. 67.86% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Lead, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

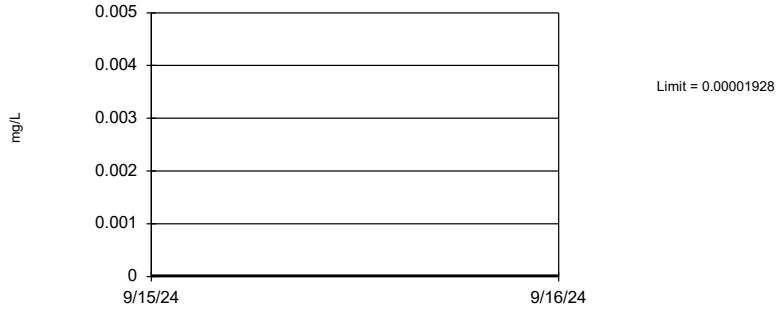


Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. 1.786% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Lithium, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

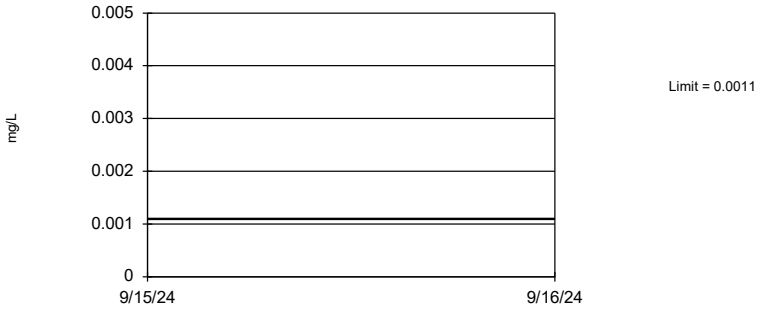


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 56 background values. 89.29% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Mercury, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 52 background values. 94.23% NDs. 91.6% coverage at alpha=0.01; 94.34% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.06944.

Constituent: Molybdenum, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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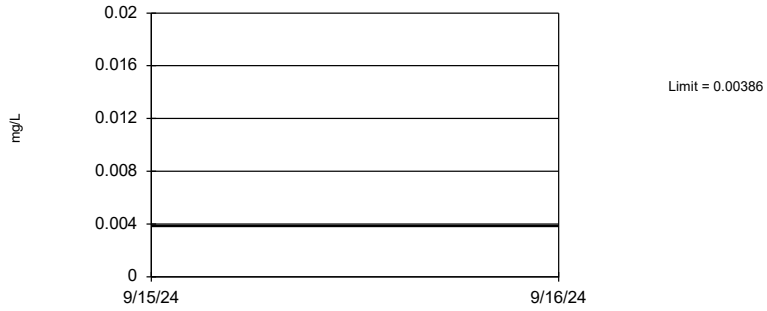
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 56 background values. 53.57% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05656.

Constituent: Selenium, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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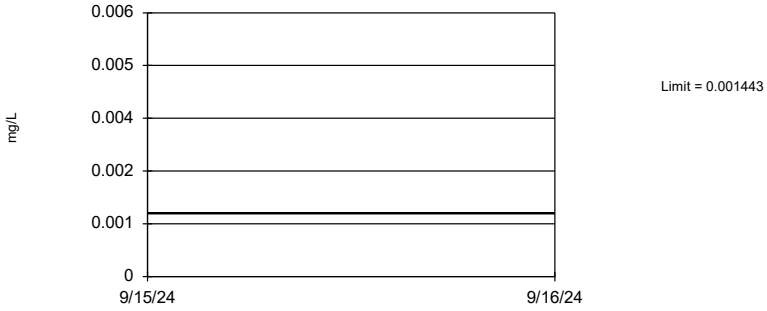
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 54 background values. 79.63% NDs. 91.99% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.06267.

Constituent: Thallium, total Analysis Run 12/5/2024 12:59 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE E

GWPS

PIRKEY STACKOUT GWPS			
Constituent Name	**MCL**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006	0.0001	0.006
Arsenic, Total (mg/L)	0.01	0.009	0.01
Barium, Total (mg/L)	2	0.055	2
Beryllium, Total (mg/L)	0.004	0.002	0.004
Cadmium, Total (mg/L)	0.005	0.00086	0.005
Chromium, Total (mg/L)	0.1	0.004	0.1
Cobalt, Total (mg/L)	n/a	0.06	0.06
Combined Radium, Total (pCi/L)	5	3.11	5
Fluoride, Total (mg/L)	4	0.75	4
Lead, Total (mg/L)	n/a	0.0002	0.0002
Lithium, Total (mg/L)	n/a	0.17	0.17
Mercury, Total (mg/L)	0.002	0.000019	0.002
Molybdenum, Total (mg/L)	n/a	0.0011	0.0011
Selenium, Total (mg/L)	0.05	0.0039	0.05
Thallium, Total (mg/L)	0.002	0.0014	0.002

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

FIGURE F
Confidence Intervals

Confidence Intervals - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 7/28/2025, 2:07 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium, total (mg/L)	**AD-22**	**0.008152**	**0.004988**	**0.004**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**
Cobalt, total (mg/L)	**AD-22**	**0.09774**	**0.07386**	**0.06**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**
Lead, total (mg/L)	**AD-33**	**0.0003157**	**0.0002299**	**0.0002**	**Yes**	**17**	**0**	**x^(1/3)**	**0.01**	**Param.**
Mercury, total (mg/L)	**AD-33**	**0.006775**	**0.00362**	**0.002**	**Yes**	**17**	**0**	**x^(1/3)**	**0.01**	**Param.**

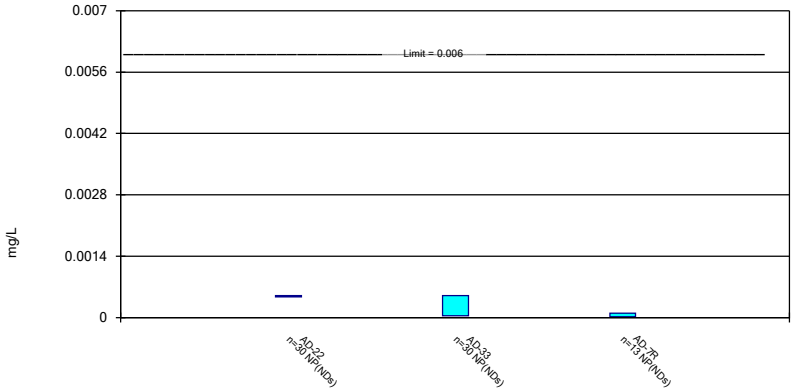
Confidence Intervals - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 7/28/2025, 2:07 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony, total (mg/L)	AD-22	0.0005	0.0005	0.006	No	30	96.67	No	0.01	NP (NDs)
Antimony, total (mg/L)	AD-33	0.0005	0.00004	0.006	No	30	86.67	No	0.01	NP (NDs)
Antimony, total (mg/L)	AD-7R	0.0001	0.00002	0.006	No	13	61.54	No	0.01	NP (NDs)
Arsenic, total (mg/L)	AD-22	0.005247	0.002585	0.01	No	30	0	ln(x)	0.01	Param.
Arsenic, total (mg/L)	AD-33	0.001198	0.0006893	0.01	No	29	6.897	ln(x)	0.01	Param.
Arsenic, total (mg/L)	AD-7R	0.001251	0.0004146	0.01	No	13	0	x^(1/3)	0.01	Param.
Barium, total (mg/L)	AD-22	0.0241	0.0167	2	No	30	0	No	0.01	NP (normality)
Barium, total (mg/L)	AD-33	0.0516	0.04569	2	No	29	0	No	0.01	Param.
Barium, total (mg/L)	AD-7R	0.0623	0.04381	2	No	13	0	No	0.01	Param.
Beryllium, total (mg/L)	**AD-22**	**0.008152**	**0.004988**	**0.004**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**
Beryllium, total (mg/L)	AD-33	0.0014	0.001	0.004	No	30	0	No	0.01	NP (normality)
Beryllium, total (mg/L)	AD-7R	0.002161	0.00161	0.004	No	13	0	No	0.01	Param.
Cadmium, total (mg/L)	AD-22	0.001251	0.0007933	0.005	No	30	0	No	0.01	Param.
Cadmium, total (mg/L)	AD-33	0.0009847	0.000049	0.005	No	30	30	No	0.01	NP (normality)
Cadmium, total (mg/L)	AD-7R	0.0003645	0.0002793	0.005	No	13	0	x^2	0.01	Param.
Chromium, total (mg/L)	AD-22	0.002	0.0004	0.1	No	30	10	No	0.01	NP (normality)
Chromium, total (mg/L)	AD-33	0.001093	0.0003447	0.1	No	29	10.34	ln(x)	0.01	Param.
Chromium, total (mg/L)	AD-7R	0.00137	0.00023	0.1	No	13	0	No	0.01	NP (normality)
Cobalt, total (mg/L)	**AD-22**	**0.09774**	**0.07386**	**0.06**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**
Cobalt, total (mg/L)	AD-33	0.01102	0.008997	0.06	No	29	0	No	0.01	Param.
Cobalt, total (mg/L)	AD-7R	0.01993	0.01699	0.06	No	13	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	AD-22	4.537	3.322	5	No	30	0	x^(1/3)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	AD-33	2.954	1.798	5	No	30	0	x^(1/3)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	AD-7R	3.604	2.196	5	No	13	0	No	0.01	Param.
Fluoride, total (mg/L)	AD-22	1.03	0.28	4	No	32	18.75	No	0.01	NP (normality)
Fluoride, total (mg/L)	AD-33	0.2472	0.1231	4	No	31	29.03	sqrt(x)	0.01	Param.
Fluoride, total (mg/L)	AD-7R	0.1747	0.136	4	No	13	0	No	0.01	Param.
Lead, total (mg/L)	AD-22	0.000277	0.0002	0.0002	No	30	26.67	No	0.01	NP (normality)
Lead, total (mg/L)	**AD-33**	**0.0003157**	**0.0002299**	**0.0002**	**Yes**	**17**	**0**	**x^(1/3)**	**0.01**	**Param.**
Lead, total (mg/L)	AD-7R	0.0002782	0.00007339	0.0002	No	13	30.77	sqrt(x)	0.01	Param.
Lithium, total (mg/L)	AD-22	0.1847	0.1347	0.17	No	30	0	No	0.01	Param.
Lithium, total (mg/L)	AD-33	0.026	0.0194	0.17	No	30	3.333	No	0.01	NP (normality)
Lithium, total (mg/L)	AD-7R	0.06413	0.04739	0.17	No	13	0	No	0.01	Param.
Mercury, total (mg/L)	AD-22	0.0004866	0.00006948	0.002	No	17	5.882	x^(1/3)	0.01	Param.
Mercury, total (mg/L)	**AD-33**	**0.006775**	**0.00362**	**0.002**	**Yes**	**17**	**0**	**x^(1/3)**	**0.01**	**Param.**
Mercury, total (mg/L)	AD-7R	0.00007783	0.000009355	0.002	No	13	7.692	sqrt(x)	0.01	Param.
Molybdenum, total (mg/L)	AD-22	0.0005	0.0001	0.0011	No	28	92.86	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	AD-33	0.0007365	0.0005	0.0011	No	28	96.43	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	AD-7R	0.0005	0.0001	0.0011	No	13	92.31	No	0.01	NP (NDs)
Selenium, total (mg/L)	AD-22	0.007158	0.003519	0.05	No	30	20	No	0.01	Param.
Selenium, total (mg/L)	AD-33	0.00493	0.0017	0.05	No	30	26.67	No	0.01	NP (normality)
Selenium, total (mg/L)	AD-7R	0.001726	0.0005651	0.05	No	13	0	No	0.01	Param.
Thallium, total (mg/L)	AD-22	0.001161	0.00018	0.002	No	29	20.69	No	0.01	NP (normality)
Thallium, total (mg/L)	AD-33	0.001	0.00006	0.002	No	29	65.52	No	0.01	NP (NDs)
Thallium, total (mg/L)	AD-7R	0.001	0.00011	0.002	No	13	23.08	No	0.01	NP (normality)

Non-Parametric Confidence Interval

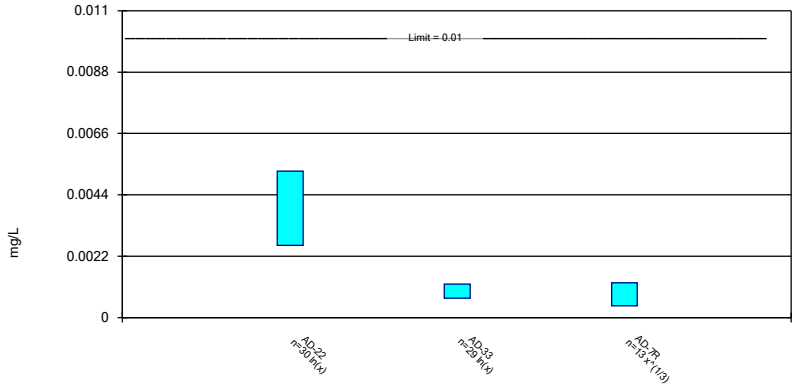
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

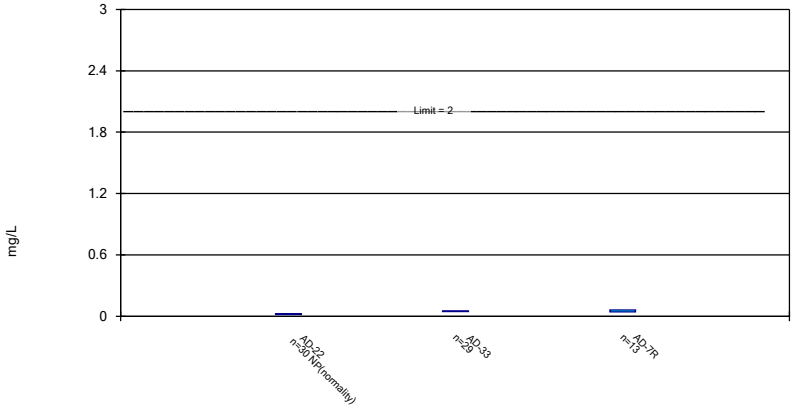
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

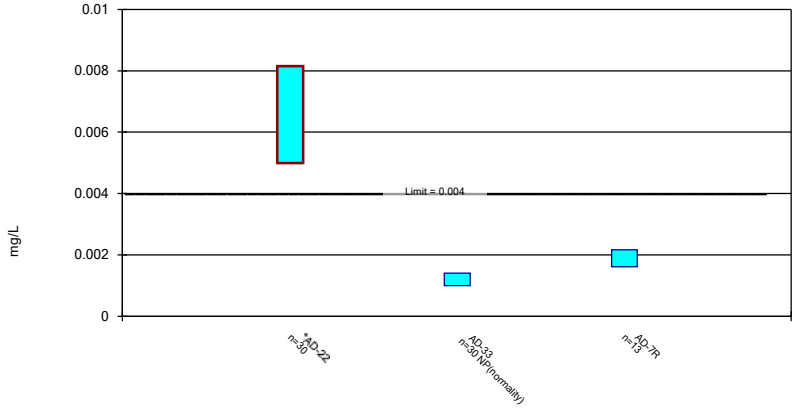
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

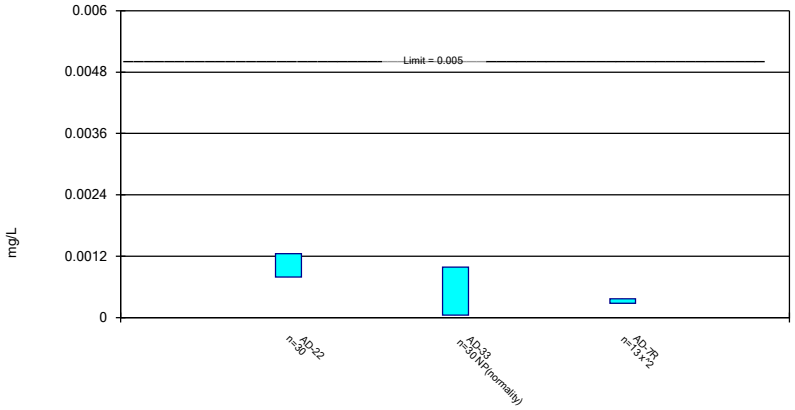
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

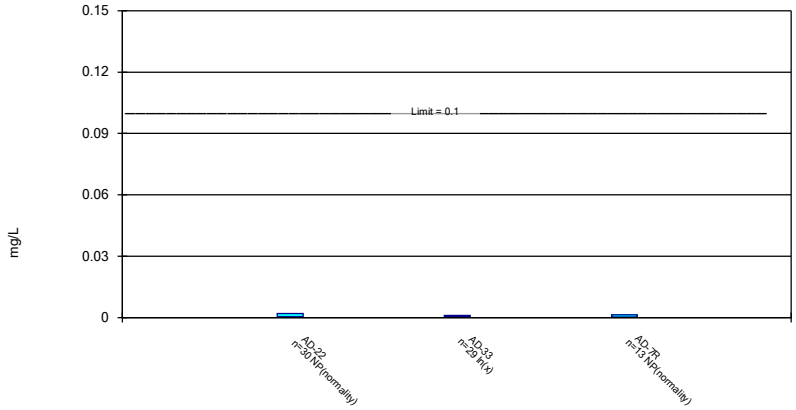
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

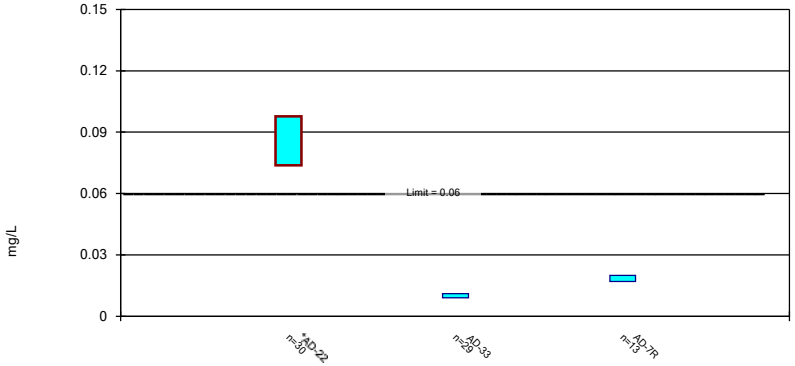
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

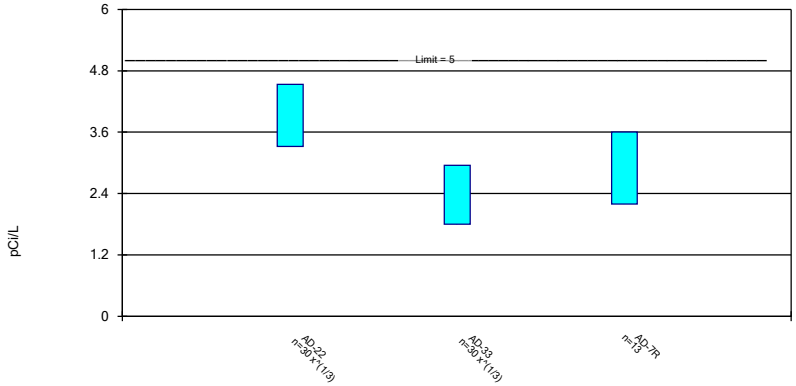
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

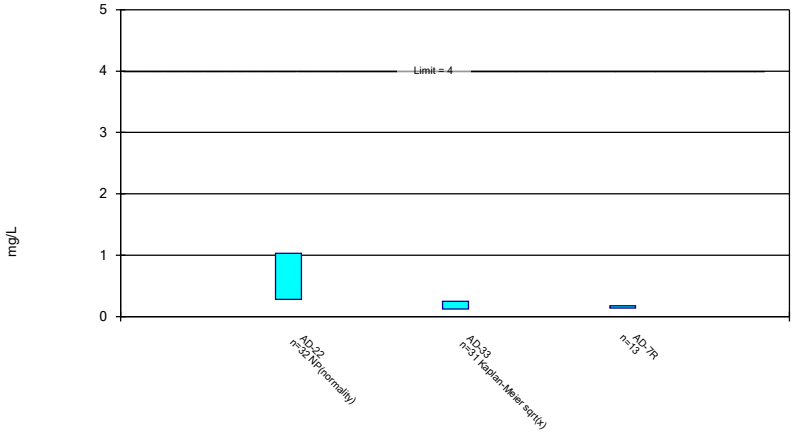
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

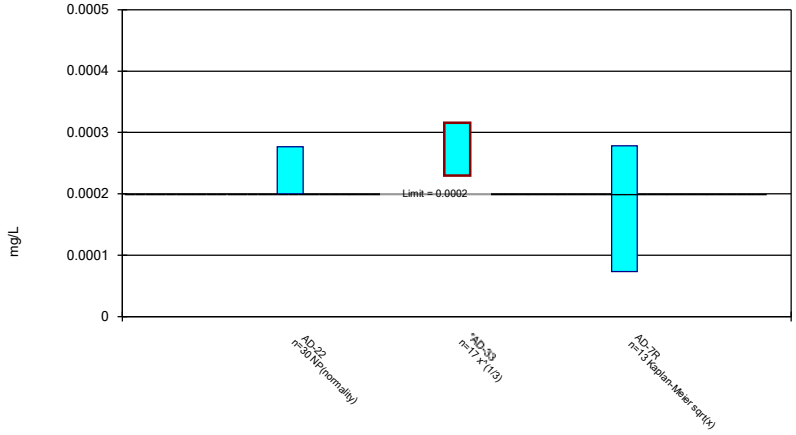
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

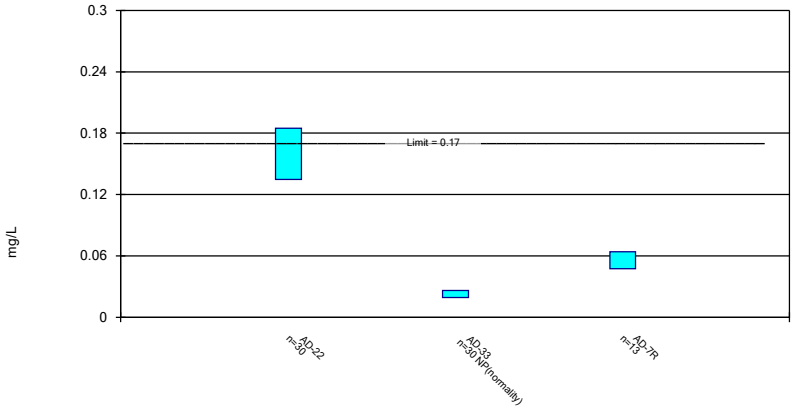
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

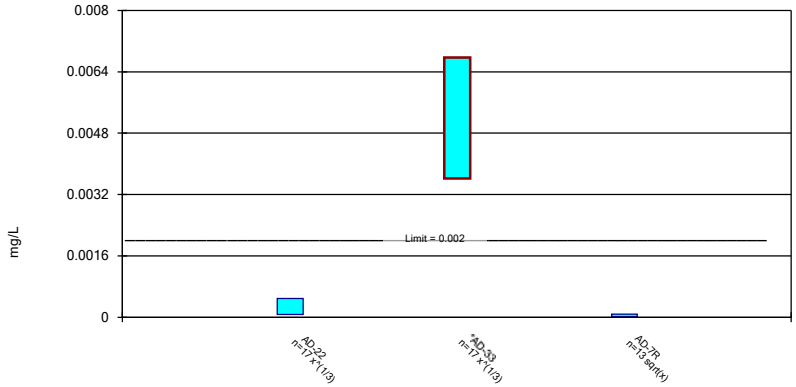
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

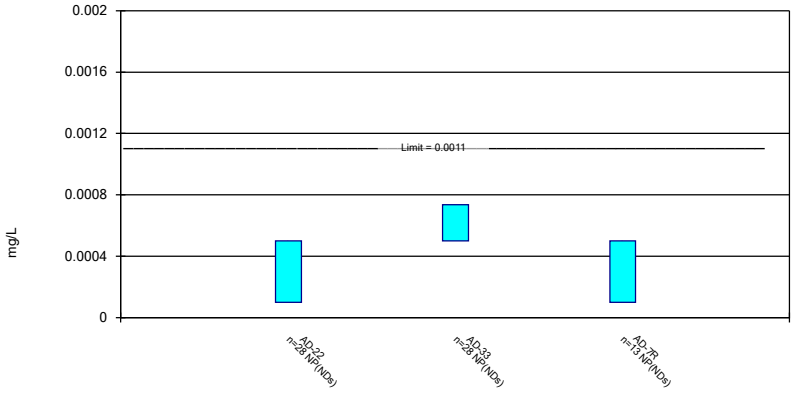
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Non-Parametric Confidence Interval

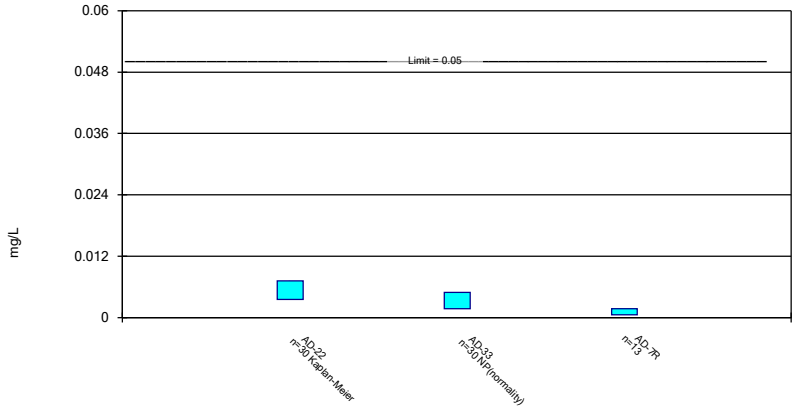
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Molybdenum, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

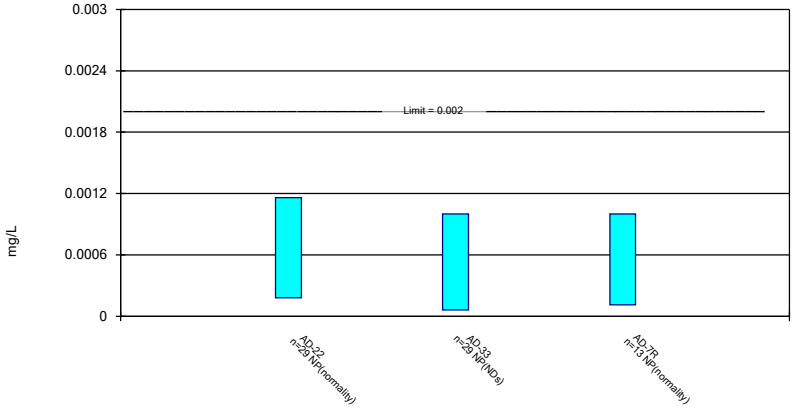
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Non-Parametric Confidence Interval

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



Constituent: Thallium, total Analysis Run 7/28/2025 2:05 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Deseasonalized Confidence Intervals - Well AD-22 - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 7/28/2025, 2:24 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium, total (mg/L)	**AD-22**	**0.007719**	**0.00542**	**0.004**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**
Cobalt, total (mg/L)	**AD-22**	**0.09376**	**0.07785**	**0.06**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**

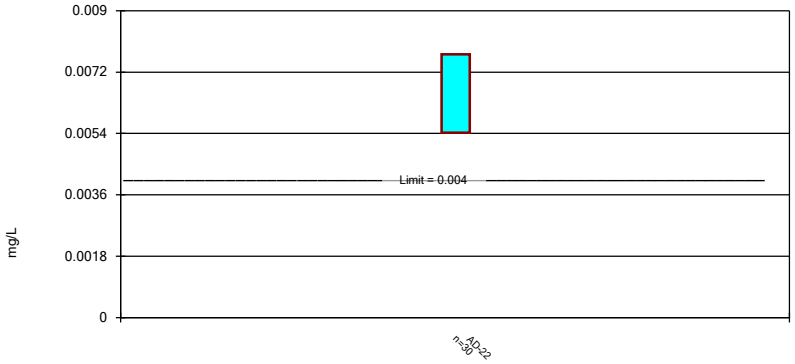
Deseasonalized Confidence Intervals - Well AD-22 - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 7/28/2025, 2:24 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium, total (mg/L)	**AD-22**	**0.007719**	**0.00542**	**0.004**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**
Cobalt, total (mg/L)	**AD-22**	**0.09376**	**0.07785**	**0.06**	**Yes**	**30**	**0**	**No**	**0.01**	**Param.**
Combined Radium 226 + 228 (pCi/L)	AD-22	4.616	3.49	5	No	30	0	No	0.01	Param.
Lithium, total (mg/L)	AD-22	0.1812	0.1382	0.17	No	30	0	No	0.01	Param.

Parametric Confidence Interval

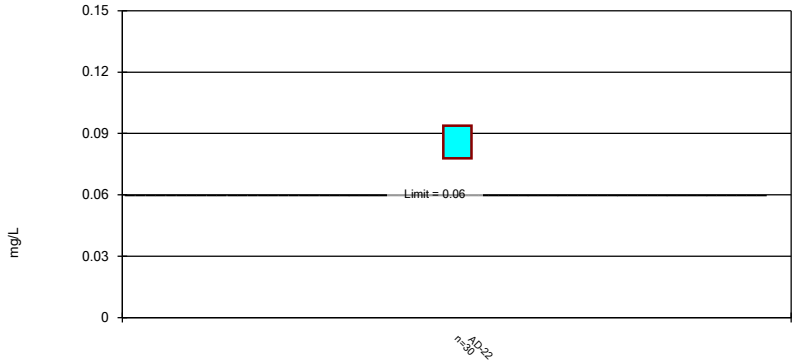
Compliance limit is exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total, Alt. Values Analysis Run 7/28/2025 2:17 PM View: Deaseasonalized Values
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

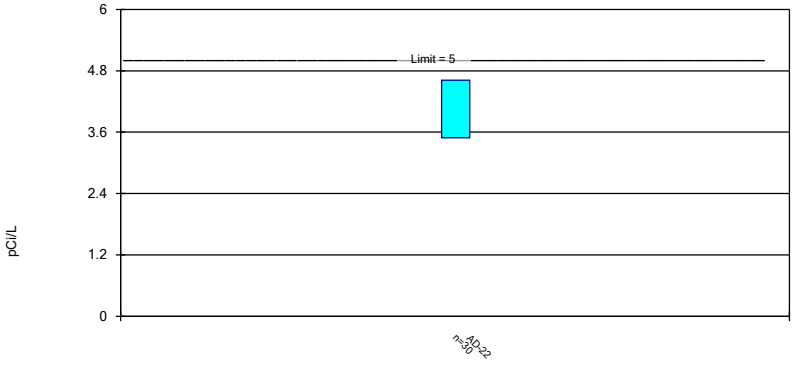
Compliance limit is exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total, Alt. Values Analysis Run 7/28/2025 2:18 PM View: Deaseasonalized Values
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

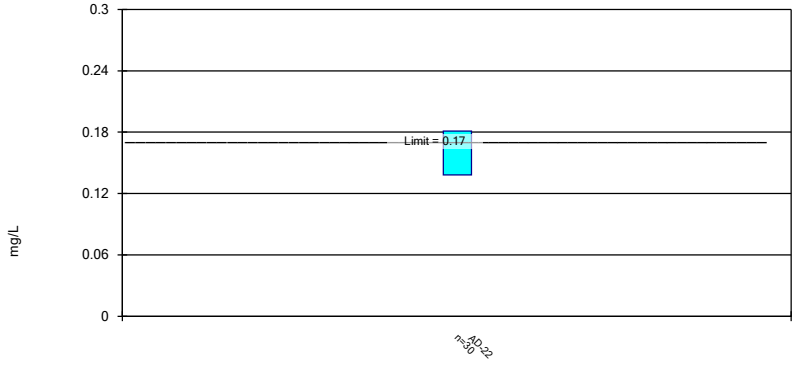
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228, Alt. Values Analysis Run 7/28/2025 2:19 PM View: Deaseaso
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

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



Constituent: Lithium, total, Alt. Values Analysis Run 7/28/2025 2:19 PM View: Deaseasonalized Values
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE G
Appendix IV Trend Tests

Appendix IV Trend Tests - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 7/29/2025, 12:38 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Beryllium, total (mg/L)	**AD-12 (bg)**	**-0.000004723**	**-167**	**-112**	**Yes**	**30**	**10**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	**AD-13 (bg)**	**-0.00003527**	**-113**	**-112**	**Yes**	**30**	**10**	**n/a**	**n/a**	**0.05**	**NP**
Cobalt, total (mg/L)	**AD-12 (bg)**	**-0.00004495**	**-172**	**-112**	**Yes**	**30**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	**AD-12 (bg)**	**-0.00001227**	**-191**	**-112**	**Yes**	**30**	**36.67**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	**AD-33**	**0.00001067**	**229**	**106**	**Yes**	**29**	**34.48**	**n/a**	**n/a**	**0.05**	**NP**
Mercury, total (mg/L)	**AD-33**	**0.0007576**	**311**	**112**	**Yes**	**30**	**0**	**n/a**	**n/a**	**0.05**	**NP**

Appendix IV Trend Tests - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 7/29/2025, 12:38 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Beryllium, total (mg/L)	**AD-12 (bg)**	**-0.000004723**	**-167**	**-112**	**Yes**	**30**	**10**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	**AD-13 (bg)**	**-0.00003527**	**-113**	**-112**	**Yes**	**30**	**10**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	AD-22	-0.0002542	-60	-112	No	30	0	n/a	n/a	0.05	NP
Cobalt, total (mg/L)	**AD-12 (bg)**	**-0.00004495**	**-172**	**-112**	**Yes**	**30**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Cobalt, total (mg/L)	AD-13 (bg)	0.0004979	70	112	No	30	0	n/a	n/a	0.05	NP
Cobalt, total (mg/L)	AD-22	0.001018	36	112	No	30	0	n/a	n/a	0.05	NP
Lead, total (mg/L)	**AD-12 (bg)**	**-0.00001227**	**-191**	**-112**	**Yes**	**30**	**36.67**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	AD-13 (bg)	0	-15	-112	No	30	93.33	n/a	n/a	0.05	NP
Lead, total (mg/L)	**AD-33**	**0.00001067**	**229**	**106**	**Yes**	**29**	**34.48**	**n/a**	**n/a**	**0.05**	**NP**
Mercury, total (mg/L)	AD-12 (bg)	0	-112	-112	No	30	83.33	n/a	n/a	0.05	NP
Mercury, total (mg/L)	AD-13 (bg)	0	-76	-112	No	30	90	n/a	n/a	0.05	NP
Mercury, total (mg/L)	**AD-33**	**0.0007576**	**311**	**112**	**Yes**	**30**	**0**	**n/a**	**n/a**	**0.05**	**NP**

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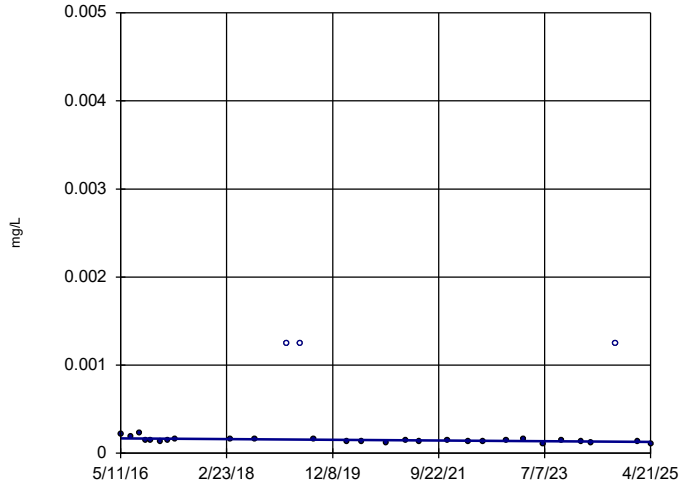
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 30

Slope = -0.000004723 units per year.

Mann-Kendall statistic = -167
critical = -112

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Beryllium, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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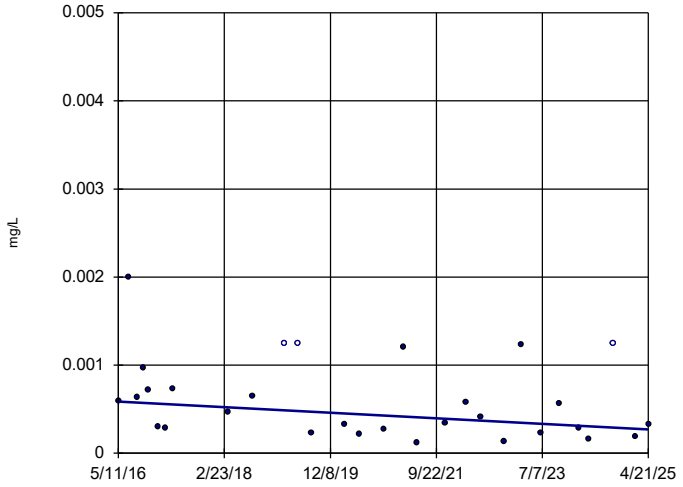
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 30

Slope = -0.00003527 units per year.

Mann-Kendall statistic = -113
critical = -112

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Beryllium, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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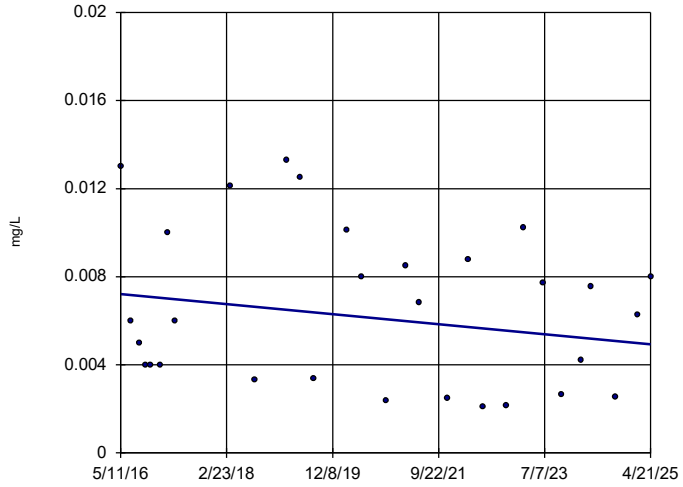
Sen's Slope Estimator

AD-22



n = 30

Slope = -0.0002542 units per year.

Mann-Kendall statistic = -60
critical = -112

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Beryllium, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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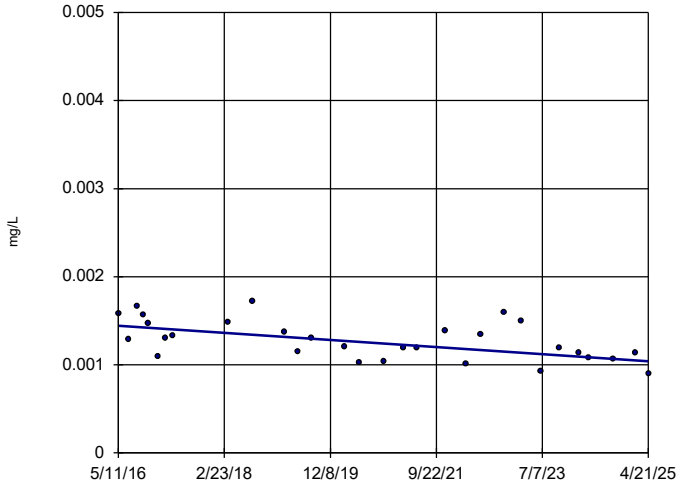
Sen's Slope Estimator

AD-12 (bg)



n = 30

Slope = -0.00004495 units per year.

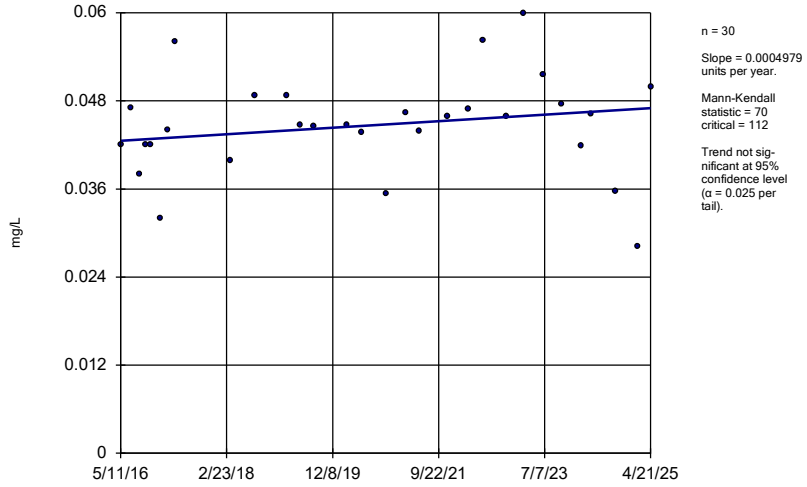
Mann-Kendall statistic = -172
critical = -112

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sen's Slope Estimator

AD-13 (bg)



n = 30

Slope = 0.0004979 units per year.

Mann-Kendall statistic = 70
critical = 112

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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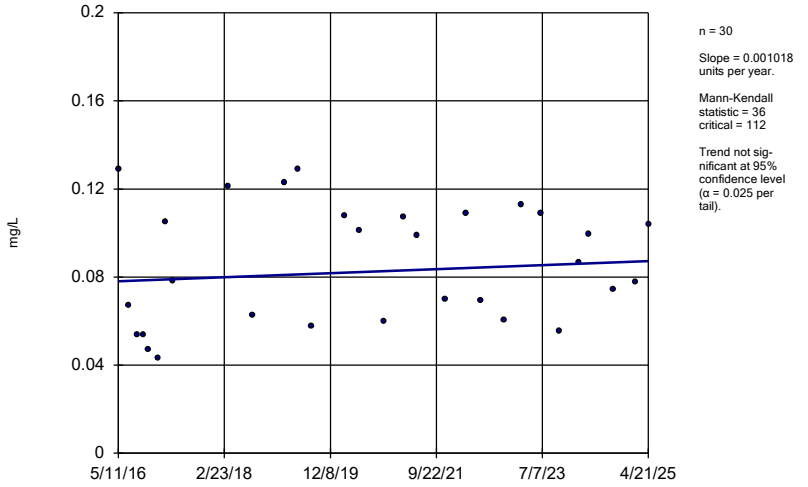
Sen's Slope Estimator

AD-22



n = 30

Slope = 0.001018 units per year.

Mann-Kendall statistic = 36
critical = 112

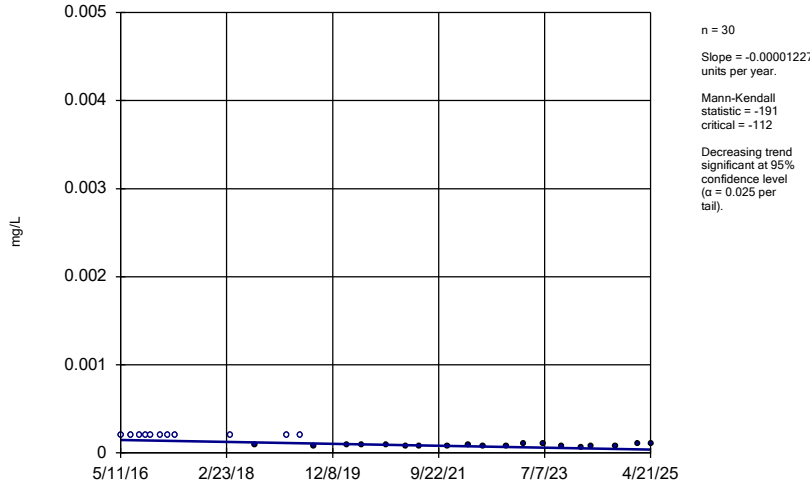
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 30

Slope = -0.00001227 units per year.

Mann-Kendall statistic = -191
critical = -112

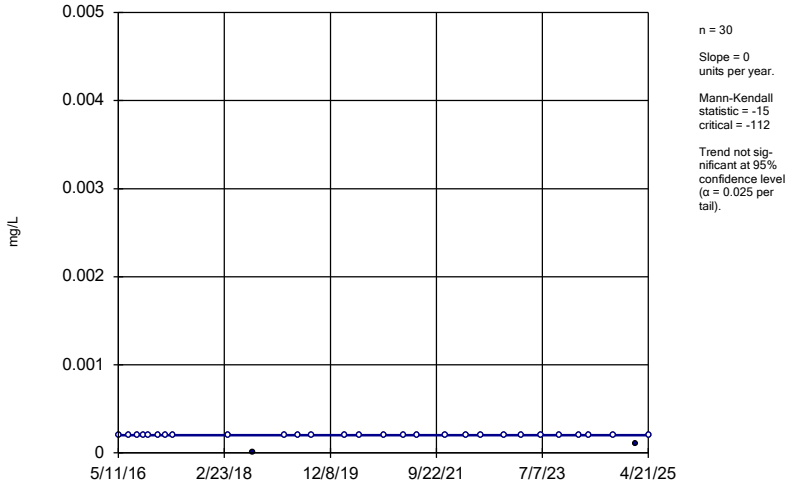
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 30

Slope = 0 units per year.

Mann-Kendall statistic = -15
critical = -112

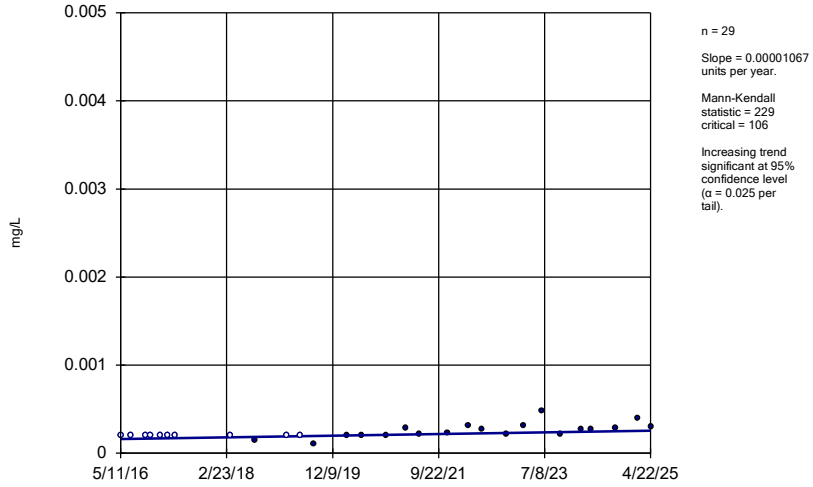
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-33



n = 29

Slope = 0.00001067 units per year.

Mann-Kendall statistic = 229
critical = 106

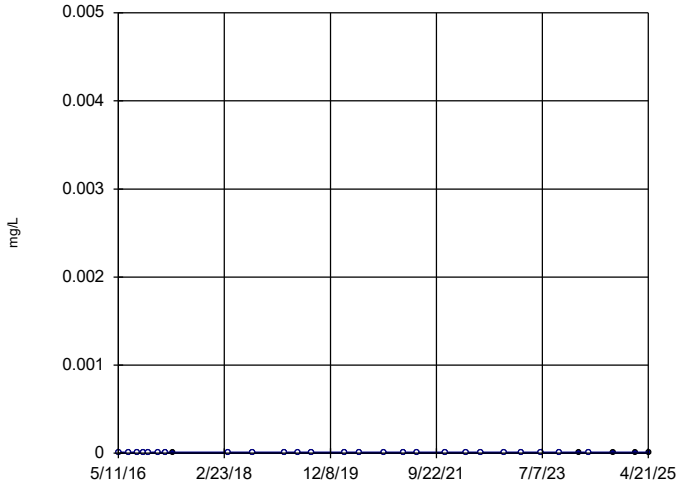
Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 30

Slope = 0
units per year.

Mann-Kendall statistic = -112
critical = -112

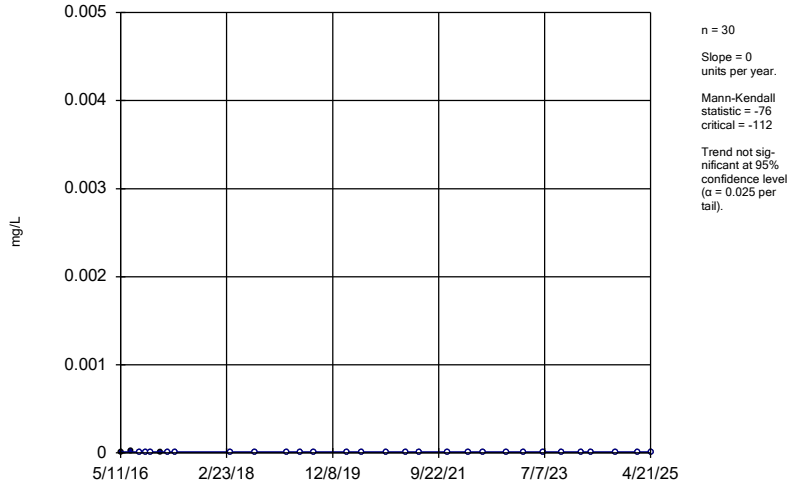
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 30

Slope = 0
units per year.

Mann-Kendall statistic = -76
critical = -112

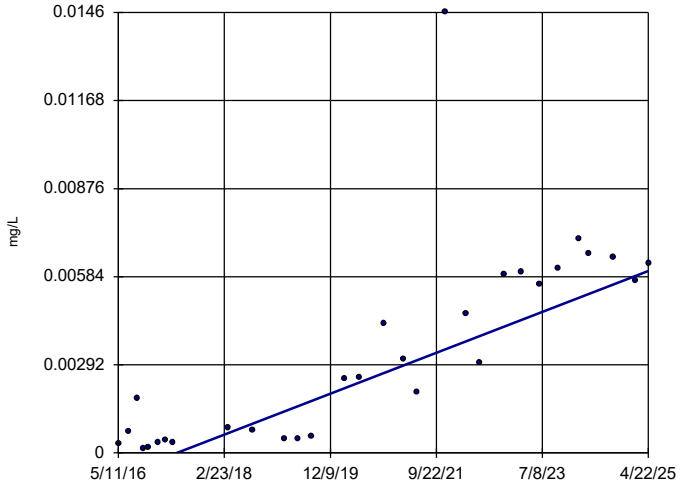
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.0.27 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

AD-33



n = 30

Slope = 0.0007576 units per year.

Mann-Kendall statistic = 311
critical = 112

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 7/29/2025 12:37 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Geosyntec consultants

engineers | scientists | innovators

STATISTICAL ANALYSIS SUMMARY, 2025 2ND SEMIANNUAL EVENT FLUE GAS DESULFURIZATION (FGD) STACKOUT AREA

H.W. Pirkey Power Plant

Hallsville, Texas

Prepared for

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December 2025

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ACRONYMS AND ABBREVIATIONS

ASD	alternative source demonstration
CCR	coal combustion residuals
FGD	flue gas desulfurization
GWPS	groundwater protection standard
LCL	lower confidence limit
LPL	lower prediction limit
mg/L	milligrams per liter
PQL	practical quantitation limit
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
TCEQ	Texas Commission on Environmental Quality
TDS	total dissolved solids
UPL	upper prediction limit

1. INTRODUCTION

In accordance with Texas Commission on Environmental Quality (TCEQ) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Texas Administrative Code Title 30, Chapter 352), groundwater monitoring has been conducted at the Flue Gas Desulfurization (FGD) Stackout Area, an existing CCR unit at the Pirkey Power Plant in Hallsville, Texas. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above site-specific groundwater protection standards (GWPSs).

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for boron, chloride, and sulfate at the FGD Stackout Area (Geosyntec 2018). An alternative source was not identified at the time, so assessment monitoring was initiated and GWPSs were set in accordance with § 352.951(b). One assessment monitoring event was conducted at the FGD Stackout Area in September 2025 in accordance with § 352.951(a). The results of the September 2025 assessment event are documented in this report.

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

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. GWPSs were reestablished for the Appendix IV parameters. Confidence intervals were calculated for Appendix IV parameters at the compliance wells to assess whether statistically significant levels (SSLs) of Appendix IV parameters were present above the GWPS. SSLs were identified for beryllium, cobalt, lead, and mercury. Therefore, either the unit will move to an assessment of corrective measures, or an alternative source demonstration (ASD) will be conducted to evaluate if the unit can remain in assessment monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. FGD STACKOUT AREA EVALUATION

2.1 Data Validation and QA/QC

One set of samples was collected for analysis from each background and compliance well to meet the requirements of § 352.951(a) in September 2025. Samples from the September 2025 sampling event were analyzed for all Appendix III and Appendix IV parameters. A summary of data collected during this assessment monitoring event are presented in Table 1.

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

A data quality review was completed to assess if the data met the objectives outlined in TCEQ Draft Technical Guidance No. 32 related to groundwater sampling and analysis (TCEQ 2020). The data were determined usable for supporting project objectives, as documented in the review memorandum provided in Attachment B. The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.10.1.02 statistics software. The export file was checked against the analytical data for transcription errors and completeness.

2.2 Statistical Analysis

Statistical analyses for the FGD Stackout Area were conducted in accordance with the November 2021 *Statistical Analysis Plan* (Geosyntec 2021). Time series plots and results for all completed statistical tests are provided in Attachment C. The data obtained in September 2025 were screened for potential outliers. No potential outliers were identified for this event.

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix IV parameter in accordance with the Statistical Analysis Plan (Geosyntec 2021). The established GWPS was set to whichever was greater of the background concentration and the maximum contaminant level for each Appendix IV parameter. To determine background concentrations, an upper tolerance limit was calculated using data that were pooled from the background wells collected during the background monitoring and assessment monitoring events. Tolerance limits were calculated parametrically with 95% coverage and 95% confidence for barium and combined radium. Nonparametric tolerance limits were calculated for arsenic, beryllium, chromium, cobalt, fluoride, and lithium due to apparent nonnormal distributions, and for antimony, cadmium, lead, mercury, molybdenum, selenium, and thallium due to a high nondetect frequency. Upper tolerance limits and the final GWPSs are summarized in Table 2.

2.2.2 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$). However, nonparametric

confidence limits were calculated in some cases (e.g., when the data did not appear to be normally distributed or when the nondetect frequency was too high).

Seasonal patterns were observed for several parameters at AD-22 based on the time series graphs (Attachment C). Kruskal-Wallis tests were performed to test whether differences between the results from different seasons were statistically significant for all Appendix IV constituents. Statistically significant differences were found for beryllium, cadmium, cobalt, combined radium, fluoride, lithium, and selenium at AD-22. Where the Kruskal-Wallis test found significant seasonal effects and at least one reported result was above the GWPS, the data for these well/parameter pairs were deseasonalized so that the resulting confidence limits correctly account for seasonality as a predictable pattern rather than a random variation or a release.

An SSL was concluded if the lower confidence limit (LCL) exceeded the GWPS (i.e., if the entire confidence interval was above the GWPS). Calculated confidence limits are shown in Attachment C.

The following SSLs were identified at the Pirkey FGD Stackout Area:

- The deseasonalized LCL for beryllium was above the GWPS of 0.00400 milligrams per liter (mg/L) at AD-22 (0.00530 mg/L).
- The deseasonalized LCL for cobalt was above the GWPS of 0.0600 mg/L at AD-22 (0.0771 mg/L).
- The LCL for lead exceeded the GWPS of 0.000200 mg/L at AD-33 (0.000248 mg/L).
- The LCL for mercury exceeded the GWPS of 0.00200 mg/L at AD-33 (0.00511 mg/L).

As a result, the Pirkey FGD Stackout Area will either move to an assessment of corrective measures or an ASD will be conducted to evaluate if the unit can remain in assessment monitoring.

2.2.3 Establishment of Appendix III Prediction Limits

Upper prediction limits (UPLs) were previously established for all Appendix III parameters following the background monitoring period (Geosyntec 2018). Intrawell tests were used to evaluate potential SSIs for calcium, pH and total dissolved solids (TDS), and interwell tests were used to evaluate potential SSIs for boron, chloride, fluoride, and sulfate. Interwell and intrawell prediction limits are updated periodically during the assessment monitoring period as sufficient data become available.

For intrawell tests, insufficient data was available to compare against the existing background dataset, and so the prediction limits were not updated for the intrawell tests at this time. The intrawell prediction limits were previously calculated using historical data through April 2024 (Geosyntec 2024). The established intrawell prediction limits were used to evaluate the potential SSIs for calcium, pH, and TDS. Seasonality was observed in the datasets for calcium, pH, and TDS at AD-22 (Attachment C); as a result, the data for these well/parameter pairs were deseasonalized so that the resulting prediction limits correctly account for seasonality as a predictable pattern.

Prediction limits for the interwell tests were calculated using data collected through the September 2025 assessment monitoring event. New background well data were tested for outliers before being added to the background data set. Background well data were also evaluated for statistically significant trends using the Sen's Slope/Mann-Kendall trend test, and the results are included in Attachment C.

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

The updated interwell prediction limits for boron, chloride, fluoride, and sulfate and previously established intrawell prediction limits for calcium, pH, and TDS are summarized in Table 3. The UPLs were calculated for a one-of-two retesting procedure; i.e., if at least one sample in a series of two is not above the UPL, or in the case of pH, is neither less than the lower prediction limit (LPL) nor greater than the UPL, then it can be concluded that an SSI has not occurred. In practice, where the initial result is not above the UPL, or in the case of pH, is neither less than the LPL nor greater than the UPL, a second sample will not be collected. The retesting procedures allowed for an acceptably high statistical power that could detect changes at compliance wells for constituents evaluated using intrawell prediction limits.

2.2.4 Evaluation of Potential Appendix III SSIs

While SSLs were identified, a review of the Appendix III results were also completed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the September 2025 assessment monitoring event from each compliance well were compared to updated interwell and intrawell prediction limits to assess whether the results are above background values (Table 3).

The following concentrations were above the UPLs:

- Boron concentrations were above the interwell UPL of 0.0950 mg/L at AD-7R (0.566 mg/L) and AD-33 (0.135 mg/L).
- The chloride concentration was above the interwell UPL of 54.5 mg/L at AD-22 (84.9 mg/L).
- The sulfate concentration was above the interwell UPL of 138 mg/L at AD-22 (221 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the September 2025 sample was above the UPL or below the LPL in the case of pH.

2.3 Conclusions

A semiannual assessment monitoring event was conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, and no QA/QC issues that impacted data usability were identified. A review of outliers identified no potential outliers in the September 2025 data. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPS. SSLs were identified for beryllium, cobalt, lead, and mercury. Appendix III parameters were compared to calculated prediction limits, with exceedances identified for boron, chloride, and sulfate.

Based on this evaluation, the Pirkey FGD Stackout Area CCR unit will either move to an assessment of corrective measures or an ASD will be conducted to evaluate if the unit can remain in assessment monitoring.

3. REFERENCES

Geosyntec. 2018. Statistical Analysis Summary – Flue Gas Desulfurization Stackout Area, H.W. Pirkey Power Plant, Hallsville, Texas. Geosyntec Consultants, Inc. January.

Geosyntec. 2021. Statistical Analysis Plan – H.W. Pirkey Power Plant. Geosyntec Consultants, Inc. November.

Geosyntec. 2024. Statistical Analysis Summary, 2024 2nd Semiannual Event – Flue Gas Desulfurization Stackout Area, H.W. Pirkey Power Plant, Hallsville, Texas. Geosyntec Consultants, Inc. December.

TCEQ. 2020. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action Draft Technical Guidance No. 32. May.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Pirkey Plant – Flue Gas Desulfurization Stackout Pad

Parameter	Unit	AD-7R	AD-12	AD-13	AD-22	AD-33
		Compliance	Background	Background	Compliance	Compliance
		9/8/2025	9/8/2025	9/8/2025	9/8/2025	9/8/2025
Antimony	µg/L	0.1 U1	0.1 U1	0.1 U1	0.1 U1	0.1 U1
Arsenic	µg/L	0.99	0.09 J1	1.85	0.8	0.93
Barium	µg/L	60.1	17.2	36.8	17.3	40.9
Beryllium	µg/L	1.35	0.12	0.14	1.81	1.23
Boron	mg/L	0.566	0.081	0.058	0.023 J1	0.135
Cadmium	µg/L	0.336	0.006 J1	0.02 U1	0.465	0.052
Calcium	mg/L	2.46	0.18	6.11	9.16	1.69
Chloride	mg/L	27.5	4.61	26.1	84.9	11.3
Chromium	µg/L	0.27 J1	0.81	0.27 J1	0.54	0.28 J1
Cobalt	µg/L	15.2	0.95	34.8	54	10
Combined Radium	pCi/L	4.79 B1	1.90 B1, J1	3.0 B1	2.60 B1	1.79 L1, P2, J1
Fluoride	mg/L	0.14	0.07	0.39	0.21	0.31
Lead	µg/L	0.22	0.1 J1	0.2 U1	0.08 J1	0.31
Lithium	mg/L	0.0358	0.00589	0.14	0.101	0.0212
Mercury	µg/L	0.101	0.005	0.003 J1	0.1	6
Molybdenum	µg/L	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.5 U1
Selenium	µg/L	4.1	0.2 J1	0.5 U1	2.61	3.79
Sulfate	mg/L	34.1	3.11	44.5	221	49.1
Thallium	µg/L	0.13 J1	0.02 J1	0.2 U1	0.13 J1	0.05 J1
Total Dissolved Solids	mg/L	180	70	210	530	170
pH	SU	4.8	3.5	5.8	4.3	4.1

Notes:
B1: Analyte detected in method blank (MB) at or above the method criteria.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptan
mg/L: milligrams per liter
P2: The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.
pCi/L: picocuries per liter
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Pirkey Plant – Flue Gas Desulfurization Stackout Area

Constituent Name	MCL	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600	0.000100	0.00600
Arsenic, Total (mg/L)	0.0100	0.00900	0.0100
Barium, Total (mg/L)	2.00	0.058	2.00
Beryllium, Total (mg/L)	0.00400	0.00200	0.00400
Cadmium, Total (mg/L)	0.00500	0.000860	0.00500
Chromium, Total (mg/L)	0.100	0.00400	0.100
Cobalt, Total (mg/L)	n/a	0.0600	0.0600
Combined Radium, Total (pCi/L)	5.00	3.12	5.00
Fluoride, Total (mg/L)	4.00	0.748	4.00
Lead, Total (mg/L)	n/a	0.00020	0.00020
Lithium, Total (mg/L)	n/a	0.165	0.165
Mercury, Total (mg/L)	0.00200	0.0000193	0.00200
Molybdenum, Total (mg/L)	n/a	0.00110	0.00110
Selenium, Total (mg/L)	0.0500	0.00386	0.0500
Thallium, Total (mg/L)	0.00200	0.00144	0.00200

Notes:
1. Calculated UTL (Upper Tolerance Limit) represents site-specific background values.
2. Gray cells indicate the GWPS is based on the calculated UTL. Either the UTL is higher than the MCL or an MCL does not exist.
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 3. Appendix III Data Summary
Statistical Analysis Summary
Pirkey Plant – Flue Gas Desulfurization Stackout Pad

Analyte	Unit	Description	AD-7R	AD-22	AD-33
			9/8/2025	9/8/2025	9/8/2025
Boron	mg/L	Interwell Background Value (UPL)	0.0950		
		Analytical Result	**0.566**	0.023	**0.135**
Calcium	mg/L	Intrawell Background Value (UPL)	4.53	15.2	2.38
		Analytical Result	2.46	9.16	1.69
Chloride	mg/L	Interwell Background Value (UPL)	54.5		
		Analytical Result	27.5	**84.9**	11.3
Fluoride	mg/L	Interwell Background Value (UPL)	0.748		
		Analytical Result	0.14	0.21	0.31
pH	SU	Intrawell Background Value (UPL)	5.8	4.9	4.6
		Intrawell Background Value (LPL)	3.9	3.6	3.2
		Analytical Result	4.8	4.3	4.1
Sulfate	mg/L	Interwell Background Value (UPL)	138		
		Analytical Result	34.1	**221**	49.1
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	266	721	215
		Analytical Result	180	530	170

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

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Pirkey FGD Stackout Area CCR management area and that the requirements of § 352.931(a) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

112498	**Texas**	**12.29.2025**
License Number	Licensing State	Date

ATTACHMENT B
Data Quality Review Memorandum

Geosyntec consultants

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Memorandum

Date:	December 22, 2025
To:	David Miller (AEP)
Copies to:	Pryce Warren (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Data Quality Review – Pirkey Power Plant September 2025 Sampling Event

This memorandum summarizes the findings of a data quality review for groundwater samples collected at the Pirkey Power Plant in Hallsville, Texas in September 2025. The groundwater samples were collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). 40 CFR 257 Appendix III and IV constituents were analyzed.

The following sample data groups (SDGs) were associated with the groundwater samples collected during the September 2025 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 252381
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 252382
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 252402

The data included in these SDGs were reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32[1] prior to submittal of this data to TCEQ.

The following data quality issues were identified:

- As reported in SDG 252402, antimony, calcium, and chromium were detected in the field blank sample "Field Blank" collected on 9/9/25. The estimated detected antimony

[1] TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

concentration (0.05 µg/L) in the field blank were more than 10% of the detected values for antimony in all groundwater samples that had detectable levels of antimony, which could result in high bias in the antimony results for those groundwater samples. The estimated detected calcium concentration in the field blank (0.03 mg/L) was more than 10% of the detected values for calcium in samples AD-12, AD-18, and AD-23, which could result in high bias in the calcium results for samples AD-12, AD-18, and AD-23. The estimated detected chromium concentration (0.25 µg/L) in the field blank were more than 10% of the detected values for chromium in samples AD-2, AD-3, AD-4, AD-7R, AD-12, AD-13, AD-17, AD-22, AD-28, AD-30, AD-31, AD-32, AD-33, and Duplicate, which could result in high bias in the chromium results for those groundwater samples.

- As reported in SDG 252402, antimony, chromium, and cobalt were detected in the equipment blank sample "Equipment Blank" collected on 9/9/25. The estimated detected antimony (0.03 µg/L) and the detected chromium (0.39 µg/L) concentrations in the equipment blank were more than 10% of the detected value for antimony and chromium in all groundwater samples that had detectable levels of those constituents, which could result in high bias in the antimony and chromium results for those groundwater samples.

- As reported in SDG 252402, the relative percent difference (RPD) for lithium concentrations from parent sample "AD-13" and duplicate sample "Duplicate" was 32%. The AD-13 result for lithium should be considered estimated.

- As reported in SDG 252402, sample "AD-18" collected on 9/10/2025 for radium-226 was flagged R2: carrier recovery was outside acceptance limits.

- As reported in SDG 252402, a laboratory quality control (QC) method blank (MB) was detected for radium-228 above the acceptable limit of 0.95 pCi/L. Samples associated with this laboratory QC sample were flagged B1: analyte detected in MB at or above the method criteria.

- As reported in SDG 252402, the laboratory QC sample ICPMS matrix spike (MS) and ICPMS matrix spike duplicate (MSD) had recoveries for beryllium below the acceptable limit of 75%. Sample "AD-31" associated with these laboratory QC samples was flagged M1: the associated MS or MSD recovery was outside acceptance limits.

- As reported in SDG 252402, the laboratory control sample duplicate (LCSD) recovery for radium-228 (67.6%) in QC sample "PB25092302" was below the acceptance limit of 75%. Samples associated with that QC batch on SDG 252402 were flagged L1: the associated laboratory control sample (LCS) or LCSD recovery was outside acceptance limits. The

LCSD RPD for radium-228 (32.1) was above the acceptable limit of 25. The associated samples were flagged P2: the precision on the LCSD was above acceptance limits. The associated results should be considered estimated.

Based on these findings, the majority of the data reported in these SDGs are considered accurate and complete. Although the QC failures mentioned above will result in some limitations of data use since the affected results are considered estimated or have elevated reporting limits, the data are considered usable for supporting project objectives.

ATTACHMENT C
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

December 5, 2025

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

Re: Pirkey Stackout
Background Update & Assessment Monitoring Event – September 2025

Dear Ms. Kreinberg,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the background update and statistical analysis of groundwater data for the September 2025 sample event for American Electric Power Inc.'s Pirkey Stackout. The analysis complies with the Texas Commission of Environmental Quality rule 30 TAC 352 as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling at each of the wells below began at Pirkey Stackout for the Coal Combustion Residuals (CCR) program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** AD-12 and AD-13
- **Downgradient wells:** AD-22, AD-33, and AD-7R

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC. Data were sent electronically, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting.

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

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

Time series and box plots for Appendix III and IV parameters are provided for all wells and constituents, and are used to evaluate concentrations over the entire record (Figures A & B, respectively). A summary of the values identified as outliers in this report and through previous screenings follows this letter. These values are deselected prior to the statistical analysis. All flagged values may also be seen in a lighter font and disconnected symbol on the time series graphs (Figure C).

Due to varying detection limits in background data sets, a substitution of the most recent reporting limit is used for all non-detects. For interwell prediction and tolerance limits, a single reporting limit substitution is used across upgradient wells for a given parameter. In some cases, the most recent reporting limit provided by the laboratory may contain varying limits for a given parameter; therefore, the substitution may differ from well to well. Reporting limit changes may occur depending on laboratory capabilities. In the case of fluoride and lead, elevated historic reporting limits were replaced by the most recent laboratory reporting limit of 0.06 mg/L and 0.0002 mg/L, respectively, and were substituted across all non-detects for all wells. The computed statistical limits, both background and compliance limits, were not adversely affected by these substitutions.

In the previous background screening, data at all wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided with the background screening report submitted in December 2017 and demonstrated that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance recommendations.

Summary of Statistical Methods:

- Intrawell prediction limits, combined with a 1-of-2 resample plan, for calcium, pH, and TDS

- Interwell prediction limits, combined with a 1-of-2 resample plan, for boron, chloride, fluoride, and sulfate
- Confidence intervals compared to Ground Water Protection Standards (GWPS) for all Appendix IV constituents

Parametric prediction limits, tolerance limits, and confidence intervals are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. While the annual false positive rate associated with parametric limits is fixed at 10% as recommended by the EPA Unified Guidance (2009), the false positive rate associated with nonparametric limits is not fixed and depends upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits as appropriate. Non-detects are handled as follows:

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

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to accommodate these types of changes. In the interwell case, statistical limits may be updated with all upgradient well data after careful screening for new outliers. In the intrawell case, data for all wells and constituents are re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In some cases, the earlier portion of data are deselected prior to construction of limits in order to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded

from the calculation, the values will continue to be reported and shown in tables and graphs.

For Appendix III detection monitoring parameters, compliance is determined by comparing the most recent observation to a background prediction limit. The corresponding trend tests for screening and evaluating prediction limit exceedances of Appendix III parameters are performed at the 99% confidence level to provide a high level of confidence against false positives. For Appendix IV assessment monitoring parameters, however, compliance is assessed by comparing a full (or truncated) period of record to a GWPS using a confidence interval. The corresponding trend tests for screening and evaluating confidence interval exceedances of Appendix IV constituents are performed at the 95% confidence level to provide greater capability of identifying potential trends than the 99% confidence level.

Summary of Original Background Screening Conducted in December 2017

Outlier Evaluation

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that would not readily identify changes in groundwater, in proposed background data. Suspected outliers at all wells for Appendix III and Appendix IV parameters were formally tested using Tukey's box plot method and, when identified by Tukey's test or visual comparison with other data, flagged in the computer database with "o" and deselected prior to construction of statistical limits.

Tukey's outlier test noted a few outliers, and the results were submitted with the screening report. For the downgradient well data that are used to construct confidence intervals, values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. However, during the 9/7/16 sample event, several reported measurements for a number of constituents were remarkably high, likely suggesting a systematic error. Therefore, those values were flagged as outliers.

Trend Test Evaluation

The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends. When statistically significant or visually apparent trends are found, the background data record may be truncated as needed in order to remove the trend and improve representation of background groundwater quality for calculation of statistical limits.

The results of the trend analyses showed no statistically significant trends; therefore, no adjustments were made to the data sets at the time of the screening.

Appendix III – Determination of Statistical Methods

The most appropriate statistical method, i.e., interwell or intrawell prediction limits as listed above for each Appendix III parameter, was recommended based on two criteria: 1) spatial variability of each parameter among upgradient wells and 2) comparison of average concentrations in each downgradient well to the expected upper limit of concentrations across all upgradient wells. The results of the application of Analysis of Variance, upgradient tolerance limits, and downgradient confidence intervals were included in the 2017 screening study report.

Summary of Background Update

Fall 2025

Outlier Analysis

During this analysis, Tukey's outlier test and visual screening were used to evaluate data through September 2025 using pooled upgradient well data for boron, chloride, fluoride, and sulfate, which are tested using interwell prediction limits (Figure C). Tukey's outlier test on pooled upgradient well data did not identify any values for boron, chloride, fluoride, or sulfate as outliers; therefore, no new values were flagged. Tukey's outlier test results for all Appendix III parameters are shown in Figure C.

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

No changes to values flagged in previous background updates occurred for any Appendix III parameters as these values were confirmed by visual screening. As mentioned above, any flagged data are displayed in a lighter font and as a disconnected symbol on the time series reports, as well as in a lighter font on the accompanying data pages.

Seasonality

When seasonal patterns are observed, data are evaluated using the Kruskal-Wallis test to determine whether seasonality is statistically significant. When the test identifies seasonality, data are deseasonalized so that the resulting statistical limits will correctly

account for the seasonality as a predictable pattern rather than random variation or a release. This procedure includes subtracting the seasonal mean from each value within a given season and adding the overall mean to each observation. Calcium, pH, and TDS were identified with significant seasonality in downgradient well AD-22 during the previous background update in Fall 2024; therefore, these records continue to be deseasonalized prior to constructing intrawell prediction limits at well AD-22.

Intrawell Prediction Limits

Intrawell prediction limits, combined with a 1-of-2 resample plan, are constructed using historical data through April 2024 for calcium, pH, and TDS at all wells (Figure D). As mentioned above, deseasonalized prediction limits were constructed for calcium, pH, and TDS at downgradient well AD-22. The prediction limits for the deseasonalized cases using seasonal cutoff dates of 1/1 and 7/1 are included separately after the rest of the plots. Note that slight changes in deseasonalized prediction limits occurred as a result of the updated seasonal cutoff dates. No comparisons of the September 2025 compliance data to these limits were made in this analysis.

Interwell – Trend Test Evaluation

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

Increasing
- Chloride: AD-13
- Sulfate: AD-13

Decreasing
- Fluoride: AD-12
- Sulfate: AD-12

While identifying these upgradient trends is useful for understanding and characterization of upgradient background groundwater quality, truncation of the records to remove the trend may be appropriate when the trend would result in statistical limits that are not representative of upgradient groundwater quality and/or not able to detect downgradient changes that result from the facility. Deselecting data at upgradient wells is done with caution as similar observations may be observed in the future at one or more downgradient wells depending on transport times.

Although a statistically significant decreasing trend was identified for fluoride in well AD-12, the trend was a byproduct of several non-detects early in the record followed by years of trace values and not based on values detected above the reporting limit. Additionally, no adjustments to data sets were required for the statistically significant trends identified for the remaining well/constituent pairs listed above, as all observations within these individual wells fall within the range of the other pooled upgradient well concentrations. Truncating the earlier measurements from these records to reduce the influence of the trend would not impact resulting interwell prediction limits. Therefore, no adjustments were required for these well/constituent pairs at this time, and all data from upgradient wells were used to construct interwell prediction limits for boron, chloride, fluoride, and sulfate.

Interwell – Prediction Limits

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all pooled upgradient well data through September 2025 for boron, chloride, fluoride, and sulfate (Figure F). Time series plots were included with the interwell prediction limit graphs to display concentrations at upgradient wells that were used to construct the statistical limits. A summary table of the updated limits may be found following this letter in the Prediction Limit Summary Table. No comparisons of the September 2025 compliance data to these limits were made in this analysis.

Evaluation of Appendix IV Parameters – Fall 2025

The overall approach for assessing compliance is to compute a GWPS for each Appendix IV parameter, using the higher of a background tolerance limit or a regulatory limit. For each downgradient well and parameter, a confidence interval for the mean or median is compared to the GWPS.

Outlier Analysis

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

For the current analysis, Tukey's outlier test on pooled upgradient well data identified values for cadmium only. However, none of those currently identified values were flagged as all identified observations were low-level concentrations and were below the MCL. Visual screening confirmed previously flagged non-detects observations from 2019 with elevated reporting limits for molybdenum and thallium in both upgradient and

downgradient wells. These elevated reporting limits are more than an order of magnitude higher than the current reporting limits.

Additionally, downgradient well data through September 2025 were screened through visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. Several observations among the 2016 events for multiple Appendix IV constituents for downgradient wells AD-13 and AD-33 remain flagged as outliers since the measurements were inconsistent with remaining concentrations. The flagged non-detect observations with elevated reporting limits from 2019 for molybdenum and thallium were discussed above. No changes were made to previously flagged data.

No additional outliers among downgradient wells were flagged during this analysis, and previously flagged values were confirmed by visual screening. All flagged values may be seen on the Outlier Summary following this letter (Figure C).

Trend Analysis – Upgradient Wells

Appendix IV data were also screened at upgradient wells using the Sen's Slope/Mann-Kendall trend test to formally evaluate whether statistically significant trends are present at the 95% confidence level (Figure G). As discussed above, when extreme trending patterns are present among upgradient wells, truncation of the records may be required for construction of interwell tolerance limits to represent current groundwater quality conditions. The following statistically significant trends were identified among upgradient wells:

Increasing

- Combined Radium: AD-12

Decreasing

- Antimony: AD-12
- Arsenic: AD-12 and AD-13
- Barium: AD-12
- Beryllium: AD-12 and AD-13
- Cadmium: AD-12 and AD-13
- Chromium: AD-13
- Cobalt: AD-12
- Fluoride: AD-12 and AD-13
- Lead: AD-12

- Lithium: AD-12
- Selenium: AD-12
- Thallium: AD-13

Several statistically significant trends were identified. In some cases, the significant trends did not adversely affect GWPS as all concentrations were below established MCLs or overall concentrations for an individual well were well below remaining pooled upgradient well data from other upgradient wells. Other statistically significant trends were a byproduct of several non-detects early in the record followed by years of trace values and not based on values detected above the reporting limit. Therefore, no adjustments were required for these well/constituent pairs at this time, and all data from upgradient wells were used to construct interwell tolerance limits.

Note that the trend tests identified statistically significant decreasing trends for antimony in upgradient well AD-12, cadmium in upgradient well AD-13, and thallium in upgradient well AD-13, the slope, which represents the median slope of all the possible pairwise slopes, is displayed on the graph and summary table as zero. All data will be re-evaluated during the next background update to determine whether more recent measurements are increasing, decreasing, or remaining stable. All data will be re-evaluated during the next background update.

Interwell Upper Tolerance Limits

Interwell upper tolerance limits (UTLs) were used to calculate background limits from pooled upgradient well data through September 2025 for Appendix IV parameters (Figure H). These limits are updated on an annual basis and will be updated again during the Fall 2026 sample event. Parametric tolerance limits are calculated, with a target of 95% confidence and 95% coverage, when data follow a normal or transformed-normal distribution. When data contained greater than 50% non-detects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were constructed using the highest background measurement. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

These background limits were compared to the MCLs as shown in the GWPS table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons (Figure I).

Seasonality

Several Appendix IV constituents appeared to have seasonal patterns at downgradient well AD-22. Therefore, all constituents evaluated with confidence intervals at this well were tested for seasonality using the Kruskal-Wallis test (Figure J). Appendix IV constituents with significant seasonality were beryllium, cadmium, cobalt, combined radium 226 + 228, fluoride, lithium, and selenium. Deseasonalized confidence intervals using seasonal cutoff dates of 1/1 and 7/1 are computed for these well/constituent pairs in addition to the regular confidence intervals when at least one reported measurement was higher than the established GWPS for a given parameter. More narrow confidence intervals are expected with deseasonalized data as a result of seasonal effects being removed and are more sensitive to detecting exceedances.

Confidence Intervals

When data followed a normal or transformed-normal distribution, parametric confidence intervals were used for Appendix IV parameters. Nonparametric confidence intervals, which use the appropriate large and small order statistics depending on the sample size as interval limits, were constructed when data did not follow a normal or transformed-normal distribution or when there were greater than 50% non-detects. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

While Appendix IV downgradient data are not routinely tested for trend, it is appropriate to evaluate compliance using data that are relatively stable over time and that correctly represent current average concentrations in each downgradient well, especially with regard to respective GWPS. Visual inspection and the Sen's Slope/Mann Kendall trend test at the 95% confidence level identified statistically significant increasing trends for mercury and lead in well AD-33 and a significant decreasing trend for mercury in well AD-22. In order to construct confidence intervals that better represent current groundwater quality conditions or reduce the influence of the trend, earlier concentrations through 2021 were truncated from those three records and plotted as disconnected points on the time series graph (USEPA Unified Guidance, 2009, Chapter 7). Trend tests using both the truncated portion of their record and the full record follow this letter. A list of well/constituent pairs using truncated records follows this report (Figure K). Note that an outlier for lead in well AD-33 that was included in the previous summary table currently lies within the truncated segment of the record, and, therefore, is not included in the current summary table.

Confidence intervals were constructed on downgradient wells with data through September 2025 for each of the Appendix IV parameters using either parametric or nonparametric intervals depending on the data distribution and percentage of non-detects (Figure L). Each confidence interval was compared to the corresponding GWPS from Figure I. Only when the entire confidence interval is above the GWPS is the well/constituent pair considered to exceed its respective standard. Exceedances were noted for the following well/constituent pairs:

- Lead: AD-33
- Mercury: AD-33

Deseasonalized Confidence Intervals

Confidence intervals were constructed on deseasonalized data for constituents with detected seasonality in well AD-22 when at least one reported measurement was higher than the established GWPS for a given parameter. The constituents that met these criteria include beryllium, cobalt, combined radium 226 + 228, and lithium at well AD-22. The results are included with the confidence intervals provided in Figure L. The deseasonalized confidence intervals are presented separately, with a separate summary table, at the end of the confidence interval results section. Exceedances were identified for the following deseasonalized confidence intervals:

- Beryllium: AD-22
- Cobalt: AD-22

Trend Test Evaluation

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are significantly increasing, decreasing, or stable at the 95% confidence level (Figure M). Upgradient wells are included in the trend analyses for all parameters found to exceed their confidence intervals in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be unrelated to practices at the site. Statistically significant trends were identified for the following well/constituent pairs:

Increasing

- Lead: AD-33
- Mercury: AD-33

Decreasing

- Beryllium: AD-12 and AD-13 (both upgradient)
- Cobalt: AD-12 (upgradient)
- Lead: AD-12 (upgradient)

Note that the decreasing trend in lead at upgradient well AD-12 results from non-detects early in the record compared to observations below the most recent reporting limit (0.0002 mg/L) in the later part of the record.

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

For Groundwater Stats Consulting,

Easton Rayner
Groundwater Analyst

Andrew T. Collins
Project Manager

Date Ranges

Date: 12/5/2025 12:44 PM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Lead, total (mg/L)
- AD-33 overall:3/28/2022-9/8/2025

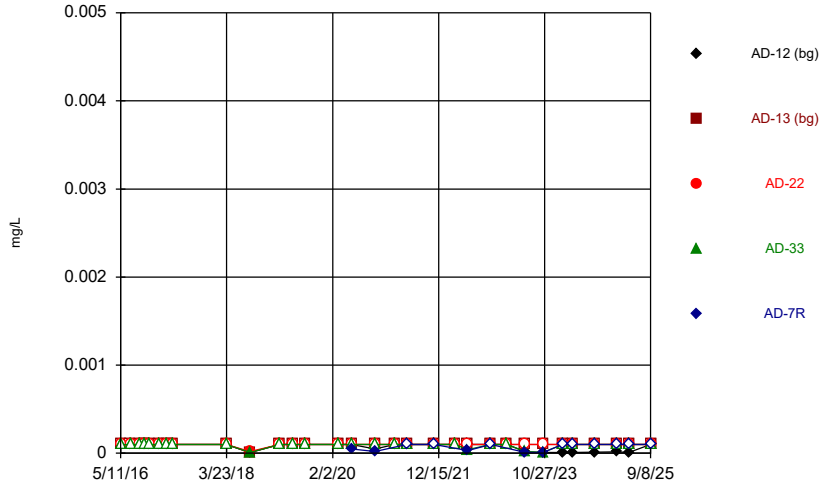
Mercury, total (mg/L)
- AD-22 overall:3/28/2022-9/8/2025
- AD-33 overall:3/28/2022-9/8/2025

FIGURE A

Time Series

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

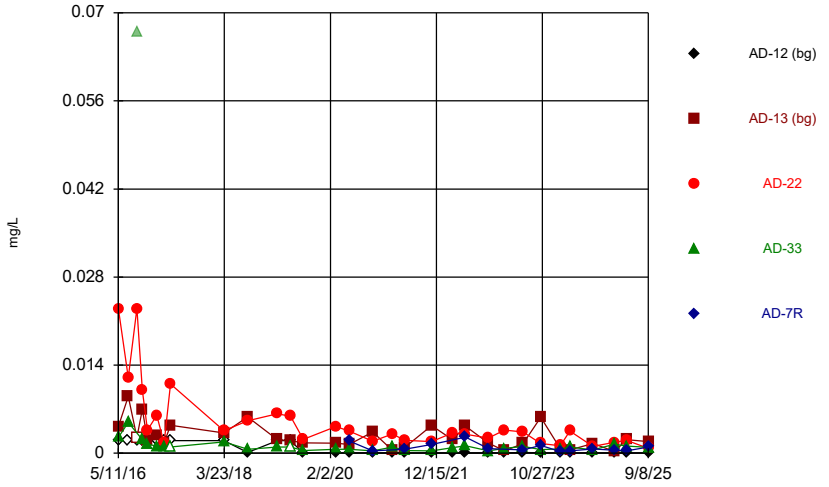
Time Series



Constituent: Antimony, total Analysis Run 12/5/2025 1:01 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

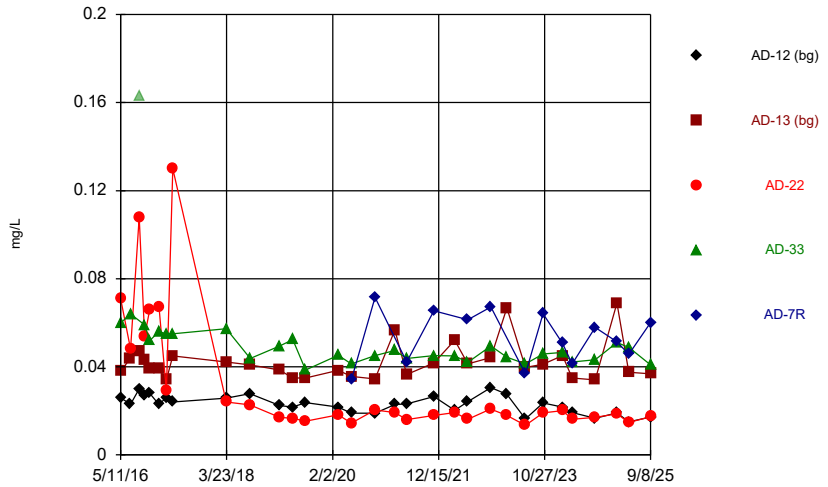
Time Series



Constituent: Arsenic, total Analysis Run 12/5/2025 1:01 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

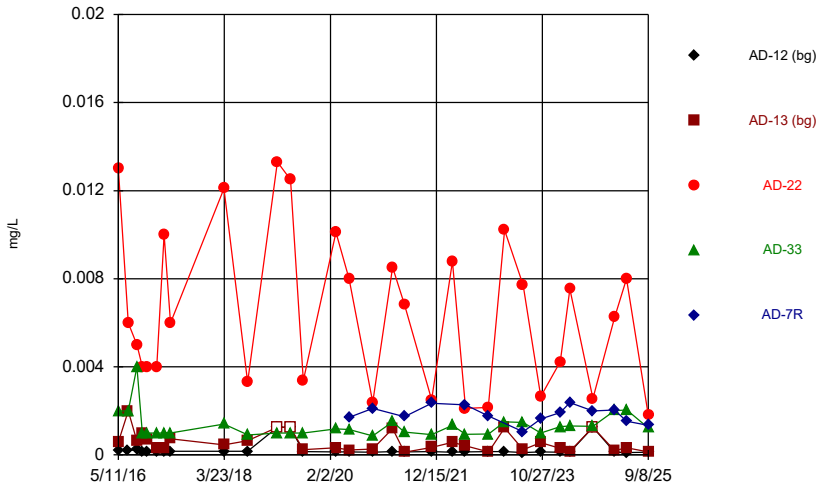
Time Series



Constituent: Barium, total Analysis Run 12/5/2025 1:01 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

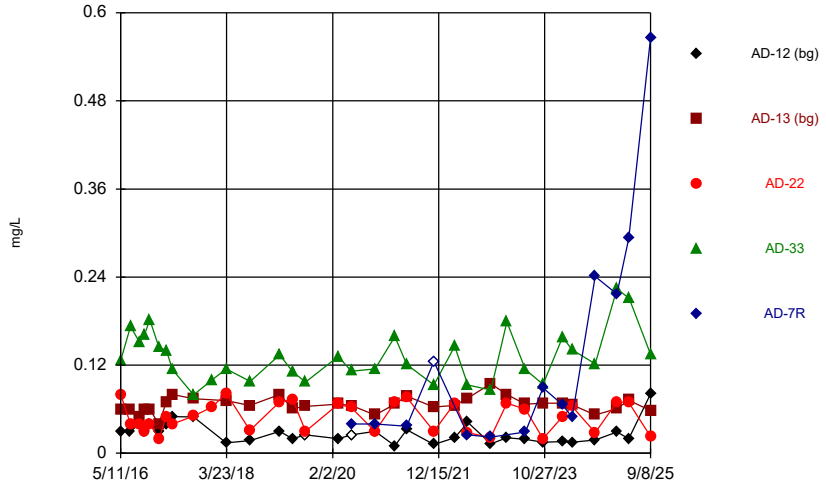
Time Series



Constituent: Beryllium, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

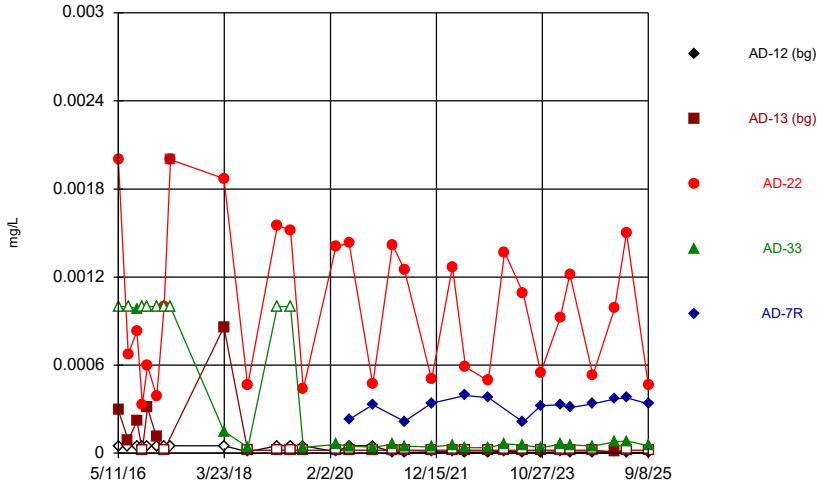
Time Series



Constituent: Boron, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

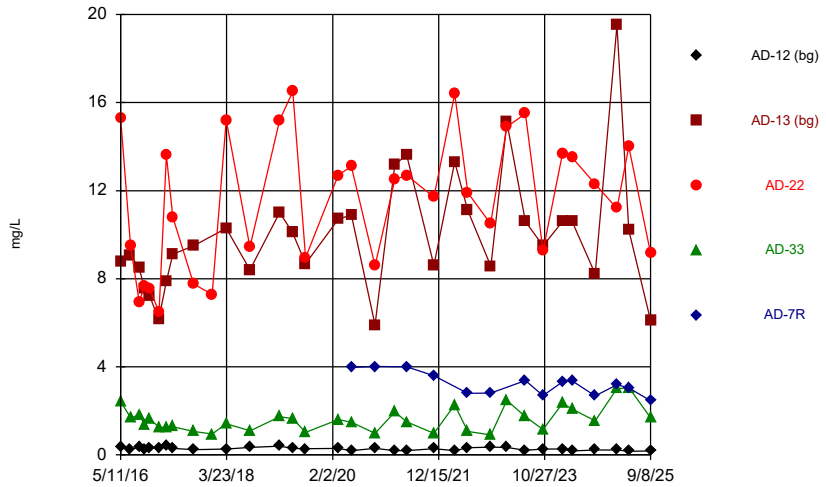
Time Series



Constituent: Cadmium, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

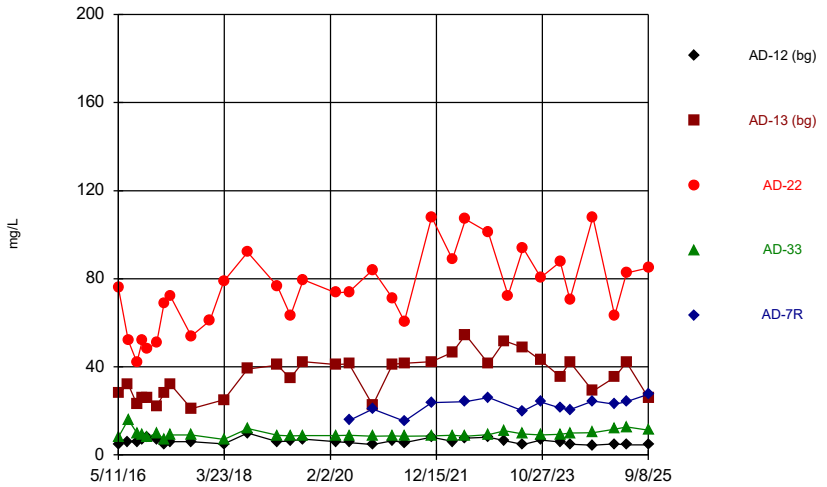
Time Series



Constituent: Calcium, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

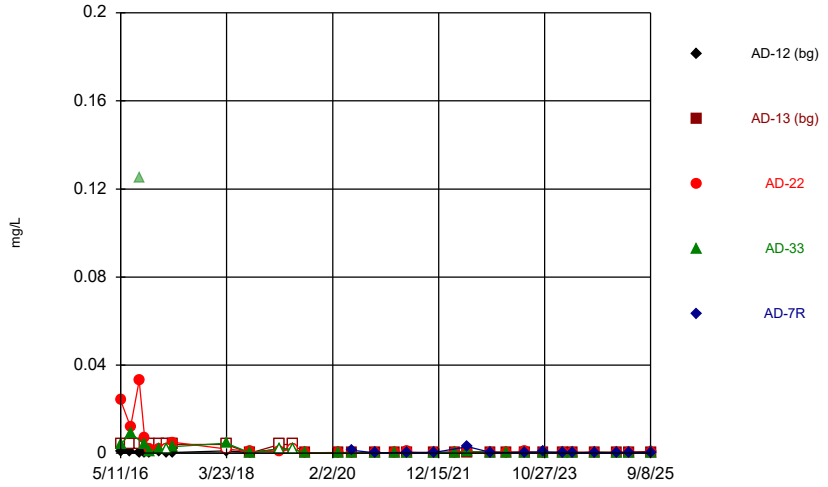
Time Series



Constituent: Chloride, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

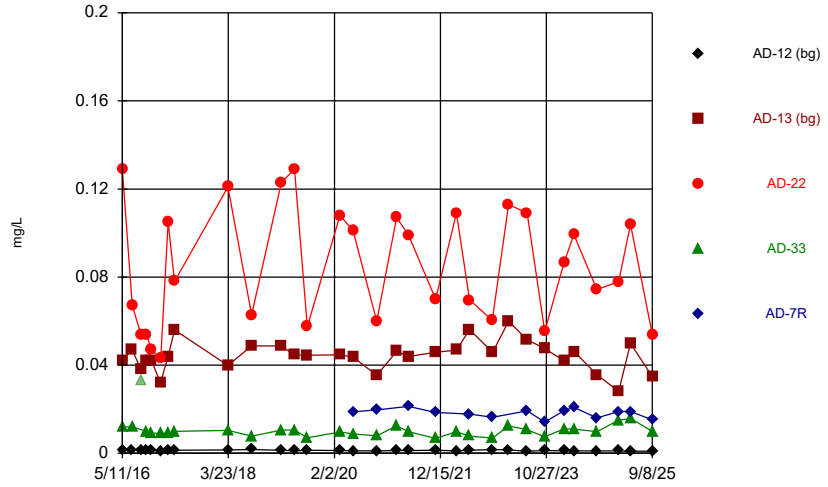
Time Series



Constituent: Chromium, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

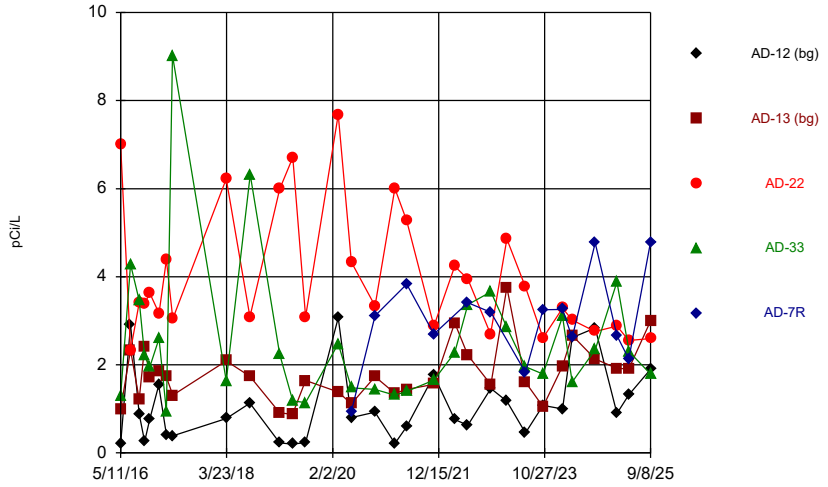
Time Series



Constituent: Cobalt, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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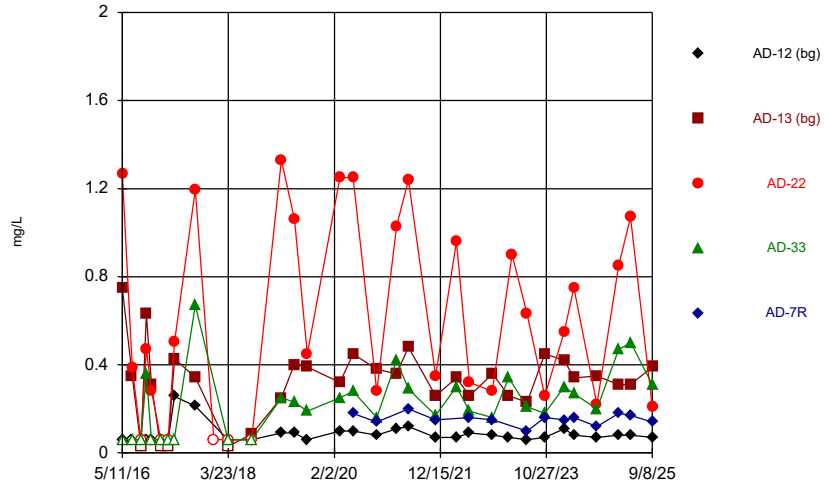
Hollow symbols indicate censored values.

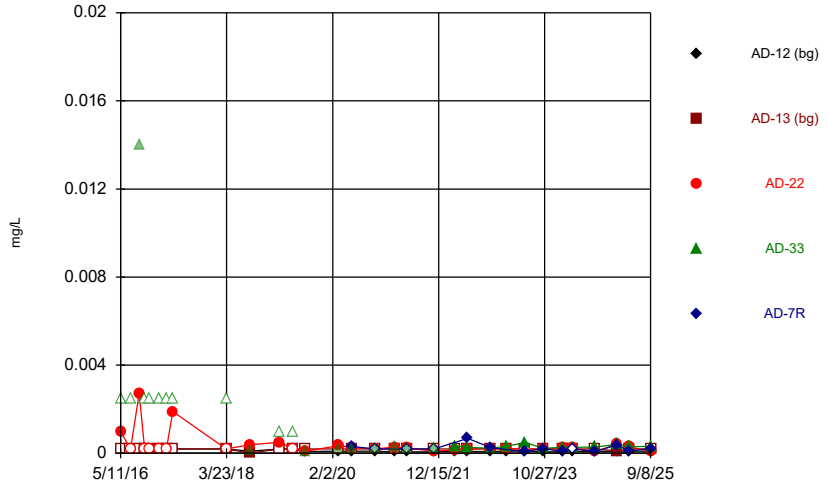
Time Series



Constituent: Fluoride, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

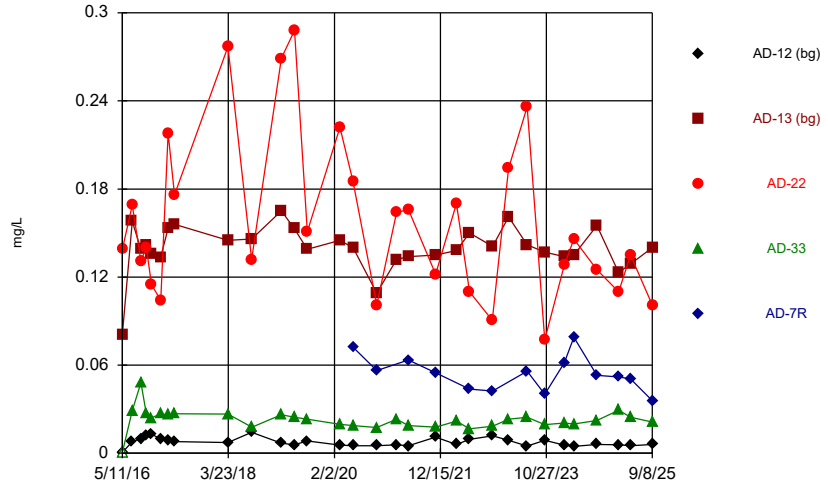
Time Series



Constituent: Lead, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Lithium, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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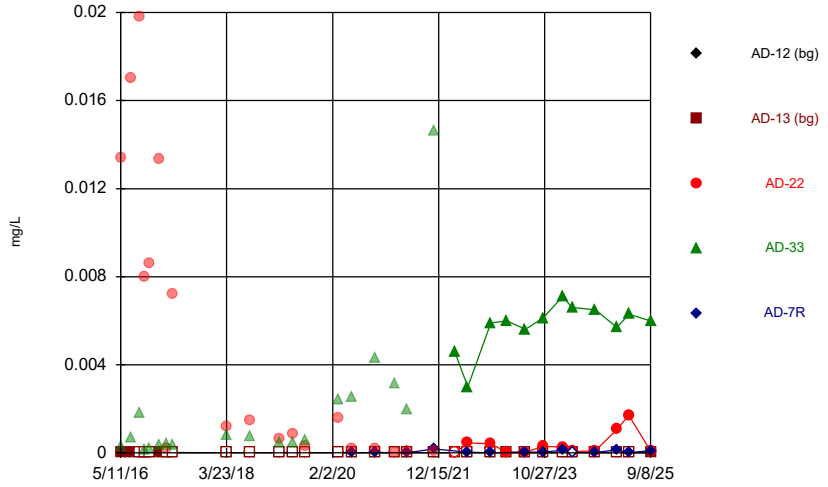
Hollow symbols indicate censored values.

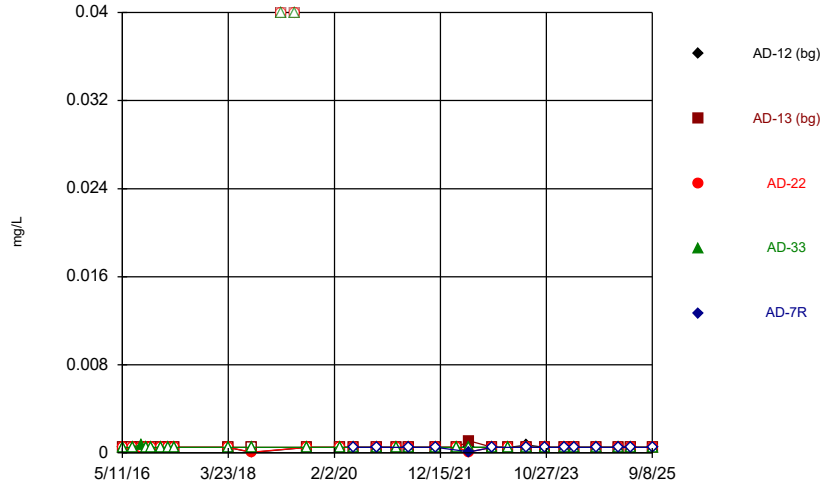
Time Series



Constituent: Mercury, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

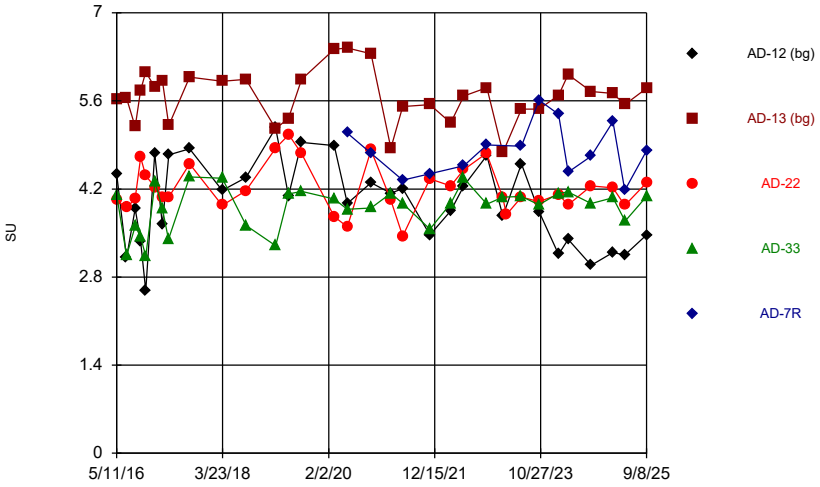
Time Series



Constituent: Molybdenum, total Analysis Run 12/5/2025 1:02 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Time Series



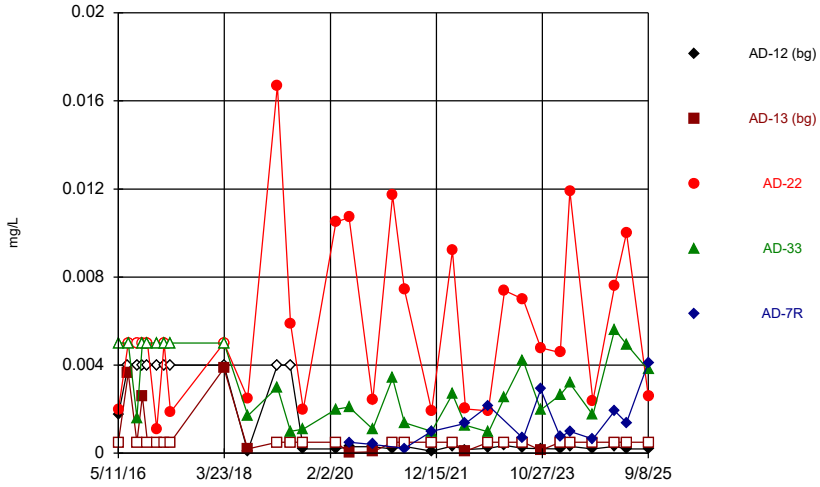
Constituent: pH, field Analysis Run 12/5/2025 1:02 PM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series

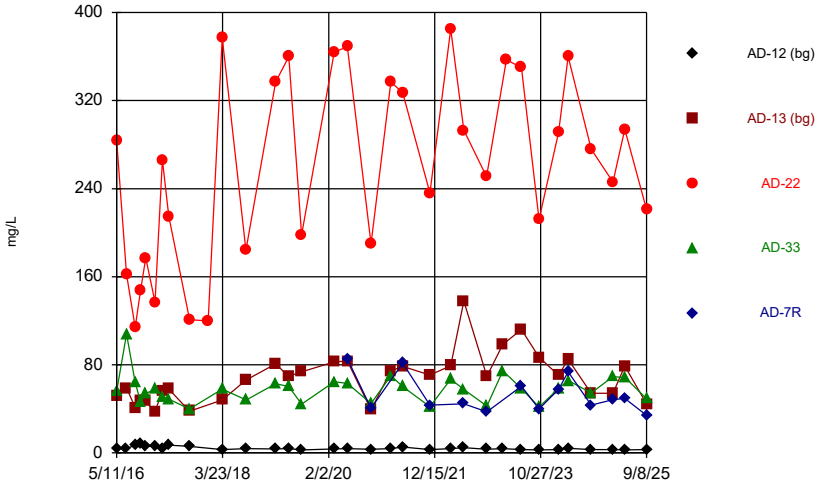


Constituent: Selenium, total Analysis Run 12/5/2025 1:02 PM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Time Series



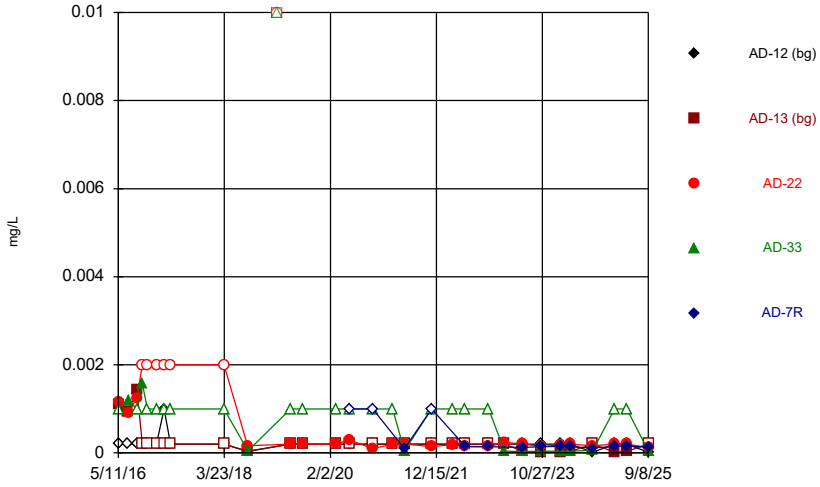
Constituent: Sulfate, total Analysis Run 12/5/2025 1:02 PM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series

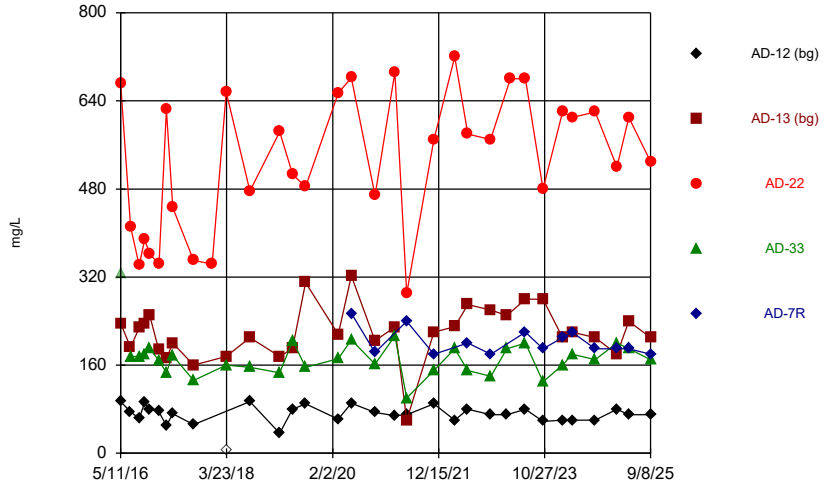


Constituent: Thallium, total Analysis Run 12/5/2025 1:02 PM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Hollow symbols indicate censored values.

Time Series



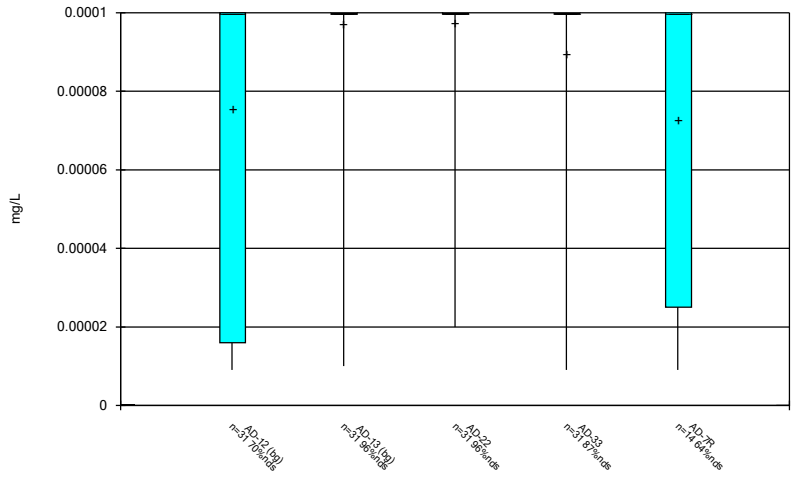
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2025 1:02 PM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE B

Box Plots

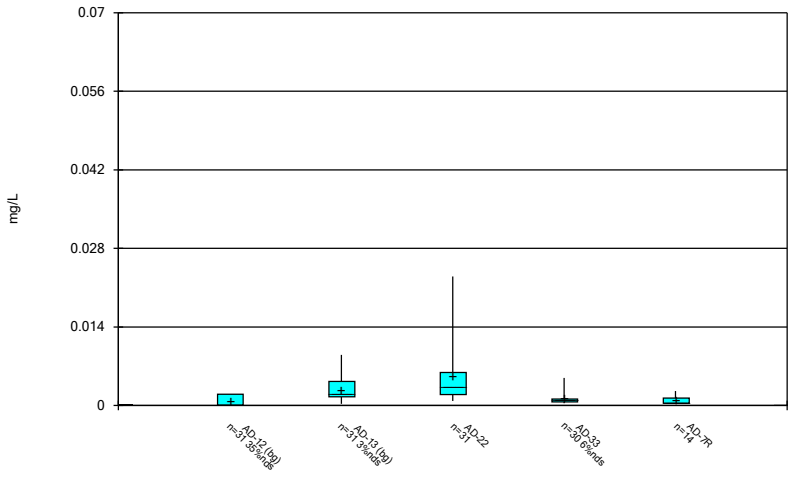
Box & Whiskers Plot



Constituent: Antimony, total Analysis Run 12/5/2025 1:03 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

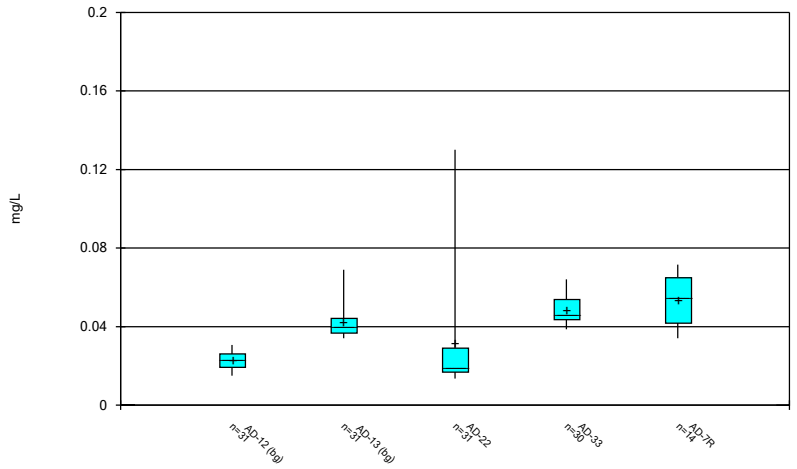
Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 12/5/2025 1:03 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

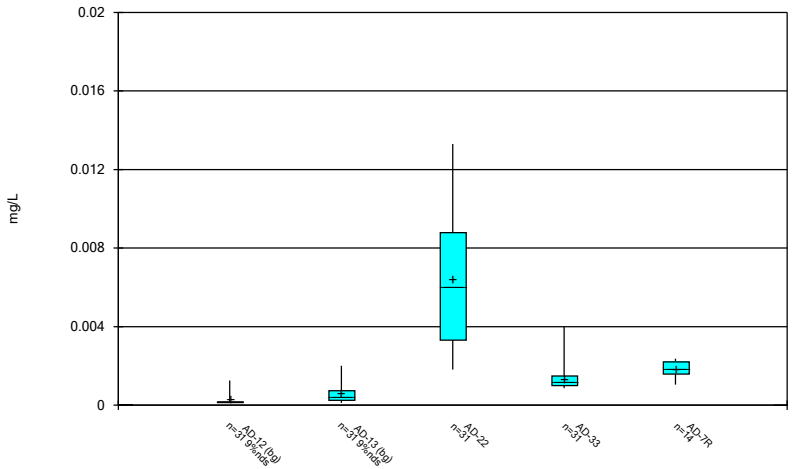
Box & Whiskers Plot



Constituent: Barium, total Analysis Run 12/5/2025 1:03 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

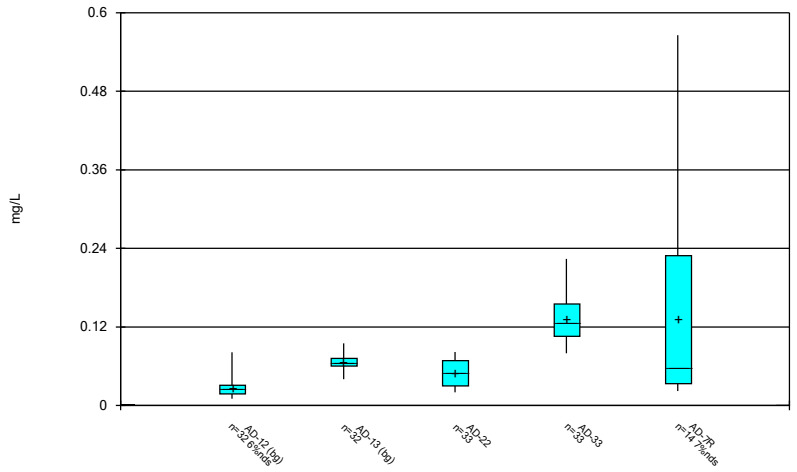
Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



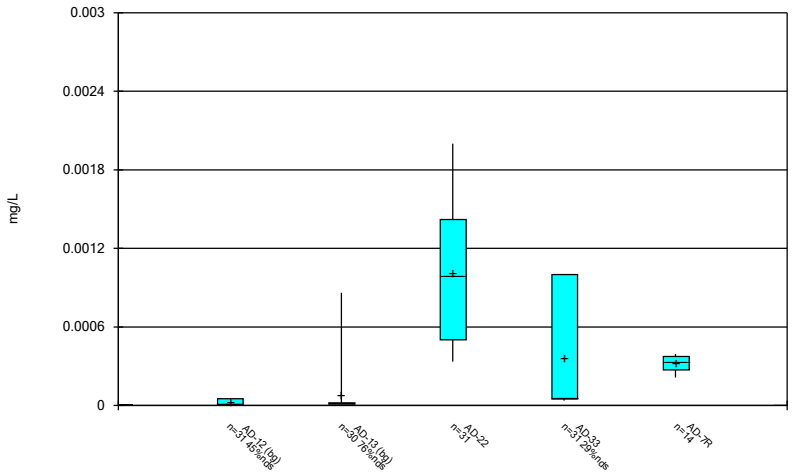
Constituent: Beryllium, total Analysis Run 12/5/2025 1:03 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



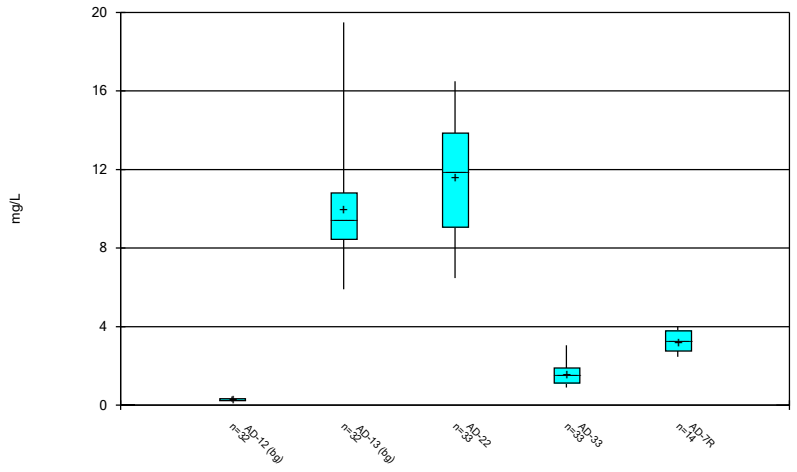
Constituent: Boron, total Analysis Run 12/5/2025 1:03 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



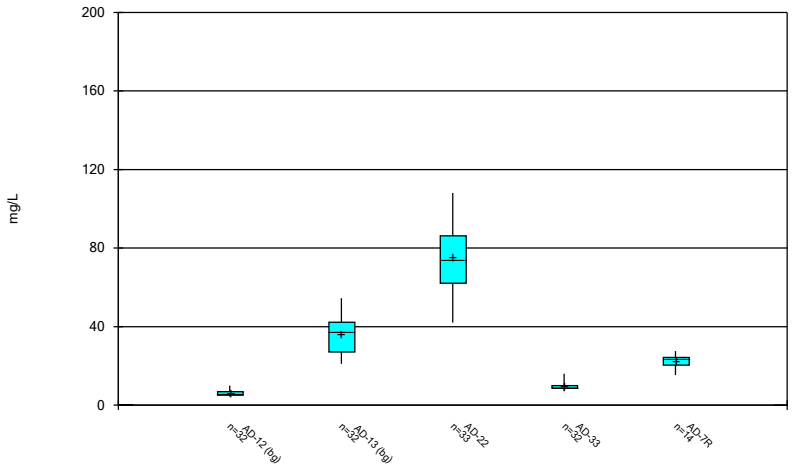
Constituent: Cadmium, total Analysis Run 12/5/2025 1:03 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



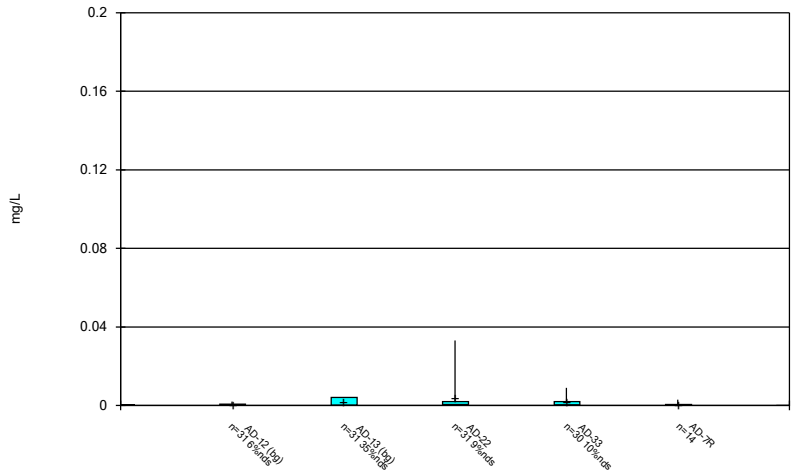
Constituent: Calcium, total Analysis Run 12/5/2025 1:03 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



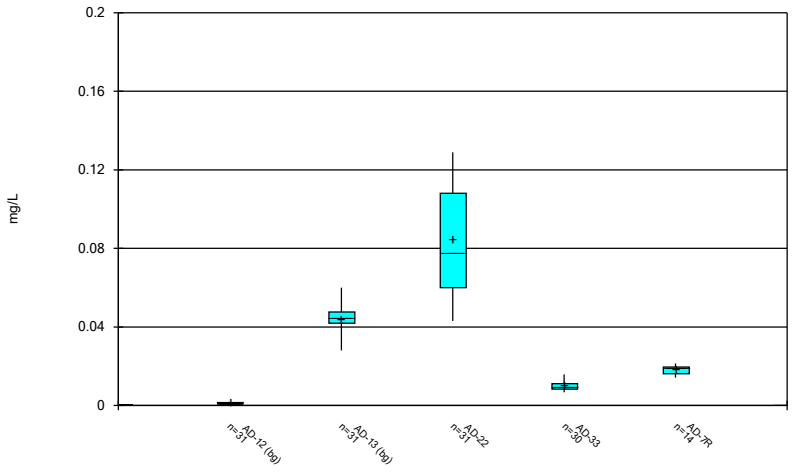
Constituent: Chloride, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



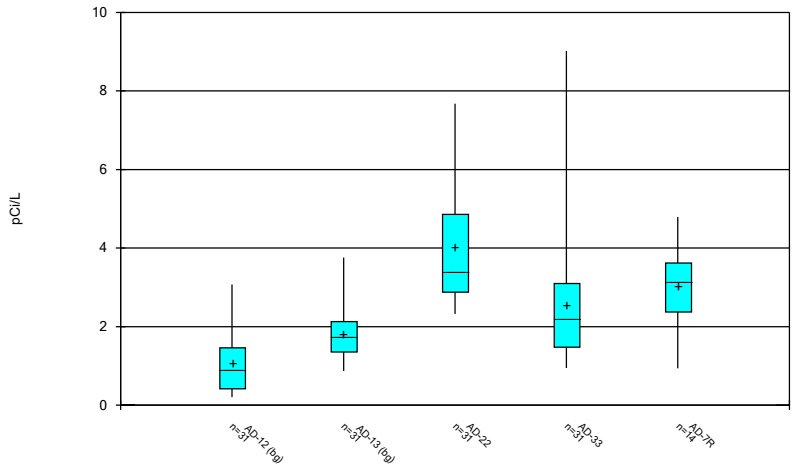
Constituent: Chromium, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



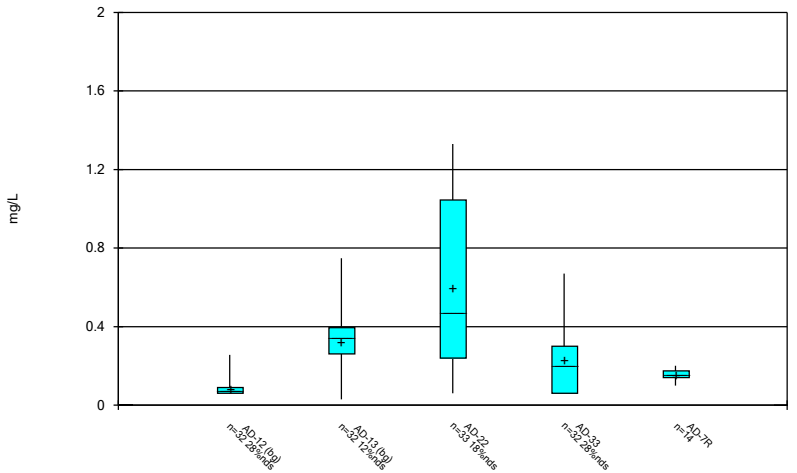
Constituent: Cobalt, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



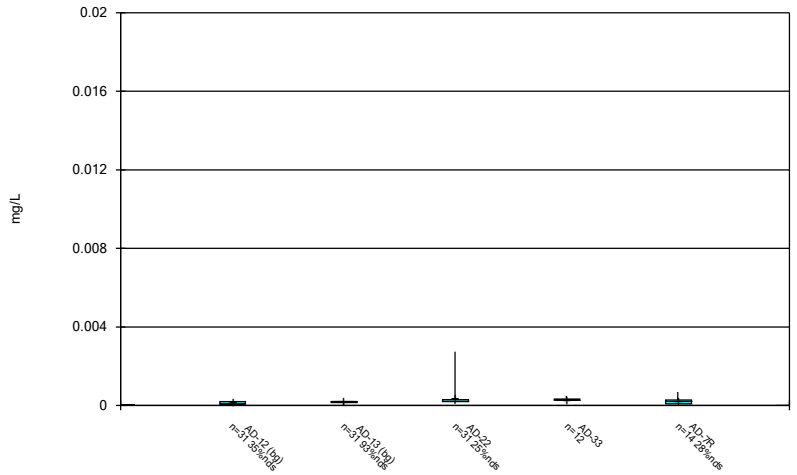
Constituent: Combined Radium 226 + 228 Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



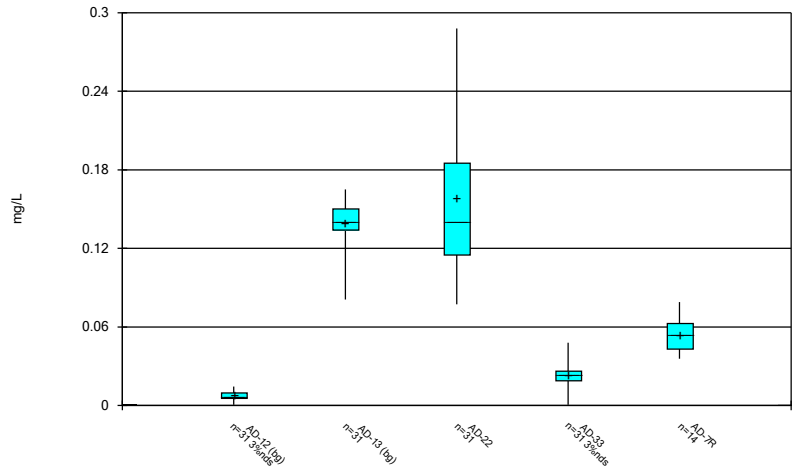
Constituent: Fluoride, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



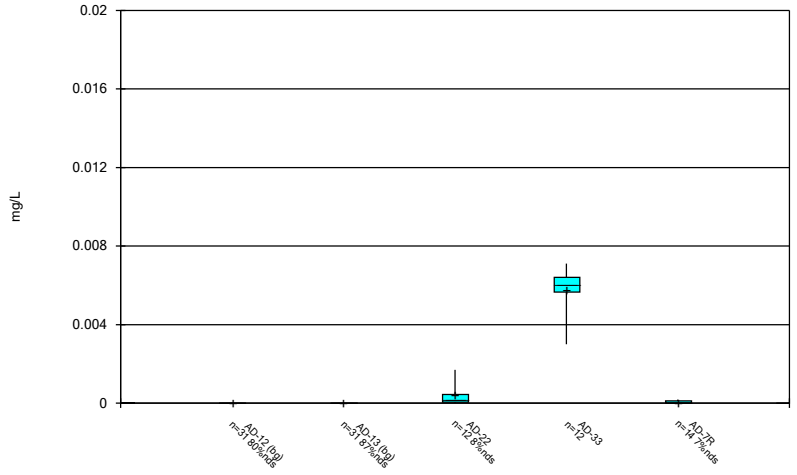
Constituent: Lead, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



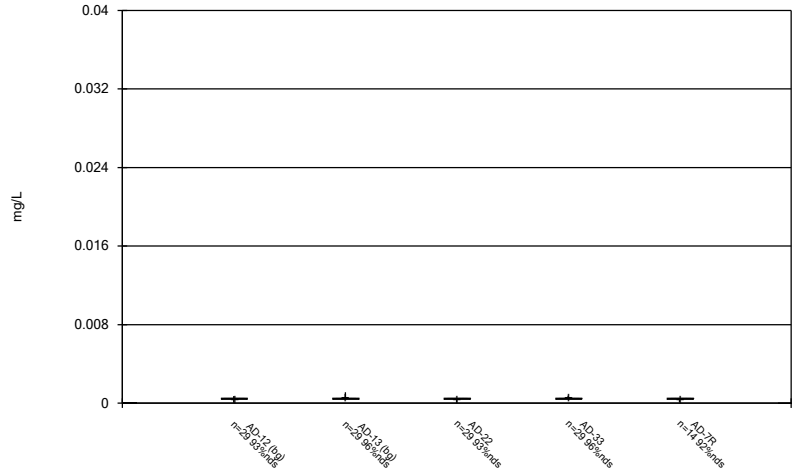
Constituent: Lithium, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



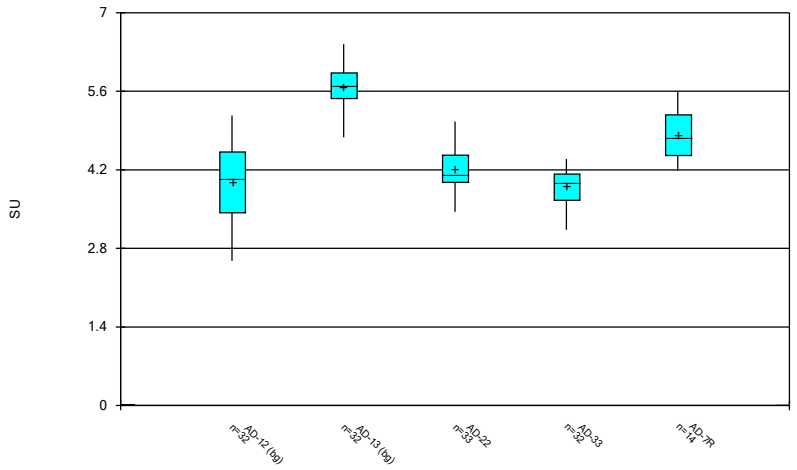
Constituent: Mercury, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



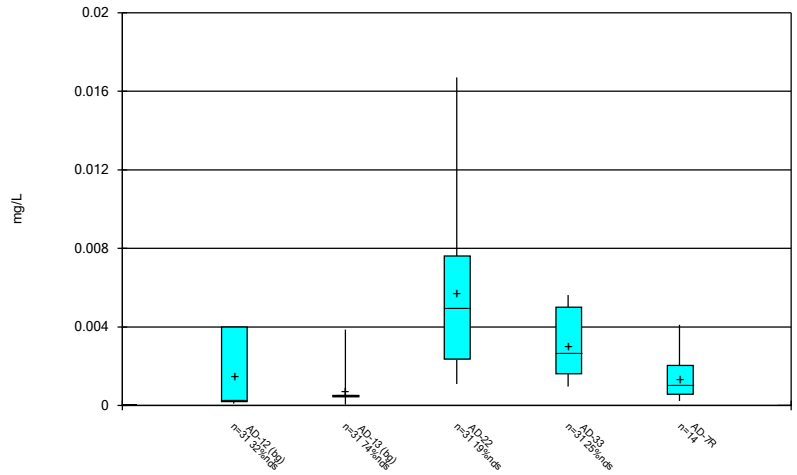
Constituent: Molybdenum, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



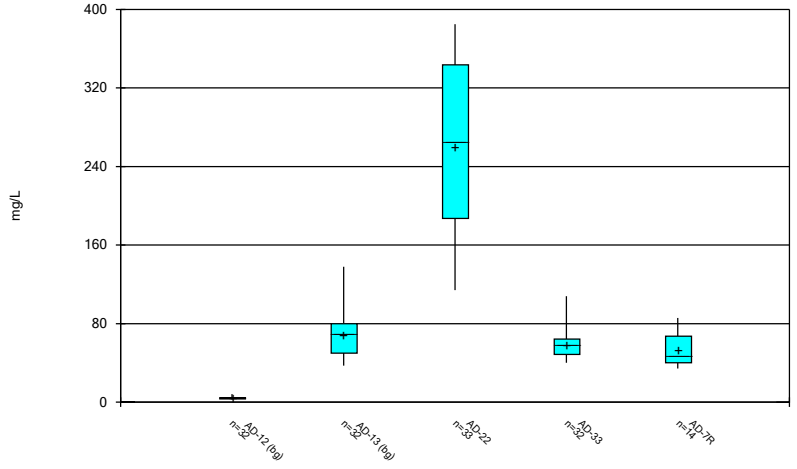
Constituent: pH, field Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



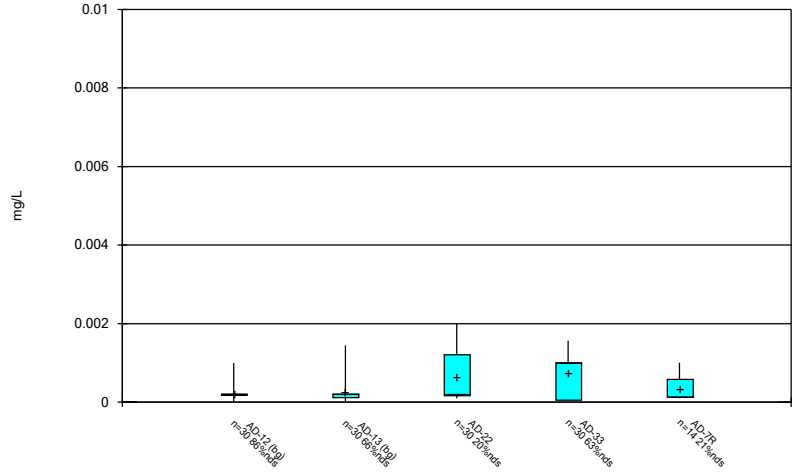
Constituent: Selenium, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



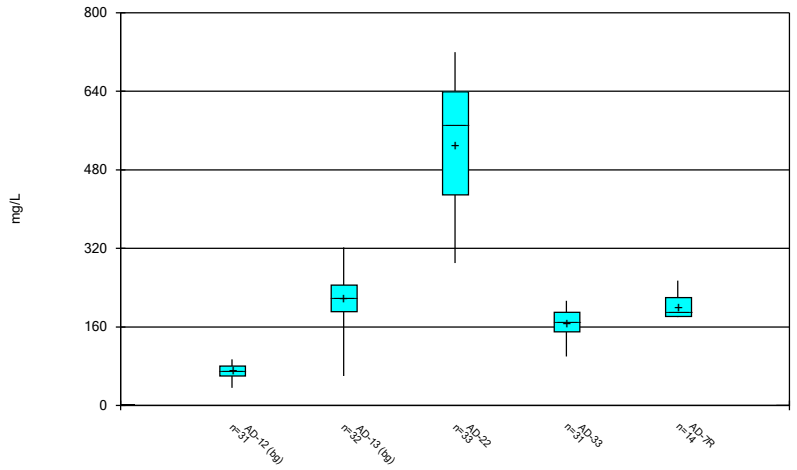
Constituent: Sulfate, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 12/5/2025 1:04 PM
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2025 1:04 PM

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE C

Outlier Summary and Tukey's Outlier Test

Outlier Summary

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 1:48 PM

	AD-33 Arsenic, total (mg/L)	AD-33 Barium, total (mg/L)	AD-13 Cadmium, total (mg/L)	AD-33 Chromium, total (mg/L)	AD-33 Cobalt, total (mg/L)	AD-12 Molybdenum, total (mg/L)	AD-13 Molybdenum, total (mg/L)	AD-22 Molybdenum, total (mg/L)	AD-33 Molybdenum, total (mg/L)	AD-12 Thallium, total (mg/L)
5/11/2016										
9/7/2016	0.067 (o)	0.163 (o)		0.125 (o)	0.033 (o)					
4/11/2017			0.002 (o)							
3/21/2018										
2/27/2019						<0.04 (o)	<0.04 (o)	<0.04 (o)	<0.04 (o)	<0.01 (o)
5/21/2019						<0.04 (o)	<0.04 (o)			
5/22/2019								<0.04 (o)	<0.04 (o)	

	AD-13 Thallium, total (mg/L)	AD-22 Thallium, total (mg/L)	AD-33 Thallium, total (mg/L)	AD-12 Total Dissolved Solids [TDS] (mg/L)	AD-33 Total Dissolved Solids [TDS] (mg/L)
5/11/2016					326 (o)
9/7/2016					
4/11/2017					
3/21/2018				<5 (o)	
2/27/2019	<0.01 (o)	<0.01 (o)	<0.01 (o)		
5/21/2019					
5/22/2019					

Tukey's Outlier Test - Upgradient Wells - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 10:19 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Cadmium, total (mg/L)	**AD-12,AD-13**	**Yes**	**0.0002938,0.0002198,0.0003103,0.0...**	**NP**	**NaN**	**62**	**0.00007695**	**0.0002758**	**ln(x)**	**ShapiroFrancia**

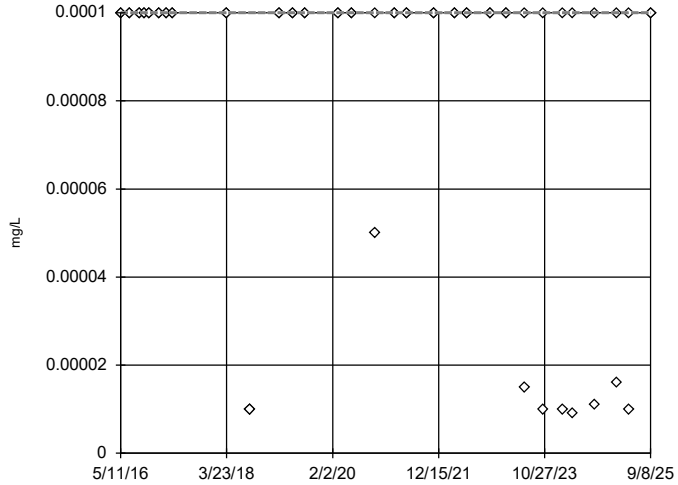
Tukey's Outlier Test - Upgradient Wells - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 10:19 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony, total (mg/L)	AD-12,AD-13	n/a	n/a	NP	NaN	62	0.00008631	0.00003184	unknown	ShapiroFrancia
Arsenic, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.001719	0.001861	x^(1/3)	ShapiroFrancia
Barium, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.03256	0.01175	ln(x)	ShapiroFrancia
Beryllium, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.000418	0.0004291	ln(x)	ShapiroFrancia
Boron, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	64	0.04686	0.02309	normal	ShapiroFrancia
Cadmium, total (mg/L)	**AD-12,AD-13**	**Yes**	**0.0002938,0.0002198,0.0003103,0.0...**	**NP**	**NaN**	**62**	**0.00007695**	**0.0002758**	**ln(x)**	**ShapiroFrancia**
Chloride, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	64	20.97	16.32	sqrt(x)	ShapiroFrancia
Chromium, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.001117	0.001507	ln(x)	ShapiroFrancia
Cobalt, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.0228	0.02224	x^2	ShapiroFrancia
Combined Radium 226 + 228 (pCi/L)	AD-12,AD-13	No	n/a	NP	NaN	62	1.445	0.8331	sqrt(x)	ShapiroFrancia
Fluoride, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	64	0.3972	0.3402	ln(x)	ShapiroFrancia
Lead, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.0001584	0.00005794	sqrt(x)	ShapiroFrancia
Lithium, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.07354	0.0675	x^4	ShapiroFrancia
Mercury, total (mg/L)	AD-12,AD-13	n/a	n/a	NP	NaN	62	0.000005289	0.000002336	unknown	ShapiroFrancia
Molybdenum, total (mg/L)	AD-12,AD-13	n/a	n/a	NP	NaN	62	0.0005055	0.00009998	unknown	ShapiroFrancia
Selenium, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	62	0.0005402	0.0006931	ln(x)	ShapiroFrancia
Sulfate, total (mg/L)	AD-12,AD-13	No	n/a	NP	NaN	64	36.04	35.81	sqrt(x)	ShapiroFrancia
Thallium, total (mg/L)	AD-12,AD-13	n/a	n/a	NP	NaN	62	0.0002313	0.0002491	unknown	ShapiroFrancia

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

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

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

Constituent: Antimony, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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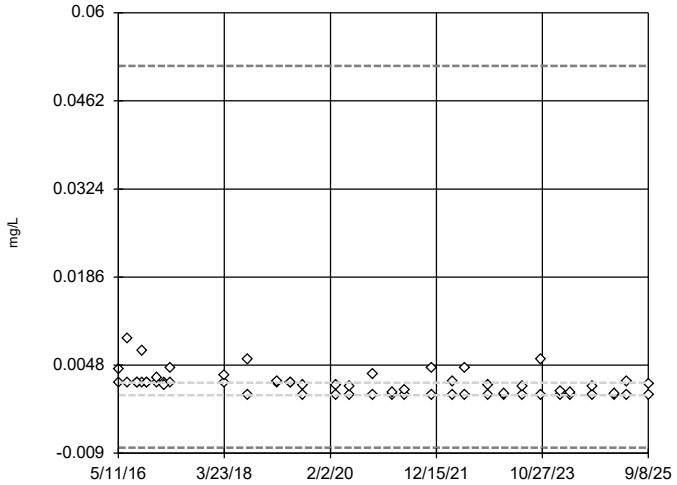
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

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

High cutoff = 0.05169, low cutoff = -0.008116, based on IQR multiplier of 3.

Constituent: Arsenic, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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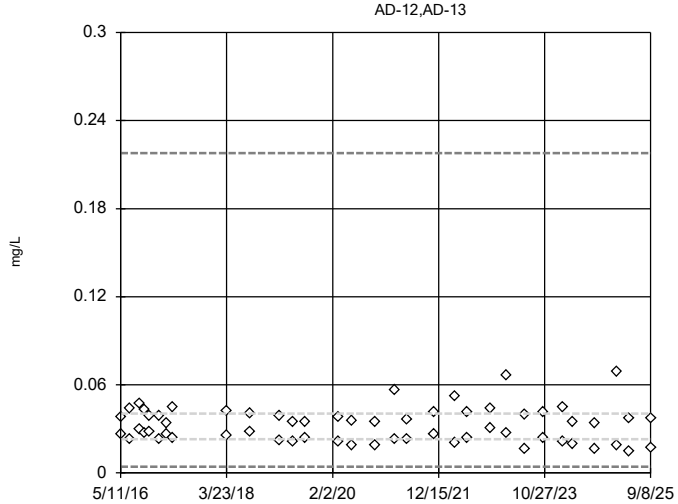
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

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

High cutoff = 0.2178, low cutoff = 0.004261, based on IQR multiplier of 3.

Constituent: Barium, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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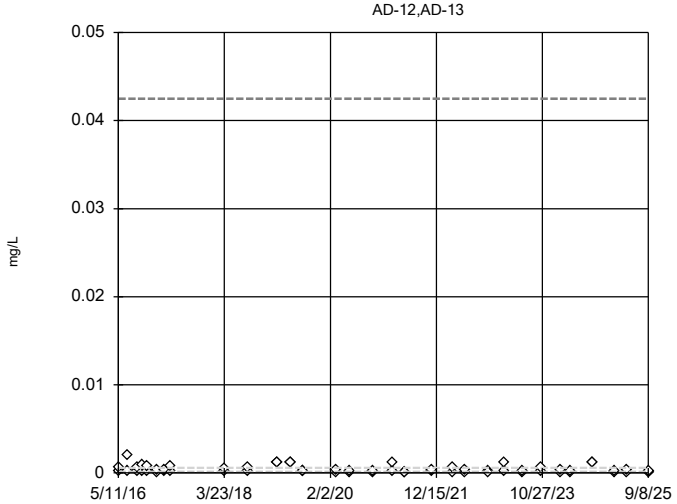
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

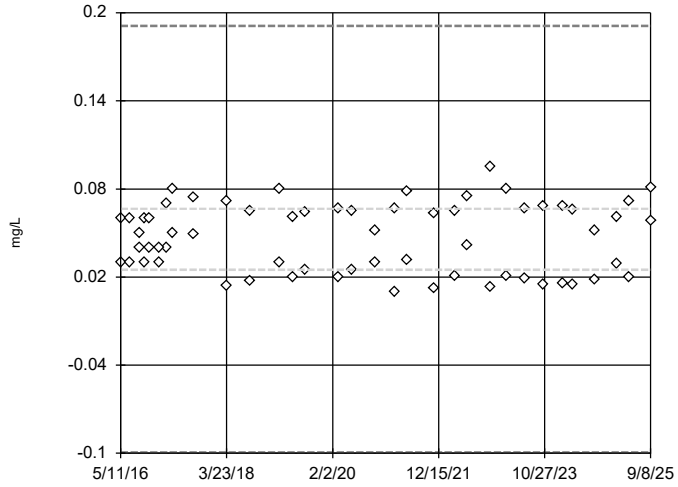
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.04249, low cutoff = 0.000001913, based on IQR multiplier of 3.

Constituent: Beryllium, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 64

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

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

High cutoff = 0.191, low cutoff = -0.0995, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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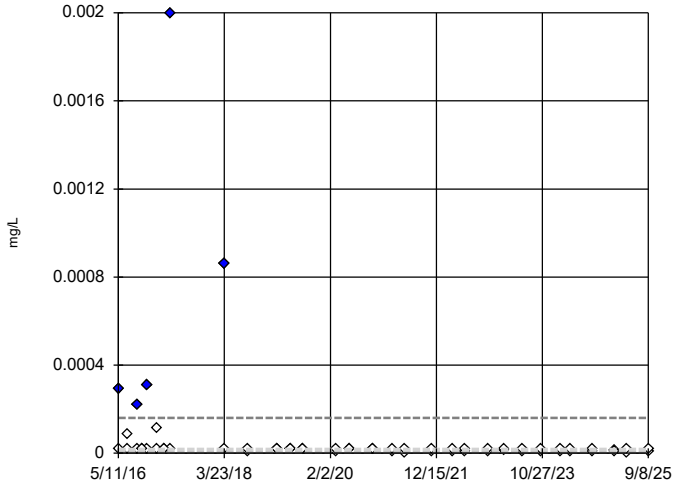
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

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

High cutoff = 0.00016, low cutoff = 0.00000125, based on IQR multiplier of 3.

Constituent: Cadmium, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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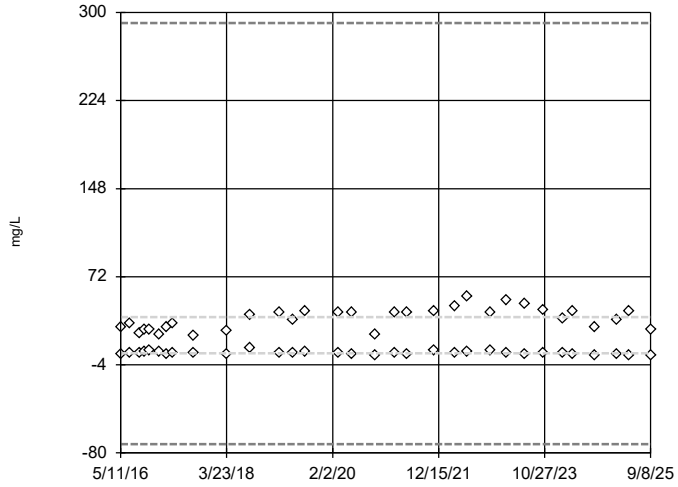
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 64

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

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

High cutoff = 291, low cutoff = -72.37, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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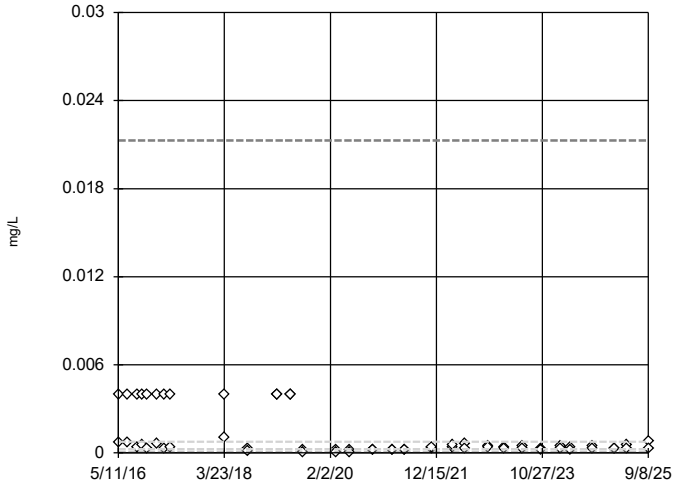
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

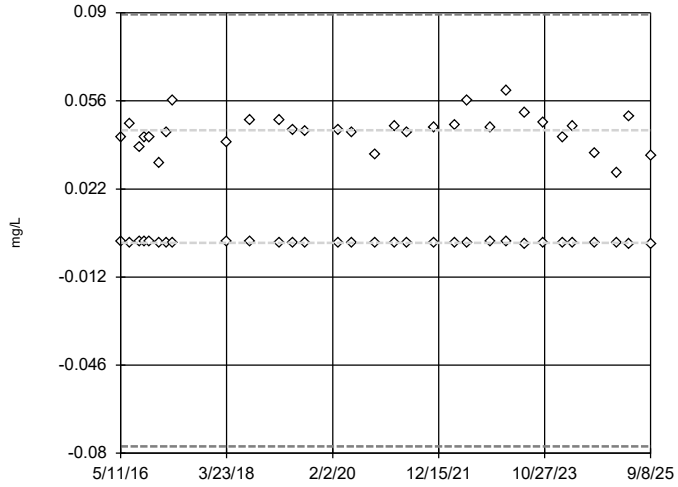
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02128, low cutoff = 0.00000891, based on IQR multiplier of 3.

Constituent: Chromium, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

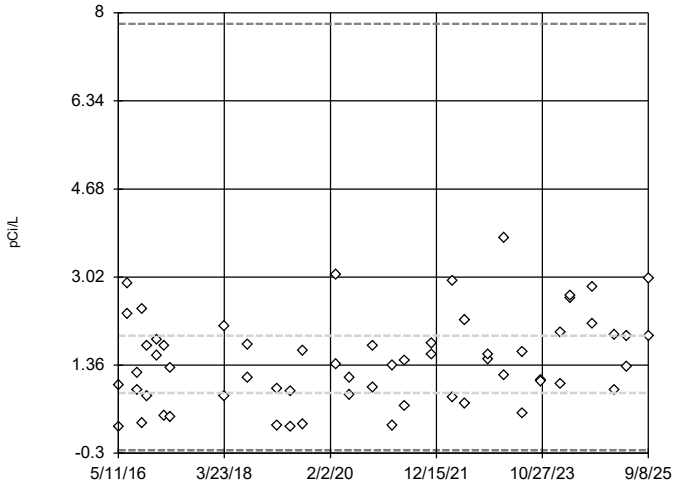
Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.08938, low cutoff = -0.07739, based on IQR multiplier of 3.

Constituent: Cobalt, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

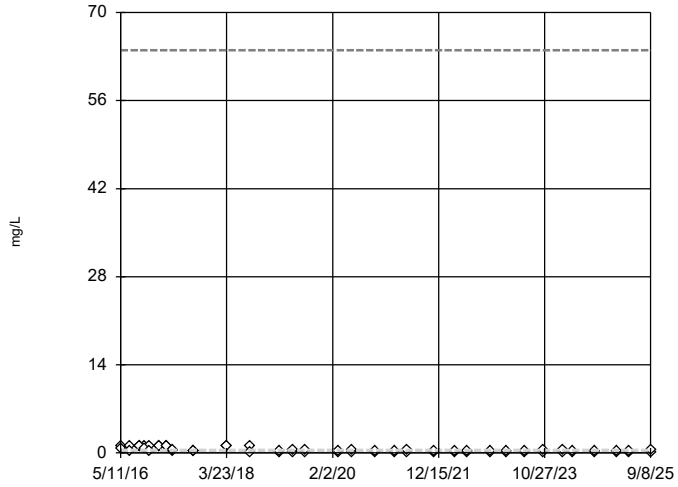
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 7.792, low cutoff = -0.243, based on IQR multiplier of 3.

Constituent: Combined Radium 226 + 228 Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 64

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

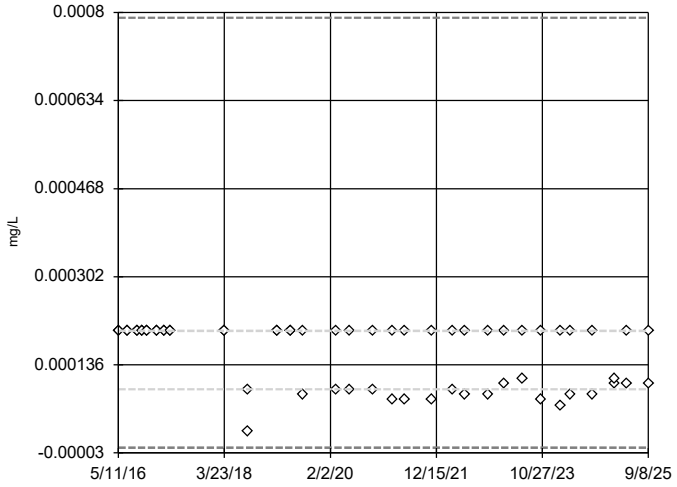
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 64, low cutoff = 0.0006536, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

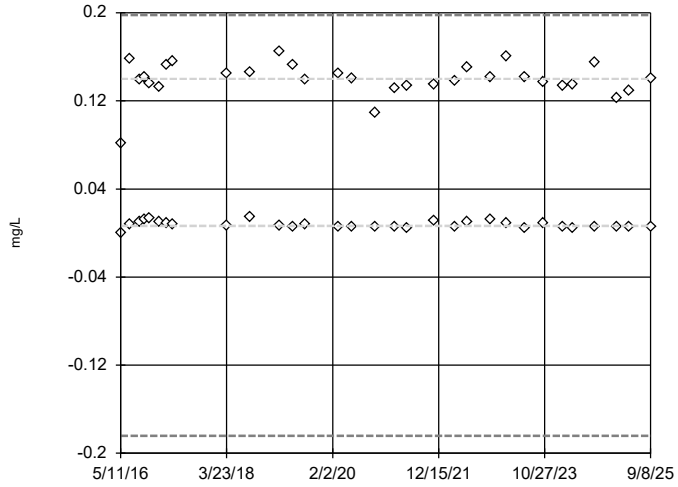
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0007901, low cutoff = -0.00002006, based on IQR multiplier of 3.

Constituent: Lead, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.198, low cutoff = -0.1843, based on IQR multiplier of 3.

Constituent: Lithium, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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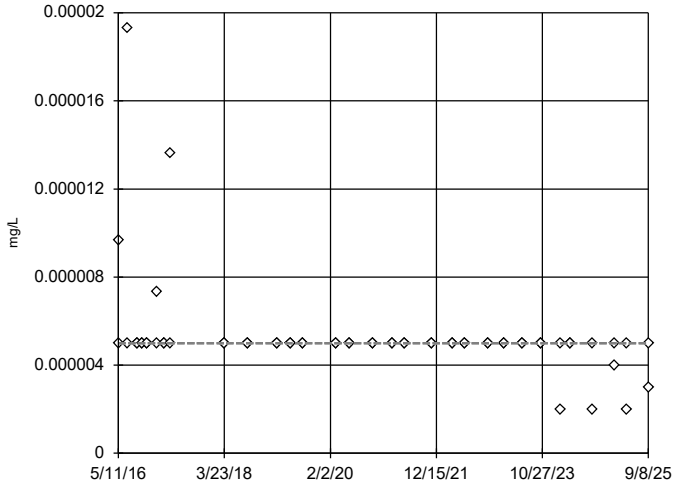
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

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

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

Constituent: Mercury, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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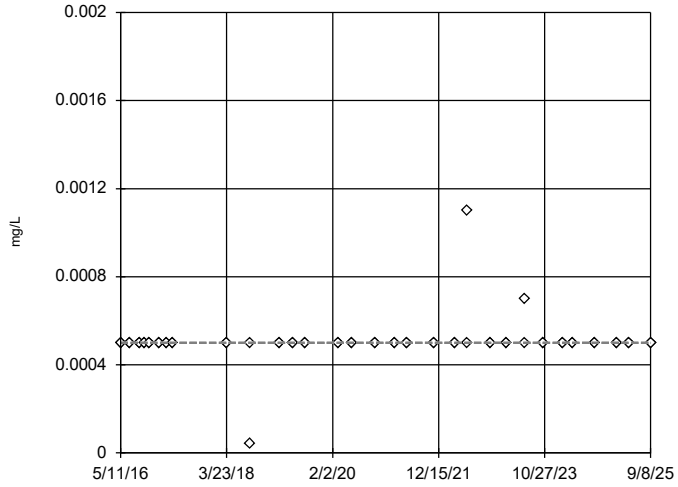
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

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

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

Constituent: Molybdenum, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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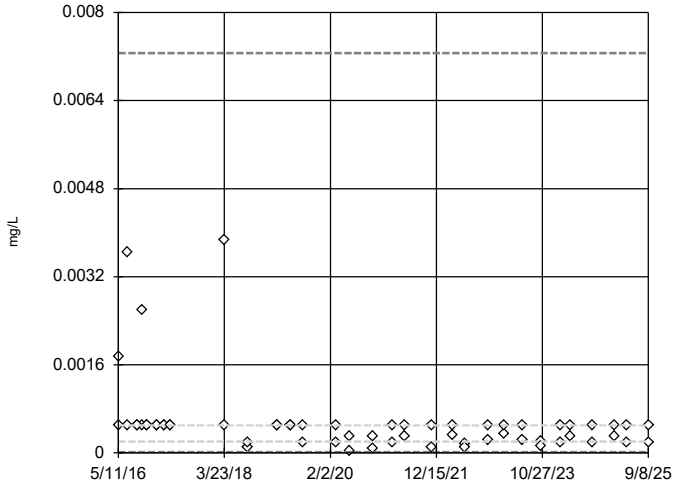
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

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

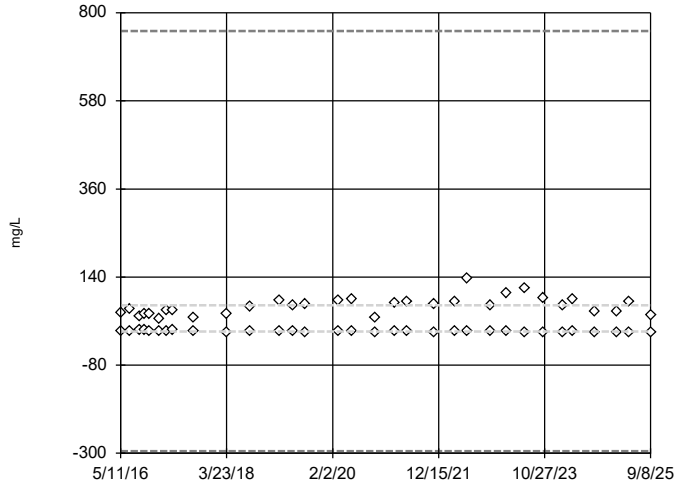
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.007261, low cutoff = 0.00001411, based on IQR multiplier of 3.

Constituent: Selenium, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 64

No outliers found. Tukey's method select-ed by user.

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

High cutoff = 754.7, low cutoff = -294.8, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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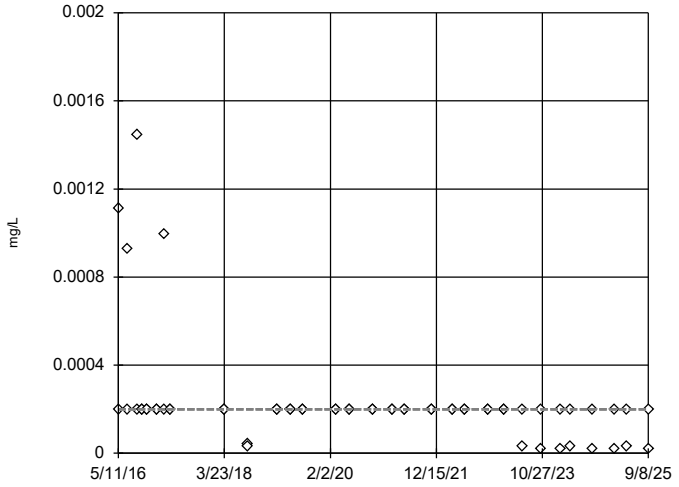
Tukey's Outlier Screening, Pooled Background

AD-12,AD-13



n = 62

No outliers found. Tukey's method select-ed by user.

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

The results were invalid-ated, because the lower and upper quartiles are equal.

Constituent: Thallium, total Analysis Run 11/18/2025 10:18 AM View: Outliers Upgradient
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE D

Intrawell PLs

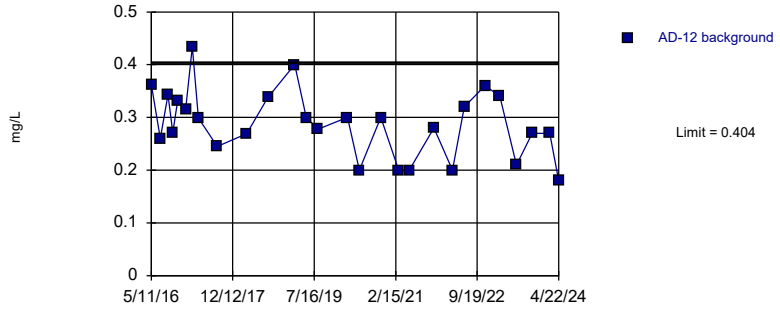
Appendix III - Intrawell Prediction Limits

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 1:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Calcium, total (mg/L)	AD-12	0.404	n/a	n/a	1 future	n/a	28	0	No	0.002505	Param Intra 1 of 2
Calcium, total (mg/L)	AD-13	13.75	n/a	n/a	1 future	n/a	28	0	No	0.002505	Param Intra 1 of 2
Calcium, total (mg/L)	AD-33	2.381	n/a	n/a	1 future	n/a	29	0	No	0.002505	Param Intra 1 of 2
Calcium, total (mg/L)	AD-7R	4.528	n/a	n/a	1 future	n/a	10	0	No	0.002505	Param Intra 1 of 2
pH, field (SU)	AD-12	5.249	2.944	n/a	1 future	n/a	28	0	No	0.001253	Param Intra 1 of 2
pH, field (SU)	AD-13	6.443	4.898	n/a	1 future	n/a	28	0	No	0.001253	Param Intra 1 of 2
pH, field (SU)	AD-33	4.555	3.241	n/a	1 future	n/a	28	0	No	0.001253	Param Intra 1 of 2
pH, field (SU)	AD-7R	5.786	3.906	n/a	1 future	n/a	10	0	No	0.001253	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	AD-12	99.01	n/a	n/a	1 future	n/a	27	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	AD-13	313.7	n/a	n/a	1 future	n/a	28	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	AD-33	214.9	n/a	n/a	1 future	n/a	27	0	No	0.002505	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	AD-7R	265.5	n/a	n/a	1 future	n/a	10	0	No	0.002505	Param Intra 1 of 2

Prediction Limit

Intrawell Parametric, AD-12 (bg)



Background Data Summary: Mean=0.2884, Std. Dev.=0.06375, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.965, critical = 0.896. Kappa = 1.814 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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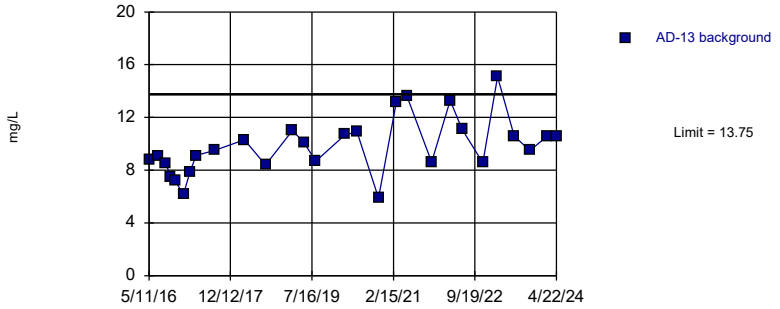
Prediction Limit

Intrawell Parametric, AD-13 (bg)



Background Data Summary: Mean=9.802, Std. Dev.=2.178, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9595, critical = 0.896. Kappa = 1.814 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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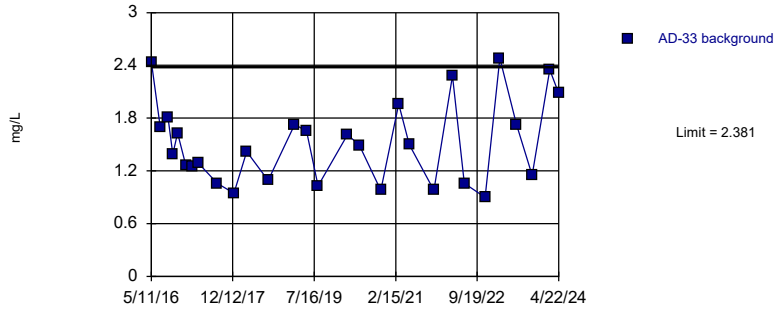
Prediction Limit

Intrawell Parametric, AD-33



Background Data Summary: Mean=1.525, Std. Dev.=0.4737, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9242, critical = 0.898. Kappa = 1.807 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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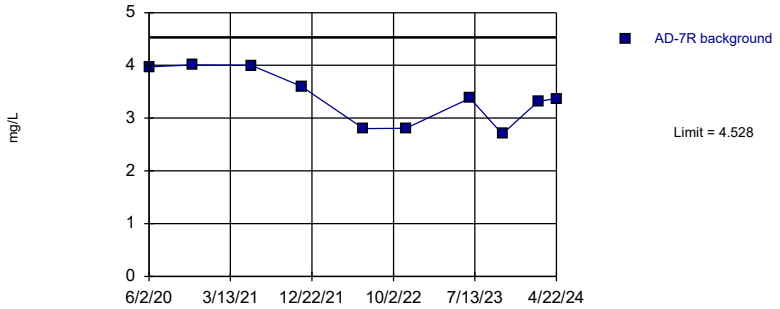
Prediction Limit

Intrawell Parametric, AD-7R

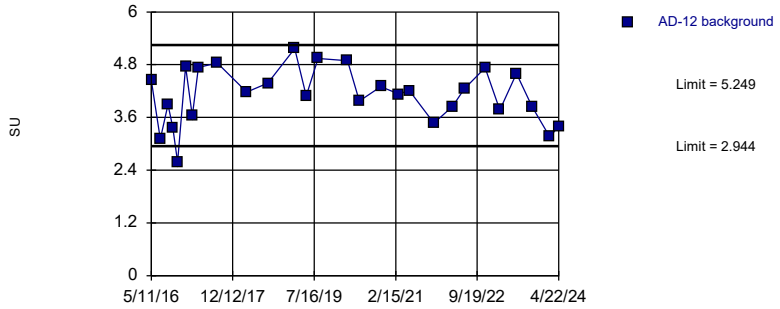


Background Data Summary: Mean=3.396, Std. Dev.=0.5058, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8878, critical = 0.842. Kappa = 2.238 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-12 (bg)

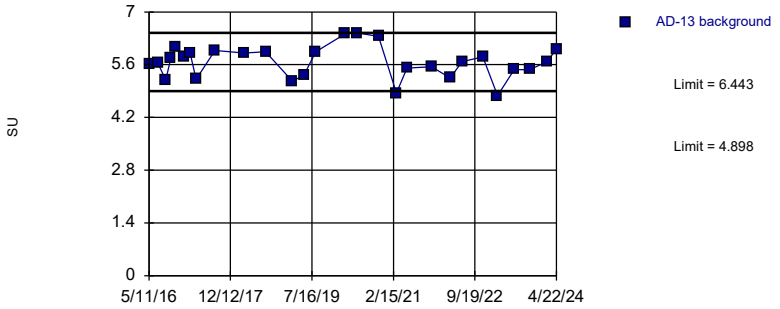


Background Data Summary: Mean=4.096, Std. Dev.=0.6355, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9753, critical = 0.896. Kappa = 1.814 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: pH, field Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-13 (bg)

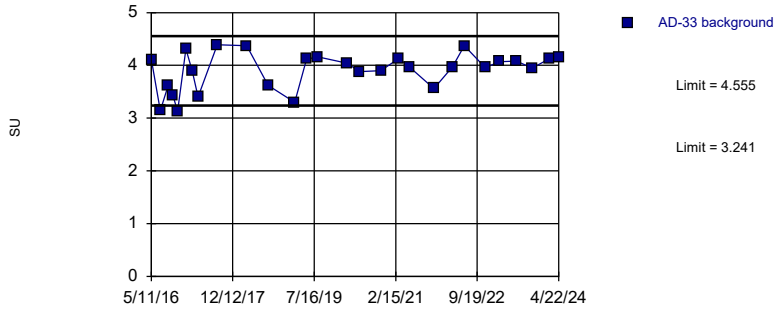


Background Data Summary: Mean=5.67, Std. Dev.=0.4259, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9733, critical = 0.896. Kappa = 1.814 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: pH, field Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-33

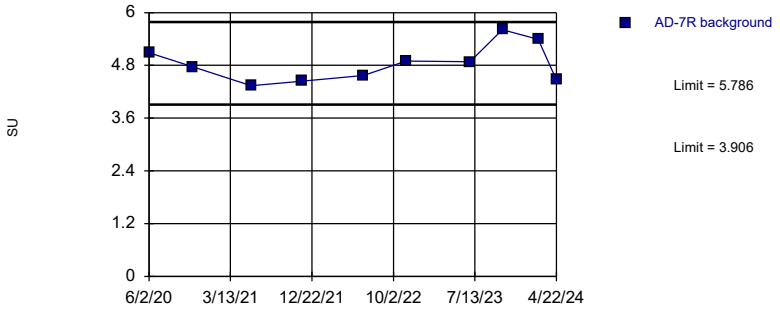


Background Data Summary: Mean=3.898, Std. Dev.=0.3624, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9083, critical = 0.896. Kappa = 1.814 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: pH, field Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-7R

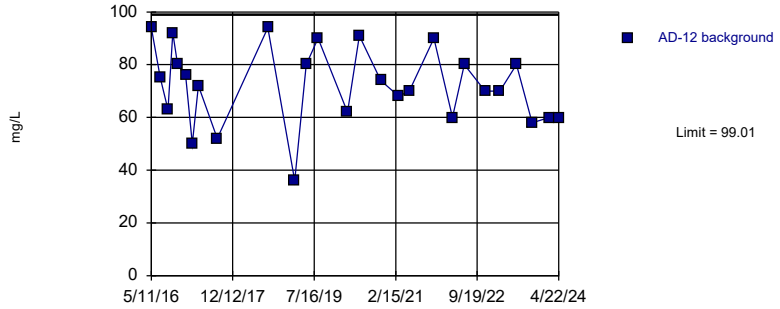


Background Data Summary: Mean=4.846, Std. Dev.=0.42, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9361, critical = 0.842. Kappa = 2.238 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: pH, field Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-12 (bg)

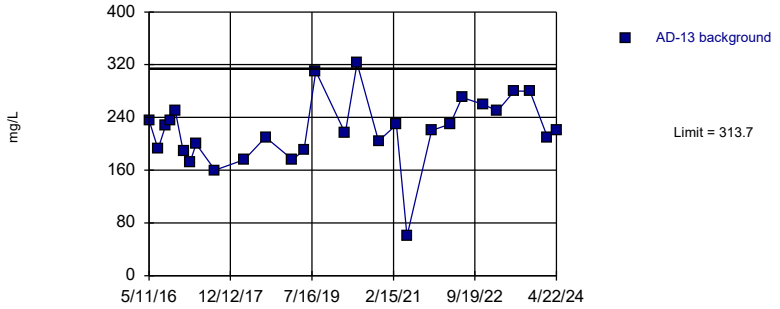


Background Data Summary: Mean=72.11, Std. Dev.=14.78, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9598, critical = 0.894. Kappa = 1.82 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-13 (bg)

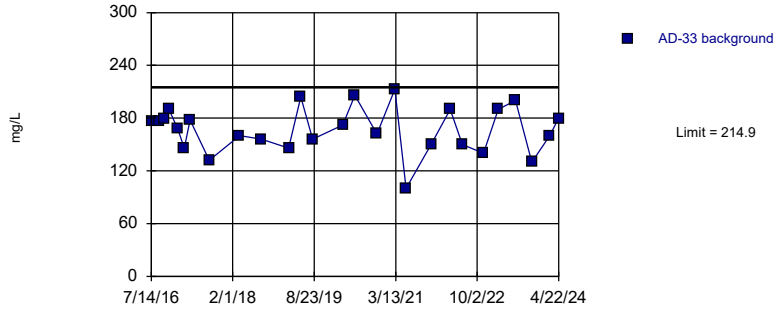


Background Data Summary: Mean=220.5, Std. Dev.=51.39, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9478, critical = 0.896. Kappa = 1.814 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-33

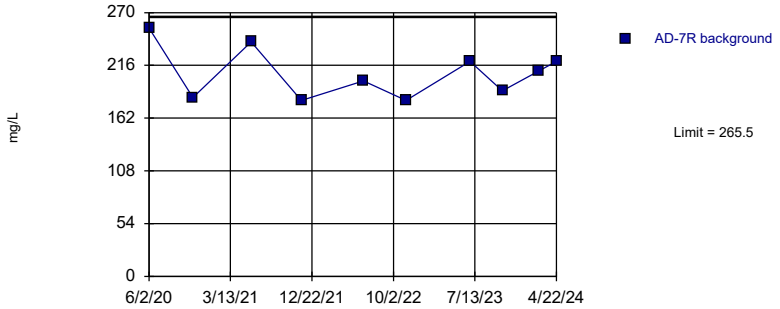


Background Data Summary: Mean=167.1, Std. Dev.=26.29, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9793, critical = 0.894. Kappa = 1.82 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-7R



Background Data Summary: Mean=207.7, Std. Dev.=25.85, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9159, critical = 0.842. Kappa = 2.238 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/18/2025 1:18 PM View: Intrawell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

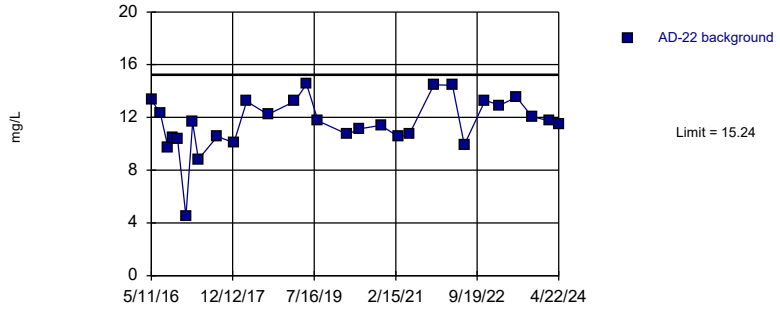
Intrawell Prediction Limits - Deseasonalized

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 1:24 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Calcium, total (mg/L)	AD-22	15.24	n/a	n/a	1 future	n/a	29	0	No	0.002505	Param Intra 1 of 2
pH, field (SU)	AD-22	4.884	3.553	n/a	1 future	n/a	29	0	No	0.001253	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	AD-22	721.5	n/a	n/a	1 future	n/a	29	0	No	0.002505	Param Intra 1 of 2

Prediction Limit

Intrawell Parametric, AD-22

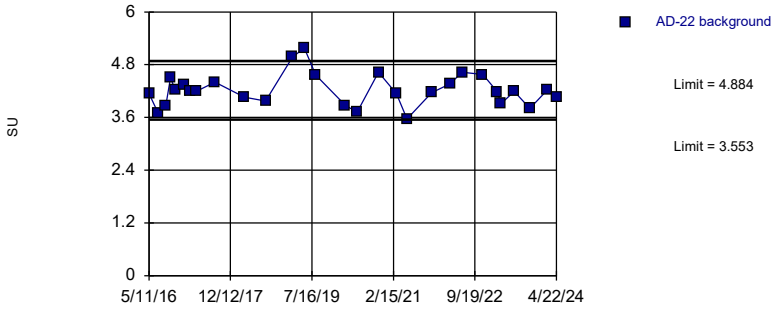


Background Data Summary: Mean=11.56, Std. Dev.=2.037, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9028, critical = 0.898. Kappa = 1.807 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Calcium, total, Alt. Values Analysis Run 11/18/2025 1:22 PM View: Intrawell - Deseasonalize
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-22

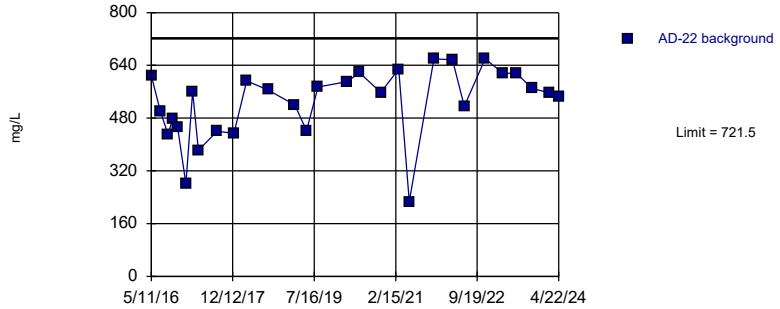


Background Data Summary: Mean=4.219, Std. Dev.=0.3684, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.964, critical = 0.898. Kappa = 1.807 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: pH, field, Alt. Values Analysis Run 11/18/2025 1:23 PM View: Intrawell - Deseasonalized
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Prediction Limit

Intrawell Parametric, AD-22



Background Data Summary: Mean=527.1, Std. Dev.=107.6, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9032, critical = 0.898. Kappa = 1.807 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS], Alt. Values Analysis Run 11/18/2025 1:24 PM View: Intrawell -
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE E
Upgradient Trend Tests – Appendix III

Appendix III Trend Tests - Upgradient Wells - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 10:57 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Chloride, total (mg/L)	**AD-13 (bg)**	**1.704**	**196**	**161**	**Yes**	**32**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Fluoride, total (mg/L)	**AD-12 (bg)**	**-0.02661**	**-283**	**-161**	**Yes**	**32**	**28.13**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate, total (mg/L)	**AD-12 (bg)**	**-0.1915**	**-221**	**-161**	**Yes**	**32**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate, total (mg/L)	**AD-13 (bg)**	**3.694**	**173**	**161**	**Yes**	**32**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Appendix III Trend Tests - Upgradient Wells - All Results

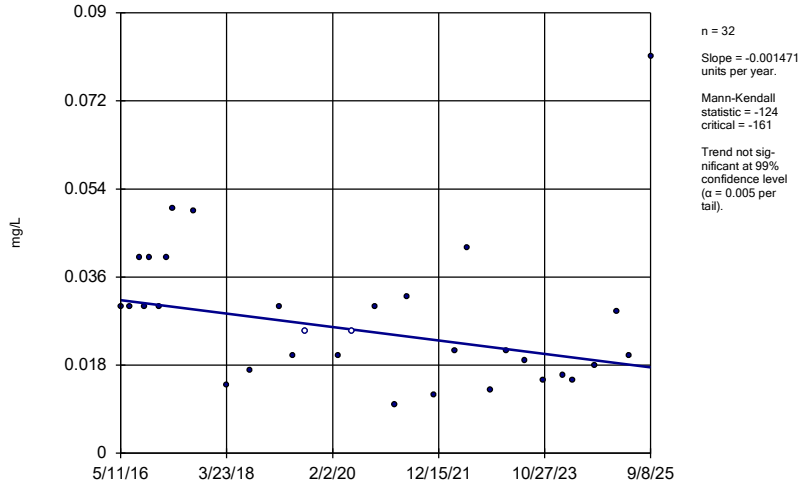
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 10:57 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron, total (mg/L)	AD-12 (bg)	-0.001471	-124	-161	No	32	6.25	n/a	n/a	0.01	NP
Boron, total (mg/L)	AD-13 (bg)	0.0006259	76	161	No	32	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	AD-12 (bg)	-0.09637	-94	-161	No	32	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	**AD-13 (bg)**	**1.704**	**196**	**161**	**Yes**	**32**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Fluoride, total (mg/L)	**AD-12 (bg)**	**-0.02661**	**-283**	**-161**	**Yes**	**32**	**28.13**	**n/a**	**n/a**	**0.01**	**NP**
Fluoride, total (mg/L)	AD-13 (bg)	-0.01463	-152	-161	No	32	12.5	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	**AD-12 (bg)**	**-0.1915**	**-221**	**-161**	**Yes**	**32**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate, total (mg/L)	**AD-13 (bg)**	**3.694**	**173**	**161**	**Yes**	**32**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 32

Slope = -0.001471 units per year.

Mann-Kendall statistic = -124
critical = -161

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

Constituent: Boron, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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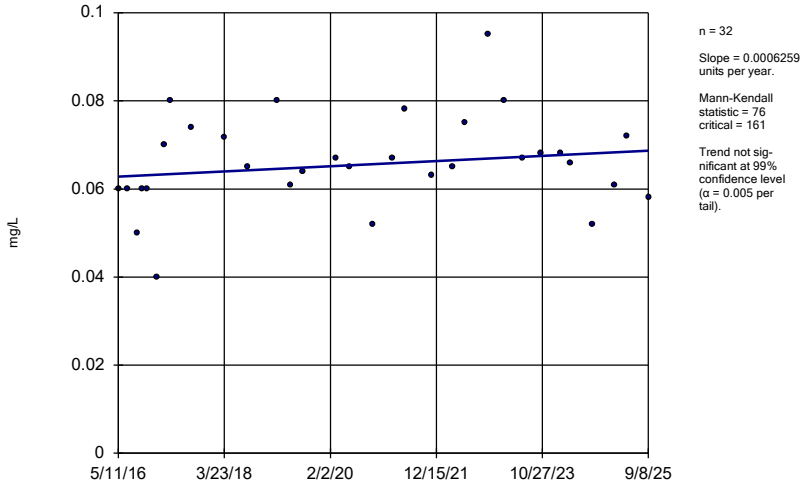
Sen's Slope Estimator

AD-13 (bg)



n = 32

Slope = 0.0006259 units per year.

Mann-Kendall statistic = 76
critical = 161

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

Constituent: Boron, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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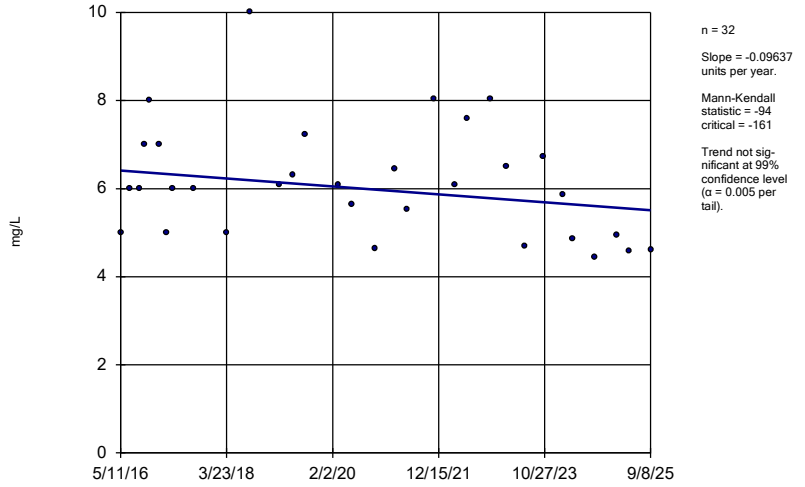
Sen's Slope Estimator

AD-12 (bg)



n = 32

Slope = -0.09637 units per year.

Mann-Kendall statistic = -94
critical = -161

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

Constituent: Chloride, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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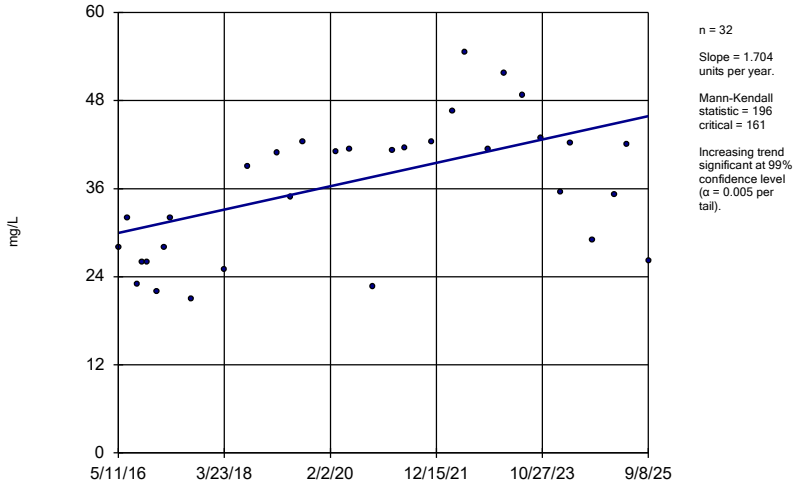
Sen's Slope Estimator

AD-13 (bg)



n = 32

Slope = 1.704 units per year.

Mann-Kendall statistic = 196
critical = 161

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

Constituent: Chloride, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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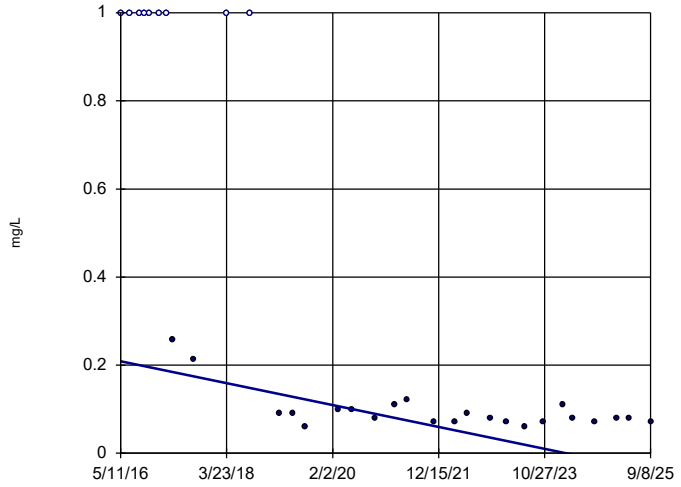
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 32

Slope = -0.02661 units per year.

Mann-Kendall statistic = -283
critical = -161

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

Constituent: Fluoride, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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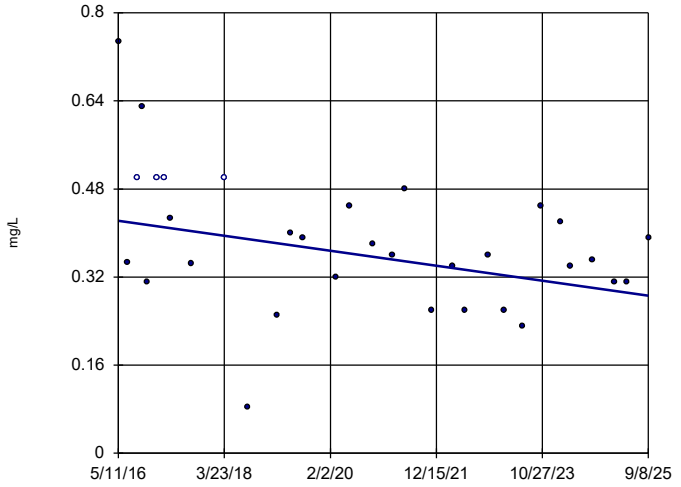
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 32

Slope = -0.01463 units per year.

Mann-Kendall statistic = -152
critical = -161

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

Constituent: Fluoride, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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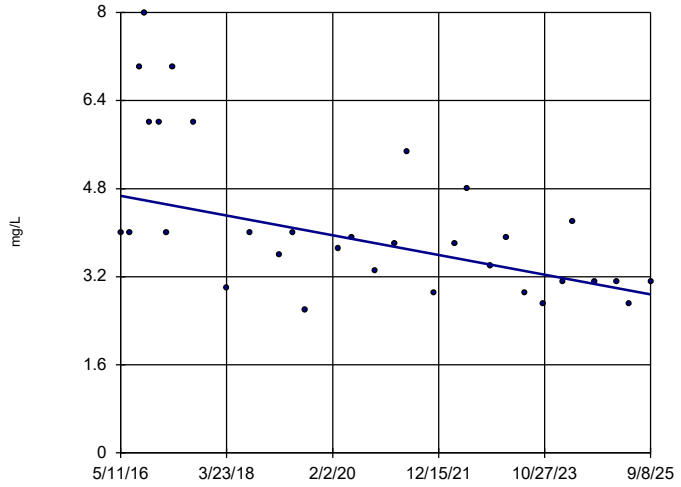
Sen's Slope Estimator

AD-12 (bg)



n = 32

Slope = -0.1915 units per year.

Mann-Kendall statistic = -221
critical = -161

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

Constituent: Sulfate, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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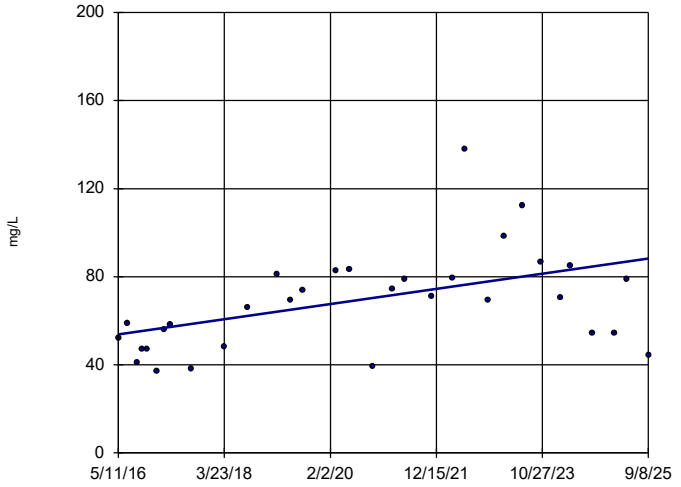
Sen's Slope Estimator

AD-13 (bg)



n = 32

Slope = 3.694 units per year.

Mann-Kendall statistic = 173
critical = 161

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

Constituent: Sulfate, total Analysis Run 11/18/2025 10:56 AM View: Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE F

Interwell PLs

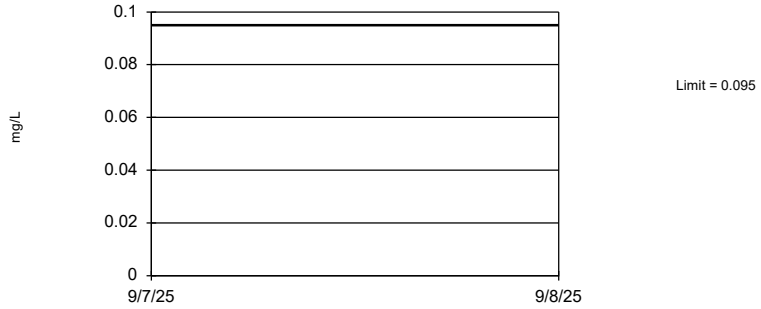
Appendix III - Interwell Prediction Limits

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 1:28 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron, total (mg/L)	n/a	0.095	n/a	n/a	3 future	n/a	64	3.125	n/a	0.0004709	NP Inter (normality) 1 of 2
Chloride, total (mg/L)	n/a	54.5	n/a	n/a	3 future	n/a	64	0	n/a	0.0004709	NP Inter (normality) 1 of 2
Fluoride, total (mg/L)	n/a	0.748	n/a	n/a	3 future	n/a	64	20.31	n/a	0.0004709	NP Inter (normality) 1 of 2
Sulfate, total (mg/L)	n/a	138	n/a	n/a	3 future	n/a	64	0	n/a	0.0004709	NP Inter (normality) 1 of 2

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 64 background values. 3.125% NDs. Annual per-constituent alpha = 0.002822. Individual comparison alpha = 0.0004709 (1 of 2). Assumes 3 future values.

Constituent: Boron, total Analysis Run 11/18/2025 1:27 PM View: Interwell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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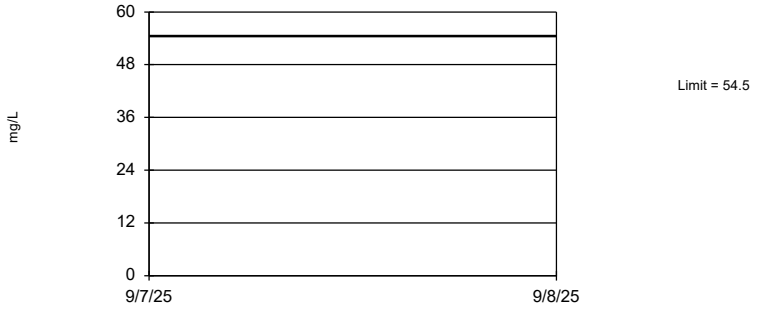
Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 64 background values. Annual per-constituent alpha = 0.002822. Individual comparison alpha = 0.0004709 (1 of 2). Assumes 3 future values.

Constituent: Chloride, total Analysis Run 11/18/2025 1:27 PM View: Interwell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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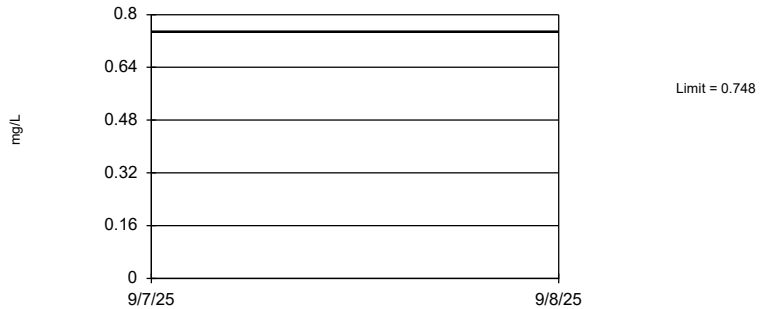
Prediction Limit

Interwell Non-parametric



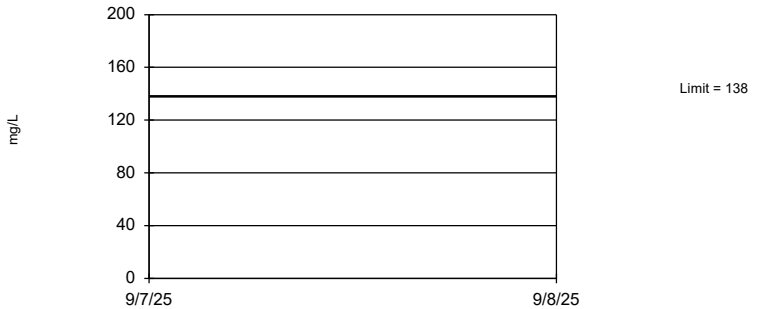
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 64 background values. 20.31% NDs. Annual per-constituent alpha = 0.002822. Individual comparison alpha = 0.0004709 (1 of 2). Assumes 3 future values.

Constituent: Fluoride, total Analysis Run 11/18/2025 1:27 PM View: Interwell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 64 background values. Annual per-constituent alpha = 0.002822. Individual comparison alpha = 0.0004709 (1 of 2). Assumes 3 future values.

Constituent: Sulfate, total Analysis Run 11/18/2025 1:27 PM View: Interwell
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE G
Upgradient Trend Tests – Appendix IV

Appendix IV Trend Tests - Upgradient Wells - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 11:03 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Antimony, total (mg/L)	**AD-12 (bg)**	**0**	**-146**	**-117**	**Yes**	**31**	**70.97**	**n/a**	**n/a**	**0.05**	**NP**
Arsenic, total (mg/L)	**AD-12 (bg)**	**-0.00002173**	**-211**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Arsenic, total (mg/L)	**AD-13 (bg)**	**-0.0002797**	**-185**	**-117**	**Yes**	**31**	**3.226**	**n/a**	**n/a**	**0.05**	**NP**
Barium, total (mg/L)	**AD-12 (bg)**	**-0.0008496**	**-198**	**-117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	**AD-12 (bg)**	**-0.000004723**	**-193**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	**AD-13 (bg)**	**-0.0000398**	**-139**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Cadmium, total (mg/L)	**AD-12 (bg)**	**-0.00000471**	**-260**	**-117**	**Yes**	**31**	**45.16**	**n/a**	**n/a**	**0.05**	**NP**
Cadmium, total (mg/L)	**AD-13 (bg)**	**0**	**-150**	**-112**	**Yes**	**30**	**76.67**	**n/a**	**n/a**	**0.05**	**NP**
Chromium, total (mg/L)	**AD-13 (bg)**	**-0.00009055**	**-149**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Cobalt, total (mg/L)	**AD-12 (bg)**	**-0.00004818**	**-198**	**-117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Combined Radium 226 + 228 (pCi/L)	**AD-12 (bg)**	**0.08325**	**125**	**117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Fluoride, total (mg/L)	**AD-12 (bg)**	**-0.02661**	**-283**	**-123**	**Yes**	**32**	**28.13**	**n/a**	**n/a**	**0.05**	**NP**
Fluoride, total (mg/L)	**AD-13 (bg)**	**-0.01463**	**-152**	**-123**	**Yes**	**32**	**12.5**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	**AD-12 (bg)**	**-0.00001738**	**-188**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Lithium, total (mg/L)	**AD-12 (bg)**	**-0.000356**	**-124**	**-117**	**Yes**	**31**	**3.226**	**n/a**	**n/a**	**0.05**	**NP**
Selenium, total (mg/L)	**AD-12 (bg)**	**-0.0001308**	**-189**	**-117**	**Yes**	**31**	**32.26**	**n/a**	**n/a**	**0.05**	**NP**
Thallium, total (mg/L)	**AD-13 (bg)**	**0**	**-174**	**-112**	**Yes**	**30**	**66.67**	**n/a**	**n/a**	**0.05**	**NP**

Appendix IV Trend Tests - Upgradient Wells - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 11:03 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Antimony, total (mg/L)	**AD-12 (bg)**	**0**	**-146**	**-117**	**Yes**	**31**	**70.97**	**n/a**	**n/a**	**0.05**	**NP**
Antimony, total (mg/L)	AD-13 (bg)	0	12	117	No	31	96.77	n/a	n/a	0.05	NP
Arsenic, total (mg/L)	**AD-12 (bg)**	**-0.00002173**	**-211**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Arsenic, total (mg/L)	**AD-13 (bg)**	**-0.0002797**	**-185**	**-117**	**Yes**	**31**	**3.226**	**n/a**	**n/a**	**0.05**	**NP**
Barium, total (mg/L)	**AD-12 (bg)**	**-0.0008496**	**-198**	**-117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Barium, total (mg/L)	AD-13 (bg)	-0.0001286	-12	-117	No	31	0	n/a	n/a	0.05	NP
Beryllium, total (mg/L)	**AD-12 (bg)**	**-0.000004723**	**-193**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	**AD-13 (bg)**	**-0.0000398**	**-139**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Cadmium, total (mg/L)	**AD-12 (bg)**	**-0.00000471**	**-260**	**-117**	**Yes**	**31**	**45.16**	**n/a**	**n/a**	**0.05**	**NP**
Cadmium, total (mg/L)	**AD-13 (bg)**	**0**	**-150**	**-112**	**Yes**	**30**	**76.67**	**n/a**	**n/a**	**0.05**	**NP**
Chromium, total (mg/L)	AD-12 (bg)	-0.000003945	-23	-117	No	31	6.452	n/a	n/a	0.05	NP
Chromium, total (mg/L)	**AD-13 (bg)**	**-0.00009055**	**-149**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Cobalt, total (mg/L)	**AD-12 (bg)**	**-0.00004818**	**-198**	**-117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Cobalt, total (mg/L)	AD-13 (bg)	0.0003618	44	117	No	31	0	n/a	n/a	0.05	NP
Combined Radium 226 + 228 (pCi/L)	**AD-12 (bg)**	**0.08325**	**125**	**117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Combined Radium 226 + 228 (pCi/L)	AD-13 (bg)	0.06918	103	117	No	31	0	n/a	n/a	0.05	NP
Fluoride, total (mg/L)	**AD-12 (bg)**	**-0.02661**	**-283**	**-123**	**Yes**	**32**	**28.13**	**n/a**	**n/a**	**0.05**	**NP**
Fluoride, total (mg/L)	**AD-13 (bg)**	**-0.01463**	**-152**	**-123**	**Yes**	**32**	**12.5**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	**AD-12 (bg)**	**-0.00001738**	**-188**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	AD-13 (bg)	0	-13	-117	No	31	93.55	n/a	n/a	0.05	NP
Lithium, total (mg/L)	**AD-12 (bg)**	**-0.000356**	**-124**	**-117**	**Yes**	**31**	**3.226**	**n/a**	**n/a**	**0.05**	**NP**
Lithium, total (mg/L)	AD-13 (bg)	-0.0008244	-64	-117	No	31	0	n/a	n/a	0.05	NP
Mercury, total (mg/L)	AD-12 (bg)	0	-109	-117	No	31	80.65	n/a	n/a	0.05	NP
Mercury, total (mg/L)	AD-13 (bg)	0	-106	-117	No	31	87.1	n/a	n/a	0.05	NP
Molybdenum, total (mg/L)	AD-12 (bg)	0	23	106	No	29	93.1	n/a	n/a	0.05	NP
Molybdenum, total (mg/L)	AD-13 (bg)	0	8	106	No	29	96.55	n/a	n/a	0.05	NP
Selenium, total (mg/L)	**AD-12 (bg)**	**-0.0001308**	**-189**	**-117**	**Yes**	**31**	**32.26**	**n/a**	**n/a**	**0.05**	**NP**
Selenium, total (mg/L)	AD-13 (bg)	0	-62	-117	No	31	74.19	n/a	n/a	0.05	NP
Thallium, total (mg/L)	AD-12 (bg)	0	-57	-112	No	30	86.67	n/a	n/a	0.05	NP
Thallium, total (mg/L)	**AD-13 (bg)**	**0**	**-174**	**-112**	**Yes**	**30**	**66.67**	**n/a**	**n/a**	**0.05**	**NP**

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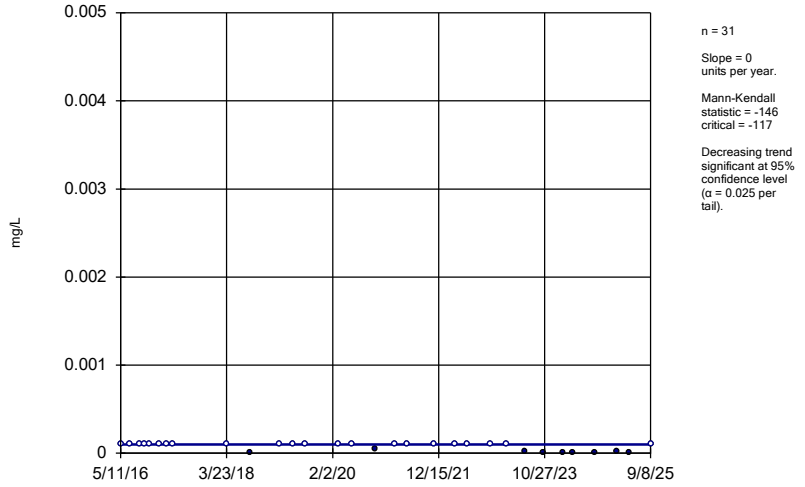
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = 0
units per year.

Mann-Kendall
statistic = -146
critical = -117

Decreasing trend
significant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Antimony, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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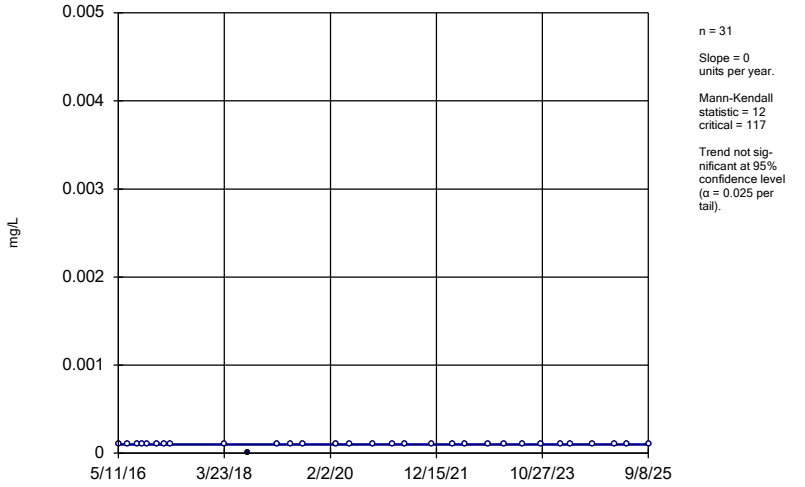
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0
units per year.

Mann-Kendall
statistic = 12
critical = 117

Trend not sig-
nificant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Antimony, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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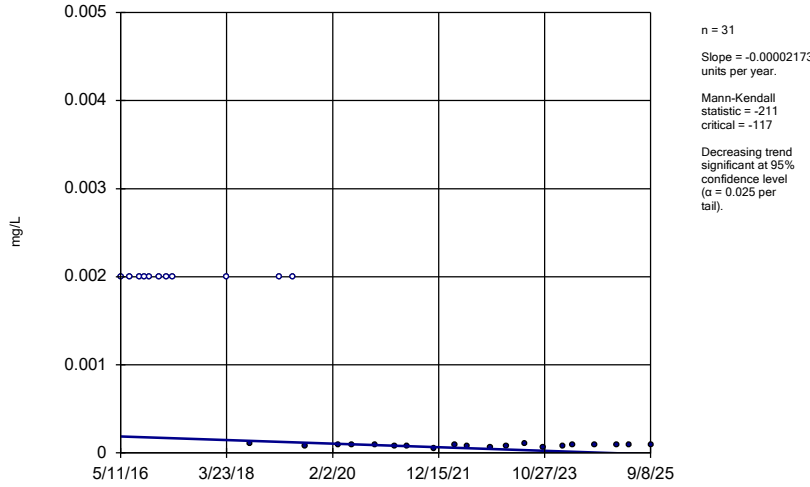
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.00002173
units per year.

Mann-Kendall
statistic = -211
critical = -117

Decreasing trend
significant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Arsenic, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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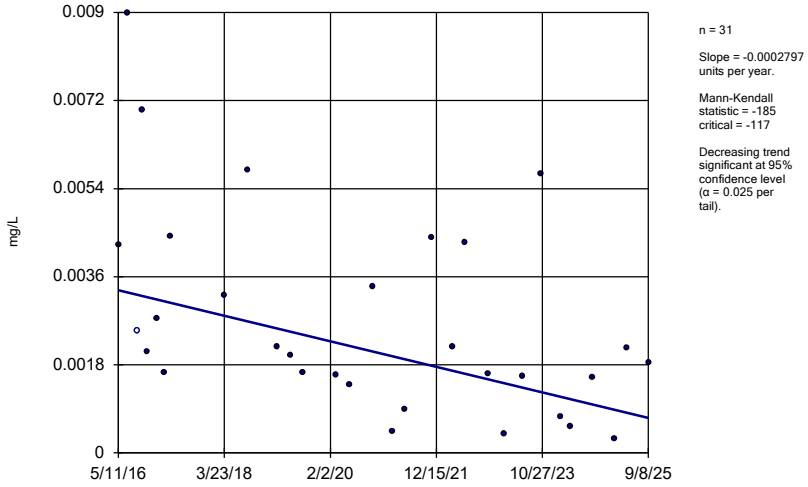
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = -0.0002797
units per year.

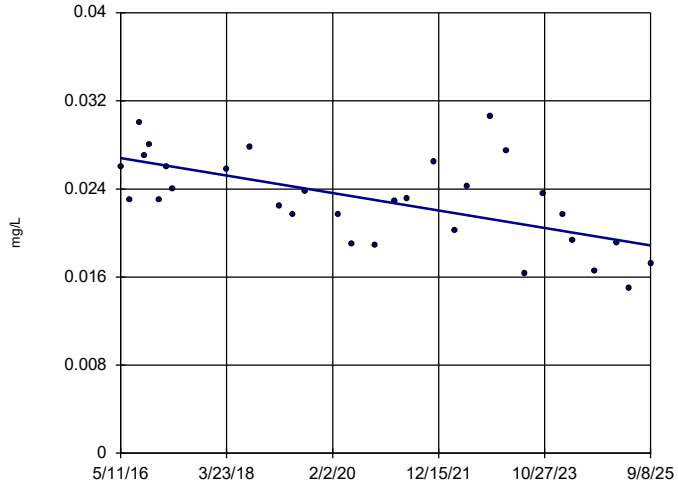
Mann-Kendall
statistic = -185
critical = -117

Decreasing trend
significant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Arsenic, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.0008496 units per year.

Mann-Kendall statistic = -198
critical = -117

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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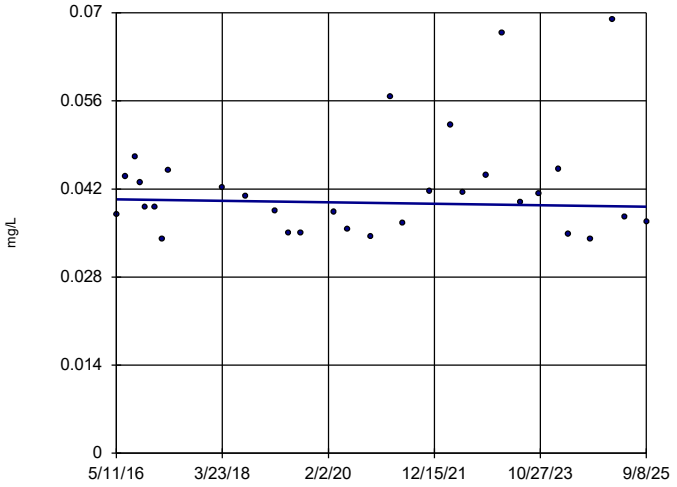
Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = -0.0001286 units per year.

Mann-Kendall statistic = -12
critical = -117

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Barium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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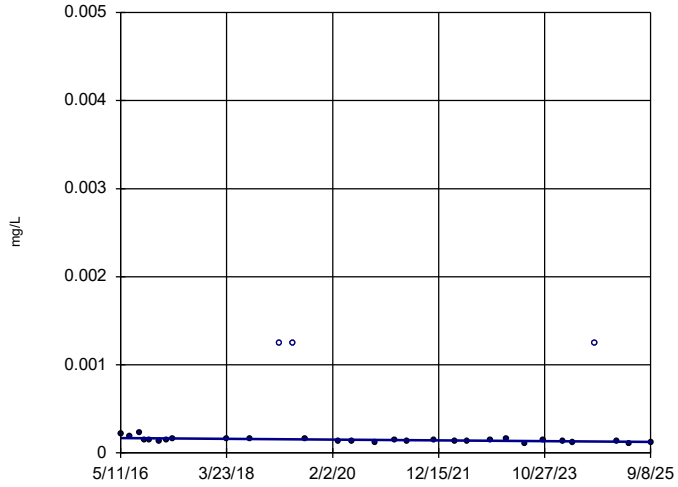
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.000004723 units per year.

Mann-Kendall statistic = -193
critical = -117

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Beryllium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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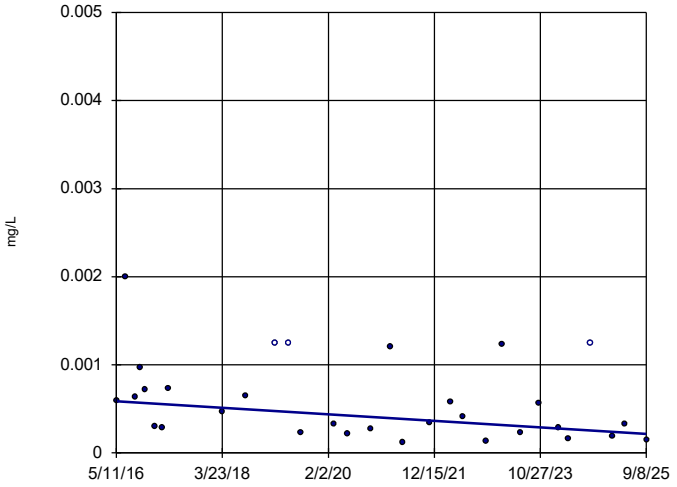
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = -0.0000398 units per year.

Mann-Kendall statistic = -139
critical = -117

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Beryllium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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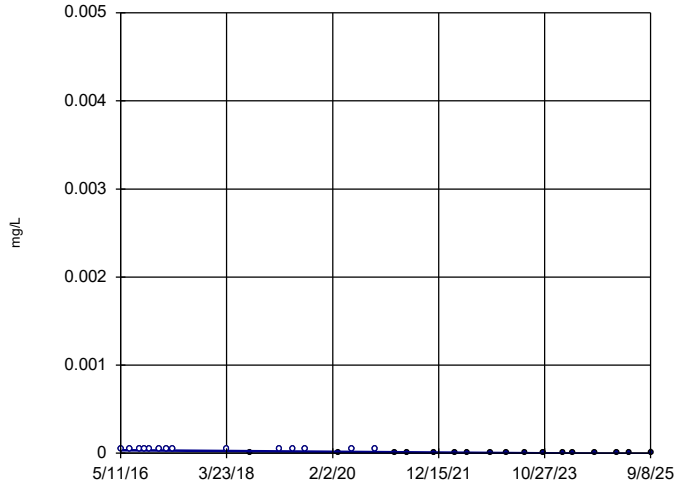
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.00000471 units per year.

Mann-Kendall statistic = -260
critical = -117

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cadmium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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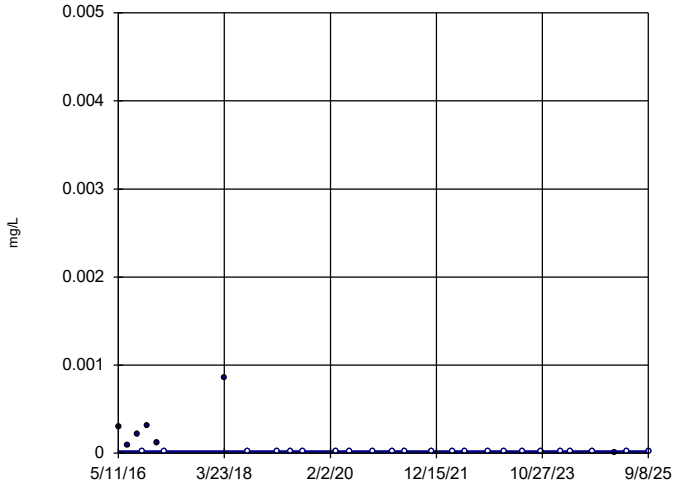
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 30

Slope = 0 units per year.

Mann-Kendall statistic = -150
critical = -112

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cadmium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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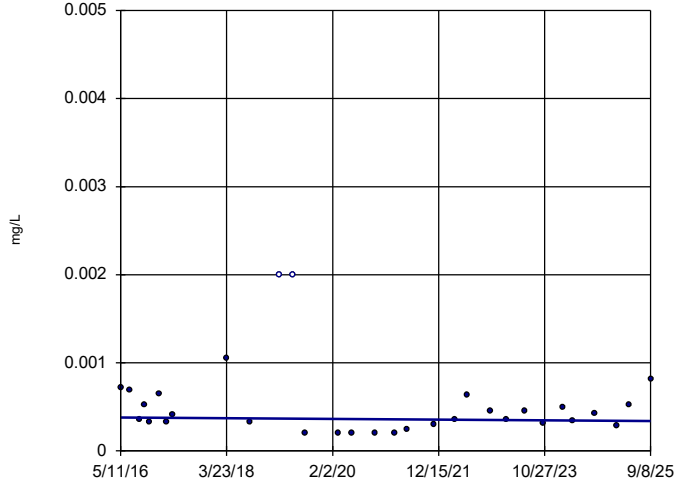
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.000003945 units per year.

Mann-Kendall statistic = -23
critical = -117

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chromium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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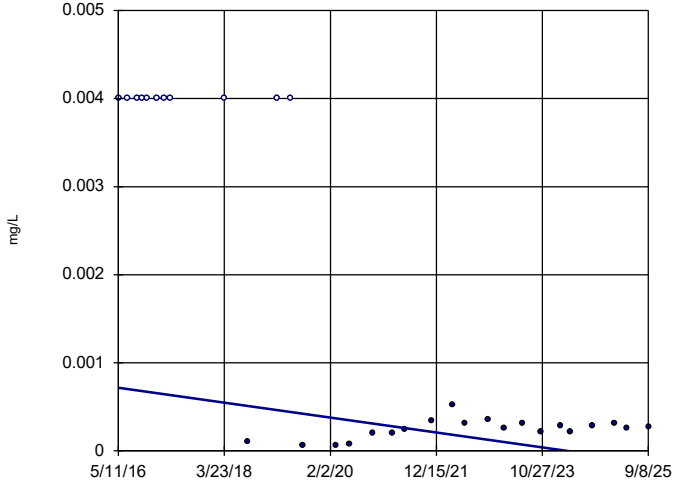
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = -0.00009055 units per year.

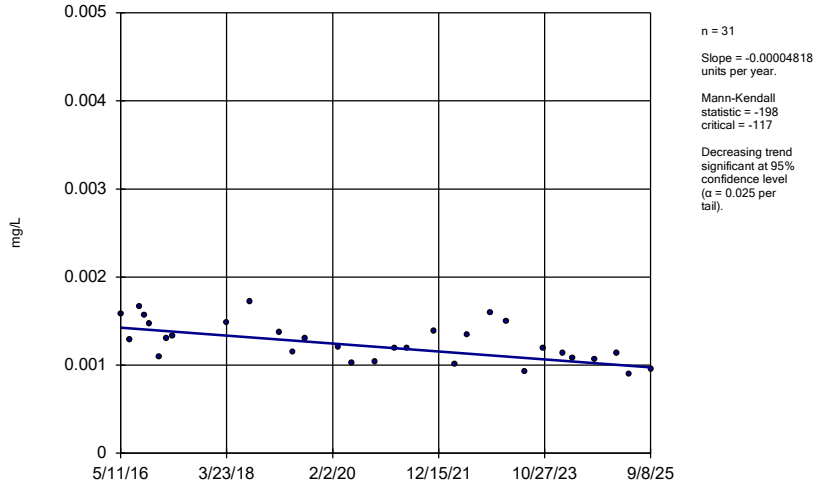
Mann-Kendall statistic = -149
critical = -117

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chromium, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.00004818 units per year.

Mann-Kendall statistic = -198
critical = -117

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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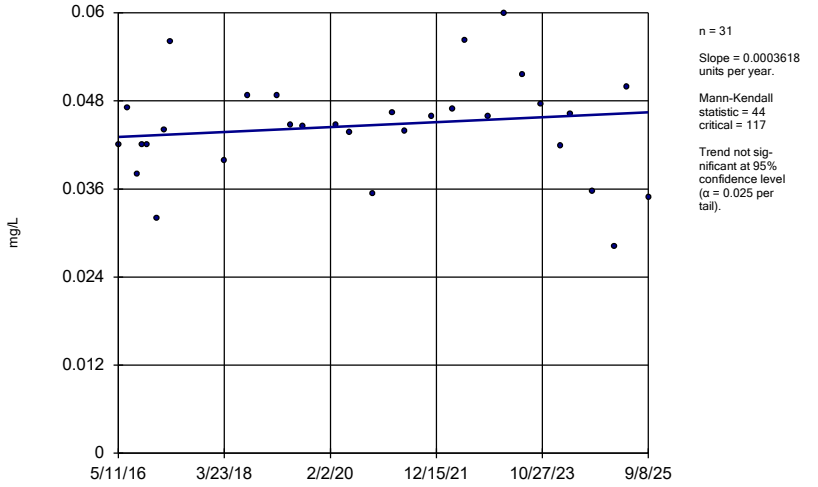
Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0.0003618 units per year.

Mann-Kendall statistic = 44
critical = 117

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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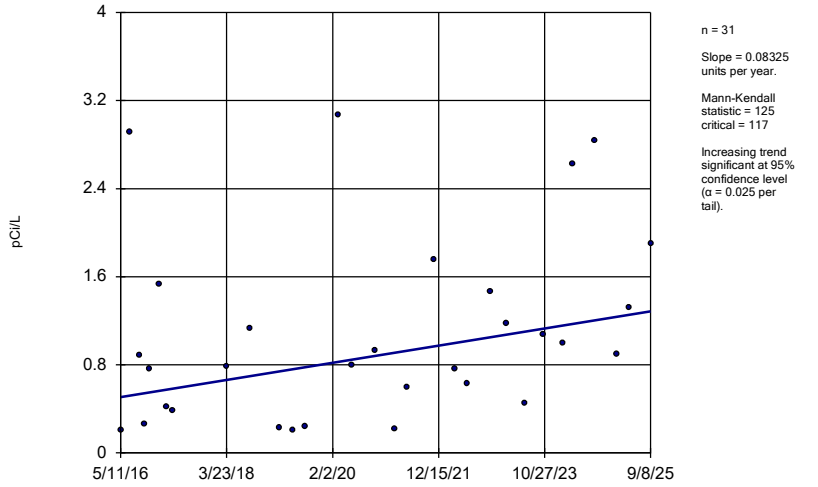
Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = 0.08325 units per year.

Mann-Kendall statistic = 125
critical = 117

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Combined Radium 226 + 228 Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Tren
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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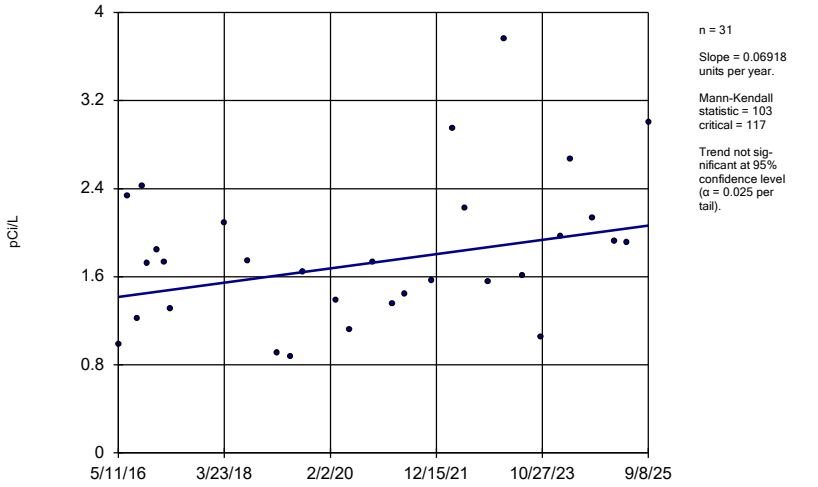
Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0.06918 units per year.

Mann-Kendall statistic = 103
critical = 117

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Combined Radium 226 + 228 Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Tren
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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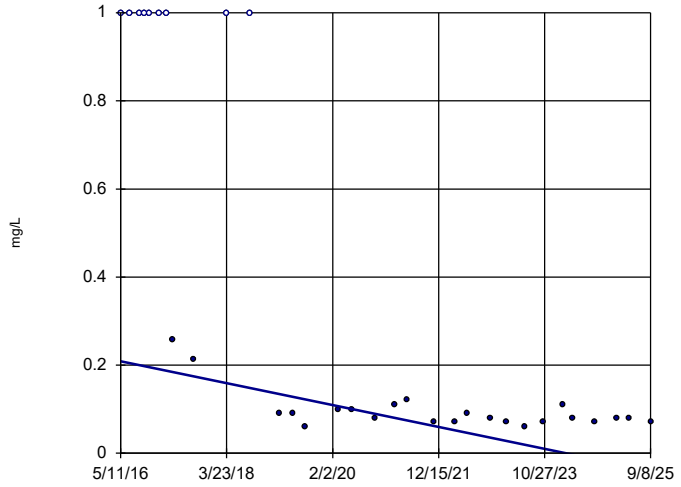
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 32

Slope = -0.02661 units per year.

Mann-Kendall statistic = -283
critical = -123

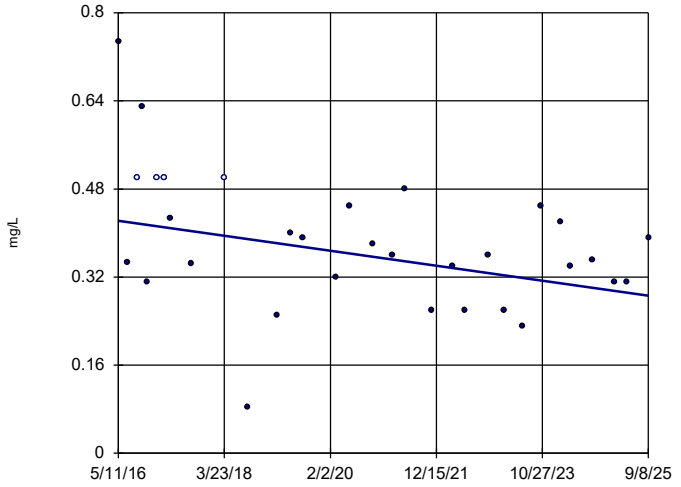
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 32

Slope = -0.01463 units per year.

Mann-Kendall statistic = -152
critical = -123

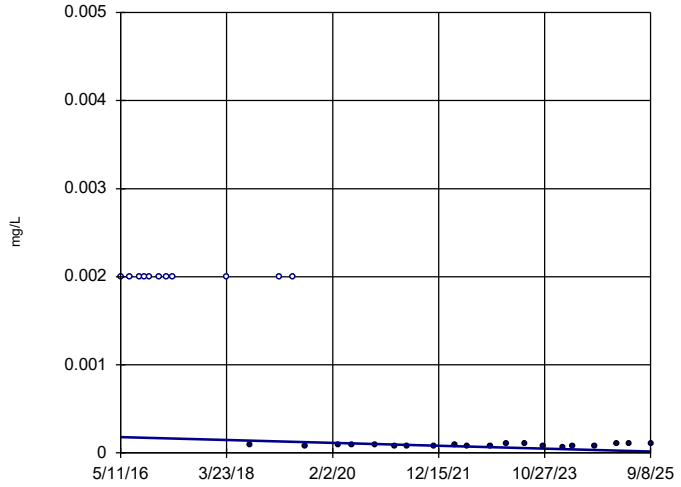
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride, total Analysis Run 11/18/2025 11:01 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.00001738 units per year.

Mann-Kendall statistic = -188
critical = -117

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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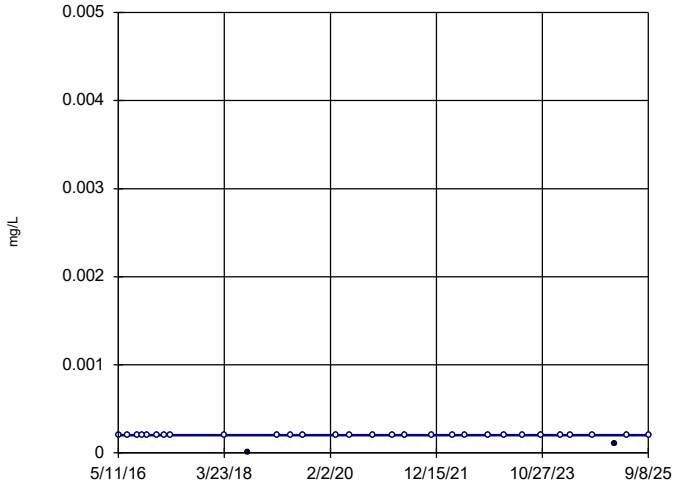
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0 units per year.

Mann-Kendall statistic = -13
critical = -117

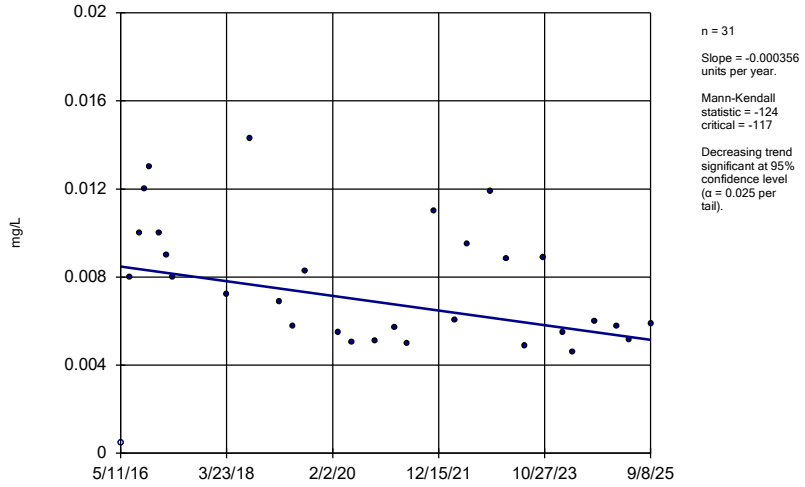
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.000356 units per year.

Mann-Kendall statistic = -124
critical = -117

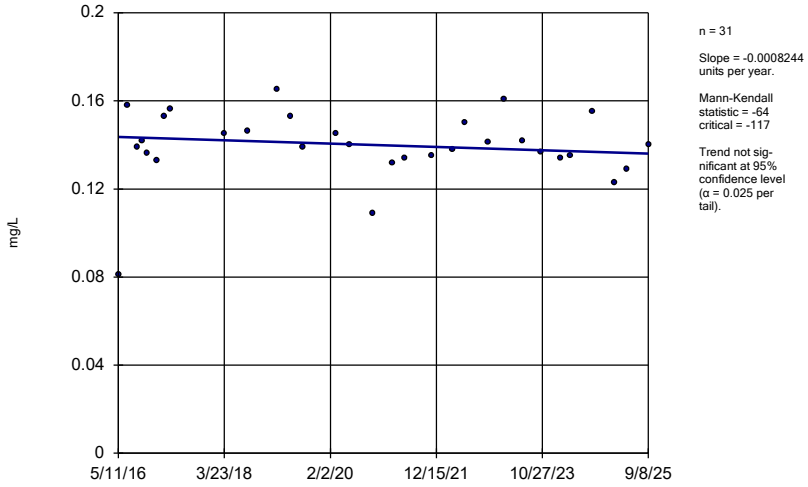
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = -0.0008244 units per year.

Mann-Kendall statistic = -64
critical = -117

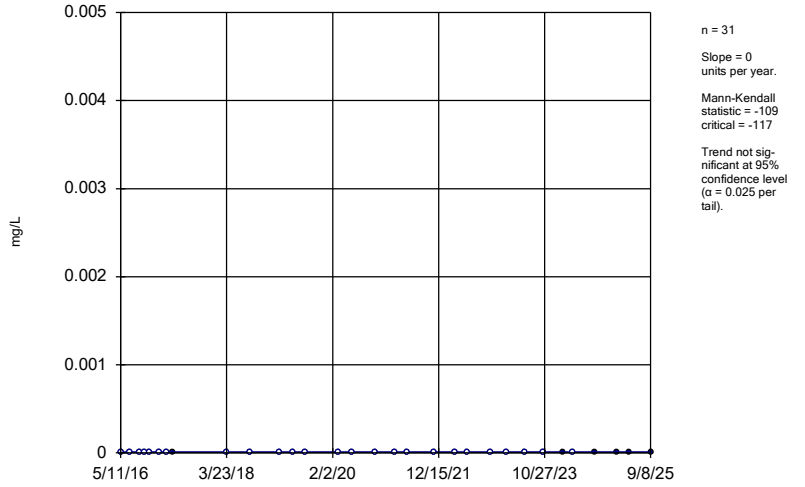
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = 0 units per year.

Mann-Kendall statistic = -109
critical = -117

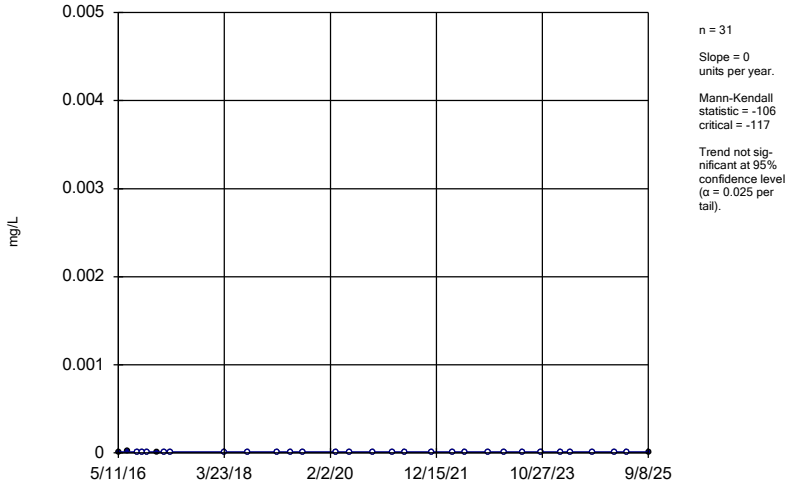
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0 units per year.

Mann-Kendall statistic = -106
critical = -117

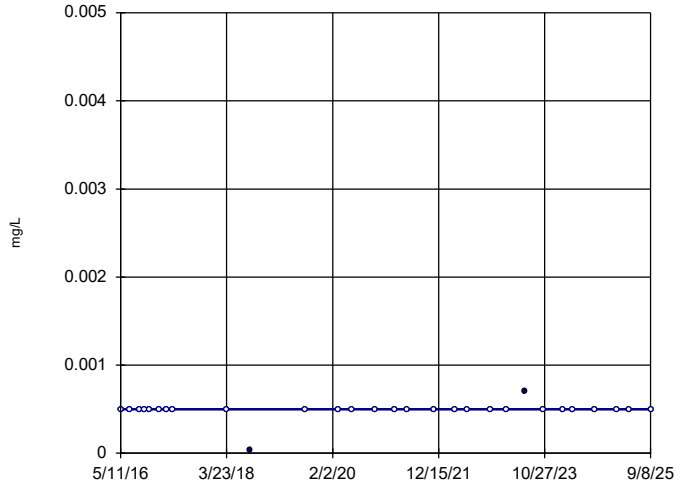
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 29

Slope = 0
units per year.

Mann-Kendall
statistic = 23
critical = 106

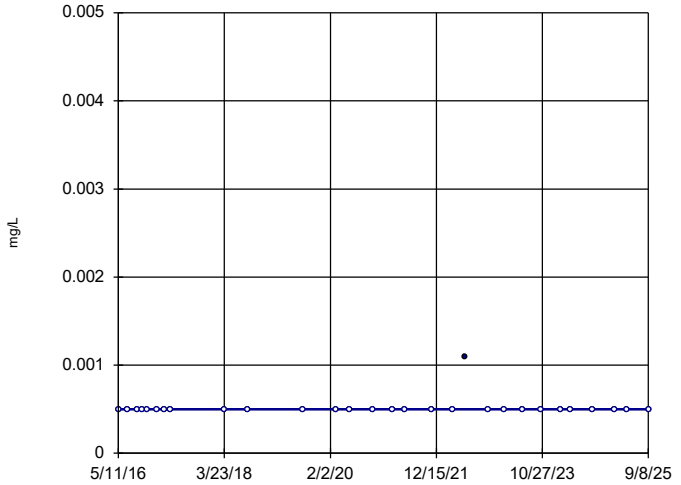
Trend not sig-
nificant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Molybdenum, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 29

Slope = 0
units per year.

Mann-Kendall
statistic = 8
critical = 106

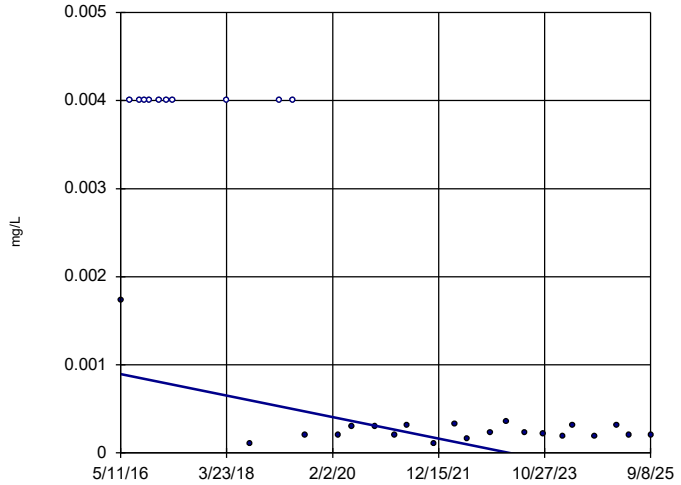
Trend not sig-
nificant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Molybdenum, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.0001308
units per year.

Mann-Kendall
statistic = -189
critical = -117

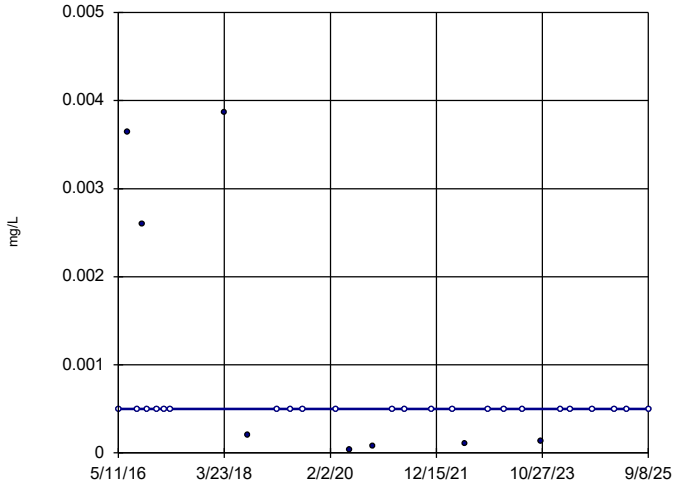
Decreasing trend
significant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Selenium, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0
units per year.

Mann-Kendall
statistic = -62
critical = -117

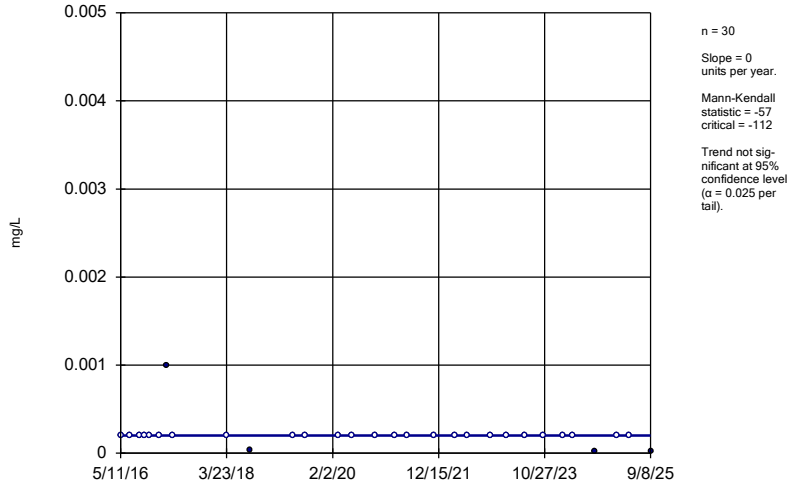
Trend not sig-
nificant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Selenium, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 30

Slope = 0
units per year.

Mann-Kendall
statistic = -57
critical = -112

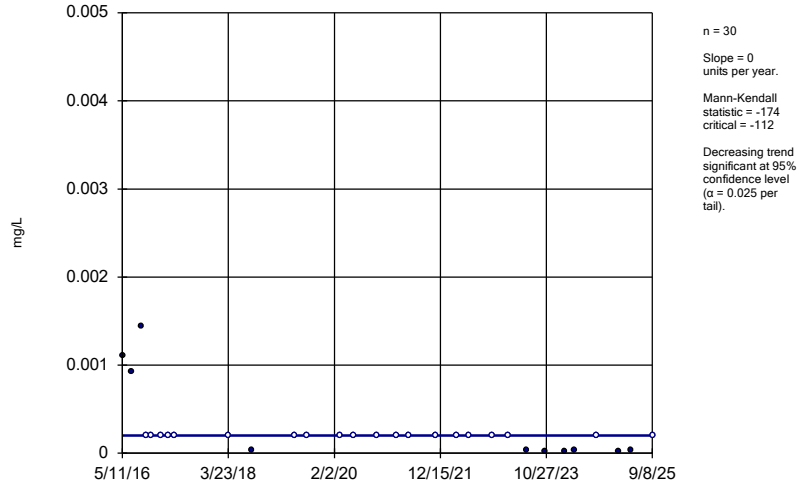
Trend not sig-
nificant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Thallium, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 30

Slope = 0
units per year.

Mann-Kendall
statistic = -174
critical = -112

Decreasing trend
significant at 95%
confidence level
(α = 0.025 per
tail).

Constituent: Thallium, total Analysis Run 11/18/2025 11:02 AM View: AIV Upgradient Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE H

UTLs

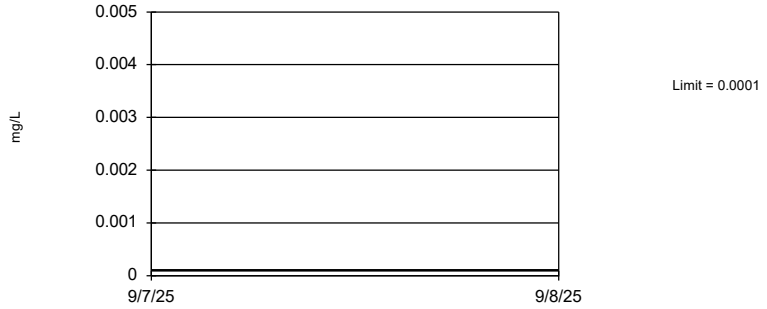
Upper Tolerance Limits

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 1:50 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony, total (mg/L)	n/a	0.0001	n/a	n/a	n/a	62	83.87	n/a	0.04158	NP Inter(NDs)
Arsenic, total (mg/L)	n/a	0.009	n/a	n/a	n/a	62	19.35	n/a	0.04158	NP Inter(normality)
Barium, total (mg/L)	n/a	0.05827	n/a	n/a	n/a	62	0	sqrt(x)	0.05	Inter
Beryllium, total (mg/L)	n/a	0.002	n/a	n/a	n/a	62	9.677	n/a	0.04158	NP Inter(normality)
Cadmium, total (mg/L)	n/a	0.00086	n/a	n/a	n/a	61	60.66	n/a	0.04377	NP Inter(NDs)
Chromium, total (mg/L)	n/a	0.004	n/a	n/a	n/a	62	20.97	n/a	0.04158	NP Inter(normality)
Cobalt, total (mg/L)	n/a	0.06	n/a	n/a	n/a	62	0	n/a	0.04158	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	3.12	n/a	n/a	n/a	62	0	No	0.05	Inter
Fluoride, total (mg/L)	n/a	0.748	n/a	n/a	n/a	64	20.31	n/a	0.03752	NP Inter(normality)
Lead, total (mg/L)	n/a	0.0002	n/a	n/a	n/a	62	64.52	n/a	0.04158	NP Inter(NDs)
Lithium, total (mg/L)	n/a	0.165	n/a	n/a	n/a	62	1.613	n/a	0.04158	NP Inter(normality)
Mercury, total (mg/L)	n/a	0.00001928	n/a	n/a	n/a	62	83.87	n/a	0.04158	NP Inter(NDs)
Molybdenum, total (mg/L)	n/a	0.0011	n/a	n/a	n/a	58	94.83	n/a	0.05105	NP Inter(NDs)
Selenium, total (mg/L)	n/a	0.00386	n/a	n/a	n/a	62	53.23	n/a	0.04158	NP Inter(NDs)
Thallium, total (mg/L)	n/a	0.001443	n/a	n/a	n/a	60	76.67	n/a	0.04607	NP Inter(NDs)

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 62 background values. 83.87% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Antimony, total Analysis Run 11/18/2025 1:48 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

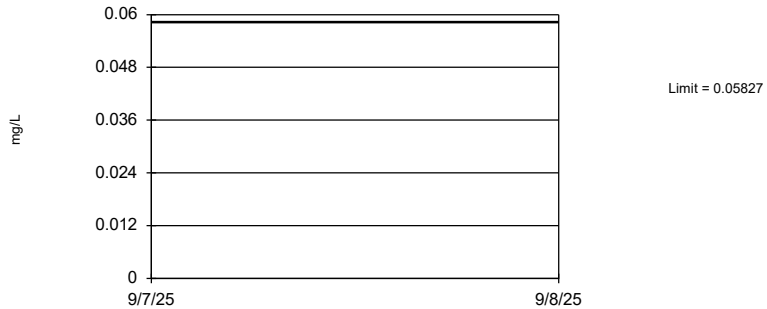
Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 62 background values. 19.35% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Arsenic, total Analysis Run 11/18/2025 1:48 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on square root transformation): Mean=0.1777, Std. Dev.=0.03169, n=62. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9669, critical = 0.947. Report alpha = 0.05.

Constituent: Barium, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

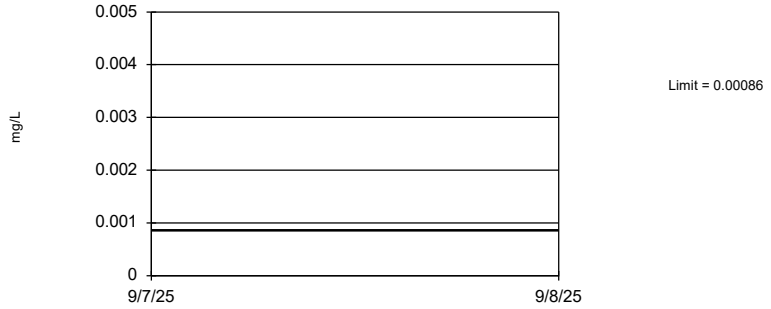
Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 62 background values. 9.677% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Beryllium, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

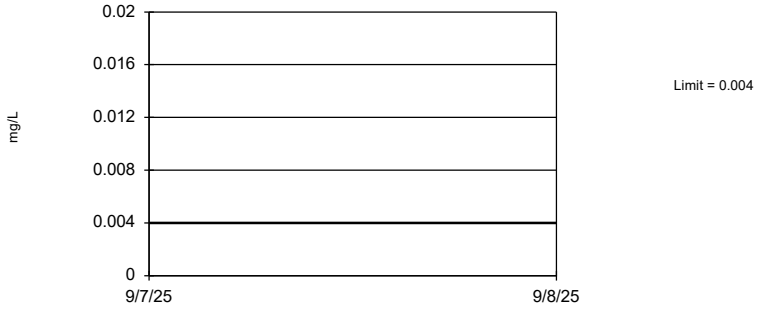


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 61 background values. 60.66% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04377.

Constituent: Cadmium, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 62 background values. 20.97% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Chromium, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 62 background values. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Cobalt, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

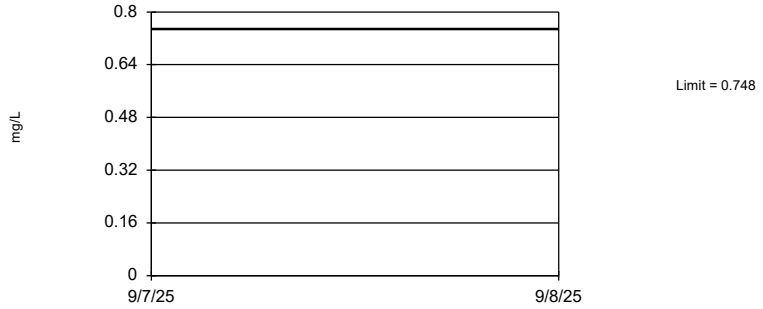
Interwell Parametric

95% coverage. Background Data Summary: Mean=1.445, Std. Dev.=0.8331, n=62. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9689, critical = 0.947. Report alpha = 0.05.

Constituent: Combined Radium 226 + 228 Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limit
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

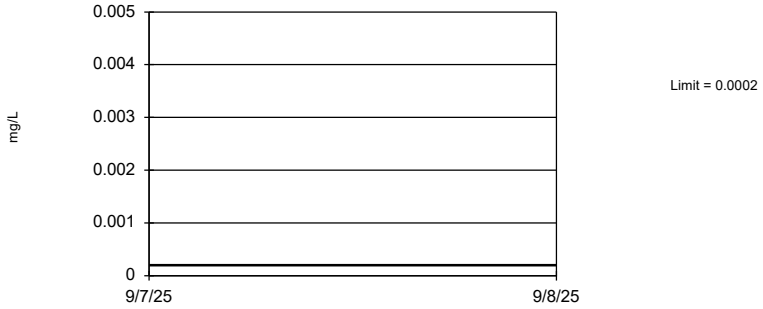


Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 64 background values. 20.31% NDs. 93.16% coverage at alpha=0.01; 95.51% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.03752.

Constituent: Fluoride, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

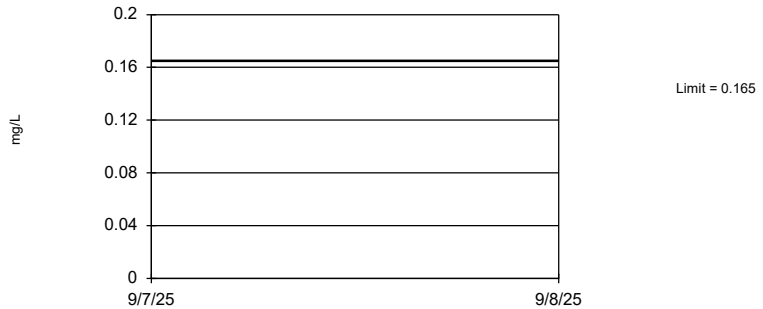


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 62 background values. 64.52% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Lead, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

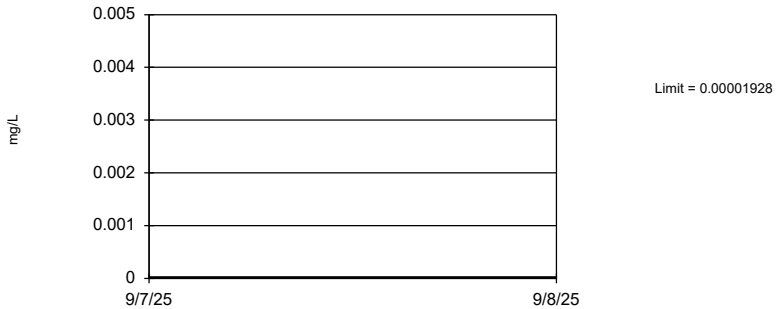


Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 62 background values. 1.613% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Lithium, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric

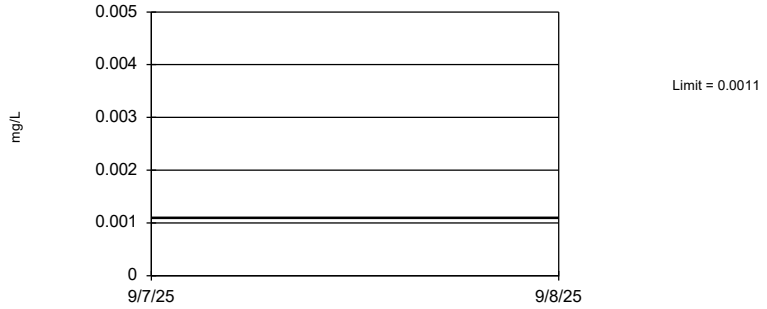


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 62 background values. 83.87% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Mercury, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 58 background values. 94.83% NDs. 92.38% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05105.

Constituent: Molybdenum, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

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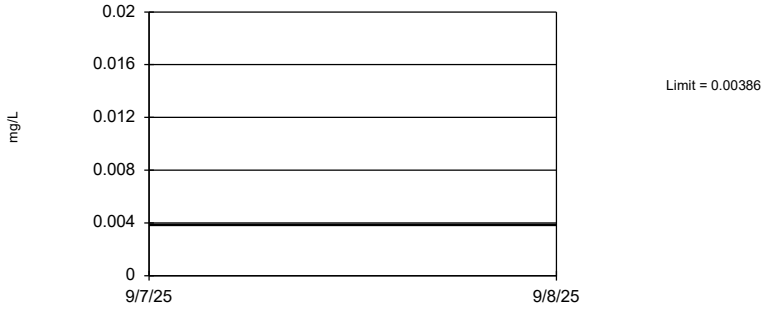
Tolerance Limit

Interwell Non-parametric



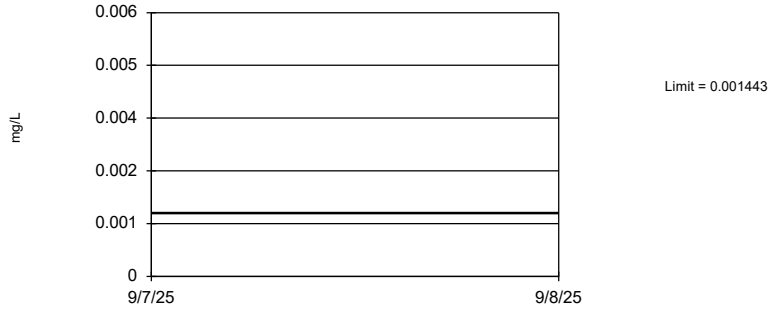
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 62 background values. 53.23% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04158.

Constituent: Selenium, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 60 background values. 76.67% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04607.

Constituent: Thallium, total Analysis Run 11/18/2025 1:49 PM View: Upper Tolerance Limits
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE I

GWPS

PIRKEY STACKOUT GWPS			
Constituent Name	**MCL**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006	0.0001	0.006
Arsenic, Total (mg/L)	0.01	0.009	0.01
Barium, Total (mg/L)	2	0.058	2
Beryllium, Total (mg/L)	0.004	0.002	0.004
Cadmium, Total (mg/L)	0.005	0.00086	0.005
Chromium, Total (mg/L)	0.1	0.004	0.1
Cobalt, Total (mg/L)	n/a	0.06	0.06
Combined Radium, Total (pCi/L)	5	3.12	5
Fluoride, Total (mg/L)	4	0.75	4
Lead, Total (mg/L)	n/a	0.0002	0.0002
Lithium, Total (mg/L)	n/a	0.17	0.17
Mercury, Total (mg/L)	0.002	0.000019	0.002
Molybdenum, Total (mg/L)	n/a	0.0011	0.0011
Selenium, Total (mg/L)	0.05	0.0039	0.05
Thallium, Total (mg/L)	0.002	0.0014	0.002

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

FIGURE J

Seasonality

Seasonality Summary Table - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 10:53 AM

Constituent	Well	Sig.	K.-W.	Chi-Sq.	df	N	Alpha
Beryllium, total (mg/L)	**AD-22**	**Yes**	**15.65**	**3.841**	**1**	**31**	**0.05**
Cadmium, total (mg/L)	**AD-22**	**Yes**	**16.45**	**3.841**	**1**	**31**	**0.05**
Cobalt, total (mg/L)	**AD-22**	**Yes**	**16.47**	**3.841**	**1**	**31**	**0.05**
Combined Radium 226 + 228 (pCi/L)	**AD-22**	**Yes**	**9.627**	**3.841**	**1**	**31**	**0.05**
Fluoride, total (mg/L)	**AD-22**	**Yes**	**9.99**	**3.841**	**1**	**33**	**0.05**
Lithium, total (mg/L)	**AD-22**	**Yes**	**9.255**	**3.841**	**1**	**31**	**0.05**
Selenium, total (mg/L)	**AD-22**	**Yes**	**6.367**	**3.841**	**1**	**31**	**0.05**

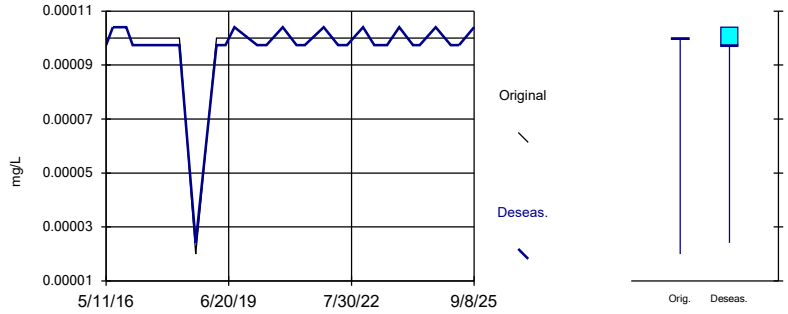
Seasonality Summary Table - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 10:53 AM

Constituent	Well	Sig.	K.-W.	Chi-Sq.	df	N	Alpha
Antimony, total (mg/L)	AD-22	No	1.583	3.841	1	31	0.05
Arsenic, total (mg/L)	AD-22	No	0.4479	3.841	1	31	0.05
Barium, total (mg/L)	AD-22	No	1.633	3.841	1	31	0.05
Beryllium, total (mg/L)	**AD-22**	**Yes**	**15.65**	**3.841**	**1**	**31**	**0.05**
Cadmium, total (mg/L)	**AD-22**	**Yes**	**16.45**	**3.841**	**1**	**31**	**0.05**
Chromium, total (mg/L)	AD-22	No	0.2178	3.841	1	31	0.05
Cobalt, total (mg/L)	**AD-22**	**Yes**	**16.47**	**3.841**	**1**	**31**	**0.05**
Combined Radium 226 + 228 (pCi/L)	**AD-22**	**Yes**	**9.627**	**3.841**	**1**	**31**	**0.05**
Fluoride, total (mg/L)	**AD-22**	**Yes**	**9.99**	**3.841**	**1**	**33**	**0.05**
Lead, total (mg/L)	AD-22	No	1.714	3.841	1	31	0.05
Lithium, total (mg/L)	**AD-22**	**Yes**	**9.255**	**3.841**	**1**	**31**	**0.05**
Mercury, total (mg/L)	AD-22	No	0.07895	3.841	1	18	0.05
Molybdenum, total (mg/L)	AD-22	No	0.09139	3.841	1	29	0.05
Selenium, total (mg/L)	**AD-22**	**Yes**	**6.367**	**3.841**	**1**	**31**	**0.05**
Thallium, total (mg/L)	AD-22	No	2.947	3.841	1	30	0.05

Seasonality: AD-22

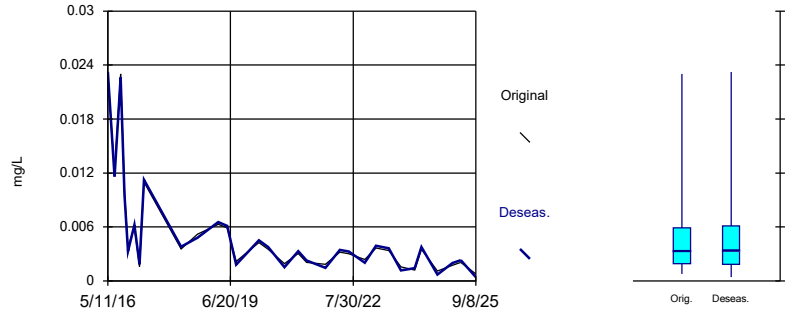
For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.583
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.1484
Adjusted Kruskal-Wallis statistic (H') = 1.583



Constituent: Antimony, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

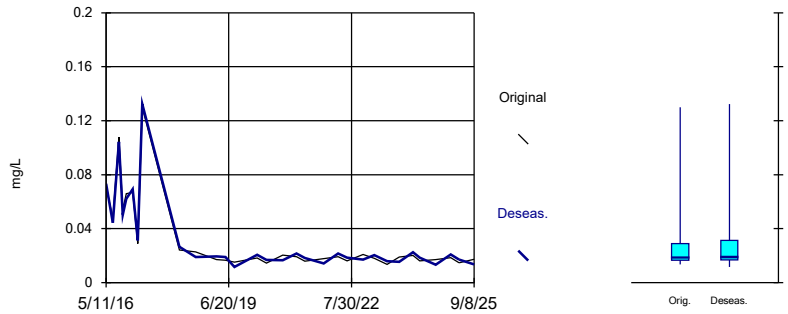
For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.4479
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.4478
Adjusted Kruskal-Wallis statistic (H') = 0.4479



Constituent: Arsenic, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

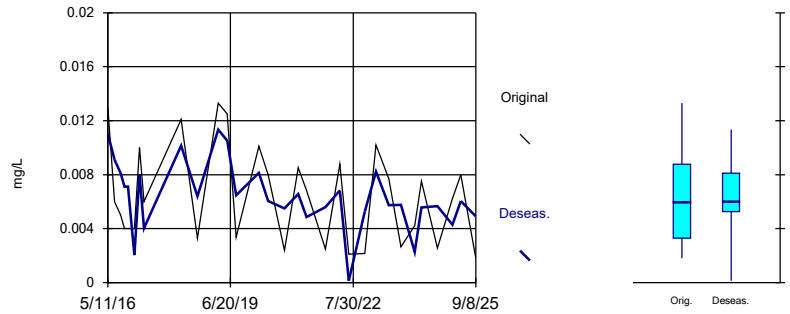
For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.633
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.632
Adjusted Kruskal-Wallis statistic (H') = 1.633



Constituent: Barium, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

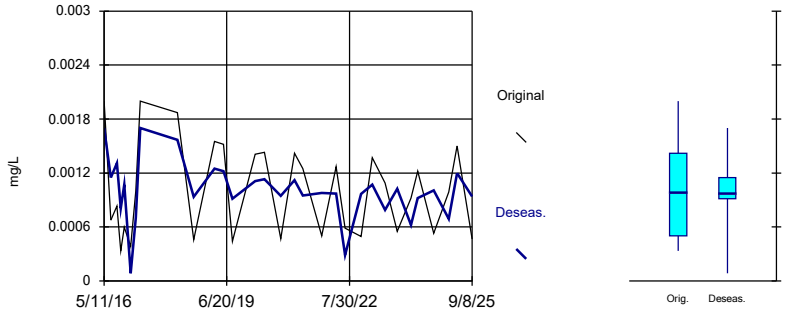
For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 15.65
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 15.64
Adjusted Kruskal-Wallis statistic (H') = 15.65



Constituent: Beryllium, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

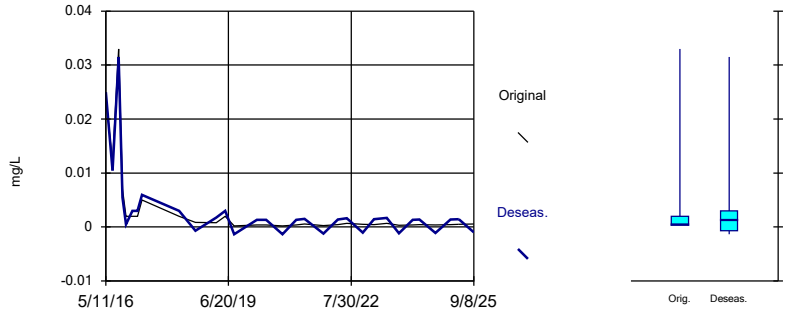
For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 16.45
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 16.45
Adjusted Kruskal-Wallis statistic (H') = 16.45



Constituent: Cadmium, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

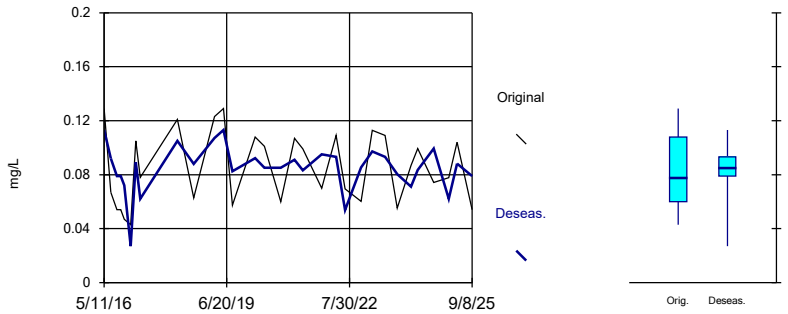
For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.2178
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 4 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.2175
Adjusted Kruskal-Wallis statistic (H') = 0.2178



Constituent: Chromium, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

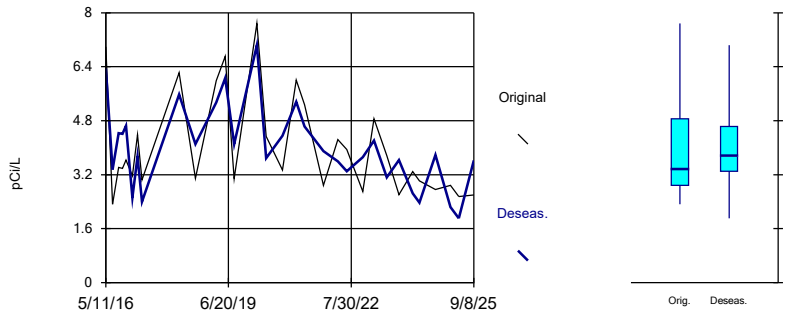
For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 16.47
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 16.45
Adjusted Kruskal-Wallis statistic (H') = 16.47



Constituent: Cobalt, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

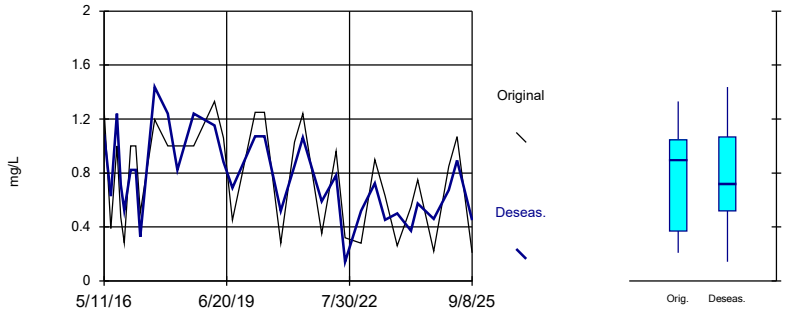
For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 9.627
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 9.625
Adjusted Kruskal-Wallis statistic (H') = 9.627



Constituent: Combined Radium 226 + 228 Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 9.99
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 9.928
Adjusted Kruskal-Wallis statistic (H') = 9.99

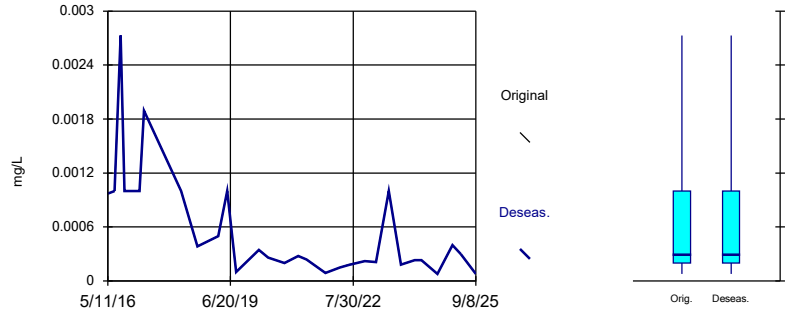


Constituent: Fluoride, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG Season cut dates: 1/1, 7/1

Seasonality: AD-22

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 1.714
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 4 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.684
Adjusted Kruskal-Wallis statistic (H') = 1.714

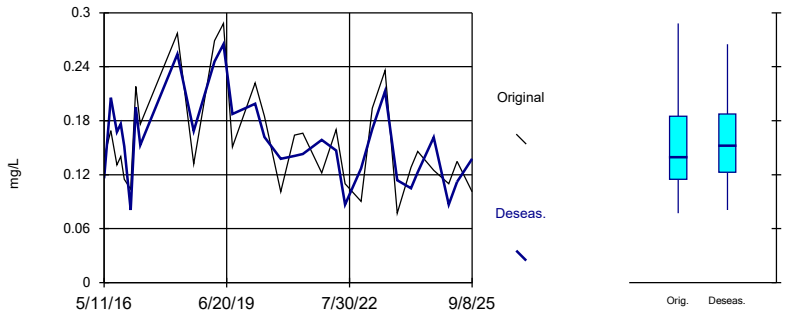


Constituent: Lead, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG Season cut dates: 1/1, 7/1

Seasonality: AD-22

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 9.255
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 9.252
Adjusted Kruskal-Wallis statistic (H') = 9.255

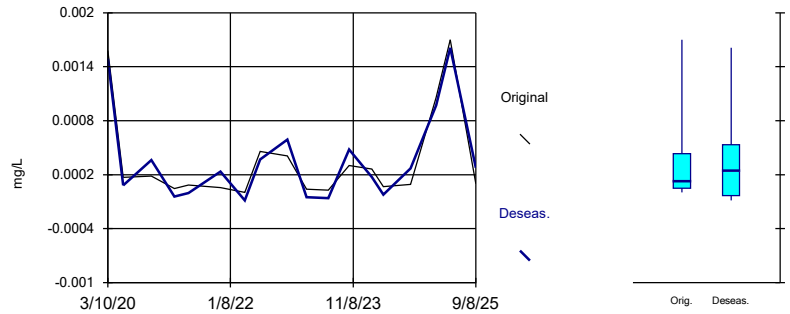


Constituent: Lithium, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG Season cut dates: 1/1, 7/1

Seasonality: AD-22

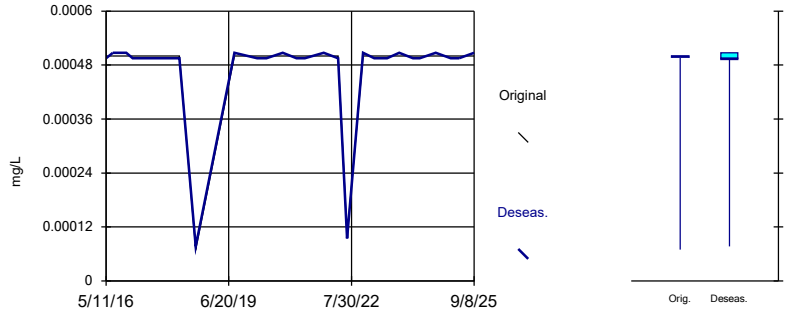
For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.07895
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 0 groups of ties in the data, so no adjustment to the Kruskal-Wallis statistic (H) was necessary.



Constituent: Mercury, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Seasonality: AD-22

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 0.09139
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 0.01765
Adjusted Kruskal-Wallis statistic (H') = 0.09139

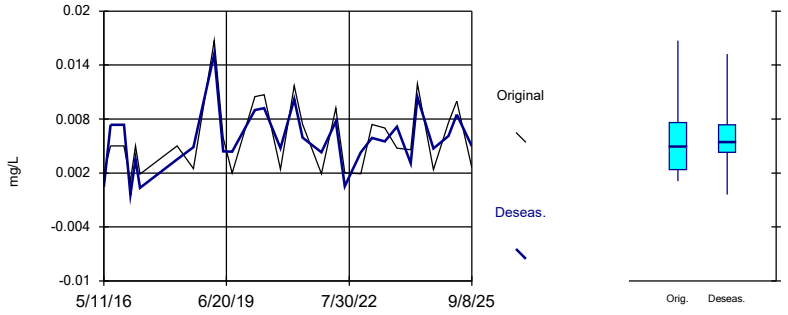


Constituent: Molybdenum, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG Season cut dates: 1/1, 7/1

Seasonality: AD-22

For the selected data, the Kruskal-Wallis test indicates SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.367
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 6.322
Adjusted Kruskal-Wallis statistic (H') = 6.367

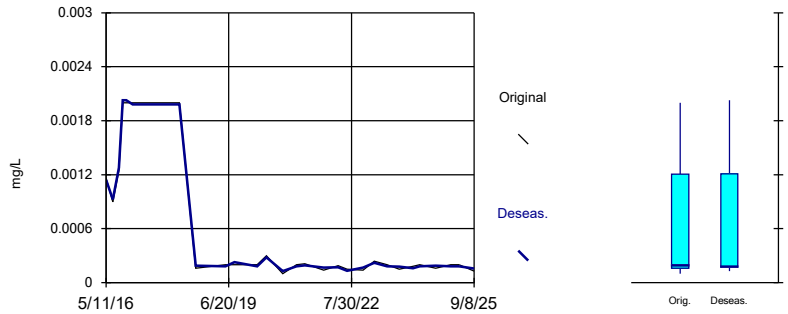


Constituent: Selenium, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG Season cut dates: 1/1, 7/1

Seasonality: AD-22

For the selected data, the Kruskal-Wallis test indicates NO SEASONALITYat the 5% significance level. Because the calculated Kruskal-Wallis statistic is less than or equal to the Chi-squared value, we conclude that no season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 2.947
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 4 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 2.867
Adjusted Kruskal-Wallis statistic (H') = 2.947



Constituent: Thallium, total Analysis Run 11/18/2025 10:52 AM View: Seasonality
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE K

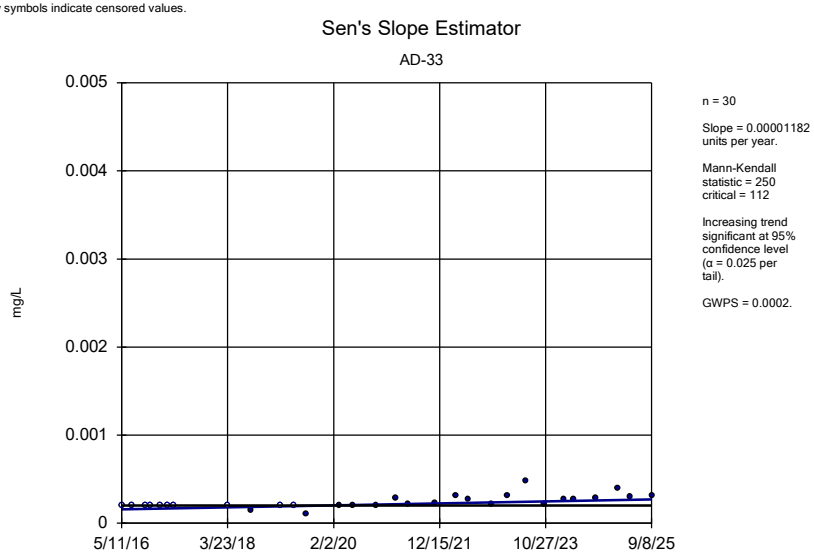
Trend Tests – Lead and Mercury

Lead & Mercury Trend Tests - All/Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 1:44 PM

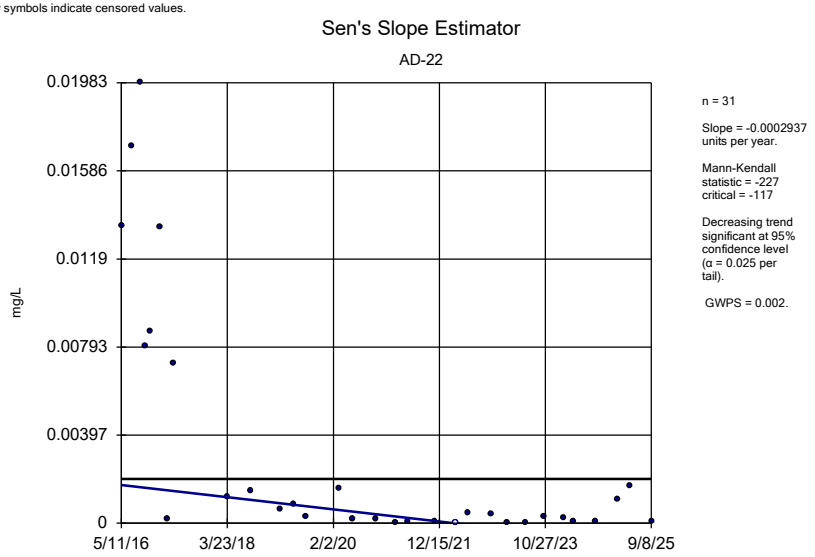
Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Lead, total (mg/L)	**AD-33**	**0.00001182**	**250**	**112**	**Yes**	**30**	**33.33**	**n/a**	**n/a**	**0.05**	**NP**
Mercury, total (mg/L)	**AD-22**	**-0.0002937**	**-227**	**-117**	**Yes**	**31**	**3.226**	**n/a**	**n/a**	**0.05**	**NP**
Mercury, total (mg/L)	**AD-33**	**0.0007326**	**328**	**117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



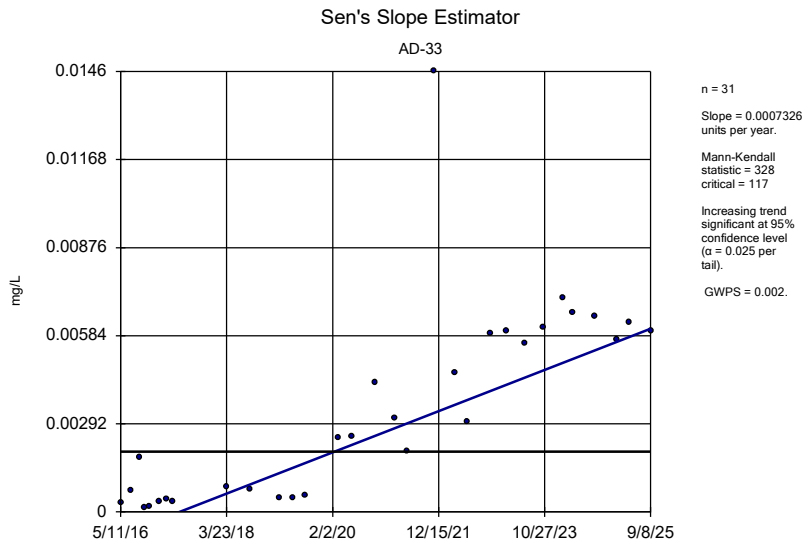
Constituent: Lead, total Analysis Run 11/18/2025 1:43 PM View: Date Range Trend Testing
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



Constituent: Mercury, total Analysis Run 11/18/2025 1:43 PM View: Date Range Trend Testing
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG



Constituent: Mercury, total Analysis Run 11/18/2025 1:43 PM View: Date Range Trend Testing
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

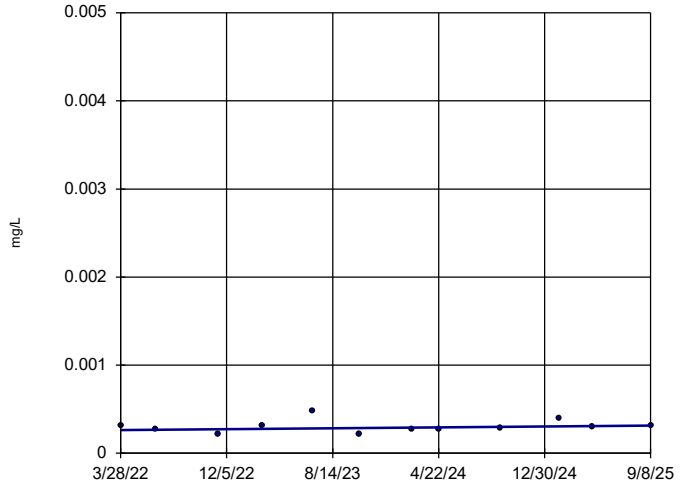
Lead & Mercury Trend Tests - Truncated Record - All Results (No Significant)

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 12/5/2025, 12:46 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Lead, total (mg/L)	AD-33	0.0000149	11	30	No	12	0	n/a	n/a	0.05	NP
Mercury, total (mg/L)	AD-22	0.00003316	16	30	No	12	8.333	n/a	n/a	0.05	NP
Mercury, total (mg/L)	AD-33	0.0003814	25	30	No	12	0	n/a	n/a	0.05	NP

Sen's Slope Estimator

AD-33



n = 12

Slope = 0.0000149 units per year.

Mann-Kendall statistic = 11 critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

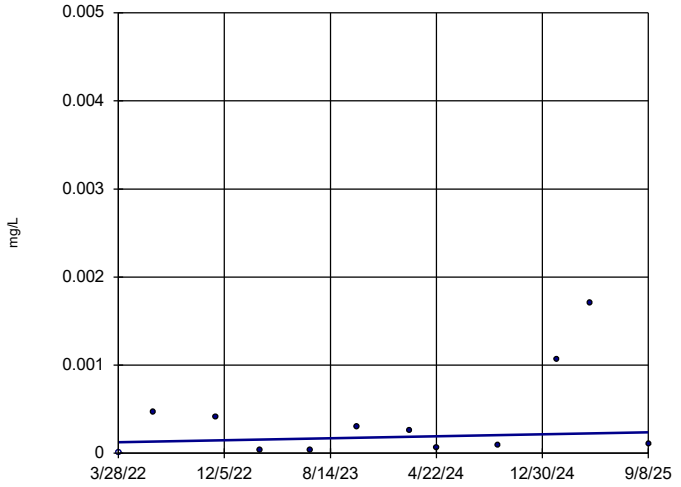
Constituent: Lead, total Analysis Run 12/5/2025 12:45 PM View: Date Range Trend Testing

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-22



n = 12

Slope = 0.00003316 units per year.

Mann-Kendall statistic = 16 critical = 30

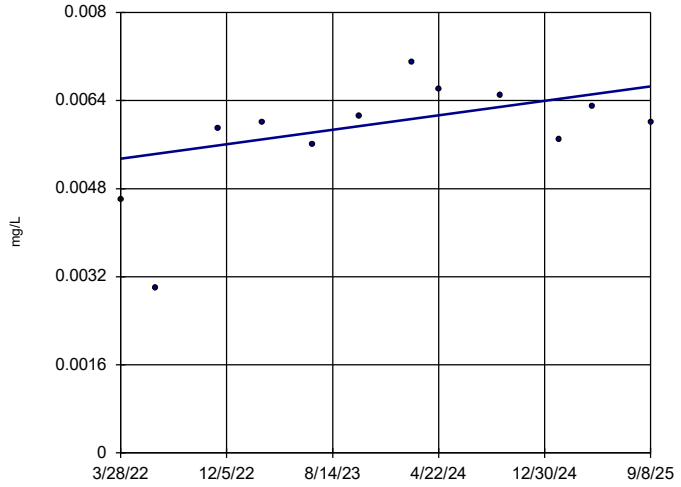
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 12/5/2025 12:45 PM View: Date Range Trend Testing

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sen's Slope Estimator

AD-33



n = 12

Slope = 0.0003814 units per year.

Mann-Kendall statistic = 25 critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 12/5/2025 12:45 PM View: Date Range Trend Testing

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE L
Confidence Intervals

Appendix IV Confidence Intervals - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 12/5/2025, 1:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lead, total (mg/L)	**AD-33**	**0.0003624**	**0.0002476**	**0.0002**	**Yes**	**12**	**0**	**No**	**0.01**	**Param.**
Mercury, total (mg/L)	**AD-33**	**0.006556**	**0.005106**	**0.002**	**Yes**	**12**	**0**	**x^2**	**0.01**	**Param.**

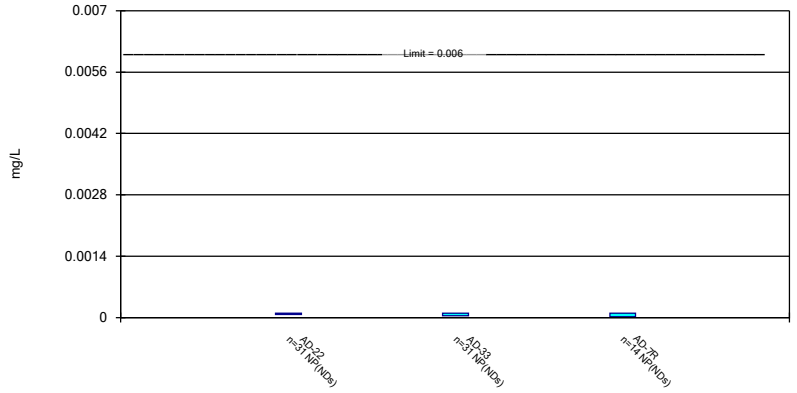
Appendix IV Confidence Intervals - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 12/5/2025, 1:00 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony, total (mg/L)	AD-22	0.0001	0.0001	0.006	No	31	96.77	No	0.01	NP (NDs)
Antimony, total (mg/L)	AD-33	0.0001	0.00004	0.006	No	31	87.1	No	0.01	NP (NDs)
Antimony, total (mg/L)	AD-7R	0.0001	0.00002	0.006	No	14	64.29	No	0.01	NP (NDs)
Arsenic, total (mg/L)	AD-22	0.005037	0.00244	0.01	No	31	0	ln(x)	0.01	Param.
Arsenic, total (mg/L)	AD-33	0.001188	0.0006967	0.01	No	30	6.667	ln(x)	0.01	Param.
Arsenic, total (mg/L)	AD-7R	0.001263	0.0004449	0.01	No	14	0	sqrt(x)	0.01	Param.
Barium, total (mg/L)	AD-22	0.0241	0.017	2	No	31	0	No	0.01	NP (normality)
Barium, total (mg/L)	AD-33	0.0513	0.04546	2	No	30	0	No	0.01	Param.
Barium, total (mg/L)	AD-7R	0.06212	0.04499	2	No	14	0	No	0.01	Param.
Beryllium, total (mg/L)	AD-33	0.0014	0.001	0.004	No	31	0	No	0.01	NP (normality)
Beryllium, total (mg/L)	AD-7R	0.002119	0.001575	0.004	No	14	0	No	0.01	Param.
Cadmium, total (mg/L)	AD-22	0.00123	0.0007789	0.005	No	31	0	No	0.01	Param.
Cadmium, total (mg/L)	AD-33	0.0009847	0.000049	0.005	No	31	29.03	No	0.01	NP (normality)
Cadmium, total (mg/L)	AD-7R	0.0003621	0.0002843	0.005	No	14	0	x^2	0.01	Param.
Chromium, total (mg/L)	AD-22	0.002	0.0004	0.1	No	31	9.677	No	0.01	NP (normality)
Chromium, total (mg/L)	AD-33	0.001047	0.0003416	0.1	No	30	10	ln(x)	0.01	Param.
Chromium, total (mg/L)	AD-7R	0.00064	0.00023	0.1	No	14	0	No	0.01	NP (normality)
Cobalt, total (mg/L)	AD-33	0.01098	0.009033	0.06	No	30	0	No	0.01	Param.
Cobalt, total (mg/L)	AD-7R	0.01971	0.01675	0.06	No	14	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	AD-33	2.911	1.797	5	No	31	0	x^(1/3)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	AD-7R	3.772	2.298	5	No	14	0	No	0.01	Param.
Fluoride, total (mg/L)	AD-22	0.96	0.28	4	No	33	18.18	No	0.01	NP (normality)
Fluoride, total (mg/L)	AD-33	0.2496	0.1272	4	No	32	28.13	sqrt(x)	0.01	Param.
Fluoride, total (mg/L)	AD-7R	0.1722	0.1363	4	No	14	0	No	0.01	Param.
Lead, total (mg/L)	AD-22	0.000277	0.0002	0.0002	No	31	25.81	No	0.01	NP (normality)
Lead, total (mg/L)	**AD-33**	**0.0003624**	**0.0002476**	**0.0002**	**Yes**	**12**	**0**	**No**	**0.01**	**Param.**
Lead, total (mg/L)	AD-7R	0.0002604	0.00007327	0.0002	No	14	28.57	sqrt(x)	0.01	Param.
Lithium, total (mg/L)	AD-33	0.026	0.0194	0.17	No	31	3.226	No	0.01	NP (normality)
Lithium, total (mg/L)	AD-7R	0.06288	0.04579	0.17	No	14	0	No	0.01	Param.
Mercury, total (mg/L)	AD-22	0.000627	0.00004555	0.002	No	12	8.333	sqrt(x)	0.01	Param.
Mercury, total (mg/L)	**AD-33**	**0.006556**	**0.005106**	**0.002**	**Yes**	**12**	**0**	**x^2**	**0.01**	**Param.**
Mercury, total (mg/L)	AD-7R	0.00008071	0.00001214	0.002	No	14	7.143	sqrt(x)	0.01	Param.
Molybdenum, total (mg/L)	AD-22	0.0005	0.0001	0.0011	No	29	93.1	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	AD-33	0.0007365	0.0005	0.0011	No	29	96.55	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	AD-7R	0.0005	0.0001	0.0011	No	14	92.86	No	0.01	NP (NDs)
Selenium, total (mg/L)	AD-22	0.006263	0.003132	0.05	No	31	19.35	sqrt(x)	0.01	Param.
Selenium, total (mg/L)	AD-33	0.00493	0.0017	0.05	No	31	25.81	No	0.01	NP (normality)
Selenium, total (mg/L)	AD-7R	0.001945	0.000606	0.05	No	14	0	sqrt(x)	0.01	Param.
Thallium, total (mg/L)	AD-22	0.0008954	0.00018	0.002	No	30	20	No	0.01	NP (normality)
Thallium, total (mg/L)	AD-33	0.001	0.00006	0.002	No	30	63.33	No	0.01	NP (NDs)
Thallium, total (mg/L)	AD-7R	0.001	0.00011	0.002	No	14	21.43	No	0.01	NP (normality)

Non-Parametric Confidence Interval

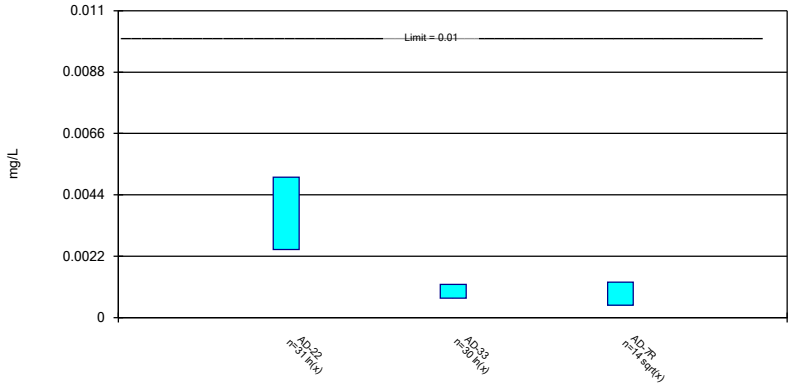
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, total Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

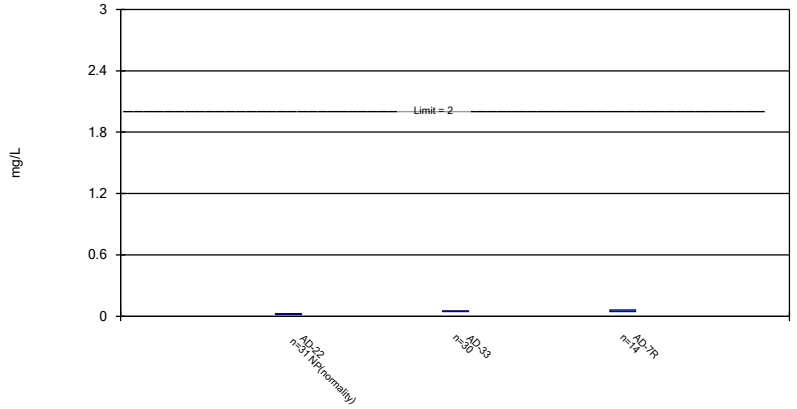
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic, total Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

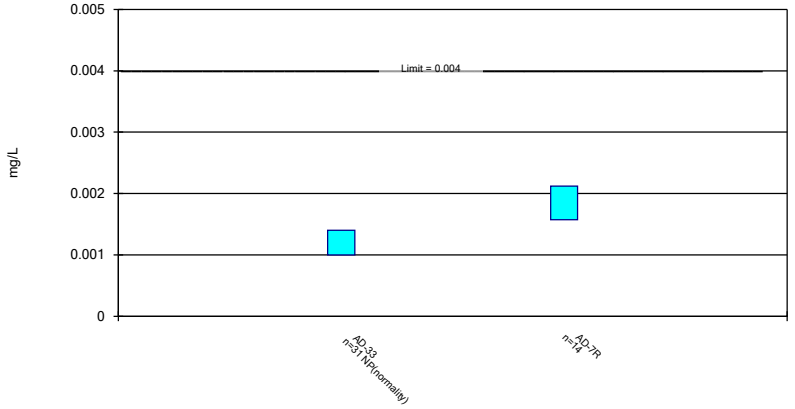
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, total Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

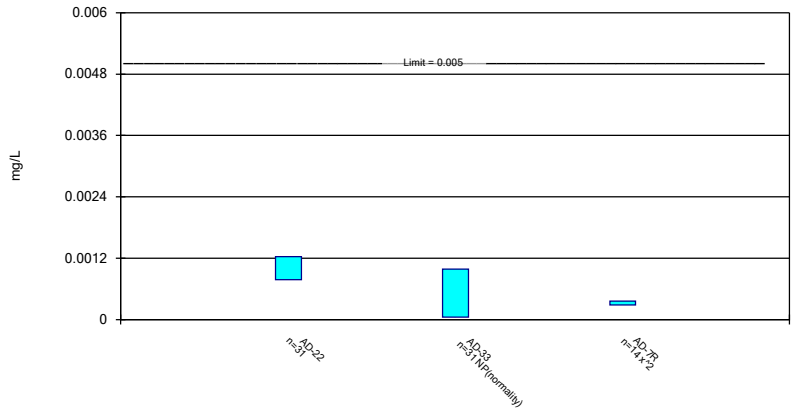
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

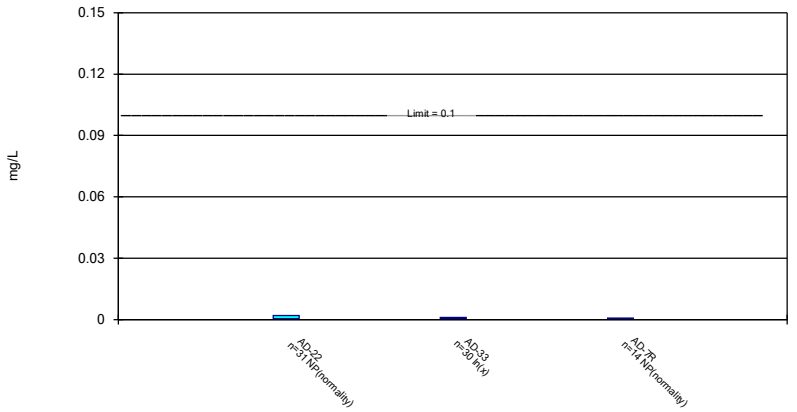
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium, total Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

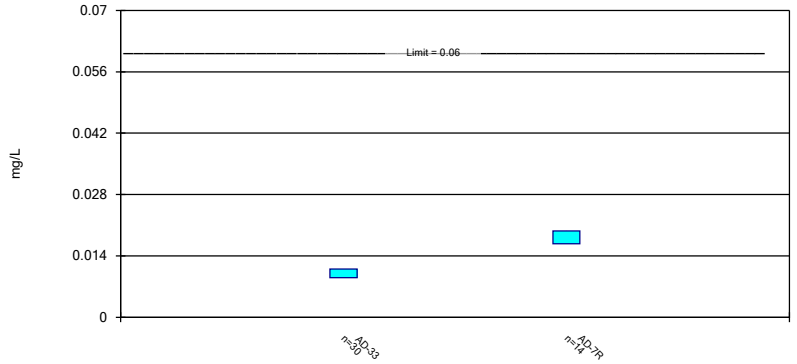
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

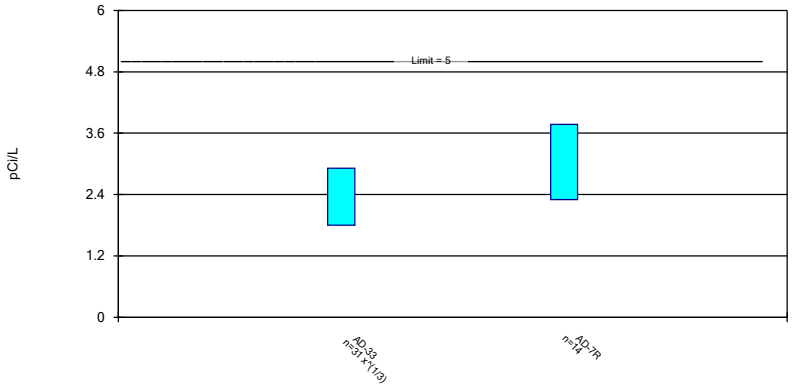
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

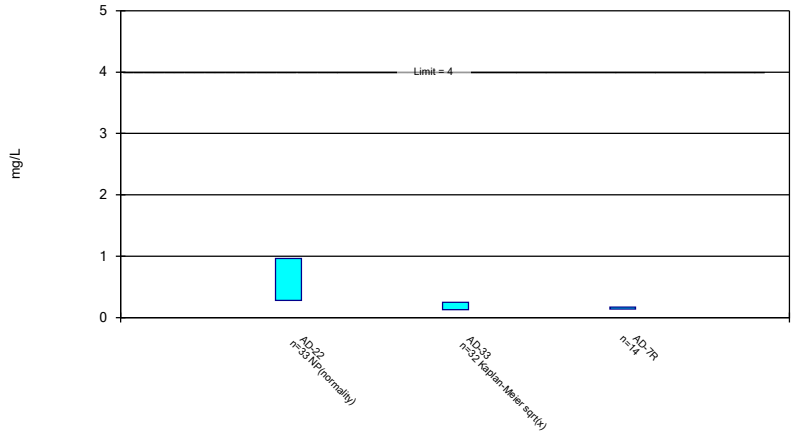
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 12/5/2025 12:57 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

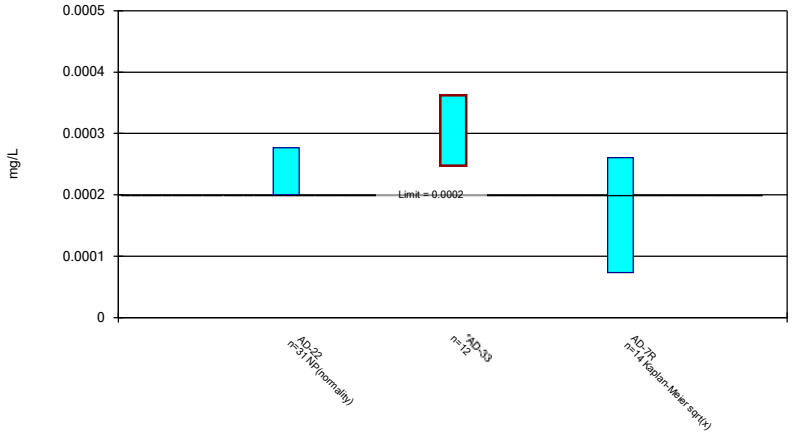
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride, total Analysis Run 12/5/2025 12:58 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

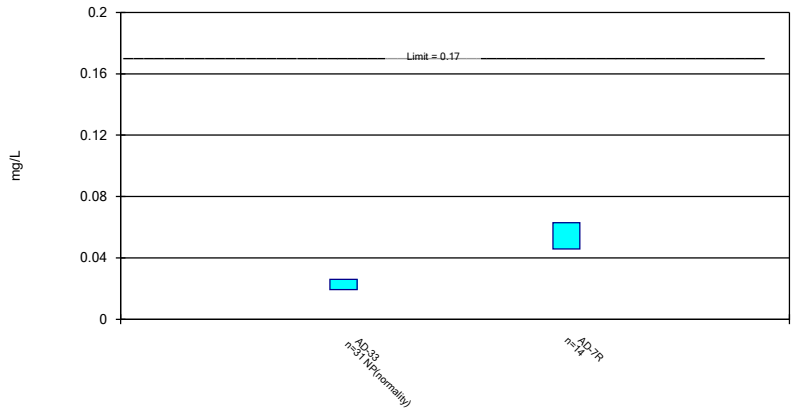
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, total Analysis Run 12/5/2025 12:58 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

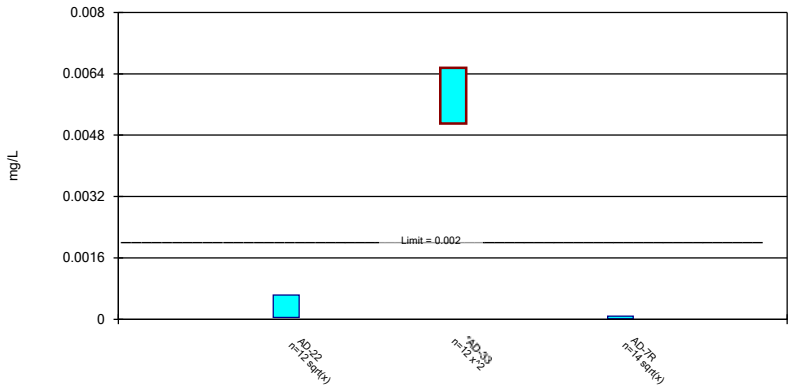
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, total Analysis Run 12/5/2025 12:58 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

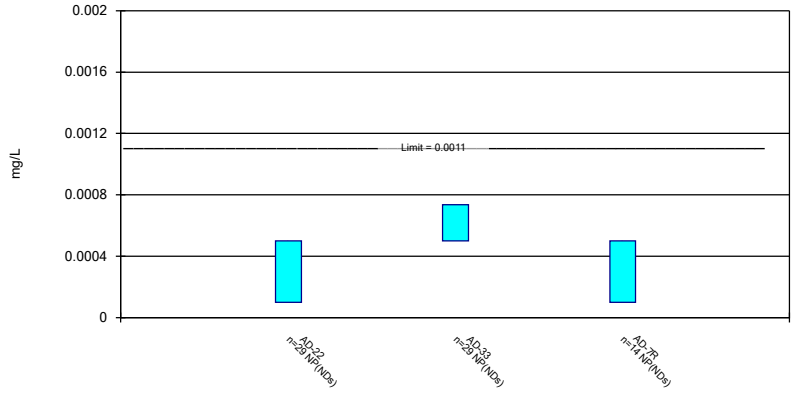
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, total Analysis Run 12/5/2025 12:58 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Non-Parametric Confidence Interval

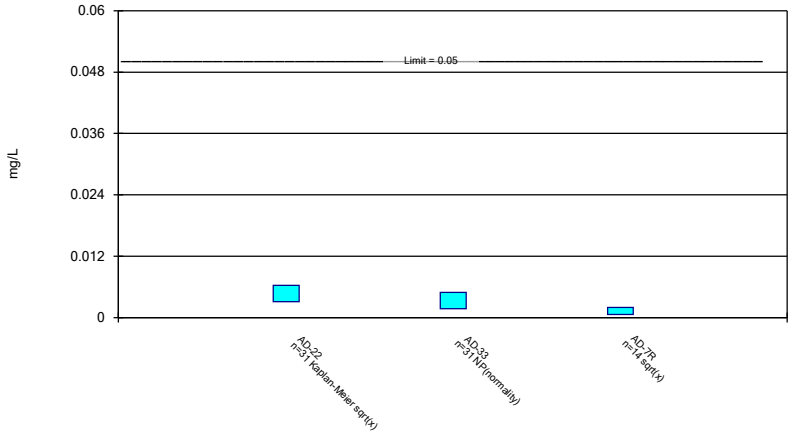
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Molybdenum, total Analysis Run 12/5/2025 12:58 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric and Non-Parametric (NP) Confidence Interval

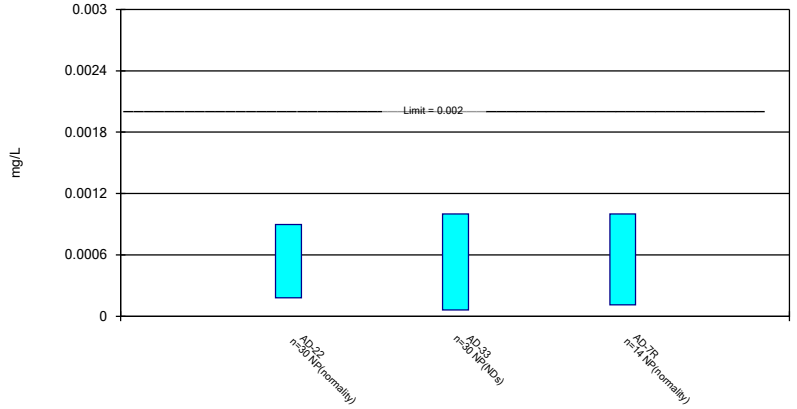
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, total Analysis Run 12/5/2025 12:58 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Non-Parametric Confidence Interval

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



Constituent: Thallium, total Analysis Run 12/5/2025 12:58 PM View: Confidence Intervals
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Deseasonalized Confidence Intervals - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 2:01 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium, total (mg/L)	**AD-22**	**0.007534**	**0.005299**	**0.004**	**Yes**	**31**	**0**	**No**	**0.01**	**Param.**
Cobalt, total (mg/L)	**AD-22**	**0.09247**	**0.07708**	**0.06**	**Yes**	**31**	**0**	**No**	**0.01**	**Param.**

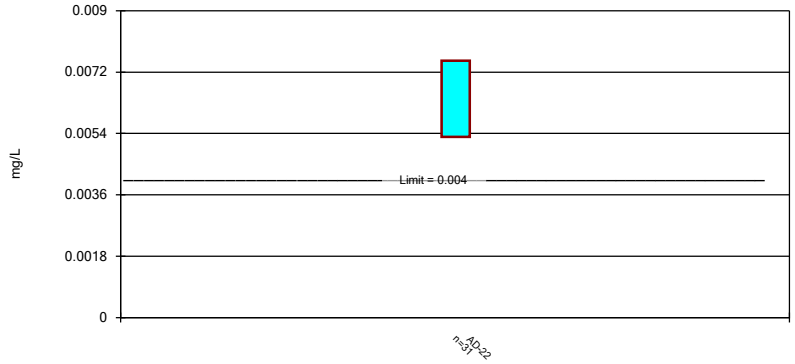
Deseasonalized Confidence Intervals - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 2:01 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium, total (mg/L)	**AD-22**	**0.007534**	**0.005299**	**0.004**	**Yes**	**31**	**0**	**No**	**0.01**	**Param.**
Cobalt, total (mg/L)	**AD-22**	**0.09247**	**0.07708**	**0.06**	**Yes**	**31**	**0**	**No**	**0.01**	**Param.**
Combined Radium 226 + 228 (pCi/L)	AD-22	4.55	3.462	5	No	31	0	No	0.01	Param.
Lithium, total (mg/L)	AD-22	0.1786	0.137	0.17	No	31	0	No	0.01	Param.

Parametric Confidence Interval

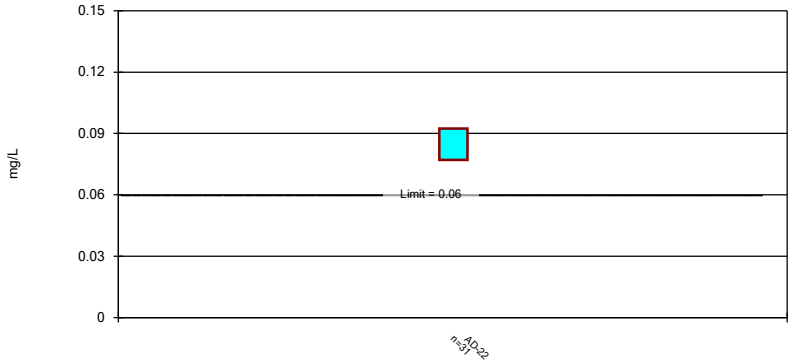
Compliance limit is exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total, Alt. Values Analysis Run 11/18/2025 1:58 PM View: Deseasonalized Confide
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

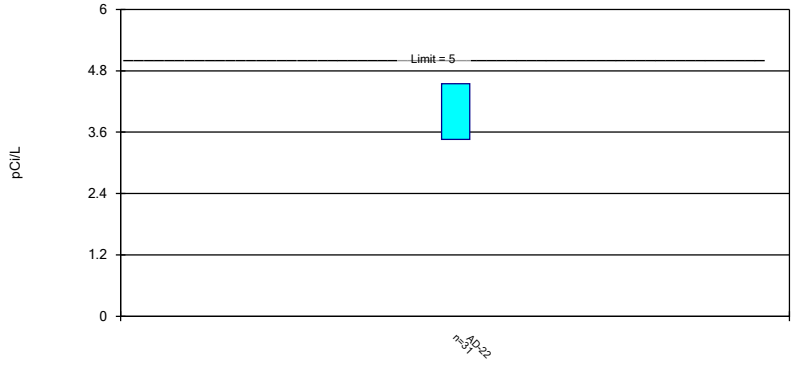
Compliance limit is exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total, Alt. Values Analysis Run 11/18/2025 1:58 PM View: Deseasonalized Confidenc
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

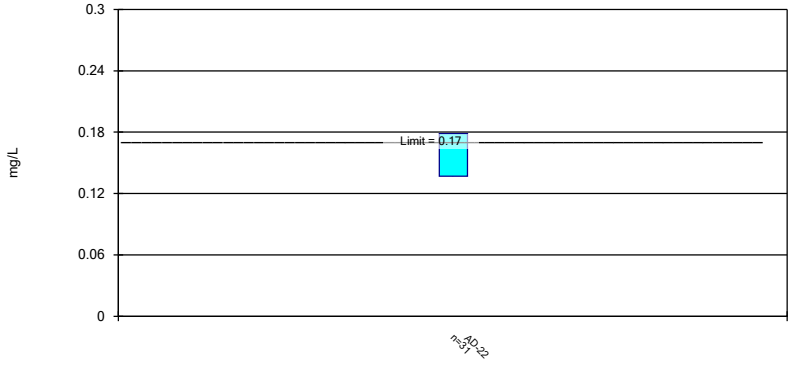
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228, Alt. Values Analysis Run 11/18/2025 1:59 PM View: Deseaso
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Parametric Confidence Interval

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



Constituent: Lithium, total, Alt. Values Analysis Run 11/18/2025 2:00 PM View: Deseasonalized Confiden
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

FIGURE M
Trend Tests – Appendix IV

Appendix IV Trend Tests - Confidence Interval Exceedances - Significant Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 2:13 PM

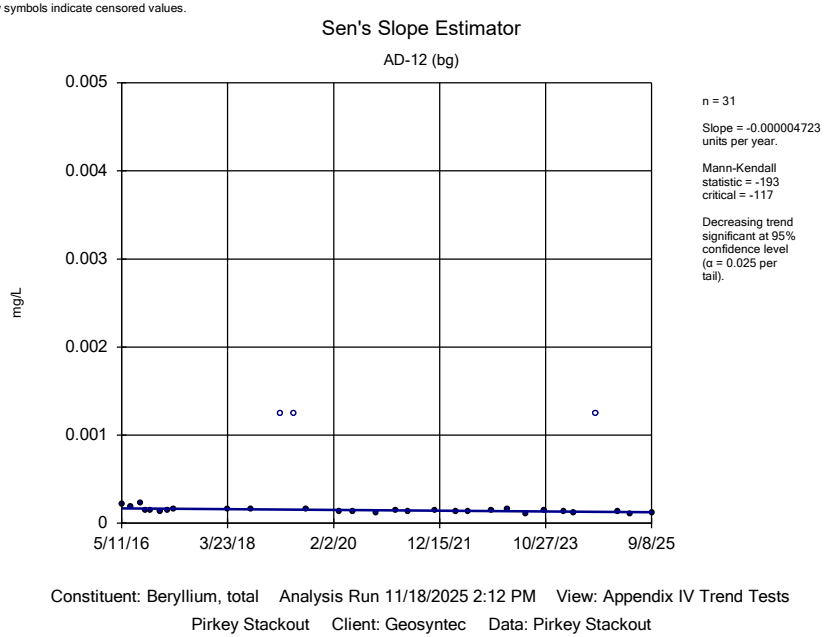
Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Beryllium, total (mg/L)	**AD-12 (bg)**	**-0.000004723**	**-193**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	**AD-13 (bg)**	**-0.0000398**	**-139**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Cobalt, total (mg/L)	**AD-12 (bg)**	**-0.00004818**	**-198**	**-117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	**AD-12 (bg)**	**-0.00001159**	**-188**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	**AD-33**	**0.00002043**	**71**	**53**	**Yes**	**18**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Mercury, total (mg/L)	**AD-33**	**0.0006837**	**74**	**53**	**Yes**	**18**	**0**	**n/a**	**n/a**	**0.05**	**NP**

Appendix IV Trend Tests - Confidence Interval Exceedances - All Results

Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout Printed 11/18/2025, 2:13 PM

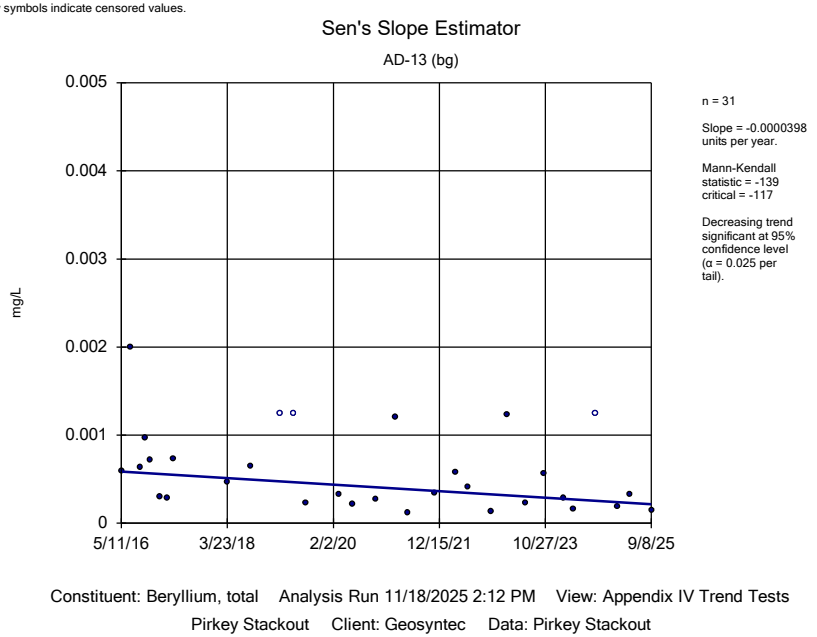
Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Beryllium, total (mg/L)	**AD-12 (bg)**	**-0.000004723**	**-193**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	**AD-13 (bg)**	**-0.0000398**	**-139**	**-117**	**Yes**	**31**	**9.677**	**n/a**	**n/a**	**0.05**	**NP**
Beryllium, total (mg/L)	AD-22	-0.0003039	-90	-117	No	31	0	n/a	n/a	0.05	NP
Cobalt, total (mg/L)	**AD-12 (bg)**	**-0.00004818**	**-198**	**-117**	**Yes**	**31**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Cobalt, total (mg/L)	AD-13 (bg)	0.0003618	44	117	No	31	0	n/a	n/a	0.05	NP
Cobalt, total (mg/L)	AD-22	0.0001853	12	117	No	31	0	n/a	n/a	0.05	NP
Lead, total (mg/L)	**AD-12 (bg)**	**-0.00001159**	**-188**	**-117**	**Yes**	**31**	**35.48**	**n/a**	**n/a**	**0.05**	**NP**
Lead, total (mg/L)	AD-13 (bg)	0	-13	-117	No	31	93.55	n/a	n/a	0.05	NP
Lead, total (mg/L)	**AD-33**	**0.00002043**	**71**	**53**	**Yes**	**18**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Mercury, total (mg/L)	AD-12 (bg)	0	-109	-117	No	31	80.65	n/a	n/a	0.05	NP
Mercury, total (mg/L)	AD-13 (bg)	0	-106	-117	No	31	87.1	n/a	n/a	0.05	NP
Mercury, total (mg/L)	**AD-33**	**0.0006837**	**74**	**53**	**Yes**	**18**	**0**	**n/a**	**n/a**	**0.05**	**NP**

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



Constituent: Beryllium, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



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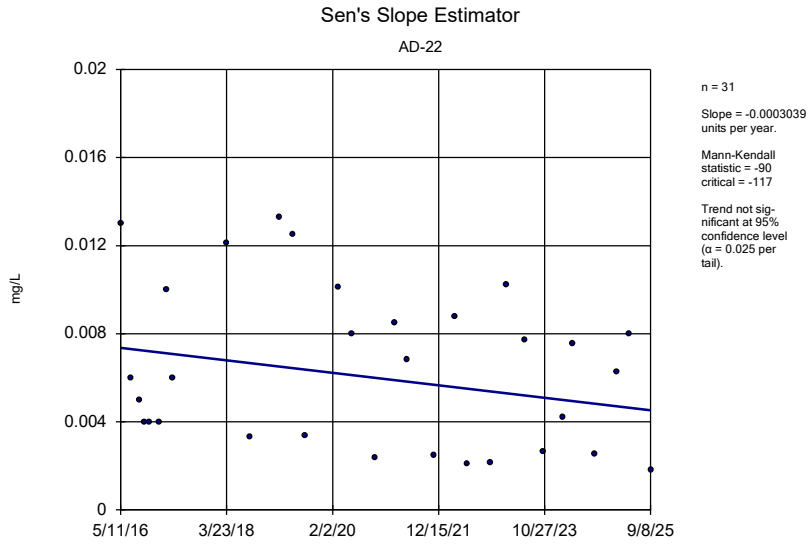

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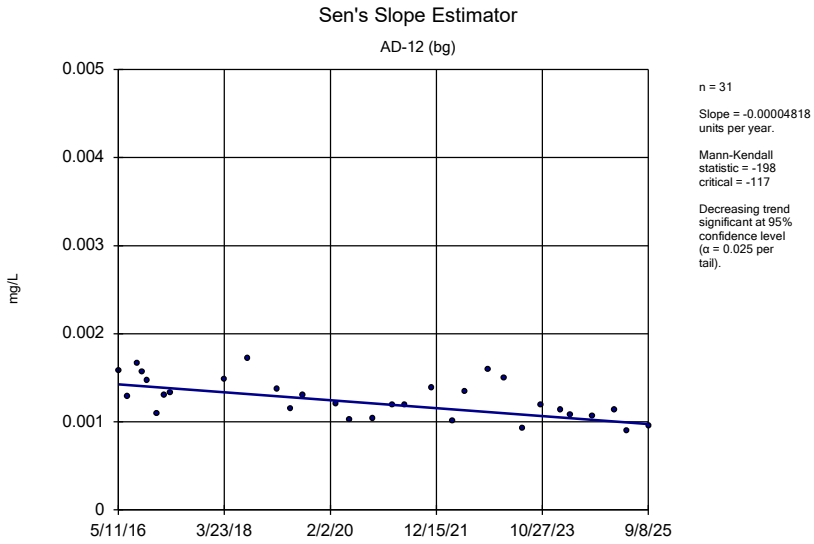
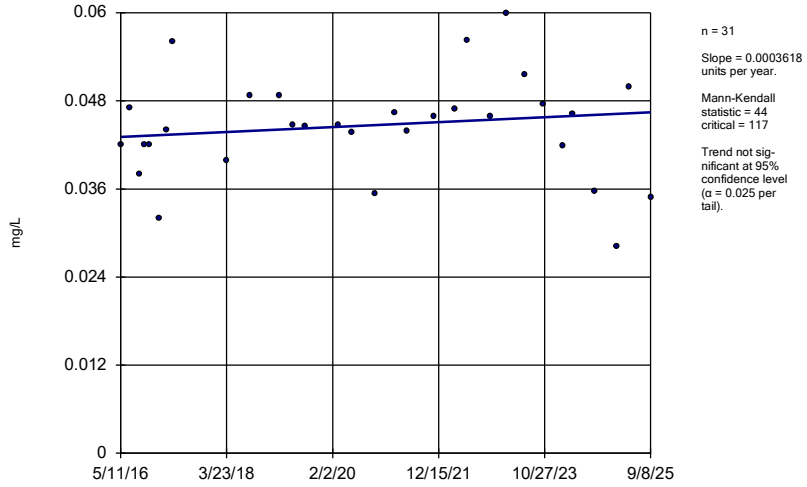
Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG



Constituent: Cobalt, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0.0003618 units per year.

Mann-Kendall statistic = 44
critical = 117

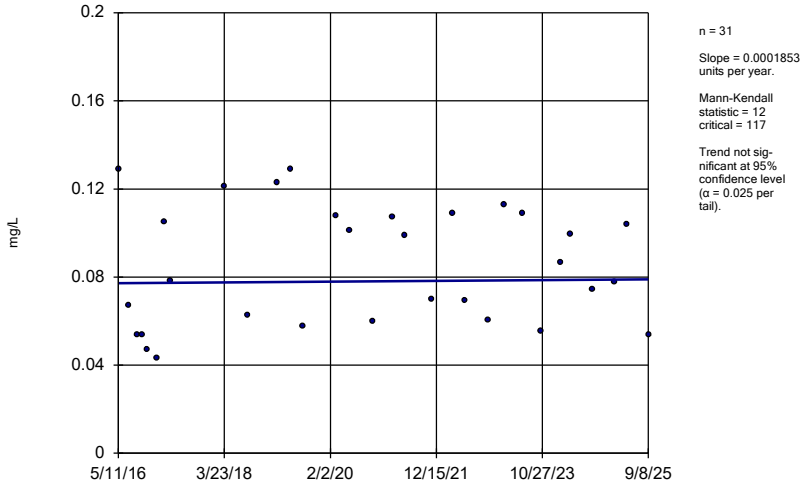
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

AD-22



n = 31

Slope = 0.0001853 units per year.

Mann-Kendall statistic = 12
critical = 117

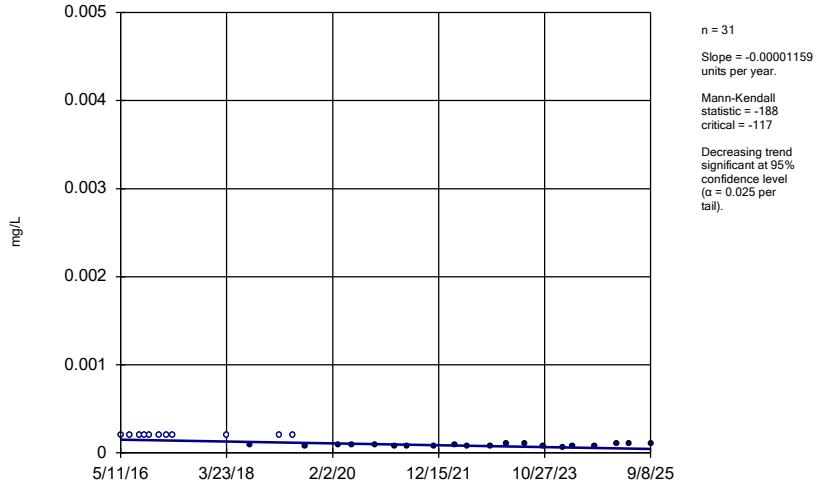
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Cobalt, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = -0.00001159 units per year.

Mann-Kendall statistic = -188
critical = -117

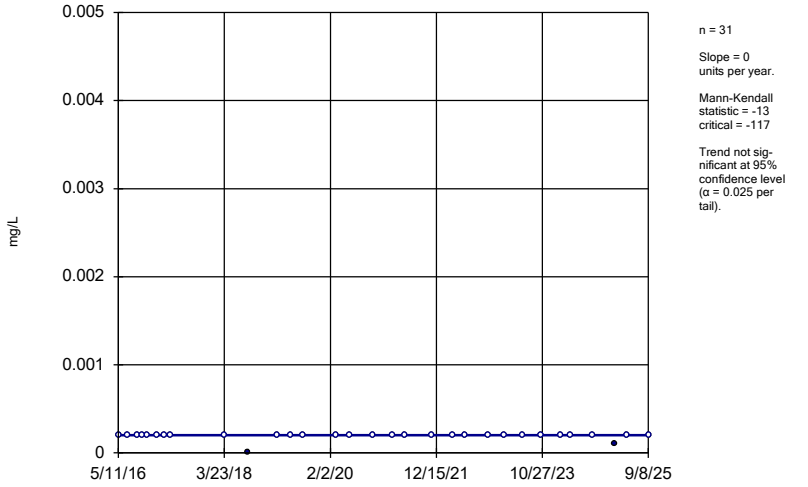
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0 units per year.

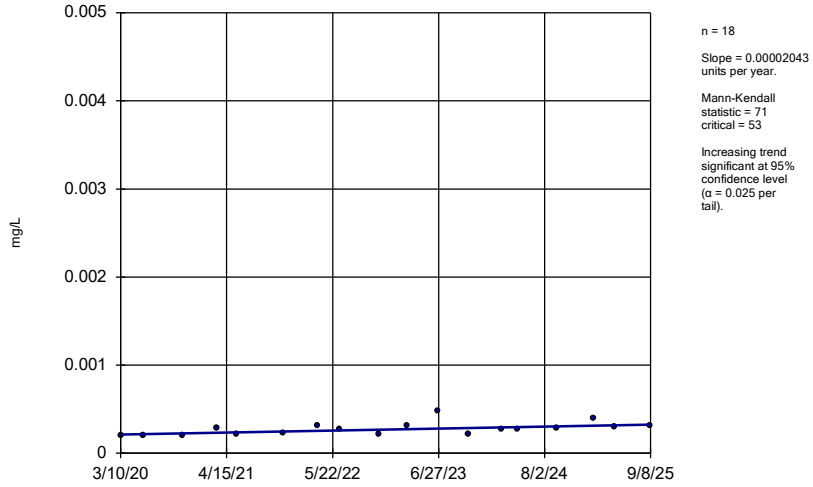
Mann-Kendall statistic = -13
critical = -117

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sen's Slope Estimator

AD-33



n = 18

Slope = 0.00002043 units per year.

Mann-Kendall statistic = 71
critical = 53

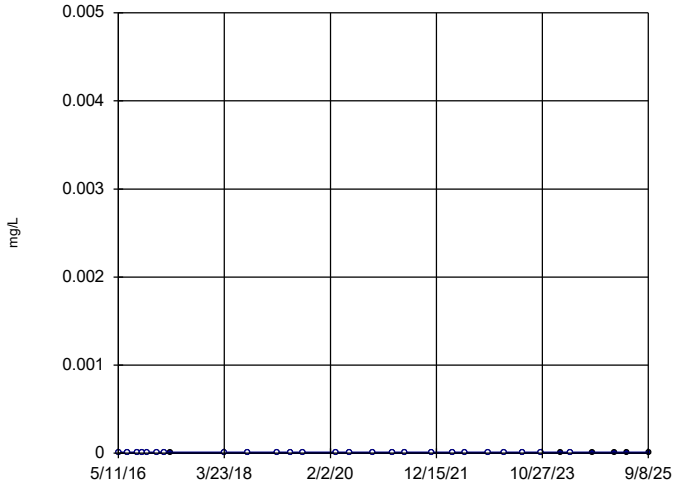
Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lead, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-12 (bg)



n = 31

Slope = 0
units per year.

Mann-Kendall statistic = -109
critical = -117

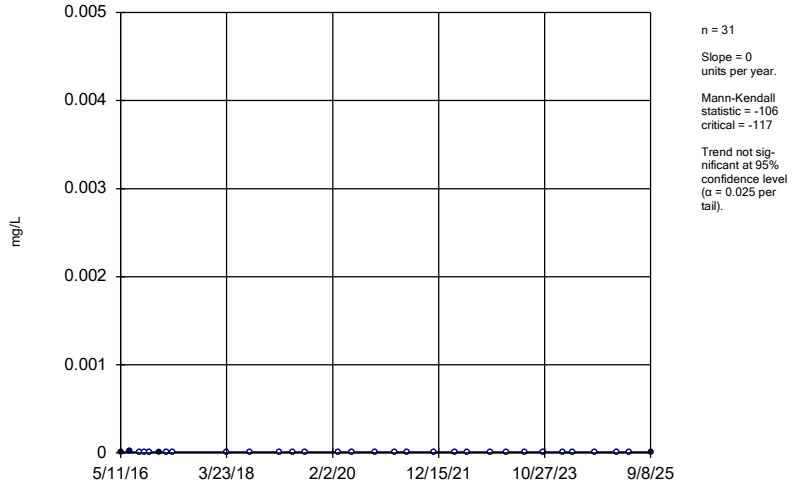
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Hollow symbols indicate censored values.

Sen's Slope Estimator

AD-13 (bg)



n = 31

Slope = 0
units per year.

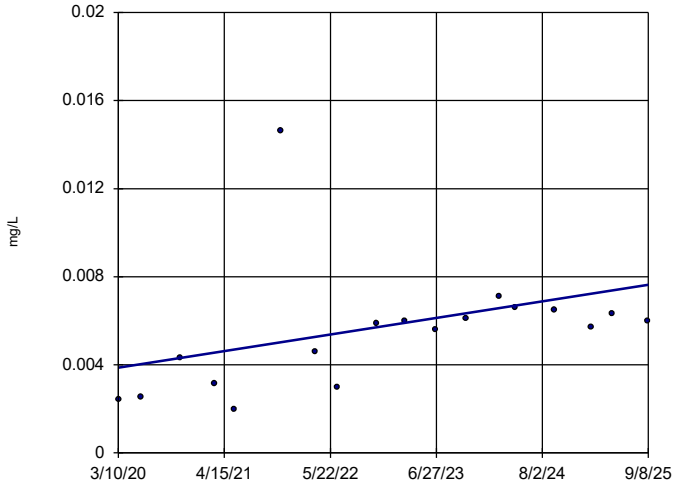
Mann-Kendall statistic = -106
critical = -117

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

Sen's Slope Estimator

AD-33



n = 18

Slope = 0.0006837 units per year.

Mann-Kendall statistic = 74
critical = 53

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Mercury, total Analysis Run 11/18/2025 2:12 PM View: Appendix IV Trend Tests
Pirkey Stackout Client: Geosyntec Data: Pirkey Stackout

APPENDIX 3

Alternative Source Demonstrations

Geosyntec consultants

engineers | scientists | innovators

ALTERNATIVE SOURCE DEMONSTRATION REPORT

2024 2nd SEMIANNUAL EVENT
TEXAS STATE CCR RULE

H.W. Pirkey Power Plant
Flue Gas Desulfurization Stackout Area
Registration No. CCR104
Hallsville, Texas

Prepared for

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

Prepared by

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

Project CHA8495B

March 2025

Geosyntec consultants

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LIST OF ACRONYMS

Å	angstrom
AEP	American Electric Power
ASD	alternative source demonstration
bgs	below ground surface
CCR	coal combustion residuals
EPRI	Electric Power Research Institute
FGD	flue gas desulfurization
GWPS	groundwater protection standard
LCL	lower confidence limit
mg/L	milligrams per liter
SPLP	Synthetic Precipitation Leaching Procedure
SSL	statistically significant level
SU	standard unit
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
USEPA	United States Environmental Protection Agency
XRD	X-ray diffraction

1. INTRODUCTION AND SUMMARY

This alternative source demonstration (ASD) report has been prepared to address statistically significant levels (SSLs) for beryllium, cobalt, lead, and mercury in the groundwater monitoring network at the former Flue Gas Desulfurization (FGD) Stackout Area, located at the H.W. Pirkey Plant in Hallsville, Texas, following the second semiannual assessment monitoring event of 2024. The H.W. Pirkey Plant has four coal combustion residuals (CCR) storage units regulated by the Texas Commission on Environmental Quality (TCEQ) under Registration No. CCR104, including the FGD Stackout Area (**Figure 1**). Three of the units, including the former FGD Stackout Area, have been closed by removal, and one unit is still active.

In September 2024, a semiannual assessment monitoring event was conducted at the former FGD Stackout Area in accordance with Texas Administrative Code (TAC) Title 30 §352.951(a) [30 TAC§352.951(a). The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Confidence intervals were recalculated for Appendix IV parameters at the compliance wells to assess whether these parameters were present at SSLs above the groundwater protection standards (GWPSs). Seasonal patterns were observed for beryllium, cadmium, cobalt, combined radium, fluoride, lithium, and selenium at AD-22 (Geosyntec 2024a). To correctly account for seasonality, confidence intervals for these wells and constituents were constructed using deseasonalized values. An SSL was attributed to a parameter if its lower confidence limit (LCL) exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). The following SSLs were identified at the former Pirkey FGD Stackout Area (Geosyntec 2024a):

- The deseasonalized LCL for beryllium exceeded the GWPS of 0.00400 milligrams per liter (mg/L) at AD-22 (0.00531 mg/L).
- The deseasonalized LCL for cobalt exceeded the GWPS of 0.0600 mg/L at AD-22 (0.0771 mg/L).
- The LCL for lead exceeded the GWPS of 0.000200 mg/L at AD-33 (0.000208 mg/L).
- The LCL for mercury exceeded the GWPS of 0.00200 mg/L at AD-33 (0.00335 mg/L).

No other SSLs were identified.

1.1 CCR Rule Requirements

TCEQ regulations regarding assessment monitoring programs for CCR landfills and surface impoundments provide owners and operators with the option to make an ASD when an SSL is identified:

> In making a demonstration under this subsection, the owner or operator must, within 90 days of detecting a statistically significant level above the groundwater protection standard of any constituent listed in Appendix IV adopted by reference in §352.1431 of this title, submit a report prepared and certified in accordance with §352.4 of this title (relating to Engineering and Geoscientific Information) to the executive director, and any local pollution agency with jurisdiction that has requested to be notified, demonstrating that a source other than a CCR unit caused the exceedance or that the exceedance resulted from

error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. (30 TAC §352.951(e))

Pursuant to 30 TAC §352.951(e), Geosyntec Consultants, Inc. (Geosyntec) has prepared this ASD report to document that the SSLs identified for beryllium and cobalt at AD-22 and for mercury and lead at AD-33 are from a source other than the former FGD Stackout Area.

1.2 Demonstration of Alternative Sources

An evaluation was completed to assess possible alternative sources to which each identified SSL could be attributed. Alternative sources were categorized into the following five types, based on methodology provided by the Electric Power Research Institute (EPRI 2017):

- ASD Type I: Sampling Causes
- ASD Type II: Laboratory Causes
- ASD Type III: Statistical Evaluation Causes
- ASD Type IV: Natural Variation
- ASD Type V: Alternative Sources (i.e., anthropogenic sources)

A demonstration was conducted to show that the SSLs identified for beryllium, cobalt, mercury, and lead were based on a Type IV cause and not by a release from the former Pirkey FGD Stackout Area.

2. SUMMARY OF SITE CONDITIONS

The Stackout Area design and construction, regional geology and site hydrogeology, and groundwater monitoring system and flow conditions are described below.

2.1 FGD Stackout Area Design and Construction

The former Pirkey FGD Stackout Area was an approximately 5-acre FGD storage area located due west of the Pirkey Plant (**Figure 1**). It was designed for temporary stockpiling of stabilized FGD material placed on the native clay soil in the unit until it could be hauled to the on-site landfill for disposal (Arcadis 2023). Prior to closure, the natural ground surface elevation in the Stackout Area ranged from approximately 360 to 365 feet above mean sea level. Based on lithological borings advanced in the vicinity, the former FGD Stackout Area is underlain by approximately 20 feet of clay (Arcadis 2023).

A Closure Plan for the FGD Stackout Area was developed in October 2016 and revised in May 2023 (American Electric Power [AEP] 2023a). This document detailed the closure activities which were to take place throughout the closure of the Stackout Area. AEP submitted a certified notification that the receipt of CCR materials had ceased as of September 1, 2023 and the closure activities had been initiated (AEP 2023b). The removal of the remaining CCR material and an additional 12 inches of underlying soil was completed in September 2023, and the removal was certified by Akron Consulting, LLC (Akron Consulting 2023) on November 12, 2023. On March 5, 2024, the Stackout Area was certified closed by removal in accordance with the most recent Closure Plan (AEP 2023a), and notification was placed in the Operating Record (AEP 2024).

2.2 Regional Geology / Site Hydrogeology

The former Stackout Area is positioned on an outcrop of the Eocene Recklaw Formation, which consists predominantly of clay and fine-grained sand (Arcadis 2023). The Recklaw Formation is underlain by the Carrizo Sand, which crops out in the topographically lower southern portion of the plant. The Carrizo Sand consists of fine- to medium-grained sand interbedded with silt and clay.

The very-fine- to fine-grained clayey and silty sand located about 10 to 20 feet below the former Stackout Area, with an average thickness of approximately 20 feet, is considered to be the uppermost aquifer below this CCR unit (Arcadis 2023).

2.3 Groundwater Monitoring System and Flow Conditions

The monitoring well network for the former Stackout Area monitors groundwater within the uppermost aquifer. Geologic cross sections B-B', E-E', and F-F' from Arcadis (2023) show the subsurface structure of the uppermost aquifer (indicated on the figures as clayey silty sand, brown to gray in color) underlying the former Stackout Area. These figures and a cross section location map are provided in **Attachment A**. The geologic cross sections demonstrate lateral continuity of the uppermost aquifer at and around the former Stackout Area.

Groundwater flow direction at and near the former Stackout Area is west-northwesterly (**Figure 1**). Groundwater flow velocities in the uppermost aquifer in the vicinity of the former Stackout Area have been reported as approximately 5 to 35 feet per year. The groundwater monitoring network for the former Stackout Area consists of upgradient monitoring wells AD-12 and AD-13

and downgradient compliance wells AD-7R, AD-22, and AD-33, all of which are screened within the uppermost aquifer (Arcadis 2023). Downgradient well AD-7R was added to the network in December 2023 to replace well AD-7, which was plugged in September 2023 due to plant demolition activities in the area.

3. ALTERNATIVE SOURCE DEMONSTRATION

The ASD evaluation method and proposed alternative source of beryllium and cobalt in AD-22, and mercury and lead in AD-33 are described below.

3.1 Proposed Alternative Source

An initial review of site geochemistry, site historical data, and laboratory quality assurance and quality control data did not identify alternative sources for beryllium, cobalt, and mercury due to Type I (sampling), Type II (laboratory), Type III (statistical evaluation), or Type V (anthropogenic sources) issues. Groundwater sampling, laboratory analysis, and statistical evaluations were generally completed in accordance with 30 TAC §352.931 and the draft TCEQ guidance for groundwater monitoring (TCEQ 2020). As described below, the SSLs for beryllium and cobalt have been attributed to natural variation associated with seasonal effects, which is a Type IV (natural variation) issue. The SSLs for lead and mercury at AD-33 have also been attributed to a Type IV issue, in this case natural variation associated with the lithology of the uppermost aquifer.

3.1.1 Beryllium

An SSL was identified for beryllium at AD-22 using deseasonalized statistics (Geosyntec 2024a). According to the *Unified Guidance*, "seasonal correction should be done both to minimize the chance of mistaking a seasonal effect for evidence of contaminated groundwater, and also to build more powerful background to compliance point tests. Problems can arise, for instance, from measurement variations associated with changing recharge rates during different seasons" (United States Environmental Protection Agency [USEPA] 2009a).

Previous ASDs for the former FGD Stackout Area showed that beryllium concentrations at AD-22 appear to correlate with groundwater elevations (Geosyntec 2019, Geosyntec 2020a, Geosyntec 2020b, Geosyntec 2021a, Geosyntec 2021b, Geosyntec 2022, Geosyntec 2023a, Geosyntec 2024b, Geosyntec 2024c, Geosyntec 2024d). This relationship generally still holds true (**Figure 2**). Beryllium concentrations at AD-22 are generally correlated with seasonal changes in other relatively mobile cationic constituents, including calcium and lithium (**Figure 3**). The correlation between beryllium and both monovalent (lithium) and divalent (calcium) cations suggests that the variability in observed beryllium concentrations is related to cation exchange behavior with clay minerals present in the native soil.

In March of 2020, the geology near AD-22 was relogged at soil boring SP-B4. Clay materials were present in the seasonally saturated zones above the permanent water table (**Figure 4**). The boring log for SP-B4 is provided in **Attachment B,** and the original boring log and well construction diagram for AD-22 is provided in **Attachment C**. At AD-22, the depth to water fluctuated between approximately 3 and 12 feet below ground surface (bgs). Clay was identified from approximately 0.7 feet bgs to 13.3 feet bgs, where it transitioned to a clayey silt (**Attachment B**). Analysis by X-ray diffraction (XRD) confirmed the presence of clay minerals within the seasonal water table and sand within the screened intervals for AD-22, as summarized in **Table 1**. The clay fraction of the uppermost samples collected from within the seasonal water table was further analyzed to identify the type of clays present. Smectite-type clays, which are 2:1-layer high-activity clays with characteristically high cation exchange capacity (compared to low-activity 1:1 clay minerals), make up the majority of the clay minerals present at those intervals.

Sorption and desorption of beryllium from smectite-type clays is well documented (You et al. 1989, Boschi and Willenbring 2016a). Desorption was found to be affected by pH, with 75% of beryllium desorbing from a smectite-type clay as pH decreased from 6.0 standard units (SU) to 3.0 SU (Boschi and Willenbring 2016b). The pH values recorded at AD-22 for samples collected under the detection monitoring program of the Texas CCR Water Management rule (30 TAC 352) ranged from 3.5 to 5.1 SU, suggesting that conditions are favorable for beryllium desorption from smectite-type clays. The presence of these exchangeable clays provides further evidence that the exceedance of beryllium at AD-22 can be attributed to the effects on groundwater quality of seasonal groundwater elevation changes and the resulting cation exchange between groundwater and the exchangeable clay within the seasonal water table.

3.1.2 Cobalt

An SSL was identified for cobalt at AD-22 using deseasonalized statistics (Geosyntec 2024a). As shown in previous ASDs (Geosyntec 2020a, Geosyntec 2020b, Geosyntec 2021a, Geosyntec 2021b, Geosyntec 2022, Geosyntec 2023a, Geosyntec 2024b, Geosyntec 2024c, Geosyntec 2024d), cobalt groundwater concentrations at AD-22 also appear to correlate with seasonal changes in groundwater elevation (**Figure 5**). The cobalt concentrations are well correlated with changes in other cations, including calcium and lithium (**Figure 6**), which suggests that natural variability associated with groundwater-mineral interactions within the seasonally saturated zone is governing aqueous concentrations of multiple parameters, including cobalt.

A sample of the solid FGD sludge material accumulated on the FGD Stackout Area was collected in July 2019 and submitted for laboratory analyses. The solid-phase sample was leached using both Synthetic Precipitation Leaching Procedure (SPLP) analysis (SW-846 Test Method 1312 [USEPA 1994]) and Seven-Day Distilled Water Leachate Test Procedure (7-day leaching procedure) analysis (Appendix 4 of 30 TAC Chapter 335, Subchapter R) to evaluate the material as a potential source of cobalt. No changes to material handling or plant operations occurred prior to ceasing operations that would have altered the anticipated chemical composition since this sample was initially collected. Calcium-cobalt ratios for the leached sludge material and site groundwater are displayed on **Figure 7**. The concentration ratio between calcium and cobalt is consistently on the order of 100:1 at both upgradient and downgradient locations (**Figure 7**). Calcium concentrations in groundwater are generally consistent between AD-22 and upgradient well AD-13 (**Figure 8**); however, leached calcium concentrations from the FGD sludge material are approximately two to three orders of magnitude greater than concentrations in site groundwater. The difference between the ratio of calcium to cobalt in the leached FGD sludge material (about 45,000:1) compared to the ratio for groundwater suggests that dissolved calcium concentrations at AD-22 would be significantly higher if the groundwater at this location were affected by leachate.

Siderite and pyrite, both reduced (ferrous; Fe^{2+}) iron-bearing minerals, were identified below the seasonal water table (within the saturated zone) at AD-22 (**Table 1**). Cobalt is known to undergo isomorphic substitution for iron in both siderite and pyrite (Gross 1965, Hitzman et al. 2017, Krupka and Serne 2002). This is due to the similarity of their ionic radii (approximately 1.56 angstrom [Å] for iron and 1.52 Å for cobalt [Clementi and Raimondi 1963]). The proposed substitution of cobalt for iron in the crystal lattice of pyrite has been documented in the most recent ASDs prepared for the Pirkey Plant's East Bottom Ash Pond (Geosyntec 2024e) and West Bottom Ash Pond (Geosyntec 2024f) as well as early ASDs for these units.

Goethite (a ferric [Fe^{3+}] iron hydroxide mineral) was identified within the seasonally saturated zone and the screened interval at AD-22 (**Table 1**). Weathering of siderite and pyrite to goethite under oxidizing conditions is a well-understood phenomenon, including in formations in East Texas (Senkayi et al. 1986, Dixon et al. 1982) and is likely occurring within the seasonally saturated zone as evidenced by the presence of goethite. Eh-pH (Pourbaix) diagrams can be used to illustrate the thermodynamically favorable speciation of iron at equilibrium under particular groundwater conditions. An Eh-pH diagram generated using geochemical conditions at AD-22 are favorable for goethite stability (**Figure 9**). During weathering from reduced (pyrite and siderite) to oxidized (goethite) iron minerals, isomorphically substituted cobalt may be released from the mineral structure into groundwater. The mobilization of cobalt, which was released during weathering of siderite or pyrite to goethite in the seasonally saturated zone, may explain the variability in aqueous cobalt concentrations and their correlation with the groundwater elevation as more or less aquifer solids are saturated with groundwater.

3.1.3 Mercury

An SSL was identified for mercury at AD-33 (Geosyntec 2024a). As shown in previous ASDs (Geosyntec 2023b, Geosyntec 2024b, Geosyntec 2024c, Geosyntec 2024d), if aqueous mercury detected at AD-33 was derived from CCR leachate from the FGD Stackout Area, we would anticipate similar trends for the concentrations of other CCR constituents, particularly those known to be more conservative. Boron, a geochemically conservative parameter, has high leachability from FGD material (USEPA 2009b). A release from the FGD Stackout Area would be anticipated to result in higher concentrations of boron and other conservative parameters, such as sulfate; however, the observed boron and sulfate concentrations at AD-33 do not display increasing trends (**Figure 10**). Two samples of FGD sludge material from the Stackout Area were collected in 2019 for characterization to assess if the FGD material was a likely source of mercury to groundwater at AD-33. As summarized in **Table 2**, both the historical average and the most recent boron groundwater concentrations at AD-33 are two orders of magnitude lower than the boron concentrations in leachate from both Synthetic Precipitation Leaching Procedure (SPLP) analysis (SW-846 Test Method 1312 [USEPA 1994]) and Seven-Day Distilled Water Leachate Test Procedure (7-day leaching procedure) analysis (Appendix 4 of 30 TAC Chapter 335, Subchapter R) of FGD sludge (**Attachment D**). The lack of increasing boron in AD-33 groundwater despite the elevated boron concentrations in leached FGD sludge suggests that groundwater at AD-33 is not impacted by the unit.

The FGD sludge material contained detectable levels of total mercury at concentrations greater than those reported for two samples of aquifer solids collected from a soil boring advanced adjacent to AD-33 (**Table 3**, **Attachment E**). While the concentration of mercury in the aquifer solids is lower than the total mercury concentration in FGD sludge material, the low mobility of mercury from FGD as demonstrated in numerous laboratory studies suggests the FGD sludge is not a likely source of mercury in groundwater (USEPA 2009b, Hao et al. 2016). As shown in **Figure 11**, previous mercury groundwater concentrations at AD-33 were consistently equal or greater than the mercury concentrations of leachate from SPLP analysis of FGD sludge material (**Table 2, Attachment D**). Mercury concentrations in leachate from 7-day leaching procedure analysis of FGD sludge material were below the laboratory detection limit of 0.005 mg/L. These results agree with previous studies that have documented that leached mercury concentrations are not correlated with total solid phase mercury in FGD samples (USEPA 2009b).

Detectable concentrations of mercury in aquifer solids at AD-33 present an alternative source of mercury in groundwater (**Table 3**). Mercury is naturally occurring in soils and known to undergo isomorphic substitution for iron in crystalline iron minerals such as pyrite (Manceau et. al 2018). Analysis by XRD of material from the AD-33 soil boring showed detectable levels of pyrite below the seasonal water table (**Table 1**).

Reported differences between the total and dissolved mercury groundwater concentrations provides evidence that mercury is associated with colloidal material native from the aquifer. Dissolved concentrations of mercury at AD-33 are consistently lower than the reported total values (**Figure 11**), with most dissolved concentrations detected below the MCL of 2 µg/L. The method for measuring dissolved mercury in groundwater (EPA Method 245.7 [USEPA 2005]) involves filtering the sample through a 0.45 µm filter prior to analysis, which would remove colloid-sized particles prior to preservation. The inclusion of suspended particles (including colloids) in totals samples is likely to result in an overestimation of metals due to the mobilization of metals from the colloidal or solid to aqueous phase following acid preservation during sample collection. Thus, the lower dissolved mercury concentrations compared to total aqueous mercury suggests that mercury is associated with colloidal material from the aquifer and the SSL of mercury at AD-33 is not due to a release from the former FGD Stackout Area.

3.1.4 Lead

An SSL for lead was identified at MW-33 (Geosyntec 2024a). Analysis of the 2019 FGD sludge samples (discussed in Section 3.1.3) suggests that the FGD unit is not the source of the lead in groundwater. As previously discussed in Section 3.1.3, aqueous boron concentrations do not indicate that AD-33 groundwater is impacted by FGD sludge material. The historical average and the most recent boron groundwater concentrations at AD-33 are both two orders of magnitude lower than boron concentrations in leachate from both SPLP analysis and 7-day leaching procedure analysis of FGD sludge (**Table 2, Attachment D**). The lack of boron impacts to AD-33 groundwater as would be expected from interaction with leached FGD sludge suggests groundwater at AD-33 is not impacted by the unit.

Two sludge samples leached using SPLP analysis and 7-day leaching procedure analysis both did not contain lead concentrations above the method detection limit (**Table 2, Attachment D**), indicating that FGD sludge leachate is not a likely source of elevated lead in downgradient groundwater due to the low mobility of lead from the sludge material. These results agree with previous studies that have documented that leached lead concentrations are not correlated with total solid phase lead in FGD samples, with limited detections of lead in leachate at pH values between 4 and 12 SU (USEPA 2009b).

Lead was detected in two aquifer solids collected from a soil boring advanced adjacent to AD-33 (**Table 3**, **Attachment E**). Like cobalt and mercury, lead is also known to undergo isomorphic substitution for the iron in pyrite or siderite (Gross 1965, Hitzman et al. 2017, Krupka and Serne 2002, Abraitis et al. 2004). While solid-phase lead was detected in FGD sludge samples at concentrations greater than those detected in aquifer solids, analysis of FGD sludge leaching indicates that this lead is not readily mobilized to the aqueous phase. Detectable concentrations of lead in aquifer soils at AD-33 present an alternative source of mercury in groundwater.

3.1.5 Conceptual Site Model

The seasonal fluctuations in beryllium and cobalt concentrations at AD-22 can be attributed to variations in the amount of the aquifer solids that are in contact with groundwater as the water table elevation changes. When the water table is higher, more clay material is in contact with groundwater, allowing greater desorption of cations (including beryllium) from the cation exchange sites on the clay. In the case of cobalt, cobalt-bearing minerals are in contact with groundwater as the water table rises, allowing for the release of cobalt from mineral phases where it has isomorphically substituted for iron. Thus, the observed SSLs were attributed to natural variation associated with seasonal fluctuation of beryllium and cobalt concentrations in groundwater as the amount of aquifer solids that are saturated increases.

Seasonal variations in mercury and lead groundwater concentrations were not observed. The observed mercury concentrations in groundwater at AD-33 were attributed to interactions with mercury-bearing colloidal solids within the unfiltered samples. The observed lead concentrations at AD-33 were attributed to interactions of groundwater with lead-bearing aquifer solids.

4. CONCLUSIONS AND RECOMMENDATIONS

The preceding information serves as the ASD prepared in accordance with 30 TAC §352.951(e) and supports the position that the SSLs of beryllium and cobalt at AD-22 and mercury and lead at AD-33 identified during the second semiannual assessment monitoring event of 2024 were not due to a release from the former FGD Stackout Area. The identified beryllium and cobalt SSLs were, instead, attributed to natural variation related to desorption of beryllium and seasonal dissolution of cobalt-bearing minerals comprising the aquifer solids. The mercury SSL was attributed to natural variation associated with the colloidal solids in the groundwater. The lead SSL was attributed to natural variation associated with groundwater-aquifer solid interactions. Therefore, no further action is warranted. Certification of this ASD by a qualified professional engineer is provided in **Attachment G.**

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TABLES

Table 1. X-Ray Diffraction Results
Alternative Source Demonstration Report
FGD Stackout Area, H. W. Pirkey Plant

Boring Location	**SP-B4**		
Associated Well	**AD-22**		
Depth (ft bgs)	**6-8**	**18-20**	**28-30**
Sample Location	**Within Seasonal Water Table**	**Below Seasonal Water Table**	**Within Screened Interval**
Quartz	28	47.5	95
Plagioclase Feldspar	<0.5	<0.5	1
K-Feldspar	1	0.5	-
Goethite	1	-	2
Hematite	-	-	-
Chlorite	1	-	-
Siderite		10	-
Pyrite	-	2	-
Clays	*	40	2
Kaolinite	13		
Illite/Mica	2		
Smectite	43		
Mixed-Layered Illite/Smectite	11		

Notes:
1. Mineral constituents are reported in percentage.
2. Values shown as less than indicate the mineral constituent is present but below the quantification limit.
*: The clay fraction at SP-B4-6-8 was further analyzed to characterize the types of clays present, as listed below.
-: not detected
ft bgs: feet below ground surface
FGD: Flue gas desulfurization

Table 2. Summary of Key Analytical Data
Alternative Source Demonstration Report
FGD Stackout Area, H.W. Pirkey Plant

Sample	Type	Mercury (µg/L)	Lead (µg/L)	Boron (mg/L)
Pirkey Sludge FGD	SPLP	2.27	<5.0	22.3
	7-Day Leaching Procedure	<5.0	<5.0	8.44
Pirkey Sludge FGD 2	SPLP	<0.025	<5.0	26.7
	7-Day Leaching Procedure	<5.0	<5.0	16.4
AD-33	Historical Average	5.36	170	0.124
	Sep-24	6.5	280	0.122

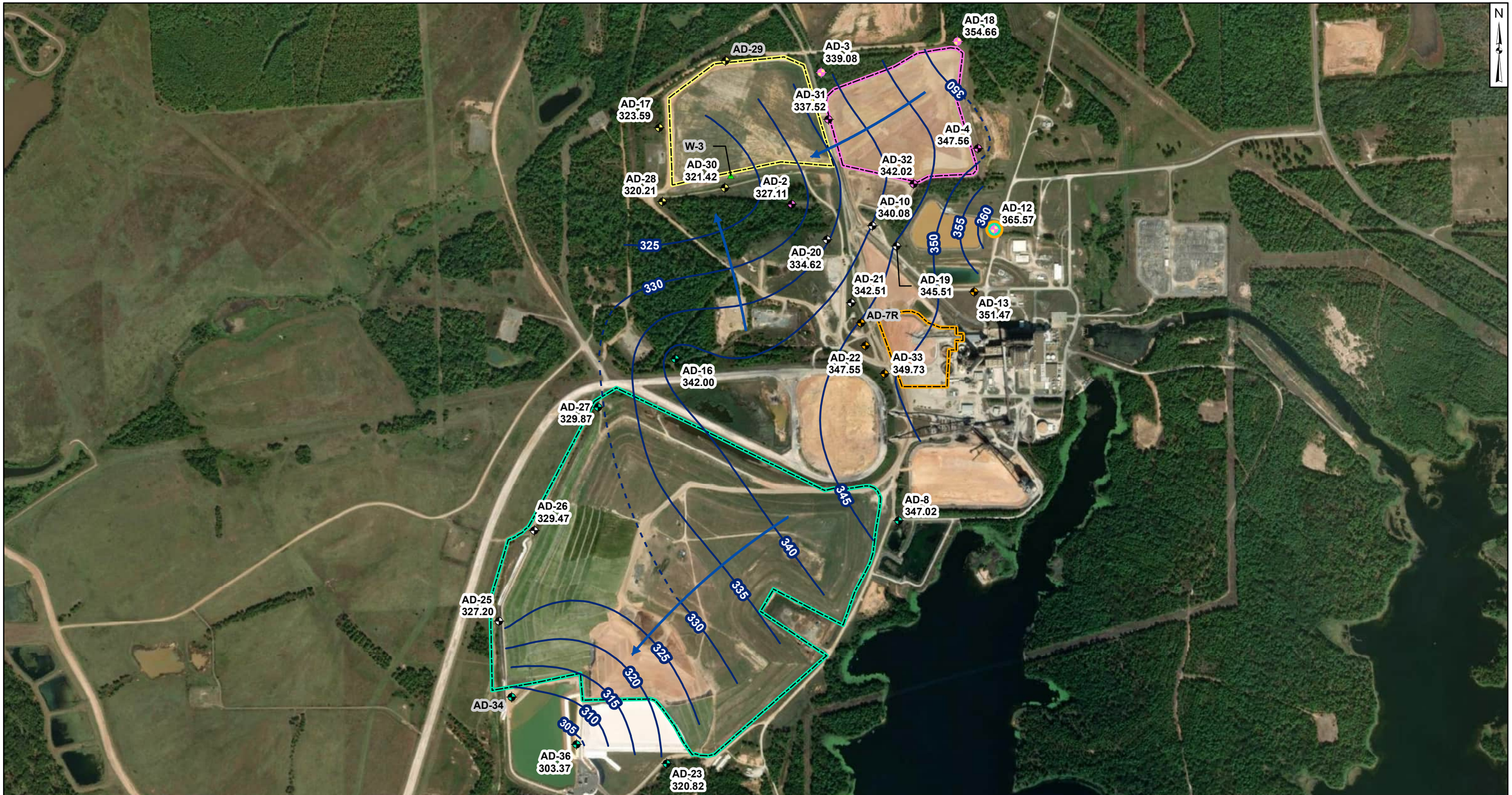
Notes:
1. Average values were calculated using truncated mercury, lead, and boron data (March 2020 - September 2024).
2. Pirkey Sludge FGD samples were collected on July 17, 2019.
3. Non-detect values reported as less than (<) the detection limit.
4. AD-33 lead historical average was calculated assuming a value of 0 µg/L for all samples for which lead was not detected above the method detection limit.
CCR: coal combustion residuals
FGD: Flue Gas Desulfurization
mg/L: milligrams per liter
SPLP: Synthetic Precipitation Leaching Procedure
µg/L: micrograms per liter

Table 3. Solid Phase Metals Data
Alternative Source Demonstration Report
FGD Stackout Area, H.W. Pirkey Plant

Location ID	Date Sampled	Sample Depth (ft bgs)	Mercury (mg/kg)	Lead (mg/kg)
AD-33	4/30/2018	11	0.0026	3.20
		21	0.0038	1.50
Pirkey Sludge FGD	7/17/2019	N/A	0.653	5.31
Pirkey Sludge FGD 2	7/17/2019	N/A	0.606	5.78

Notes:
1. For AD-33 locations, samples were collected from additional boreholes advanced in the intermediate area of AD-33. Samples were not collected from the cuttings of the borings advanced for well .
FGD: Flue Gas Desulfurization
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
N/A: not applicable

FIGURES



Legend

Groundwater Monitoring Wells

- Out of Network
- East Bottom Ash Pond (EBAP)
- West Bottom Ash Pond (WBAP)
- Landfill
- Flue Gas Desulfurization Stackout Area (FGDSA)
- EBAP and WBAP
- All CCR Unit Networks
- Piezometer
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water levels (collected on September 16, 17, and 18, 2024) provided by AEP.
2. Site features based on information available in coal combustion residuals (CCR) Groundwater Monitoring Well Network Evaluation Update (Arcadis 2022) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft msl).
4. Wells AD-29 and W-3 were not gauged during the September 2024 event.
5. AD-7R replaced AD-7, which was abandoned on September 12, 2023.
6. Wells shaded in gray were not used for contouring.
7. Well AD-34 had artesian characteristics during this event and was not used for contouring.
8. AD-35 was abandoned on November 13, 2018 and is not shown on the map.
9. Removal of CCR plus one foot of material for the WBAP was completed for on July 26, 2022.
10. Removal of CCR plus one foot of material for the EBAP was completed on July 20, 2023, for the East Pond.
11. Removal of CCR plus one foot of material for the FGDSA was completed on September 18, 2023.
12. Map is updated to incorporate Landfill survey data collected on May 1, 2024.
13. Aerial imagery provided by ESRI, dated September 19, 2023.

1,000 500 0 1,000 Feet

Beth Ann Gross

January 10, 2025
Geosyntec Consultants, Inc.
Texas Firm Registration
No. 1182

STATE OF TEXAS
BETH ANN GROSS
79864
LICENSED
PROFESSIONAL ENGINEER

Potentiometric Contours: Uppermost Aquifer
September 2024

AEP Pirkey Power Plant
Hallsville, Texas

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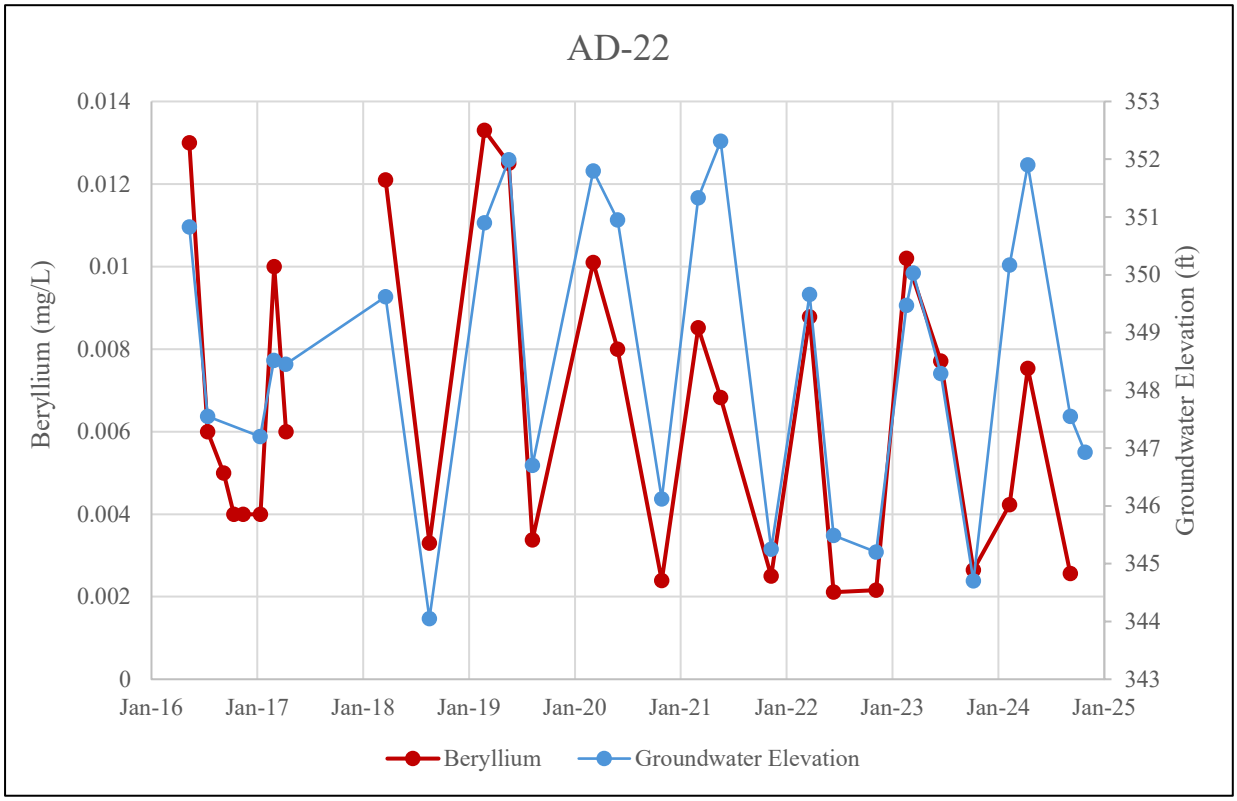
Figure **1**

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Pirkey\2024\AEP-Pirkey_GW_2024-09Pirkey.mxd. Okiemute.Commander. 12/24/2024. Project/Phase/Task.



Notes:
1. Beryllium concentrations are shown in milligrams per liter (mg/L).
2. Water level is shown as groundwater elevation in feet above mean sea level (ft amsl).
3. The gap in beryllium data represents the time period in which detection monitoring took place and samples were not analyzed for beryllium.
FGD: Flue Gas Desulfurization

Beryllium v. Groundwater Elevation
Pirkey FGD Stackout Pad

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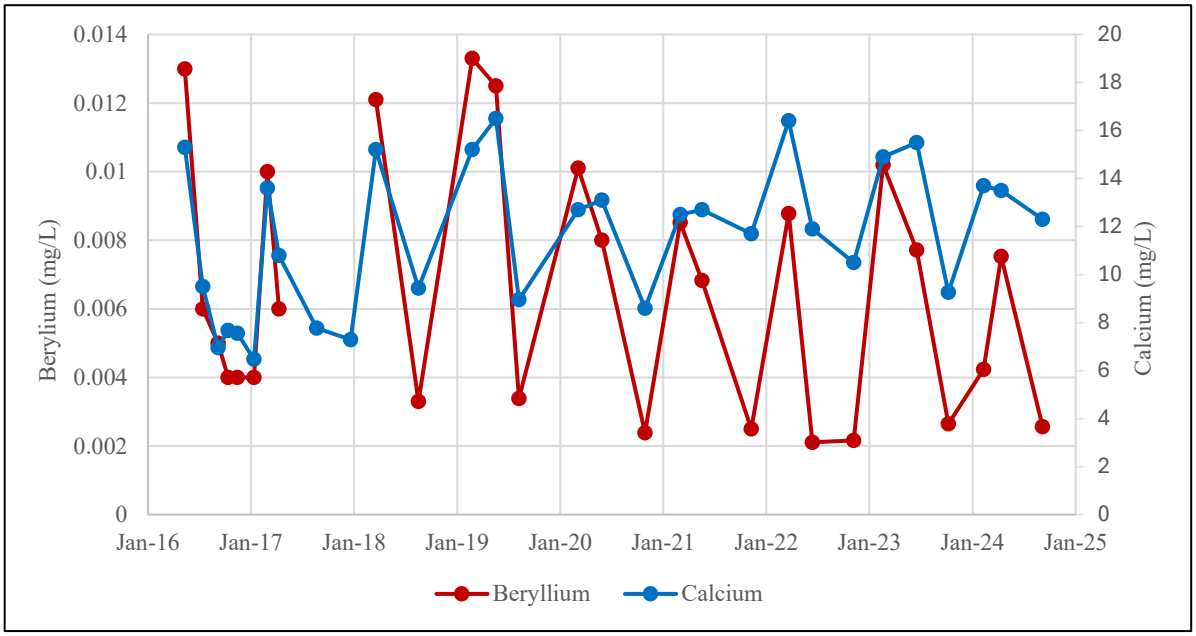
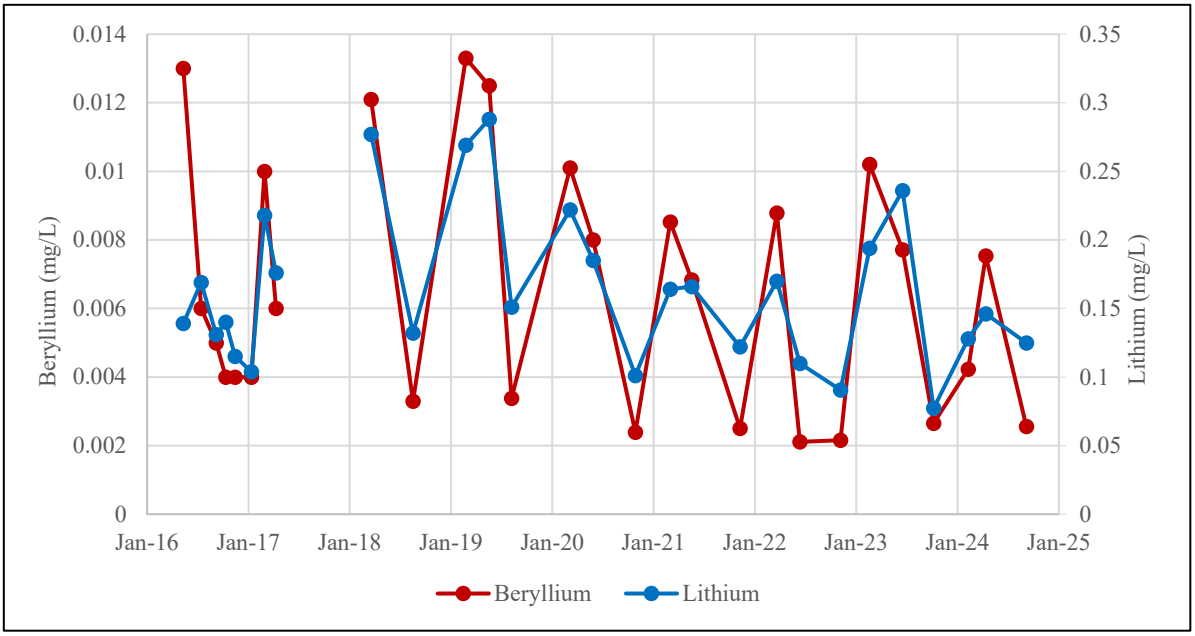
Figure **2**





Notes:
1. Beryllium, calcium, and lithium concentrations are shown in milligrams per liter (mg/L).
2. The gaps in beryllium and lithium data represent the time period in which detection monitoring took place and samples were not analyzed for beryllium and lithium.
FGD: flue gas desulfurization

AD-22 Beryllium v. Calcium and Lithium
Pirkey FGD Stackout Pad

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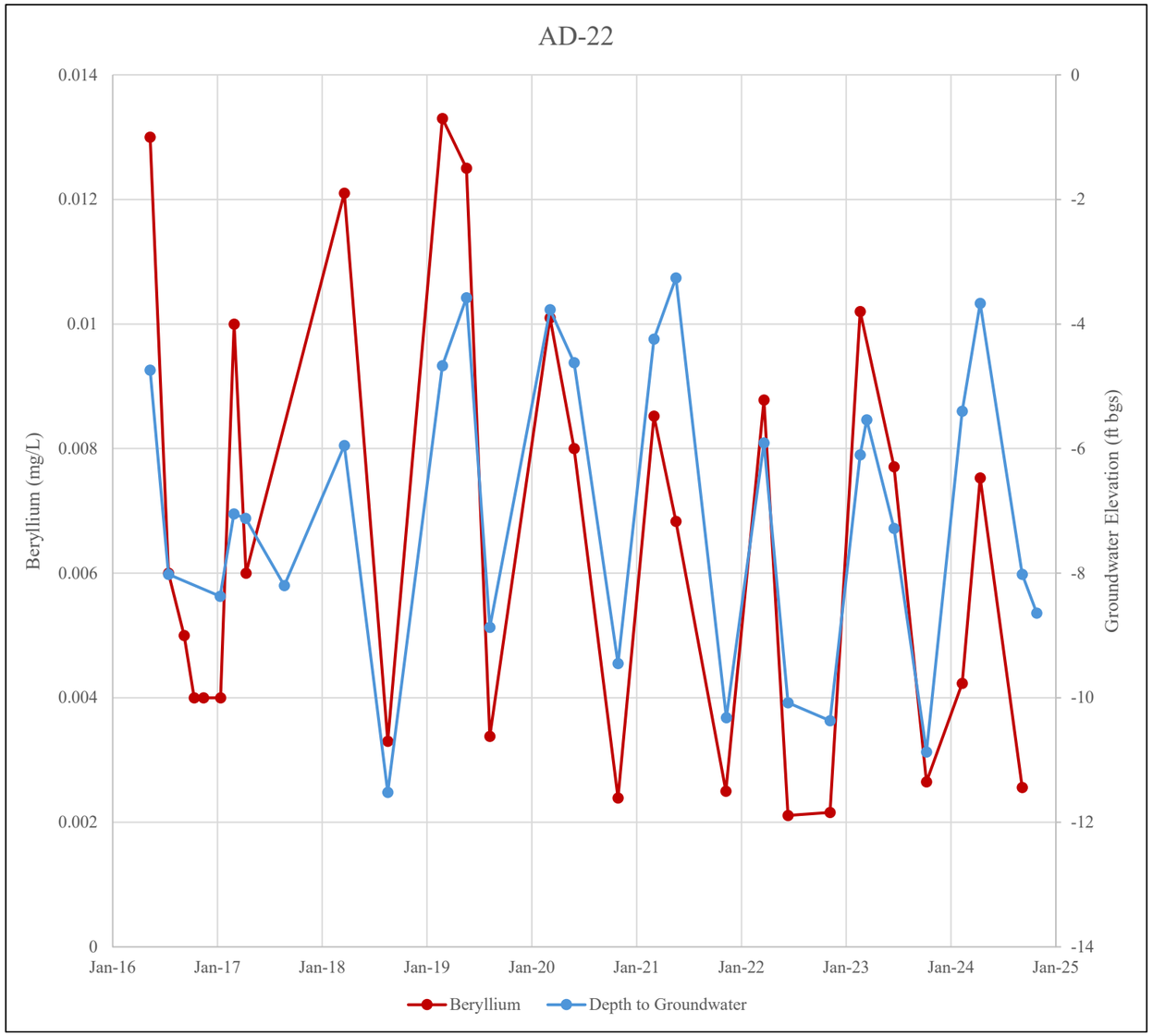

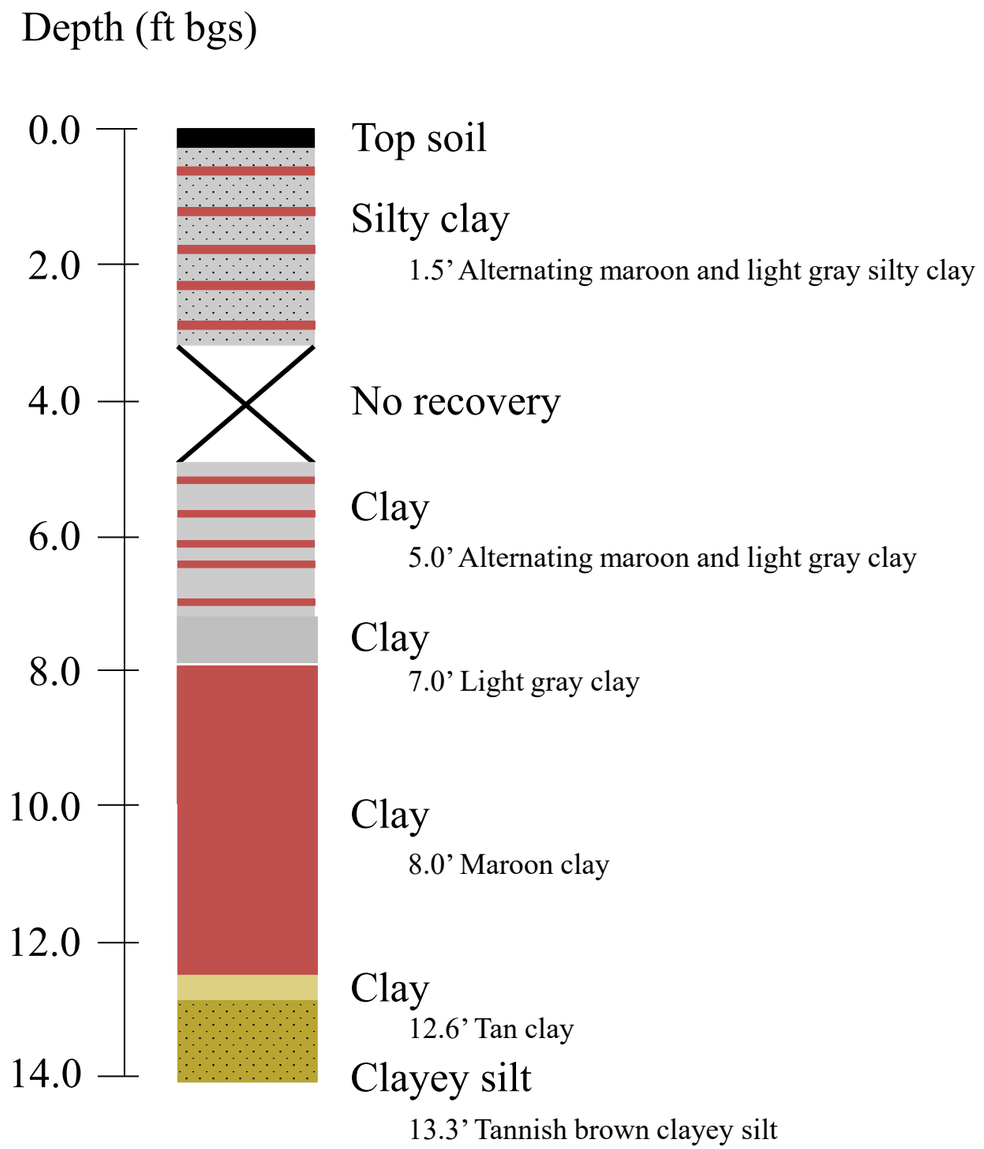

Notes:
1. A sample was collected for analysis of mineralogy from 6–8 ft bgs.
2. This illustration represents the log for boring SP-B4. The full boring log is available in Attachment B.
3. AD-22 is screened at the interval of 10–30 ft bgs.
FGD: Flue Gas Desulfurization
ft bgs: feet below ground surface
mg/L: milligrams per liter

AD-22 Seasonal Water Table Geology

H. W. Pirkey Plant – FGD Stackout Pad

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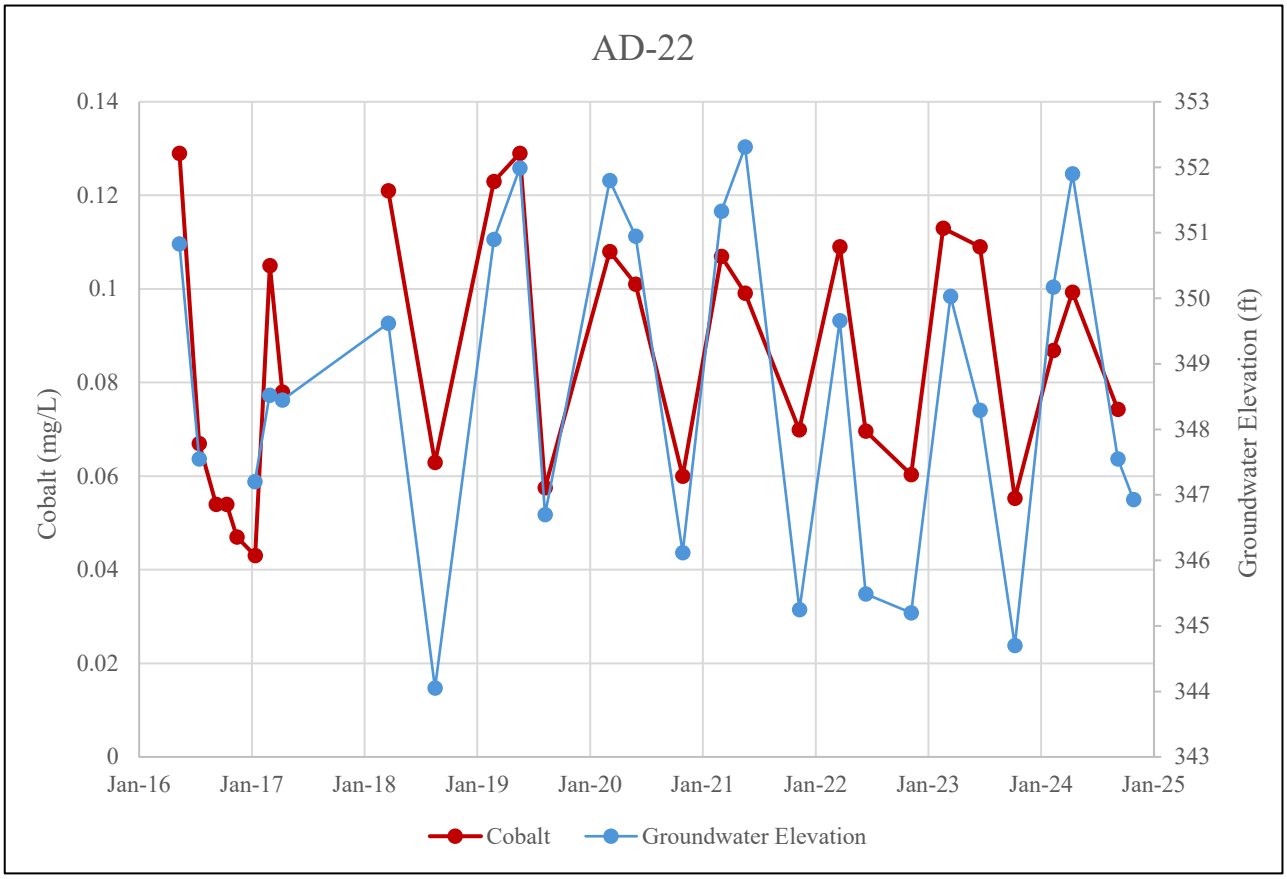
Figure **4**



Notes:
1. Cobalt concentrations are shown in milligrams per liter (mg/L).
2. Water level is shown as groundwater elevation in feet above mean sea level (ft amsl).
3. The gap in cobalt data represents the time period in which detection monitoring took place and samples were not analyzed for cobalt.
FGD: Flue Gas Desulfurization

AD-22 Cobalt v. Groundwater Elevation
Pirkey FGD Stackout Pad

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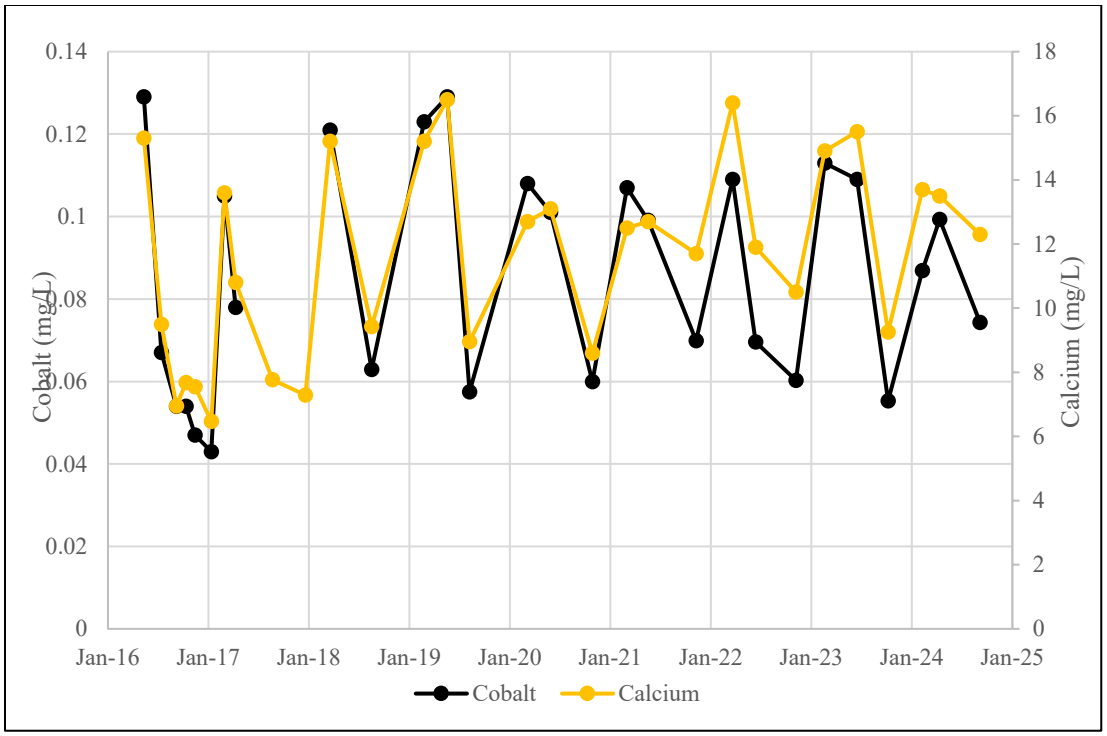
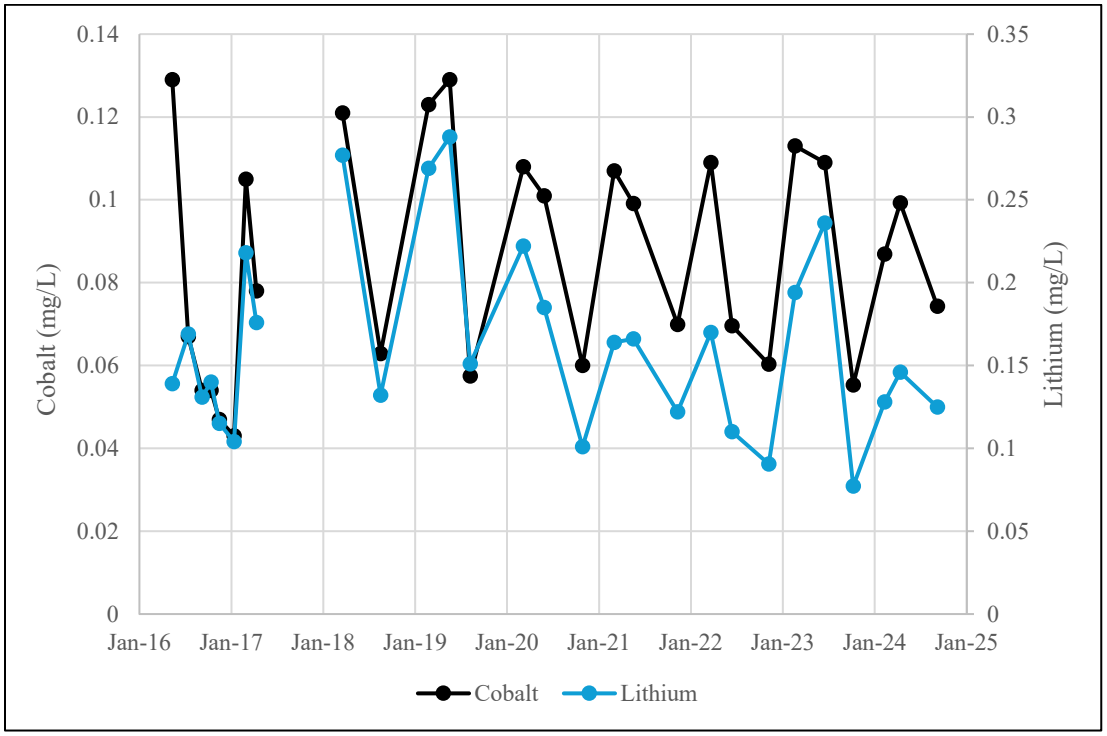
Figure **5**





Notes:
1. Cobalt, calcium, and lithium concentrations are shown in milligrams per liter (mg/L).
2. The gaps in cobalt and lithium data represent the time period during which detection monitoring took place and samples were not analyzed for cobalt and lithium.
FGD: Flue Gas Desulfurization

AD-22 Cobalt v. Calcium and Lithium
Pirkey FGD Stackout Pad

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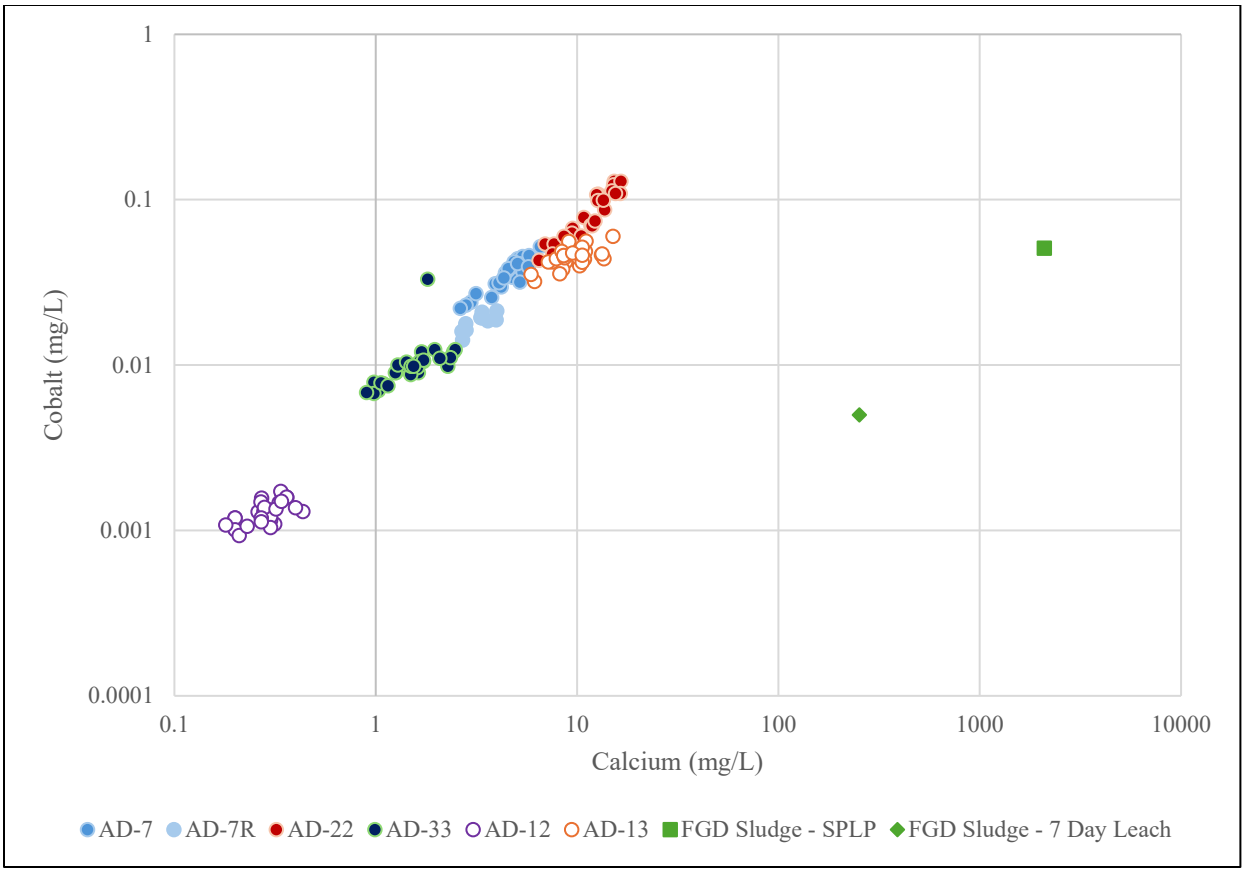
Figure
6



Notes:
1. Cobalt and calcium concentrations are shown in milligrams per liter (mg/L).
2. Upgradient wells are shown with hollow circles.
3. 'FGD Sludge-SPLP' and 'FGD Sludge 7 Day Leach' present the leached concentrations of cobalt and calcium using the Synthetic Precipitation Leaching Procedure (SPLP) (SW-846 Test Method 1312) and the 7-Day Distilled Water Leachate Test Procedure (30 Texas Administration Code 335.521 Appendix 4), respectively.
FGD: Flue Gas Desulfurization

Cobalt and Calcium Concentration Distribution
Pirkey FGD Stackout Pad

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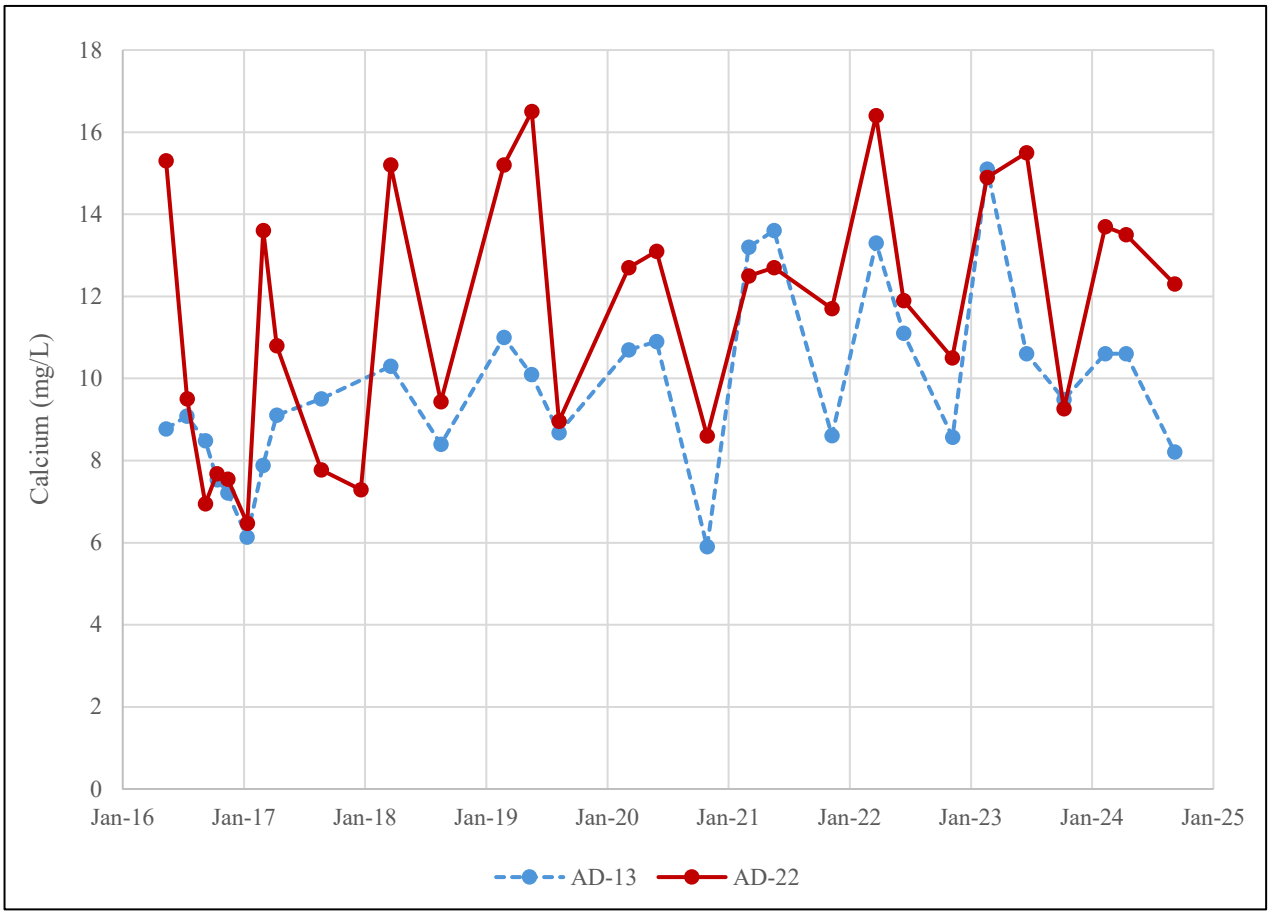
Figure
7



Notes:
1. Calcium concentrations are shown in milligrams per liter (mg/L).
2. Upgradient monitoring well AD-13 is shown with a dashed line.
FGD: Flue Gas Desulfurization

Calcium Time Series Graph
Pirkey FGD Stackout Pad

Geosyntec consultants

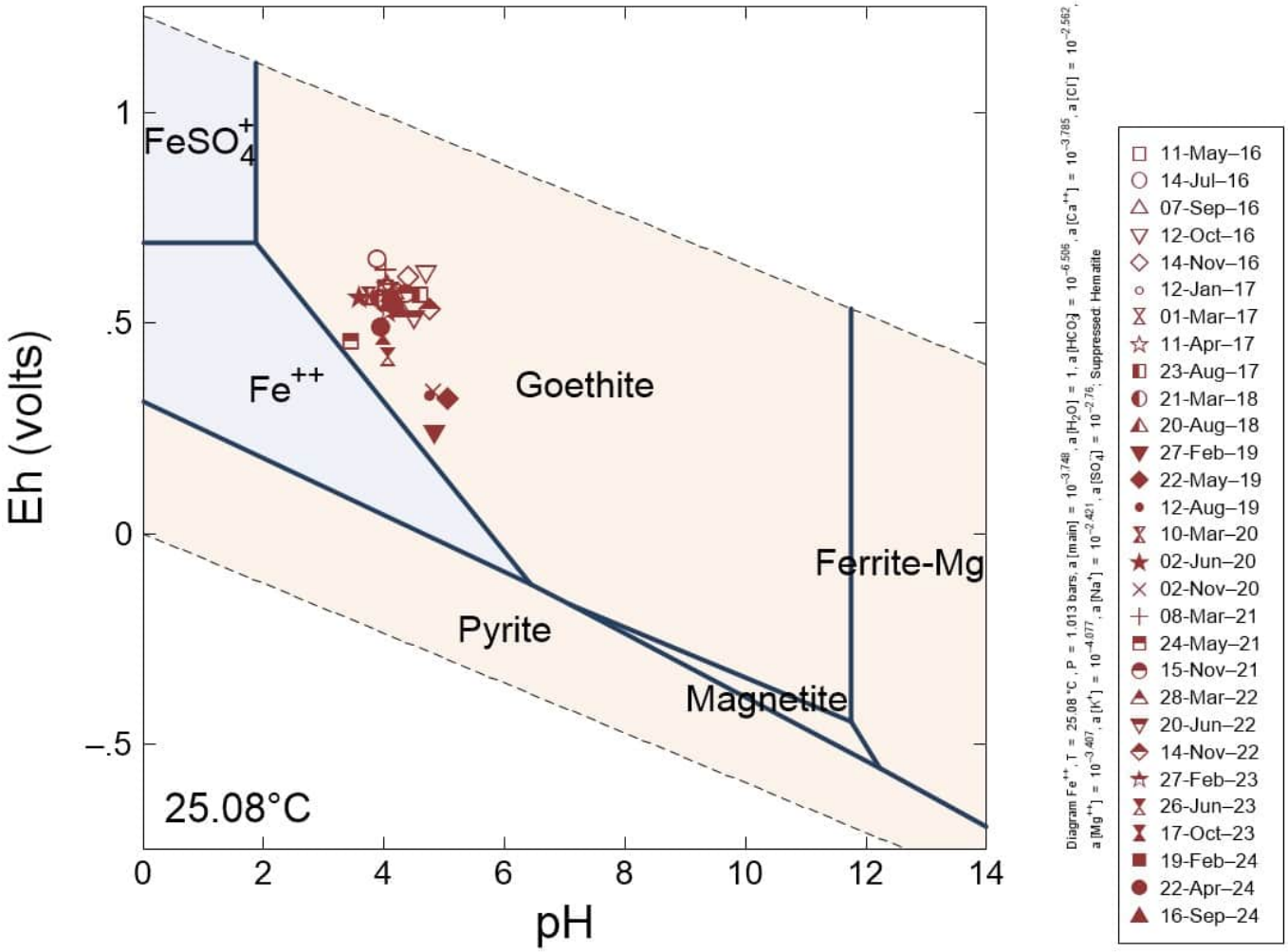
AMERICAN ELECTRIC POWER

Columbus, Ohio

March 2025

Figure

8



Notes: Groundwater concentrations of major cations and anions at AD-22 from the September 2024 sampling event were used to establish baseline conditions for the diagram. Eh and pH values for sampling dates at AD-22 are shown on the diagram.

AD-22 Eh-pH Diagram
Pirkey FGD Stackout Pad

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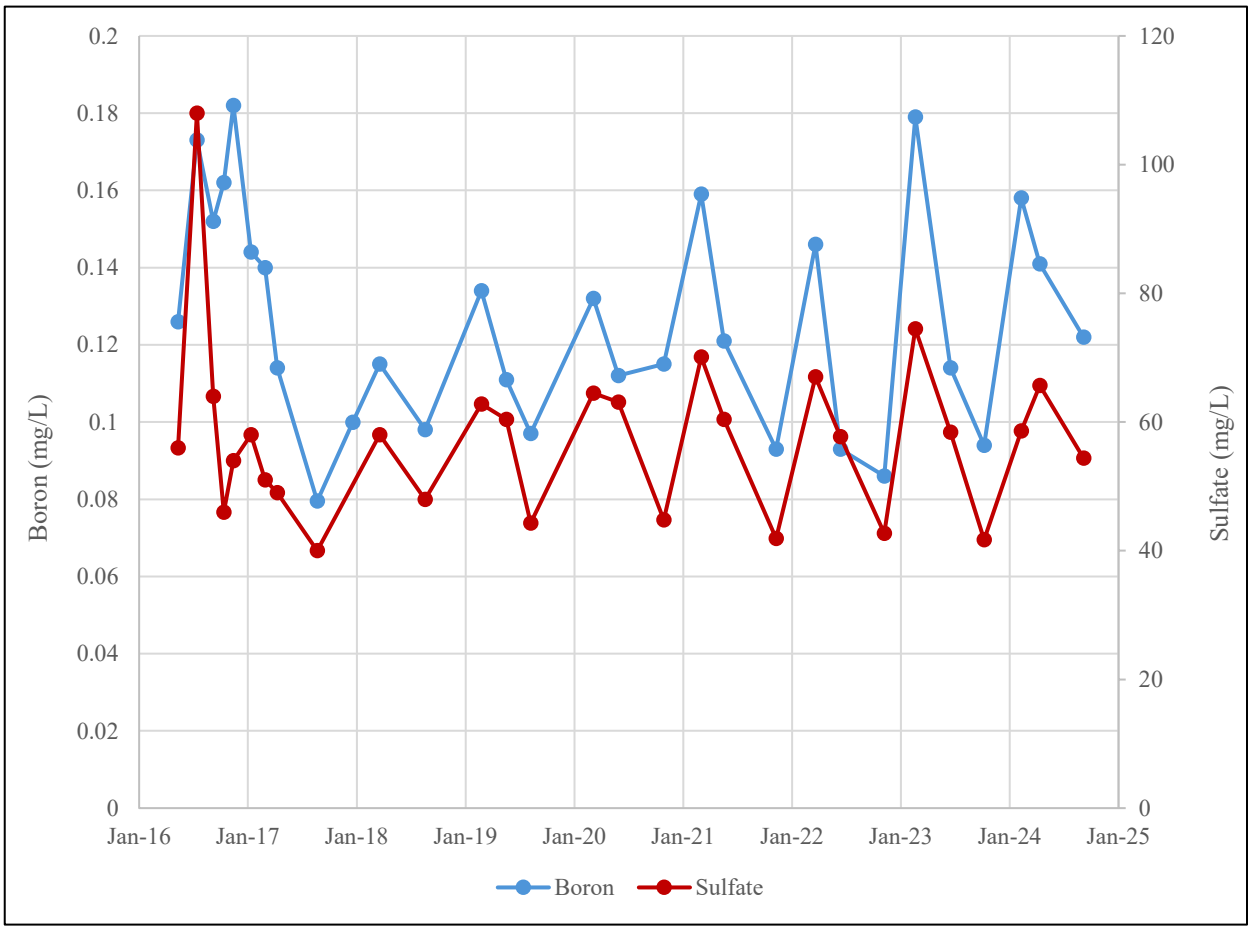
Columbus, Ohio | March 2025

Figure 9



Notes:
1. Boron and sulfate concentrations are shown in milligrams per liter (mg/L).
FGD: Flue Gas Desulfurization

AD-33 Boron and Sulfate Time Series Graph
Pirkey FGD Stackout Pad

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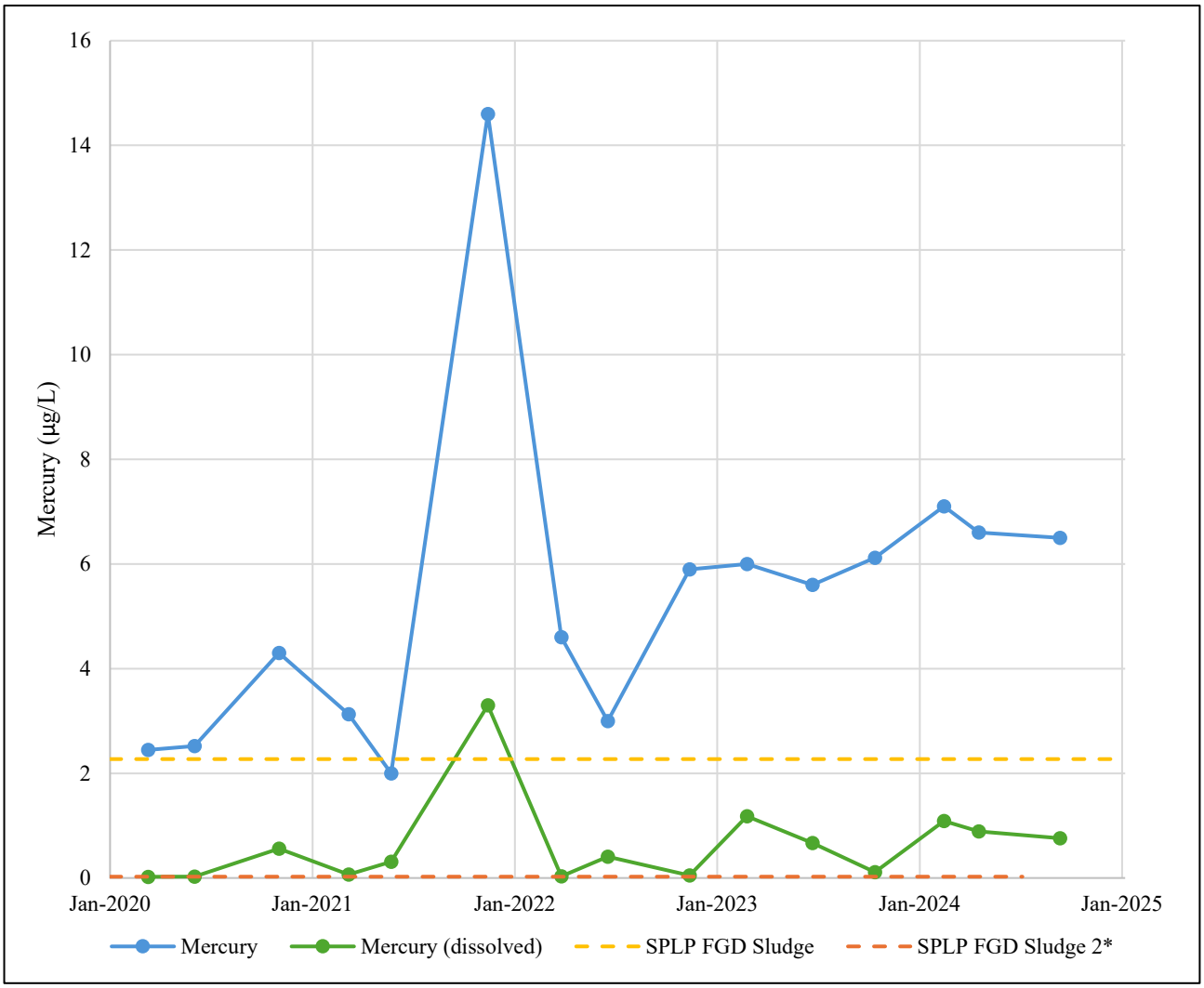
Columbus, Ohio | March 2025



Notes:
1. Mercury concentrations are shown in micrograms per liter (µg/L).
2. FGD sludge samples collected on 7/17/2019.
3. 7-day leaching procedure results were not shown due to non-detects.
*: Non-detect presented as the reporting limit
FGD: Flue Gas Desulfurization
SPLP: Synthetic Precipitation Leaching Procedure

AD-33 Mercury Time Series Graph
Pirkey FGD Stackout Pad

Geosyntec consultants

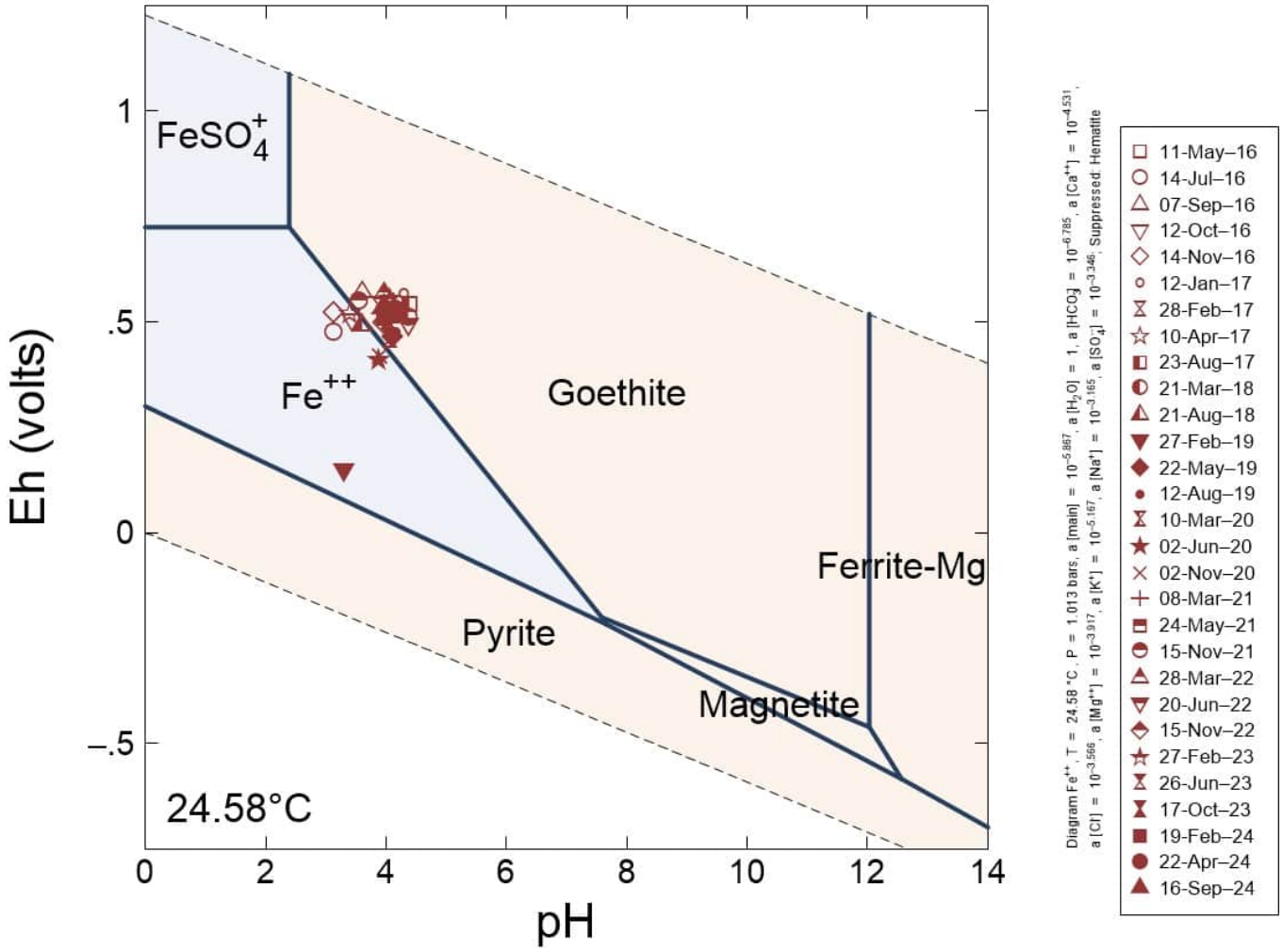
AMERICAN ELECTRIC POWER

Columbus, Ohio

March 2025

Figure

11



Notes: Groundwater concentrations of major cations and anions at AD-33 from the September 2024 sampling event were used to establish baseline conditions for the diagram. Eh and pH values for sampling dates at AD-33 are shown on the diagram.

AD-33 Eh-pH Diagram
Pirkey FGD Stackout Pad

Geosyntec consultants

AMERICAN ELECTRIC POWER

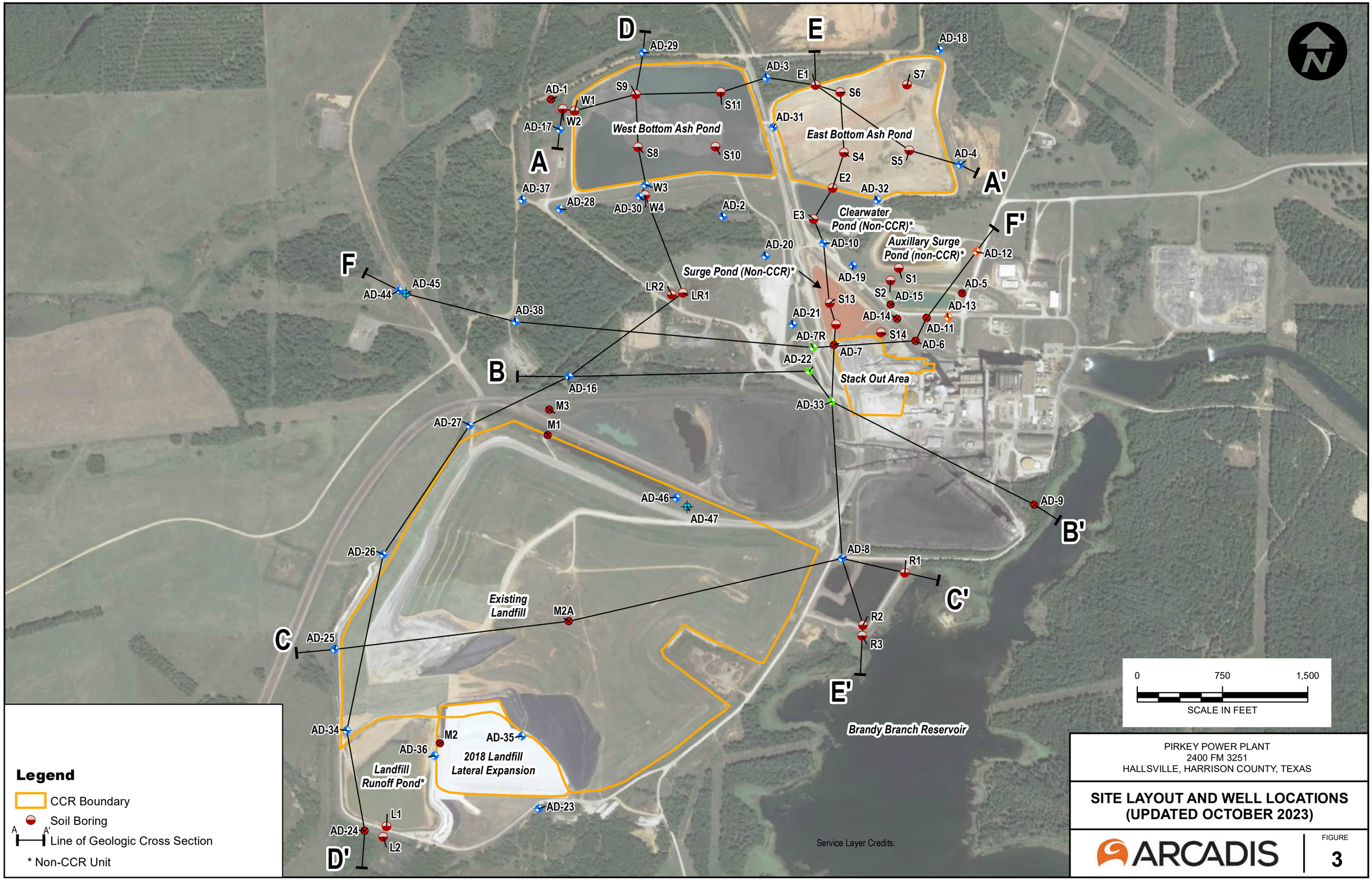
Columbus, Ohio

March 2025

Figure

12

ATTACHMENT A
Geologic Cross Sections



PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS

SITE LAYOUT AND WELL LOCATIONS (UPDATED OCTOBER 2023)

ARCADIS

FIGURE 3

Document Path: T:_ENV\AEP\Pirkey Plant\MXD\Updated\Figure 3 - Site Layout and Well LocationMap2023Octrev.mxd

WEST

B

EAST

B'

STACK OUT AREA

CCR

AD-16

AD-22

AD-33

AD-9 (PLUGGED)

SILTY CLAYEY SAND, DRY, VERY FINE GRAINED.

SILTY SANDY CLAY, RED TO BROWN.

CLAYEY SILTY SAND, BROWN TO GRAY, VERY FINE GRAINED.

ELEVATION (FEET MSL)

370'
360'
350'
340'
330'
320'

LEGEND

- MONITORING WELL SCREENED INTERVAL
- WATER LEVEL IN MONITORING WELL (1/20/16)
- BASE OF CCR UNIT

0 300'
HORIZONTAL SCALE

NOTES:
A) BASE OF STACK OUT AREA CCR UNIT LOCATED AT GRADE, ELEVATION TAKEN FROM MAY 2012 AND JUNE 23, 2015 TOPOGRAPHIC SURVEYS BY BEACON AVIATION.
B) ELEVATION OF CCR MATERIAL ABOVE STACK OUT AREA VARIES.

PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS

CROSS SECTION B - B'

ARCADIS

FIGURE 5

NORTH

E

SOUTH

E'

EAST BOTTOM ASH POND

CLEARWATER POND (NON-CCR UNIT)

SURGE POND (NON-CCR UNIT)

STACK OUT AREA[D]

AD-10 AD-7 AD-33 AD-8

E1 S6[E] E2 E3 R2 R3

CCR

CLAYEY SAND

SILTY SANDY CLAY, TAN TO GRAY.

CLAY

SILTY SAND

WATER AND CCR FILL[A]

COMPACTED COHESIVE FILL

WATER[B]

WATER[C]

S4[E] S13 S12

SILTY SANDY CLAY, GRAY.

CLAYEY SILTY SAND, BROWN TO GRAY

SANDY CLAY, TAN TO GRAY.

SILTY SAND, GRAY.

ELEVATION (FEET MSL)

370' 360' 350' 340' 330' 320' 310'

0 500'

HORIZONTAL SCALE

STATE OF TEXAS
Kenneth J. Brandner
Geology
1787
LICENSED PROFESSIONAL GEOSCIENTIST

12-11-23

LEGEND

- MONITORING WELL SCREENED INTERVAL
- WATER LEVEL IN MONITORING WELL (1/20/16)
- BASE OF CCR UNIT

NOTES:

A) TOP OF EAST BOTTOM ASH POND PERIMETER BERM ELEVATION IS 357', OPERATING LEVEL IS 354' (JOHNSON & PACE, MAY 2011); BASE ELEVATION OF EAST BOTTOM ASH POND IS 347' (SARGENT & LUNDY, JANUARY 1983).
B) TOP OF CLEARWATER POND PERIMETER BERM ELEVATION IS 357',OPERATING LEVEL IS 354' (JOHNSON & PACE, MAY 2011). BASE ELEVATION OF CLEARWATER POND IS 344' (SARGENT & LUNDY, JANUARY 1983).
C) BASE ELEVATION OF SURGE POND (347-352'MSL) AND POND DESIGN LEVEL (355'MSL) TAKEN FROM JANUARY 31, 1983 SARGENT & LUNDY REPORT "DESIGN SUMMARY FOR LIGNITE STORAGE AREA AND WASTEWATER POND FACILITIES".
D) BASE OF STACK OUT AREA CCR UNIT LOCATED AT GRADE. ELEVATION TAKEN FROM MAY 2012 AND JUNE 23, 2015 TOPOGRAPHIC SURVEYS BY BEACON AVIATION.
E) SOIL BORING INSTALLED BY SOUTHWESTERN LABORATORIES DURING ASH POND CONSTRUCTION IN 1983.

PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS

CROSS SECTION E - E'

ARCADIS

FIGURE 8

WEST

F

EAST

F'

ELEVATION (FEET MSL)

380' 370' 360' 350' 340' 330' 320' 310' 300' 290' 280' 270' 260'

AD-44 AD-45 AD-38 AD-7R AD-7 (PLUGGED) AD-6 (PLUGGED) AD-11 (PLUGGED) AD-12

STACK OUT AREA[A]

SILTY SANDY CLAY, TAN TO GRAY.

CLAYEY SILTY SAND, BROWN TO GRAY.

SILT AND CLAY, GRAY TO BROWN.

CLAY

LIGNITE

CLAYEY SILTY SAND, BROWN TO GRAY.

0 400'
HORIZONTAL SCALE

LEGEND

- MONITORING WELL SCREENED INTERVAL
- WATER LEVEL IN MONITORING WELL (9/12/23)
- BASE OF CCR UNIT

NOTES: BASE OF STACK OUT AREA CCR UNIT LOCATED AT GRADE.

STATE OF TEXAS
Kenneth J. Brandner
Geology
1787
LICENSED
PROFESSIONAL GEOSCIENTIST
12-11-23

PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS

CROSS SECTION F - F'

ARCADIS

FIGURE 9

ATTACHMENT B
SP-B4 Boring Log

Soil Boring Log

Project: AEP Pirkey

Boring/Well Name: SP-B4

Project Location: Hallsville, TX

Boring Date: 3/3/2020

Depth Scale Feet	Water Table	Soil Profile Description	PID*
		pp= pocket penetrometer	
0		0.0'-0.4': Top soil, black silt, vegetation	
		0.4'-0.7': Brown clayey silt, good cohesion	
		0.7'-1.5': Red and light gray silty clay, moderate stiffness (pp. 2.5), high plasticity	
		1.5'-3.7': Maroon and light gray clay, high stiffness (pp. 4.5-5.0), low plasticity; iron ore present 3.1'-3.7'	
		3.7'-5.0': NO RECOVERY	
5		5.0'-7.0': Maroon and light gray clay, high stiffness (pp. 4.5-5.0), low plasticity; iron ore present throughout	
		7.0'-8.0': Light gray clay with iron ore, moderate stiffness (pp.2.5-3.0), moderate plasticity	
		8.0'-10.0': Maroon clay, moderate stiffness (pp. 3.5), moderate plasticity; iron ore present; moist at 9'	
10	▽	10.0'-12.6': Maroon clay, moderate stiffness (pp. 3.5), moderate plasticity; iron ore present; wet at 12'	
		12.6'-13.3': Tan clay, low stiffness (pp.1.5), high plasticity; wet	
		13.3'-18.5': Tan and brown clayey silt, moderate cohesion; iron ore present; wet	
15			
		18.5'-20.3': Maroon silty clay, low stiffness (pp. 1.0), moderate plasticity; iron ore; wet	
20		20.3'-21.1': Dark gray/black clay, trace silt, low stiffness (pp. 1.5), high plasticity; wet	
		21.1'-21.3': Dark gray silt, good cohesion; wet	
		21.3'-21.9': Dark gray silty clay, low stiffness (pp. 1.5), high plasticity; wet	
		21.9'-22.3': Dark gray silt, moderate cohesion; wet	
		22.3'-22.7': light brown silt; low cohesion; wet	
		22.7'-24.4': Dark gray and dark green silty clay, moderate/high stiffness (pp.3.5), moderate plasticity; wet, glauconite present	
		24.4'-27.8': Dark green/gray fine grained sand, well sorted; wet; glauconite present	
25		27.8'-30.0': Red and orange fine grained sand, well sorted, with iron ore; wet	
30			
		Samples collected at 6-8'; 18-20'; 28-30'	
		TD at 30' bgs; refusal	
		*PID readings not collected	
35			

Drill Rig: Geoprobe 3230 DT

Drilling Contractor: C&S

Driller: DJ Diduch

Geosyntec Consultants

ATTACHMENT C
AD-22 Boring Log and Well Installation Diagram

☐ BORING ■ MONITOR WELL

APEX PROJECT NO.: 110-089 BORING NUMBER: ____ MONITOR WELL NUMBER: AD-22

FACILITY NAME: AEP- Pirkey Power Plant FACILITY ID NO.: N/A

FACILITY ADDRESS: Hallsville, Texas

DRILLING COMPANY/METHOD/RIG: Apex Geoscience Inc. / Hollow-stem Augers/ CME-55 Track Rig

DRILLER: Ed Wilson, Apex Geoscience Inc. COMPLETION DATE: 12/16/2010

PREPARED BY: David Bedford LOGGED BY: David Bedford

LATTITUDE: N 32°27'03.3" Datum: WGS-84 WELL LOCATION: Triangle- South side Quansit Hut

LONGITUDE: W94°29'41.3"

DEPTH (FEET)	PID (PPM)	SAMPLE INTERVAL	WELL LOG AND COMPLETION DETAILS	USCS CODE	SOIL DESCRIPTION AND COMMENTS	Odor	Moisture
1			0-0.5	SC	Clayey sand, light brown, very fine grained	None	Moist
2			0.5-12	CL	Lean clay, light brown mottled with light gray	None	Slightly Moist
3							
4					Few iron ore (small) pebbles in clayey sandy streaks		
5							
6							
7							
8							
9							
10							
11							
12							
13			▽	12-20	SC	Clayey sand, grayish brown with orangish brown streaks, very fine grained	None	Slightly Wet
14					Slightly wet @ 12.5' from seepage		
15					Large amount of iron ore 15-17'		
16							
17							
18							
19					Very firm 18-18.5'		
20							
21				20-25	SC	(Dense crystalline rock 21-21.1'), light brown clayey sand, greenish black, mica, black clay streaks, very fine grained, wet @ 20'	None	Wet
22							
23							
24							
25							
26				25-30	SM	Sand, greenish brown (1') grading to orangish brown, silty, very fine grained	None	Wet
27							
28							
29							
30							
31					Boring Terminated at 30'		
32							
33							
34							
35							
36							
37							
38							
39							
40							

Cement Bentonite Filter Sand ▽ Water Level

Apex geoscience inc.

Total Depth: 30 feet Riser Interval: +3 (ags)-10'

Filter Sand (Size/Interval): 8-30' Screen Interval: 10-30'

Grout (Type/Interval): Grout from 0-2'; Bentonite from 2-8' Water level: 12.5'

Surface Completion ☐ Flush ■ Above Ground 3'

Note: This log is not to be used separate from this report.

ATTACHMENT D
FGD Sludge Materials Analytical Report

502 North Allen Ave.
Shreveport, LA 71101
Phone: (318) 673-3802
Fax: (318) 673-3960

AEP ANALYTICAL CHEMISTRY SERVICES
Analysis Report

Report ID : 40143
Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
Shreveport, LA 71101
Fax: (318) 673-3960

AEP Sample ID : 227040
Cust Sample ID: Dirt/Sludge
Sample Desc.: Pirkey Sludge FGD Total

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

Metals (227040)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	20500	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Antimony	0.993	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Arsenic	28.3	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Barium	142	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Beryllium	2.12	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Boron	845	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18	M4	JDB
Cadmium	1.68	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Calcium	77500	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Chromium	30.6	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Cobalt	24.8	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Copper	30.2	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Dry Weight, Percent	94.7	%	0.001	1		07/22/2019 15:30	T5	JDB
Iron	36300	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:18	M4	JDB
Lead	5.31	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Lithium	11.5	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47	T5	JDB
Magnesium	7150	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Manganese	498	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Mercury	0.653	mg/Kg	0.000025	1	EPA 7471B 1998	07/24/2019 14:37		LNM
Molybdenum	8.45	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Nickel	28.8	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Potassium	1370	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Selenium	36.4	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Silver	0.208	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Sodium	1230	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Strontium	382	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Thallium	0.503	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB

AEP ANALYTICAL CHEMISTRY SERVICES
502 North Allen Ave.
Shreveport, LA 71101
Phone: (318) 673-3802
Fax: (318) 673-3960

Analysis Report

Report ID : 40143
Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
Shreveport, LA 71101
Fax: (318) 673-3960

Tin	1.28	mg/Kg	0.2	1:50	EPA 6010B 1996	07/26/2019 0:47	T5	JDB
Titanium	1360	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18	M4	JDB
Vanadium	77.5	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Zinc	26	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB

Waste Characterization (227040)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
pH, Soil	8.44	pH		1	EPA 9045D 2002	07/25/2019 12:30		GB

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Shreveport, LA 71101
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AEP ANALYTICAL CHEMISTRY SERVICES
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Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
Shreveport, LA 71101
Fax: (318) 673-3960

AEP Sample ID : 227041
Cust Sample ID: Dirt/Sludge
Sample Desc.: Pirkey Sludge FGD SPLP

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

SPLP (227041)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	14.2	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Antimony	0.018	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Arsenic	0.015	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Barium	3.46	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Beryllium	0.012	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Boron	22.3	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Cadmium	0.002	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Calcium	2090	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Chromium	0.005	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Cobalt	0.051	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Copper	0.009	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Iron	52.4	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Lithium	0.146	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Magnesium	62.3	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Manganese	2.83	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Mercury	0.002272	mg/L	0.000025	1	EPA 7470A 1994	07/24/2019 14:05		LNM
Molybdenum	0.229	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Nickel	0.054	mg/L	0.025	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Potassium	9.61	mg/L	0.01	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Selenium	0.93	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Sodium	35.6	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Strontium	12.7	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB

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Fax: (318) 673-3960

Titanium	0.041	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Vanadium	0.269	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Zinc	0.299	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB

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Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
Shreveport, LA 71101
Fax: (318) 673-3960

AEP Sample ID : 227042
Cust Sample ID: Dirt/Sludge
Sample Desc.: Pirkey Sludge FGD 7 Day Leachate

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

7-Day Leachate (227042)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	0.563	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Antimony	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Arsenic	0.011	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Barium	0.134	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Beryllium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Boron	8.44	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:43		JDB
Cadmium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Calcium	252	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:43		JDB
Chromium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Cobalt	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Copper	0.002	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Iron	0.211	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Lithium	0.069	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Magnesium	6.73	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Manganese	0.008	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Mercury	< 0.005	mg/L	0.005	1:200	EPA 7470A 1994	07/30/2019 10:19		LNM
Molybdenum	0.18	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Nickel	< 0.025	mg/L	0.025	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Potassium	4.82	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Selenium	0.208	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Sodium	19.8	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:43		JDB
Strontium	1.6	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB

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AEP ANALYTICAL CHEMISTRY SERVICES
Analysis Report

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Titanium	0.015	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Vanadium	0.03	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Zinc	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB

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AEP Sample ID : 227043
Cust Sample ID: Dirt/Sludge 2
Sample Desc.: Pirkey Sludge FGD 2 Total

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

Metals (227043)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	19600	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Antimony	0.919	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Arsenic	22.8	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Barium	121	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Beryllium	1.66	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Boron	891	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25	T5	JDB
Cadmium	1.37	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Calcium	84500	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Chromium	28.5	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Cobalt	20.3	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Copper	26.9	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Dry Weight, Percent	97.2	%	0.001	1		07/22/2019 15:30	T5	JDB
Iron	28800	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Lead	5.78	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Lithium	12	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26	T5	JDB
Magnesium	7070	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Manganese	388	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Mercury	0.606	mg/Kg	0.000025	1	EPA 7471B 1998	07/24/2019 14:27		LNM
Molybdenum	11	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Nickel	25.7	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Potassium	1460	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Selenium	30.4	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Silver	0.19	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Sodium	1780	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Strontium	451	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Thallium	0.562	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB

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Tin	1.06	mg/Kg	0.2	1:50	EPA 6010B 1996	07/26/2019 1:26	T5	JDB
Titanium	1280	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Vanadium	68.3	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Zinc	33.8	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB

Waste Characterization (227043)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
pH, Soil	8.71	pH		1	EPA 9045D 2002	07/25/2019 12:30		GB

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AEP Sample ID : 227044
Cust Sample ID: Dirt/Sludge 2
Sample Desc.: Pirkey Sludge FGD 2 SPLP

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

SPLP (227044)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	10.5	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Antimony	0.017	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Arsenic	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Barium	2.57	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Beryllium	0.009	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Boron	26.7	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Cadmium	0.002	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Calcium	1960	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Chromium	0.004	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Cobalt	0.051	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Copper	0.003	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Iron	47.7	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Lithium	0.136	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Magnesium	70.2	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Manganese	2.87	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Mercury	< 0.000025	mg/L	0.000025	1	EPA 7470A 1994	07/24/2019 14:21		LNM
Molybdenum	0.288	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Nickel	0.071	mg/L	0.025	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Potassium	11.4	mg/L	0.01	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Selenium	0.775	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Sodium	56.7	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Strontium	13.2	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB

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Titanium	0.037	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Vanadium	0.194	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Zinc	0.338	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB

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AEP Sample ID : 227045
Cust Sample ID: Dirt/Sludge 2
Sample Desc.: Pirkey Sludge FGD 2 7 Day Leachate

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

7-Day Leachate (227045)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	0.994	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Antimony	0.006	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Arsenic	0.031	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Barium	0.121	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Beryllium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Boron	16.4	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Cadmium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Calcium	633	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Chromium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Cobalt	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Copper	0.003	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Iron	0.225	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Lithium	0.1	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Magnesium	9.54	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Manganese	0.015	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Mercury	< 0.005	mg/L	0.005	1:200	EPA 7470A 1994	07/30/2019 10:36		LNM
Molybdenum	0.448	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Nickel	< 0.025	mg/L	0.025	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Potassium	9.02	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Selenium	0.201	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Sodium	48.3	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Strontium	3.79	mg/L	0.05	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB

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Titanium	0.02	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Vanadium	0.087	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Zinc	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB

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Quality Control Data

* Quality control units are the same as reported analytical results

Date	Parameter	Sample ID	Blank Value *	Standard			Spike			Surrogate % Recovery	Duplicate % Difference	Tech
				Value *	Recovery*	%	Value *	Recovery*	%			
7/25/2019	Aluminum	226939.1	<0.005	2	2.0229733	101.1	2	2.071639	103.6		0.4	JDB
7/25/2019	Aluminum	227041.1	<0.005	2	2.0229733	101.1	2	2.2242	111.2		0.0	JDB
7/26/2019	Aluminum	227040.1	<12.5	2	2.0358232	101.8	100	132.38333	132.4		1.2	JDB
7/25/2019	Antimony	226939.1	<0.005	0.8	0.8092462	101.2	0.8	0.8159776	102.0		0.2	JDB
7/25/2019	Antimony	227041.1	<0.005	0.8	0.8092462	101.2	0.8	0.7671843	95.9		0.5	JDB
7/26/2019	Antimony	227040.1	<0.25	0.8	0.8071122	100.9	40	32.643192	81.6		1.8	JDB
7/25/2019	Arsenic	227041.1	<0.005	0.8	0.8086795	101.1	0.8	0.7758421	97.0		0.0	JDB
7/25/2019	Arsenic	226939.1	<0.005	0.8	0.8086795	101.1	0.8	0.8086275	101.1		0.1	JDB
7/26/2019	Arsenic	226915.1	<0.25	0.8	0.7906797	98.8	40	40.306278	100.8		0.8	JDB
7/26/2019	Arsenic	227040.1	<0.25	0.8	0.7940238	99.3	40	34.433917	86.1		2.3	JDB
7/25/2019	Barium	226939.1	<0.001	0.2	0.2080557	104.0	0.2	0.209543	104.8		0.1	JDB
7/25/2019	Barium	227041.1	<0.05	0.2	0.2080557	104.0	0.2	0.1829767	91.5		0.4	JDB
7/26/2019	Barium	227040.1	<2.5	0.2	0.2112650	105.6	500	543.5715	108.7		7.2	JDB
7/25/2019	Beryllium	226939.1	<0.001	0.2	0.2122779	106.1	0.2	0.2142832	107.1		0.3	JDB
7/25/2019	Beryllium	227041.1	<0.001	0.2	0.2122779	106.1	0.2	0.1992329	99.6		0.4	JDB
7/26/2019	Beryllium	227040.1	<0.05	0.2	0.2131235	106.6	10	9.40679	94.1		0.2	JDB
7/25/2019	Boron	226939.1	<0.01	0.3	0.2995651	99.9	0.3	0.2984183	99.5		0.7	JDB
7/25/2019	Boron	227041.1	<0.5	0.3	0.2995651	99.9	0.3	0.2855333	95.2		0.5	JDB
7/25/2019	Cadmium	227041.1	<0.001	0.2	0.2069934	103.5	0.2	0.1836838	91.8		0.6	JDB
7/25/2019	Cadmium	226939.1	<0.001	0.2	0.2069934	103.5	0.2	0.2061243	103.1		0.5	JDB
7/26/2019	Cadmium	226915.1	<0.05	0.2	0.1973571	98.7	10	10.058007	100.6		1.8	JDB
7/26/2019	Cadmium	227040.1	<0.05	0.2	0.2013293	100.7	10	8.0453767	80.5		1.6	JDB
7/25/2019	Calcium	226939.1	<0.01	1	1.0087505	100.9	1	1.0243667	102.4		0.9	JDB
7/26/2019	Calcium	227040.1	<25	1	0.8616568	86.2	50	113.63333	227.3		0.8	JDB
7/25/2019	Chromium	226939.1	<0.001	0.4	0.4116387	102.9	0.4	0.4125529	103.1		0.4	JDB
7/25/2019	Chromium	227041.1	<0.001	0.4	0.4116387	102.9	0.4	0.3867339	96.7		0.3	JDB
7/26/2019	Chromium	227040.1	<0.05	0.4	0.40798	102.0	20	17.692233	88.5		1.6	JDB
7/26/2019	Chromium	226915.1	<0.05	0.4	0.4059509	101.5	20	20.758823	103.8		0.8	JDB
7/25/2019	Cobalt	227041.1	<0.005	0.2	0.2043482	102.2	0.2	0.1839347	92.0		0.4	JDB
7/25/2019	Cobalt	226939.1	<0.005	0.2	0.2043482	102.2	0.2	0.2054714	102.7		0.4	JDB
7/26/2019	Cobalt	227040.1	<0.05	0.2	0.2032547	101.6	10	7.7614833	77.6		1.8	JDB
7/25/2019	Copper	227041.1	<0.001	0.3	0.3066399	102.2	0.3	0.2963301	98.8		0.1	JDB

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Shreveport, LA 71101
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7/25/2019	Copper	226939.1	<0.001	0.3	0.3066399	102.2	0.3	0.3109092	103.6		0.1	JDB
7/26/2019	Copper	227040.1	<0.05	0.3	0.3124104	104.1	15	15.003017	100.0		1.9	JDB
7/25/2019	Iron	226939.1	<0.01	3	3.1158893	103.9	3	3.1231158	104.1		1.0	JDB
7/25/2019	Iron	227041.1	<0.5	3	3.1158893	103.9	150	159.28837	106.2		0.8	JDB
7/26/2019	Iron	227040.1	<12.5	3	3.0861005	102.9					3.1	JDB
7/25/2019	Lead	227041.1	<0.005	1	1.0430644	104.3	1	0.9320653	93.2		0.6	JDB
7/25/2019	Lead	226939.1	<0.005	1	1.0430644	104.3	1	1.0416574	104.2		0.4	JDB
7/26/2019	Lead	226915.1	<0.25	1	1.0147827	101.5	50	51.881956	103.8		1.4	JDB
7/26/2019	Lead	227040.1	<0.25	1	1.0194305	101.9	50	41.227533	82.5		1.1	JDB
7/25/2019	Lithium	227041.1	<0.001	0.2	0.2119096	106.0	0.2	0.2353987	117.7		0.1	JDB
7/25/2019	Lithium	226939.1	<0.001	0.2	0.2119096	106.0	0.2	0.2163799	108.2		0.4	JDB
7/26/2019	Lithium	227040.1	<0.05	0.2	0.211291	105.6	10	11.698417	117.0		2.8	JDB
7/25/2019	Magnesium	226939.1	<0.01	2	2.0868175	104.3	2	2.0877567	104.4		0.2	JDB
7/25/2019	Magnesium	227041.1	<0.5	2	2.0868175	104.3	2	1.9791333	99.0		0.6	JDB
7/26/2019	Magnesium	227040.1	<25	2	2.0570549	102.9	100	76.916667	76.9		1.4	JDB
7/25/2019	Manganese	226939.1	<0.001	0.2	0.2072869	103.6	0.2	0.2077536	103.9		0.2	JDB
7/25/2019	Manganese	227041.1	<0.001	0.2	0.2072869	103.6	0.2	0.16684	83.4		0.7	JDB
7/26/2019	Manganese	227040.1	<2.5	0.2	0.2066368	103.3	500	572.398	114.5		1.1	JDB
7/24/2019	Mercury	227041.1	<0.00002	0.001	0.00097	97.0	0.2	0.16373	81.9		7.0	LNM
7/24/2019	Mercury	227040.1	<0.00002	0.001	0.00097	97.0	0.04	0.0496	124.0		4.4	LNM
7/30/2019	Mercury	227042.1	<0.005	0.001	0.0009	90.0	0.2	0.156162	78.1		4.0	LNM
7/25/2019	Molybdenum	227041.1	<0.005	0.2	0.2067657	103.4	0.2	0.197727	98.9		0.5	JDB
7/25/2019	Molybdenum	226939.1	<0.005	0.2	0.2067657	103.4	0.2	0.2076129	103.8		0.4	JDB
7/26/2019	Molybdenum	227040.1	<0.05	0.2	0.2073308	103.7	10	9.2486833	92.5		0.4	JDB
7/25/2019	Nickel	227041.1	<0.025	0.5	0.5192594	103.9	0.5	0.46183	92.4		0.6	JDB
7/25/2019	Nickel	226939.1	<0.025	0.5	0.5192594	103.9	0.5	0.5209379	104.2		0.6	JDB
7/26/2019	Nickel	227040.1	<0.05	0.5	0.5228273	104.6	25	19.992767	80.0		1.9	JDB
7/25/2019	Potassium	227041.1	<0.01	10	9.3692109	93.7	10	11.11754	111.2		0.3	JDB
7/25/2019	Potassium	226939.1	<0.01	10	9.3692109	93.7	10	9.4631223	94.6		0.2	JDB
7/26/2019	Potassium	227040.1	<25	10	9.1397018	91.4	500	428.035	85.6		2.9	JDB
7/25/2019	Selenium	226939.1	<0.005	2	1.9998495	100.0	2	1.9816300	99.1		0.8	JDB
7/25/2019	Selenium	227041.1	<0.005	2	1.9998495	100.0	2	1.991203	99.6		0.7	JDB
7/26/2019	Selenium	227040.1	<0.25	2	1.9551138	97.8	100	89.733067	89.7		3.0	JDB
7/25/2019	Silver	227041.1	<0.001	0.075	0.0712930	95.1	0.075	0.0708639	94.5		0.2	JDB
7/25/2019	Silver	226939.1	<0.001	0.075	0.0712930	95.1	0.075	0.0714285	95.2		0.1	JDB
7/26/2019	Silver	227040.1	<0.05	0.075	0.0712215	95.0	3.75	3.6188628	96.5		0.5	JDB

AEP ANALYTICAL CHEMISTRY SERVICES
Analysis Report

502 North Allen Ave.
Shreveport, LA 71101
Phone: (318) 673-3802
Fax: (318) 673-3960

Report ID : 40143
Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
Shreveport, LA 71101
Fax: (318) 673-3960

7/25/2019	Sodium	227041.1	<0.5	3	3.1384831	104.6	3	2.3746333	79.2		0.0	JDB
7/25/2019	Sodium	226939.1	<0.01	3	3.1384831	104.6	3	2.4693667	82.3		0.1	JDB
7/26/2019	Sodium	227040.1	<25	3	3.1256605	104.2	150	120.525	80.4		1.9	JDB
7/25/2019	Strontium	226939.1	<0.001	0.2	0.2059899	103.0	0.2	0.2081687	104.1		0.4	JDB
7/26/2019	Strontium	227040.1	<2.5	0.2	0.2078256	103.9	500	577.76733	115.6		17.9	JDB
7/25/2019	Thallium	227041.1	<0.005	0.4	0.4152040	103.8	0.4	0.3682771	92.1		1.2	JDB
7/25/2019	Thallium	226939.1	<0.005	0.4	0.4152040	103.8	0.4	0.4171124	104.3		0.0	JDB
7/26/2019	Thallium	227040.1	<0.25	0.4	0.4155052	103.9	20	15.947380	79.7		1.2	JDB
7/25/2019	Tin	226939.1	<0.005	0.7	0.6995446	99.9	0.7	0.6930628	99.0		0.2	JDB
7/25/2019	Tin	227041.1	<0.005	0.7	0.6995446	99.9	0.7	0.644164	92.0		0.2	JDB
7/26/2019	Tin	227040.1	<0.2	0.7	0.6896072	98.5	35	28.438362	81.3		0.8	JDB
7/25/2019	Titanium	227041.1	<0.005	0.2	0.2109341	105.5	0.2	0.2098874	104.9		0.2	JDB
7/25/2019	Titanium	226939.1	<0.005	0.2	0.2109341	105.5	0.2	0.2124567	106.2		0.1	JDB
7/26/2019	Titanium	227040.1	<2.5	0.2	0.2121079	106.1					1.6	JDB
7/25/2019	Vanadium	226939.1	<0.001	0.3	0.3076519	102.6	0.3	0.3104754	103.5		0.4	JDB
7/25/2019	Vanadium	227041.1	<0.001	0.3	0.3076519	102.6	0.3	0.2997157	99.9		0.6	JDB
7/26/2019	Vanadium	227040.1	<0.05	0.3	0.30789	102.6	15	15.291667	101.9		0.0	JDB
7/25/2019	Zinc	226939.1	<0.005	0.2	0.2091679	104.6	0.2	0.2081374	104.1		0.3	JDB
7/25/2019	Zinc	227041.1	<0.005	0.2	0.2091679	104.6	0.2	0.1851907	92.6		0.1	JDB
7/26/2019	Zinc	227040.1	<0.25	0.2	0.2074233	103.7	10	8.4881167	84.9		0.5	JDB

Code ***Code Description***

M4 The analysis of the spiked sample required a dilution such that the spike recovery calculation does not provide useful information. The associated blank spike recovery was acceptable.

T5 This parameter is not included in the Laboratory's LELAP Laboratory Scope of Accreditation.

Jonathan Barnhill
Quality Assurance Officer

05-Aug-19
Report Date

JOB 7-18-19

Figure 1 – Chain of Custody

American Electric Power
Analytical Chemistry Services

CHAIN OF CUSTODY

COC 40143

OPCO/PROJECT NAME	FAX NO.
H.W Pirkey Power Plant	(903) 927-5840
CONTACT PERSON(Please Print)	**PHONE NO.**
Ron Franklin, Randy Rountree, Ben House	(903) 927-5889

SAMPLER(SIGNATURE): Ron Franklin

Metals to analyze for each (Totals, SPLP, Deionized) B, Ca, Sb, Ag, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Sc, Te and any other metals in calibration.

DATE	TIME	SAMPLE SOURCE & DESCRIPTION	SAMPLE ID	COMP	GRAB	NUMBER OF CONTAINERS	Total Metals (See for metals)	SPLP	Deionized water leach	pH				Lab Number	REMARKS
7-17-19	1800	Pirkey Sludge FGD	Dirt Sludge		✓		✓	✓	✓	✓				227040-42	Terry Wehling
" " "	1800	" " "	Dirt Sludge		✓		✓	✓	✓	✓				227043-45	

RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY	RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY
RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY	RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY
RECEIVED FOR LABORATORY: Jonathan Barnhill 7-18-19 1036			COMMENTS		

SHREVEPORT CHEMICAL LABORATORY

502 N. Allen Ave.
Shreveport, LA 71101
Phone 318-673-3802
FAX 318-673-3960

PROJECT RECEIPT FORM

Container Type	Delivery Type
Ice Chest (Bag) Action Pak PCB Mailer Bottle	UPS FEDEX US Mail (Walk in) Shuttle
Other	Other
	Tracking #

Client: Terry Wehling
Received By: JDB
Received Date: 7-18-19
Open Date: 7-18-19

Sample Matrix: DGA PCB Oil Water Oil (Soil)
Solid Liquid Other

Container Temp Read: ~~NA~~
Thermometer Serial #F04103
Correction Factor
Corrected Temp

Project I.D.

Were samples received on ice? YES (NO)

Did container arrive in good condition? (YES) NO

Was sample documentation received? (YES) NO

Was documentation filled out properly? (YES) NO

Were samples labeled properly? (YES) NO

Were correct containers used? (YES) NO

Were the pH's of samples appropriately checked? YES (NO)

Total number of sample containers: 2

Was any corrective action taken? (NO)

Person Contacted
Date & Time

Comments

Sample ID	Analysis	pH	Preservative Added / Lot #
			/
			/
			/
			/
			/
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			/

ATTACHMENT E
AD-33 Soil Samples Analytical Report

Client:	Burns & McDonnell	**Date:**	*08-Jun-18*
Project:	106665 PIRKEY	**Work Order:**	1805081
Sample ID:	AD-33 (11')	**Lab ID:**	1805081-15
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/30/2018 16:05	**Percent Moisture:**	18.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Gamma Spectroscopy Results			**SOP 713**	Prep Date: **5/17/2018**		PrepBy: **MRL**
Ra-226	**1.29 (+/- 0.3)**	G	**0.47**	**pCi/g**	NA	6/7/2018 08:54
Ra-228	**1.36 (+/- 0.47)**	G,TI	**0.7**	**pCi/g**	NA	6/7/2018 08:54
ICPMS Metals			**SW6020**	Prep Date: **5/14/2018**		PrepBy: **JML**
ARSENIC	**4.9**		**0.23**	**MG/KG**	10	5/17/2018 01:02
BARIUM	**20**		**0.57**	**MG/KG**	10	5/17/2018 01:02
BERYLLIUM	**0.15**		**0.057**	**MG/KG**	10	5/17/2018 01:02
CADMIUM	ND		0.23	MG/KG	10	5/17/2018 01:02
COBALT	**0.61**		**0.57**	**MG/KG**	10	5/17/2018 01:02
CHROMIUM	**9.5**		**1.1**	**MG/KG**	10	5/17/2018 01:02
LITHIUM	**0.25**	J	**2.3**	**MG/KG**	10	5/17/2018 01:02
MOLYBDENUM	**0.18**	J	**0.23**	**MG/KG**	10	5/17/2018 01:02
LEAD	**3.2**		**0.23**	**MG/KG**	10	5/17/2018 01:02
ANTIMONY	**0.086**	J	**0.11**	**MG/KG**	10	5/17/2018 01:02
SELENIUM	**0.81**	J	**1.1**	**MG/KG**	10	5/17/2018 01:02
THALLIUM	**0.044**		**0.011**	**MG/KG**	10	5/17/2018 01:02
Ion Chromatography			**EPA300.0**	Prep Date: **5/10/2018**		PrepBy: **HMA**
FLUORIDE	ND		1	MG/KG	1	5/11/2018 21:43
Mercury			**SW7471**	Prep Date: **5/11/2018**		PrepBy: **AJL2**
MERCURY	**0.0026**	J	**0.039**	**MG/KG**	1	5/11/2018 16:07

Client:	Burns & McDonnell	**Date:**	*08-Jun-18*
Project:	106665 PIRKEY	**Work Order:**	1805081
Sample ID:	AD-33 (21')	**Lab ID:**	1805081-16
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/30/2018 16:05	**Percent Moisture:**	20.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Gamma Spectroscopy Results			**SOP 713**	Prep Date: **5/17/2018**		PrepBy: **MRL**
Ra-226	0.7 (+/- 0.22)	LT	0.37	pCi/g	NA	6/7/2018 08:16
Ra-228	**0.72 (+/- 0.5)**	NQ	**0.67**	**pCi/g**	NA	6/7/2018 08:16
ICPMS Metals			**SW6020**	Prep Date: **5/14/2018**		PrepBy: **JML**
ARSENIC	**12**		**0.25**	**MG/KG**	10	5/17/2018 01:05
BARIUM	**9.1**		**0.62**	**MG/KG**	10	5/17/2018 01:05
BERYLLIUM	**0.09**		**0.062**	**MG/KG**	10	5/17/2018 01:05
CADMIUM	ND		0.25	MG/KG	10	5/17/2018 01:05
COBALT	**0.64**		**0.62**	**MG/KG**	10	5/17/2018 01:05
CHROMIUM	**4.6**		**1.2**	**MG/KG**	10	5/17/2018 01:05
LITHIUM	**0.24**	J	**2.5**	**MG/KG**	10	5/17/2018 01:05
MOLYBDENUM	**0.061**	J	**0.25**	**MG/KG**	10	5/17/2018 01:05
LEAD	**1.5**		**0.25**	**MG/KG**	10	5/17/2018 01:05
ANTIMONY	**0.19**		**0.12**	**MG/KG**	10	5/17/2018 01:05
SELENIUM	**0.42**	J	**1.2**	**MG/KG**	10	5/17/2018 01:05
THALLIUM	**0.03**		**0.012**	**MG/KG**	10	5/17/2018 01:05
Ion Chromatography			**EPA300.0**	Prep Date: **5/10/2018**		PrepBy: **HMA**
FLUORIDE	ND		1	MG/KG	1	5/11/2018 22:29
Mercury			**SW7471**	Prep Date: **5/11/2018**		PrepBy: **AJL2**
MERCURY	**0.0038**	J	**0.04**	**MG/KG**	1	5/11/2018 16:09

ATTACHMENT F
AD-33 Boring Log and Well Installation Diagram

Hydrex ENVIRONMENTAL, INC.

Monitor Well

Monitor Well No.: AD-33

PROJECT INFORMATION

PROJECT:	Pirkey Power Plant
PROJECT NO.:	I-04-1021
LOGGED BY:	Jeffrey D. Sammons, P.G.
SUPERVISING PG:	Jeffrey D. Sammons, P.G.
COMPLETION:	12/11/2015
DEVELOPMENT:	12/16/2015
SITE LOCATION:	2400 FM 3251, Hallsville, Texas
WELL OWNER:	AEP

DRILLING INFORMATION

DRILLER:	Buford Collier
DRILLER'S LICENSE NO.:	50089
RIG TYPE:	Geoprobe 3230DT
METHOD OF DRILLING:	Hollow Stem Auger
SAMPLING METHODS:	Split Core
SURFACE ELEVATION:	382.37 (Top of Casing)
HOLE DIAMETER:	8.25"
LATITUDE	32 27' 38.70" LONGITUDE 94 28' 15.82"

STATE OF TEXAS — JEFFREY D. SAMMONS — GEOLOGY #10070 — LICENSED PROFESSIONAL GEOSCIENTIST — 1.21.16

▼ Water Level Upon Installation ▽ Water Level at Time of Drilling ■ Geotechnical Lab Sample

TBPG No. 50027

DESCRIPTION	USCS	% MOISTURE	% FINES	LL	PL	PI
CLAYEY SAND: very fine to fine sand, some silt, dark brownish black and brown, very moist	SC					
FAT CLAY: trace sand and silt, reddish brown and light gray - some iron ore gravel at 2.0' - some silt and ironstone in thin seams at 2.5', light gray, yellowish brown, and reddish brown,	CH	29	93	74	32	42
CLAYEY SAND: interbedded clays and fine to very fine sand and silt, some iron ore gravel, light reddish brown and light gray - some clay and trace of iron ore gravel at 11', light gray and reddish brown, moist - trace clay at 13', thin saturated ironstone and gravel seams at 13' to 16', reddish brown, light reddish brown, and light gray - dark reddish brown at 15' - clay lense at 15.5' to 16.5', light reddish brown and light gray	SC	21	35	35	23	12
SILTY CLAYEY SAND: very fine to fine sand, reddish brown, very moist to saturated - some clay lenses and iron ore gravel at 20' - clayey at 20.5' to 21' - trace clay at 21', light gray, saturated - some iron ore gravel at 28', reddish brown, very moist	SM-SC	23	19	27	18	9
CLAYEY SAND: very fine to fine sand, dark gray and gray, moist	SC	23	30	25	18	7

WELL CONSTRUCTION

- Locking Well Casing Cover
- Locking Well Cap
- Protective Well Casing
- Concrete Pad
- Ground Surface
- Cement
- Bentonite
- 2" Sch. 40 PVC Riser
- 20/40 Silica Sand
- 0.010" Slotted Sch. 40 PVC Well Screen
- PVC Bottom Cap

NOTES: This log should not be used separately from the original report. Not all USCS descriptors were laboratory verified.

ATTACHMENT G
Certification by a Qualified Professional Engineer

CERTIFICATION BY A QUALIFIED PROFESSIONAL ENGINEER

I certify that the above described alternative source demonstration is appropriate for evaluating the groundwater monitoring data for the Pirkey FGD Stackout Area CCR management area and that the requirements of 30 TAC §352.951(e) have been met.

Beth Ann Gross
Printed Name of Licensed Professional Engineer

Beth Ann Gross
Signature

Geosyntec Consultants
2039 Centre Pointe Blvd, Suite 103
Tallahassee, Florida 32308

Texas Registered Engineering Firm
No. F-1182

79864	Texas	March 21, 2025
License Number	Licensing State	Date

Geosyntec consultants

engineers | scientists | innovators

ALTERNATIVE SOURCE DEMONSTRATION REPORT

2025 1st SEMIANNUAL EVENT

TEXAS STATE CCR RULE

H.W. Pirkey Power Plant

Flue Gas Desulfurization Stackout Area

Registration No. CCR104

Hallsville, Texas

Prepared for

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

Prepared by

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

Project CHA1147I

December 2025

Geosyntec consultants

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LIST OF ACRONYMS

Å	angstrom
AEP	American Electrical Power
ASD	alternative source demonstration
bgs	below ground surface
CCR	coal combustion residuals
EPRI	Electric Power Research Institute
FGD	flue gas desulfurization
GWPS	groundwater protection standard
LCL	lower confidence limit
mg/L	milligrams per liter
SPLP	Synthetic Precipitation Leaching Procedure
SSL	statistically significant level
SU	standard unit
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
USEPA	United States Environmental Protection Agency
XRD	X-ray diffraction

1. INTRODUCTION AND SUMMARY

This alternative source demonstration (ASD) report has been prepared to address statistically significant levels (SSLs) of beryllium, cobalt, lead, and mercury in the groundwater monitoring network at the former Flue Gas Desulfurization (FGD) Stackout Area, located at the H.W. Pirkey Plant in Hallsville, Texas, following the first semiannual assessment monitoring event of 2025. The H.W. Pirkey Plant (Site) has four coal combustion residuals (CCR) storage units regulated by the Texas Commission on Environmental Quality (TCEQ) under Registration No. CCR104, including the FGD Stackout Area (**Figure 1**). Three of the units, including the former FGD Stackout Area, have been closed by removal, and one unit is still active.

In April 2025, a semiannual assessment monitoring event was conducted at the former FGD Stackout Area in accordance with Texas Administrative Code (TAC) Title 30 §352.951(a) [30 TAC §352.951(a)]. The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Confidence intervals were recalculated for Appendix IV parameters at the compliance wells to assess whether these parameters were present at SSLs above the groundwater protection standards (GWPSs). Seasonal patterns were observed for beryllium, cadmium, cobalt, combined radium, fluoride, lithium, and selenium at AD-22 (Geosyntec Consultants, Inc. [Geosyntec] 2025a). To correctly account for seasonality, confidence intervals for these wells and constituents were constructed using deseasonalized values. An SSL was attributed to a parameter if its lower confidence limit (LCL) exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). The following SSLs were identified at the former Pirkey FGD Stackout Area (Geosyntec 2025a):

- The deseasonalized LCL for beryllium exceeded the GWPS of 0.00400 milligrams per liter (mg/L) at AD-22 (0.00542 mg/L).
- The deseasonalized LCL for cobalt exceeded the GWPS of 0.0600 mg/L at AD-22 (0.0779 mg/L).
- The LCL for lead exceeded the GWPS of 0.00200 mg/L at AD-33 (0.000230 mg/L).
- The LCL for mercury exceeded the GWPS of 0.00200 mg/L at AD-33 (0.00362 mg/L).

No other SSLs were identified.

1.1 CCR Rule Requirements

TCEQ regulations regarding assessment monitoring programs for CCR landfills and surface impoundments provide owners and operators with the option to make an ASD when an SSL is identified:

> In making a demonstration under this subsection, the owner or operator must, within 90 days of detecting a statistically significant level above the groundwater protection standard of any constituent listed in Appendix IV adopted by reference in §352.1431 of this title, submit a report prepared and certified in accordance with §352.4 of this title (relating to Engineering and Geoscientific Information) to the executive director, and any local pollution agency with jurisdiction that has requested to be notified, demonstrating that a

> source other than a CCR unit caused the exceedance or that the exceedance resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. (30 TAC §352.951(e))

Pursuant to 30 TAC §352.951(e), Geosyntec has prepared this ASD report to document that the SSLs identified for beryllium and cobalt at well AD-22 and for mercury and lead at well AD-33 are from a source other than the former FGD Stackout Area.

1.2 Demonstration of Alternative Sources

An evaluation was completed to assess possible alternative sources to which each identified SSL could be attributed. Alternative sources were categorized into the following five types, based on methodology provided by the Electric Power Research Institute (EPRI 2017):

- ASD Type I: Sampling Causes
- ASD Type II: Laboratory Causes
- ASD Type III: Statistical Evaluation Causes
- ASD Type IV: Natural Variation
- ASD Type V: Anthropogenic Sources

A demonstration was conducted to show that the SSLs identified for beryllium, cobalt, lead, and mercury were based on a Type IV cause and not by a release from the former Pirkey FGD Stackout Area.

2. SUMMARY OF SITE CONDITIONS

The Stackout Area design and construction, regional geology and Site hydrogeology, and groundwater monitoring system and flow conditions are described below.

2.1 FGD Stackout Area Design and Construction

The former Pirkey FGD Stackout Area was an approximately 5-acre FGD storage area located due west of the Pirkey Plant (**Figure 1**). It was designed for temporary stockpiling of stabilized FGD material placed on the native clay soil in the unit until it could be hauled to the on-Site landfill for disposal (Arcadis 2023). Prior to closure, the natural ground surface elevation in the Stackout Area ranged from approximately 360 to 365 feet above mean sea level. Based on lithological borings advanced in the vicinity, the former FGD Stackout Area is underlain by approximately 20 feet of clay (Arcadis 2023).

A Closure Plan for the FGD Stackout Area was developed in October 2016 and revised in May 2023 (American Electric Power [AEP] 2023a) and February 2025 (AEP 2025). This document detailed the closure activities which were to take place throughout the closure of the Stackout Area. AEP submitted a certified notification that the receipt of CCR materials had ceased as of September 1, 2023, and the closure activities had been initiated (AEP 2023b). Closure was conducted in accordance with the requirements of 40 CFR §257.102(c) (which were adopted by the State of Texas under 30 TAC §352.1221) and the certified Closure Plan at the time (AEP 2023a). The removal of the remaining CCR material and an additional 12 inches of underlying soil was completed in September 2023, and the removal was certified by Akron Consulting (2023) on November 12, 2023. On March 5, 2024, the Stackout Area was certified closed by removal in accordance with the 2023 Closure Plan and notification was placed in the Operating Record (AEP 2024).

2.2 Regional Geology / Site Hydrogeology

The former Stackout Area was positioned on an outcrop of the Eocene-age Recklaw Formation, which consists predominantly of clay and fine-grained sand (Arcadis 2023). The Recklaw Formation is underlain by the Carrizo Sand, which crops out in the topographically lower southern portion of the plant. The Carrizo Sand consists of fine- to medium-grained sand interbedded with silt and clay.

The very-fine- to fine-grained clayey and silty sand located about 10 to 20 feet below the former Stackout Area, with an average thickness of approximately 20 feet, is considered to be the uppermost aquifer below this CCR unit (Arcadis 2023).

2.3 Groundwater Monitoring System and Flow Conditions

The monitoring well network for the former Stackout Area monitors groundwater within the uppermost aquifer. Geologic cross sections B-B', E-E', and F-F' from Arcadis (2023), provided as **Attachment A**, show the subsurface structure of the uppermost aquifer (indicated on the figures as clayey silty sand, brown to gray in color) underlying the former Stackout Area. The geologic cross sections demonstrate lateral continuity of the uppermost aquifer at and around the former Stackout Area.

Groundwater flow direction at and near the former Stackout Area is west-northwesterly (**Figure 1**). Groundwater flow velocities in the uppermost aquifer in the vicinity of the former Stackout Area have been reported as approximately 5 to 35 feet per year. The groundwater monitoring network for the former Stackout Area consists of upgradient monitoring wells AD-12 and AD-13 and downgradient compliance wells AD-7R, AD-22, and AD-33, all of which are screened within the uppermost aquifer (Arcadis 2023). Downgradient well AD-7R was added to the network in December 2023 to replace well AD-7, which was plugged in September 2023 due to plant demolition activities in the area.

3. ALTERNATIVE SOURCE DEMONSTRATION

The ASD evaluation method and proposed alternative source of beryllium and cobalt in AD-22 and lead and mercury in AD-33 are described below.

3.1 Proposed Alternative Source

An initial review of site geochemistry, site historical data, and laboratory quality assurance and quality control data did not identify alternative sources for beryllium, cobalt, lead, and mercury due to Type I (sampling), Type II (laboratory), Type III (statistical evaluation), or Type V (anthropogenic) issues. Groundwater sampling, laboratory analysis, and statistical evaluations were generally completed in accordance with 30 TAC §352.931 and the draft TCEQ guidance for groundwater monitoring (TCEQ 2020). As described below, the SSLs for beryllium and cobalt have been attributed to natural variation associated with seasonal effects, which is a Type IV (natural variation) issue. The SSLs for mercury and lead have also been attributed to a Type IV issue, in this case natural variation associated with the lithology of the uppermost aquifer.

3.1.1 Beryllium

An SSL was identified for beryllium at AD-22 using deseasonalized statistics (Geosyntec 2025a). According to the *Unified Guidance*, "seasonal correction should be done both to minimize the chance of mistaking a seasonal effect for evidence of contaminated groundwater, and also to build more powerful background to compliance point tests. Problems can arise, for instance, from measurement variations associated with changing recharge rates during different seasons" (United States Environmental Protection Agency [USEPA] 2009a).

Previous ASDs for the former FGD Stackout Area showed that beryllium concentrations at AD-22 appear to correlate with groundwater elevations (Geosyntec 2025b)[1]. This relationship generally still holds true (**Figure 2**). Beryllium concentrations at AD-22 are generally correlated with seasonal changes in other relatively mobile cationic constituents, including calcium and lithium (**Figure 3**). The correlation between beryllium and both monovalent (lithium) and divalent (calcium) cations suggests that the variability in observed beryllium concentrations is related to cation exchange behavior with clay minerals present in the native soil.

In March of 2020, the geology near AD-22 was relogged at soil boring SP-B4. Clay materials were present in the seasonally saturated zones above the permanent water table (**Figure 4**). The boring log for SP-B4 is provided in **Attachment B,** and the original boring log and well construction diagram for AD-22 is provided in **Attachment C**. At AD-22, the depth to water fluctuated between approximately 3 and 12 feet below ground surface (bgs). Clay was identified from approximately 0.7 feet bgs to 13.3 feet bgs, where it transitioned to a clayey silt (**Attachment B**). Analysis of solid samples by X-ray diffraction (XRD) confirmed the presence of clay minerals within the seasonal water table and sand within the screened intervals for AD-22, as summarized in **Table 1**. The clay fraction of the uppermost samples collected from within the seasonal water table was

[1] A citation is provided for the most recently completed ASD addressing beryllium correlations with groundwater elevation. Additional previous ASD reports have presented this discussion, and references to those reports are included within the referenced document.

further analyzed to identify the type of clays present. Smectite-type clays, which are 2:1-layer high-activity clays with characteristically high cation exchange capacity (compared to low-activity 1:1 clay minerals), make up the majority of the clay minerals present at those intervals.

Sorption and desorption of beryllium from smectite-type clays is well documented (You et al. 1989, Boschi and Willenbring 2016a). Desorption is influenced by pH, with 75% of beryllium desorbing from a smectite-type clay as pH decreased from 6.0 standard units (SU) to 3.0 SU (Boschi and Willenbring 2016b). The pH values recorded at AD-22 for samples collected under the detection monitoring program of 30 TAC §352.941 ranged from 3.5 to 5.1 SU, suggesting that conditions are favorable for beryllium desorption from smectite-type clays. The presence of these exchangeable clays provides further evidence that the exceedance of beryllium at AD-22 can be attributed to the effects on groundwater quality of seasonal groundwater elevation changes and the resulting cation exchange between groundwater and the exchangeable clay within the seasonal water table.

3.1.2 Cobalt

An SSL was identified for cobalt at AD-22 using deseasonalized statistics (Geosyntec 2025a). As shown in previous ASDs (Geosyntec 2025b)[2], cobalt groundwater concentrations at AD-22 also appear to correlate with seasonal changes in groundwater elevation (**Figure 5**). The cobalt concentrations are well correlated with changes in other cations, including calcium and lithium (**Figure 6**), which suggests that natural variability associated with groundwater-mineral interactions within the seasonally saturated zone is governing aqueous concentrations of multiple parameters, including cobalt.

A sample of the solid FGD sludge material accumulated on the FGD Stackout Area was collected in July 2019 and submitted for laboratory analyses. The solid-phase sample was leached using both Synthetic Precipitation Leaching Procedure (SPLP) analysis (SW-846 Test Method 1312 [USEPA 1994]) and Seven-Day Distilled Water Leachate Test Procedure (7-day leaching procedure) analysis (Appendix 4 of 30 TAC Chapter 335, Subchapter R) to evaluate the material as a potential source of cobalt. No changes to material handling or plant operations occurred prior to ceasing operations that would have altered the anticipated chemical composition since this sample was initially collected. Calcium-cobalt ratios for the leached sludge material and Site groundwater are displayed on **Figure 7**. The concentration ratio between calcium and cobalt is consistently on the order of 100:1 at both upgradient and downgradient locations (**Figure 7**). Calcium concentrations in groundwater are generally consistent between AD-22 and upgradient well AD-13 (**Figure 8**); however, leached calcium concentrations from the FGD sludge material are approximately two to three orders of magnitude greater than concentrations in site groundwater. The difference between the ratio of calcium to cobalt in the leached FGD sludge material (about 45,000:1) compared to the ratio for groundwater suggests that dissolved calcium concentrations at AD-22 would be significantly higher if the groundwater at this location were affected by leachate.

[2] A citation is provided for the most recently completed ASD addressing cobalt correlations with groundwater elevation. Additional previous ASD reports have presented this discussion, and references to those reports are included within the referenced document.

Siderite and pyrite, both reduced (ferrous; Fe^{2+}) iron-bearing minerals, were identified below the seasonal water table (within the saturated zone) at AD-22 (**Table 1**). Cobalt is known to undergo isomorphic substitution for iron in both siderite and pyrite (Gross 1965, Hitzman et al. 2017, Krupka and Serne 2002). This is due to the similarity of their ionic radii (approximately 1.56 angstrom [Å] for iron and 1.52 Å for cobalt [Clementi and Raimondi 1963]). The proposed substitution of cobalt for iron in the crystal lattice of pyrite has been documented in the most recent ASDs prepared for the Pirkey Plant's West Bottom Ash Pond (Geosyntec 2025c) and East Bottom Ash Pond (Geosyntec 2025d) as well as previous ASDs for these units.

Goethite (a ferric [Fe^{3+}] iron hydroxide mineral) was identified within the seasonally saturated zone and the screened interval at AD-22 (**Table 1**). Weathering of siderite and pyrite to goethite under oxidizing conditions is a well-understood phenomenon, including in formations in East Texas (Senkayi et al. 1986, Dixon et al. 1982) and is likely occurring within the seasonally saturated zone as evidenced by the presence of goethite. Eh-pH (Pourbaix) diagrams can be used to illustrate the thermodynamically favorable speciation of iron at equilibrium under particular groundwater conditions. An Eh-pH diagram generated using geochemical conditions at AD-22 are favorable for goethite stability (**Figure 9**). During weathering from reduced (pyrite and siderite) to oxidized (goethite) iron minerals, isomorphically substituted cobalt may be released from the mineral structure into groundwater as the mineral crystal structures alter to the product mineral. Mobilization of cobalt released during weathering of siderite or pyrite to goethite in the seasonally saturated zone accounts for the variability in aqueous cobalt concentrations and their correlation with the groundwater elevation as more or less aquifer solids are saturated with groundwater depending on groundwater elevation conditions.

3.1.3 Mercury

An SSL was identified for mercury at AD-33 (Geosyntec 2025a). As shown in previous ASDs (Geosyntec 2025b)[3], if aqueous mercury detected at AD-33 was derived from CCR leachate from the FGD Stackout Area, we would anticipate similar trends for the concentrations of other CCR constituents, particularly those known to be more conservative. Boron, a geochemically conservative parameter commonly considered a CCR indicator, has high leachability from FGD material (USEPA 2009b). A release from the FGD Stackout Area would be anticipated to result in higher concentrations of boron and other conservative parameters such as sulfate. However, the observed boron and sulfate concentrations at AD-33 are not indicative of increasing trends based on a visual review of the data (**Figure 10**). Two samples of FGD sludge material from the Stackout Area were collected in 2019 for characterization to assess if the FGD material was a likely source of mercury to groundwater at AD-33. As summarized in **Table 2**, both the historical average and the most recent boron groundwater concentrations at AD-33 are two orders of magnitude lower than the boron concentrations in leachate from both Synthetic Precipitation Leaching Procedure (SPLP) analysis (SW-846 Test Method 1312 [USEPA 1994]) and Seven-Day Distilled Water Leachate Test Procedure (7-day leaching procedure) analysis (Appendix 4 of 30 TAC Chapter 335, Subchapter R) of FGD sludge (**Attachment D**). The lack of an apparent increasing boron

[3]A citation is provided for the most recently completed ASD addressing mercury correlations with other geochemically conservative parameters. Additional previous ASD reports have presented this discussion, and references to those reports are included within the referenced document.

trend in AD-33 groundwater despite the elevated boron concentrations in leached FGD sludge suggests that groundwater at AD-33 is not impacted by the unit.

The FGD sludge material contained detectable levels of total mercury at concentrations greater than those reported for two samples of aquifer solids collected from a soil boring advanced adjacent to AD-33 (**Table 3**, **Attachment E**). While the concentration of mercury in the aquifer solids is lower than the total mercury concentration in FGD sludge material, the low mobility of mercury from FGD as demonstrated in numerous laboratory studies suggests the FGD sludge is not a likely source of mercury in groundwater (USEPA 2009b, Hao et al. 2016). As shown in **Figure 11**, previous mercury groundwater concentrations at AD-33 were consistently equal to or greater than the mercury concentrations of leachate from SPLP analysis of FGD sludge material (**Table 2, Attachment D**). Mercury concentrations in leachate from 7-day leaching procedure analysis of FGD sludge material were below the laboratory detection limit of 0.005 mg/L. These results agree with previous studies that have documented that leached mercury concentrations are not correlated with total solid phase mercury in FGD samples (USEPA 2009b).

Detectable concentrations of mercury in aquifer solids at AD-33 present an alternative source of mercury in groundwater (**Table 3**). Mercury is naturally occurring in soils and known to undergo isomorphic substitution for iron in crystalline iron minerals such as pyrite (Manceau et al. 2018). Analysis by XRD of material from the AD-33 soil boring showed detectable levels of pyrite below the seasonal water table (**Table 1**).

Reported differences between the total and dissolved mercury groundwater concentrations provides evidence that mercury is associated with colloidal material native from the aquifer. Dissolved concentrations of mercury at AD-33 are consistently lower than the reported total values (**Figure 11**), with most dissolved concentrations detected below the MCL of 2 µg/L. The method for measuring dissolved mercury in groundwater (EPA Method 245.7 [USEPA 2005]) involves filtering the sample through a 0.45 µm filter prior to analysis, which would remove colloid-sized particles prior to preservation. The inclusion of suspended particles (including colloids) in totals samples is likely to result in an overestimation of metals due to the mobilization of metals from the colloidal or solid phases to aqueous phase following acid preservation during sample collection. Thus, the lower dissolved mercury concentrations compared to total aqueous mercury suggests that mercury is associated with colloidal material from the aquifer and the SSL of mercury at AD-33 is not due to a release from the former FGD Stackout Area.

3.1.4 Lead

An SSL for lead was identified at AD-33 (Geosyntec 2025a). As shown in the previous ASD (Geosyntec 2025b), lead groundwater concentrations at AD-33 do not appear to be associated with impacts from the FGD Stackout Area. As discussed in Section 3.1.3, aqueous boron concentrations detected in AD-33 groundwater do not indicate that groundwater is impacted by FGD sludge material. The historical average and the most recent boron groundwater concentrations at AD-33 are both two orders of magnitude lower than boron concentrations in leachate from both SPLP analysis and 7-day leaching procedure analysis of FGD sludge (**Table 2, Attachment D**). The lack of boron impacts to AD-33 groundwater as would be expected from interaction with leached FGD sludge suggests groundwater at AD-33 is not impacted by the unit.

Two sludge samples leached using SPLP analysis and 7-day leaching procedure analysis both did not contain lead concentrations above the method detection limit (**Table 2, Attachment D**),

indicating that FGD sludge leachate is not a likely source of elevated lead in downgradient groundwater due to the low concentrations of lead in the sludge material. These results agree with previous studies that have documented that leached lead concentrations are not correlated with total solid phase lead in FGD samples, with limited detections of lead in leachate at pH values between 4 and 12 SU (USEPA 2009b).

Lead was detected in two aquifer solids samples collected from a soil boring advanced adjacent to AD-33 (**Table 3**, **Attachment E**). Like cobalt and mercury, lead is also known to undergo isomorphic substitution for the iron in pyrite or siderite (Gross 1965, Hitzman et al. 2017, Krupka and Serne 2002, Abraitis et al. 2004). While solid-phase lead was detected in FGD sludge samples at concentrations greater than those detected in aquifer solids, analysis of FGD sludge leaching indicates that this lead is not readily mobilized to the aqueous phase (**Table 2, Attachment D**). Detectable concentrations of lead in aquifer soils at AD-33 present an alternative source of lead in groundwater.

3.1.5 Conceptual Site Model

The seasonal fluctuations in beryllium and cobalt concentrations at AD-22 can be attributed to variations in the surface area of aquifer solids that are in contact with groundwater as the water table elevation changes. When the water table is higher, more clay material is in contact with groundwater, allowing greater desorption of cations (including beryllium) from the cation exchange sites on the clay minerals. In the case of cobalt, cobalt-bearing minerals are in contact with groundwater as the water table rises, allowing for the release of cobalt from mineral phases where it has isomorphically substituted for iron during mineral weathering reactions. Thus, the observed SSLs were attributed to natural variation associated with seasonal fluctuation of beryllium and cobalt concentrations in groundwater as the surface area of saturated aquifer solids increases.

Seasonal variations in mercury and lead groundwater concentrations at AD-33 were not observed. The observed mercury concentrations in groundwater at AD-33 were attributed to interactions with mercury-bearing colloidal solids within the unfiltered samples. The observed lead concentrations at AD-33 were attributed to interactions of groundwater with lead-bearing aquifer solids.

4. CONCLUSIONS AND RECOMMENDATIONS

The preceding information serves as the ASD prepared in accordance with 30 TAC §352.951(e) and supports the position that the SSLs of beryllium and cobalt at AD-22 and lead and mercury at AD-33 identified during the semiannual assessment monitoring in April 2025 were not due to a release from the former FGD Stackout Area. The identified beryllium and cobalt SSLs were, instead, attributed to natural variation related to desorption of beryllium and seasonal weathering of cobalt-bearing minerals comprising the aquifer solids. The mercury SSL was attributed to natural variation associated with the colloidal solids in the groundwater. The lead SSL was attributed to natural variation associated with groundwater-aquifer solid interactions. Therefore, no further action is warranted. Certification of this ASD by a qualified professional engineer is provided in **Attachment G.**

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TABLES

Table 1. X-Ray Diffraction Results
Alternative Source Demonstration Report
FGD Stackout Area, H.W. Pirkey Plant

Boring Location	**SP-B4**		
Associated Well	**AD-22**		
Depth (ft bgs)	**6-8**	**18-20**	**28-30**
Sample Location	**Within Seasonal Water Table**	**Below Seasonal Water Table**	**Within Screened Interval**
Quartz	28	47.5	95
Plagioclase Feldspar	<0.5	<0.5	1
K-Feldspar	1	0.5	-
Goethite	1	-	2
Hematite	-	-	-
Chlorite	1	-	-
Siderite		10	-
Pyrite	-	2	-
Clays	*	40	2
Kaolinite	13		
Illite/Mica	2		
Smectite	43		
Mixed-Layered Illite/Smectite	11		

Notes:
1. Mineral constituents are reported in percentage.
2. Values shown as less than indicate the mineral constituent is present but below the quantification limit.
*: The clay fraction at SP-B4-6-8 was further analyzed to characterize the types of clays present, as listed below.
-: not detected
ft bgs: feet below ground surface
FGD: Flue gas desulfurization

Table 2. Summary of Key Analytical Data
Alternative Source Demonstration Report
FGD Stackout Area, H.W. Pirkey Plant

Sample	Type	Mercury (µg/L)	Lead (µg/L)	Boron (mg/L)
Pirkey Sludge FGD	SPLP	2.27	<5.0	22.3
	7-Day Leaching Procedure	<5.0	<5.0	8.44
Pirkey Sludge FGD 2	SPLP	<0.025	<5.0	26.7
	7-Day Leaching Procedure	<5.0	<5.0	16.4
AD-33	Historical Average	6.1	0.29	0.138
	Apr-25	6.3	0.3	0.211

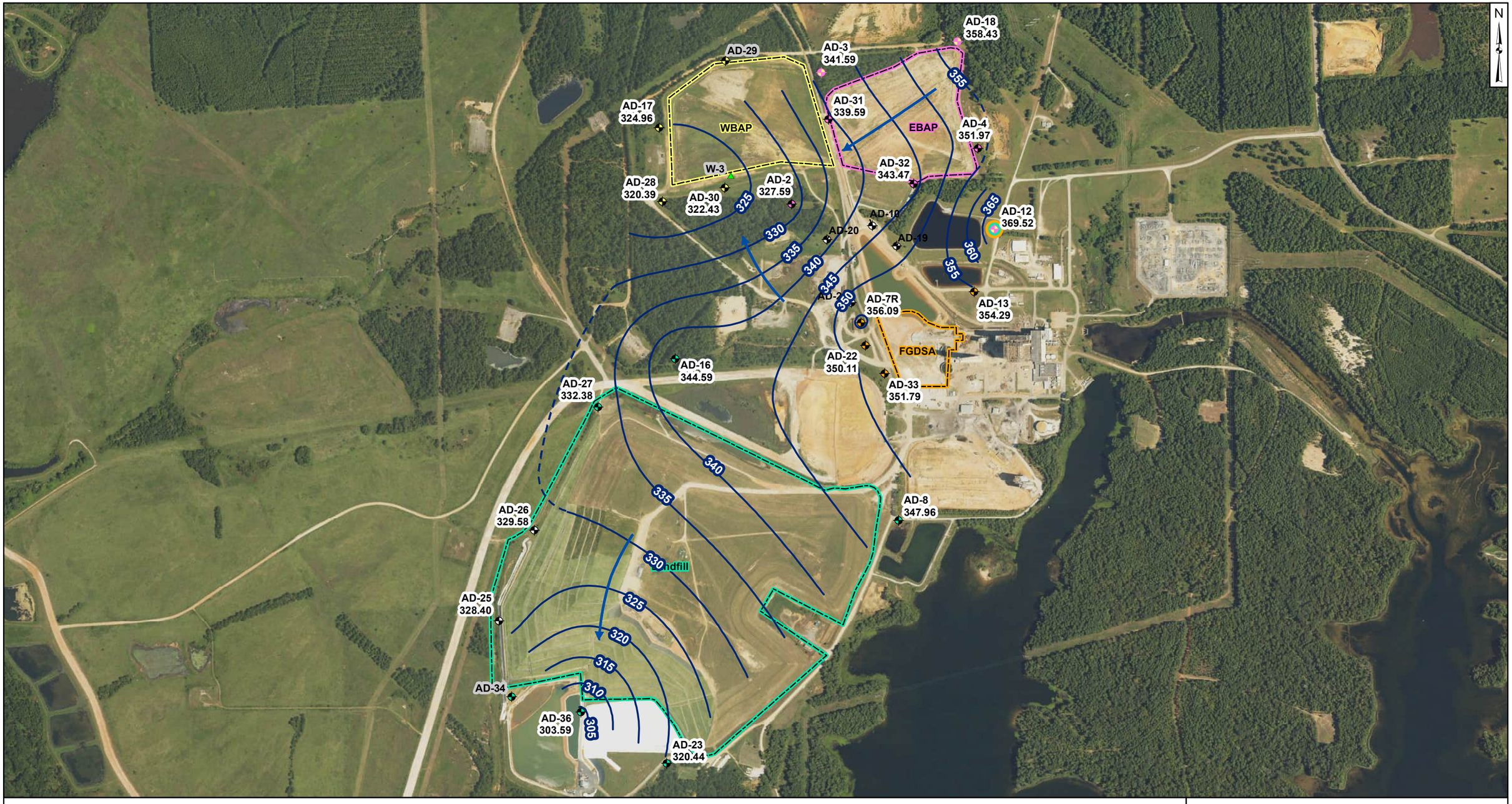
Notes:
1. Average values were calculated using truncated mercury, lead, and boron data (March 2020 - April 2025).
2. Pirkey Sludge FGD samples were collected on July 17, 2019.
3. Non-detect values reported as less than (<) the detection limit.
4. AD-33 lead historical average was calculated assuming a value of 0 µg/L for all samples for which lead was not detected above the method detection limit.
CCR: coal combustion residuals
FGD: Flue Gas Desulfurization
mg/L: milligrams per liter
SPLP: Synthetic Precipitation Leaching Procedure
µg/L: micrograms per liter

Table 3. Solid Phase Metals Data
Alternative Source Demonstration Report
FGD Stackout Area, H.W. Pirkey Plant

Location ID	Date Sampled	Sample Depth (ft bgs)	Mercury (mg/kg)	Lead (mg/kg)
AD-33	4/30/2018	11	0.0026	3.20
		21	0.0038	1.50
Pirkey Sludge FGD	7/17/2019	N/A	0.653	5.31
Pirkey Sludge FGD 2	7/17/2019	N/A	0.606	5.78

Notes:
1. For AD-33 locations, samples were collected from additional boreholes advanced in the intermediate area of AD-33. Samples were not collected from the cuttings of the borings advanced for well .
FGD: Flue Gas Desulfurization
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
N/A: not applicable

FIGURES



Legend

Groundwater Monitoring Wells

- Out of Network
- East Bottom Ash Pond (EBAP)
- West Bottom Ash Pond (WBAP)
- Landfill
- Flue Gas Desulfurization Stackout Area (FGDSA)
- EBAP and WBAP
- All CCR Unit Networks
- Piezometer
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction

Notes

1. Monitoring well coordinates and water levels (collected on April 21, 22, and 23, 2025) provided by AEP.
2. Site features based on information available in coal combustion residuals (CCR) Groundwater Monitoring Well Network Evaluation Update (Arcadis 2022) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft msl).
4. Wells AD-10, AD-19, AD-20, AD-21, AD-29, and W-3 were not gauged during the April 2025 event.
5. AD-7R replaced AD-7, which was abandoned on September 12, 2023.
6. Wells shaded in gray are within the network but not used for contouring.
7. Well AD-34 had artesian characteristics during this event and was not used for contouring.
8. AD-35 was abandoned on November 13, 2018 and is not shown on the map.
9. Removal of CCR plus one foot of material for the WBAP was completed for on July 26, 2022.
10. Removal of CCR plus one foot of material for the EBAP was completed on July 20, 2023.
11. Removal of CCR plus one foot of material for the FGDSA was completed on September 18, 2023.
12. Map is updated to incorporate Landfill survey data collected on May 1, 2024.
13. Aerial imagery provided by the TxGIO DataHub (dated 2024).

1,000 500 0 1,000 Feet

Beth Ann Gross

December 23, 2025
Geosyntec Consultants, Inc.
Texas Firm Registration
No. 1182

STATE OF TEXAS
BETH ANN GROSS
79864
LICENSED
PROFESSIONAL ENGINEER

Potentiometric Contours: Uppermost Aquifer April 2025

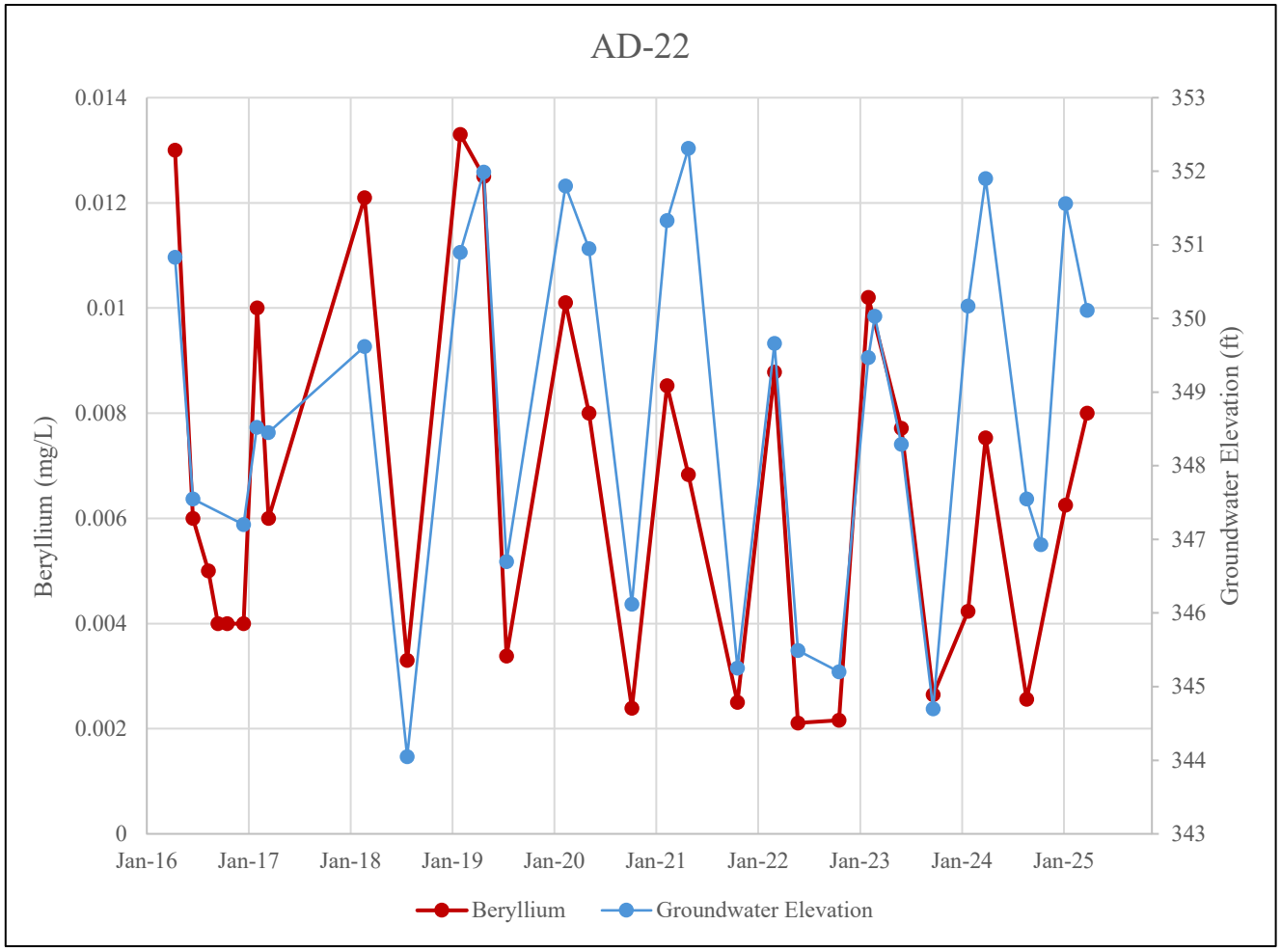
AEP Pirkey Power Plant
Hallsville, Texas

Geosyntec consultants

Columbus, Ohio | 2025/10/28

Figure 1

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Pirkey\2025\AEP-Pirkey_GW_2025-04Pirkey.mxd. okiemute.commander. 10/28/2025. CHA8500B/12/01_04.



Notes:
1. Beryllium concentrations are shown in milligrams per liter (mg/L).
2. Water level is shown as groundwater elevation in feet above mean sea level (ft amsl).
3. The gap in beryllium data represents the time period in which detection monitoring took place and samples were not analyzed for beryllium.
FGD: Flue Gas Desulfurization

Beryllium v. Groundwater Elevation
Pirkey FGD Stackout Pad

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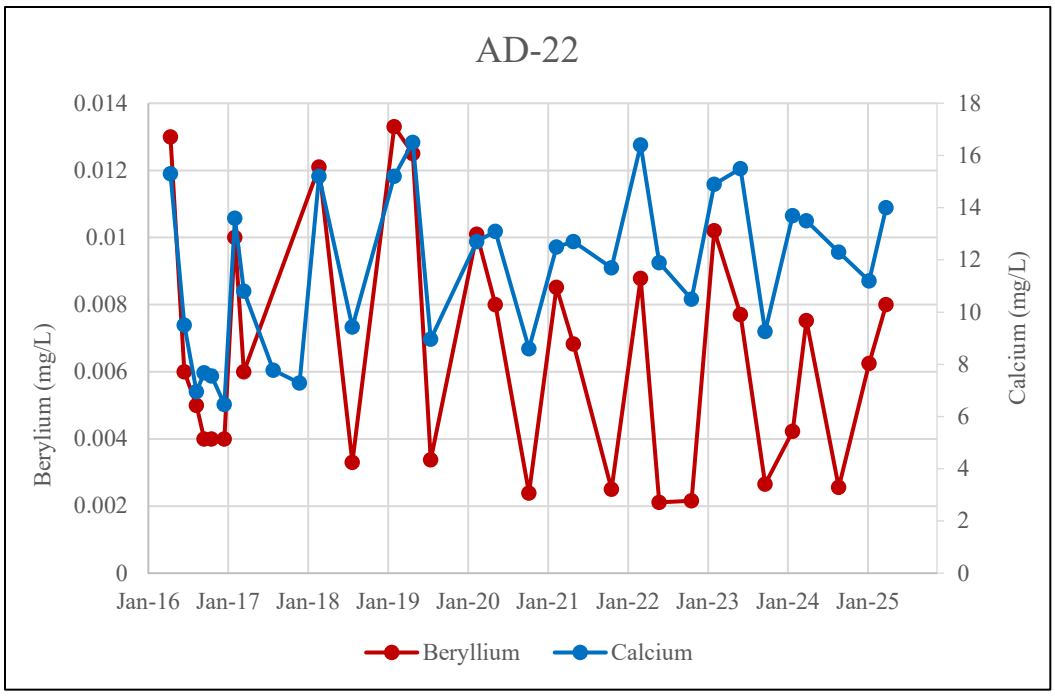
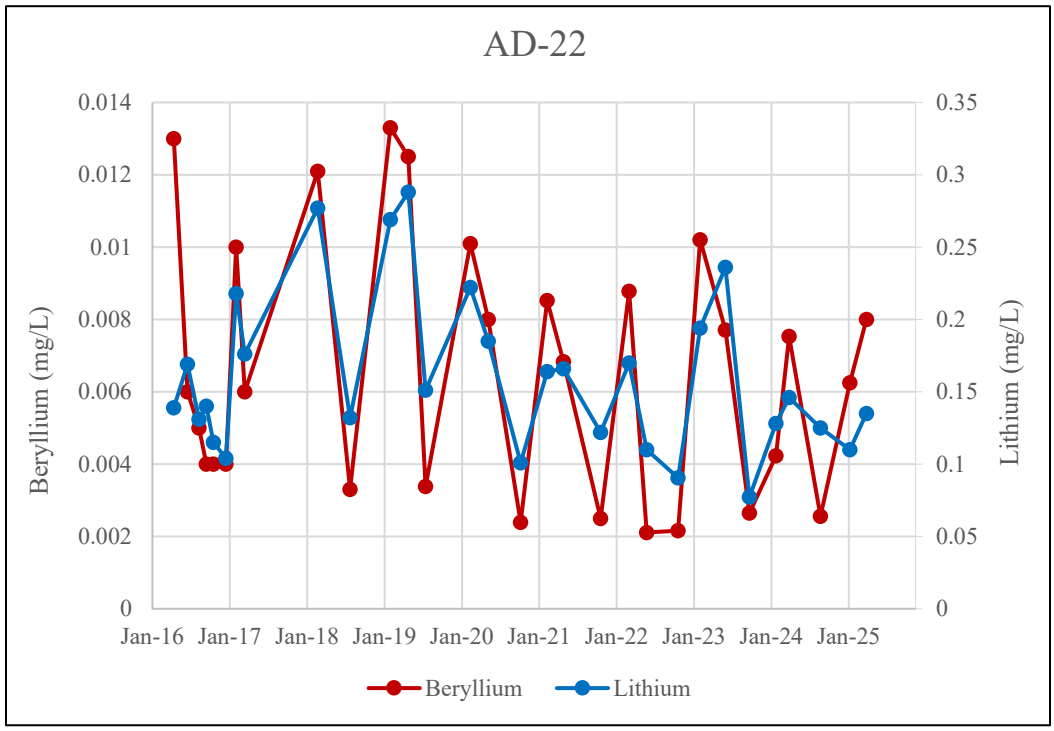
Columbus, Ohio | December 2025

Figure **2**





Notes:
1. Beryllium, calcium, and lithium concentrations are shown in milligrams per liter (mg/L).
FGD: flue gas desulfurization

AD-22 Beryllium v. Calcium and Lithium
Pirkey FGD Stackout Pad

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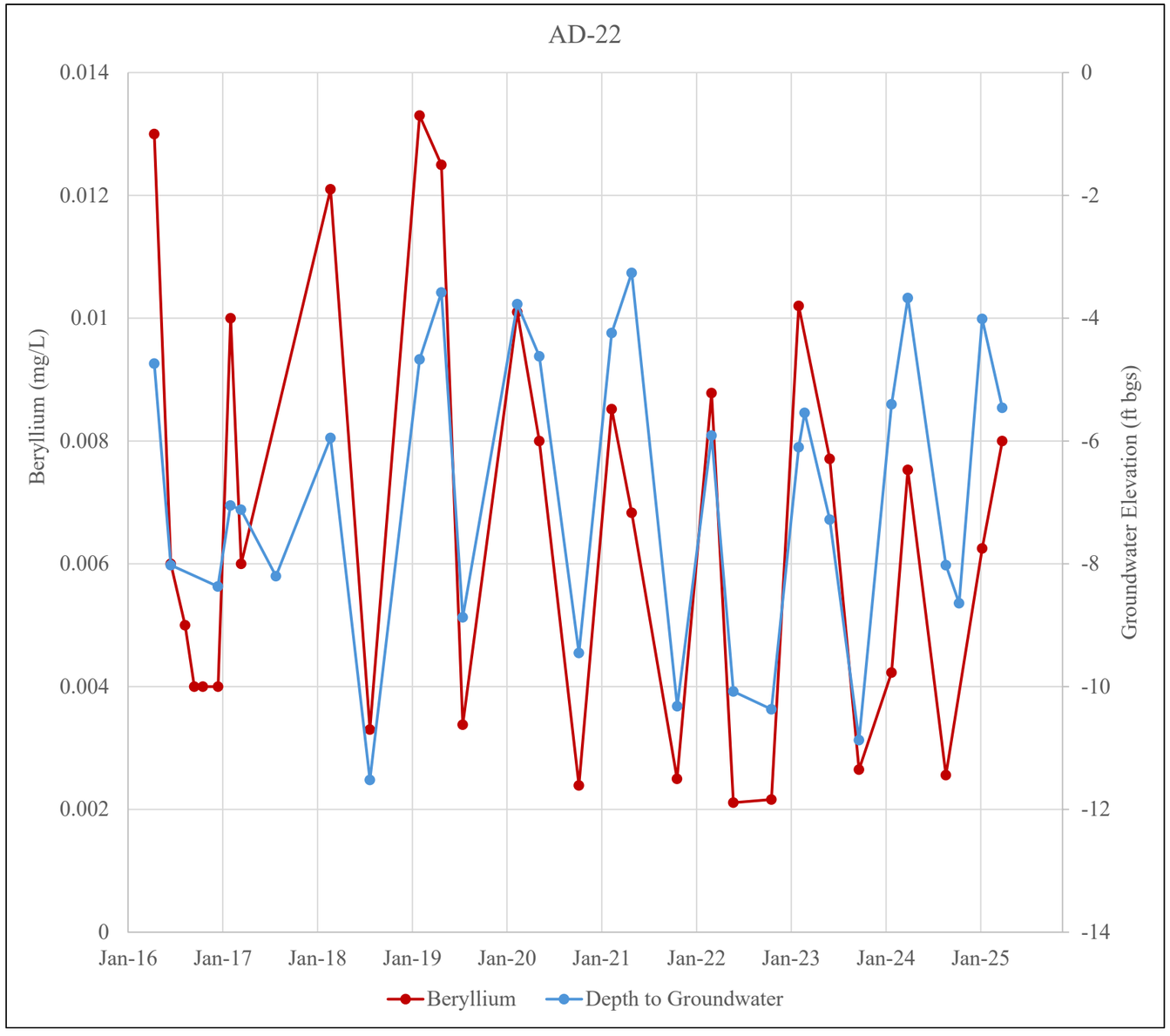
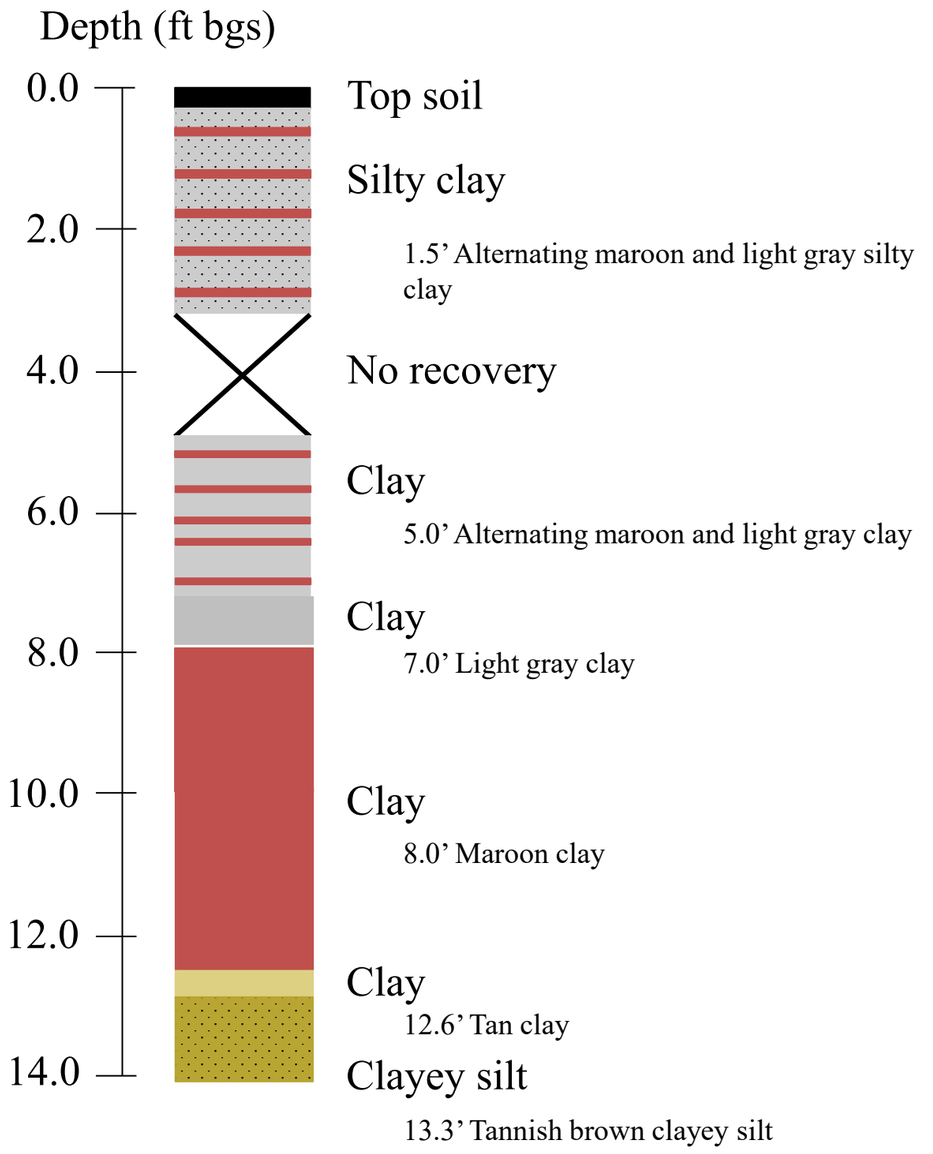
Columbus, Ohio | December 2025





Notes:
1. A sample was collected for analysis of mineralogy from 6–8 ft bgs.
2. This illustration represents the log for boring SP-B4. The full boring log is available in Attachment B.
3. AD-22 is screened at the interval of 10–30 ft bgs.
FGD: Flue Gas Desulfurization
ft bgs: feet below ground surface
mg/L: milligrams per liter

AD-22 Seasonal Water Table Geology

H. W. Pirkey Plant – FGD Stackout Pad

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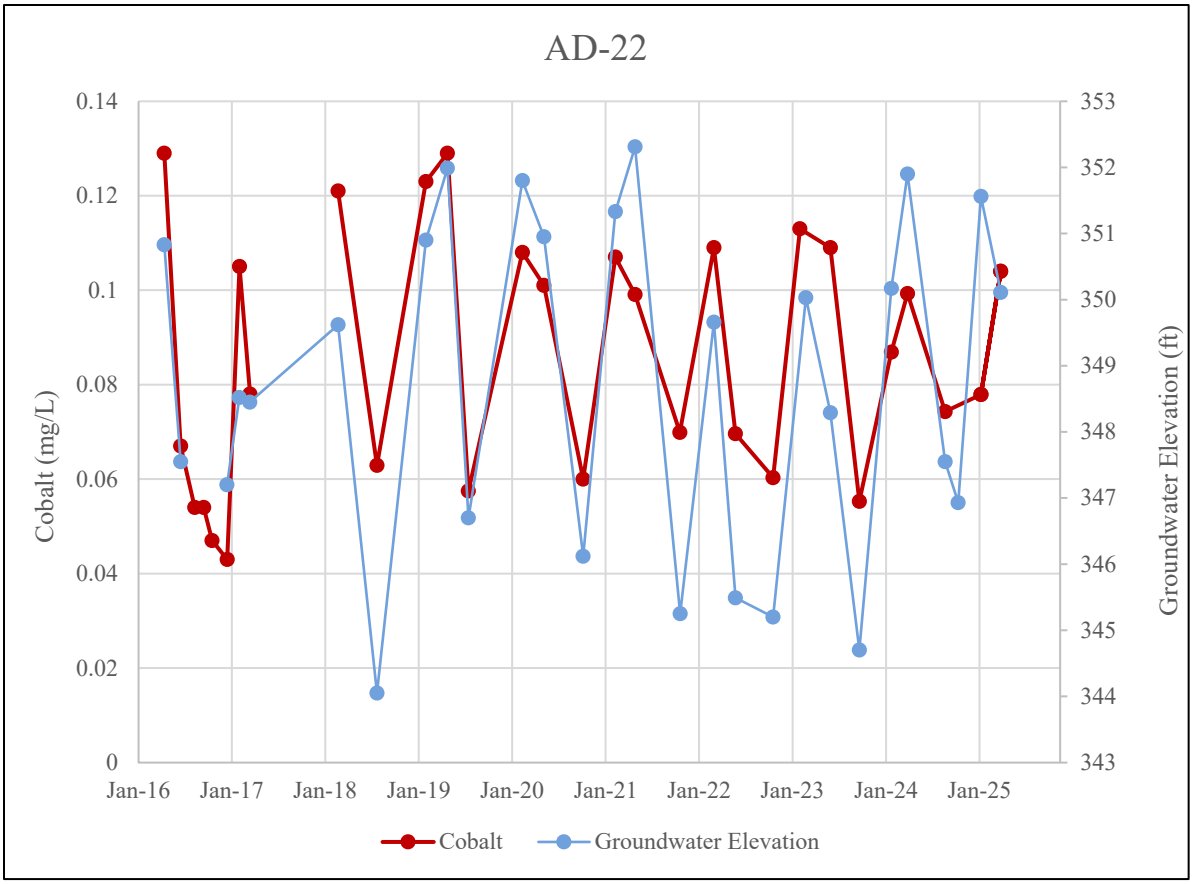
Columbus, OH

December 2025

Figure **4**



Notes:
1. Cobalt concentrations are shown in milligrams per liter (mg/L).
2. Water level is shown as groundwater elevation in feet above mean sea level (ft amsl).
3. The gap in cobalt data represents the time period in which detection monitoring took place and samples were not analyzed for cobalt.
FGD: Flue Gas Desulfurization

AD-22 Cobalt v. Groundwater Elevation
Pirkey FGD Stackout Pad

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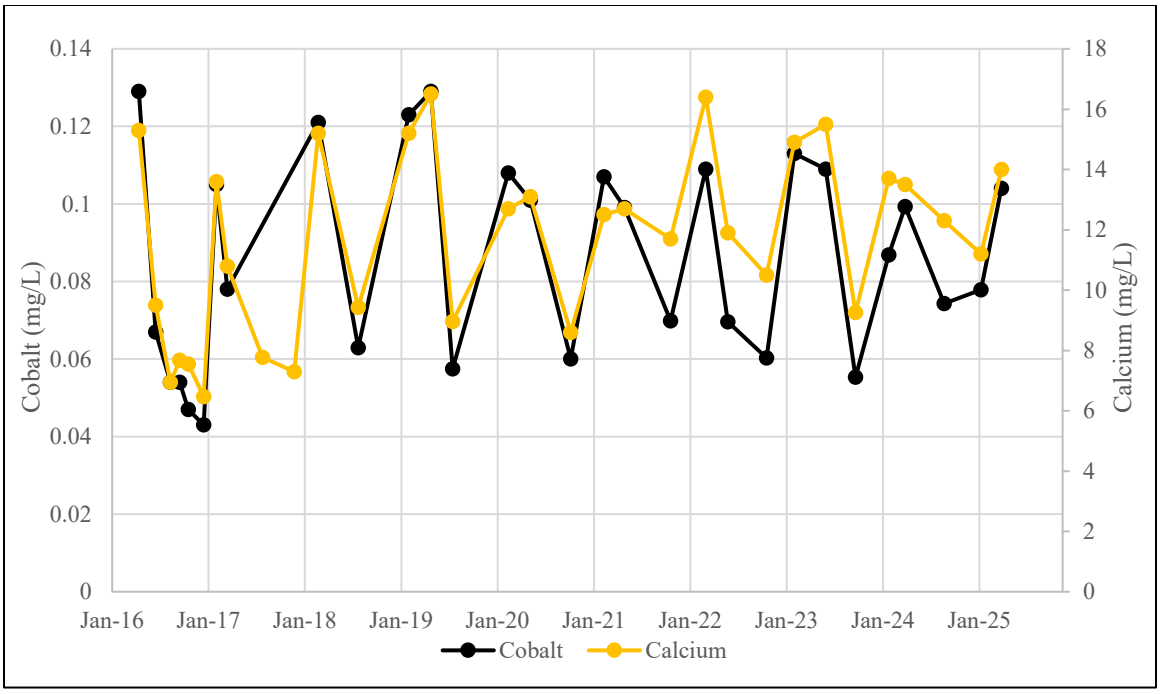
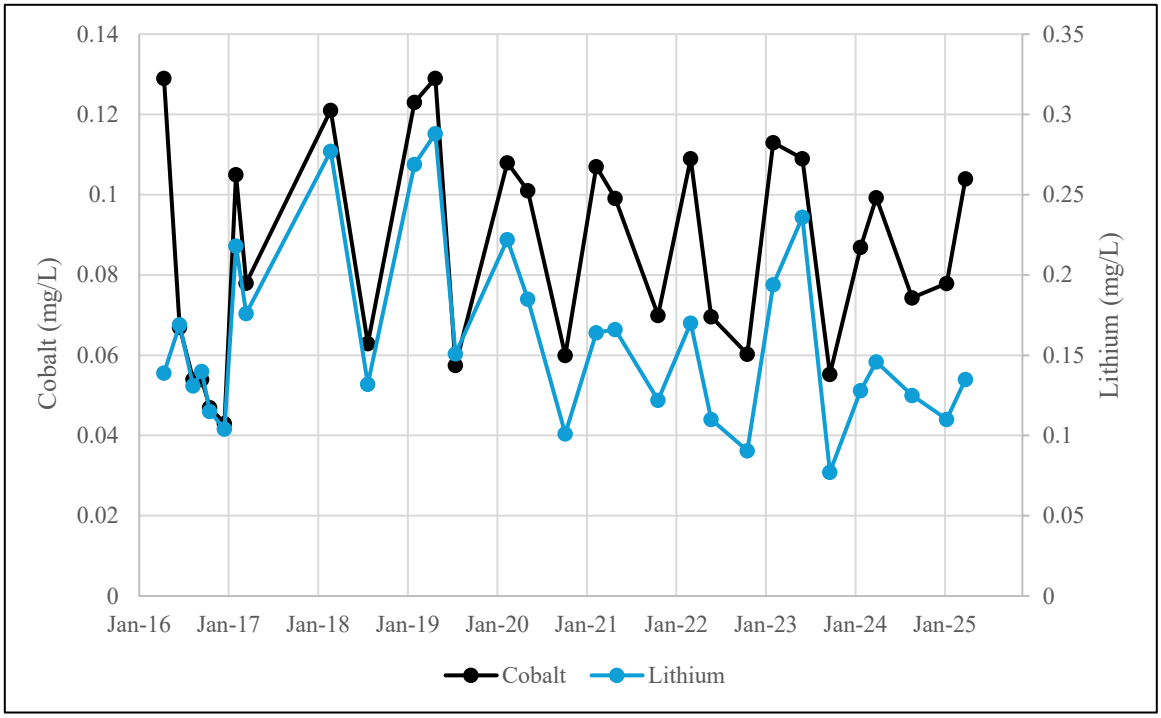
Columbus, Ohio | December 2025





Notes:
1. Cobalt, calcium, and lithium concentrations are shown in milligrams per liter (mg/L).
FGD: Flue Gas Desulfurization

AD-22 Cobalt v. Calcium and Lithium
Pirkey FGD Stackout Pad

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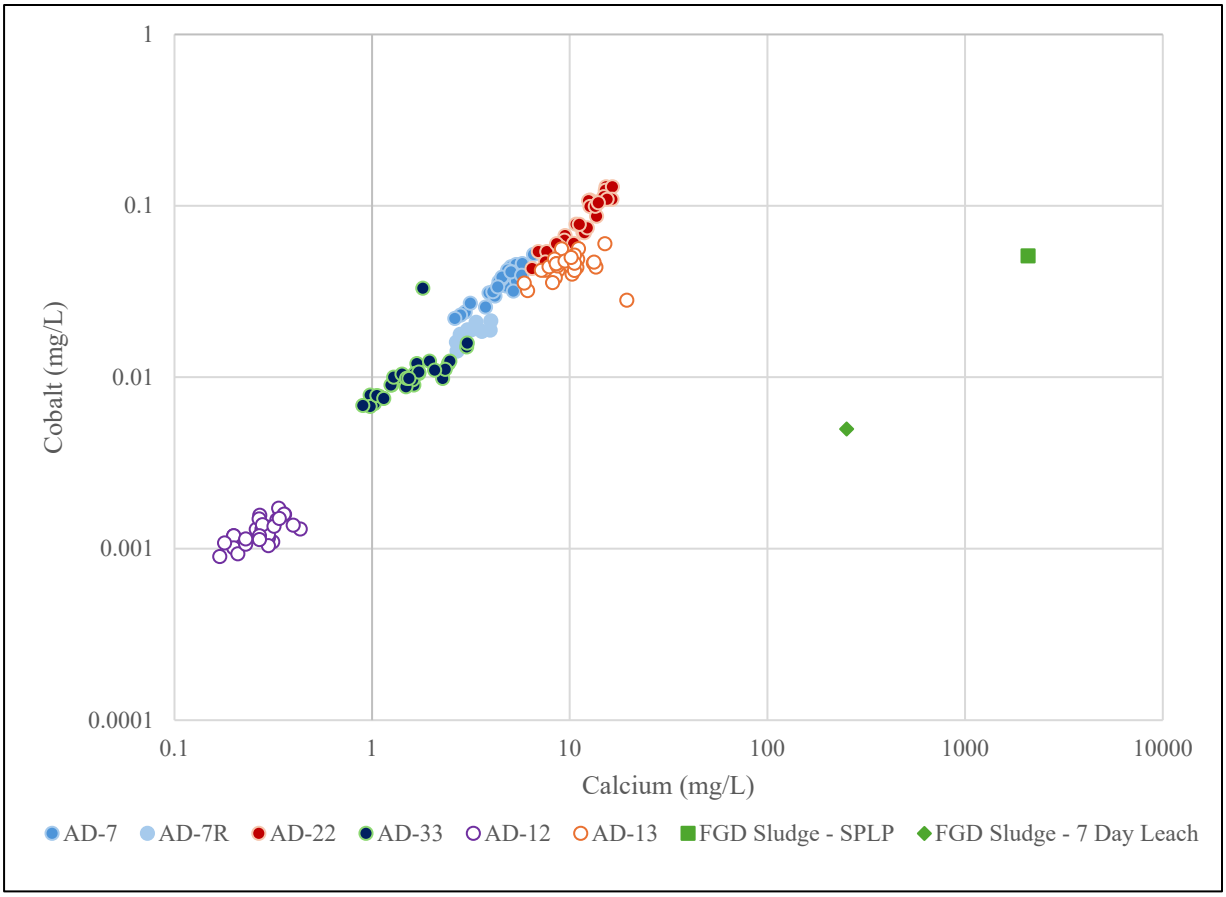
Columbus, Ohio

December 2025

Figure
6



Notes:
1. Cobalt and calcium concentrations are shown in milligrams per liter (mg/L).
2. Upgradient wells are shown with hollow circles.
3. 'FGD Sludge-SPLP' and 'FGD Sludge 7 Day Leach' present the leached concentrations of cobalt and calcium using the Synthetic Precipitation Leaching Procedure (SPLP) (SW-846 Test Method 1312) and the 7-Day Distilled Water Leachate Test Procedure (30 Texas Administration Code 335.521 Appendix 4), respectively.
FGD: Flue Gas Desulfurization

Cobalt and Calcium Concentration Distribution
Pirkey FGD Stackout Pad

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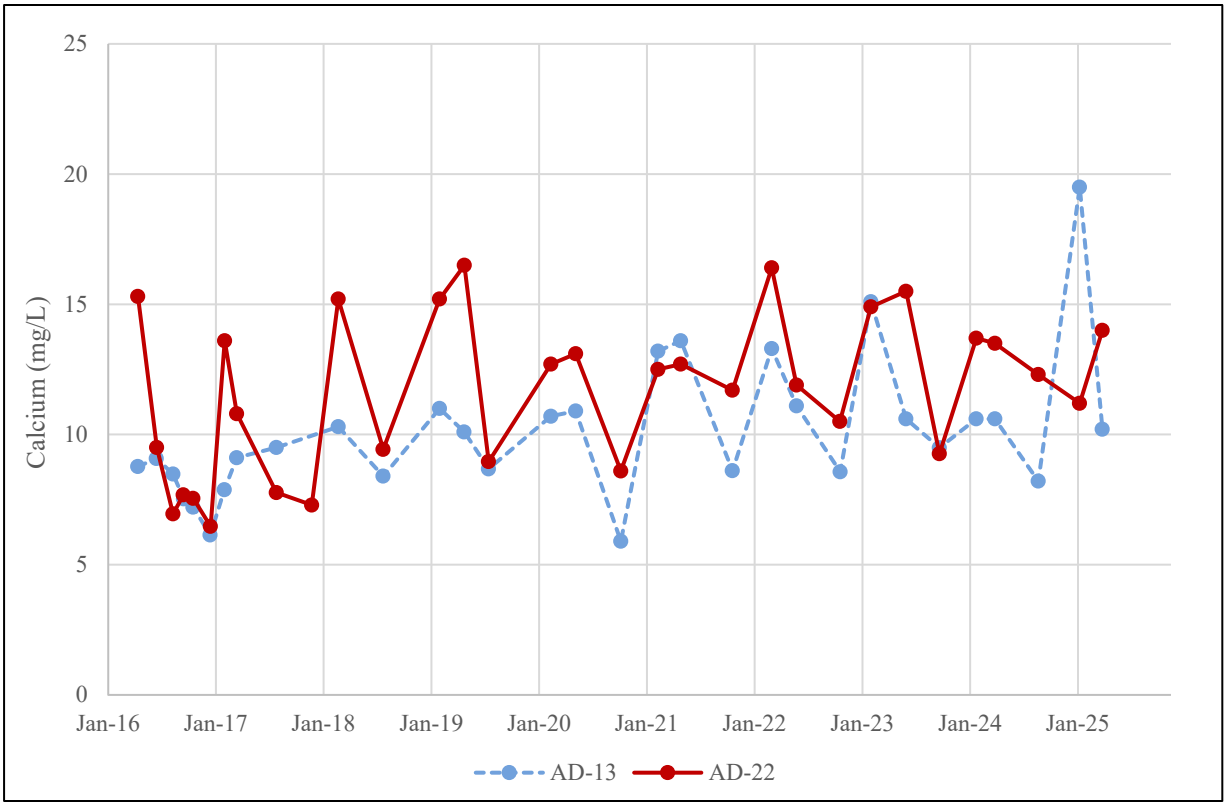
Columbus, Ohio

December 2025

Figure 7



Notes:
1. Calcium concentrations are shown in milligrams per liter (mg/L).
2. Upgradient monitoring well AD-13 is shown with a dashed line.
FGD: Flue Gas Desulfurization

Calcium Time Series Graph
Pirkey FGD Stackout Pad

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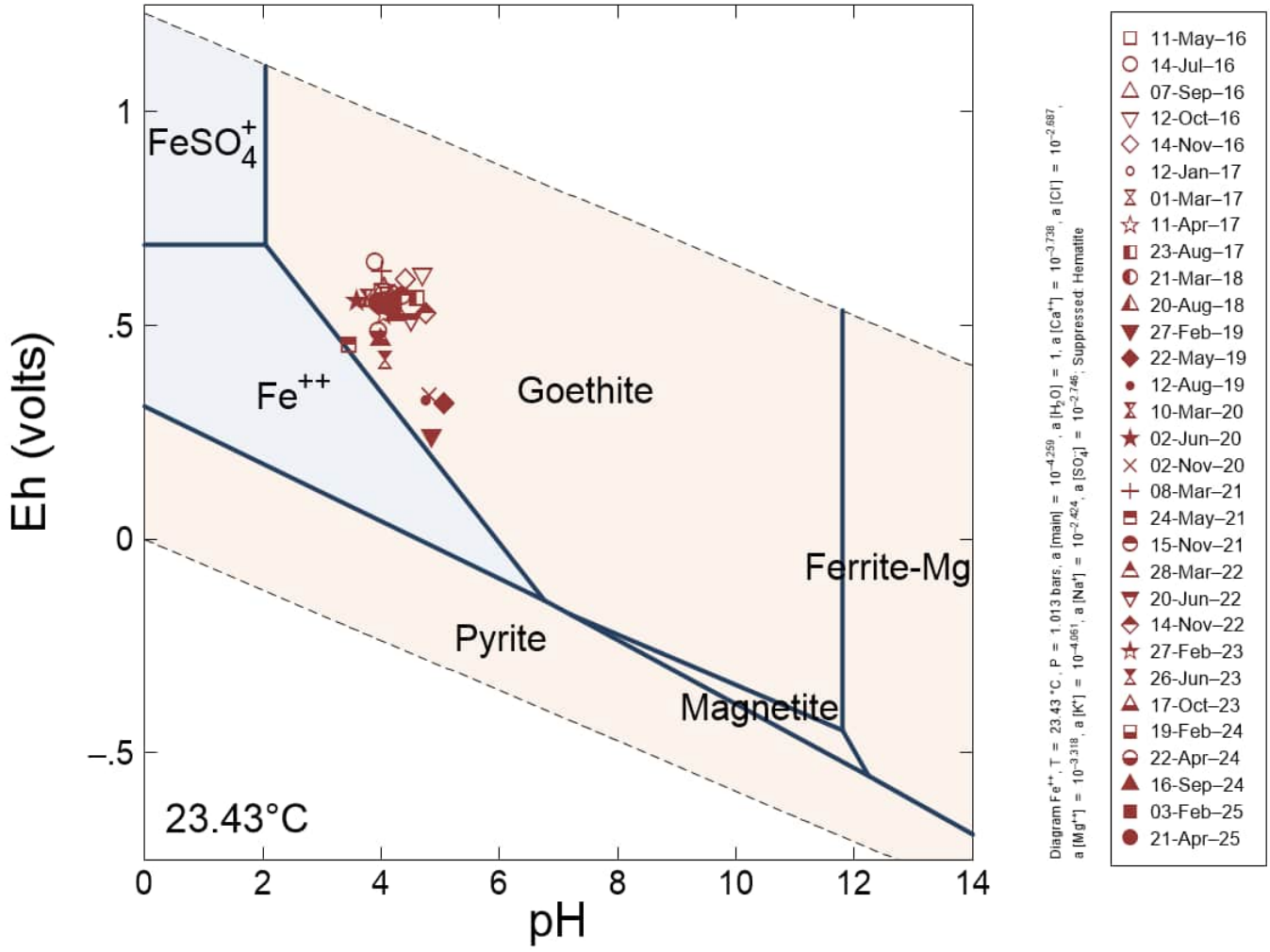
Figure
8

Columbus, Ohio

December 2025



Notes: Groundwater concentrations of major cations and anions at AD-22 from the April 2025 sampling event were used to establish baseline conditions for the diagram. Eh and pH values for sampling dates at AD-22 are shown on the diagram.

AD-22 Eh-pH Diagram
Pirkey FGD Stackout Pad

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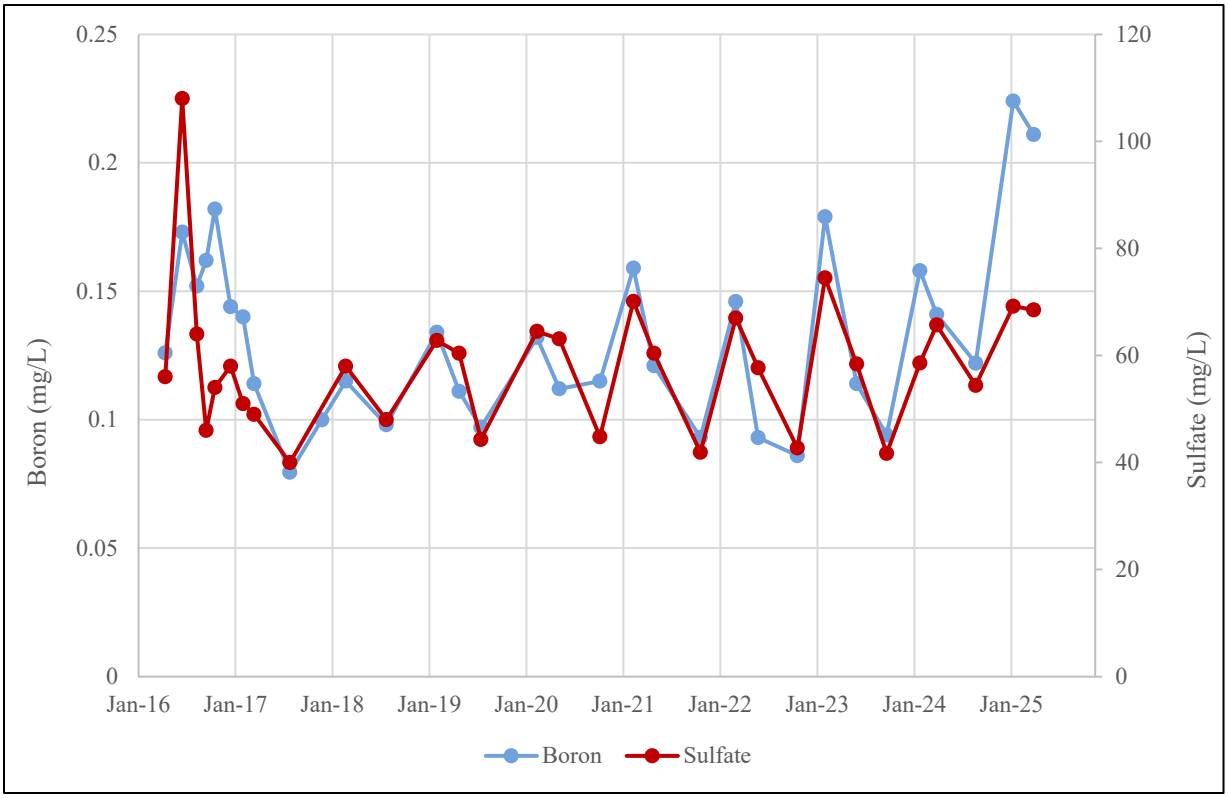
Columbus, Ohio | December 2025

Figure 9



Notes:
1. Boron and sulfate concentrations are shown in milligrams per liter (mg/L).
FGD: Flue Gas Desulfurization

AD-33 Boron and Sulfate Time Series Graph
Pirkey FGD Stackout Pad

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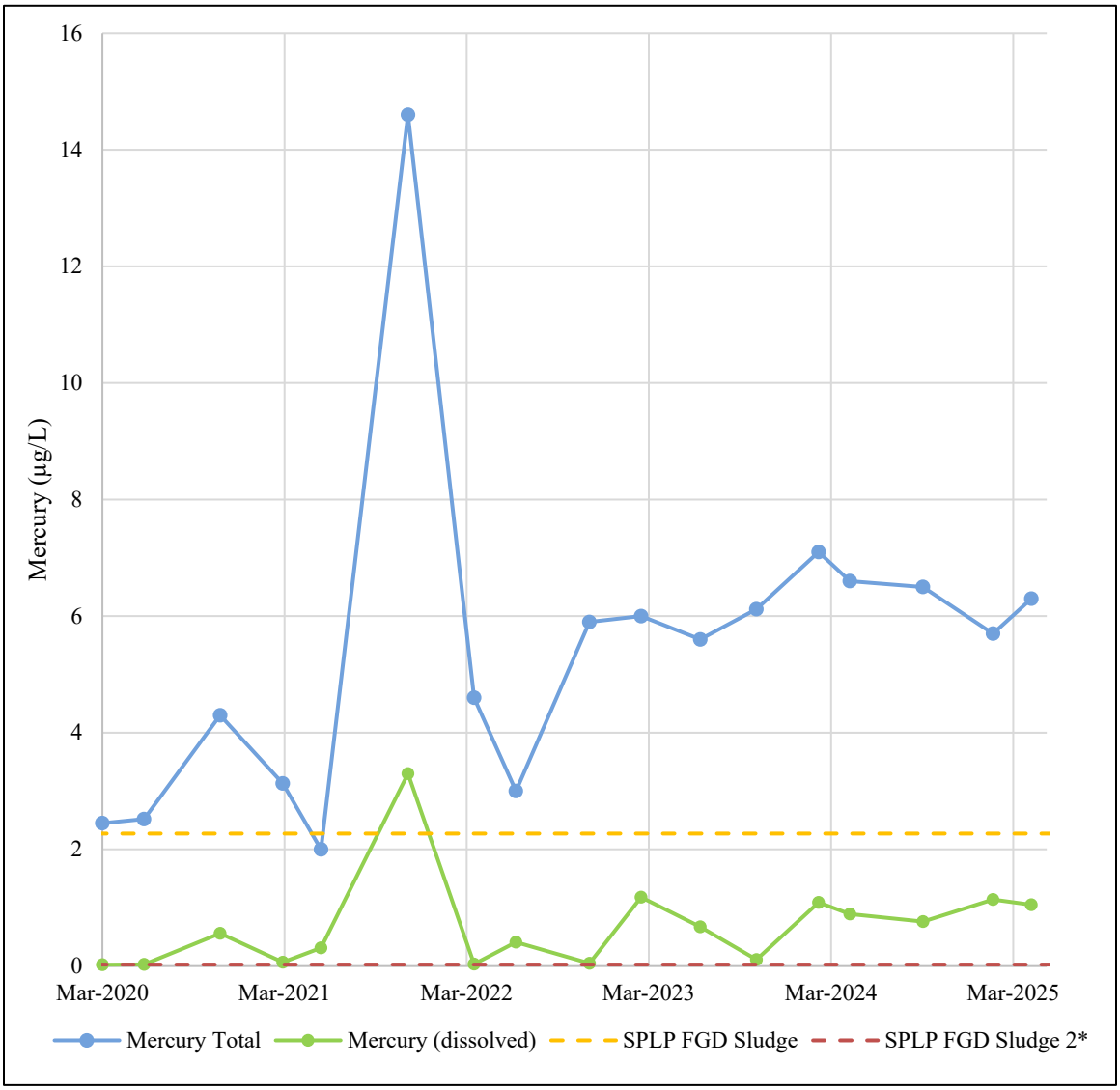
Figure **10**

Columbus, Ohio

October 2025



Notes:
1. Mercury concentrations are shown in micrograms per liter (µg/L).
2. FGD sludge samples collected on 7/17/2019.
3. 7-day leaching procedure results were not shown due to non-detects.
*: Non-detect presented as the reporting limit
FGD: Flue Gas Desulfurization
SPLP: Synthetic Precipitation Leaching Procedure

AD-33 Mercury Time Series Graph
Pirkey FGD Stackout Pad

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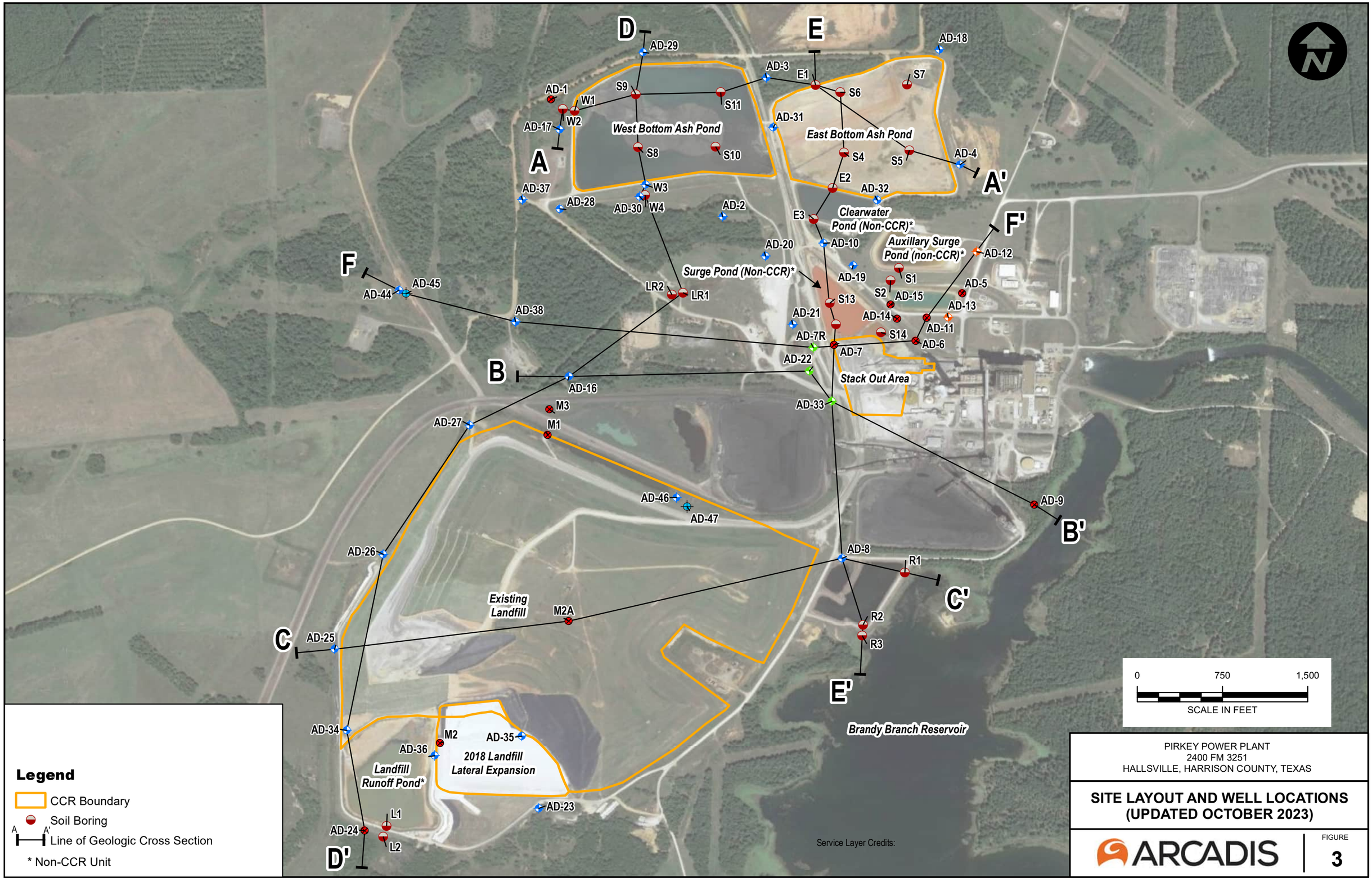
Columbus, Ohio | October 2025

Figure **11**

ATTACHMENT A
Geologic Cross Sections


D
AD-29
E
AD-18
AD-3
E1
S7
AD-1
S9
S6
W1
S11
AD-31
AD-17
W2
West Bottom Ash Pond
East Bottom Ash Pond
A
S8
S10
S4
S5
AD-4
A'
E2
AD-37
W3
AD-32
AD-28
AD-30
W4
AD-2
E3
Clearwater
Pond (Non-CCR)*
F'
AD-20
AD-10
Auxillary Surge
Pond (non-CCR)*
AD-12
F
AD-45
AD-44
Surge Pond (Non-CCR)*
AD-19
S1
LR2
LR1
S2
AD-15
AD-5
AD-38
S13
AD-13
AD-21
AD-14
AD-11
AD-7R
S14
AD-6
AD-7
B
AD-22
Stack Out Area
AD-16
AD-33
M3
AD-27
M1
AD-9
AD-46
AD-47
B'
AD-26
AD-8
R1
C'
Existing
Landfill
M2A
C
AD-25
R2
R3
E'
Brandy Branch Reservoir
AD-34
M2
AD-35
AD-36
2018 Landfill
Lateral Expansion
Landfill
Runoff Pond*
AD-23
L1
AD-24
L2
D'
0
750
1,500
SCALE IN FEET
Legend
CCR Boundary
Soil Boring
A
A'
Line of Geologic Cross Section
* Non-CCR Unit
Service Layer Credits:
PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS
SITE LAYOUT AND WELL LOCATIONS
(UPDATED OCTOBER 2023)
ARCADIS
FIGURE
3
Document Path: T:_ENV\AEP\Pirkey Plant\MXD\Updated\Figure 3 - Site Layout and Well LocationMap2023Octrev.mxd

WEST

B

EAST

B'

STACK OUT AREA

CCR

AD-16

AD-22

AD-33

AD-9 (PLUGGED)

SILTY CLAYEY SAND, DRY, VERY FINE GRAINED.

SILTY SANDY CLAY, RED TO BROWN.

CLAYEY SILTY SAND, BROWN TO GRAY, VERY FINE GRAINED.

ELEVATION (FEET MSL)

370'
360'
350'
340'
330'
320'

LEGEND

- MONITORING WELL SCREENED INTERVAL
- WATER LEVEL IN MONITORING WELL (1/20/16)
- BASE OF CCR UNIT

0 300'
HORIZONTAL SCALE

NOTES:
A) BASE OF STACK OUT AREA CCR UNIT LOCATED AT GRADE, ELEVATION TAKEN FROM MAY 2012 AND JUNE 23, 2015 TOPOGRAPHIC SURVEYS BY BEACON AVIATION.
B) ELEVATION OF CCR MATERIAL ABOVE STACK OUT AREA VARIES.

PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS

CROSS SECTION B - B'

ARCADIS

FIGURE 5

NORTH

E

SOUTH

E'

EAST BOTTOM ASH POND

CLEARWATER POND (NON-CCR UNIT)

SURGE POND (NON-CCR UNIT)

STACK OUT AREA[D]

AD-10 AD-7 AD-33 AD-8

E1 S6[E] E2 E3 R2 R3

CCR

CLAYEY SAND

SILTY SANDY CLAY, TAN TO GRAY.

CLAY

SILTY SAND

WATER AND CCR FILL[A]

COMPACTED COHESIVE FILL

WATER[B]

WATER[C]

S4[E] S13 S12

SILTY SANDY CLAY, GRAY.

CLAYEY SILTY SAND, BROWN TO GRAY

SANDY CLAY, TAN TO GRAY.

SILTY SAND, GRAY.

ELEVATION (FEET MSL)

370' 360' 350' 340' 330' 320' 310'

0 500'

HORIZONTAL SCALE

STATE OF TEXAS
Kenneth J. Brandner
Geology
1787
LICENSED PROFESSIONAL GEOSCIENTIST

12-11-23

LEGEND

- MONITORING WELL SCREENED INTERVAL
- WATER LEVEL IN MONITORING WELL (1/20/16)
- BASE OF CCR UNIT

NOTES:

A) TOP OF EAST BOTTOM ASH POND PERIMETER BERM ELEVATION IS 357', OPERATING LEVEL IS 354' (JOHNSON & PACE, MAY 2011); BASE ELEVATION OF EAST BOTTOM ASH POND IS 347' (SARGENT & LUNDY, JANUARY 1983).
B) TOP OF CLEARWATER POND PERIMETER BERM ELEVATION IS 357',OPERATING LEVEL IS 354' (JOHNSON & PACE, MAY 2011). BASE ELEVATION OF CLEARWATER POND IS 344' (SARGENT & LUNDY, JANUARY 1983).
C) BASE ELEVATION OF SURGE POND (347-352'MSL) AND POND DESIGN LEVEL (355'MSL) TAKEN FROM JANUARY 31, 1983 SARGENT & LUNDY REPORT "DESIGN SUMMARY FOR LIGNITE STORAGE AREA AND WASTEWATER POND FACILITIES".
D) BASE OF STACK OUT AREA CCR UNIT LOCATED AT GRADE. ELEVATION TAKEN FROM MAY 2012 AND JUNE 23, 2015 TOPOGRAPHIC SURVEYS BY BEACON AVIATION.
E) SOIL BORING INSTALLED BY SOUTHWESTERN LABORATORIES DURING ASH POND CONSTRUCTION IN 1983.

PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS

CROSS SECTION E - E'

ARCADIS

FIGURE 8

WEST

F

EAST

F'

ELEVATION (FEET MSL)

380' 370' 360' 350' 340' 330' 320' 310' 300' 290' 280' 270' 260'

AD-44 AD-45 AD-38 AD-7R AD-7 (PLUGGED) AD-6 (PLUGGED) AD-11 (PLUGGED) AD-12

STACK OUT AREA[A]

SILTY SANDY CLAY, TAN TO GRAY.

CLAYEY SILTY SAND, BROWN TO GRAY.

SILT AND CLAY, GRAY TO BROWN.

CLAY

LIGNITE

CLAYEY SILTY SAND, BROWN TO GRAY.

0 400'
HORIZONTAL SCALE

LEGEND

- MONITORING WELL SCREENED INTERVAL
- WATER LEVEL IN MONITORING WELL (9/12/23)
- BASE OF CCR UNIT

NOTES: BASE OF STACK OUT AREA CCR UNIT LOCATED AT GRADE.

STATE OF TEXAS
Kenneth J. Brandner
Geology
1787
LICENSED
PROFESSIONAL GEOSCIENTIST
12-11-23

PIRKEY POWER PLANT
2400 FM 3251
HALLSVILLE, HARRISON COUNTY, TEXAS

CROSS SECTION F - F'

ARCADIS

FIGURE 9

ATTACHMENT B
SP-B4 Boring Log

Soil Boring Log

Project: AEP Pirkey

Boring/Well Name: SP-B4

Project Location: Hallsville, TX

Boring Date: 3/3/2020

Depth Scale Feet	Water Table	Soil Profile Description	PID*
		pp= pocket penetrometer	
0		0.0'-0.4': Top soil, black silt, vegetation	
		0.4'-0.7': Brown clayey silt, good cohesion	
		0.7'-1.5': Red and light gray silty clay, moderate stiffness (pp. 2.5), high plasticity	
		1.5'-3.7': Maroon and light gray clay, high stiffness (pp. 4.5-5.0), low plasticity; iron ore present 3.1'-3.7'	
		3.7'-5.0': NO RECOVERY	
5		5.0'-7.0': Maroon and light gray clay, high stiffness (pp. 4.5-5.0), low plasticity; iron ore present throughout	
		7.0'-8.0': Light gray clay with iron ore, moderate stiffness (pp.2.5-3.0), moderate plasticity	
		8.0'-10.0': Maroon clay, moderate stiffness (pp. 3.5), moderate plasticity; iron ore present; moist at 9'	
10	▽	10.0'-12.6': Maroon clay, moderate stiffness (pp. 3.5), moderate plasticity; iron ore present; wet at 12'	
		12.6'-13.3': Tan clay, low stiffness (pp.1.5), high plasticity; wet	
		13.3'-18.5': Tan and brown clayey silt, moderate cohesion; iron ore present; wet	
15			
		18.5'-20.3': Maroon silty clay, low stiffness (pp. 1.0), moderate plasticity; iron ore; wet	
20		20.3'-21.1': Dark gray/black clay, trace silt, low stiffness (pp. 1.5), high plasticity; wet	
		21.1'-21.3': Dark gray silt, good cohesion; wet	
		21.3'-21.9': Dark gray silty clay, low stiffness (pp. 1.5), high plasticity; wet	
		21.9'-22.3': Dark gray silt, moderate cohesion; wet	
		22.3'-22.7': light brown silt; low cohesion; wet	
		22.7'-24.4': Dark gray and dark green silty clay, moderate/high stiffness (pp.3.5), moderate plasticity; wet, glauconite present	
		24.4'-27.8': Dark green/gray fine grained sand, well sorted; wet; glauconite present	
25		27.8'-30.0': Red and orange fine grained sand, well sorted, with iron ore; wet	
30			
		Samples collected at 6-8'; 18-20'; 28-30'	
		TD at 30' bgs; refusal	
		*PID readings not collected	
35			

Drill Rig: Geoprobe 3230 DT

Drilling Contractor: C&S

Driller: DJ Diduch

Geosyntec Consultants

ATTACHMENT C
AD-22 Boring Log and Well Installation Diagram

☐ BORING ■ MONITOR WELL

APEX PROJECT NO.: 110-089 BORING NUMBER: ____ MONITOR WELL NUMBER: AD-22

FACILITY NAME: AEP- Pirkey Power Plant FACILITY ID NO.: N/A

FACILITY ADDRESS: Hallsville, Texas

DRILLING COMPANY/METHOD/RIG: Apex Geoscience Inc. / Hollow-stem Augers/ CME-55 Track Rig

DRILLER: Ed Wilson, Apex Geoscience Inc. COMPLETION DATE: 12/16/2010

PREPARED BY: David Bedford LOGGED BY: David Bedford

LATTITUDE: N 32°27'03.3" Datum: WGS-84 WELL LOCATION: Triangle- South side Quansit Hut

LONGITUDE: W94°29'41.3"

DEPTH (FEET)	PID (PPM)	SAMPLE INTERVAL	WELL LOG AND COMPLETION DETAILS	USCS CODE	SOIL DESCRIPTION AND COMMENTS	Odor	Moisture
1			0-0.5	SC	Clayey sand, light brown, very fine grained	None	Moist
2			0.5-12	CL	Lean clay, light brown mottled with light gray	None	Slightly Moist
3							
4					Few iron ore (small) pebbles in clayey sandy streaks		
5							
6							
7							
8							
9							
10							
11							
12							
13			▽	12-20	SC	Clayey sand, grayish brown with orangish brown streaks, very fine grained	None	Slightly Wet
14					Slightly wet @ 12.5' from seepage		
15					Large amount of iron ore 15-17'		
16							
17							
18							
19					Very firm 18-18.5'		
20							
21				20-25	SC	(Dense crystalline rock 21-21.1'), light brown clayey sand, greenish black, mica, black clay streaks, very fine grained, wet @ 20'	None	Wet
22							
23							
24							
25							
26				25-30	SM	Sand, greenish brown (1') grading to orangish brown, silty, very fine grained	None	Wet
27							
28							
29							
30							
31					Boring Terminated at 30'		
32							
33							
34							
35							
36							
37							
38							
39							
40							

Cement Bentonite Filter Sand ▽ Water Level

Apex geoscience inc.

Total Depth: 30 feet Riser Interval: +3 (ags)-10'

Filter Sand (Size/Interval): 8-30' Screen Interval: 10-30'

Grout (Type/Interval): Grout from 0-2'; Bentonite from 2-8' Water level: 12.5'

Surface Completion ☐ Flush ■ Above Ground 3'

Note: This log is not to be used separate from this report.

ATTACHMENT D
FGD Sludge Materials Analytical Report

502 North Allen Ave.
Shreveport, LA 71101
Phone: (318) 673-3802
Fax: (318) 673-3960

AEP ANALYTICAL CHEMISTRY SERVICES
Analysis Report

Report ID : 40143
Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
Shreveport, LA 71101
Fax: (318) 673-3960

AEP Sample ID : 227040
Cust Sample ID: Dirt/Sludge
Sample Desc.: Pirkey Sludge FGD Total

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

Metals (227040)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	20500	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Antimony	0.993	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Arsenic	28.3	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Barium	142	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Beryllium	2.12	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Boron	845	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18	M4	JDB
Cadmium	1.68	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Calcium	77500	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Chromium	30.6	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Cobalt	24.8	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Copper	30.2	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Dry Weight, Percent	94.7	%	0.001	1		07/22/2019 15:30	T5	JDB
Iron	36300	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:18	M4	JDB
Lead	5.31	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Lithium	11.5	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47	T5	JDB
Magnesium	7150	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Manganese	498	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Mercury	0.653	mg/Kg	0.000025	1	EPA 7471B 1998	07/24/2019 14:37		LNM
Molybdenum	8.45	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Nickel	28.8	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Potassium	1370	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Selenium	36.4	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Silver	0.208	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Sodium	1230	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Strontium	382	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18		JDB
Thallium	0.503	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB

AEP ANALYTICAL CHEMISTRY SERVICES
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Analysis Report

Report ID : 40143
Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
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Tin	1.28	mg/Kg	0.2	1:50	EPA 6010B 1996	07/26/2019 0:47	T5	JDB
Titanium	1360	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:18	M4	JDB
Vanadium	77.5	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB
Zinc	26	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 0:47		JDB

Waste Characterization (227040)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
pH, Soil	8.44	pH		1	EPA 9045D 2002	07/25/2019 12:30		GB

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Contact: Terry Wehling
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Address: 502 North Allen Avenue
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AEP Sample ID : 227041
Cust Sample ID: Dirt/Sludge
Sample Desc.: Pirkey Sludge FGD SPLP

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

SPLP (227041)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	14.2	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Antimony	0.018	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Arsenic	0.015	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Barium	3.46	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Beryllium	0.012	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Boron	22.3	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Cadmium	0.002	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Calcium	2090	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Chromium	0.005	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Cobalt	0.051	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Copper	0.009	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Iron	52.4	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Lithium	0.146	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Magnesium	62.3	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Manganese	2.83	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Mercury	0.002272	mg/L	0.000025	1	EPA 7470A 1994	07/24/2019 14:05		LNM
Molybdenum	0.229	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Nickel	0.054	mg/L	0.025	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Potassium	9.61	mg/L	0.01	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Selenium	0.93	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Sodium	35.6	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Strontium	12.7	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 20:58		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB

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Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
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Titanium	0.041	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Vanadium	0.269	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB
Zinc	0.299	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:09		JDB

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Address: 502 North Allen Avenue
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AEP Sample ID : 227042
Cust Sample ID: Dirt/Sludge
Sample Desc.: Pirkey Sludge FGD 7 Day Leachate

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

7-Day Leachate (227042)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	0.563	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Antimony	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Arsenic	0.011	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Barium	0.134	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Beryllium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Boron	8.44	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:43		JDB
Cadmium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Calcium	252	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:43		JDB
Chromium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Cobalt	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Copper	0.002	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Iron	0.211	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Lithium	0.069	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Magnesium	6.73	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Manganese	0.008	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Mercury	< 0.005	mg/L	0.005	1:200	EPA 7470A 1994	07/30/2019 10:19		LNM
Molybdenum	0.18	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Nickel	< 0.025	mg/L	0.025	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Potassium	4.82	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Selenium	0.208	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Sodium	19.8	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:43		JDB
Strontium	1.6	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB

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AEP ANALYTICAL CHEMISTRY SERVICES
Analysis Report

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Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

Address: 502 North Allen Avenue
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Titanium	0.015	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Vanadium	0.03	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:35		JDB
Zinc	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:35		JDB

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Address: 502 North Allen Avenue
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AEP Sample ID : 227043
Cust Sample ID: Dirt/Sludge 2
Sample Desc.: Pirkey Sludge FGD 2 Total

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

Metals (227043)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	19600	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Antimony	0.919	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Arsenic	22.8	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Barium	121	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Beryllium	1.66	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Boron	891	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25	T5	JDB
Cadmium	1.37	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Calcium	84500	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Chromium	28.5	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Cobalt	20.3	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Copper	26.9	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Dry Weight, Percent	97.2	%	0.001	1		07/22/2019 15:30	T5	JDB
Iron	28800	mg/Kg	12.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Lead	5.78	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Lithium	12	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26	T5	JDB
Magnesium	7070	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Manganese	388	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Mercury	0.606	mg/Kg	0.000025	1	EPA 7471B 1998	07/24/2019 14:27		LNM
Molybdenum	11	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Nickel	25.7	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Potassium	1460	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Selenium	30.4	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Silver	0.19	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Sodium	1780	mg/Kg	25	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Strontium	451	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Thallium	0.562	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB

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Analysis Report

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Date Received: 07/18/2019

Company: SEP - Flint Creek (TW)
Contact: Terry Wehling
Phone: (318) 673-2721

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Tin	1.06	mg/Kg	0.2	1:50	EPA 6010B 1996	07/26/2019 1:26	T5	JDB
Titanium	1280	mg/Kg	2.5	1:2500	EPA 6010B 1996	07/26/2019 0:25		JDB
Vanadium	68.3	mg/Kg	0.05	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB
Zinc	33.8	mg/Kg	0.25	1:50	EPA 6010B 1996	07/26/2019 1:26		JDB

Waste Characterization (227043)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
pH, Soil	8.71	pH		1	EPA 9045D 2002	07/25/2019 12:30		GB

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Address: 502 North Allen Avenue
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AEP Sample ID : 227044
Cust Sample ID: Dirt/Sludge 2
Sample Desc.: Pirkey Sludge FGD 2 SPLP

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

SPLP (227044)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	10.5	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Antimony	0.017	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Arsenic	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Barium	2.57	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Beryllium	0.009	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Boron	26.7	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Cadmium	0.002	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Calcium	1960	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Chromium	0.004	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Cobalt	0.051	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Copper	0.003	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Iron	47.7	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Lithium	0.136	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Magnesium	70.2	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Manganese	2.87	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Mercury	< 0.000025	mg/L	0.000025	1	EPA 7470A 1994	07/24/2019 14:21		LNM
Molybdenum	0.288	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Nickel	0.071	mg/L	0.025	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Potassium	11.4	mg/L	0.01	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Selenium	0.775	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Sodium	56.7	mg/L	0.5	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Strontium	13.2	mg/L	0.05	1:50	EPA 1312/6010B 1996	07/25/2019 21:06		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB

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AEP ANALYTICAL CHEMISTRY SERVICES
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Titanium	0.037	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Vanadium	0.194	mg/L	0.001	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB
Zinc	0.338	mg/L	0.005	1	EPA 1312/6010B 1996	07/25/2019 23:55		JDB

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Address: 502 North Allen Avenue
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AEP Sample ID : 227045
Cust Sample ID: Dirt/Sludge 2
Sample Desc.: Pirkey Sludge FGD 2 7 Day Leachate

Collected Date: 07/17/2019
Location: H.W. Pirkey Power Plant

By: RF
Matrix: Solid

7-Day Leachate (227045)

Parameter	Value	Unit	Det. Limit	Dil./Conc.	Method	Analysis Date/Time	Codes	Tech
Aluminum	0.994	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Antimony	0.006	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Arsenic	0.031	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Barium	0.121	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Beryllium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Boron	16.4	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Cadmium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Calcium	633	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Chromium	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Cobalt	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Copper	0.003	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Iron	0.225	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Lead	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Lithium	0.1	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Magnesium	9.54	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Manganese	0.015	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Mercury	< 0.005	mg/L	0.005	1:200	EPA 7470A 1994	07/30/2019 10:36		LNM
Molybdenum	0.448	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Nickel	< 0.025	mg/L	0.025	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Potassium	9.02	mg/L	0.01	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Selenium	0.201	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Silver	< 0.001	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Sodium	48.3	mg/L	0.5	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Strontium	3.79	mg/L	0.05	1:50	EPA 6010B 1996	08/04/2019 17:53		JDB
Thallium	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Tin	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB

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Contact: Terry Wehling
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Titanium	0.02	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Vanadium	0.087	mg/L	0.001	1	EPA 6010B 1996	08/04/2019 19:45		JDB
Zinc	< 0.005	mg/L	0.005	1	EPA 6010B 1996	08/04/2019 19:45		JDB

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Quality Control Data

* Quality control units are the same as reported analytical results

Date	Parameter	Sample ID	Blank Value *	Standard			Spike			Surrogate % Recovery	Duplicate % Difference	Tech
				Value *	Recovery*	%	Value *	Recovery*	%			
7/25/2019	Aluminum	226939.1	<0.005	2	2.0229733	101.1	2	2.071639	103.6		0.4	JDB
7/25/2019	Aluminum	227041.1	<0.005	2	2.0229733	101.1	2	2.2242	111.2		0.0	JDB
7/26/2019	Aluminum	227040.1	<12.5	2	2.0358232	101.8	100	132.38333	132.4		1.2	JDB
7/25/2019	Antimony	226939.1	<0.005	0.8	0.8092462	101.2	0.8	0.8159776	102.0		0.2	JDB
7/25/2019	Antimony	227041.1	<0.005	0.8	0.8092462	101.2	0.8	0.7671843	95.9		0.5	JDB
7/26/2019	Antimony	227040.1	<0.25	0.8	0.8071122	100.9	40	32.643192	81.6		1.8	JDB
7/25/2019	Arsenic	227041.1	<0.005	0.8	0.8086795	101.1	0.8	0.7758421	97.0		0.0	JDB
7/25/2019	Arsenic	226939.1	<0.005	0.8	0.8086795	101.1	0.8	0.8086275	101.1		0.1	JDB
7/26/2019	Arsenic	226915.1	<0.25	0.8	0.7906797	98.8	40	40.306278	100.8		0.8	JDB
7/26/2019	Arsenic	227040.1	<0.25	0.8	0.7940238	99.3	40	34.433917	86.1		2.3	JDB
7/25/2019	Barium	226939.1	<0.001	0.2	0.2080557	104.0	0.2	0.209543	104.8		0.1	JDB
7/25/2019	Barium	227041.1	<0.05	0.2	0.2080557	104.0	0.2	0.1829767	91.5		0.4	JDB
7/26/2019	Barium	227040.1	<2.5	0.2	0.2112650	105.6	500	543.5715	108.7		7.2	JDB
7/25/2019	Beryllium	226939.1	<0.001	0.2	0.2122779	106.1	0.2	0.2142832	107.1		0.3	JDB
7/25/2019	Beryllium	227041.1	<0.001	0.2	0.2122779	106.1	0.2	0.1992329	99.6		0.4	JDB
7/26/2019	Beryllium	227040.1	<0.05	0.2	0.2131235	106.6	10	9.40679	94.1		0.2	JDB
7/25/2019	Boron	226939.1	<0.01	0.3	0.2995651	99.9	0.3	0.2984183	99.5		0.7	JDB
7/25/2019	Boron	227041.1	<0.5	0.3	0.2995651	99.9	0.3	0.2855333	95.2		0.5	JDB
7/25/2019	Cadmium	227041.1	<0.001	0.2	0.2069934	103.5	0.2	0.1836838	91.8		0.6	JDB
7/25/2019	Cadmium	226939.1	<0.001	0.2	0.2069934	103.5	0.2	0.2061243	103.1		0.5	JDB
7/26/2019	Cadmium	226915.1	<0.05	0.2	0.1973571	98.7	10	10.058007	100.6		1.8	JDB
7/26/2019	Cadmium	227040.1	<0.05	0.2	0.2013293	100.7	10	8.0453767	80.5		1.6	JDB
7/25/2019	Calcium	226939.1	<0.01	1	1.0087505	100.9	1	1.0243667	102.4		0.9	JDB
7/26/2019	Calcium	227040.1	<25	1	0.8616568	86.2	50	113.63333	227.3		0.8	JDB
7/25/2019	Chromium	226939.1	<0.001	0.4	0.4116387	102.9	0.4	0.4125529	103.1		0.4	JDB
7/25/2019	Chromium	227041.1	<0.001	0.4	0.4116387	102.9	0.4	0.3867339	96.7		0.3	JDB
7/26/2019	Chromium	227040.1	<0.05	0.4	0.40798	102.0	20	17.692233	88.5		1.6	JDB
7/26/2019	Chromium	226915.1	<0.05	0.4	0.4059509	101.5	20	20.758823	103.8		0.8	JDB
7/25/2019	Cobalt	227041.1	<0.005	0.2	0.2043482	102.2	0.2	0.1839347	92.0		0.4	JDB
7/25/2019	Cobalt	226939.1	<0.005	0.2	0.2043482	102.2	0.2	0.2054714	102.7		0.4	JDB
7/26/2019	Cobalt	227040.1	<0.05	0.2	0.2032547	101.6	10	7.7614833	77.6		1.8	JDB
7/25/2019	Copper	227041.1	<0.001	0.3	0.3066399	102.2	0.3	0.2963301	98.8		0.1	JDB

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7/25/2019	Copper	226939.1	<0.001	0.3	0.3066399	102.2	0.3	0.3109092	103.6		0.1	JDB
7/26/2019	Copper	227040.1	<0.05	0.3	0.3124104	104.1	15	15.003017	100.0		1.9	JDB
7/25/2019	Iron	226939.1	<0.01	3	3.1158893	103.9	3	3.1231158	104.1		1.0	JDB
7/25/2019	Iron	227041.1	<0.5	3	3.1158893	103.9	150	159.28837	106.2		0.8	JDB
7/26/2019	Iron	227040.1	<12.5	3	3.0861005	102.9					3.1	JDB
7/25/2019	Lead	227041.1	<0.005	1	1.0430644	104.3	1	0.9320653	93.2		0.6	JDB
7/25/2019	Lead	226939.1	<0.005	1	1.0430644	104.3	1	1.0416574	104.2		0.4	JDB
7/26/2019	Lead	226915.1	<0.25	1	1.0147827	101.5	50	51.881956	103.8		1.4	JDB
7/26/2019	Lead	227040.1	<0.25	1	1.0194305	101.9	50	41.227533	82.5		1.1	JDB
7/25/2019	Lithium	227041.1	<0.001	0.2	0.2119096	106.0	0.2	0.2353987	117.7		0.1	JDB
7/25/2019	Lithium	226939.1	<0.001	0.2	0.2119096	106.0	0.2	0.2163799	108.2		0.4	JDB
7/26/2019	Lithium	227040.1	<0.05	0.2	0.211291	105.6	10	11.698417	117.0		2.8	JDB
7/25/2019	Magnesium	226939.1	<0.01	2	2.0868175	104.3	2	2.0877567	104.4		0.2	JDB
7/25/2019	Magnesium	227041.1	<0.5	2	2.0868175	104.3	2	1.9791333	99.0		0.6	JDB
7/26/2019	Magnesium	227040.1	<25	2	2.0570549	102.9	100	76.916667	76.9		1.4	JDB
7/25/2019	Manganese	226939.1	<0.001	0.2	0.2072869	103.6	0.2	0.2077536	103.9		0.2	JDB
7/25/2019	Manganese	227041.1	<0.001	0.2	0.2072869	103.6	0.2	0.16684	83.4		0.7	JDB
7/26/2019	Manganese	227040.1	<2.5	0.2	0.2066368	103.3	500	572.398	114.5		1.1	JDB
7/24/2019	Mercury	227041.1	<0.00002	0.001	0.00097	97.0	0.2	0.16373	81.9		7.0	LNM
7/24/2019	Mercury	227040.1	<0.00002	0.001	0.00097	97.0	0.04	0.0496	124.0		4.4	LNM
7/30/2019	Mercury	227042.1	<0.005	0.001	0.0009	90.0	0.2	0.156162	78.1		4.0	LNM
7/25/2019	Molybdenum	227041.1	<0.005	0.2	0.2067657	103.4	0.2	0.197727	98.9		0.5	JDB
7/25/2019	Molybdenum	226939.1	<0.005	0.2	0.2067657	103.4	0.2	0.2076129	103.8		0.4	JDB
7/26/2019	Molybdenum	227040.1	<0.05	0.2	0.2073308	103.7	10	9.2486833	92.5		0.4	JDB
7/25/2019	Nickel	227041.1	<0.025	0.5	0.5192594	103.9	0.5	0.46183	92.4		0.6	JDB
7/25/2019	Nickel	226939.1	<0.025	0.5	0.5192594	103.9	0.5	0.5209379	104.2		0.6	JDB
7/26/2019	Nickel	227040.1	<0.05	0.5	0.5228273	104.6	25	19.992767	80.0		1.9	JDB
7/25/2019	Potassium	227041.1	<0.01	10	9.3692109	93.7	10	11.11754	111.2		0.3	JDB
7/25/2019	Potassium	226939.1	<0.01	10	9.3692109	93.7	10	9.4631223	94.6		0.2	JDB
7/26/2019	Potassium	227040.1	<25	10	9.1397018	91.4	500	428.035	85.6		2.9	JDB
7/25/2019	Selenium	226939.1	<0.005	2	1.9998495	100.0	2	1.9816300	99.1		0.8	JDB
7/25/2019	Selenium	227041.1	<0.005	2	1.9998495	100.0	2	1.991203	99.6		0.7	JDB
7/26/2019	Selenium	227040.1	<0.25	2	1.9551138	97.8	100	89.733067	89.7		3.0	JDB
7/25/2019	Silver	227041.1	<0.001	0.075	0.0712930	95.1	0.075	0.0708639	94.5		0.2	JDB
7/25/2019	Silver	226939.1	<0.001	0.075	0.0712930	95.1	0.075	0.0714285	95.2		0.1	JDB
7/26/2019	Silver	227040.1	<0.05	0.075	0.0712215	95.0	3.75	3.6188628	96.5		0.5	JDB

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7/25/2019	Sodium	227041.1	<0.5	3	3.1384831	104.6	3	2.3746333	79.2		0.0	JDB
7/25/2019	Sodium	226939.1	<0.01	3	3.1384831	104.6	3	2.4693667	82.3		0.1	JDB
7/26/2019	Sodium	227040.1	<25	3	3.1256605	104.2	150	120.525	80.4		1.9	JDB
7/25/2019	Strontium	226939.1	<0.001	0.2	0.2059899	103.0	0.2	0.2081687	104.1		0.4	JDB
7/26/2019	Strontium	227040.1	<2.5	0.2	0.2078256	103.9	500	577.76733	115.6		17.9	JDB
7/25/2019	Thallium	227041.1	<0.005	0.4	0.4152040	103.8	0.4	0.3682771	92.1		1.2	JDB
7/25/2019	Thallium	226939.1	<0.005	0.4	0.4152040	103.8	0.4	0.4171124	104.3		0.0	JDB
7/26/2019	Thallium	227040.1	<0.25	0.4	0.4155052	103.9	20	15.947380	79.7		1.2	JDB
7/25/2019	Tin	226939.1	<0.005	0.7	0.6995446	99.9	0.7	0.6930628	99.0		0.2	JDB
7/25/2019	Tin	227041.1	<0.005	0.7	0.6995446	99.9	0.7	0.644164	92.0		0.2	JDB
7/26/2019	Tin	227040.1	<0.2	0.7	0.6896072	98.5	35	28.438362	81.3		0.8	JDB
7/25/2019	Titanium	227041.1	<0.005	0.2	0.2109341	105.5	0.2	0.2098874	104.9		0.2	JDB
7/25/2019	Titanium	226939.1	<0.005	0.2	0.2109341	105.5	0.2	0.2124567	106.2		0.1	JDB
7/26/2019	Titanium	227040.1	<2.5	0.2	0.2121079	106.1					1.6	JDB
7/25/2019	Vanadium	226939.1	<0.001	0.3	0.3076519	102.6	0.3	0.3104754	103.5		0.4	JDB
7/25/2019	Vanadium	227041.1	<0.001	0.3	0.3076519	102.6	0.3	0.2997157	99.9		0.6	JDB
7/26/2019	Vanadium	227040.1	<0.05	0.3	0.30789	102.6	15	15.291667	101.9		0.0	JDB
7/25/2019	Zinc	226939.1	<0.005	0.2	0.2091679	104.6	0.2	0.2081374	104.1		0.3	JDB
7/25/2019	Zinc	227041.1	<0.005	0.2	0.2091679	104.6	0.2	0.1851907	92.6		0.1	JDB
7/26/2019	Zinc	227040.1	<0.25	0.2	0.2074233	103.7	10	8.4881167	84.9		0.5	JDB

Code ***Code Description***

M4 The analysis of the spiked sample required a dilution such that the spike recovery calculation does not provide useful information. The associated blank spike recovery was acceptable.

T5 This parameter is not included in the Laboratory's LELAP Laboratory Scope of Accreditation.

Jonathan Barnhill
Quality Assurance Officer

05-Aug-19
Report Date

JOB 7-18-19

Figure 1 – Chain of Custody

American Electric Power
Analytical Chemistry Services

CHAIN OF CUSTODY

COC 40143

OPCO/PROJECT NAME	FAX NO.
H.W Pirkey Power Plant	(903) 927-5840
CONTACT PERSON(Please Print)	**PHONE NO.**
Ron Franklin, Randy Rountree, Ben House	(903) 927-5889

SAMPLER(SIGNATURE): Ron Franklin

Metals to analyze for each (Totals, SPLP, Deionized) B, Ca, Sb, Ag, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Sc, Te and any other metals in calibration.

DATE	TIME	SAMPLE SOURCE & DESCRIPTION	SAMPLE ID	COMP	GRAB	NUMBER OF CONTAINERS	Total Metals (See for metals)	SPLP	Deionized water leach	pH				Lab Number	REMARKS
7-17-19	1800	Pirkey Sludge FGD	Dirt Sludge		✓		✓	✓	✓	✓				227040-42	Terry Wehling
" " "	1800	" " "	Dirt Sludge		✓		✓	✓	✓	✓				227043-45	

RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY	RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY
RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY	RELINQUISHED BY (SIGN)	DATE/TIME	RECEIVED BY
RECEIVED FOR LABORATORY: Jonathan Barnhill 7-18-19 1036			COMMENTS		

SHREVEPORT CHEMICAL LABORATORY

502 N. Allen Ave.
Shreveport, LA 71101
Phone 318-673-3802
FAX 318-673-3960

PROJECT RECEIPT FORM

Container Type	Delivery Type
Ice Chest (Bag) Action Pak PCB Mailer Bottle	UPS FEDEX US Mail (Walk in) Shuttle
Other	Other
	Tracking #

Client: Terry Wehling
Received By: JDB
Received Date: 7-18-19
Open Date: 7-18-19

Sample Matrix: DGA PCB Oil Water Oil (Soil)
Solid Liquid Other

Container Temp Read: ~~NA~~
Thermometer Serial #F04103
Correction Factor
Corrected Temp

Project I.D.

Were samples received on ice? YES (NO)

Did container arrive in good condition? (YES) NO

Was sample documentation received? (YES) NO

Was documentation filled out properly? (YES) NO

Were samples labeled properly? (YES) NO

Were correct containers used? (YES) NO

Were the pH's of samples appropriately checked? YES (NO)

Total number of sample containers: 2

Was any corrective action taken? (NO)

Person Contacted
Date & Time

Comments

ATTACHMENT E
AD-33 Soil Samples Analytical Report

Client:	Burns & McDonnell	**Date:**	*08-Jun-18*
Project:	106665 PIRKEY	**Work Order:**	1805081
Sample ID:	AD-33 (11')	**Lab ID:**	1805081-15
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/30/2018 16:05	**Percent Moisture:**	18.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Gamma Spectroscopy Results			**SOP 713**	Prep Date: **5/17/2018**		PrepBy: **MRL**
Ra-226	**1.29 (+/- 0.3)**	G	**0.47**	**pCi/g**	NA	6/7/2018 08:54
Ra-228	**1.36 (+/- 0.47)**	G,TI	**0.7**	**pCi/g**	NA	6/7/2018 08:54
ICPMS Metals			**SW6020**	Prep Date: **5/14/2018**		PrepBy: **JML**
ARSENIC	**4.9**		**0.23**	**MG/KG**	10	5/17/2018 01:02
BARIUM	**20**		**0.57**	**MG/KG**	10	5/17/2018 01:02
BERYLLIUM	**0.15**		**0.057**	**MG/KG**	10	5/17/2018 01:02
CADMIUM	ND		0.23	MG/KG	10	5/17/2018 01:02
COBALT	**0.61**		**0.57**	**MG/KG**	10	5/17/2018 01:02
CHROMIUM	**9.5**		**1.1**	**MG/KG**	10	5/17/2018 01:02
LITHIUM	**0.25**	J	**2.3**	**MG/KG**	10	5/17/2018 01:02
MOLYBDENUM	**0.18**	J	**0.23**	**MG/KG**	10	5/17/2018 01:02
LEAD	**3.2**		**0.23**	**MG/KG**	10	5/17/2018 01:02
ANTIMONY	**0.086**	J	**0.11**	**MG/KG**	10	5/17/2018 01:02
SELENIUM	**0.81**	J	**1.1**	**MG/KG**	10	5/17/2018 01:02
THALLIUM	**0.044**		**0.011**	**MG/KG**	10	5/17/2018 01:02
Ion Chromatography			**EPA300.0**	Prep Date: **5/10/2018**		PrepBy: **HMA**
FLUORIDE	ND		1	MG/KG	1	5/11/2018 21:43
Mercury			**SW7471**	Prep Date: **5/11/2018**		PrepBy: **AJL2**
MERCURY	**0.0026**	J	**0.039**	**MG/KG**	1	5/11/2018 16:07

Client:	Burns & McDonnell	**Date:**	*08-Jun-18*
Project:	106665 PIRKEY	**Work Order:**	1805081
Sample ID:	AD-33 (21')	**Lab ID:**	1805081-16
Legal Location:		**Matrix:**	SOIL
Collection Date:	4/30/2018 16:05	**Percent Moisture:**	20.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Gamma Spectroscopy Results			**SOP 713**	Prep Date: **5/17/2018**		PrepBy: **MRL**
Ra-226	0.7 (+/- 0.22)	LT	0.37	pCi/g	NA	6/7/2018 08:16
Ra-228	**0.72 (+/- 0.5)**	NQ	**0.67**	**pCi/g**	NA	6/7/2018 08:16
ICPMS Metals			**SW6020**	Prep Date: **5/14/2018**		PrepBy: **JML**
ARSENIC	**12**		**0.25**	**MG/KG**	10	5/17/2018 01:05
BARIUM	**9.1**		**0.62**	**MG/KG**	10	5/17/2018 01:05
BERYLLIUM	**0.09**		**0.062**	**MG/KG**	10	5/17/2018 01:05
CADMIUM	ND		0.25	MG/KG	10	5/17/2018 01:05
COBALT	**0.64**		**0.62**	**MG/KG**	10	5/17/2018 01:05
CHROMIUM	**4.6**		**1.2**	**MG/KG**	10	5/17/2018 01:05
LITHIUM	**0.24**	J	**2.5**	**MG/KG**	10	5/17/2018 01:05
MOLYBDENUM	**0.061**	J	**0.25**	**MG/KG**	10	5/17/2018 01:05
LEAD	**1.5**		**0.25**	**MG/KG**	10	5/17/2018 01:05
ANTIMONY	**0.19**		**0.12**	**MG/KG**	10	5/17/2018 01:05
SELENIUM	**0.42**	J	**1.2**	**MG/KG**	10	5/17/2018 01:05
THALLIUM	**0.03**		**0.012**	**MG/KG**	10	5/17/2018 01:05
Ion Chromatography			**EPA300.0**	Prep Date: **5/10/2018**		PrepBy: **HMA**
FLUORIDE	ND		1	MG/KG	1	5/11/2018 22:29
Mercury			**SW7471**	Prep Date: **5/11/2018**		PrepBy: **AJL2**
MERCURY	**0.0038**	J	**0.04**	**MG/KG**	1	5/11/2018 16:09

ATTACHMENT F

AD-33 Boring Log and Well Installation Diagram

Hydrex ENVIRONMENTAL, INC.

Monitor Well

Monitor Well No.: AD-33

PROJECT INFORMATION

PROJECT:	Pirkey Power Plant
PROJECT NO.:	I-04-1021
LOGGED BY:	Jeffrey D. Sammons, P.G.
SUPERVISING PG:	Jeffrey D. Sammons, P.G.
COMPLETION:	12/11/2015
DEVELOPMENT:	12/16/2015
SITE LOCATION:	2400 FM 3251, Hallsville, Texas
WELL OWNER:	AEP

DRILLING INFORMATION

DRILLER:	Buford Collier
DRILLER'S LICENSE NO.:	50099
RIG TYPE:	Geoprobe 3230DT
METHOD OF DRILLING:	Hollow Stem Auger
SAMPLING METHODS:	Split Core
SURFACE ELEVATION:	382.37 (Top of Casing)
HOLE DIAMETER:	8.25"
LATITUDE	32 27' 38.70" LONGITUDE 94 28' 15.82"

STATE OF TEXAS — JEFFREY D. SAMMONS — GEOLOGY #10070 — LICENSED PROFESSIONAL GEOSCIENTIST — JDS 1.21.16

TBPG No. 50027

▼ Water Level Upon Installation ▽ Water Level at Time of Drilling ■ Geotechnical Lab Sample

DESCRIPTION	USCS	SOIL SYMBOLS	DEPTH	WATER LEVEL	SAMPLE	% MOISTURE	% FINES	LL	PL	PI	WELL CONSTRUCTION
			-4 to 30								Locking Well Casing Cover; Locking Well Cap; Protective Well Casing; Concrete Pad; Ground Surface; Cement
CLAYEY SAND: very fine to fine sand, some silt, dark brownish black and brown, very moist	SC		0 to 1								
FAT CLAY: trace sand and silt, reddish brown and light gray - some iron ore gravel at 2.0' - some silt and ironstone in thin seams at 2.5', light gray, yellowish brown, and reddish brown,	CH		1 to 8	▼		29	93	74	32	42	Bentonite; 2" Sch. 40 PVC Riser
CLAYEY SAND: interbedded clays and fine to very fine sand and silt, some iron ore gravel, light reddish brown and light gray - some clay and trace of iron ore gravel at 11', light gray and reddish brown, moist - trace clay at 13', thin saturated ironstone and gravel seams at 13' to 16', reddish brown, light reddish brown, and light gray - dark reddish brown at 15' - clay lense at 15.5' to 16.5', light reddish brown and light gray	SC		8 to 16			21	35	35	23	12	
SILTY CLAYEY SAND: very fine to fine sand, reddish brown, very moist to saturated - some clay lenses and iron ore gravel at 20' - clayey at 20.5' to 21' - trace clay at 21', light gray, saturated - some iron ore gravel at 28', reddish brown, very moist	SM-SC		16 to 29	▽		23	19	27	18	9	20/40 Silica Sand; 0.010" Slotted Sch. 40 PVC Well Screen
CLAYEY SAND: very fine to fine sand, dark gray and gray, moist	SC		29 to 30			23	30	25	18	7	PVC Bottom Cap

NOTES: This log should not be used separately from the original report. Not all USCS descriptors were laboratory verified.

ATTACHMENT G
Certification by a Qualified Professional Engineer

CERTIFICATION BY A QUALIFIED PROFESSIONAL ENGINEER

I certify that the above described alternative source demonstration is appropriate for evaluating the groundwater monitoring data for the CCR management area at the former Pirkey FGD Stackout Area and that the requirements of 30 TAC §352.951(e) have been met.

Beth Ann Gross
Printed Name of Licensed Professional Engineer

Beth Ann Gross
Signature

Geosyntec Consultants
2039 Centre Pointe Blvd, Suite 103
Tallahassee, Florida 32308

Texas Registered Engineering Firm
No. F-1182

79864	Texas	December 23, 2025
License Number	Licensing State	Date

APPENDIX 4

Notices for Monitoring Program Transitions

Pirkey Plant

Notice of Assessment Monitoring Program Establishment

FGD Stackout Area

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

APPENDIX 5

Well Installation/Decommissioning Logs – NA

APPENDIX 6

Groundwater monitoring Field and Laboratory Reports

CCR Groundwater Monitoring Well Inspection Form

Facility: Pilgrim

Sampling Period: Feb 2025

Sampling Contractor: Eagle

Signature:

Well No.	Well Locked	Fastener and Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Protective Cover, Barriers and Pad in Good Shape	Well Properly Labeled	Well Cap Present and Vented*	Comments
B-2				✓		✓	✓	lid will not shut
AD-12	✓	✓	✓	✓	✓	✓	✓	
AD-32	✓	✓	✓	✓	✓	✓	✓	
AD-31	✓	✓	✓	✓	✓	✓	✓	
AD-30	✓	✓	✓	✓	✓	✓	✓	
AD-26	✓	✓	✓	✓	✓	✓	✓	
AD-25	✓	✓	✓	✓	✓	✓	✓	
AD-28	✓	✓	✓	✓	✓	✓	✓	
AD-3	✓	✓	✓	✓	✓	✓	✓	

*Not all wells will be vented, especially flush mounted wells. If that is the case, please note "flush mount well" in the comments.

CCR Groundwater Monitoring Well Inspection Form

Facility: AEP Pinney PP

Sampling Period: February 2025

Sampling Contractor: EAGLE

Signature: KAM

Well No.	Well Locked	Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Housing, and Pad in Good Shape	Well Properly Labeled	Well cap present	Comments
AD-13	✓	✓	✓	✓	✓	✓	✓	
AD-18	✓	✓	✓	✓	✓	✓	✓	
AD-04	✓	✓	✓		✓	✓	✓	NO GOOD ACCESS TO WELL LOCATION STEEP HILL
B-3	✓	✓	✓	✓	✓		✓	NEEDS LABEL
AD-7R	✓	✓	✓	✓	✓		✓	NO LABEL
AD-22	✓	✓	✓	✓	✓	✓	✓	
AD-33	✓	✓	✓	✓	✓	✓	✓	
AD-02	✓	✓	✓	✓	✓	✓	✓	
AD-17	✓	✓	✓	✓	✓	✓	✓	

Instructions: Complete form and submit to AEP Environmental Services with Field Data. Place check mark for items that are satisfactory. Unsatisfactory items should be left blank with a note in the comments section on what needs to be remedied.

Facility Name	AEP Pickaway PP
Sample by	Kenny McDonald

Sample Location ID	AD-02

Depth to water, feet (TOC)	15.31
Measured Total Depth, feet (TOC)	40.36

Depth to water date	02/04/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1006	15.40	220	4.37	722	1.1	2.71	411	18.37		
1011	15.41	220	4.35	725	0.6	2.28	414	18.40		
1016	15.41	220	4.35	729	0.8	2.25	420	18.42		
1021	15.44	220	4.34	731	0.4	2.23	417	18.42		

Total volume purged	
Sample appearance	clear
Sample time	1023
Sample date	02/04/25

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-3

Depth to water, feet (TOC)	33.98
Measured Total Depth, feet (TOC)	57.81

Depth to water date	2-4-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1032	34.22	220	4.55	105	22.3	1.00	413	21.71		
1037	34.31	220	4.57	106	22.7	0.48	400	21.18		
1042	34.39	220	4.58	105	8.2	0.93	394	20.82		
1047	34.49	220	4.57	104	8.4	0.91	390	20.67		

Total volume purged	
Sample appearance	clear
Sample time	1045
Sample date	2-4-25

Facility Name	AEP Pirkey PP
Sample by	Kenny McDonald

Sample Location ID	AD-04

Depth to water, feet (TOC)	10.93
Measured Total Depth, feet (TOC)	47.29

Depth to water date	02/03/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0941	10.95	190	5.03	84	10.6	4.13	436	18.52		
0946	10.95	190	4.97	87	9.4	2.87	436	18.59		
0951	10.96	190	4.95	91	9.0	2.92	430	18.60		
0956	10.95	190	4.94	94	9.2	2.94	427	18.63		

Total volume purged	
Sample appearance	CLEAR
Sample time	0958
Sample date	02/03/25

Facility Name	AEP Pirkam PP
Sample by	Kimm McDonald

Sample Location ID	AD-7R

Depth to water, feet (TOC)	5.75
Measured Total Depth, feet (TOC)	33.03

Depth to water date	02/03/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1052	5.91	230	5.08	234	1.4	3.21	287	17.46		
1057	5.87	230	5.23	238	0.8	2.26	285	17.50		
1102	5.86	230	5.26	240	0.0	2.22	280	17.54		
1107	5.86	230	5.27	236	0.5	2.21	279	17.56		
Qr										

Total volume purged	
Sample appearance	Clear
Sample time	1109
Sample date	02/03/25

Facility Name	Pixley
Sample by	Hamilton

Sample Location ID	AD-12

Depth to water, feet (TOC)	7.22
Measured Total Depth, feet (TOC)	52.00

Depth to water date	2-3-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
912	7.71	300	3.59	44	3.0	1.16	277	19.40		
917	7.89	300	3.22	41	3.3	1.05	347	19.67		
922	7.98	300	3.14	40	3.1	1.03	361	19.77		

Total volume purged	
Sample appearance	clear
Sample time	924
Sample date	2-3-25

Facility Name	AEP Pinch PP
Sample by	Kenny McDonald

Sample Location ID	AD-13

Depth to water, feet (TOC)	10.34
Measured Total Depth, feet (TOC)	40.70

Depth to water date	02/03/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0756	10.61	180	5.69	386	15.6	4.87	218	18.21		
0801	10.63	180	5.71	379	11.3	3.29	209	18.24		
0806	10.64	180	5.71	377	8.2	3.06	209	18.27		
0811	10.68	180	5.74	377	8.0	3.10	209	18.30		
0816	10.70	180	5.72	375	8.4	3.07	206	18.30		

Total volume purged	
Sample appearance	Reddish Brown tint
Sample time	0818
Sample date	02/03/25

Duplicate 0818

Facility Name	AEP PIRKEY PP
Sample by	KENNY McDONALD

Sample Location ID	AD-17

Depth to water, feet (TOC)	19.04
Measured Total Depth, feet (TOC)	33.05

Depth to water date	02/04/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1107	19.13	206	4.12	80	8.3	1.87	422	19.84		
1112	19.13	206	4.16	84	7.9	1.85	427	19.88		
1117	19.15	206	4.19	87	7.6	1.87	431	19.91		

Total volume purged	
Sample appearance	CLEAR
Sample time	1119
Sample date	02/04/25

Facility Name	ACP PINAM PP
Sample by	KIMMY McDONALD

Sample Location ID	AD-18

Depth to water, feet (TOC)	3.82
Measured Total Depth, feet (TOC)	28.42

Depth to water date	02/03/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0917	4.91	96	4.61	60	13.7	2.61	422	18.91		
0922	5.76	96	4.57	56	14.3	2.48	417	19.03		
			WOWL Head							

Total volume purged	
Sample appearance	CLEAR
Sample time	0804
Sample date	02/04/25

Facility Name	ACP Pinnacle PP
Sample by	Kenny McDonald

Sample Location ID	AD-22

Depth to water, feet (TOC)	6.95
Measured Total Depth, feet (TOC)	32.70

Depth to water date	02/03/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1204	7.02	180	4.20	796	0.8	2.03	342	18.11		
1209	7.02	180	4.21	802	1.1	1.98	346	18.13		
1214	7.04	180	4.22	805	0.7	1.97	348	18.13		

Total volume purged	
Sample appearance	Clear
Sample time	1216
Sample date	02/03/25

Facility Name	Pickett
Sample by	Matt Bonilla

Sample Location ID	AD-25

Depth to water, feet (TOC)	8.57
Measured Total Depth, feet (TOC)	27.38

Depth to water date	2-4-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
851	8.81	125	3.51	769	11.4	1.14	351	20.66		
856	8.89	125	3.58	739	8.2	0.98	364	21.00		
901	8.91	125	3.61	741	8.3	0.90	276	21.09		
906	9.09	125	3.63	742	8.3	0.87	269	21.12		

Total volume purged	
Sample appearance	clear
Sample time	908
Sample date	2-4-25

Facility Name	Pinkey
Sample by	Hunt / Hamilton

Sample Location ID	AD-26

Depth to water, feet (TOC)	16.14
Measured Total Depth, feet (TOC)	42.73

Depth to water date	2-4-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
802	16.33	300	3.21	2,000	11.4	4.38	554	20.86		
807	16.51	300	3.78	2,100	8.8	1.49	523	21.06		
812	16.65	300	3.90	2,150	8.9	1.21	506	21.22		
817	16.78	300	3.94	2,250	8.8	1.13	498	21.31		

Total volume purged	
Sample appearance	clear
Sample time	819
Sample date	2-4-25

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-28

Depth to water, feet (TOC)	17.82
Measured Total Depth, feet (TOC)	38.59

Depth to water date	2-4-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
935	18.21	220	3.46	120	5.7	1.16	298	21.02		
940	18.31	220	3.51	113	3.0	1.03	343	20.89		
945	18.33	220	3.75	113	1.7	0.95	351	20.86		

Total volume purged	
Sample appearance	Clear
Sample time	947
Sample date	2-4-25

Facility Name	Pixley
Sample by	Hamilton

Depth to water, feet (TOC)	17.95
Measured Total Depth, feet (TOC)	42.71

Sample Location ID	AD-30
Depth to water date	2-3-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1152	18.06	300	3.48	320	99	0.62	405	23.54		
1157	18.06	300	3.44	323	54.6	0.67	388	23.33		
1202	18.06	300	3.98	323	32.2	0.64	377	23.05		
1207	18.06	300	3.97	322	21.2	0.61	371	22.95		
1212	18.06	300	3.97	321	9.9	0.54	367	22.88		
1217	18.06	300	3.96	320	9.9	0.58	364	22.71		

Total volume purged	
Sample appearance	clear
Sample time	1219
Sample date	2-3-25

Facility Name	Pinckney
Sample by	Matt Hamilton

Sample Location ID	AD-31

Depth to water, feet (TOC)	21.38
Measured Total Depth, feet (TOC)	37.32

Depth to water date	2-3-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1053	21.72	220	3.25	254	47.4	0.79	311	23.26		
1058	21.72	220	3.08	262	24.5	0.74	318	23.64		
1103	21.72	220	3.07	265	22.9	0.70	324	23.96		
1108	21.72	220	3.07	267	18.3	0.65	330	23.67		
1113	21.72	220	3.09	269	18.4	0.62	335	24.07		

Total volume purged	
Sample appearance	clear
Sample time	1115
Sample date	2-3-25

Facility Name	Pixley
Sample by	Matt / Hailey

Depth to water, feet (TOC)	14.44
Measured Total Depth, feet (TOC)	34.61

Sample Location ID	AD-32
Depth to water date	2-3-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
955	14.96	220	4.61	225	71.3	0.93	231	21.42		
1004	15.01	220	4.66	237	61.2	0.91	134	21.81		
1009	15.08	220	4.71	242	64.5	0.89	107	21.96		
1014	15.12	220	4.75	244	68.7	0.84	99	22.11		

Total volume purged	
Sample appearance	slightly turbid
Sample time	1016
Sample date	2-3-25

Facility Name	AEP PIKE PP
Sample by	KENNY McDONALD

Sample Location ID	AP-33

Depth to water, feet (TOC)	10.08
Measured Total Depth, feet (TOC)	32.50

Depth to water date	02/04/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0912	10.13	224	4.08	198	1.3	3.35	306	17.24		
0917	10.14	224	4.07	200	1.3	3.34	311	17.26		
0922	10.14	224	4.06	204	1.0	3.36	313	17.27		

Total volume purged	
Sample appearance	CLEAR
Sample time	0924
Sample date	02/04/25

Facility Name	Pinkey
Sample by	M-N Hamilton

Sample Location ID	B-2

Depth to water, feet (TOC)	15.25
Measured Total Depth, feet (TOC)	51.44

Depth to water date	2-3-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
830	15.65	300	4.67	233	9.2	0.74	327	19.56		
835	15.67	300	3.93	124	3.3	1.00	279	19.68		
840	15.68	300	4.00	121	2.1	0.98	268	19.73		

Total volume purged	
Sample appearance	clear
Sample time	842
Sample date	2-3-25

Duplicate
1333

Facility Name	AEP Pirkey PP
Sample by	Kimmy McDonald

Sample Location ID	B-3

Depth to water, feet (TOC)	10.30
Measured Total Depth, feet (TOC)	37.49

Depth to water date	02/03/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1035	11.21	102	4.97	189	5.7	2.13	371	18.47		
1040	12.36	102	5.01	194	4.9	2.06	352	18.53		
			Well Hold water level							

Total volume purged	
Sample appearance	Clear
Sample time	0845
Sample date	02/04/25

CCR Groundwater Monitoring Well Inspection Form

Facility: AEP Pirkey PP

Sampling Period: APRIL 2025

Sampling Contractor: EAGLE

Signature: KYM

Well No.	Well Locked	Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Housing, and Pad in Good Shape	Well Properly Labeled	Well cap present	Comments
AD-16	✓	✓	✓		✓	✓	✓	TRAIL NEEDS CLEANING
AD-13	✓	✓	✓	✓	✓	✓	✓	
AD-7R	✓	✓	✓	✓	✓	✓	✓	
AD-22	✓	✓	✓	✓	✓	✓	✓	
AD-33	✓	✓	✓	✓	✓	✓	✓	
AD-2	✓	✓	✓	✓	✓	✓	✓	
AD-36	✓	✓	✓	✓	✓	✓	✓	
AD-8	✓	✓	✓	✓	✓	✓	✓	
B-3	✓	✓	✓	✓	✓	✓	✓	
AD-18	✓	✓	✓	✓	✓	✓	✓	
AD-34	✓	✓	✓		✓	✓	✓	FENCE REPAIRS SIDE ACCESS OVER LANDFILL
AD-4	✓	✓	✓		✓	✓	✓	STEEP SLOPE ONLY ACCESS

Instructions: Complete form and submit to AEP Environmental Services with Field Data. Place check mark for items that are satisfactory. Unsatisfactory items should be left blank with a note in the comments section on what needs to be remedied.

CCR Groundwater Monitoring Well Inspection Form

Facility: Pirkey

Sampling Period: April 2-25

Sampling Contractor: Eagle

Signature: Matt Tull

Well No.	Well Locked	Fastener and Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Protective Cover, Barriers and Pad in Good Shape	Well Properly Labeled	Well Cap Present and Vented*	Comments
B-2		✓		✓	✓	✓	✓	lid will not close
AD-12	✓	✓	✓	✓	✓	✓	✓	
AD-32	✓	✓	✓	✓	✓	✓	✓	
AD-31	✓	✓	✓	✓	✓	✓	✓	
AD-3c	✓	✓	✓	✓	✓	✓	✓	
AD-17	✓	✓	✓	✓	✓	✓	✓	
AD-28	✓	✓	✓	✓	✓	✓	✓	
AD-3	✓	✓	✓	✓	✓	✓	✓	
AD-27	✓	✓	✓	✓	✓	✓	✓	
AD-26	✓	✓	✓	✓	✓	✓	✓	needs new lock
AD-25	✓	✓	✓	✓	✓	✓	✓	needs new lock
AD-23	✓	✓	✓	✓	✓	✓	✓	

*Not all wells will be vented, especially flush mounted wells. If that is the case, please note "flush mount well" in the comments.

Facility Name	AEP Pirkey PP
Sample by	Kenny McDonald

Sample Location ID	AD-2

Depth to water, feet (TOC)	16.45
Measured Total Depth, feet (TOC)	40.36

Depth to water date	04/22/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0916	16.51	220	3.93	732	1.1	1.99	424	21.31		
0921	16.52	220	3.95	749	0.8	1.97	424	21.24		
0926	16.52	220	3.96	758	0.6	1.93	422	21.20		
	16									

Total volume purged	
Sample appearance	Clear
Sample time	0928
Sample date	04/22/25

Facility Name	Pilcoy
Sample by	M-H Hamilton

Depth to water, feet (TOC)	33.91
Measured Total Depth, feet (TOC)	57.46

Sample Location ID	AD-3
Depth to water date	4.22.25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1030	33.82	220	4.89	124	10.6	1.05	432	22.53		
1035	33.90	220	4.72	123	5	1.09	433	21.58		
1040	33.94	220	4.74	123	4	1.00	416	21.41		
1045	34.09	220	4.75	123	3	0.97	410	21.34		

Total volume purged	
Sample appearance	Clear
Sample time	1047
Sample date	4.22.25

Facility Name	AGP Plant 1 PP
Sample by	Kerry McDonald

Sample Location ID	AO-4

Depth to water, feet (TOC)	14.82
Measured Total Depth, feet (TOC)	47.29

Depth to water date	04/23/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0945	14.92	180	4.09	88	13.7	2.97	410	22.28		
0950	14.94	180	4.02	106	15.3	2.04	413	22.31		
0955	14.95	180	4.00	107	15.0	1.99	415	22.31		
1000	14.97	180	3.99	111	14.8	1.97	418	22.31		

Total volume purged	
Sample appearance	Clear
Sample time	1002
Sample date	04/23/25

Facility Name	AEP Pirkey PP
Sample by	Kenny McDonald

Sample Location ID	AO-7R

Depth to water, feet (TOC)	6.83
Measured Total Depth, feet (TOC)	33.03

Depth to water date	04/21/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1046	6.85	218	4.21	231	8.2	2.80	222			
1051	6.85	218	4.20	230	4.6	1.77	225			
1056	6.85	218	4.18	230	4.5	1.73	227			
1101	6.87	218	4.18	226	4.2	1.71	229			

Total volume purged	
Sample appearance	Clear
Sample time	1103
Sample date	04/21/25

Facility Name	AEP Pirkey PP
Sample by	Kenny McDonald

Depth to water, feet (TOC)	11.88
Measured Total Depth, feet (TOC)	31.33

Sample Location ID	AP-08
Depth to water date	04/22/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1057	11.91	206	5.94	416	4.7	3.12	334	22.41		
1102	11.91	206	5.63	420	5.3	1.84	318	22.37		
1107	11.91	206	5.61	422	5.7	1.80	311	22.35		
1112	11.93	206	5.60	422	5.9	1.79	306	22.33		

Total volume purged	
Sample appearance	Clear
Sample time	1114
Sample date	04/22/25

Facility Name	Pinkey
Sample by	Mert / Hamilton

Sample Location ID	AD-12

Depth to water, feet (TOC)	12.47
Measured Total Depth, feet (TOC)	52.00

Depth to water date	4.21.21

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
923	12.61	300	3.50	42	6.4	1.32	313	20.75		
928	12.72	300	3.18	39	7.3	1.27	348	21.05		
933	12.80	300	3.12	38	7.4	1.21	364	21.33		
938	12.92	300	3.15	37	7.4	1.19	371	21.31		

Total volume purged	
Sample appearance	clear
Sample time	940
Sample date	4-21-21

Facility Name	AFP Pitney PP
Sample by	Kenny McDonald

Sample Location ID	AD-13

Depth to water, feet (TOC)	10.47
Measured Total Depth, feet (TOC)	40.70

Depth to water date	04/21/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0942	10.56	184	5.59	415	425	5.31	253	22.93		
0947	10.60	184	5.56	397	315	5.02	124	23.06		
0952	10.63	184	5.55	399	228	4.97	80	23.09		
0957	10.65	184	5.55	399	223	4.96	79	23.10		
1002	10.69	184	5.54	398	220	4.92	77	23.10		

Total volume purged	
Sample appearance	TURBID
Sample time	1004
Sample date	04/21/25

Facility Name	AEP Pinnacle PP
Sample by	Kenny McDonald

Sample Location ID	AD-16

Depth to water, feet (TOC)	15.96
Measured Total Depth, feet (TOC)	38.24

Depth to water date	04/21/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0852	15.55	180	4.51	304	10.2	0.87	358	21.84		
0857	15.55	180	4.53	297	9.8	0.86	360	21.79		
0902	15.55	180	4.53	291	10.1	0.83	364	21.77		

Total volume purged	
Sample appearance	Clear
Sample time	904
Sample date	04/21/25

Facility Name	Pilney
Sample by	M-tt Hamilton

Depth to water, feet (TOC)	21.13
Measured Total Depth, feet (TOC)	33.05

Sample Location ID	AD-17
Depth to water date	4-22-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
854	21.63	200	4.18	68	17.4	1.17	474	20.83		
859	21.65	200	3.76	66	4.9	1.19	513	20.41		
904	21.66	200	3.74	65	3.3	1.17	514	20.36		
909	21.66	200	3.73	64	2.9	1.16	514	20.37		

Total volume purged	
Sample appearance	clear
Sample time	911
Sample date	4-22-25

Facility Name	AEP Pirkey PP
Sample by	Kenny McDonald

Sample Location ID	AP-18

Depth to water, feet (TOC)	4.99
Measured Total Depth, feet (TOC)	28.42

Depth to water date	04/22/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1201	6.03	106	4.10	135	1.3	1.58	407	21.83		
1206	6.97	106	4.18	123	2.5	1.47	389	21.96		
				won't hold warm level						

Total volume purged	
Sample appearance	clear
Sample time	~~0901~~ 0901
Sample date	04/23/25

Facility Name	AEP Pigeon PP
Sample by	Kenny McDonald

Sample Location ID	AO-22

Depth to water, feet (TOC)	8.40
Measured Total Depth, feet (TOC)	32.70

Depth to water date	04/21/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1148	8.82	180	3.85	822	3.7	2.51	364	23.28		
1153	8.83	180	3.92	833	1.6	2.43	357	23.41		
1158	8.86	180	3.92	836	1.3	2.41	354	23.43		
1203	8.87	180	3.94	838	1.2	2.40	352	23.43		

Total volume purged	
Sample appearance	Clear
Sample time	1205
Sample date	04/21/25

Facility Name	Pixley
Sample by	M. Ft Hamilton

Sample Location ID	MW-23

Depth to water, feet (TOC)	29.66
Measured Total Depth, feet (TOC)	38.26

Depth to water date	4-23-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1035	29.89	220	4.18	199	14.4	0.96	306	21.71		
1040	29.91	220	4.25	103	78.9	0.99	315	21.47		
1045	29.92	220	4.24	85	60.2	0.96	322	21.39		
1050	29.93	220	4.25	84	47.2	0.91	330	21.37		
1055	29.93	220	4.26	82	48.5	0.89	334	21.42		

Total volume purged	
Sample appearance	Turbid
Sample time	1057
Sample date	4-23-25

Facility Name	Pitcay
Sample by	Matt Hamilton

Sample Location ID	AD-23

Depth to water, feet (TOC)	8.64
Measured Total Depth, feet (TOC)	27.38

Depth to water date	4-23-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
940	8.90	120	4.03	874	47.5	1.05	306	22.01		
945	9.01	120	4.21	739	23.5	1.04	278	21.74		
950	9.08	120	4.25	717	9.9	1.03	265	21.62		
955	9.16	120	4.27	710	9.5	1.04	258	21.56		

Total volume purged	
Sample appearance	Clear
Sample time	957
Sample date	4-23-25

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-26

Depth to water, feet (TOC)	15.67
Measured Total Depth, feet (TOC)	42.73

Depth to water date	4-23-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
856	16.08	300	3.47	2,060	6.4	1.41	467	21.43		
901	16.28	300	3.54	2,100	3.8	1.20	394	21.36		
906	16.35	300	3.57	2,110	4.7	1.16	390	21.44		

Total volume purged	
Sample appearance	clear
Sample time	908
Sample date	4-23-25

Facility Name	Pillow
Sample by	Matt Hamilton

Sample Location ID	AD-27

Depth to water, feet (TOC)	2.24
Measured Total Depth, feet (TOC)	40.07

Depth to water date	4-23-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
826	2.57	300	3.75	223	21.6	1.20	488	21.75		
831	2.64	300	3.53	238	11.3	1.15	498	21.57		
836	2.67	300	3.54	241	8.4	1.05	493	21.54		
841	2.69	300	3.55	243	8.3	1.01	490	21.53		

Total volume purged	
Sample appearance	clear
Sample time	843
Sample date	4-23-25

Facility Name	Pitney
Sample by	Mesa Hamilton

Sample Location ID	AD-28

Depth to water, feet (TOC)	19.01
Measured Total Depth, feet (TOC)	38.54

Depth to water date	4.22.25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
933	19.24	220	3.95	110	7.3	1.07	481	21.46		
938	19.41	220	3.80	113	4.9	1.18	459	20.86		
943	19.49	220	3.76	114	4.0	1.15	500	20.81		

Total volume purged	
Sample appearance	Clear
Sample time	945
Sample date	4.22.25

Facility Name	Pixley
Sample by	Matt / Hamilton

Sample Location ID	AD-30

Depth to water, feet (TOC)	19.59
Measured Total Depth, feet (TOC)	27.15

Depth to water date	4-22-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
803	19.74	220	4.55	300	45.2	1.01	450	21.01		
808	19.77	220	4.27	314	75.6	1.14	488	20.66		
813	19.79	220	4.23	316	82.0	1.08	492	20.52		
818	19.80	220	4.21	317	51.4	1.00	491	20.41		
823	19.81	220	4.21	317	22.1	0.85	489	20.47		
828	19.81	220	4.20	318	22.5	0.83	488	20.46		

Total volume purged	
Sample appearance	clear
Sample time	830
Sample date	4.22.25

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-31

Depth to water, feet (TOC)	21.16
Measured Total Depth, feet (TOC)	37.32

Depth to water date	4.21.25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1103	21.34	220	3.21	253	38.4	1.03	322	24.26		
1108	21.53	220	3.14	251	26.2	0.99	3-1	24.23		
1113	21.55	220	3.12	264	26.2	0.88	295	24.21		
1118	21.56	220	3.11	270	26.3	0.86	295	24.28		

Total volume purged	
Sample appearance	clear
Sample time	1120
Sample date	4-21-25

Facility Name	Pinney
Sample by	Matt Hamilton

Sample Location ID	AD-32

Depth to water, feet (TOC)	15.71
Measured Total Depth, feet (TOC)	34.65

Depth to water date	4-21-21

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1012	16.37	220	4.69	231	42	1.068	269	21.46		
1017	16.51	220	4.81	241	25	0.99	148	21.54		
1022	16.62	220	4.85	251	36	0.85	121	21.78		
1027	16.70	220	4.84	252	38	0.77	114	22.35		

Total volume purged	
Sample appearance	~~Clear~~ Slightly turbid
Sample time	1029
Sample date	4-21-21

Facility Name	AEP Pinnacle PP
Sample by	K Gray McDonald

Sample Location ID	AO-33

Depth to water, feet (TOC)	10.58
Measured Total Depth, feet (TOC)	32.50

Depth to water date	04/22/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0753	10.63	214	3.73	266	0.0	1.97	446	21.05		
0758	16.64	214	3.70	247	0.0	1.93	459	20.94		
0803	10.64	214	3.69	246	0.0	1.91	467	20.92		
0808	10.63	214	3.69	241	0.0	1.90	478	20.91		

Total volume purged	
Sample appearance	Clear
Sample time	0810
Sample date	04/22/25

DUPLICATE-1 1200

Facility Name	AEP PIRKEY PP
Sample by	Kenny McDonald

Sample Location ID	AD-34

Depth to water, feet (TOC)	TOC
Measured Total Depth, feet (TOC)	26.05

Depth to water date	04/23/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0754	0.52	118	3.86	1490	1.2	0.97	423	22.03		
0759	0.60	118	3.91	1500	0.8	0.93	428	21.95		
0804	0.63	118	3.92	1520	0.5	0.91	431	21.84		

Total volume purged	
Sample appearance	Clear
Sample time	0806
Sample date	04/23/25

Facility Name	AEP Pilgrim PP
Sample by	Kenny McDonald

Sample Location ID	AD-36

Depth to water, feet (TOC)	5.61
Measured Total Depth, feet (TOC)	17.10

Depth to water date	04/22/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1009	5.69	172	4.47	109	2.8	1.74	364	22.41		
1014	5.69	172	4.48	99	1.9	1.42	378	22.50		
1019	5.72	172	4.48	97	1.6	1.38	381	22.52		
1024	5.73	172	4.48	96	1.7	1.37	384	22.55		

Total volume purged	
Sample appearance	Clear
Sample time	1026
Sample date	04/22/25

Facility Name	Pilkey
Sample by	Matt Hamilton

Sample Location ID	B-2

Depth to water, feet (TOC)	17.94
Measured Total Depth, feet (TOC)	51.44

Depth to water date	4-21-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
822	18.36	300	4.25	163	16.0	0.89	332	14.38		
827	18.48	300	4.02	118	4.8	1.24	316	19.56		
832	18.42	300	4.02	114	4.7	1.20	311	14.64		
837	18.43	300	4.03	112	4.6	1.18	310	19.69		

Total volume purged	
Sample appearance	clear
Sample time	839
Sample date	4-21-25

Duplicate

1222

Facility Name	AFP Pinkney PP
Sample by	Kenny McDonald

Sample Location ID	B-3

Depth to water, feet (TOC)	12.84
Measured Total Depth, feet (TOC)	37.49

Depth to water date	04/22/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1141	13.73	104	5.45	192	8.7	2.41	350	21.38		
1146	14.92	104	5.48	197	4.6	2.36	342	21.29		
			WON'T HOLD WATER LEVEL							

Total volume purged	
Sample appearance	CLEAR
Sample time	1051
Sample date	04/23/25

CCR Groundwater Monitoring Well Inspection Form

Facility: AEP Pirkm PP

Sampling Period: September 2025

Sampling Contractor: Engle

Signature: [signature]

Well No.	Well Locked	Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Housing, and Pad in Good Shape	Well Properly Labeled	Well cap present	Comments
AD-13	✓	✓	✓	✓	✓	✓	✓	
AD-7R	✓	✓	✓	✓	✓	✓	✓	
AD-22	✓	✓	✓	✓	✓	✓	✓	
AD-33	✓	✓	✓	✓	✓	✓	✓	
AD-34	✓	✓	✓	✓	✓	✓	✓	
AD-36	✓	✓	✓	✓	✓	✓	✓	
AD-8	✓	✓	✓	✓	✓	✓	✓	
AD-2	✓	✓	✓	✓	✓	✓	✓	
B-3	✓	✓	✓		✓	✓	✓	NEEDS WEEDEATING
AD-18	✓	✓	✓	✓	✓	✓	✓	
AB-4	✓	✓	✓		✓	✓	✓	NO GOOD ACCESS
AD-16	✓	✓	✓		✓	✓	✓	TRAIL NEEDS MAINTENANCE

Instructions: Complete form and submit to AEP Environmental Services with Field Data. Place check mark for items that are satisfactory. Unsatisfactory items should be left blank with a note in the comments section on what needs to be remedied.

CCR Groundwater Monitoring Well Inspection Form

Facility: Pilkey

Sampling Period: Sept 2025

Sampling Contractor: Eagle

Signature:

Well No.	Well Locked	Fastener and Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Protective Cover, Barriers and Pad in Good Shape	Well Properly Labeled	Well Cap Present and Vented*	Comments
B-2					✓	—	—	Protective Casing will not close
AD-12	✓	—	—	✓	—	—	✓	
AD-32	✓	—	—	✓	—	—	✓	
AD-31	✓	✓	—	✓	—	—	—	
AD-30	✓	✓	✓	—	—	—	—	
AD-28	✓	—	—	—	✓	—	✓	
AD-17	✓	✓	—	—	—	—	✓	
AD-3	—	—	—	—	—	—	—	
AD-27	✓	—	—	—	—	—	✓	
AD-26	✓	—	✓	✓	✓	✓	—	
AD-25	—	—	✓	—	—	✓	—	
AD-23	✓	—	—	—	—	—	—	

*Not all wells will be vented, especially flush mounted wells. If that is the case, please note "flush mount well" in the comments.

Facility Name	AEP Pirkey PP
Sample by	Kenny McDonald

Sample Location ID	AD-2

Depth to water, feet (TOC)	16.52
Measured Total Depth, feet (TOC)	40.36

Depth to water date	09/09/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1014	16.63	220	4.13	720	1.0	1.94	406	21.27		
1019	16.62	220	4.10	724	0.8	1.80	410	21.32		
1024	16.62	220	4.10	728	0.8	1.78	414	21.33		
1029	16.61	220	4.09	728	0.8	1.77	420	21.36		

Total volume purged	
Sample appearance	Clear
Sample time	1031
Sample date	09/09/25

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-3

Depth to water, feet (TOC)	36.42
Measured Total Depth, feet (TOC)	57.49

Depth to water date	4.6.21

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1104	36.76	220	4.91	129	46.2	1.35	316	25.08		
1109	36.85	220	4.73	131	49.9	0.42	282	22.58		
1114	36.93	220	4.72	131	49.5	0.39	259	22.18		
1119	36.99	220	4.71	132	49.9	0.37	255	22.10		

Total volume purged	
Sample appearance	~~clear~~ slightly turbid
Sample time	1121
Sample date	4.6.21

Facility Name	AEP PIRKEY PP
Sample by	KENNY McDONALD

Sample Location ID	AD-4

Depth to water, feet (TOC)	17.86
Measured Total Depth, feet (TOC)	47.29

Depth to water date	09/10/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0941	17.90	190	4.82	120	30.1	2.42	397	23.17		
0946	17.91	190	4.84	116	22.4	2.07	408	23.20		
0951	17.91	190	4.85	112	50.6	1.96	411	23.24		
0956	17.91	190	4.85	112	50.2	1.92	413	23.21		
1001	17.92	190	4.86	110	50.8	1.89	416	23.19		

Total volume purged	
Sample appearance	TURBID
Sample time	1003
Sample date	09/10/25

Facility Name	AEP Pinnacle PP
Sample by	Kimmy McDonald

Sample Location ID	AD-7R

Depth to water, feet (TOC)	8.26
Measured Total Depth, feet (TOC)	33.03

Depth to water date	09/08/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0919	8.31	230	4.78	236	2.2	1.93	247	22.13		
0924	8.31	230	4.79	241	0.4	1.64	244	22.46		
0929	8.31	230	4.82	245	0.0	1.60	246	22.51		
0934	8.32	230	4.81	247	0.2	1.59	250	22.53		

Total volume purged	
Sample appearance	Clear
Sample time	0936
Sample date	09/08/25

Facility Name	AEP Pickaway PP
Sample by	Kenny McDonald

Sample Location ID	AD-8

Depth to water, feet (TOC)	12.71
Measured Total Depth, feet (TOC)	31.33

Depth to water date	09/09/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0928	12.76	214	5.87	452	4.2	2.13	284	23.07		
0933	12.77	214	5.89	447	3.6	1.64	276	23.11		
0938	12.78	214	5.91	443	3.3	1.60	276	23.15		
0943	12.78	214	5.93	443	3.5	1.59	271	23.17		

Total volume purged	
Sample appearance	Clear
Sample time	0945
Sample date	09/09/25

Facility Name	Pixley
Sample by	Matt/ Hamilton

Sample Location ID	AD-12

Depth to water, feet (TOC)	13.87
Measured Total Depth, feet (TOC)	52.00

Depth to water date	9-8-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
921	14.12	300	3.48	42	19.5	1.74	447	23.37		
926	14.13	300	3.40	42	9.9	1.25	452	23.75		
931	14.13	300	3.44	42	7.2	1.25	448	23.78		
936	14.14	300	3.47	42	7.3	1.28	445	23.99		

Total volume purged	
Sample appearance	Clear
Sample time	938
Sample date	9-8-25

Facility Name	AEP Pickaway PP
Sample by	Kenny McDonald

Sample Location ID -	AD-13

Depth to water, feet (TOC)	12.68
Measured Total Depth, feet (TOC)	40.70

Depth to water date	09/08/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0815	12.75	180	5.75	434	11.6	4.71	164	22.43		
0820	12.81	180	5.79	424	10.9	4.43	128	22.36		
0825	12.84	180	5.81	426	11.1	4.39	123	22.38		
0830	12.88	180	5.80	421	10.8	4.37	119	22.41		

Total volume purged	
Sample appearance	Clear
Sample time	0832
Sample date	09/08/25

DUPLICATE 1200

Facility Name	AFP Pitman PP
Sample by	Kenny McPintch

Sample Location ID	AD-16

Depth to water, feet (TOC)	18.65
Measured Total Depth, feet (TOC)	38.24

Depth to water date	09/10/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1048	18.11	200	4.73	260	12.4	1.37	350	23.21		
1053	18.10	200	4.73	263	11.8	1.09	352	23.30		
1058	18.10	200	4.76	268	11.6	1.05	356	23.31		
1103	18.11	200	4.74	271	11.6	1.03	361	23.35		

Total volume purged	
Sample appearance	Clear
Sample time	1105
Sample date	09/10/25

Facility Name	D. Ilcox
Sample by	Staff Hamilton

Sample Location ID	AD-17

Depth to water, feet (TOC)	22.54
Measured Total Depth, feet (TOC)	33.05

Depth to water date	9-9-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1003	22.64	220	3.75	108	56.3	1.14	401	22.92		
1008	22.67	220	3.67	109	38.3	0.51	404	23.25		
1013	22.68	220	3.65	127	14.3	0.52	401	23.35		
1018	22.69	220	3.66	110	6.5	0.53	397	23.45		
1023	22.69	220	3.67	108	6.5	0.54	395	23.52		

Total volume purged	
Sample appearance	Clear
Sample time	1025
Sample date	9-9-25

Facility Name	ATP Pinney PP
Sample by	K Kinney/McDonald

Sample Location ID	AD-18

Depth to water, feet (TOC)	7.99
Measured Total Depth, feet (TOC)	28.42

Depth to water date	09/09/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1121	8.37	102	4.20	98	6.4	2.03	357	22.83		
1126	9.24	102	4.18	87	5.1	1.89	364	22.94		
				WON'T HOLD WATER LEVEL						

Total volume purged	
Sample appearance	SLIGHTLY TURBID
Sample time	0842
Sample date	09/10/25

Facility Name	AFP Pinney PP
Sample by	Kenny McDonald

Sample Location ID	AD-22

Depth to water, feet (TOC)	10.28
Measured Total Depth, feet (TOC)	32.70

Depth to water date	04/08/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1003	10.36	200	4.31	746	0.8	2.51	341	22.83		
1008	10.44	200	4.33	752	0.2	2.16	344	22.85		
1013	10.57	200	4.31	759	0.0	2.13	346	22.89		
1018	10.63	200	4.30	762	0.0	2.12	347	22.93		

Total volume purged	
Sample appearance	CLEAR
Sample time	1020
Sample date	09/08/25

Facility Name	Pillsley
Sample by	Matt Hamilton

Sample Location ID	AD.23

Depth to water, feet (TOC)	29.36
Measured Total Depth, feet (TOC)	38.26

Depth to water date	9.10.25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1046	29.53	220	4.10	140	90	2.72	281	26.82		
1051	29.54	220	4.11	95	145	1.75	294	25.68		
1056	29.60	220	4.10	88	117	1.61	303	25.42		
1101	29.60	220	4.10	87	70.6	1.28	305	25.20		
1106	29.61	220	4.11	89	52.7	1.21	301	25.11		
1111	29.61	220	4.10	90	37.2	1.04	311	25.15		
1116	29.62	220	4.09	91	34.2	1.03	313	25.32		
1121	29.62	220	4.04	91	34.5	0.99	314	25.61		

Total volume purged	
Sample appearance	Clear
Sample time	1123
Sample date	9.10.25

Facility Name	Pixley
Sample by	Matt Manilla

Sample Location ID	AD-25

Depth to water, feet (TOC)	10.31
Measured Total Depth, feet (TOC)	21.38

Depth to water date	9-10-23

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
959	10.64	120	4.32	685	47.8	2.11	278	27.16		
1004	10.72	120	4.52	806	48.3	0.38	222	26.85		
1009	10.80	120	4.56	792	48.4	0.41	211	26.54		
1014	10.84	120	4.60	784	46.8	0.44	208	26.38		

Total volume purged	
Sample appearance	Clear
Sample time	1016
Sample date	9-10-23

Facility Name	Chatt Hills Pitney
Sample by	Matt Hamilton

Sample Location ID	AD-26

Depth to water, feet (TOC)	15.65
Measured Total Depth, feet (TOC)	42.73

Depth to water date	9-10-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
854	16.04	300	3.38	1,990	10.4	1.43	425	23.4		
859	16.15	300	3.50	2,020	4.9	0.70	395	22.87		
904	16.19	300	3.53	2,050	3.5	0.46	386	22.97		

Total volume purged	
Sample appearance	Clear
Sample time	906
Sample date	9-10-25

Facility Name	Pixley
Sample by	Matt Hamlin

Sample Location ID	AD.27

Depth to water, feet (TOC)	21.69
Measured Total Depth, feet (TOC)	46.07

Depth to water date	9-10-11

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
818	21.91	300	3.56	233	36.6	1.52	447	22.71		
823	21.98	300	3.31	244	28.3	0.64	451	22.23		
828	22.02	300	3.25	256	9.9	1.57	449	22.36		
823	22.03	300	3.28	259	9.9	1.54	448	22.39		

Total volume purged	
Sample appearance	Clear
Sample time	825
Sample date	9-10-11

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-28

Depth to water, feet (TOC)	19.33
Measured Total Depth, feet (TOC)	38.51

Depth to water date	9-9-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
917	19.54	220	3.82	116	12.7	1.90	382	21.31		
922	19.67	220	3.59	113	4.9	1.32	392	20.46		
927	19.71	220	3.55	113	4.9	1.35	392	20.45		

Total volume purged	
Sample appearance	Clear
Sample time	927
Sample date	9-9-25

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-30

Depth to water, feet (TOC)	20.18
Measured Total Depth, feet (TOC)	27.15

Depth to water date	9-9-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
807	20.47	220	3.48	318	49	2.86	309	19.13		
812	20.46	220	3.53	326	113	0.72	332	20.50		
817	20.48	220	3.59	327	94.2	0.63	332	21.12		
822	20.44	220	3.66	326	51.8	0.57	331	21.63		
827	20.44	220	3.70	328	35.2	0.57	329	21.96		
832	20.49	220	3.76	328	22.3	0.55	326	22.12		
837	20.50	220	3.79	328	19.4	0.54	325	22.30		
842	20.50	220	3.81	328	19.5	0.53	324	22.41		

Total volume purged	
Sample appearance	Clear
Sample time	844
Sample date	9-9-25

Facility Name	Pixley
Sample by	Matt Hamilton

Sample Location ID	AD-31

Depth to water, feet (TOC)	23.42
Measured Total Depth, feet (TOC)	37.32

Depth to water date	9-8-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1109	23.64	220	3.45	254	184	1.08	293	26.12		
1114	23.68	220	3.46	254	97	0.54	298	26.24		
1119	23.70	220	3.46	269	129	0.47	295	25.97		
1124	23.71	220	3.48	270	133	0.46	295	25.71		
1129	23.73	220	3.44	271	135	0.44	293	25.72		

Total volume purged	
Sample appearance	turbid
Sample time	1131
Sample date	9-8-25

Facility Name	Pillow
Sample by	Matt Hamilton

Sample Location ID	AD-32

Depth to water, feet (TOC)	17.03
Measured Total Depth, feet (TOC)	34.65

Depth to water date	9-8-25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1014	17.35	220	5.28	257	226	2.90	305	23.55		
1019	17.51	220	5.26	259	131	0.68	147	23.35		
1024	17.65	220	5.28	261	112	0.54	116	23.73		
1029	17.77	220	5.30	262	113	0.50	102	24.03		
1034	17.86	220	5.32	263	116	0.48	95	24.08		

Total volume purged	
Sample appearance	turbid
Sample time	1036
Sample date	9-8-25

Facility Name	AFP Pigeon PP
Sample by	Kenny McDonald

Sample Location ID	AD-33

Depth to water, feet (TOC)	11.92
Measured Total Depth, feet (TOC)	32.50

Depth to water date	09/08/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1106	11.94	220	4.10	223	0.0	2.61	382	23.02		
1111	11.95	220	4.08	223	0.0	1.92	386	22.97		
1116	11.96	220	4.08	223	0.0	1.90	390	23.00		
1121	11.96	220	4.08	222	0.0	1.90	393	23.06		

Total volume purged	
Sample appearance	Clear
Sample time	1123
Sample date	09/08/25

Facility Name	AEP PIRKEY PP
Sample by	KENNY McDONALD

Sample Location ID	AP-34

Depth to water, feet (TOC)	TOC
Measured Total Depth, feet (TOC)	26.05

Depth to water date	09/09/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0757	0.41	120	4.02	1510	3.6	2.83	374	22.08		
0802	0.47	120	4.06	1510	3.4	2.51	379	22.11		
0807	0.53	120	4.04	1500	3.4	2.48	382	22.11		
0812	0.56	120	4.04	1490	3.4	2.47	388	22.13		

Total volume purged	
Sample appearance	CLEAR
Sample time	0814
Sample date	09/09/25

Facility Name	AFP Pitney PP
Sample by	Kenny McDonald

Sample Location ID	AD-36

Depth to water, feet (TOC)	5.49
Measured Total Depth, feet (TOC)	17.10

Depth to water date	09/09/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0840	5.52	200	4.21	94	4.8	1.69	411	22.41		
0845	5.54	200	4.19	90	2.6	0.92	413	22.42		
0850	5.55	200	4.16	88	2.3	0.97	417	22.43		
0855	5.55	200	4.15	87	2.6	0.95	417	22.46		

Total volume purged	
Sample appearance	Clear
Sample time	0857
Sample date	09/09/25

Facility Name	Pixley
Sample by	M+t Hamilton

Sample Location ID	B-2

Depth to water, feet (TOC)	23.45
Measured Total Depth, feet (TOC)	51.44

Depth to water date	9-8-23

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
815	23.19	300	4.72	97	35.3	2.02	324	20.41		
820	23.89	300	4.05	95	15.3	2.12	375	19.86		
825	23.97	300	3.98	95	6.1	2.14	385	19.81		
830	24.02	300	3.97	94	6.1	2.15	392	19.78		

Total volume purged	
Sample appearance	clear
Sample time	832
Sample date	9-8-23

Duplicate
1214

Facility Name	AEP Pinnypp
Sample by	Kimmy Mitchell

Sample Location ID	B-3

Depth to water, feet (TOC)	15.53
Measured Total Depth, feet (TOC)	37.49

Depth to water date	09/09/25

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1139	16.38	102	4.97	207	5.2	2.06	332	23.06		
1144	17.19	102	4.99	214	5.8	1.83	340	22.94		
				WON'T Hold	WATER LEVEL					

Total volume purged	
Sample appearance	CLEAR
Sample time	0756
Sample date	09/10/25

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-2
Customer Description: TG-32
Lab Number: 250394-001
Preparation:
Date Collected: 02/04/2025 11:23 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Arsenic	2.0	µg/L	5	0.5	0.2		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Barium	15.0	µg/L	5	1.0	0.3		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Beryllium	1.15	µg/L	5	0.25	0.04		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Boron	3.98	mg/L	5	0.25	0.04		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Cadmium	0.18	µg/L	5	0.10	0.02		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Calcium	5.1	mg/L	5	0.3	0.1		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Chromium	0.5	µg/L	5	1.5	0.4	J1	GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Cobalt	37.1	µg/L	5	0.10	0.03		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Lead	0.8	µg/L	5	1.0	0.3	J1	GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Lithium	0.0872	mg/L	5	0.0015	0.0003		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Magnesium	11.7	mg/L	5	0.50	0.05		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Mercury	73	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.5	µg/L	5	2.5	0.5	U1	GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Potassium	1.68	mg/L	5	0.50	0.05		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Selenium	7.9	µg/L	5	2.5	0.2		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Sodium	132	mg/L	5	1.0	0.1		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Strontium	0.0689	mg/L	5	0.0100	0.0003		GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4
Thallium	0.2	µg/L	5	1.0	0.1	J1	GES	02/10/2025 21:23	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.35	pCi/L	0.18	0.55	P2	WCG	02/19/2025 10:03	SW-846 9315-1986, Rev. 0
Carrier Recovery	82.4	%						
Radium-228	0.87	pCi/L	0.15	0.46		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	86.8	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-2
Customer Description: TG-32
Lab Number: 250394-001-01
Preparation: Dissolved
Date Collected: 02/04/2025 11:23 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Arsenic	2.0	µg/L	5	0.5	0.2		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Barium	14.6	µg/L	5	1.0	0.3		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Beryllium	1.12	µg/L	5	0.25	0.04		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Boron	3.34	mg/L	5	0.25	0.04		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.14	µg/L	5	0.10	0.02		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Calcium	4.5	mg/L	5	0.3	0.1		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.5	µg/L	5	1.5	0.4	J1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Cobalt	35.7	µg/L	5	0.10	0.03	M1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Iron	0.14	mg/L	5	0.10	0.02		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Lead	0.8	µg/L	5	1.0	0.3	J1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.0832	mg/L	5	0.0015	0.0003		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Magnesium	9.62	mg/L	5	0.50	0.05	M1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Manganese	0.120	mg/L	5	0.0050	0.0004	M1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.5	µg/L	5	2.5	0.5	U1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Potassium	1.62	mg/L	5	0.50	0.05		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Selenium	7.1	µg/L	5	2.5	0.2		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Sodium	125	mg/L	5	1.0	0.1	M1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Strontium	0.0653	mg/L	5	0.0100	0.0003		GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4
Thallium	0.2	µg/L	5	1.0	0.1	J1	GES	02/10/2025 23:12	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-3
Customer Description: TG-32
Lab Number: 250394-002
Preparation:
Date Collected: 02/04/2025 11:49 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.018	µg/L	1	0.100	0.008	J1	GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Arsenic	0.24	µg/L	1	0.10	0.03		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Barium	68.5	µg/L	1	0.20	0.05		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Beryllium	0.198	µg/L	1	0.050	0.007		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Boron	0.082	mg/L	1	0.050	0.007		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Cadmium	0.020	µg/L	1	0.020	0.004		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Calcium	4.44	mg/L	1	0.05	0.02		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Chromium	0.44	µg/L	1	0.30	0.07		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Cobalt	3.62	µg/L	1	0.020	0.005		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Lead	0.12	µg/L	1	0.20	0.05	J1	GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.0471	mg/L	1	0.00030	0.00006		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Magnesium	1.98	mg/L	1	0.100	0.009		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Potassium	2.36	mg/L	1	0.10	0.01		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Selenium	0.06	µg/L	1	0.50	0.04	J1	GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Sodium	9.72	mg/L	1	0.20	0.02		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Strontium	0.0307	mg/L	1	0.00200	0.00005		GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	02/10/2025 21:28	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.43	pCi/L	0.15	0.32	P2	WCG	02/19/2025 10:03	SW-846 9315-1986, Rev. 0
Carrier Recovery	99.1	%						
Radium-228	0.84	pCi/L	0.12	0.38		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.1	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-3
Customer Description: TG-32
Lab Number: 250394-002-01
Preparation: Dissolved
Date Collected: 02/04/2025 11:49 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.022	µg/L	1	0.100	0.008	J1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Arsenic	0.20	µg/L	1	0.10	0.03		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Barium	67.7	µg/L	1	0.20	0.05		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Beryllium	0.204	µg/L	1	0.050	0.007		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Boron	0.048	mg/L	1	0.050	0.007	J1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Cadmium	0.019	µg/L	1	0.020	0.004	J1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Calcium	4.43	mg/L	1	0.05	0.02		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Chromium	0.29	µg/L	1	0.30	0.07	J1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Cobalt	3.93	µg/L	1	0.020	0.005		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Iron	0.991	mg/L	1	0.020	0.003		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Lead	0.05	µg/L	1	0.20	0.05	J1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.0479	mg/L	1	0.00030	0.00006		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Magnesium	1.95	mg/L	1	0.100	0.009		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Manganese	0.0409	mg/L	1	0.00100	0.00007		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Potassium	2.42	mg/L	1	0.10	0.01		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Selenium	0.04	µg/L	1	0.50	0.04	J1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Sodium	9.87	mg/L	1	0.20	0.02		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Strontium	0.0300	mg/L	1	0.00200	0.00005		GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	02/10/2025 23:28	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-4
Customer Description: TG-32
Lab Number: 250394-003
Preparation:
Date Collected: 02/03/2025 10:58 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.013	µg/L	1	0.100	0.008	J1	GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Arsenic	0.11	µg/L	1	0.10	0.03		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Barium	133	µg/L	1	0.20	0.05		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Beryllium	0.36	µg/L	5	0.25	0.04		GES	02/11/2025 10:06	EPA 200.8-1994, Rev. 5.4
Boron	0.038	mg/L	1	0.050	0.007	J1	GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Cadmium	0.020	µg/L	1	0.020	0.004		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Calcium	2.70	mg/L	1	0.05	0.02		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Chromium	0.37	µg/L	1	0.30	0.07		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Cobalt	3.52	µg/L	1	0.020	0.005		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Lithium	0.0254	mg/L	5	0.0015	0.0003		GES	02/11/2025 10:06	EPA 200.8-1994, Rev. 5.4
Magnesium	0.630	mg/L	1	0.100	0.009		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Mercury	5	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Potassium	2.32	mg/L	1	0.10	0.01		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Selenium	0.07	µg/L	1	0.50	0.04	J1	GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Sodium	6.46	mg/L	1	0.20	0.02		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Strontium	0.0219	mg/L	1	0.00200	0.00005		GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4
Thallium	0.10	µg/L	1	0.20	0.02	J1	GES	02/10/2025 21:34	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.46	pCi/L	0.16	0.34	P2	WCG	02/19/2025 10:03	SW-846 9315-1986, Rev. 0
Carrier Recovery	98.0	%						
Radium-228	1.19	pCi/L	0.13	0.41		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	98.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-4
Customer Description: TG-32
Lab Number: 250394-003-01
Preparation: Dissolved
Date Collected: 02/03/2025 10:58 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Arsenic	0.06	µg/L	1	0.10	0.03	J1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Barium	129	µg/L	1	0.20	0.05		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Beryllium	0.327	µg/L	1	0.050	0.007		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Boron	0.019	mg/L	1	0.050	0.007	J1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Cadmium	0.023	µg/L	1	0.020	0.004		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Calcium	2.62	mg/L	1	0.05	0.02		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Chromium	0.26	µg/L	1	0.30	0.07	J1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Cobalt	3.57	µg/L	1	0.020	0.005		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Iron	0.019	mg/L	1	0.020	0.003	J1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Lithium	0.0212	mg/L	1	0.00030	0.00006		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Magnesium	0.591	mg/L	1	0.100	0.009		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Manganese	0.0291	mg/L	1	0.00100	0.00007		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Potassium	2.23	mg/L	1	0.10	0.01		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Selenium	0.07	µg/L	1	0.50	0.04	J1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Sodium	6.60	mg/L	1	0.20	0.02		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Strontium	0.0212	mg/L	1	0.00200	0.00005		GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	02/10/2025 23:34	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-7R
Customer Description: TG-32
Lab Number: 250394-004
Preparation:
Date Collected: 02/03/2025 12:09 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Arsenic	0.46	µg/L	1	0.10	0.03		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Barium	51.4	µg/L	1	0.20	0.05		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Beryllium	2.04	µg/L	1	0.050	0.007		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Boron	0.217	mg/L	1	0.050	0.007		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Cadmium	0.370	µg/L	1	0.020	0.004		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Calcium	3.19	mg/L	1	0.05	0.02		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Chromium	0.25	µg/L	1	0.30	0.07	J1	GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Cobalt	18.9	µg/L	1	0.020	0.005		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Lead	0.38	µg/L	1	0.20	0.05		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.0519	mg/L	1	0.00030	0.00006		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Magnesium	4.89	mg/L	1	0.100	0.009		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Mercury	131	ng/L	4	20	8		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Potassium	1.89	mg/L	1	0.10	0.01		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Selenium	1.92	µg/L	1	0.50	0.04		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Sodium	23.8	mg/L	1	0.20	0.02		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Strontium	0.0344	mg/L	1	0.00200	0.00005		GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4
Thallium	0.15	µg/L	1	0.20	0.02	J1	GES	02/10/2025 21:39	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.58	pCi/L	0.29	0.35	P2	WCG	02/19/2025 10:03	SW-846 9315-1986, Rev. 0
Carrier Recovery	95.2	%						
Radium-228	1.08	pCi/L	0.17	0.52		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	73.0	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-7R
Customer Description: TG-32
Lab Number: 250394-004-01
Preparation: Dissolved
Date Collected: 02/03/2025 12:09 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Arsenic	0.13	µg/L	1	0.10	0.03		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Barium	50.7	µg/L	1	0.20	0.05		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Beryllium	1.72	µg/L	1	0.050	0.007		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Boron	0.195	mg/L	1	0.050	0.007		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Cadmium	0.326	µg/L	1	0.020	0.004		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Calcium	3.04	mg/L	1	0.05	0.02		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Chromium	0.26	µg/L	1	0.30	0.07	J1	GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Cobalt	18.0	µg/L	1	0.020	0.005		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Iron	0.567	mg/L	1	0.020	0.003		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Lead	0.14	µg/L	1	0.20	0.05	J1	GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.0508	mg/L	1	0.00030	0.00006		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Magnesium	4.69	mg/L	1	0.100	0.009		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Manganese	0.0509	mg/L	1	0.00100	0.00007		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Mercury	52	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Potassium	1.89	mg/L	1	0.10	0.01		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Selenium	0.28	µg/L	1	0.50	0.04	J1	GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Sodium	23.4	mg/L	1	0.20	0.02		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Strontium	0.0329	mg/L	1	0.00200	0.00005		GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4
Thallium	0.12	µg/L	1	0.20	0.02	J1	GES	02/10/2025 23:39	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-12
Customer Description: TG-32
Lab Number: 250394-005
Preparation:
Date Collected: 02/03/2025 10:24 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.016	µg/L	1	0.100	0.008	J1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Arsenic	0.09	µg/L	1	0.10	0.03	J1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Barium	19.1	µg/L	1	0.20	0.05		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Beryllium	0.129	µg/L	1	0.050	0.007		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Boron	0.029	mg/L	1	0.050	0.007	J1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Cadmium	0.012	µg/L	1	0.020	0.004	J1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Calcium	0.23	mg/L	1	0.05	0.02		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Chromium	0.29	µg/L	1	0.30	0.07	J1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Cobalt	1.14	µg/L	1	0.020	0.005		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Lead	0.10	µg/L	1	0.20	0.05	J1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Lithium	0.00579	mg/L	1	0.00030	0.00006		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Magnesium	0.344	mg/L	1	0.100	0.009		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Mercury	4	ng/L	1	5	2	J1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Potassium	0.27	mg/L	1	0.10	0.01		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Selenium	0.31	µg/L	1	0.50	0.04	J1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Sodium	3.91	mg/L	1	0.20	0.02		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Strontium	0.00234	mg/L	1	0.00200	0.00005		GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	02/10/2025 23:45	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.58	pCi/L	0.19	0.45	P2	WCG	02/19/2025 10:03	SW-846 9315-1986, Rev. 0
Carrier Recovery	106	%						
Radium-228	0.32	pCi/L	0.17	0.57		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	98.4	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-12
Customer Description: TG-32
Lab Number: 250394-005-01
Preparation: Dissolved
Date Collected: 02/03/2025 10:24 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.017	µg/L	1	0.100	0.008	J1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Arsenic	0.06	µg/L	1	0.10	0.03	J1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Barium	18.9	µg/L	1	0.20	0.05		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Beryllium	0.132	µg/L	1	0.050	0.007		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Boron	0.030	mg/L	1	0.050	0.007	J1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Cadmium	0.012	µg/L	1	0.020	0.004	J1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Calcium	0.26	mg/L	1	0.05	0.02		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Chromium	0.21	µg/L	1	0.30	0.07	J1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Cobalt	1.28	µg/L	1	0.020	0.005		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Iron	0.021	mg/L	1	0.020	0.003		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Lead	0.07	µg/L	1	0.20	0.05	J1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Lithium	0.00593	mg/L	1	0.00030	0.00006		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Magnesium	0.340	mg/L	1	0.100	0.009		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Manganese	0.00339	mg/L	1	0.00100	0.00007		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Potassium	0.27	mg/L	1	0.10	0.01		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Selenium	0.32	µg/L	1	0.50	0.04	J1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Sodium	3.90	mg/L	1	0.20	0.02		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Strontium	0.00234	mg/L	1	0.00200	0.00005		GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	02/10/2025 23:50	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-13
Customer Description: TG-32
Lab Number: 250394-006
Preparation:
Date Collected: 02/03/2025 09:18 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Arsenic	0.29	µg/L	1	0.10	0.03		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Barium	68.9	µg/L	1	0.20	0.05		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Beryllium	0.194	µg/L	1	0.050	0.007		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Boron	0.061	mg/L	1	0.050	0.007		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Cadmium	0.009	µg/L	1	0.020	0.004	J1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Calcium	19.5	mg/L	1	0.05	0.02	M1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Chromium	0.31	µg/L	1	0.30	0.07		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Cobalt	28.1	µg/L	1	0.020	0.005		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Lead	0.11	µg/L	1	0.20	0.05	J1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Lithium	0.123	mg/L	1	0.00030	0.00006		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Magnesium	9.71	mg/L	1	0.100	0.009		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Potassium	4.95	mg/L	1	0.10	0.01		GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Sodium	16.6	mg/L	1	0.20	0.02	M1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Strontium	0.502	mg/L	1	0.00200	0.00005	M1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	02/10/2025 23:56	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.41	pCi/L	0.14	0.26	P2	WCG	02/19/2025 10:03	SW-846 9315-1986, Rev. 0
Carrier Recovery	103	%						
Radium-228	1.51	pCi/L	0.13	0.38		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	87.8	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
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Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-13
Customer Description: TG-32
Lab Number: 250394-006-01
Preparation: Dissolved
Date Collected: 02/03/2025 09:18 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.010	µg/L	1	0.100	0.008	J1	GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Arsenic	0.04	µg/L	1	0.10	0.03	J1	GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Barium	66.2	µg/L	1	0.20	0.05		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.163	µg/L	1	0.050	0.007		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Boron	0.066	mg/L	1	0.050	0.007		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.009	µg/L	1	0.020	0.004	J1	GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Calcium	18.9	mg/L	1	0.05	0.02		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.34	µg/L	1	0.30	0.07		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Cobalt	27.2	µg/L	1	0.020	0.005		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Iron	0.050	mg/L	1	0.020	0.003		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.120	mg/L	1	0.00030	0.00006		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Magnesium	9.45	mg/L	1	0.100	0.009		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Manganese	0.269	mg/L	1	0.00100	0.00007		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Potassium	4.77	mg/L	1	0.10	0.01		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Sodium	16.1	mg/L	1	0.20	0.02		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Strontium	0.492	mg/L	1	0.00200	0.00005		GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4
Thallium	0.07	µg/L	1	0.20	0.02	J1	GES	02/11/2025 00:12	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-17
Customer Description: TG-32
Lab Number: 250394-007
Preparation:
Date Collected: 02/04/2025 12:19 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.009	µg/L	1	0.100	0.008	J1	GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Arsenic	0.19	µg/L	1	0.10	0.03		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Barium	53.0	µg/L	1	0.20	0.05		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Beryllium	0.215	µg/L	1	0.050	0.007		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Boron	0.033	mg/L	1	0.050	0.007	J1	GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Cadmium	0.009	µg/L	1	0.020	0.004	J1	GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Calcium	0.07	mg/L	1	0.05	0.02		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Chromium	0.46	µg/L	1	0.30	0.07		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Cobalt	2.39	µg/L	1	0.020	0.005		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Lead	0.12	µg/L	1	0.20	0.05	J1	GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Lithium	0.00731	mg/L	1	0.00030	0.00006		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Magnesium	0.894	mg/L	1	0.100	0.009		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Mercury	52	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Potassium	0.22	mg/L	1	0.10	0.01		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Selenium	0.12	µg/L	1	0.50	0.04	J1	GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Sodium	5.32	mg/L	1	0.20	0.02		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Strontium	0.00270	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	02/11/2025 01:18	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.89	pCi/L	0.19	0.31		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	118	%						
Radium-228	1.31	pCi/L	0.13	0.40		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	99.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-17
Customer Description: TG-32
Lab Number: 250394-007-01
Preparation: Dissolved
Date Collected: 02/04/2025 12:19 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Arsenic	0.05	µg/L	1	0.10	0.03	J1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Barium	51.2	µg/L	1	0.20	0.05		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Beryllium	0.220	µg/L	1	0.050	0.007		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Boron	0.031	mg/L	1	0.050	0.007	J1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Cadmium	0.008	µg/L	1	0.020	0.004	J1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Calcium	0.07	mg/L	1	0.05	0.02		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Chromium	0.24	µg/L	1	0.30	0.07	J1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Cobalt	2.44	µg/L	1	0.020	0.005		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Iron	0.003	mg/L	1	0.020	0.003	J1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Lead	0.05	µg/L	1	0.20	0.05	J1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Lithium	0.00765	mg/L	1	0.00030	0.00006		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Magnesium	0.860	mg/L	1	0.100	0.009		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Manganese	0.00172	mg/L	1	0.00100	0.00007		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Potassium	0.20	mg/L	1	0.10	0.01		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Selenium	0.07	µg/L	1	0.50	0.04	J1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Sodium	5.25	mg/L	1	0.20	0.02		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Strontium	0.00256	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	02/11/2025 01:23	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-18
Customer Description: TG-32
Lab Number: 250394-008
Preparation:
Date Collected: 02/04/2025 09:04 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.009	µg/L	1	0.100	0.008	J1	GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Arsenic	0.20	µg/L	1	0.10	0.03		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Barium	71.7	µg/L	1	0.20	0.05		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Beryllium	0.090	µg/L	1	0.050	0.007		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Boron	0.013	mg/L	1	0.050	0.007	J1	GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Cadmium	0.010	µg/L	1	0.020	0.004	J1	GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Calcium	0.20	mg/L	1	0.05	0.02		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Chromium	0.59	µg/L	1	0.30	0.07		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Cobalt	0.844	µg/L	1	0.020	0.005		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Lead	0.13	µg/L	1	0.20	0.05	J1	GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Lithium	0.0135	mg/L	1	0.00030	0.00006		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Magnesium	0.288	mg/L	1	0.100	0.009		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Mercury	24	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Potassium	0.75	mg/L	1	0.10	0.01		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Selenium	0.14	µg/L	1	0.50	0.04	J1	GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Sodium	5.33	mg/L	1	0.20	0.02		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Strontium	0.00415	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	02/11/2025 01:29	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.35	pCi/L	0.15	0.42		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	105	%						
Radium-228	0.63	pCi/L	0.11	0.36		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	97.0	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-18
Customer Description: TG-32
Lab Number: 250394-008-01
Preparation: Dissolved
Date Collected: 02/04/2025 09:04 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Arsenic	0.05	µg/L	1	0.10	0.03	J1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Barium	72.5	µg/L	1	0.20	0.05		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Beryllium	0.087	µg/L	1	0.050	0.007		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Boron	0.013	mg/L	1	0.050	0.007	J1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Cadmium	0.014	µg/L	1	0.020	0.004	J1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Calcium	0.21	mg/L	1	0.05	0.02		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Chromium	0.26	µg/L	1	0.30	0.07	J1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Cobalt	1.04	µg/L	1	0.020	0.005		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Iron	0.014	mg/L	1	0.020	0.003	J1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Lithium	0.0140	mg/L	1	0.00030	0.00006		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Magnesium	0.296	mg/L	1	0.100	0.009		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Manganese	0.00369	mg/L	1	0.00100	0.00007		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Potassium	0.78	mg/L	1	0.10	0.01		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Selenium	0.08	µg/L	1	0.50	0.04	J1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Sodium	5.53	mg/L	1	0.20	0.02		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Strontium	0.00419	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	02/11/2025 01:34	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-22
Customer Description: TG-32
Lab Number: 250394-009
Preparation:
Date Collected: 02/03/2025 13:16 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	02/17/2025 12:53	EPA 200.8-1994, Rev. 5.4
Arsenic	1.75	µg/L	1	0.10	0.03		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Barium	18.6	µg/L	5	1.0	0.3		GES	02/17/2025 12:53	EPA 200.8-1994, Rev. 5.4
Beryllium	6.25	µg/L	1	0.050	0.007		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Boron	0.070	mg/L	1	0.050	0.007		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Cadmium	0.989	µg/L	1	0.020	0.004		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Calcium	11.2	mg/L	1	0.05	0.02		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Chromium	0.45	µg/L	1	0.30	0.07		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Cobalt	77.9	µg/L	1	0.020	0.005		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Lead	0.4	µg/L	5	1.0	0.3	J1	GES	02/17/2025 12:53	EPA 200.8-1994, Rev. 5.4
Lithium	0.110	mg/L	1	0.00030	0.00006		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Magnesium	16.6	mg/L	1	0.100	0.009		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Mercury	1060	ng/L	20	100	40		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Potassium	3.40	mg/L	1	0.10	0.01		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Selenium	7.61	µg/L	1	0.50	0.04		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Sodium	92.8	mg/L	1	0.20	0.02		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Strontium	0.112	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:40	EPA 200.8-1994, Rev. 5.4
Thallium	0.2	µg/L	5	1.0	0.1	J1	GES	02/17/2025 12:53	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.35	pCi/L	0.27	0.38		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	89.3	%						
Radium-228	1.53	pCi/L	0.15	0.44		TTP	02/24/2025 14:57	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	75.0	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-22
Customer Description: TG-32
Lab Number: 250394-009-01
Preparation: Dissolved
Date Collected: 02/03/2025 13:16 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	02/11/2025 10:12	EPA 200.8-1994, Rev. 5.4
Arsenic	1.72	µg/L	1	0.10	0.03		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Barium	16.9	µg/L	5	1.0	0.3		GES	02/11/2025 10:12	EPA 200.8-1994, Rev. 5.4
Beryllium	6.75	µg/L	5	0.25	0.04		GES	02/11/2025 10:12	EPA 200.8-1994, Rev. 5.4
Boron	0.071	mg/L	1	0.050	0.007		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Cadmium	1.00	µg/L	1	0.020	0.004		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Calcium	11.1	mg/L	1	0.05	0.02		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Chromium	0.32	µg/L	1	0.30	0.07		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Cobalt	78.4	µg/L	1	0.020	0.005		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Iron	1.67	mg/L	1	0.020	0.003		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Lead	<0.3	µg/L	5	1.0	0.3	U1	GES	02/11/2025 10:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.136	mg/L	5	0.0015	0.0003		GES	02/11/2025 10:12	EPA 200.8-1994, Rev. 5.4
Magnesium	16.7	mg/L	1	0.100	0.009		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Manganese	0.278	mg/L	1	0.00100	0.00007		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Mercury	5	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Potassium	3.38	mg/L	1	0.10	0.01		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Selenium	7.61	µg/L	1	0.50	0.04		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Sodium	94.5	mg/L	1	0.20	0.02		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Strontium	0.112	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:45	EPA 200.8-1994, Rev. 5.4
Thallium	0.2	µg/L	5	1.0	0.1	J1	GES	02/11/2025 10:12	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-28
Customer Description: TG-32
Lab Number: 250394-010
Preparation:
Date Collected: 02/04/2025 10:47 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.010	µg/L	1	0.100	0.008	J1	GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Arsenic	0.11	µg/L	1	0.10	0.03		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Barium	122	µg/L	1	0.20	0.05		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Beryllium	0.917	µg/L	1	0.050	0.007		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Boron	0.347	mg/L	1	0.050	0.007		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Cadmium	0.063	µg/L	1	0.020	0.004		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Calcium	1.33	mg/L	1	0.05	0.02		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Chromium	0.33	µg/L	1	0.30	0.07		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Cobalt	14.4	µg/L	1	0.020	0.005		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Lead	0.08	µg/L	1	0.20	0.05	J1	GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Lithium	0.0219	mg/L	1	0.00030	0.00006		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Magnesium	3.10	mg/L	1	0.100	0.009		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Mercury	18	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Potassium	0.71	mg/L	1	0.10	0.01		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Selenium	0.41	µg/L	1	0.50	0.04	J1	GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Sodium	6.77	mg/L	1	0.20	0.02		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Strontium	0.0227	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	02/11/2025 01:51	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.44	pCi/L	0.36	0.37		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.0	%						
Radium-228	0.87	pCi/L	0.10	0.30		TTP	02/24/2025 17:05	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	94.5	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-28
Customer Description: TG-32
Lab Number: 250394-010-01
Preparation: Dissolved
Date Collected: 02/04/2025 10:47 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.009	µg/L	1	0.100	0.008	J1	GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Arsenic	0.10	µg/L	1	0.10	0.03		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Barium	123	µg/L	1	0.20	0.05		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Beryllium	0.765	µg/L	1	0.050	0.007		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Boron	0.350	mg/L	1	0.050	0.007		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Cadmium	0.058	µg/L	1	0.020	0.004		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Calcium	1.31	mg/L	1	0.05	0.02		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Chromium	0.32	µg/L	1	0.30	0.07		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Cobalt	14.4	µg/L	1	0.020	0.005		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Iron	0.014	mg/L	1	0.020	0.003	J1	GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Lead	0.08	µg/L	1	0.20	0.05	J1	GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Lithium	0.0203	mg/L	1	0.00030	0.00006		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Magnesium	3.10	mg/L	1	0.100	0.009		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Manganese	0.0418	mg/L	1	0.00100	0.00007		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Potassium	0.72	mg/L	1	0.10	0.01		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Selenium	0.36	µg/L	1	0.50	0.04	J1	GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Sodium	6.51	mg/L	1	0.20	0.02		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Strontium	0.0223	mg/L	1	0.00200	0.00005		GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	02/11/2025 01:56	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-30
Customer Description: TG-32
Lab Number: 250394-011
Preparation:
Date Collected: 02/03/2025 13:19 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Arsenic	0.14	µg/L	1	0.10	0.03		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Barium	47.0	µg/L	1	0.20	0.05		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Beryllium	0.080	µg/L	1	0.050	0.007		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Boron	1.25	mg/L	1	0.050	0.007		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Cadmium	0.008	µg/L	1	0.020	0.004	J1	GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Calcium	0.47	mg/L	1	0.05	0.02		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Chromium	0.43	µg/L	1	0.30	0.07		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Cobalt	3.06	µg/L	1	0.020	0.005		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Lithium	0.00873	mg/L	1	0.00030	0.00006		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Magnesium	1.58	mg/L	1	0.100	0.009		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Mercury	42	ng/L	2	10	4		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Potassium	0.71	mg/L	1	0.10	0.01		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Selenium	0.21	µg/L	1	0.50	0.04	J1	GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Sodium	58.3	mg/L	1	0.20	0.02		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Strontium	0.00682	mg/L	1	0.00200	0.00005		GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	02/11/2025 02:01	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.14	pCi/L	0.26	0.46		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.8	%						
Radium-228	0.56	pCi/L	0.13	0.43		TTP	02/24/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.3	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-30
Customer Description: TG-32
Lab Number: 250394-011-01
Preparation: Dissolved
Date Collected: 02/03/2025 13:19 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Arsenic	0.09	µg/L	1	0.10	0.03	J1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Barium	43.5	µg/L	1	0.20	0.05		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Beryllium	0.079	µg/L	1	0.050	0.007		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Boron	1.24	mg/L	1	0.050	0.007		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Cadmium	0.009	µg/L	1	0.020	0.004	J1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Calcium	0.46	mg/L	1	0.05	0.02		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Chromium	0.40	µg/L	1	0.30	0.07		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Cobalt	3.14	µg/L	1	0.020	0.005		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Iron	0.013	mg/L	1	0.020	0.003	J1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Lithium	0.00864	mg/L	1	0.00030	0.00006		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Magnesium	1.54	mg/L	1	0.100	0.009		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Manganese	0.0129	mg/L	1	0.00100	0.00007		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Potassium	0.70	mg/L	1	0.10	0.01		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Selenium	0.24	µg/L	1	0.50	0.04	J1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Sodium	58.5	mg/L	1	0.20	0.02		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Strontium	0.00649	mg/L	1	0.00200	0.00005		GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	02/11/2025 02:07	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-31
Customer Description: TG-32
Lab Number: 250394-012
Preparation:
Date Collected: 02/03/2025 12:15 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.009	µg/L	1	0.100	0.008	J1	GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Arsenic	0.30	µg/L	1	0.10	0.03		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Barium	30.1	µg/L	1	0.20	0.05		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.96	µg/L	5	0.25	0.04		GES	02/11/2025 10:17	EPA 200.8-1994, Rev. 5.4
Boron	0.030	mg/L	1	0.050	0.007	J1	GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.058	µg/L	1	0.020	0.004		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Calcium	2.20	mg/L	1	0.05	0.02		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.41	µg/L	1	0.30	0.07		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Cobalt	8.68	µg/L	1	0.020	0.005		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Lead	0.27	µg/L	1	0.20	0.05		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.0782	mg/L	5	0.0015	0.0003		GES	02/11/2025 10:17	EPA 200.8-1994, Rev. 5.4
Magnesium	3.21	mg/L	1	0.100	0.009		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Mercury	440	ng/L	10	50	20		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Potassium	1.50	mg/L	1	0.10	0.01		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Selenium	0.50	µg/L	1	0.50	0.04		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Sodium	29.2	mg/L	1	0.20	0.02		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Strontium	0.0322	mg/L	1	0.00200	0.00005		GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4
Thallium	0.08	µg/L	1	0.20	0.02	J1	GES	02/11/2025 02:12	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.46	pCi/L	0.27	0.33		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	93.7	%						
Radium-228	2.90	pCi/L	0.14	0.31		TTP	03/03/2025 14:32	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	99.0	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
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Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-31
Customer Description: TG-32
Lab Number: 250394-012-01
Preparation: Dissolved
Date Collected: 02/03/2025 12:15 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.009	µg/L	1	0.100	0.008	J1	GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Arsenic	0.27	µg/L	1	0.10	0.03		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Barium	29.8	µg/L	1	0.20	0.05		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Beryllium	0.88	µg/L	5	0.25	0.04		GES	02/11/2025 10:23	EPA 200.8-1994, Rev. 5.4
Boron	0.025	mg/L	1	0.050	0.007	J1	GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Cadmium	0.060	µg/L	1	0.020	0.004		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Calcium	2.21	mg/L	1	0.05	0.02		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Chromium	0.42	µg/L	1	0.30	0.07		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Cobalt	8.79	µg/L	1	0.020	0.005		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Iron	0.121	mg/L	1	0.020	0.003		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Lead	0.26	µg/L	1	0.20	0.05		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Lithium	0.0720	mg/L	5	0.0015	0.0003		GES	02/11/2025 10:23	EPA 200.8-1994, Rev. 5.4
Magnesium	3.20	mg/L	1	0.100	0.009		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Manganese	0.0217	mg/L	1	0.00100	0.00007		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Potassium	1.52	mg/L	1	0.10	0.01		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Selenium	0.55	µg/L	1	0.50	0.04		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Sodium	29.4	mg/L	1	0.20	0.02		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Strontium	0.0324	mg/L	1	0.00200	0.00005		GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4
Thallium	0.08	µg/L	1	0.20	0.02	J1	GES	02/11/2025 02:18	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-32
Customer Description: TG-32
Lab Number: 250394-013
Preparation:
Date Collected: 02/03/2025 11:16 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.014	µg/L	1	0.100	0.008	J1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Arsenic	6.81	µg/L	1	0.10	0.03		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Barium	37.6	µg/L	1	0.20	0.05		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Beryllium	0.114	µg/L	1	0.050	0.007		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Boron	0.097	mg/L	1	0.050	0.007		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Cadmium	0.007	µg/L	1	0.020	0.004	J1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Calcium	6.08	mg/L	1	0.05	0.02	M1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Chromium	0.39	µg/L	1	0.30	0.07		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Cobalt	13.7	µg/L	1	0.020	0.005		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Lead	0.07	µg/L	1	0.20	0.05	J1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Lithium	0.0722	mg/L	1	0.00030	0.00006	M1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Magnesium	6.51	mg/L	1	0.100	0.009		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Mercury	450	ng/L	20	100	40		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Potassium	3.09	mg/L	1	0.10	0.01		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Selenium	0.14	µg/L	1	0.50	0.04	J1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Sodium	14.8	mg/L	1	0.20	0.02	M1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Strontium	0.0791	mg/L	1	0.00200	0.00005		GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	02/11/2025 12:23	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.67	pCi/L	0.19	0.36		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	90.9	%						
Radium-228	2.71	pCi/L	0.16	0.42		TTP	03/03/2025 14:32	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	93.2	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-32
Customer Description: TG-32
Lab Number: 250394-013-01
Preparation: Dissolved
Date Collected: 02/03/2025 11:16 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.016	µg/L	1	0.100	0.008	J1	GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Arsenic	3.35	µg/L	1	0.10	0.03		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Barium	36.5	µg/L	1	0.20	0.05		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Beryllium	0.10	µg/L	5	0.25	0.04	J1	GES	02/11/2025 14:28	EPA 200.8-1994, Rev. 5.4
Boron	0.104	mg/L	1	0.050	0.007		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Cadmium	0.019	µg/L	1	0.020	0.004	J1	GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Calcium	6.10	mg/L	1	0.05	0.02		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Chromium	0.22	µg/L	1	0.30	0.07	J1	GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Cobalt	13.6	µg/L	1	0.020	0.005		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Iron	16.7	mg/L	1	0.020	0.003		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Lead	0.10	µg/L	1	0.20	0.05	J1	GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.0849	mg/L	5	0.0015	0.0003		GES	02/11/2025 14:28	EPA 200.8-1994, Rev. 5.4
Magnesium	6.49	mg/L	1	0.100	0.009		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Manganese	0.112	mg/L	1	0.00100	0.00007		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Mercury	8	ng/L	1	5	2		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Potassium	3.07	mg/L	1	0.10	0.01		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Selenium	0.07	µg/L	1	0.50	0.04	J1	GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Sodium	15.0	mg/L	1	0.20	0.02		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Strontium	0.0786	mg/L	1	0.00200	0.00005		GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4
Thallium	0.10	µg/L	1	0.20	0.02	J1	GES	02/11/2025 12:39	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-33
Customer Description: TG-32
Lab Number: 250394-014
Preparation:
Date Collected: 02/04/2025 10:24 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	02/11/2025 14:34	EPA 200.8-1994, Rev. 5.4
Arsenic	1.43	µg/L	1	0.10	0.03		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Barium	51.1	µg/L	5	1.0	0.3		GES	02/11/2025 14:34	EPA 200.8-1994, Rev. 5.4
Beryllium	2.01	µg/L	5	0.25	0.04		GES	02/11/2025 14:34	EPA 200.8-1994, Rev. 5.4
Boron	0.224	mg/L	1	0.050	0.007		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Cadmium	0.078	µg/L	1	0.020	0.004		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Calcium	3.02	mg/L	1	0.05	0.02		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Chromium	0.38	µg/L	1	0.30	0.07		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Cobalt	15.0	µg/L	1	0.020	0.005		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Lead	0.4	µg/L	5	1.0	0.3	J1	GES	02/11/2025 14:34	EPA 200.8-1994, Rev. 5.4
Lithium	0.0293	mg/L	5	0.0015	0.0003		GES	02/11/2025 14:34	EPA 200.8-1994, Rev. 5.4
Magnesium	5.87	mg/L	1	0.100	0.009		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Mercury	5700	ng/L	100	500	200		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Potassium	0.31	mg/L	1	0.10	0.01		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Selenium	5.62	µg/L	1	0.50	0.04		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Sodium	20.0	mg/L	1	0.20	0.02		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Strontium	0.0473	mg/L	1	0.00200	0.00005		GES	02/11/2025 12:45	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	02/11/2025 14:34	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.34	pCi/L	0.27	0.35		WCG	02/19/2025 11:56	SW-846 9315-1986, Rev. 0
Carrier Recovery	92.8	%						
Radium-228	2.54	pCi/L	0.14	0.36		TTP	03/03/2025 14:32	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	101	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: AD-33
Customer Description: TG-32
Lab Number: 250394-014-01
Preparation: Dissolved
Date Collected: 02/04/2025 10:24 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	02/11/2025 14:39	EPA 200.8-1994, Rev. 5.4
Arsenic	1.35	µg/L	1	0.10	0.03		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Barium	51.4	µg/L	5	1.0	0.3		GES	02/11/2025 14:39	EPA 200.8-1994, Rev. 5.4
Beryllium	2.06	µg/L	5	0.25	0.04		GES	02/11/2025 14:39	EPA 200.8-1994, Rev. 5.4
Boron	0.222	mg/L	1	0.050	0.007		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Cadmium	0.072	µg/L	1	0.020	0.004		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Calcium	3.00	mg/L	1	0.05	0.02		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Chromium	0.25	µg/L	1	0.30	0.07	J1	GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Cobalt	14.5	µg/L	1	0.020	0.005		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Iron	0.021	mg/L	1	0.020	0.003		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Lead	0.4	µg/L	5	1.0	0.3	J1	GES	02/11/2025 14:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.0293	mg/L	5	0.0015	0.0003		GES	02/11/2025 14:39	EPA 200.8-1994, Rev. 5.4
Magnesium	5.75	mg/L	1	0.100	0.009		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Manganese	0.00934	mg/L	1	0.00100	0.00007		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Mercury	1140	ng/L	20	100	40		RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Potassium	0.31	mg/L	1	0.10	0.01		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Selenium	5.16	µg/L	1	0.50	0.04		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Sodium	19.7	mg/L	1	0.20	0.02		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Strontium	0.0459	mg/L	1	0.00200	0.00005		GES	02/11/2025 12:50	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	02/11/2025 14:39	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: DUPLICATE
Customer Description: TG-32
Lab Number: 250394-015
Preparation:
Date Collected: 02/03/2025 09:18 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.018	µg/L	1	0.100	0.008	J1	GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Arsenic	0.27	µg/L	1	0.10	0.03		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Barium	64.0	µg/L	1	0.20	0.05		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Beryllium	0.22	µg/L	5	0.25	0.04	M1, J1	GES	02/11/2025 14:45	EPA 200.8-1994, Rev. 5.4
Boron	0.054	mg/L	1	0.050	0.007		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Cadmium	0.007	µg/L	1	0.020	0.004	J1	GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Calcium	18.5	mg/L	1	0.05	0.02		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Chromium	0.52	µg/L	1	0.30	0.07		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Cobalt	25.4	µg/L	1	0.020	0.005		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Lithium	0.147	mg/L	5	0.0015	0.0003	M1	GES	02/11/2025 14:45	EPA 200.8-1994, Rev. 5.4
Magnesium	9.02	mg/L	1	0.100	0.009		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/18/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Potassium	4.51	mg/L	1	0.10	0.01		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Sodium	14.8	mg/L	1	0.20	0.02	M1	GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Strontium	0.441	mg/L	1	0.00200	0.00005		GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	02/11/2025 12:56	EPA 200.8-1994, Rev. 5.4

Dolan Chemical Laboratory
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Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: DUPLICATE
Customer Description: TG-32
Lab Number: 250394-015-01
Preparation: Dissolved
Date Collected: 02/03/2025 09:18 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Arsenic	0.03	µg/L	1	0.10	0.03	J1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Barium	68.0	µg/L	1	0.20	0.05		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Beryllium	0.166	µg/L	1	0.050	0.007		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Boron	0.059	mg/L	1	0.050	0.007		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Cadmium	0.006	µg/L	1	0.020	0.004	J1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Calcium	20.3	mg/L	1	0.05	0.02		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Chromium	0.27	µg/L	1	0.30	0.07	J1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Cobalt	27.8	µg/L	1	0.020	0.005		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Iron	0.053	mg/L	1	0.020	0.003		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Lithium	0.129	mg/L	1	0.00030	0.00006		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Magnesium	9.80	mg/L	1	0.100	0.009		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Manganese	0.279	mg/L	1	0.00100	0.00007		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.2	µg/L	1	0.5	0.1	J1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Potassium	4.86	mg/L	1	0.10	0.01		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Sodium	15.8	mg/L	1	0.20	0.02		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Strontium	0.493	mg/L	1	0.00200	0.00005		GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	02/11/2025 13:01	EPA 200.8-1994, Rev. 5.4

Dolan Chemical Laboratory
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Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: EQUIPMENT BLANK
Customer Description: TG-32
Lab Number: 250394-016
Preparation:
Date Collected: 02/03/2025 10:00 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.008	µg/L	1	0.100	0.008	J1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Barium	0.24	µg/L	1	0.20	0.05		GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Boron	<0.007	mg/L	1	0.050	0.007	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Calcium	0.05	mg/L	1	0.05	0.02		GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Chromium	0.50	µg/L	1	0.30	0.07		GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Cobalt	0.082	µg/L	1	0.020	0.005		GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Lithium	0.00021	mg/L	1	0.00030	0.00006	J1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Magnesium	0.027	mg/L	1	0.100	0.009	J1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Potassium	0.01	mg/L	1	0.10	0.01	J1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Sodium	0.04	mg/L	1	0.20	0.02	J1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Strontium	0.00173	mg/L	1	0.00200	0.00005	J1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	02/11/2025 13:06	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Customer Sample ID: FIELD BLANK
Customer Description: TG-32
Lab Number: 250394-017
Preparation:
Date Collected: 02/04/2025 10:15 EST
Date Received: 02/07/2025 12:05 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Boron	<0.007	mg/L	1	0.050	0.007	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.05	0.02	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.19	µg/L	1	0.30	0.07	J1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.005	µg/L	1	0.020	0.005	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.00009	mg/L	1	0.00030	0.00006	J1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.009	mg/L	1	0.100	0.009	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	02/11/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Potassium	<0.01	mg/L	1	0.10	0.01	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Sodium	<0.02	mg/L	1	0.20	0.02	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Strontium	<0.00005	mg/L	1	0.00200	0.00005	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	02/11/2025 13:12	EPA 200.8-1994, Rev. 5.4

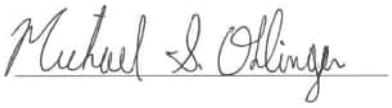
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250394 **Customer: Pirkey Power Station** **Date Reported: 03/19/2025**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
P2 - The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL) **4001 Bixby Road** **Groveport, Ohio 43125**	**Site Contact:**
Contacts: Jonathan Barnhill (318-673-3803) Michael Ohlinger (614-836-4184)	**Date:**
Project Name: Pirkey - CCR	**For Lab Use Only:** COC/Order #: 250394
Contact Name: Pryce Warren	
Contact Phone: 325-310-6668	
Sampler(s): Matt Hamilton Kenny McDonald	

Analysis Turnaround Time (in Calendar Days)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 — B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL and Na, K, Mg, Sr	Field-filter 250 mL bottle, then pH<2, HNO_3 — B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Fe, Mn, Mo, Pb, Se, TL and Na, K, Mg, Sr	1 L bottle, Cool, 0-6°C — TDS, F, Cl, SO_4, and Br, Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 — Ra-226, Ra-228	Field-Filter 250 mL Glass bottle, HCL**, pH<2 — Hg	250 mL Glass bottle, HCL**, pH<2 — Hg		Sample Specific Notes:
AD-2	2/4/2025	1023	G	GW	7		X	X		X	X	X		
AD-3	2/4/2025	1049	G	GW	7		X	X		X	X	X		
AD-4	2/3/2025	958	G	GW	7		X	X		X	X	X		
AD-7R	2/3/2025	1109	G	GW	7		X	X		X	X	X		
AD-12	2/3/2025	924	G	GW	7		X	X		X	X	X		
AD-13	2/3/2025	818	G	GW	10		X	X		X	X	X		
AD-17	2/4/2025	1119	G	GW	7		X	X		X	X	X		
AD-18	2/4/2025	804	G	GW	7		X	X		X	X	X		
AD-22	2/3/2025	1216	G	GW	7		X	X		X	X	X		
AD-28	2/4/2025	947	G	GW	7		X	X		X	X	X		
AD-30	2/3/2025	1219	G	GW	7		X	X		X	X	X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4	F2	2		

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32

Relinquished by:	Company: EGK	Date/Time: 2-5-25 15:00	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in laboratory by:	Date/Time: 2/6/25 12:05

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: Pirkey - CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL and Na, K, Mg, Sr	Field-filter 250 mL bottle, then pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Fe, Mn, Mo, Pb, Se, TL and Na, K, Mg, Sr	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4, and Br, Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	Field-Filter 250 mL Glass bottle, HCL**, pH<2 Hg	250 mL Glass bottle, HCL**, pH<2 Hg		Sample Specific Notes.
AD-31	2/3/2025	1115	G	GW	7		X	X		X	X	X		
AD-32	2/3/2025	1016	G	GW	7		X	X		X	X	X		
AD-33	2/4/2025	924	G	GW	7		X	X		X	X	X		
DUPLICATE	2/3/2025	818	G	GW	4		X	X			X	X		
EQUIPMENT BLANK	2/3/2025	900	G	GW	2		X					X		
FIELD BLANK	2/4/2025	915	G	GW	2		X					X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4	F2	2		

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
	Eask	1500 2-5-25		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 2/6/25 12:35

AEP

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

Package Type: (Cooler) Box Bag Envelope

Delivery Type: UPS (FedEX) USPS Other ________

Plant/Customer Pirkey

Opened By WKG / MGV / KBB

Date/Time 02/06/25 1705 07 / 2/7/25

Total # of Containers RECEIVED in Job: 116 116 02/06/25 93 MGV 2/6/25 07 MGV 2/7/25

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? Y / N or (N/A)

Initial/Date: ________ on ice / (no ice)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 02/14/2025)

Was container in good condition? (Y) / N Comments

Was Chain of Custody received? (Y) / N Comments ________

Requested turnaround: Routine If **RUSH**, who was notified? ________

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: MGV 02/07/25 24T: 1-10 02/06/25 KBB A0317 f6: 11 → 24

***pH paper**: mfr Lab Rat, PN 4801, LOT# X000RWDG21, EXPIR DATE 11/30/2025

*** Note changes to pH paper in comments below***

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: ________ (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments ________ (See Prep Book)

Was COC filled out properly? (Y) / N Comments ________

Were samples labeled properly? (Y) / N Comments ________

Were correct containers used? (Y) / N Comments ________

Was the customer contacted? If Yes: Person Contacted: ________

Lab ID# 250394 Initial & Date & Time : ________

Logged by MGV Comments: FB label says 2/3/25 @ 9AM

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 116 109 MGV 2/7/25

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10. 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:

i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 250394 **Initial/ Date:** MSO 2/7/25 **Peer Review Initial/ Date:** DMB 02/10/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
21	250394-001		21
21	" -001-01		
21	" -002		
21	" -002-01		
21	" -003		
21	" -003-01		
21	" -004		
21	" -004-01		
21	" -005		
21	" -005-01		
21	" -006		
21	" -006-01		
21	" -007		
21	" -007-01		
21	" -008		
21	" -008-01		
21	" -009		
21	" -009-01		
21	" -010		
21	" -010-01		
21	" -011		
21	" -011-01		
21	" -012		
21	" -012-01		

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS **Comments below.**

i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 250394 **Initial/ Date:** MSO 2/7/25 **Peer Review Initial/ Date:** [illegible] 02/10/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
21	250394-013		21
21	-013-01		21
21	-014		21
21	-014-01		21
19	-015		19
21	-015-01		21
19	-016		19
19	-017		19

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

Package Type	Delivery Type
(Cooler) Box Bag Envelope	UPS (FedEX) USPS
	Other _____

Plant/Customer Pixley **Total # of Containers RECEIVED in Job:** 16

Opened By KMD / MJSO

Date/Time 02/10/25 1155

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? Y / N or (N/A)

Initial/Date: _____ on ice / (no ice)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 02/14/2025)

Was container in good condition? (Y) / N Comments

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: 250394-008 → 009 R1→R3→R1 (009 only) KMD 02/10/25; 250394-003-R1→R3, 006-R1→R3;

pH paper: mfr Lab Rat, PN 4801, LOT# X000RWDG21, EXPIR DATE 11/30/2025

**** Note changes to pH paper in comments below***

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 250394 Initial & Date & Time : _____

Logged by MJS Comments: _____

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 16

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below:**
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : _____ Initial/ Date: _____ Peer Review Initial/ Date: _____

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	**Comments /Nonconformities**	**Peer Review Test Count from COC**

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [●] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Tamisha Palmer	Tamisha T. Palmer	Chemical Lab Technician, Prin.	03/18/2025
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power

Reviewer Name: Tamisha Palmer

LRC Date: 03/18/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021403, PB25021404

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	No	ER
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power

Reviewer Name: Tamisha Palmer

LRC Date: 03/18/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021403, PB25021404

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power

Reviewer Name: Tamisha Palmer

LRC Date: 03/18/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021403, PB25021404

Exception Report No.	Description
ER1	The RPD for the duplicate was outside the 25% limit for both prep batches

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Sunita Timsina	Timsina	Chemist Associate	03/06/2025
Name (printed)	Signature	Official Title	Date

Radium Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sunita Timsina

LRC Date: 03/06/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021302, PB25022101

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	No	ER1
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	NA	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sunita Timsina

LRC Date: 03/06/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021302, PB25022101

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sunita Timsina

LRC Date: 03/06/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021302, PB25022101

Exception Report No.	Description
ER1	For PB25022101, The precision on the matrix spike duplicate (MS) was above acceptance limits.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

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- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Kelsey Huff		Chemist	02/26/2025
Name (printed)	Signature	Official Title	Date

Mercury Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 02/26/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021008, PB25021009, PB25021010, PB25021801

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	NA	
	I	Were analytical duplicates analyzed at the appropriate frequency?	NA	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	NA	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 02/26/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021008, PB25021009, PB25021010, PB25021801

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 02/26/2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021008, PB25021009, PB25021010, PB25021801

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

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- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Elizabeth Hoitink	Elizabeth L Hoitink Digitally signed by Elizabeth L Hoitink Date: 2025.02.20 10:14:50 -05'00'	Chemist	2-20-2025
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 2-20-2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021003, PB25021011, PB25021012, QC2502067, QC2502083, QC2502120

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

ICP-MS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	No	ER3, ER4, ER5, ER6
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 2-20-2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021003, PB25021011, PB25021012, QC2502067, QC2502083, QC2502120

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 2-20-2025

Laboratory Job Number: 250394

Prep Batch Number(s): PB25021003, PB25021011, PB25021012, QC2502067, QC2502083, QC2502120

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.
ER3	Matrix Spike failed for Co, Mn, Na, and Mg for sample 250394-001-01.
ER4	Matrix Spike failed for Ca, Na, and Sr for sample 250394-006.
ER5	Matrix Spike failed for Ca, Li, and Na for sample 250394-013.
ER6	Matrix Spike failed for Li, Be, and Na for sample 250394-015.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: AD-2
Customer Description: TG-32
Lab Number: 250367-001
Preparation:
Date Collected: 02/04/2025 11:23 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.45	mg/L	2	0.10	0.02		CRJ	02/13/2025 16:09	EPA 300.1 -1997, Rev. 1.0
Chloride	27.3	mg/L	2	0.06	0.02		CRJ	02/13/2025 16:09	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.36	mg/L	2	0.06	0.02		CRJ	02/13/2025 16:09	EPA 300.1 -1997, Rev. 1.0
Sulfate	290	mg/L	10	3.0	0.6		CRJ	02/13/2025 15:49	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	590	mg/L	1	50	20	S7	SDW	02/07/2025 09:02	SM 2540C-2015

Customer Sample ID: AD-3
Customer Description: TG-32
Lab Number: 250367-002
Preparation:
Date Collected: 02/04/2025 11:49 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.07	mg/L	2	0.10	0.02	J1	CRJ	02/13/2025 15:28	EPA 300.1 -1997, Rev. 1.0
Chloride	5.91	mg/L	2	0.06	0.02		CRJ	02/13/2025 15:28	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.06	mg/L	2	0.06	0.02		CRJ	02/13/2025 15:28	EPA 300.1 -1997, Rev. 1.0
Sulfate	25.7	mg/L	2	0.6	0.1		CRJ	02/13/2025 15:28	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	6	mg/L	1	20	5	J1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	140	mg/L	1	50	20		SDW	02/07/2025 09:08	SM 2540C-2015

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: AD-4
Customer Description: TG-32
Lab Number: 250367-003
Preparation:
Date Collected: 02/03/2025 10:58 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.24	mg/L	2	0.10	0.02		CRJ	02/13/2025 16:51	EPA 300.1 -1997, Rev. 1.0
Chloride	4.21	mg/L	2	0.06	0.02		CRJ	02/13/2025 16:51	EPA 300.1 -1997, Rev. 1.0
Fluoride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	02/13/2025 16:51	EPA 300.1 -1997, Rev. 1.0
Sulfate	17.8	mg/L	2	0.6	0.1		CRJ	02/13/2025 16:51	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	140	mg/L	1	50	20		SDW	02/07/2025 09:08	SM 2540C-2015

Customer Sample ID: AD-7R
Customer Description: TG-32
Lab Number: 250367-004
Preparation:
Date Collected: 02/03/2025 12:09 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.97	mg/L	2	0.10	0.02		CRJ	02/13/2025 17:12	EPA 300.1 -1997, Rev. 1.0
Chloride	23.0	mg/L	2	0.06	0.02		CRJ	02/13/2025 17:12	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.18	mg/L	2	0.06	0.02		CRJ	02/13/2025 17:12	EPA 300.1 -1997, Rev. 1.0
Sulfate	48.4	mg/L	2	0.6	0.1		CRJ	02/13/2025 17:12	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	190	mg/L	1	50	20		SDW	02/07/2025 09:08	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: AD-12 Customer Description: TG-32
Lab Number: 250367-005 Preparation:
Date Collected: 02/03/2025 10:24 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.20	mg/L	2	0.10	0.02		CRJ	02/13/2025 17:32	EPA 300.1 -1997, Rev. 1.0
Chloride	4.94	mg/L	2	0.06	0.02		CRJ	02/13/2025 17:32	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.08	mg/L	2	0.06	0.02		CRJ	02/13/2025 17:32	EPA 300.1 -1997, Rev. 1.0
Sulfate	3.1	mg/L	2	0.6	0.1		CRJ	02/13/2025 17:32	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	80	mg/L	1	50	20		SDW	02/07/2025 09:08	SM 2540C-2015

Customer Sample ID: AD-13 Customer Description: TG-32
Lab Number: 250367-006 Preparation:
Date Collected: 02/03/2025 09:18 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.31	mg/L	2	0.10	0.02		CRJ	02/13/2025 17:53	EPA 300.1 -1997, Rev. 1.0
Chloride	35.2	mg/L	2	0.06	0.02		CRJ	02/13/2025 17:53	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.31	mg/L	2	0.06	0.02		CRJ	02/13/2025 17:53	EPA 300.1 -1997, Rev. 1.0
Sulfate	54.2	mg/L	2	0.6	0.1		CRJ	02/13/2025 17:53	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	20	mg/L	1	20	5		MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	180	mg/L	1	50	20		SDW	02/07/2025 09:15	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: AD-17 Customer Description: TG-32
Lab Number: 250367-007 Preparation:
Date Collected: 02/04/2025 12:19 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.11	mg/L	2	0.10	0.02		CRJ	02/13/2025 18:35	EPA 300.1 -1997, Rev. 1.0
Chloride	9.13	mg/L	2	0.06	0.02		CRJ	02/13/2025 18:35	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.10	mg/L	2	0.06	0.02		CRJ	02/13/2025 18:35	EPA 300.1 -1997, Rev. 1.0
Sulfate	2.9	mg/L	2	0.6	0.1		CRJ	02/13/2025 18:35	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	40	mg/L	1	50	20	J1	SDW	02/07/2025 09:15	SM 2540C-2015

Customer Sample ID: AD-18 Customer Description: TG-32
Lab Number: 250367-008 Preparation:
Date Collected: 02/04/2025 09:04 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.05	mg/L	2	0.10	0.02	J1	CRJ	02/13/2025 18:55	EPA 300.1 -1997, Rev. 1.0
Chloride	4.80	mg/L	2	0.06	0.02		CRJ	02/13/2025 18:55	EPA 300.1 -1997, Rev. 1.0
Fluoride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	02/13/2025 18:55	EPA 300.1 -1997, Rev. 1.0
Sulfate	6.8	mg/L	2	0.6	0.1		CRJ	02/13/2025 18:55	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	90	mg/L	1	50	20		SDW	02/07/2025 09:15	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: AD-22 Customer Description: TG-32
Lab Number: 250367-009 Preparation:
Date Collected: 02/03/2025 13:16 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.43	mg/L	2	0.10	0.02		CRJ	02/13/2025 21:41	EPA 300.1 -1997, Rev. 1.0
Chloride	63.2	mg/L	25	0.8	0.3		CRJ	02/13/2025 21:21	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.85	mg/L	2	0.06	0.02		CRJ	02/13/2025 21:41	EPA 300.1 -1997, Rev. 1.0
Sulfate	246	mg/L	25	8	2		CRJ	02/13/2025 21:21	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	520	mg/L	1	50	20		SDW	02/07/2025 09:15	SM 2540C-2015

Customer Sample ID: AD-28 Customer Description: TG-32
Lab Number: 250367-010 Preparation:
Date Collected: 02/04/2025 10:47 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.10	mg/L	2	0.10	0.02		CRJ	02/13/2025 22:23	EPA 300.1 -1997, Rev. 1.0
Chloride	4.95	mg/L	2	0.06	0.02		CRJ	02/13/2025 22:23	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.89	mg/L	2	0.06	0.02		CRJ	02/13/2025 22:23	EPA 300.1 -1997, Rev. 1.0
Sulfate	22.8	mg/L	2	0.6	0.1		CRJ	02/13/2025 22:23	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	100	mg/L	1	50	20		SDW	02/07/2025 09:21	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: AD-30 Customer Description: TG-32
Lab Number: 250367-011 Preparation:
Date Collected: 02/03/2025 13:19 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.17	mg/L	2	0.10	0.02		CRJ	02/13/2025 23:04	EPA 300.1 -1997, Rev. 1.0
Chloride	13.5	mg/L	2	0.06	0.02		CRJ	02/13/2025 23:04	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.04	mg/L	2	0.06	0.02	J1	CRJ	02/13/2025 23:04	EPA 300.1 -1997, Rev. 1.0
Sulfate	93.2	mg/L	2	0.6	0.1		CRJ	02/13/2025 23:04	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	210	mg/L	1	50	20		SDW	02/07/2025 09:21	SM 2540C-2015

Customer Sample ID: AD-31 Customer Description: TG-32
Lab Number: 250367-012 Preparation:
Date Collected: 02/03/2025 12:15 EST Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.23	mg/L	2	0.10	0.02		CRJ	02/13/2025 23:46	EPA 300.1 -1997, Rev. 1.0
Chloride	13.9	mg/L	2	0.06	0.02		CRJ	02/13/2025 23:46	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.13	mg/L	2	0.06	0.02		CRJ	02/13/2025 23:46	EPA 300.1 -1997, Rev. 1.0
Sulfate	70.6	mg/L	2	0.6	0.1		CRJ	02/13/2025 23:46	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	240	mg/L	1	50	20		SDW	02/07/2025 09:21	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: AD-32
Customer Description: TG-32
Lab Number: 250367-013
Preparation:
Date Collected: 02/03/2025 11:16 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.28	mg/L	2	0.10	0.02		CRJ	02/14/2025 00:07	EPA 300.1 -1997, Rev. 1.0
Chloride	9.98	mg/L	2	0.06	0.02		CRJ	02/14/2025 00:07	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.37	mg/L	2	0.06	0.02		CRJ	02/14/2025 00:07	EPA 300.1 -1997, Rev. 1.0
Sulfate	52.7	mg/L	2	0.6	0.1		CRJ	02/14/2025 00:07	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	10	mg/L	1	20	5	J1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	160	mg/L	1	50	20		SDW	02/07/2025 09:21	SM 2540C-2015

Customer Sample ID: AD-33
Customer Description: TG-32
Lab Number: 250367-014
Preparation:
Date Collected: 02/04/2025 10:24 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.83	mg/L	2	0.10	0.02		CRJ	02/14/2025 01:30	EPA 300.1 -1997, Rev. 1.0
Chloride	11.7	mg/L	2	0.06	0.02		CRJ	02/14/2025 01:30	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.47	mg/L	2	0.06	0.02		CRJ	02/14/2025 01:30	EPA 300.1 -1997, Rev. 1.0
Sulfate	69.2	mg/L	2	0.6	0.1		CRJ	02/14/2025 01:30	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	200	mg/L	1	50	20		SDW	02/07/2025 09:28	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Customer Sample ID: DUPLICATE
Customer Description: TG-32
Lab Number: 250367-015
Preparation:
Date Collected: 02/03/2025 09:18 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.31	mg/L	2	0.10	0.02		CRJ	02/14/2025 00:28	EPA 300.1 -1997, Rev. 1.0
Chloride	35.1	mg/L	2	0.06	0.02		CRJ	02/14/2025 00:28	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.31	mg/L	2	0.06	0.02		CRJ	02/14/2025 00:28	EPA 300.1 -1997, Rev. 1.0
Sulfate	54.2	mg/L	2	0.6	0.1		CRJ	02/14/2025 00:28	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	20	mg/L	1	20	5		MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	200	mg/L	1	50	20		SDW	02/07/2025 09:28	SM 2540C-2015

Customer Sample ID: FIELD BLANK
Customer Description: TG-32
Lab Number: 250367-016
Preparation:
Date Collected: 02/04/2025 10:15 EST
Date Received: 02/06/2025 10:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	<0.02	mg/L	2	0.10	0.02	U1	CRJ	02/14/2025 01:09	EPA 300.1 -1997, Rev. 1.0
Chloride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	02/14/2025 01:09	EPA 300.1 -1997, Rev. 1.0
Fluoride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	02/14/2025 01:09	EPA 300.1 -1997, Rev. 1.0
Sulfate	<0.1	mg/L	2	0.6	0.1	U1	CRJ	02/14/2025 01:09	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	02/10/2025 10:06	SM 2320B-2011
TDS, Filterable Residue	<20	mg/L	1	50	20	U1	SDW	02/07/2025 09:28	SM 2540C-2015

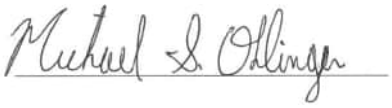
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 250367 **Customer: Pirkey Power Station** **Date Reported: 02/26/2025**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
S7 - Sample did not achieve constant weight.
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: Pirkey - CCR

Contact Name: Pryce Warren

Contact Phone: 325-310-6668

Sampler(s) Matt Hamilton Kenny McDonald

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 250367

Analysis Turnaround Time (in Calendar Days)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3: B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL and Na, K, Mg, Sr	Field-filter 250 mL bottle, then pH<2, HNO_3: B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Fe, Mn, Mo, Pb, Se, TL and Na, K, Mg, Sr	1 L bottle, Cool, 0-6°C: TDS, F, Cl, SO_4, Br, and Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3: Ra-226, Ra-228	Field-Filter 250 mL Glass bottle, HCL**, pH<2: Hg	250 mL Glass bottle, HCL**, pH<2: Hg		Sample Specific Notes.
AD-2	2/4/2025	1023	G	GW	1				X					
AD-3	2/4/2025	1049	G	GW	1				X					
AD-4	2/3/2025	958	G	GW	1				X					
AD-7R	2/3/2025	1109	G	GW	1				X					
AD-12	2/3/2025	924	G	GW	1				X					
AD-13	2/3/2025	818	G	GW	1				X					
AD-17	2/4/2025	1119	G	GW	1				X					
AD-18	2/4/2025	804	G	GW	1				X					
AD-22	2/3/2025	1216	G	GW	1				X					
AD-28	2/4/2025	947	G	GW	1				X					
AD-30	2/3/2025	1219	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4	2	2		

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32

Relinquished by:	Company: Eagle	Date/Time: 2-5-25 1300	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 2/6/25 10:00

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: Pirkey - CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL and Na, K, Mg, Sr	Field-filter 250 mL bottle, then pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Fe, Mn, Mo, Pb, Se, TL and Na, K, Mg, Sr	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4, Br, and Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	Field-Filter 250 mL Glass bottle, HCL**, pH<2 Hg	250 mL Glass bottle, HCL**, pH<2 Hg	Sample Specific Notes
AD-31	2/3/2025	1115	G	GW	1				X				
AD-32	2/3/2025	1016	G	GW	1				X				
AD-33	2/4/2025	924	G	GW	1				X				
DUPLICATE	2/3/2025	818	G	GW	1				X				
FIELD BLANK	2/4/2025	915	G	GW	1				X				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4	2	2	

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	Eagle	2-5-25 1500		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 2/6/25 10:00

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 — Sample Receipt Form Rev. 10, 01/03/25

Package Type: (Cooler) Box Bag Envelope

Delivery Type: UPS (FedEX) USPS Other _____

Plant/Customer Pirkey — **Total # of Containers RECEIVED in Job:** 16

Opened By KSH / MSO

Date/Time 02/06/25 1005

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? (Y) / N or N/A

Initial/Date: mbw 02/06/25 on ice / no ice

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 02/14/2025)

Was container in good condition? (Y) / N Comments

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: KSH 02/06/25

pH paper: mfr Lab Rat, PN 4801, LOT# X000RWDG21, EXPIR DATE 11/30/2025

*** Note changes to pH paper in comments below***

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 250367 Initial & Date & Time : _____

Logged by ~~KSH~~ MSO Comments: _____

(Record Test Count on back of form)

02-06-25 MSO

Total # of Containers LISTED on COC: 16

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 250367 **Initial/ Date:** MSO 2/6/25 **Peer Review Initial/ Date:** MBC 02/07/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
6	250367-001		6
	" -002		6
	" -003		6
	" -004		6
	" -005		6
	" -006		6
	" -007		6
	" -008		6
	" -009		6
	" -010		6
	" -011		6
	" -012		6
	" -013		6
	" -014		6
	" -015		6
	" -016		6

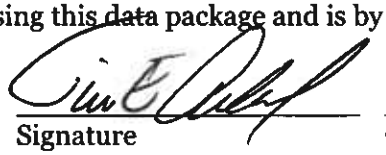
Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this ~~data~~ package and is by signature affirming the above release statement is true.

Tim E Arnold		Chemist Principal	02/14/2025
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey - CCR

Reviewer Name: Tim E Arnold

LRC Date: 2/14/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502101

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Ion Chromatography Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey - CCR

Reviewer Name: Tim E Arnold

LRC Date: 2/14/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502101

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey - CCR

Reviewer Name: Tim E Arnold

LRC Date: 2/14/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502101

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Sandra Williams	Sandra D. Williams	Chemist	2/26/2025
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 2/26/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502082

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 2/26/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502082

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 2/26/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502082

Exception Report No.	Description

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

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- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger		Chemist	02/26/2025
Name (printed)	Signature	Official Title	Date

Alkalinity Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 02/26/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502056

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 02/26/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502056

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 02/26/2025

Laboratory Job Number: 250367

Prep Batch Number(s): QC2502056

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<0.5*MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-2
Customer Description: TG-32
Lab Number: 251109-001
Preparation:
Date Collected: 04/22/2025 10:28 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Arsenic	1.5	µg/L	5	0.5	0.2		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Barium	13.5	µg/L	5	1.0	0.3		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Beryllium	0.90	µg/L	5	0.25	0.04		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Boron	3.02	mg/L	5	0.25	0.04		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Cadmium	0.12	µg/L	5	0.10	0.02		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Calcium	4.6	mg/L	5	0.3	0.1		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Chromium	0.5	µg/L	5	1.5	0.4	J1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Cobalt	34.9	µg/L	1	0.020	0.005		GES	04/30/2025 12:22	EPA 200.8-1994, Rev. 5.4
Copper	<0.5	µg/L	5	2.5	0.5	U1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Lead	0.7	µg/L	5	1.0	0.3	J1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Lithium	0.0791	mg/L	5	0.0015	0.0003	M1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Magnesium	10.2	mg/L	5	0.50	0.05		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Mercury	62	ng/L	1	5	2		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.5	µg/L	5	2.5	0.5	U1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Potassium	1.59	mg/L	5	0.50	0.05		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Selenium	6.4	µg/L	5	2.5	0.2		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Sodium	120	mg/L	5	1.0	0.1	M1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Strontium	0.0636	mg/L	5	0.0100	0.0003		GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4
Thallium	0.1	µg/L	5	1.0	0.1	J1	GES	04/30/2025 13:27	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.08	pCi/L	0.30	0.30	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	89.4	%						
Radium-228	1.45	pCi/L	0.13	0.40	L1	TTP	05/08/2025 16:14	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	94.4	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-2
Customer Description: TG-32
Lab Number: 251109-001-01
Preparation: Dissolved
Date Collected: 04/22/2025 10:28 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	04/30/2025 13:44	EPA 200.8-1994, Rev. 5.4
Arsenic	1.43	µg/L	1	0.10	0.03		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Barium	13.6	µg/L	5	1.0	0.3		GES	04/30/2025 13:44	EPA 200.8-1994, Rev. 5.4
Beryllium	0.94	µg/L	5	0.25	0.04		GES	04/30/2025 13:44	EPA 200.8-1994, Rev. 5.4
Cadmium	0.150	µg/L	1	0.020	0.004		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Chromium	0.39	µg/L	1	0.30	0.07		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Cobalt	35.1	µg/L	1	0.020	0.005		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Copper	0.5	µg/L	1	0.5	0.1		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Iron	0.194	mg/L	1	0.020	0.003		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Lead	0.7	µg/L	5	1.0	0.3	J1	GES	04/30/2025 13:44	EPA 200.8-1994, Rev. 5.4
Lithium	0.0819	mg/L	5	0.0015	0.0003		GES	04/30/2025 13:44	EPA 200.8-1994, Rev. 5.4
Manganese	0.119	mg/L	1	0.00100	0.00007		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Selenium	6.56	µg/L	1	0.50	0.04		GES	04/30/2025 12:38	EPA 200.8-1994, Rev. 5.4
Thallium	0.2	µg/L	5	1.0	0.1	J1	GES	04/30/2025 13:44	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-3
Customer Description: TG-32
Lab Number: 251109-002
Preparation:
Date Collected: 04/22/2025 11:47 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.015	µg/L	1	0.100	0.008	J1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Arsenic	0.50	µg/L	1	0.10	0.03		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Barium	69.3	µg/L	1	0.20	0.05		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Beryllium	0.175	µg/L	1	0.050	0.007		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Boron	0.054	mg/L	1	0.050	0.007		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Cadmium	0.017	µg/L	1	0.020	0.004	J1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Calcium	5.12	mg/L	1	0.05	0.02		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Chromium	0.29	µg/L	1	0.30	0.07	J1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Cobalt	4.59	µg/L	1	0.020	0.005		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Copper	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Lead	0.11	µg/L	1	0.20	0.05	J1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Lithium	0.0589	mg/L	1	0.00030	0.00006		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Magnesium	2.52	mg/L	1	0.100	0.009		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.1	µg/L	1	0.5	0.1	J1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Potassium	2.64	mg/L	1	0.10	0.01		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Selenium	0.07	µg/L	1	0.50	0.04	J1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Sodium	10.2	mg/L	1	0.20	0.02		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Strontium	0.0337	mg/L	1	0.00200	0.00005		GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4
Thallium	0.07	µg/L	1	0.20	0.02	J1	GES	04/30/2025 12:54	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.49	pCi/L	0.25	0.30	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	93.9	%						
Radium-228	0.36	pCi/L	0.13	0.43	L1	TTP	05/08/2025 16:14	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	101	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-3
Customer Description: TG-32
Lab Number: 251109-002-01
Preparation: Dissolved
Date Collected: 04/22/2025 11:47 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	04/30/2025 14:00	EPA 200.8-1994, Rev. 5.4
Arsenic	0.40	µg/L	1	0.10	0.03		GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Barium	71.5	µg/L	5	1.0	0.3		GES	04/30/2025 14:00	EPA 200.8-1994, Rev. 5.4
Beryllium	0.19	µg/L	5	0.25	0.04	J1	GES	04/30/2025 14:00	EPA 200.8-1994, Rev. 5.4
Cadmium	0.019	µg/L	1	0.020	0.004	J1	GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Chromium	0.32	µg/L	1	0.30	0.07		GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Cobalt	4.87	µg/L	1	0.020	0.005		GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Copper	0.1	µg/L	1	0.5	0.1	J1	GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Iron	3.78	mg/L	1	0.020	0.003		GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Lead	<0.3	µg/L	5	1.0	0.3	U1	GES	04/30/2025 14:00	EPA 200.8-1994, Rev. 5.4
Lithium	0.0804	mg/L	5	0.0015	0.0003		GES	04/30/2025 14:00	EPA 200.8-1994, Rev. 5.4
Manganese	0.0634	mg/L	1	0.00100	0.00007		GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 13:00	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	04/30/2025 14:00	EPA 200.8-1994, Rev. 5.4

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Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-4
Customer Description: TG-32
Lab Number: 251109-003
Preparation:
Date Collected: 04/23/2025 11:02 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Arsenic	0.35	µg/L	1	0.10	0.03		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Barium	103	µg/L	1	0.20	0.05		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Beryllium	0.50	µg/L	5	0.25	0.04		GES	04/30/2025 14:05	EPA 200.8-1994, Rev. 5.4
Boron	0.018	mg/L	1	0.050	0.007	J1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Cadmium	0.016	µg/L	1	0.020	0.004	J1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Calcium	2.37	mg/L	1	0.05	0.02		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Chromium	0.32	µg/L	1	0.30	0.07		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Cobalt	4.86	µg/L	1	0.020	0.005		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Copper	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Lithium	0.0373	mg/L	5	0.0015	0.0003		GES	04/30/2025 14:05	EPA 200.8-1994, Rev. 5.4
Magnesium	0.898	mg/L	1	0.100	0.009		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Mercury	4	ng/L	1	5	2	J1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Potassium	2.21	mg/L	1	0.10	0.01		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Sodium	7.13	mg/L	1	0.20	0.02		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Strontium	0.0187	mg/L	1	0.00200	0.00005		GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	04/30/2025 13:05	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.51	pCi/L	0.26	0.39	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	88.1	%						
Radium-228	0.88	pCi/L	0.13	0.40	L1	TTP	05/08/2025 16:14	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	104	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-4
Customer Description: TG-32
Lab Number: 251109-003-01
Preparation: Dissolved
Date Collected: 04/23/2025 11:02 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Arsenic	0.04	µg/L	1	0.10	0.03	J1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Barium	109	µg/L	1	0.20	0.05		GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Beryllium	0.50	µg/L	5	0.25	0.04		GES	04/30/2025 14:11	EPA 200.8-1994, Rev. 5.4
Cadmium	0.017	µg/L	1	0.020	0.004	J1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Chromium	0.21	µg/L	1	0.30	0.07	J1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Cobalt	5.24	µg/L	1	0.020	0.005		GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Copper	0.2	µg/L	1	0.5	0.1	J1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Iron	0.118	mg/L	1	0.020	0.003		GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Lithium	0.0369	mg/L	5	0.0015	0.0003		GES	04/30/2025 14:11	EPA 200.8-1994, Rev. 5.4
Manganese	0.0433	mg/L	1	0.00100	0.00007		GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	04/30/2025 13:11	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-7R
Customer Description: TG-32
Lab Number: 251109-004
Preparation:
Date Collected: 04/21/2025 12:03 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Arsenic	0.39	µg/L	1	0.10	0.03		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Barium	45.7	µg/L	1	0.20	0.05		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Beryllium	1.53	µg/L	1	0.050	0.007		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Boron	0.293	mg/L	1	0.050	0.007		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Cadmium	0.379	µg/L	1	0.020	0.004		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Calcium	3.05	mg/L	1	0.05	0.02		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Chromium	0.29	µg/L	1	0.30	0.07	J1	GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Cobalt	18.9	µg/L	1	0.020	0.005		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Copper	0.2	µg/L	1	0.5	0.1	J1	GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Lead	0.09	µg/L	1	0.20	0.05	J1	GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Lithium	0.0506	mg/L	1	0.00030	0.00006		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Magnesium	4.85	mg/L	1	0.100	0.009		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Mercury	5	ng/L	1	5	2		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Potassium	1.76	mg/L	1	0.10	0.01		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Selenium	1.39	µg/L	1	0.50	0.04		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Sodium	22.3	mg/L	1	0.20	0.02		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Strontium	0.0316	mg/L	1	0.00200	0.00005		GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4
Thallium	0.16	µg/L	1	0.20	0.02	J1	GES	04/30/2025 13:16	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.33	pCi/L	0.23	0.27	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	92.3	%						
Radium-228	0.80	pCi/L	0.14	0.45	L1	TTP	05/08/2025 16:14	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	103	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Audinet: 210-4221

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-7R
Customer Description: TG-32
Lab Number: 251109-004-01
Preparation: Dissolved
Date Collected: 04/21/2025 12:03 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Arsenic	0.31	µg/L	1	0.10	0.03		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Barium	44.6	µg/L	1	0.20	0.05		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Beryllium	1.47	µg/L	1	0.050	0.007		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Cadmium	0.355	µg/L	1	0.020	0.004		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Chromium	0.24	µg/L	1	0.30	0.07	J1	GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Cobalt	18.8	µg/L	1	0.020	0.005		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Copper	0.4	µg/L	1	0.5	0.1	J1	GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Iron	4.87	mg/L	1	0.020	0.003		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Lead	0.07	µg/L	1	0.20	0.05	J1	GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Lithium	0.0492	mg/L	1	0.00030	0.00006		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Manganese	0.0605	mg/L	1	0.00100	0.00007		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Selenium	1.47	µg/L	1	0.50	0.04		GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4
Thallium	0.15	µg/L	1	0.20	0.02	J1	GES	04/30/2025 13:22	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-8
Customer Description: TG-32
Lab Number: 251109-005
Preparation:
Date Collected: 04/22/2025 12:14 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.805	mg/L	1	0.050	0.007		GES	04/30/2025 15:16	EPA 200.8-1994, Rev. 5.4
Calcium	63.3	mg/L	1	0.05	0.02		GES	04/30/2025 15:16	EPA 200.8-1994, Rev. 5.4
Magnesium	5.25	mg/L	1	0.100	0.009		GES	04/30/2025 15:16	EPA 200.8-1994, Rev. 5.4
Potassium	1.04	mg/L	1	0.10	0.01		GES	04/30/2025 15:16	EPA 200.8-1994, Rev. 5.4
Sodium	9.65	mg/L	1	0.20	0.02		GES	04/30/2025 15:16	EPA 200.8-1994, Rev. 5.4
Strontium	0.384	mg/L	1	0.00200	0.00005		GES	04/30/2025 15:16	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-12
Customer Description: TG-32
Lab Number: 251109-006
Preparation:
Date Collected: 04/21/2025 10:40 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.010	µg/L	1	0.100	0.008	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Arsenic	0.09	µg/L	1	0.10	0.03	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Barium	15.0	µg/L	1	0.20	0.05		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Beryllium	0.108	µg/L	1	0.050	0.007		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Boron	0.020	mg/L	1	0.050	0.007	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Cadmium	0.005	µg/L	1	0.020	0.004	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Calcium	0.17	mg/L	1	0.05	0.02		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Chromium	0.52	µg/L	1	0.30	0.07		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Cobalt	0.900	µg/L	1	0.020	0.005		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Copper	0.2	µg/L	1	0.5	0.1	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Lead	0.10	µg/L	1	0.20	0.05	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Lithium	0.00514	mg/L	1	0.00030	0.00006		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Magnesium	0.273	mg/L	1	0.100	0.009		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	1	5	2	J1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Potassium	0.18	mg/L	1	0.10	0.01		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Selenium	0.20	µg/L	1	0.50	0.04	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Sodium	3.29	mg/L	1	0.20	0.02		GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Strontium	0.00157	mg/L	1	0.00200	0.00005	J1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/30/2025 15:22	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.51	pCi/L	0.14	0.27	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	96.9	%						
Radium-228	0.81	pCi/L	0.16	0.52	L1	TTP	05/08/2025 16:14	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	102	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-12
Customer Description: TG-32
Lab Number: 251109-006-01
Preparation: Dissolved
Date Collected: 04/21/2025 10:40 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.019	µg/L	1	0.100	0.008	J1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Arsenic	0.06	µg/L	1	0.10	0.03	J1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Barium	15.4	µg/L	1	0.20	0.05		GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Beryllium	0.109	µg/L	1	0.050	0.007		GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Cadmium	0.005	µg/L	1	0.020	0.004	J1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Chromium	0.34	µg/L	1	0.30	0.07		GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Cobalt	1.02	µg/L	1	0.020	0.005		GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Copper	0.3	µg/L	1	0.5	0.1	J1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Iron	0.021	mg/L	1	0.020	0.003		GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Lithium	0.00530	mg/L	1	0.00030	0.00006		GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Manganese	0.00263	mg/L	1	0.00100	0.00007		GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Selenium	0.15	µg/L	1	0.50	0.04	J1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/30/2025 15:27	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-13
Customer Description: TG-32
Lab Number: 251109-007
Preparation:
Date Collected: 04/21/2025 11:04 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Arsenic	2.15	µg/L	1	0.10	0.03		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Barium	37.5	µg/L	1	0.20	0.05		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.327	µg/L	1	0.050	0.007		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Boron	0.072	mg/L	1	0.050	0.007		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Calcium	10.2	mg/L	1	0.05	0.02		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.26	µg/L	1	0.30	0.07	J1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Cobalt	49.9	µg/L	1	0.020	0.005		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Copper	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.129	mg/L	1	0.00030	0.00006		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Magnesium	14.0	mg/L	1	0.100	0.009		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Potassium	4.90	mg/L	1	0.10	0.01		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Sodium	20.2	mg/L	1	0.20	0.02		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Strontium	0.0740	mg/L	1	0.00200	0.00005		GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	04/30/2025 15:33	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.03	pCi/L	0.21	0.29	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	86.7	%						
Radium-228	0.88	pCi/L	0.15	0.48	L1	TTP	05/08/2025 16:14	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	101	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-13
Customer Description: TG-32
Lab Number: 251109-007-01
Preparation: Dissolved
Date Collected: 04/21/2025 11:04 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Arsenic	0.49	µg/L	1	0.10	0.03		GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Barium	37.1	µg/L	1	0.20	0.05		GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Beryllium	0.233	µg/L	1	0.050	0.007		GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Chromium	0.25	µg/L	1	0.30	0.07	J1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Cobalt	50.1	µg/L	1	0.020	0.005		GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Copper	0.1	µg/L	1	0.5	0.1	J1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Iron	28.5	mg/L	1	0.020	0.003		GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Lithium	0.128	mg/L	1	0.00030	0.00006		GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Manganese	0.479	mg/L	1	0.00100	0.00007		GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	04/30/2025 15:38	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-16
Customer Description: TG-32
Lab Number: 251109-008
Preparation:
Date Collected: 04/21/2025 10:04 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.015	mg/L	1	0.050	0.007	J1	GES	04/30/2025 15:44	EPA 200.8-1994, Rev. 5.4
Calcium	0.88	mg/L	1	0.05	0.02		GES	04/30/2025 15:44	EPA 200.8-1994, Rev. 5.4
Manganese	0.0157	mg/L	1	0.00100	0.00007		GES	04/30/2025 15:44	EPA 200.8-1994, Rev. 5.4
Potassium	1.09	mg/L	1	0.10	0.01		GES	04/30/2025 15:44	EPA 200.8-1994, Rev. 5.4
Sodium	17.6	mg/L	1	0.20	0.02		GES	04/30/2025 15:44	EPA 200.8-1994, Rev. 5.4
Strontium	0.0114	mg/L	1	0.00200	0.00005		GES	04/30/2025 15:44	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-17
Customer Description: TG-32
Lab Number: 251109-009
Preparation:
Date Collected: 04/22/2025 10:11 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Arsenic	0.07	µg/L	1	0.10	0.03	J1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Barium	93.1	µg/L	1	0.20	0.05		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Beryllium	0.240	µg/L	1	0.050	0.007		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Boron	0.039	mg/L	1	0.050	0.007	J1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Cadmium	0.019	µg/L	1	0.020	0.004	J1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Calcium	0.25	mg/L	1	0.05	0.02		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Chromium	0.33	µg/L	1	0.30	0.07		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Cobalt	4.60	µg/L	1	0.020	0.005		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Copper	0.3	µg/L	1	0.5	0.1	J1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Lithium	0.00984	mg/L	1	0.00030	0.00006		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Magnesium	1.45	mg/L	1	0.100	0.009		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Mercury	97	ng/L	4	20	8		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Potassium	0.37	mg/L	1	0.10	0.01		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Selenium	0.06	µg/L	1	0.50	0.04	J1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Sodium	6.39	mg/L	1	0.20	0.02		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Strontium	0.00715	mg/L	1	0.00200	0.00005		GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/30/2025 15:49	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.69	pCi/L	0.27	0.41	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	89.2	%						
Radium-228	1.06	pCi/L	0.11	0.34	L1	TTP	05/08/2025 16:14	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	105	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-17
Customer Description: TG-32
Lab Number: 251109-009-01
Preparation: Dissolved
Date Collected: 04/22/2025 10:11 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Arsenic	0.05	µg/L	1	0.10	0.03	J1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Barium	86.9	µg/L	1	0.20	0.05		GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Beryllium	0.240	µg/L	1	0.050	0.007		GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Cadmium	0.020	µg/L	1	0.020	0.004		GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Chromium	0.29	µg/L	1	0.30	0.07	J1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Cobalt	4.21	µg/L	1	0.020	0.005		GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Copper	0.3	µg/L	1	0.5	0.1	J1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Iron	0.005	mg/L	1	0.020	0.003	J1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Lithium	0.00980	mg/L	1	0.00030	0.00006		GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Manganese	0.00360	mg/L	1	0.00100	0.00007		GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Selenium	0.06	µg/L	1	0.50	0.04	J1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/30/2025 15:55	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-18
Customer Description: TG-32
Lab Number: 251109-010
Preparation:
Date Collected: 04/23/2025 10:01 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Arsenic	0.18	µg/L	1	0.10	0.03		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Barium	76.8	µg/L	1	0.20	0.05		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Beryllium	0.082	µg/L	1	0.050	0.007		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Boron	0.011	mg/L	1	0.050	0.007	J1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Cadmium	0.011	µg/L	1	0.020	0.004	J1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Calcium	0.23	mg/L	1	0.05	0.02		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Chromium	0.49	µg/L	1	0.30	0.07		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Cobalt	0.991	µg/L	1	0.020	0.005		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Copper	0.2	µg/L	1	0.5	0.1	J1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Lead	0.09	µg/L	1	0.20	0.05	J1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Lithium	0.0152	mg/L	1	0.00030	0.00006		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Magnesium	0.327	mg/L	1	0.100	0.009		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Mercury	14	ng/L	1	5	2		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Potassium	0.82	mg/L	1	0.10	0.01		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Selenium	0.10	µg/L	1	0.50	0.04	J1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Sodium	5.98	mg/L	1	0.20	0.02		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Strontium	0.00446	mg/L	1	0.00200	0.00005		GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	04/30/2025 16:00	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.67	pCi/L	0.15	0.20	O3, L1	ST	05/09/2025 13:07	SW-846 9315-1986, Rev. 0
Carrier Recovery	105	%						
Radium-228	0.45	pCi/L	0.14	0.45		TTP	05/12/2025 17:25	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	99.3	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
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Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-18
Customer Description: TG-32
Lab Number: 251109-010-01
Preparation: Dissolved
Date Collected: 04/23/2025 10:01 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Arsenic	0.06	µg/L	1	0.10	0.03	J1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Barium	71.3	µg/L	1	0.20	0.05		GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Beryllium	0.084	µg/L	1	0.050	0.007		GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Cadmium	0.011	µg/L	1	0.020	0.004	J1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Chromium	0.22	µg/L	1	0.30	0.07	J1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Cobalt	1.10	µg/L	1	0.020	0.005		GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Copper	0.3	µg/L	1	0.5	0.1	J1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Iron	0.018	mg/L	1	0.020	0.003	J1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Lithium	0.0158	mg/L	1	0.00030	0.00006		GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Manganese	0.00444	mg/L	1	0.00100	0.00007		GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Selenium	0.05	µg/L	1	0.50	0.04	J1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	04/30/2025 16:05	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-22
Customer Description: TG-32
Lab Number: 251109-011
Preparation:
Date Collected: 04/21/2025 13:05 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	05/06/2025 22:20	EPA 200.8-1994, Rev. 5.4
Arsenic	2.06	µg/L	1	0.10	0.03		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Barium	14.8	µg/L	5	1.0	0.3		GES	05/06/2025 22:20	EPA 200.8-1994, Rev. 5.4
Beryllium	8.00	µg/L	1	0.050	0.007		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Boron	0.069	mg/L	1	0.050	0.007		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Cadmium	1.50	µg/L	1	0.020	0.004		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Calcium	14.0	mg/L	1	0.05	0.02		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Chromium	0.51	µg/L	1	0.30	0.07		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Cobalt	104	µg/L	1	0.020	0.005		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Copper	0.5	µg/L	1	0.5	0.1		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Lead	0.3	µg/L	5	1.0	0.3	J1	GES	05/06/2025 22:20	EPA 200.8-1994, Rev. 5.4
Lithium	0.135	mg/L	1	0.00030	0.00006		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Magnesium	21.0	mg/L	1	0.100	0.009		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Mercury	1700	ng/L	50	300	100		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Potassium	3.89	mg/L	1	0.10	0.01		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Selenium	10.0	µg/L	1	0.50	0.04		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Sodium	98.4	mg/L	1	0.20	0.02		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Strontium	0.127	mg/L	1	0.00200	0.00005		GES	04/30/2025 16:11	EPA 200.8-1994, Rev. 5.4
Thallium	0.2	µg/L	5	1.0	0.1	J1	GES	05/06/2025 22:20	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.75	pCi/L	0.15	0.23		WCG	05/06/2025 13:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	90.8	%						
Radium-228	1.80	pCi/L	0.17	0.50		TTP	05/12/2025 17:25	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.8	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-22
Customer Description: TG-32
Lab Number: 251109-011-01
Preparation: Dissolved
Date Collected: 04/21/2025 13:05 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Arsenic	1.96	µg/L	1	0.10	0.03		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Barium	14.6	µg/L	5	1.0	0.3		GES	05/06/2025 22:25	EPA 200.8-1994, Rev. 5.4
Beryllium	7.92	µg/L	1	0.050	0.007		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Cadmium	1.48	µg/L	1	0.020	0.004		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Chromium	0.54	µg/L	1	0.30	0.07		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Cobalt	103	µg/L	1	0.020	0.005		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Copper	0.9	µg/L	1	0.5	0.1		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Iron	5.58	mg/L	1	0.020	0.003		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Lead	0.4	µg/L	5	1.0	0.3	J1	GES	05/06/2025 22:25	EPA 200.8-1994, Rev. 5.4
Lithium	0.138	mg/L	1	0.00030	0.00006		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Manganese	0.353	mg/L	1	0.00100	0.00007		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Mercury	39	ng/L	1	5	2		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Selenium	9.95	µg/L	1	0.50	0.04		GES	04/30/2025 16:16	EPA 200.8-1994, Rev. 5.4
Thallium	0.2	µg/L	5	1.0	0.1	J1	GES	05/06/2025 22:25	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-23
Customer Description: TG-32
Lab Number: 251109-012
Preparation:
Date Collected: 04/23/2025 11:57 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.424	mg/L	1	0.050	0.007		GES	04/30/2025 17:55	EPA 200.8-1994, Rev. 5.4
Calcium	0.21	mg/L	1	0.05	0.02		GES	04/30/2025 17:55	EPA 200.8-1994, Rev. 5.4
Magnesium	0.200	mg/L	1	0.100	0.009		GES	04/30/2025 17:55	EPA 200.8-1994, Rev. 5.4
Potassium	2.83	mg/L	1	0.10	0.01		GES	04/30/2025 17:55	EPA 200.8-1994, Rev. 5.4
Sodium	5.00	mg/L	1	0.20	0.02		GES	04/30/2025 17:55	EPA 200.8-1994, Rev. 5.4
Strontium	0.00229	mg/L	1	0.00200	0.00005		GES	04/30/2025 17:55	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-27
Customer Description: TG-32
Lab Number: 251109-013
Preparation:
Date Collected: 04/23/2025 10:43 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.083	mg/L	1	0.050	0.007		GES	04/30/2025 18:11	EPA 200.8-1994, Rev. 5.4
Calcium	3.67	mg/L	1	0.05	0.02		GES	04/30/2025 18:11	EPA 200.8-1994, Rev. 5.4
Magnesium	4.98	mg/L	1	0.100	0.009		GES	04/30/2025 18:11	EPA 200.8-1994, Rev. 5.4
Potassium	2.07	mg/L	1	0.10	0.01		GES	04/30/2025 18:11	EPA 200.8-1994, Rev. 5.4
Sodium	11.5	mg/L	1	0.20	0.02		GES	04/30/2025 18:11	EPA 200.8-1994, Rev. 5.4
Strontium	0.0556	mg/L	1	0.00200	0.00005		GES	04/30/2025 18:11	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

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Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-28
Customer Description: TG-32
Lab Number: 251109-014
Preparation:
Date Collected: 04/22/2025 10:45 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.011	µg/L	1	0.100	0.008	J1	GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Arsenic	0.13	µg/L	1	0.10	0.03		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Barium	136	µg/L	1	0.20	0.05		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Beryllium	0.615	µg/L	1	0.050	0.007		GES	05/06/2025 22:30	EPA 200.8-1994, Rev. 5.4
Boron	0.350	mg/L	1	0.050	0.007		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Cadmium	0.061	µg/L	1	0.020	0.004		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Calcium	1.65	mg/L	1	0.05	0.02		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Chromium	0.41	µg/L	1	0.30	0.07		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Cobalt	16.1	µg/L	1	0.020	0.005		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Copper	0.4	µg/L	1	0.5	0.1	J1	GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Lead	0.11	µg/L	1	0.20	0.05	J1	GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.0266	mg/L	1	0.00030	0.00006		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Magnesium	3.62	mg/L	1	0.100	0.009		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Mercury	11	ng/L	1	5	2		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Potassium	0.82	mg/L	1	0.10	0.01		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Selenium	0.29	µg/L	1	0.50	0.04	J1	GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Sodium	6.66	mg/L	1	0.20	0.02		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Strontium	0.0238	mg/L	1	0.00200	0.00005		GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	04/30/2025 18:28	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.58	pCi/L	0.22	0.27		WCG	05/06/2025 13:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.7	%						
Radium-228	0.99	pCi/L	0.13	0.39		TTP	05/12/2025 17:25	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	98.8	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
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Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-28
Customer Description: TG-32
Lab Number: 251109-014-01
Preparation: Dissolved
Date Collected: 04/22/2025 10:45 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.009	µg/L	1	0.100	0.008	J1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Arsenic	0.08	µg/L	1	0.10	0.03	J1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Barium	133	µg/L	1	0.20	0.05		GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.607	µg/L	1	0.050	0.007		GES	05/06/2025 22:36	EPA 200.8-1994, Rev. 5.4
Cadmium	0.061	µg/L	1	0.020	0.004		GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.30	µg/L	1	0.30	0.07		GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Cobalt	15.6	µg/L	1	0.020	0.005		GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Copper	0.4	µg/L	1	0.5	0.1	J1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Iron	0.012	mg/L	1	0.020	0.003	J1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Lead	0.09	µg/L	1	0.20	0.05	J1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.0263	mg/L	1	0.00030	0.00006		GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Manganese	0.0595	mg/L	1	0.00100	0.00007		GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Selenium	0.18	µg/L	1	0.50	0.04	J1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	04/30/2025 18:33	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-30
Customer Description: TG-32
Lab Number: 251109-015
Preparation:
Date Collected: 04/22/2025 09:30 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Arsenic	0.14	µg/L	1	0.10	0.03		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Barium	43.7	µg/L	1	0.20	0.05		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Beryllium	0.070	µg/L	1	0.050	0.007		GES	05/06/2025 22:41	EPA 200.8-1994, Rev. 5.4
Boron	1.02	mg/L	1	0.050	0.007		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Cadmium	0.005	µg/L	1	0.020	0.004	J1	GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Calcium	0.44	mg/L	1	0.05	0.02		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Chromium	0.50	µg/L	1	0.30	0.07		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Cobalt	3.05	µg/L	1	0.020	0.005		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Copper	0.2	µg/L	1	0.5	0.1	J1	GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.00856	mg/L	1	0.00030	0.00006		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Magnesium	1.58	mg/L	1	0.100	0.009		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Mercury	16	ng/L	1	5	2		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Potassium	0.70	mg/L	1	0.10	0.01		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Selenium	0.23	µg/L	1	0.50	0.04	J1	GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Sodium	54.6	mg/L	1	0.20	0.02		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Strontium	0.00630	mg/L	1	0.00200	0.00005		GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	04/30/2025 18:39	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.53	pCi/L	0.15	0.28		WCG	05/06/2025 13:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	69.7	%						
Radium-228	0.28	pCi/L	0.10	0.33		TTP	05/12/2025 17:25	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	101	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-30
Customer Description: TG-32
Lab Number: 251109-015-01
Preparation: Dissolved
Date Collected: 04/22/2025 09:30 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Arsenic	0.09	µg/L	1	0.10	0.03	J1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Barium	42.5	µg/L	1	0.20	0.05		GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Beryllium	0.067	µg/L	1	0.050	0.007		GES	05/06/2025 22:47	EPA 200.8-1994, Rev. 5.4
Cadmium	0.008	µg/L	1	0.020	0.004	J1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Chromium	0.38	µg/L	1	0.30	0.07		GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Cobalt	3.17	µg/L	1	0.020	0.005		GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Copper	0.3	µg/L	1	0.5	0.1	J1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Iron	0.007	mg/L	1	0.020	0.003	J1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Lithium	0.00892	mg/L	1	0.00030	0.00006		GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Manganese	0.0127	mg/L	1	0.00100	0.00007		GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Selenium	0.24	µg/L	1	0.50	0.04	J1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	04/30/2025 18:44	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-31
Customer Description: TG-32
Lab Number: 251109-016
Preparation:
Date Collected: 04/21/2025 12:20 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Arsenic	0.26	µg/L	1	0.10	0.03		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Barium	31.0	µg/L	1	0.20	0.05		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Beryllium	0.94	µg/L	5	0.25	0.04		GES	05/06/2025 22:52	EPA 200.8-1994, Rev. 5.4
Boron	0.024	mg/L	1	0.050	0.007	J1	GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Cadmium	0.061	µg/L	1	0.020	0.004		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Calcium	2.20	mg/L	1	0.05	0.02		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Chromium	0.39	µg/L	1	0.30	0.07		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Cobalt	8.87	µg/L	1	0.020	0.005		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Copper	0.5	µg/L	1	0.5	0.1		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Lead	0.27	µg/L	1	0.20	0.05		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Lithium	0.0934	mg/L	10	0.0030	0.0006		GES	05/08/2025 14:49	EPA 200.8-1994, Rev. 5.4
Magnesium	3.40	mg/L	1	0.100	0.009		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Mercury	500	ng/L	10	50	20		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Potassium	1.54	mg/L	1	0.10	0.01		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Selenium	0.38	µg/L	1	0.50	0.04	J1	GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Sodium	29.5	mg/L	1	0.20	0.02		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Strontium	0.0322	mg/L	1	0.00200	0.00005		GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	04/30/2025 18:49	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.07	pCi/L	0.18	0.20		WCG	05/06/2025 13:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	100	%						
Radium-228	1.60	pCi/L	0.15	0.45		TTP	05/12/2025 17:25	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	102	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-31
Customer Description: TG-32
Lab Number: 251109-016-01
Preparation: Dissolved
Date Collected: 04/21/2025 12:20 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Arsenic	0.18	µg/L	1	0.10	0.03		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Barium	30.0	µg/L	1	0.20	0.05		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Beryllium	0.89	µg/L	5	0.25	0.04		GES	05/06/2025 22:58	EPA 200.8-1994, Rev. 5.4
Cadmium	0.055	µg/L	1	0.020	0.004		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Chromium	0.33	µg/L	1	0.30	0.07		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Cobalt	8.90	µg/L	1	0.020	0.005		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Copper	0.5	µg/L	1	0.5	0.1		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Iron	0.106	mg/L	1	0.020	0.003		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Lead	0.31	µg/L	1	0.20	0.05		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Lithium	0.0929	mg/L	10	0.0030	0.0006		GES	05/08/2025 14:54	EPA 200.8-1994, Rev. 5.4
Manganese	0.0222	mg/L	1	0.00100	0.00007		GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Selenium	0.32	µg/L	1	0.50	0.04	J1	GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	04/30/2025 18:55	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-32
Customer Description: TG-32
Lab Number: 251109-017
Preparation:
Date Collected: 04/21/2025 11:29 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.009	µg/L	1	0.100	0.008	J1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Arsenic	5.81	µg/L	1	0.10	0.03		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Barium	40.8	µg/L	1	0.20	0.05		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Beryllium	0.08	µg/L	5	0.25	0.04	J1	GES	05/08/2025 15:00	EPA 200.8-1994, Rev. 5.4
Boron	0.097	mg/L	1	0.050	0.007		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Calcium	6.15	mg/L	1	0.05	0.02		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Chromium	0.27	µg/L	1	0.30	0.07	J1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Cobalt	14.8	µg/L	1	0.020	0.005		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Copper	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Lithium	0.0684	mg/L	1	0.00030	0.00006		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Magnesium	6.89	mg/L	1	0.100	0.009		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Mercury	240	ng/L	20	100	40		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Potassium	3.17	mg/L	1	0.10	0.01		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Selenium	0.07	µg/L	1	0.50	0.04	J1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Sodium	15.6	mg/L	1	0.20	0.02		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Strontium	0.0797	mg/L	1	0.00200	0.00005		GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4
Thallium	0.06	µg/L	1	0.20	0.02	J1	GES	04/30/2025 20:06	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.33	pCi/L	0.11	0.26		WCG	05/06/2025 13:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.2	%						
Radium-228	0.61	pCi/L	0.15	0.49		TTP	05/12/2025 17:25	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	77.6	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-32
Customer Description: TG-32
Lab Number: 251109-017-01
Preparation: Dissolved
Date Collected: 04/21/2025 11:29 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Arsenic	4.11	µg/L	1	0.10	0.03		GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Barium	40.2	µg/L	1	0.20	0.05		GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.07	µg/L	5	0.25	0.04	J1	GES	05/08/2025 15:05	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.35	µg/L	1	0.30	0.07		GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Cobalt	15.0	µg/L	1	0.020	0.005		GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Copper	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Iron	19.1	mg/L	1	0.020	0.003		GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.0681	mg/L	1	0.00030	0.00006		GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Manganese	0.125	mg/L	1	0.00100	0.00007		GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4
Thallium	0.06	µg/L	1	0.20	0.02	J1	GES	04/30/2025 20:12	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-33
Customer Description: TG-32
Lab Number: 251109-018
Preparation:
Date Collected: 04/22/2025 09:10 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	05/06/2025 23:14	EPA 200.8-1994, Rev. 5.4
Arsenic	1.13	µg/L	1	0.10	0.03		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Barium	48.8	µg/L	5	1.0	0.3		GES	05/06/2025 23:14	EPA 200.8-1994, Rev. 5.4
Beryllium	2.04	µg/L	5	0.25	0.04		GES	05/06/2025 23:14	EPA 200.8-1994, Rev. 5.4
Boron	0.211	mg/L	1	0.050	0.007		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Cadmium	0.083	µg/L	1	0.020	0.004		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Calcium	3.04	mg/L	1	0.05	0.02		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Chromium	0.38	µg/L	1	0.30	0.07		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Cobalt	15.8	µg/L	1	0.020	0.005		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Copper	0.9	µg/L	1	0.5	0.1		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Lead	0.3	µg/L	5	1.0	0.3	J1	GES	05/06/2025 23:14	EPA 200.8-1994, Rev. 5.4
Lithium	0.0246	mg/L	1	0.00030	0.00006		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Magnesium	6.33	mg/L	1	0.100	0.009		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Mercury	6300	ng/L	100	500	200		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Potassium	0.31	mg/L	1	0.10	0.01		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Selenium	4.93	µg/L	1	0.50	0.04		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Sodium	20.3	mg/L	1	0.20	0.02		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Strontium	0.0477	mg/L	1	0.00200	0.00005		GES	04/30/2025 20:17	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	05/06/2025 23:14	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.94	pCi/L	0.16	0.19		WCG	05/06/2025 13:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.5	%						
Radium-228	1.36	pCi/L	0.13	0.41		TTP	05/12/2025 17:25	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	101	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-33
Customer Description: TG-32
Lab Number: 251109-018-01
Preparation: Dissolved
Date Collected: 04/22/2025 09:10 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	05/06/2025 23:20	EPA 200.8-1994, Rev. 5.4
Arsenic	1.04	µg/L	1	0.10	0.03		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Barium	46.7	µg/L	5	1.0	0.3		GES	05/06/2025 23:20	EPA 200.8-1994, Rev. 5.4
Beryllium	2.05	µg/L	5	0.25	0.04		GES	05/06/2025 23:20	EPA 200.8-1994, Rev. 5.4
Cadmium	0.079	µg/L	1	0.020	0.004		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Chromium	0.34	µg/L	1	0.30	0.07		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Cobalt	15.5	µg/L	1	0.020	0.005		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Copper	2.2	µg/L	1	0.5	0.1		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Iron	0.016	mg/L	1	0.020	0.003	J1	GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Lead	0.3	µg/L	5	1.0	0.3	J1	GES	05/06/2025 23:20	EPA 200.8-1994, Rev. 5.4
Lithium	0.0245	mg/L	1	0.00030	0.00006		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Manganese	0.0101	mg/L	1	0.00100	0.00007		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Mercury	1050	ng/L	20	100	40		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Selenium	4.64	µg/L	1	0.50	0.04		GES	04/30/2025 20:22	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	05/06/2025 23:20	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-34
Customer Description: TG-32
Lab Number: 251109-019
Preparation:
Date Collected: 04/23/2025 09:06 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.08	mg/L	10	0.50	0.07	J1	GES	04/30/2025 20:28	EPA 200.8-1994, Rev. 5.4
Calcium	42.2	mg/L	10	0.5	0.2		GES	04/30/2025 20:28	EPA 200.8-1994, Rev. 5.4
Magnesium	40.3	mg/L	10	1.00	0.09		GES	04/30/2025 20:28	EPA 200.8-1994, Rev. 5.4
Potassium	7.5	mg/L	10	1.0	0.1		GES	04/30/2025 20:28	EPA 200.8-1994, Rev. 5.4
Sodium	15.7	mg/L	10	2.0	0.2		GES	04/30/2025 20:28	EPA 200.8-1994, Rev. 5.4
Strontium	0.433	mg/L	10	0.0200	0.0005		GES	04/30/2025 20:28	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: AD-36
Customer Description: TG-32
Lab Number: 251109-020
Preparation:
Date Collected: 04/23/2025 09:06 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.079	mg/L	1	0.050	0.007		GES	04/30/2025 20:33	EPA 200.8-1994, Rev. 5.4
Calcium	1.34	mg/L	1	0.05	0.02		GES	04/30/2025 20:33	EPA 200.8-1994, Rev. 5.4
Magnesium	2.72	mg/L	1	0.100	0.009		GES	04/30/2025 20:33	EPA 200.8-1994, Rev. 5.4
Potassium	1.72	mg/L	1	0.10	0.01		GES	04/30/2025 20:33	EPA 200.8-1994, Rev. 5.4
Sodium	8.03	mg/L	1	0.20	0.02		GES	04/30/2025 20:33	EPA 200.8-1994, Rev. 5.4
Strontium	0.0147	mg/L	1	0.00200	0.00005		GES	04/30/2025 20:33	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: Duplicate 1
Customer Description: TG-32
Lab Number: 251109-021
Preparation:
Date Collected: 04/22/2025 13:00 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	05/07/2025 00:31	EPA 200.8-1994, Rev. 5.4
Arsenic	1.11	µg/L	1	0.10	0.03		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Barium	47.7	µg/L	5	1.0	0.3		GES	05/07/2025 00:31	EPA 200.8-1994, Rev. 5.4
Beryllium	1.99	µg/L	5	0.25	0.04		GES	05/07/2025 00:31	EPA 200.8-1994, Rev. 5.4
Boron	0.214	mg/L	1	0.050	0.007		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Cadmium	0.080	µg/L	1	0.020	0.004		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Calcium	3.01	mg/L	1	0.05	0.02		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Chromium	0.40	µg/L	1	0.30	0.07		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Cobalt	15.9	µg/L	1	0.020	0.005		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Copper	0.9	µg/L	1	0.5	0.1		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Lead	0.4	µg/L	5	1.0	0.3	J1	GES	05/07/2025 00:31	EPA 200.8-1994, Rev. 5.4
Lithium	0.0244	mg/L	1	0.00030	0.00006		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Magnesium	6.30	mg/L	1	0.100	0.009		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Mercury	6400	ng/L	100	500	200		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Potassium	0.31	mg/L	1	0.10	0.01		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Selenium	4.75	µg/L	1	0.50	0.04		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Sodium	20.5	mg/L	1	0.20	0.02		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Strontium	0.0479	mg/L	1	0.00200	0.00005		GES	04/30/2025 20:39	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	05/07/2025 00:31	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: Duplicate 1
Customer Description: TG-32
Lab Number: 251109-021-01
Preparation: Dissolved
Date Collected: 04/22/2025 13:00 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	05/07/2025 00:36	EPA 200.8-1994, Rev. 5.4
Arsenic	1.05	µg/L	1	0.10	0.03		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Barium	49.9	µg/L	5	1.0	0.3		GES	05/07/2025 00:36	EPA 200.8-1994, Rev. 5.4
Beryllium	1.61	µg/L	5	0.25	0.04		GES	05/07/2025 00:36	EPA 200.8-1994, Rev. 5.4
Cadmium	0.078	µg/L	1	0.020	0.004		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Chromium	0.34	µg/L	1	0.30	0.07		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Cobalt	15.3	µg/L	1	0.020	0.005		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Copper	0.9	µg/L	1	0.5	0.1		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Iron	0.016	mg/L	1	0.020	0.003	J1	GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Lead	0.4	µg/L	5	1.0	0.3	J1	GES	05/07/2025 00:36	EPA 200.8-1994, Rev. 5.4
Lithium	0.0308	mg/L	1	0.00030	0.00006		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Manganese	0.00994	mg/L	1	0.00100	0.00007		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Mercury	990	ng/L	20	100	40		RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Potassium	0.30	mg/L	1	0.10	0.01		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Selenium	4.59	µg/L	1	0.50	0.04		GES	04/30/2025 20:44	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	04/30/2025 20:34	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: Equipment Blank
Customer Description: TG-32
Lab Number: 251109-022
Preparation:
Date Collected: 04/22/2025 11:22 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.008	µg/L	1	0.100	0.008	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Barium	0.05	µg/L	1	0.20	0.05	J1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	05/07/2025 00:41	EPA 200.8-1994, Rev. 5.4
Boron	<0.007	mg/L	1	0.050	0.007	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Calcium	0.02	mg/L	1	0.05	0.02	J1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Chromium	0.36	µg/L	1	0.30	0.07		GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Cobalt	0.007	µg/L	1	0.020	0.005	J1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Copper	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Lithium	0.00006	mg/L	1	0.00030	0.00006	J1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.009	mg/L	1	0.100	0.009	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Potassium	<0.01	mg/L	1	0.10	0.01	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Sodium	<0.02	mg/L	1	0.20	0.02	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Strontium	<0.00005	mg/L	1	0.00200	0.00005	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/30/2025 20:50	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Customer Sample ID: Field Blank
Customer Description: TG-32
Lab Number: 251109-023
Preparation:
Date Collected: 04/23/2025 09:19 EDT
Date Received: 04/28/2025 10:49 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.067	µg/L	1	0.100	0.008	J1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	05/07/2025 00:47	EPA 200.8-1994, Rev. 5.4
Boron	<0.007	mg/L	1	0.050	0.007	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Calcium	0.02	mg/L	1	0.05	0.02	J1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Chromium	0.23	µg/L	1	0.30	0.07	J1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.005	µg/L	1	0.020	0.005	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Copper	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00006	mg/L	1	0.00030	0.00006	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.009	mg/L	1	0.100	0.009	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	05/02/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Potassium	<0.01	mg/L	1	0.10	0.01	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Sodium	<0.02	mg/L	1	0.20	0.02	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Strontium	<0.00005	mg/L	1	0.00200	0.00005	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/30/2025 20:55	EPA 200.8-1994, Rev. 5.4

251109
Job Comments:

Original report issued 5/13/25. Report reissued 6/26/25 with Tl added to 251109-021-01. Report reissued 7/2/25 with Co added to samples originally reported with Cu.

Water Analysis Report

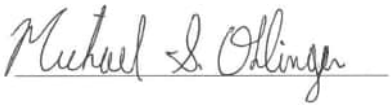
Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251109 **Customer: Pirkey Power Station** **Date Reported: 07/02/2025**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
O3 - Insufficient sample was received to perform the duplicate analysis with this sample batch.
L1 - The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Michael Ohlinger (614-836-4184)
Dave Conover (614-836-4219)

Project Name: Pirkey PP CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
(•) Routine (28 days for Monitoring Wells)

Site Contact: 18 14 2 1
Date: — 15

For Lab Use Only:
COC/Order #: 251109

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 — Sb, As, B, Ba, Be, Ca, Cd, Cr, Co, K, Li, Mg, Mo, Na, Pb, Se, Sr, Tl	Field-filter 250 mL bottle, then pH<2, HNO_3 — Dissolved Sb, As, Ba, Be, Cd, Cr, Co, Fe, Li, Mn, Mo, Pb, Se, Tl	Three (six every 10th*) 1 L bottles, pH<2, HNO3 — Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2 — Mercury	250 mL Glass bottle, HCL**, pH<2 — Dissolved Mercury	250 mL bottle, pH<2, HNO_3 — B, Ca, K, Mg, Na, Sr		Sample Specific Notes
AD-2	4/22/2025	928	G	GW	7		X	X	X	X	X			1
AD-3	4/22/2025	1047	G	GW	7		X	X	X	X	X			2
AD-4	4/23/2025	1002	G	GW	7		X	X	X	X	X			3
AD-7R	4/21/2025	1103	G	GW	7		X	X	X	X	X			4
AD-8	4/22/2025	1114	G	GW	1							X		5
AD-12	4/21/2025	940	G	GW	7		X	X	X	X	X			6
AD-13	4/21/2025	1004	G	GW	7		X	X	X	X	X			7
AD-16	4/21/2025	904	G	GW	1							X		8
AD-17	4/22/2025	911	G	GW	7		X	X	X	X	X			9
AD-18	4/23/2025	901	G	GW	7		X	X	X	X	X			10
AD-22	4/21/2025	1205	G	GW	7		X	X	X	X	X			11
AD-23	4/23/2025	1057	G	GW	1							X		12
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	4	2	F2			

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by: [signature]	Company: Eagle	Date/Time: 4-24-25 1300	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 04/28/25 10:49 AM

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Michael Ohlinger (614-836-4184)
Dave Conover (614-836-4219)

Project Name: Pirkey PP CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
◉ Routine (28 days for Monitoring Wells)

Site Contact: 18 14 2 –
Date: – 6

For Lab Use Only:
COC/Order #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 Sb, As, B, Ba, Be, Ca Cd, Cr, Co, K, Li, Mg, Mo, Na, Pb, Se, Sr, Tl	Field-filter 250 mL bottle, then pH<2, HNO_3 Dissolved Sb, As, Ba, Be, Cd, Cr, Co, Fe, Li, Mn, Mo, Pb, Se, Tl	Three (six every 10th*) 1 L bottles, pH<2, HNO3 Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2 Mercury	250 mL Glass bottle, HCL**, pH<2 Dissolved Mercury	250 mL bottle, pH<2, HNO_3 B, Ca, K, Mg, Na, Sr		Sample Specific Notes:
AD-27	4/23/2025	843	G	GW	1							X		13
AD-28	4/22/2025	945	G	GW	7		X	X	X	X	X			14
AD-30	4/22/2025	830	G	GW	7		X	X	X	X	X			15
AD-31	4/21/2025	1120	G	GW	7		X	X	X	X	X			16
AD-32	4/21/2025	1029	G	GW	7		X	X	X	X	X			17
AD-33	4/22/2025	810	G	GW	10		X	X	X	X	X			18
AD-34	4/23/2025	806	G	GW	1							X		19
AD-36	4/22/2025	1026	G	GW	1							X		20
Duplicate 1	4/22/2025	1200	G	GW	4		X	X		X	X			21
Equipment Blank	4/22/2025	1022	G	GW	2		X			X				22
Field Blank	4/23/2025	819	G	GW	2		X			X				23
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	4	2	F2	4		

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by: Matt Hamilton	Company: Eagle	Date/Time: 4-24-25 1300	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 04/28/25 10:49 AM

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

Package Type	Delivery Type
(Cooler) Box Bag Envelope	UPS FedEX USPS
	Other _____

Plant/Customer Pirkey **Total # of Containers RECEIVED in Job:** 115

Opened By ELH

Date/Time 4/28/25 @11:00am

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? Y / N or (N/A)

Initial/Date: BLB 4/28/25 on ice / (no ice)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 05/20/2025

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: BLB 4/28/25

***pH paper*: mfr** Lab Rat Supplies, PN RS-4801, LOT# X000RWDG21, EXPIR DATE 05/31/2026

***** Note changes to pH paper in comments below***

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 251109 Initial & Date & Time : _____

Logged by MH Comments: _____

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 115

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 251109 **Initial/ Date:** MDL 04/28/25 **Peer Review Initial/ Date:** MSO 4/28/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
21	251109-001		21
15	251109-001-01		15
21	251109-002		21
15	251109-002-01		15
21	251109-003		21
15	251109-003-01		15
21	251109-004		21
15	251109-004-01		15
6	251109-005		6
21	251109-006		21
15	251109-006-01		15
21	251109-007		21
15	251109-007-01		15
6	251109-008		6
21	251109-009		21
15	251109-009-01		15
21	251109-010		21
15	251109-010-01		15
21	251109-011		21
15	251109-011-01		15
6	251109-012		6
6	251109-013		6
21	251109-014		21
15	251109-014-01		15

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 25/109 **Initial/ Date:** MBK 04/28/25 **Peer Review Initial/ Date:** MBD 4/28/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
21	25/109-015		21
15	25/109-015-01		15
21	25/109-016		21
15	25/109-016-01		15
21	25/109-017		21
15	25/109-017-01		15
21	25/109-018		21
15	25/109-018-01		15
6	25/109-019		6
6	25/109-020		6
21	25/109-021		~~21~~ 19
15	25/109-021-01		15
19	25/109-022		19
19	25/109-023		19

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [●] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Tamisha T. Palmer	Tamisha T. Palmer	Chemical Technician, Principal	05/13/2025
Name (printed)	Signature	Official Title	Date

Radium Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Tamisha Palmer

LRC Date: 05/13/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25043002

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	No	ER1
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	No	ER2
	I	Were analytical duplicates analyzed at the appropriate frequency?	NA	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	NA	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Tamisha Palmer

LRC Date: 05/13/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25043002

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Tamisha Palmer

LRC Date: 05/13/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25043002

Exception Report No.	Description
ER1	The associated LCS recovery was outside limits: LCSD was acceptable
ER2	There was not a duplicate available for analysis with this batch.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

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  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Sunita Timsina		Chemist Associate	05/13/2025
Name (printed)	Signature	Official Title	Date

Radium Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sunita Timsina

LRC Date: 05/13/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25050106, PB25050203

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	No	ER1
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	No	ER2
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	NA	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sunita Timsina

LRC Date: 05/13/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25050106, PB25050203

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sunita Timsina

LRC Date: 05/13/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25050106, PB25050203

Exception Report No.	Description
ER1	PB25050106, The associated laboratory control sample (LCS) or laboratory control
	sample duplicate (LCSD) recovery was outside acceptance limits.
ER2	PB25050106, The precision on the matrix spike duplicate (MSD) was above
	acceptance limits.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Kelsey Huff		Chemist	05/09/2025
Name (printed)	Signature	Official Title	Date

Mercury Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 05/09/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25050101, PB25050102, PB25050104

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	NA	
	I	Were analytical duplicates analyzed at the appropriate frequency?	NA	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	NA	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Mercury Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 05/09/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25050101, PB25050102, PB25050104

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 05/09/2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25050101, PB25050102, PB25050104

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Elizabeth Hoitink	Elizabeth L Hoitink Digitally signed by Elizabeth L Hoitink Date: 2025.07.01 10:04:30 -04'00'	Chemist	7-1-2025
Name (printed)	Signature	Official Title	Date

ICP-MS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 07-1-2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25042901, PB25042905, QC250515, QC2505057, QC2505072

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

ICP-MS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	No	ER3
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 07-1-2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25042901, PB25042905, QC250515, QC2505057, QC2505072

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

ICP-MS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 07-1-2025

Laboratory Job Number: 251109

Prep Batch Number(s): PB25042901, PB25042905, QC250515, QC2505057, QC2505072

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.
ER3	Matrix spike failed for Li and Na for sample 251109-001.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-2 Customer Description:
Lab Number: 251095-001 Preparation:
Date Collected: 04/22/2025 10:28 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.47	mg/L	2	0.10	0.02		CRJ	04/30/2025 15:05	EPA 300.1 -1997, Rev. 1.0
Chloride	26.8	mg/L	2	0.06	0.02		CRJ	04/30/2025 15:05	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.37	mg/L	2	0.06	0.02		CRJ	04/30/2025 15:05	EPA 300.1 -1997, Rev. 1.0
Sulfate	298	mg/L	10	3.0	0.6		CRJ	04/30/2025 15:47	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	570	mg/L	1	50	20		BLB	04/25/2025 12:36	SM 2540C-2015

Customer Sample ID: AD-3 Customer Description:
Lab Number: 251095-002 Preparation:
Date Collected: 04/22/2025 11:47 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.07	mg/L	2	0.10	0.02	J1	CRJ	04/30/2025 14:45	EPA 300.1 -1997, Rev. 1.0
Chloride	6.30	mg/L	2	0.06	0.02		CRJ	04/30/2025 14:45	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.09	mg/L	2	0.06	0.02		CRJ	04/30/2025 14:45	EPA 300.1 -1997, Rev. 1.0
Sulfate	29.6	mg/L	2	0.6	0.1		CRJ	04/30/2025 14:45	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	12	mg/L	1	20	5	J1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	130	mg/L	1	50	20		BLB	04/28/2025 08:09	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-4
Customer Description:
Lab Number: 251095-003
Preparation:
Date Collected: 04/23/2025 11:02 EDT
Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.23	mg/L	2	0.10	0.02		CRJ	04/30/2025 16:22	EPA 300.1 -1997, Rev. 1.0
Chloride	4.12	mg/L	2	0.06	0.02		CRJ	04/30/2025 16:22	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.05	mg/L	2	0.06	0.02	J1	CRJ	04/30/2025 16:22	EPA 300.1 -1997, Rev. 1.0
Sulfate	20.5	mg/L	2	0.6	0.1		CRJ	04/30/2025 16:22	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	110	mg/L	1	50	20		BLB	04/28/2025 08:15	SM 2540C-2015

Customer Sample ID: AD-7R
Customer Description:
Lab Number: 251095-004
Preparation:
Date Collected: 04/21/2025 12:03 EDT
Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	1.32	mg/L	2	0.10	0.02		CRJ	04/30/2025 17:45	EPA 300.1 -1997, Rev. 1.0
Chloride	24.2	mg/L	2	0.06	0.02		CRJ	04/30/2025 17:45	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.17	mg/L	2	0.06	0.02		CRJ	04/30/2025 17:45	EPA 300.1 -1997, Rev. 1.0
Sulfate	49.5	mg/L	2	0.6	0.1		CRJ	04/30/2025 17:45	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	190	mg/L	1	50	20		BLB	04/25/2025 12:41	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
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Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-8 Customer Description:
Lab Number: 251095-005 Preparation:
Date Collected: 04/22/2025 12:14 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.85	mg/L	2	0.10	0.02		CRJ	04/30/2025 16:42	EPA 300.1 -1997, Rev. 1.0
Chloride	7.58	mg/L	2	0.06	0.02		CRJ	04/30/2025 16:42	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.36	mg/L	2	0.06	0.02		CRJ	04/30/2025 16:42	EPA 300.1 -1997, Rev. 1.0
Sulfate	136	mg/L	10	3.0	0.6		CRJ	04/30/2025 17:24	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	71	mg/L	1	20	5		MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	270	mg/L	1	50	20		BLB	04/28/2025 08:15	SM 2540C-2015

Customer Sample ID: AD-12 Customer Description:
Lab Number: 251095-006 Preparation:
Date Collected: 04/21/2025 10:40 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.11	mg/L	2	0.10	0.02		CRJ	04/30/2025 18:05	EPA 300.1 -1997, Rev. 1.0
Chloride	4.58	mg/L	2	0.06	0.02		CRJ	04/30/2025 18:05	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.08	mg/L	2	0.06	0.02		CRJ	04/30/2025 18:05	EPA 300.1 -1997, Rev. 1.0
Sulfate	2.7	mg/L	2	0.6	0.1		CRJ	04/30/2025 18:05	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	70	mg/L	1	50	20		BLB	04/25/2025 12:41	SM 2540C-2015

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Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-13 Customer Description:
Lab Number: 251095-007 Preparation:
Date Collected: 04/21/2025 11:04 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.30	mg/L	2	0.10	0.02		CRJ	04/30/2025 18:26	EPA 300.1 -1997, Rev. 1.0
Chloride	42.1	mg/L	10	0.3	0.1		CRJ	05/01/2025 10:16	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.31	mg/L	2	0.06	0.02		CRJ	04/30/2025 18:26	EPA 300.1 -1997, Rev. 1.0
Sulfate	78.8	mg/L	2	0.6	0.1		CRJ	04/30/2025 18:26	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	240	mg/L	1	50	20		BLB	04/25/2025 12:47	SM 2540C-2015

Customer Sample ID: AD-16 Customer Description:
Lab Number: 251095-008 Preparation:
Date Collected: 04/21/2025 10:04 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.21	mg/L	2	0.10	0.02		CRJ	04/30/2025 19:08	EPA 300.1 -1997, Rev. 1.0
Chloride	29.2	mg/L	2	0.06	0.02		CRJ	04/30/2025 19:08	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.12	mg/L	2	0.06	0.02		CRJ	04/30/2025 19:08	EPA 300.1 -1997, Rev. 1.0
Sulfate	10.2	mg/L	2	0.6	0.1		CRJ	04/30/2025 19:08	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	120	mg/L	1	50	20		BLB	04/25/2025 12:47	SM 2540C-2015

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Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-17 Customer Description:
Lab Number: 251095-009 Preparation:
Date Collected: 04/22/2025 10:11 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.15	mg/L	2	0.10	0.02		CRJ	04/30/2025 22:35	EPA 300.1 -1997, Rev. 1.0
Chloride	12.3	mg/L	2	0.06	0.02		CRJ	04/30/2025 22:35	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.17	mg/L	2	0.06	0.02		CRJ	04/30/2025 22:35	EPA 300.1 -1997, Rev. 1.0
Sulfate	1.8	mg/L	2	0.6	0.1		CRJ	04/30/2025 22:35	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	30	mg/L	1	50	20	J1	BLB	04/28/2025 08:20	SM 2540C-2015

Customer Sample ID: AD-18 Customer Description:
Lab Number: 251095-010 Preparation:
Date Collected: 04/23/2025 10:01 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.04	mg/L	2	0.10	0.02	J1	CRJ	04/30/2025 22:56	EPA 300.1 -1997, Rev. 1.0
Chloride	4.98	mg/L	2	0.06	0.02		CRJ	04/30/2025 22:56	EPA 300.1 -1997, Rev. 1.0
Fluoride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	04/30/2025 22:56	EPA 300.1 -1997, Rev. 1.0
Sulfate	7.5	mg/L	2	0.6	0.1		CRJ	04/30/2025 22:56	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	100	mg/L	1	50	20		BLB	04/28/2025 08:20	SM 2540C-2015

Dolan Chemical Laboratory
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-22 Customer Description:
Lab Number: 251095-011 Preparation:
Date Collected: 04/21/2025 13:05 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.53	mg/L	2	0.10	0.02		CRJ	04/30/2025 21:54	EPA 300.1 -1997, Rev. 1.0
Chloride	82.6	mg/L	25	0.8	0.3		CRJ	04/30/2025 21:33	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.07	mg/L	2	0.06	0.02		CRJ	04/30/2025 21:54	EPA 300.1 -1997, Rev. 1.0
Sulfate	294	mg/L	25	8	2		CRJ	04/30/2025 21:33	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	610	mg/L	1	50	20		BLB	04/25/2025 12:53	SM 2540C-2015

Customer Sample ID: AD-23 Customer Description:
Lab Number: 251095-012 Preparation:
Date Collected: 04/23/2025 11:57 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.37	mg/L	2	0.10	0.02		CRJ	04/30/2025 23:17	EPA 300.1 -1997, Rev. 1.0
Chloride	10.4	mg/L	2	0.06	0.02		CRJ	04/30/2025 23:17	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.05	mg/L	2	0.06	0.02	J1	CRJ	04/30/2025 23:17	EPA 300.1 -1997, Rev. 1.0
Sulfate	4.7	mg/L	2	0.6	0.1		CRJ	04/30/2025 23:17	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	40	mg/L	1	50	20	J1	BLB	04/28/2025 08:26	SM 2540C-2015

Dolan Chemical Laboratory
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-27 Customer Description:
Lab Number: 251095-013 Preparation:
Date Collected: 04/23/2025 09:43 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.38	mg/L	2	0.10	0.02		CRJ	04/30/2025 23:38	EPA 300.1 -1997, Rev. 1.0
Chloride	12.5	mg/L	2	0.06	0.02		CRJ	04/30/2025 23:38	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.22	mg/L	2	0.06	0.02		CRJ	04/30/2025 23:38	EPA 300.1 -1997, Rev. 1.0
Sulfate	49.8	mg/L	2	0.6	0.1		CRJ	04/30/2025 23:38	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	130	mg/L	1	50	20		BLB	04/28/2025 08:26	SM 2540C-2015

Customer Sample ID: AD-28 Customer Description:
Lab Number: 251095-014 Preparation:
Date Collected: 04/22/2025 10:45 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.13	mg/L	2	0.10	0.02		CRJ	05/01/2025 00:19	EPA 300.1 -1997, Rev. 1.0
Chloride	4.99	mg/L	2	0.06	0.02		CRJ	05/01/2025 00:19	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.76	mg/L	2	0.06	0.02		CRJ	05/01/2025 00:19	EPA 300.1 -1997, Rev. 1.0
Sulfate	25.4	mg/L	2	0.6	0.1		CRJ	05/01/2025 00:19	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	100	mg/L	1	50	20		BLB	04/25/2025 12:53	SM 2540C-2015

Dolan Chemical Laboratory
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Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-30
Customer Description:
Lab Number: 251095-015
Preparation:
Date Collected: 04/22/2025 09:30 EDT
Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.13	mg/L	2	0.10	0.02		CRJ	05/01/2025 01:01	EPA 300.1 -1997, Rev. 1.0
Chloride	11.5	mg/L	2	0.06	0.02		CRJ	05/01/2025 01:01	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.04	mg/L	2	0.06	0.02	J1	CRJ	05/01/2025 01:01	EPA 300.1 -1997, Rev. 1.0
Sulfate	99.0	mg/L	10	3.0	0.6		CRJ	05/01/2025 00:40	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	220	mg/L	1	50	20	S7	BLB	04/25/2025 13:00	SM 2540C-2015

Customer Sample ID: AD-31
Customer Description:
Lab Number: 251095-016
Preparation:
Date Collected: 04/21/2025 12:20 EDT
Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.22	mg/L	2	0.10	0.02		CRJ	05/01/2025 01:42	EPA 300.1 -1997, Rev. 1.0
Chloride	13.1	mg/L	2	0.06	0.02		CRJ	05/01/2025 01:42	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.12	mg/L	2	0.06	0.02		CRJ	05/01/2025 01:42	EPA 300.1 -1997, Rev. 1.0
Sulfate	75.3	mg/L	10	3.0	0.6		CRJ	05/01/2025 15:06	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	230	mg/L	1	50	20		BLB	04/25/2025 13:00	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-32 Customer Description:
Lab Number: 251095-017 Preparation:
Date Collected: 04/21/2025 11:29 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.32	mg/L	2	0.10	0.02		CRJ	05/01/2025 05:10	EPA 300.1 -1997, Rev. 1.0
Chloride	10.3	mg/L	2	0.06	0.02		CRJ	05/01/2025 05:10	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.39	mg/L	2	0.06	0.02		CRJ	05/01/2025 05:10	EPA 300.1 -1997, Rev. 1.0
Sulfate	55.2	mg/L	2	0.6	0.1		CRJ	05/01/2025 05:10	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	8	mg/L	1	20	5	J1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	180	mg/L	1	50	20		BLB	04/25/2025 13:06	SM 2540C-2015

Customer Sample ID: AD-33 Customer Description:
Lab Number: 251095-018 Preparation:
Date Collected: 04/22/2025 09:10 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	1.04	mg/L	2	0.10	0.02		CRJ	05/01/2025 05:31	EPA 300.1 -1997, Rev. 1.0
Chloride	12.7	mg/L	2	0.06	0.02		CRJ	05/01/2025 05:31	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.50	mg/L	2	0.06	0.02		CRJ	05/01/2025 05:31	EPA 300.1 -1997, Rev. 1.0
Sulfate	68.5	mg/L	2	0.6	0.1		CRJ	05/01/2025 05:31	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	190	mg/L	1	50	20		BLB	04/25/2025 13:06	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: AD-34 Customer Description:
Lab Number: 251095-019 Preparation:
Date Collected: 04/23/2025 09:06 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.17	mg/L	5	0.25	0.05	J1	CRJ	05/01/2025 06:33	EPA 300.1 -1997, Rev. 1.0
Chloride	7.65	mg/L	5	0.15	0.05		CRJ	05/01/2025 06:33	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.39	mg/L	5	0.15	0.05		CRJ	05/01/2025 06:33	EPA 300.1 -1997, Rev. 1.0
Sulfate	1110	mg/L	50	15	3		CRJ	05/01/2025 06:12	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	1600	mg/L	1	50	20	S7	BLB	04/28/2025 08:32	SM 2540C-2015

Customer Sample ID: AD-36 Customer Description:
Lab Number: 251095-020 Preparation:
Date Collected: 04/23/2025 11:26 EDT Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.84	mg/L	2	0.10	0.02		CRJ	05/01/2025 08:17	EPA 300.1 -1997, Rev. 1.0
Chloride	17.0	mg/L	2	0.06	0.02		CRJ	05/01/2025 08:17	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.11	mg/L	2	0.06	0.02		CRJ	05/01/2025 08:17	EPA 300.1 -1997, Rev. 1.0
Sulfate	6.2	mg/L	2	0.6	0.1		CRJ	05/01/2025 08:17	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	<20	mg/L	1	50	20	S12, U1	BLB	04/28/2025 08:32	SM 2540C-2015

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 251095 **Customer: Pirkey Power Station** **Date Reported: 05/08/2025**

Customer Sample ID: Duplicate
Lab Number: 251095-021
Date Collected: 04/22/2025 01:00 EDT

Customer Description:
Preparation:
Date Received: 04/25/2025 09:45 EDT

Ion Chromatography

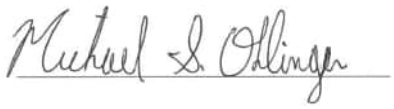
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	1.05	mg/L	2	0.10	0.02		CRJ	05/01/2025 07:35	EPA 300.1 -1997, Rev. 1.0
Chloride	12.7	mg/L	2	0.06	0.02		CRJ	05/01/2025 07:35	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.50	mg/L	2	0.06	0.02		CRJ	05/01/2025 07:35	EPA 300.1 -1997, Rev. 1.0
Sulfate	68.9	mg/L	2	0.6	0.1		CRJ	05/01/2025 07:35	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	04/25/2025 14:25	SM 2320B-2011
TDS, Filterable Residue	200	mg/L	1	50	20		BLB	04/25/2025 13:11	SM 2540C-2015

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
S7 - Sample did not achieve constant weight.
S12 - Residue weight is below the method criteria but was already analyzed with 100 mL.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Michael Ohlinger (614-836-4184)
Dave Conover (614-836-4219)

Project Name: Pirkey PP Semi-Annual CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 251095

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO3 — Mercury	Field-filter 250 mL bottle, then pH<2, HNO3 — Dissolved Mercury	1 L bottle, Cool, 0-6C — F, Cl, SO4, Br, TDS, Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO3 — Ra-226, Ra-228				Sample Specific Notes:
AD-2	4/22/2025	928	G	GW	1				X					
AD-3	4/22/2025	1047	G	GW	1				X					
AD-4	4/23/2025	1002	G	GW	1				X					
AD-7R	4/21/2025	1103	G	GW	1				X					
AD-8	4/22/2025	1114	G	GW	1				X					
AD-12	4/21/2025	940	G	GW	1				X					
AD-13	4/21/2025	1004	G	GW	1				X					
AD-16	4/21/2025	904	G	GW	1				X					
AD-17	4/22/2025	911	G	GW	1				X					
AD-18	4/23/2025	901	G	GW	1				X					
AD-22	4/21/2025	1205	G	GW	1				X					
AD-23	4/23/2025	1057	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by: [signature]	Company: Eagle	Date/Time: 4-24-25 1300	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 4/25/25 9:45

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Michael Ohlinger (614-836-4184)
Dave Conover (614-836-4219)

Project Name: Pirkey PP CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
Routine (28 days for Monitoring Wells)

Site Contact: | Date: | For Lab Use Only: COC/Order #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	Mercury (250 mL bottle, pH<2, HNO3)	Dissolved Mercury (Field-filter 250 mL bottle, then pH<2, HNO3)	F, Cl, SO4, Br, TDS, Alkalinity (1 L bottle, Cool, 0-6C)	Ra-226, Ra-228 (Three (six every 10th*) 1 L bottles, pH<2, HNO3)				Sample Specific Notes
AD-27	4/23/2025	843	G	GW	1				X					
AD-28	4/22/2025	945	G	GW	1				X					
AD-30	4/22/2025	830	G	GW	1				X					
AD-31	4/21/2025	1120	G	GW	1				X					
AD-32	4/21/2025	1029	G	GW	1				X					
AD-33	4/22/2025	810	G	GW	1				X					
AD-34	4/23/2025	806	G	GW	1				X					
AD-36	4/22/2025	1026	G	GW	1				X					
Duplicate 1	4/22/2025	1200	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	Eng'r	4-24-25 1300		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 4/25/25 9:45.

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev. 10, 01/03/25

Package Type	Delivery Type
(Cooler) Box Bag Envelope	UPS (FedEX) USPS
	Other _____

Plant/Customer Pirkey **Total # of Containers RECEIVED in Job:** 21

Opened By WCh

Date/Time 4/25/25 0945

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? (Y) / N or N/A

Initial/Date: mbc 04/25/25 (on ice) / no ice

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 05/20/2025)

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: ELH 4-25-25 (#1-17) MBC 04/25/25 (18-20)

***pH paper*:** mfr Lab Rat Supplies, PN RS-4801 LOT# X000RWDG21 EXPIR DATE 05/31/2026

**** Note changes to pH paper in comments below**

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 251095 Initial & Date & Time : _____

Logged by MSD Comments: _____

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 21

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:

i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 251095 **Initial/ Date:** MSO 4/25/25 **Peer Review Initial/ Date:** CLH 4/28/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
6	251095-001		6
6	" -002		
6	" -003		
6	" -004		
6	" -005		
6	" -006		
6	" -007		
6	" -008		
6	" -009		
6	" -010		
6	" -011		
6	" -012		
6	" -013		
6	" -014		
6	" -015		
6	" -016		
6	" -017		
6	" -018		
6	" -019		
6	" -020		
6	" -021		

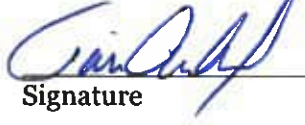
Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Tim Arnold		Principle Chemist	5/2/2025
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Semi-annual CCR

Reviewer Name: Tim Arnold

LRC Date: 5/2/2025

Laboratory Job Number: 251095

Prep Batch Number(s): QC2505020

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Ion Chromatography Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Semi-annual CCR

Reviewer Name: Tim Arnold

LRC Date: 5/2/2025

Laboratory Job Number: 251095

Prep Batch Number(s): QC2505020

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Semi-annual CCR

Reviewer Name: Tim Arnold

LRC Date: 5/2/2025

Laboratory Job Number: 251095

Prep Batch Number(s): QC2505020

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Sandra Williams	Sandra D. Williams	Chemist	05/05/2025
Name (printed)	Signature	Official Title	Date

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger	Michael Ohlinger	Senior Chemist	05/02/2025
Name (printed)	Signature	Official Title	Date

Alkalinity Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 05/02/2025

Laboratory Job Number: 251095

Prep Batch Number(s): QC2504171

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Alkalinity Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 05/02/2025

Laboratory Job Number: 251095

Prep Batch Number(s): QC2504171

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Alkalinity Laboratory Review Checklist

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 05/02/2025

Laboratory Job Number: 251095

Prep Batch Number(s): QC2504171

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<0.5*MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-2
Lab Number: 252402-001
Date Collected: 09/09/2025 11:31 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.1	µg/L	5	0.5	0.1	U1	GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Arsenic	1.7	µg/L	5	0.5	0.2		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Barium	14.2	µg/L	5	1.0	0.3		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Beryllium	0.9	µg/L	5	0.3	0.1		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Boron	2.82	mg/L	5	0.25	0.03		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Cadmium	0.13	µg/L	5	0.10	0.02		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Calcium	4.1	mg/L	5	0.5	0.1		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Chromium	0.5	µg/L	5	1.5	0.4	J1	GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Cobalt	31.3	µg/L	5	0.15	0.05		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Lead	0.8	µg/L	5	1.0	0.3	J1	GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Lithium	0.0828	mg/L	5	0.0015	0.0004		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Magnesium	8.36	mg/L	5	0.50	0.05		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Mercury	55	ng/L	20	10	4		JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.3	µg/L	5	2.5	0.3	U1	GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Potassium	1.6	mg/L	5	0.5	0.1		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Selenium	6.7	µg/L	5	2.5	0.2		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Sodium	111	mg/L	5	1.0	0.1		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Strontium	0.0561	mg/L	5	0.0100	0.0003		GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4
Thallium	0.1	µg/L	5	1.0	0.1	J1	GES	09/22/2025 14:17	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.96	pCi/L	0.35	0.58		TTP	09/19/2025 09:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	83.8	%						
Radium-228	1.19	pCi/L	0.19	0.58	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	79.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-2 Dissolved
Customer Description:
Lab Number: 252402-001-01
Preparation: Dissolved
Date Collected: 09/09/2025 11:31 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.1	µg/L	5	0.5	0.1	U1	GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Arsenic	1.9	µg/L	5	0.5	0.2		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Barium	13.9	µg/L	5	1.0	0.3		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Beryllium	0.9	µg/L	5	0.3	0.1		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Cadmium	0.13	µg/L	5	0.10	0.02		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Chromium	0.8	µg/L	5	1.5	0.4	J1	GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Cobalt	32.3	µg/L	5	0.15	0.05		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Iron	0.81	mg/L	5	0.10	0.02		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Lead	0.8	µg/L	5	1.0	0.3	J1	GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Lithium	0.0820	mg/L	5	0.0015	0.0004		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Manganese	0.118	mg/L	5	0.0050	0.0005		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Mercury	6	ng/L	10	5	2		JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.3	µg/L	5	2.5	0.3	U1	GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Selenium	7.5	µg/L	5	2.5	0.2		GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4
Thallium	0.1	µg/L	5	1.0	0.1	J1	GES	09/22/2025 14:22	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-3
Lab Number: 252402-002
Date Collected: 09/09/2025 12:21 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Arsenic	0.84	µg/L	1	0.10	0.03		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Barium	63.4	µg/L	1	0.20	0.05		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Beryllium	0.19	µg/L	1	0.05	0.02		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Boron	0.045	mg/L	1	0.050	0.006	J1	GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Cadmium	0.014	µg/L	1	0.020	0.004	J1	GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Calcium	4.48	mg/L	1	0.10	0.02		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Chromium	0.61	µg/L	1	0.30	0.07		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Cobalt	4.68	µg/L	1	0.03	0.01		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Lead	0.38	µg/L	1	0.20	0.05		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Lithium	0.0564	mg/L	1	0.00030	0.00007		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Magnesium	2.53	mg/L	1	0.10	0.01		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Mercury	5	ng/L	10	5	2		JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	0.07	µg/L	1	0.50	0.05	J1	GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Potassium	2.58	mg/L	1	0.10	0.02		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Selenium	0.06	µg/L	1	0.50	0.04	J1	GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Sodium	9.75	mg/L	1	0.20	0.02		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Strontium	0.0300	mg/L	1	0.00200	0.00006		GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	09/22/2025 14:27	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.24	pCi/L	0.36	0.33		TTP	09/19/2025 09:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	83.0	%						
Radium-228	1.30	pCi/L	0.15	0.43	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	88.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-3 Dissolved
Customer Description:
Lab Number: 252402-002-01
Preparation: Dissolved
Date Collected: 09/09/2025 12:21 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Arsenic	0.25	µg/L	1	0.10	0.03		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Barium	64.1	µg/L	1	0.20	0.05		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.17	µg/L	1	0.05	0.02		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Cadmium	0.014	µg/L	1	0.020	0.004	J1	GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.40	µg/L	1	0.30	0.07		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Cobalt	4.76	µg/L	1	0.03	0.01		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Iron	3.49	mg/L	1	0.020	0.003		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.0584	mg/L	1	0.00030	0.00007		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Manganese	0.0633	mg/L	1	0.0010	0.0001		GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Selenium	0.05	µg/L	1	0.50	0.04	J1	GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	09/22/2025 14:33	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-4
Lab Number: 252402-003
Date Collected: 09/10/2025 11:03 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Arsenic	1.95	µg/L	1	0.10	0.03		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Barium	114	µg/L	1	0.20	0.05		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Beryllium	0.25	µg/L	1	0.05	0.02		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Boron	0.013	mg/L	1	0.050	0.006	J1	GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Cadmium	0.020	µg/L	1	0.020	0.004		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Calcium	2.21	mg/L	1	0.10	0.02		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Chromium	0.55	µg/L	1	0.30	0.07		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Cobalt	3.26	µg/L	1	0.03	0.01		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Lead	0.30	µg/L	1	0.20	0.05		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Lithium	0.0236	mg/L	1	0.00030	0.00007		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Magnesium	0.59	mg/L	1	0.10	0.01		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Mercury	9	ng/L	10	5	2		JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Potassium	2.08	mg/L	1	0.10	0.02		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Selenium	0.09	µg/L	1	0.50	0.04	J1	GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Sodium	6.25	mg/L	1	0.20	0.02		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Strontium	0.0176	mg/L	1	0.00200	0.00006		GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	09/22/2025 14:38	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.47	pCi/L	0.14	0.29		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	59.5	%						
Radium-228	1.28	pCi/L	0.16	0.50	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	83.9	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
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Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-4 Dissolved
Customer Description:
Lab Number: 252402-003-01
Preparation: Dissolved
Date Collected: 09/10/2025 11:03 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Arsenic	0.16	µg/L	1	0.10	0.03		GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Barium	113	µg/L	1	0.20	0.05		GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Beryllium	0.21	µg/L	1	0.05	0.02		GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Cadmium	0.019	µg/L	1	0.020	0.004	J1	GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Chromium	0.45	µg/L	1	0.30	0.07		GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Cobalt	3.40	µg/L	1	0.03	0.01		GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Iron	3.08	mg/L	1	0.020	0.003		GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Lead	0.05	µg/L	1	0.20	0.05	J1	GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Lithium	0.0229	mg/L	1	0.00030	0.00007		GES	09/24/2025 10:06	EPA 200.8-1994, Rev. 5.4
Manganese	0.0308	mg/L	1	0.0010	0.0001		GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	10	5	2	U1	JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Selenium	0.05	µg/L	1	0.50	0.04	J1	GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	09/22/2025 15:49	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-7R
Lab Number: 252402-004
Date Collected: 09/08/2025 10:36 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Arsenic	0.99	µg/L	1	0.10	0.03		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Barium	60.1	µg/L	1	0.20	0.05		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Beryllium	1.35	µg/L	1	0.05	0.02		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Boron	0.566	mg/L	1	0.050	0.006		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Cadmium	0.336	µg/L	1	0.020	0.004		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Calcium	2.46	mg/L	1	0.10	0.02		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Chromium	0.27	µg/L	1	0.30	0.07	J1	GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Cobalt	15.2	µg/L	1	0.03	0.01		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Lead	0.22	µg/L	1	0.20	0.05		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Lithium	0.0358	mg/L	1	0.00030	0.00007		GES	09/24/2025 10:12	EPA 200.8-1994, Rev. 5.4
Magnesium	4.54	mg/L	1	0.10	0.01		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Mercury	101	ng/L	20	10	4		JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Potassium	1.45	mg/L	1	0.10	0.02		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Selenium	4.10	µg/L	1	0.50	0.04		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Sodium	20.2	mg/L	1	0.20	0.02		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Strontium	0.0301	mg/L	1	0.00200	0.00006		GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4
Thallium	0.13	µg/L	1	0.20	0.02	J1	GES	09/22/2025 15:55	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.64	pCi/L	0.27	0.24		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	91.8	%						
Radium-228	2.15	pCi/L	0.15	0.40	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	89.4	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-7R Dissolved
Customer Description:
Lab Number: 252402-004-01
Preparation: Dissolved
Date Collected: 09/08/2025 10:36 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Arsenic	1.02	µg/L	1	0.10	0.03		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Barium	60.2	µg/L	1	0.20	0.05		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Beryllium	1.29	µg/L	1	0.05	0.02		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Cadmium	0.346	µg/L	1	0.020	0.004		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Chromium	0.27	µg/L	1	0.30	0.07	J1	GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Cobalt	15.5	µg/L	1	0.03	0.01		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Iron	1.25	mg/L	1	0.020	0.003		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Lead	0.23	µg/L	1	0.20	0.05		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Lithium	0.0362	mg/L	1	0.00030	0.00007		GES	09/24/2025 10:17	EPA 200.8-1994, Rev. 5.4
Manganese	0.0389	mg/L	1	0.0010	0.0001		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Mercury	18	ng/L	10	5	2		JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Selenium	4.18	µg/L	1	0.50	0.04		GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4
Thallium	0.12	µg/L	1	0.20	0.02	J1	GES	09/22/2025 16:00	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-8
Customer Description:
Lab Number: 252402-005
Preparation:
Date Collected: 09/09/2025 10:45 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	1.06	mg/L	1	0.050	0.006		GES	09/22/2025 16:06	EPA 200.8-1994, Rev. 5.4
Calcium	66.0	mg/L	1	0.10	0.02		GES	09/22/2025 16:06	EPA 200.8-1994, Rev. 5.4
Magnesium	4.72	mg/L	1	0.10	0.01		GES	09/22/2025 16:06	EPA 200.8-1994, Rev. 5.4
Potassium	1.71	mg/L	1	0.10	0.02		GES	09/22/2025 16:06	EPA 200.8-1994, Rev. 5.4
Sodium	8.08	mg/L	1	0.20	0.02		GES	09/22/2025 16:06	EPA 200.8-1994, Rev. 5.4
Strontium	0.398	mg/L	1	0.00200	0.00006		GES	09/22/2025 16:06	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
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Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-12
Lab Number: 252402-006
Date Collected: 09/08/2025 10:38 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Arsenic	0.09	µg/L	1	0.10	0.03	J1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Barium	17.2	µg/L	1	0.20	0.05		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Beryllium	0.12	µg/L	1	0.05	0.02		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Boron	0.081	mg/L	1	0.050	0.006		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Cadmium	0.006	µg/L	1	0.020	0.004	J1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Calcium	0.18	mg/L	1	0.10	0.02		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Chromium	0.81	µg/L	1	0.30	0.07		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Cobalt	0.95	µg/L	1	0.03	0.01		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Lead	0.10	µg/L	1	0.20	0.05	J1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Lithium	0.00589	mg/L	1	0.00030	0.00007		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Magnesium	0.30	mg/L	1	0.10	0.01		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Mercury	5	ng/L	10	5	2		JLD	10/03/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Potassium	0.16	mg/L	1	0.10	0.02		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Selenium	0.20	µg/L	1	0.50	0.04	J1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Sodium	3.41	mg/L	1	0.20	0.02		GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Strontium	0.00169	mg/L	1	0.00200	0.00006	J1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	09/18/2025 10:49	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.13	pCi/L	0.16	0.15		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	112	%						
Radium-228	0.77	pCi/L	0.15	0.48	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	80.2	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-12 Dissolved
Customer Description:
Lab Number: 252402-006-01
Preparation: Dissolved
Date Collected: 09/08/2025 10:38 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Arsenic	0.05	µg/L	1	0.10	0.03	J1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Barium	17.2	µg/L	1	0.20	0.05		GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Beryllium	0.12	µg/L	1	0.05	0.02		GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Cadmium	0.006	µg/L	1	0.020	0.004	J1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Chromium	0.40	µg/L	1	0.30	0.07		GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Cobalt	1.10	µg/L	1	0.03	0.01		GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Iron	0.016	mg/L	1	0.020	0.003	J1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Lead	0.06	µg/L	1	0.20	0.05	J1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Lithium	0.00583	mg/L	1	0.00030	0.00007		GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Manganese	0.0027	mg/L	1	0.0010	0.0001		GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Selenium	0.20	µg/L	1	0.50	0.04	J1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	09/18/2025 10:54	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-13
Lab Number: 252402-007
Date Collected: 09/08/2025 09:32 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Arsenic	1.85	µg/L	1	0.10	0.03		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Barium	36.8	µg/L	1	0.20	0.05		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Beryllium	0.14	µg/L	1	0.05	0.02		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Boron	0.058	mg/L	1	0.050	0.006		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Calcium	6.11	mg/L	1	0.10	0.02		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Chromium	0.27	µg/L	1	0.30	0.07	J1	GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Cobalt	34.8	µg/L	1	0.03	0.01		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Lithium	0.140	mg/L	20	0.006	0.001		GES	09/22/2025 10:51	EPA 200.8-1994, Rev. 5.4
Magnesium	8.69	mg/L	1	0.10	0.01		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Potassium	4.33	mg/L	1	0.10	0.02		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Sodium	13.6	mg/L	1	0.20	0.02		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Strontium	0.0320	mg/L	1	0.00200	0.00006		GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	09/18/2025 10:59	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.60	pCi/L	0.21	0.19		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	93.1	%						
Radium-228	1.40	pCi/L	0.17	0.50	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	86.6	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-13 Dissolved
Lab Number: 252402-007-01
Date Collected: 09/08/2025 09:32 EDT

Customer Description:
Preparation: Dissolved
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Arsenic	1.53	µg/L	1	0.10	0.03		GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Barium	36.1	µg/L	1	0.20	0.05		GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Beryllium	0.13	µg/L	1	0.05	0.02		GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Chromium	0.25	µg/L	1	0.30	0.07	J1	GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Cobalt	34.4	µg/L	1	0.03	0.01		GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Iron	28.3	mg/L	1	0.020	0.003		GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Lithium	0.140	mg/L	20	0.006	0.001		GES	09/22/2025 10:57	EPA 200.8-1994, Rev. 5.4
Manganese	0.279	mg/L	1	0.0010	0.0001		GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	09/18/2025 11:05	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-16
Lab Number: 252402-008
Date Collected: 09/10/2025 12:05 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.019	mg/L	1	0.050	0.006	J1	GES	09/18/2025 11:10	EPA 200.8-1994, Rev. 5.4
Calcium	1.02	mg/L	1	0.10	0.02		GES	09/18/2025 11:10	EPA 200.8-1994, Rev. 5.4
Magnesium	1.98	mg/L	1	0.10	0.01		GES	09/18/2025 11:10	EPA 200.8-1994, Rev. 5.4
Potassium	1.18	mg/L	1	0.10	0.02		GES	09/18/2025 11:10	EPA 200.8-1994, Rev. 5.4
Sodium	16.6	mg/L	1	0.20	0.02		GES	09/18/2025 11:10	EPA 200.8-1994, Rev. 5.4
Strontium	0.0127	mg/L	1	0.00200	0.00006		GES	09/18/2025 11:10	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-17
Lab Number: 252402-009
Date Collected: 09/09/2025 11:25 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.02	µg/L	1	0.10	0.02	J1	GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Arsenic	0.12	µg/L	1	0.10	0.03		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Barium	128	µg/L	1	0.20	0.05		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Beryllium	0.37	µg/L	1	0.05	0.02		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Boron	0.040	mg/L	1	0.050	0.006	J1	GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Cadmium	0.032	µg/L	1	0.020	0.004		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Calcium	0.35	mg/L	1	0.10	0.02		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Chromium	0.45	µg/L	1	0.30	0.07		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Cobalt	5.68	µg/L	1	0.03	0.01		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Lead	0.06	µg/L	1	0.20	0.05	J1	GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Lithium	0.0167	mg/L	1	0.00030	0.00007		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Magnesium	1.98	mg/L	1	0.10	0.01		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Mercury	123	ng/L	10	5	2		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Potassium	0.49	mg/L	1	0.10	0.02		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Selenium	0.35	µg/L	1	0.50	0.04	J1	GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Sodium	7.33	mg/L	1	0.20	0.02		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Strontium	0.00784	mg/L	1	0.00200	0.00006		GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	09/18/2025 11:16	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.80	pCi/L	0.22	0.23		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	92.5	%						
Radium-228	1.79	pCi/L	0.16	0.44	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	94.6	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-17 Dissolved
Customer Description:
Lab Number: 252402-009-01
Preparation: Dissolved
Date Collected: 09/09/2025 11:25 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Arsenic	0.10	µg/L	1	0.10	0.03		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Barium	136	µg/L	1	0.20	0.05		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Beryllium	0.38	µg/L	1	0.05	0.02		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Cadmium	0.034	µg/L	1	0.020	0.004		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Chromium	0.36	µg/L	1	0.30	0.07		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Cobalt	6.05	µg/L	1	0.03	0.01		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Iron	0.014	mg/L	1	0.020	0.003	J1	GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Lead	0.06	µg/L	1	0.20	0.05	J1	GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Lithium	0.0170	mg/L	1	0.00030	0.00007		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Manganese	0.0144	mg/L	1	0.0010	0.0001		GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Selenium	0.34	µg/L	1	0.50	0.04	J1	GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	09/18/2025 11:21	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-18
Lab Number: 252402-010
Date Collected: 09/10/2025 09:42 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.04	µg/L	1	0.10	0.02	J1	GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Arsenic	2.87	µg/L	1	0.10	0.03		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Barium	87.7	µg/L	1	0.20	0.05		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Beryllium	0.11	µg/L	1	0.05	0.02		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Boron	0.015	mg/L	1	0.050	0.006	J1	GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Cadmium	0.012	µg/L	1	0.020	0.004	J1	GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Calcium	0.23	mg/L	1	0.10	0.02		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Chromium	3.43	µg/L	1	0.30	0.07		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Cobalt	1.04	µg/L	1	0.03	0.01		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Lead	1.47	µg/L	1	0.20	0.05		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Lithium	0.0151	mg/L	1	0.00030	0.00007		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Magnesium	0.41	mg/L	1	0.10	0.01		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Mercury	32	ng/L	10	5	2		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	0.12	µg/L	1	0.50	0.05	J1	GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Potassium	0.83	mg/L	1	0.10	0.02		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Selenium	0.87	µg/L	1	0.50	0.04		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Sodium	4.96	mg/L	1	0.20	0.02		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Strontium	0.00645	mg/L	1	0.00200	0.00006		GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4
Thallium	0.06	µg/L	1	0.20	0.02	J1	GES	09/18/2025 11:27	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.06	pCi/L	0.13	0.11	R2	TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	137	%						
Radium-228	1.24	pCi/L	0.17	0.53	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	90.2	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-18 Dissolved
Customer Description: PK_AD18
Lab Number: 252402-010-01
Preparation: Dissolved
Date Collected: 09/10/2025 09:42 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Arsenic	0.05	µg/L	1	0.10	0.03	J1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Barium	76.9	µg/L	1	0.20	0.05		GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Beryllium	0.07	µg/L	1	0.05	0.02		GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Cadmium	0.010	µg/L	1	0.020	0.004	J1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Chromium	0.24	µg/L	1	0.30	0.07	J1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Cobalt	0.89	µg/L	1	0.03	0.01		GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Iron	0.010	mg/L	1	0.020	0.003	J1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Lithium	0.0159	mg/L	1	0.00030	0.00007		GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Manganese	0.0029	mg/L	1	0.0010	0.0001		GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Selenium	0.07	µg/L	1	0.50	0.04	J1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	09/18/2025 11:32	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-22
Lab Number: 252402-011
Date Collected: 09/08/2025 11:20 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Arsenic	0.80	µg/L	1	0.10	0.03		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Barium	17.3	µg/L	1	0.20	0.05		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Beryllium	1.81	µg/L	1	0.05	0.02		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Boron	0.023	mg/L	1	0.050	0.006	J1	GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Cadmium	0.465	µg/L	1	0.020	0.004		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Calcium	9.16	mg/L	1	0.10	0.02		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Chromium	0.54	µg/L	1	0.30	0.07		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Cobalt	54.0	µg/L	1	0.03	0.01		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Lead	0.08	µg/L	1	0.20	0.05	J1	GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Lithium	0.101	mg/L	20	0.006	0.001		GES	09/22/2025 11:16	EPA 200.8-1994, Rev. 5.4
Magnesium	13.1	mg/L	1	0.10	0.01		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Mercury	100	ng/L	100	50	20		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Potassium	2.99	mg/L	1	0.10	0.02		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Selenium	2.61	µg/L	1	0.50	0.04		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Sodium	84.4	mg/L	1	0.20	0.02		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Strontium	0.0761	mg/L	1	0.00200	0.00006		GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4
Thallium	0.13	µg/L	1	0.20	0.02	J1	GES	09/18/2025 12:43	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.04	pCi/L	0.16	0.17		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	93.2	%						
Radium-228	1.56	pCi/L	0.20	0.62	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	86.2	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
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Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-22 Dissolved
Customer Description:
Lab Number: 252402-011-01
Preparation: Dissolved
Date Collected: 09/08/2025 11:20 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Arsenic	0.82	µg/L	1	0.10	0.03		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Barium	17.7	µg/L	1	0.20	0.05		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Beryllium	1.69	µg/L	1	0.05	0.02		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Cadmium	0.450	µg/L	1	0.020	0.004		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Chromium	0.53	µg/L	1	0.30	0.07		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Cobalt	58.7	µg/L	1	0.03	0.01		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Iron	26.6	mg/L	1	0.020	0.003		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Lead	0.08	µg/L	1	0.20	0.05	J1	GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Lithium	0.109	mg/L	20	0.006	0.001		GES	09/22/2025 11:22	EPA 200.8-1994, Rev. 5.4
Manganese	0.290	mg/L	1	0.0010	0.0001		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Mercury	23	ng/L	10	5	2		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Selenium	2.51	µg/L	1	0.50	0.04		GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4
Thallium	0.13	µg/L	1	0.20	0.02	J1	GES	09/18/2025 12:49	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-23
Customer Description:
Lab Number: 252402-012
Preparation:
Date Collected: 09/10/2025 12:23 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.525	mg/L	1	0.050	0.006		GES	09/18/2025 12:54	EPA 200.8-1994, Rev. 5.4
Calcium	0.19	mg/L	1	0.10	0.02		GES	09/18/2025 12:54	EPA 200.8-1994, Rev. 5.4
Magnesium	0.17	mg/L	1	0.10	0.01		GES	09/18/2025 12:54	EPA 200.8-1994, Rev. 5.4
Potassium	2.96	mg/L	1	0.10	0.02		GES	09/18/2025 12:54	EPA 200.8-1994, Rev. 5.4
Sodium	5.90	mg/L	1	0.20	0.02		GES	09/18/2025 12:54	EPA 200.8-1994, Rev. 5.4
Strontium	0.00190	mg/L	1	0.00200	0.00006	J1	GES	09/18/2025 12:54	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
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Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-27
Customer Description:
Lab Number: 252402-013
Preparation:
Date Collected: 09/10/2025 09:25 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.137	mg/L	1	0.050	0.006		GES	09/18/2025 13:00	EPA 200.8-1994, Rev. 5.4
Calcium	3.96	mg/L	1	0.10	0.02		GES	09/18/2025 13:00	EPA 200.8-1994, Rev. 5.4
Magnesium	5.09	mg/L	1	0.10	0.01		GES	09/18/2025 13:00	EPA 200.8-1994, Rev. 5.4
Potassium	2.06	mg/L	1	0.10	0.02		GES	09/18/2025 13:00	EPA 200.8-1994, Rev. 5.4
Sodium	11.9	mg/L	1	0.20	0.02		GES	09/18/2025 13:00	EPA 200.8-1994, Rev. 5.4
Strontium	0.0598	mg/L	1	0.00200	0.00006		GES	09/18/2025 13:00	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

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Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-28
Lab Number: 252402-014
Date Collected: 09/09/2025 10:29 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.14	µg/L	1	0.10	0.02		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Arsenic	0.23	µg/L	1	0.10	0.03		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Barium	125	µg/L	1	0.20	0.05		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Beryllium	0.53	µg/L	1	0.05	0.02		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Boron	0.327	mg/L	1	0.050	0.006		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Cadmium	0.051	µg/L	1	0.020	0.004		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Calcium	1.54	mg/L	1	0.10	0.02		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Chromium	0.62	µg/L	1	0.30	0.07		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Cobalt	13.7	µg/L	1	0.03	0.01		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Lead	0.20	µg/L	1	0.20	0.05		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Lithium	0.0289	mg/L	1	0.00030	0.00007		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Magnesium	3.06	mg/L	1	0.10	0.01		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Mercury	21	ng/L	10	5	2		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Potassium	0.82	mg/L	1	0.10	0.02		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Selenium	0.25	µg/L	1	0.50	0.04	J1	GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Sodium	5.93	mg/L	1	0.20	0.02		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Strontium	0.0213	mg/L	1	0.00200	0.00006		GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	09/18/2025 13:05	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.26	pCi/L	0.18	0.17		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.7	%						
Radium-228	1.94	pCi/L	0.19	0.56	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	86.9	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-28 Dissolved
Customer Description: PK_AD28
Lab Number: 252402-014-01
Preparation: Dissolved
Date Collected: 09/09/2025 10:29 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.02	µg/L	1	0.10	0.02	J1	GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Arsenic	0.08	µg/L	1	0.10	0.03	J1	GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Barium	125	µg/L	1	0.20	0.05		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Beryllium	0.54	µg/L	1	0.05	0.02		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Cadmium	0.057	µg/L	1	0.020	0.004		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Chromium	0.38	µg/L	1	0.30	0.07		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Cobalt	13.9	µg/L	1	0.03	0.01		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Iron	0.045	mg/L	1	0.020	0.003		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Lead	0.12	µg/L	1	0.20	0.05	J1	GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Lithium	0.0290	mg/L	1	0.00030	0.00007		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Manganese	0.0545	mg/L	1	0.0010	0.0001		GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Mercury	8	ng/L	10	5	2		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Selenium	0.20	µg/L	1	0.50	0.04	J1	GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	09/18/2025 13:11	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

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Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-30
Lab Number: 252402-015
Date Collected: 09/09/2025 09:44 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Arsenic	0.13	µg/L	1	0.10	0.03		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Barium	51.8	µg/L	1	0.20	0.05		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Beryllium	0.07	µg/L	1	0.05	0.02		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Boron	1.18	mg/L	1	0.050	0.006		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Cadmium	0.006	µg/L	1	0.020	0.004	J1	GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Calcium	0.50	mg/L	1	0.10	0.02		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Chromium	0.52	µg/L	1	0.30	0.07		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Cobalt	3.15	µg/L	1	0.03	0.01		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Lithium	0.0117	mg/L	1	0.00030	0.00007		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Magnesium	1.62	mg/L	1	0.10	0.01		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Mercury	16	ng/L	20	10	4		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Potassium	0.76	mg/L	1	0.10	0.02		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Selenium	0.26	µg/L	1	0.50	0.04	J1	GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Sodium	51.0	mg/L	1	0.20	0.02	M1	GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Strontium	0.00695	mg/L	1	0.00200	0.00006		GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	09/18/2025 13:16	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	17.30	pCi/L	0.88	0.30		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	75.0	%						
Radium-228	1.04	pCi/L	0.14	0.41	B1	ST	09/30/2025 14:16	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	90.9	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-30 Dissolved
Customer Description: PK_AD30
Lab Number: 252402-015-01
Preparation: Dissolved
Date Collected: 09/09/2025 09:44 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Arsenic	0.09	µg/L	1	0.10	0.03	J1	GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Barium	45.0	µg/L	1	0.20	0.05		GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Beryllium	0.07	µg/L	1	0.05	0.02		GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Cadmium	0.006	µg/L	1	0.020	0.004	J1	GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Chromium	0.55	µg/L	1	0.30	0.07		GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Cobalt	3.02	µg/L	1	0.03	0.01		GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Iron	0.087	mg/L	1	0.020	0.003		GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Lithium	0.0115	mg/L	1	0.00030	0.00007		GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Manganese	0.0140	mg/L	1	0.0010	0.0001		GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Selenium	0.24	µg/L	1	0.50	0.04	J1	GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4
Thallium	0.07	µg/L	1	0.20	0.02	J1	GES	09/18/2025 13:32	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-31
Lab Number: 252402-016
Date Collected: 09/08/2025 12:31 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.10	µg/L	1	0.10	0.02		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Arsenic	1.26	µg/L	1	0.10	0.03		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Barium	36.5	µg/L	1	0.20	0.05		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Beryllium	0.75	µg/L	1	0.05	0.02	M1	GES	09/29/2025 14:01	EPA 200.8-1994, Rev. 5.4
Boron	0.023	mg/L	1	0.050	0.006	J1	GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Cadmium	0.054	µg/L	1	0.020	0.004		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Calcium	2.09	mg/L	1	0.10	0.02		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Chromium	2.24	µg/L	1	0.30	0.07		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Cobalt	8.06	µg/L	1	0.03	0.01		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Lead	1.07	µg/L	1	0.20	0.05		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Lithium	0.0894	mg/L	10	0.0030	0.0007		GES	09/22/2025 22:17	EPA 200.8-1994, Rev. 5.4
Magnesium	3.03	mg/L	1	0.10	0.01		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Mercury	610	ng/L	100	50	20		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	0.06	µg/L	1	0.50	0.05	J1	GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Potassium	1.62	mg/L	1	0.10	0.02		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Selenium	0.85	µg/L	1	0.50	0.04		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Sodium	26.4	mg/L	1	0.20	0.02	M1	GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Strontium	0.0311	mg/L	1	0.00200	0.00006		GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4
Thallium	0.10	µg/L	1	0.20	0.02	J1	GES	09/22/2025 17:55	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.91	pCi/L	0.26	0.11		TTP	09/24/2025 16:19	SW-846 9315-1986, Rev. 0
Carrier Recovery	111	%						
Radium-228	1.71	pCi/L	0.17	0.51	L1, P2	TTP	09/29/2025 16:28	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	86.8	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-31 Dissolved
Customer Description: PK_AD31
Lab Number: 252402-016-01
Preparation: Dissolved
Date Collected: 09/08/2025 12:31 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.02	µg/L	1	0.10	0.02	J1	GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Arsenic	0.19	µg/L	1	0.10	0.03		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Barium	28.3	µg/L	1	0.20	0.05		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.74	µg/L	1	0.05	0.02	M1	GES	09/29/2025 15:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.054	µg/L	1	0.020	0.004		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.41	µg/L	1	0.30	0.07		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Cobalt	7.98	µg/L	1	0.03	0.01		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Iron	0.151	mg/L	1	0.020	0.003		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Lead	0.30	µg/L	1	0.20	0.05		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.0882	mg/L	10	0.0030	0.0007		GES	09/22/2025 22:34	EPA 200.8-1994, Rev. 5.4
Manganese	0.0215	mg/L	1	0.0010	0.0001		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	0.06	µg/L	1	0.50	0.05	J1	GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Selenium	0.50	µg/L	1	0.50	0.04		GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4
Thallium	0.12	µg/L	1	0.20	0.02	J1	GES	09/22/2025 18:12	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
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Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-32
Lab Number: 252402-017
Date Collected: 09/08/2025 11:36 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.11	µg/L	1	0.10	0.02		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Arsenic	9.77	µg/L	1	0.10	0.03		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Barium	46.0	µg/L	1	0.20	0.05		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Beryllium	0.07	µg/L	1	0.05	0.02		GES	09/29/2025 15:28	EPA 200.8-1994, Rev. 5.4
Boron	0.081	mg/L	1	0.050	0.006		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Calcium	6.03	mg/L	1	0.10	0.02		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Chromium	0.39	µg/L	1	0.30	0.07		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Cobalt	14.4	µg/L	1	0.03	0.01		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Lead	0.08	µg/L	1	0.20	0.05	J1	GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.0629	mg/L	1	0.00030	0.00007		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Magnesium	6.50	mg/L	1	0.10	0.01		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Mercury	2480	ng/L	100	50	20		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	0.09	µg/L	1	0.50	0.05	J1	GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Potassium	3.13	mg/L	1	0.10	0.02		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Selenium	0.17	µg/L	1	0.50	0.04	J1	GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Sodium	14.7	mg/L	1	0.20	0.02		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Strontium	0.0720	mg/L	1	0.00200	0.00006		GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4
Thallium	0.08	µg/L	1	0.20	0.02	J1	GES	09/22/2025 18:28	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.42	pCi/L	0.10	0.17		ST	10/10/2025 11:15	SW-846 9315-1986, Rev. 0
Carrier Recovery	81.8	%						
Radium-228	1.02	pCi/L	0.16	0.51	L1, P2	TTP	09/29/2025 16:28	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	90.0	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-32 Dissolved
Customer Description: PK_AD32
Lab Number: 252402-017-01
Preparation: Dissolved
Date Collected: 09/08/2025 11:36 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Arsenic	3.99	µg/L	1	0.10	0.03		GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Barium	44.4	µg/L	1	0.20	0.05		GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.04	µg/L	1	0.05	0.02	J1	GES	09/29/2025 15:33	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.60	µg/L	1	0.30	0.07		GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Cobalt	14.7	µg/L	1	0.03	0.01		GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Iron	19.0	mg/L	1	0.020	0.003		GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.0646	mg/L	1	0.00030	0.00007		GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Manganese	0.131	mg/L	1	0.0010	0.0001		GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Mercury	4	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Selenium	0.05	µg/L	1	0.50	0.04	J1	GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	09/22/2025 18:33	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
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Phone: 614-836-4221
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Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-33
Lab Number: 252402-018
Date Collected: 09/08/2025 12:23 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Arsenic	0.93	µg/L	1	0.10	0.03		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Barium	40.9	µg/L	1	0.20	0.05		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Beryllium	1.23	µg/L	1	0.05	0.02		GES	09/29/2025 15:39	EPA 200.8-1994, Rev. 5.4
Boron	0.135	mg/L	1	0.050	0.006		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Cadmium	0.052	µg/L	1	0.020	0.004		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Calcium	1.69	mg/L	1	0.10	0.02		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Chromium	0.28	µg/L	1	0.30	0.07	J1	GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Cobalt	10.0	µg/L	1	0.03	0.01		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Lead	0.31	µg/L	1	0.20	0.05		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.0212	mg/L	1	0.00030	0.00007		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Magnesium	3.86	mg/L	1	0.10	0.01		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Mercury	6000	ng/L	1000	500	200		JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Potassium	0.28	mg/L	1	0.10	0.02		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Selenium	3.79	µg/L	1	0.50	0.04		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Sodium	16.1	mg/L	1	0.20	0.02		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Strontium	0.0297	mg/L	1	0.00200	0.00006		GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	09/22/2025 18:39	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.42	pCi/L	0.10	0.19		ST	10/10/2025 11:15	SW-846 9315-1986, Rev. 0
Carrier Recovery	93.6	%						
Radium-228	1.37	pCi/L	0.15	0.44	L1, P2	TTP	09/29/2025 16:28	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	88.5	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

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Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-33 Dissolved
Customer Description: PK_AD33
Lab Number: 252402-018-01
Preparation: Dissolved
Date Collected: 09/08/2025 12:23 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Arsenic	0.93	µg/L	1	0.10	0.03		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Barium	41.0	µg/L	1	0.20	0.05		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Beryllium	1.22	µg/L	1	0.05	0.02		GES	09/29/2025 15:44	EPA 200.8-1994, Rev. 5.4
Cadmium	0.055	µg/L	1	0.020	0.004		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Chromium	0.39	µg/L	1	0.30	0.07		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Cobalt	10.4	µg/L	1	0.03	0.01		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Iron	0.012	mg/L	1	0.020	0.003	J1	GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Lead	0.32	µg/L	1	0.20	0.05		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Lithium	0.0212	mg/L	1	0.00030	0.00007		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Magnesium	3.98	mg/L	1	0.10	0.01		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Manganese	0.0063	mg/L	1	0.0010	0.0001		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Mercury	210	ng/L	50	30	10		JLD	10/07/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Selenium	4.00	µg/L	1	0.50	0.04		GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.02	J1	GES	09/22/2025 18:44	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: AD-34
Customer Description:
Lab Number: 252402-019
Preparation:
Date Collected: 09/09/2025 09:14 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.063	mg/L	1	0.050	0.006		GES	09/22/2025 18:50	EPA 200.8-1994, Rev. 5.4
Calcium	39.2	mg/L	1	0.10	0.02		GES	09/22/2025 18:50	EPA 200.8-1994, Rev. 5.4
Magnesium	34.2	mg/L	1	0.10	0.01		GES	09/22/2025 18:50	EPA 200.8-1994, Rev. 5.4
Potassium	7.19	mg/L	1	0.10	0.02		GES	09/22/2025 18:50	EPA 200.8-1994, Rev. 5.4
Sodium	14.6	mg/L	1	0.20	0.02		GES	09/22/2025 18:50	EPA 200.8-1994, Rev. 5.4
Strontium	0.407	mg/L	1	0.00200	0.00006		GES	09/22/2025 18:50	EPA 200.8-1994, Rev. 5.4

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: AD-36
Lab Number: 252402-020
Date Collected: 09/09/2025 09:57 EDT
Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.099	mg/L	1	0.050	0.006		GES	09/22/2025 18:55	EPA 200.8-1994, Rev. 5.4
Calcium	1.43	mg/L	1	0.10	0.02		GES	09/22/2025 18:55	EPA 200.8-1994, Rev. 5.4
Magnesium	2.80	mg/L	1	0.10	0.01		GES	09/22/2025 18:55	EPA 200.8-1994, Rev. 5.4
Potassium	1.93	mg/L	1	0.10	0.02		GES	09/22/2025 18:55	EPA 200.8-1994, Rev. 5.4
Sodium	7.26	mg/L	1	0.20	0.02		GES	09/22/2025 18:55	EPA 200.8-1994, Rev. 5.4
Strontium	0.0147	mg/L	1	0.00200	0.00006		GES	09/22/2025 18:55	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: Duplicate
Lab Number: 252402-021
Date Collected: 09/08/2025 13:00 EDT
Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Arsenic	1.85	µg/L	1	0.10	0.03		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Barium	35.4	µg/L	1	0.20	0.05		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Beryllium	0.15	µg/L	1	0.05	0.02		GES	09/29/2025 15:50	EPA 200.8-1994, Rev. 5.4
Boron	0.048	mg/L	1	0.050	0.006	J1	GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Calcium	5.68	mg/L	1	0.10	0.02		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Chromium	0.30	µg/L	1	0.30	0.07		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Cobalt	33.7	µg/L	1	0.03	0.01		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Lithium	0.101	mg/L	1	0.00030	0.00007		GES	09/24/2025 10:23	EPA 200.8-1994, Rev. 5.4
Magnesium	8.29	mg/L	1	0.10	0.01		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Potassium	4.16	mg/L	1	0.10	0.02		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Sodium	13.5	mg/L	1	0.20	0.02		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Strontium	0.0307	mg/L	1	0.00200	0.00006		GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	09/22/2025 20:06	EPA 200.8-1994, Rev. 5.4

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: Duplicate Dissolved
Customer Description: PK_DUP
Lab Number: 252402-021-01
Preparation: Dissolved
Date Collected: 09/08/2025 13:00 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Arsenic	1.55	µg/L	1	0.10	0.03		GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Barium	35.1	µg/L	1	0.20	0.05		GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.13	µg/L	1	0.05	0.02		GES	09/29/2025 15:55	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.32	µg/L	1	0.30	0.07		GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Cobalt	34.2	µg/L	1	0.03	0.01		GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Iron	28.3	mg/L	1	0.020	0.003		GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.101	mg/L	1	0.00030	0.00007		GES	09/24/2025 10:28	EPA 200.8-1994, Rev. 5.4
Manganese	0.276	mg/L	1	0.0010	0.0001		GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	10	5	2	J1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	09/22/2025 20:12	EPA 200.8-1994, Rev. 5.4

Dolan Chemical Laboratory
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Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: Equipment Blank
Lab Number: 252402-022
Date Collected: 09/09/2025 10:20 EDT

Customer Description:
Preparation:
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.03	µg/L	1	0.10	0.02	J1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.02	µg/L	1	0.05	0.02	U1	GES	09/29/2025 16:01	EPA 200.8-1994, Rev. 5.4
Boron	<0.006	mg/L	1	0.050	0.006	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.10	0.02	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Chromium	0.39	µg/L	1	0.30	0.07		GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Cobalt	0.01	µg/L	1	0.03	0.01	J1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00007	mg/L	1	0.00030	0.00007	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.01	mg/L	1	0.10	0.01	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	10	5	2	U1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Potassium	<0.02	mg/L	1	0.10	0.02	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Sodium	<0.02	mg/L	1	0.20	0.02	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Strontium	<0.00006	mg/L	1	0.00200	0.00006	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	09/22/2025 20:17	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Customer Sample ID: Field Blank
Customer Description:
Lab Number: 252402-023
Preparation:
Date Collected: 09/09/2025 10:21 EDT
Date Received: 09/15/2025 12:40 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.05	µg/L	1	0.10	0.02	J1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.02	µg/L	1	0.05	0.02	U1	GES	09/29/2025 16:06	EPA 200.8-1994, Rev. 5.4
Boron	<0.006	mg/L	1	0.050	0.006	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Calcium	0.03	mg/L	1	0.10	0.02	J1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Chromium	0.25	µg/L	1	0.30	0.07	J1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.01	µg/L	1	0.03	0.01	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00007	mg/L	1	0.00030	0.00007	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.01	mg/L	1	0.10	0.01	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	10	5	2	U1	JLD	10/06/2025 00:00	EPA 1631E-2002
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Potassium	<0.02	mg/L	1	0.10	0.02	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Sodium	<0.02	mg/L	1	0.20	0.02	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Strontium	<0.00006	mg/L	1	0.00200	0.00006	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	09/22/2025 20:23	EPA 200.8-1994, Rev. 5.4

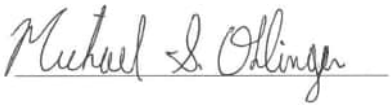
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252402 **Customer: Pirkey Power Station** **Date Reported: 10/15/2025**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
B1 - Analyte detected in method blank (MB) at or above the method criteria.
R2 - Carrier recovery was outside acceptance limits.
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
L1 - The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
P2 - The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: *Michael Ohlinger (614-836-4184)*
Dave Conover (614-836-4219)

Project Name: Pirkey PP CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
◉ Routine (28 days for Monitoring Wells)

Site Contact:
Date:

For Lab Use Only:
COC/Order #: 252402 1/2

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 — Sb, As, B, Ba, Be, Ca Cd, Cr, Co, K, Li, Mg, Mo, Na, Pb, Se, Sr, Tl	Field-filter 250 mL bottle, then pH<2, HNO_3 — Dissolved Sb, As, Ba, Be, Cd, Cr, Co, Fe, Li, Mn, Mo, Pb, Se, Tl	Three (six every 10th*) 1 L bottles, pH<2, HNO3 — Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2 — Mercury	250 mL Glass bottle, HCL**, pH<2 — Dissolved Mercury	250 mL bottle, pH<2, HNO_3 — B, Ca, K, Mg, Na, Sr		Sample Specific Notes
1	AD-2	9/9/2025	1031	G	GW	7		X	X	X	X	X			
2	AD-3	9/9/2025	1121	G	GW	7		X	X	X	X	X			
3	AD-4	9/10/2025	1003	G	GW	7		X	X	X	X	X			
4	AD-7R	9/8/2025	936	G	GW	7		X	X	X	X	X			
5	AD-8	9/9/2025	945	G	GW	1							X		
6	AD-12	9/8/2025	938	G	GW	7		X	X	X	X	X			
7	AD-13	9/8/2025	932	G	GW	10		X	X	X	X	X			
8	AD-16	9/10/2025	1105	G	GW	1							X		
9	AD-17	9/9/2025	1025	G	GW	7		X	X	X	X	X			
10	AD-18	9/10/2025	842	G	GW	7		X	X	X	X	X			
11	AD-22	9/8/2025	1020	G	GW	7		X	X	X	X	X			
12	AD-23	9/10/2025	1123	G	GW	1							X		
	Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______; F= filter in field							4	F4	4	2	F2	4		

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	Eagle	9-11-25 1400		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	9·15·25 1240

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Michael Ohlinger (614-836-4184)
Dave Conover (614-836-4219)

Project Name: Pirkey PP CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
◉ Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 252402 2/2

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 Sb, As, B, Ba, Be, Ca Cd, Cr, Co, K, Li, Mg, Mo, Na, Pb, Se, Sr, Tl	Field-filter 250 mL bottle, then pH<2, HNO_3 Dissolved Sb, As, Ba, Be, Cd, Cr, Co, Fe, Li, Mn, Mo, Pb, Se, Tl	Three (six every 10th*) 1 L bottles, pH<2, HNO3 Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2 Mercury	250 mL Glass bottle, HCL**, pH<2 Dissolved Mercury	250 mL bottle, pH<2, HNO_3 B, Ca, K, Mg, Na, Sr		Sample Specific Notes
AD-27	9/10/2025	825	G	GW	1							X		
AD-28	9/9/2025	929	G	GW	7		X	X	X	X	X			
AD-30	9/9/2025	844	G	GW	7		X	X	X	X	X			
AD-31	9/8/2025	1131	G	GW	7		X	X	X	X	X			
AD-32	9/8/2025	1036	G	GW	7		X	X	X	X	X			
AD-33	9/8/2025	1123	G	GW	7		X	X	X	X	X			
AD-34	9/9/2025	814	G	GW	1							X		
AD-36	9/9/2025	857	G	GW	1							X		
Duplicate	9/8/2025	832	G	GW	4		X	X		X	X			
Equipment Blank	9/9/2025	920	G	GW	2		X			X				
Field Blank	9/9/2025	921	G	GW	2		X			X				
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	4	2	F2	4		

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by: [signature]	Company: Eagle	Date/Time: 9-11-25 1400	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 9.15.25 1240

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

Package Type	Delivery Type
(Cooler) Box Bag Envelope	UPS (FedEX) USPS
	Other _____

Plant/Customer Pinney **Total # of Containers RECEIVED in Job:** 115

Opened By KSH/AMR

Date/Time 09/15/25 1246

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? Y / N or (N/A)

Initial/Date: NA on ice / (no ice)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 01/31/2026)

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: AMR 9.15.25

***pH paper:* mfr LabRat ,PN LRS-4801 ,LOT# X000RWDG21 ,EXPIR DATE 09/30/2026

*** Note changes to pH paper in comments below***

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: NA (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments NA (See Prep Book)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? Y / (N) Comments *AD-13, AD-16, Duplicate time diff on label vs. COC

Were correct containers used? (Y) / N Comments _____

Was the customer contacted? If Yes: Person Contacted: Pryce Warren AMR 9.15.25

Lab ID# 252402 Initial & Date & Time : AMR 9.15.25 1454

Logged by AMR Comments: Per email AD-13 and duplicate bottle times used and AD-16 COC time used.

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 115

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev 10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below:**

i.e. Mark "LE" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : ~~252401~~ 252402 AMR 9/16/25 **Initial/ Date:** AMR 9.15.25 **Peer Review Initial/ Date:** EGM 9/16/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
21	~~252402~~ ~~252401~~ AMR 9.16.25 -001		21
15	-001-01		15
21	-002		21
15	-002-01		15
21	-003		21
15	-003-01		15
21	-004		21
15	-004-01		15
6	-005		6
21	-006		21
15	-006-01		15
21	-007		21
15	-007-01		15
6	-008		6
21	-009		21
15	-009-01		15
21	-010		21
15	-010-01		15
21	-011		21
15	-011-01		15
6	-012		6
6	-013		6
21	-014		21
15	-014-01		15

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:

i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : ~~252401~~ 252402 **Initial/ Date:** AMP 9.15.25 **Peer Review Initial/ Date:** EGM 9/16/25

AMP 9.16.25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
	252402 AMP 9.16.25		
21	~~252401~~ -015		21
15	-015-01		15
21	-016		21
15	-016-01		15
21	-017		21
15	-017-01		15
21	-018		21
15	-018-01		15
6	-019		6
6	-020		6
19	-021		19
15	-021-01		15
19	-022		19
19	-023		19

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Tamisha T. Palmer	Tamisha T. Palmer	Chemical Technican, Principal	10/14/2025
Name (printed)	Signature	Official Title	Date

Radium Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Plant

Reviewer Name: Tamisha Palmer

LRC Date: 10/14/2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25092402

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Radium Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	No	ER1
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Plant

Reviewer Name: Tamisha Palmer

LRC Date: 10/14/2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25092402

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Radium Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Plant

Reviewer Name: Tamisha Palmer

LRC Date: 10/14/2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25092402

Exception Report No.	Description
ER1	The RPD was outside criteria. The sample and the Duplicate both were below the detection limit.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

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- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Tamisha Palmer	Tami L. Palmer	Chemical Technician Principal	10/14/2025
Name (printed)	Signature	Official Title	Date

Radium Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Plant

Reviewer Name: Tamisha Palmer

LRC Date: 10/14/2025

Laboratory Job Number: 252401, 252402

Prep Batch Number(s): PB25091701

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Radium Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	No	ER1
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	NA	
	I	Were analytical duplicates analyzed at the appropriate frequency?	NA	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	NA	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Plant

Reviewer Name: Tamisha Palmer

LRC Date: 10/14/2025

Laboratory Job Number: 252401, 252402

Prep Batch Number(s): PB25091701

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Radium Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Plant

Reviewer Name: Tamisha Palmer

LRC Date: 10/14/2025

Laboratory Job Number: 252401, 252402

Prep Batch Number(s): PB25091701

Exception Report No.	Description
ER1	RPD for MS/MSD was outside of the criteria of 25%

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

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  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Kelsey Huff		Chemist	10/09/2025
Name (printed)	Signature	Official Title	Date

Mercury Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 10/09/2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25100305, PB25100306, PB25100307, PB25100606

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	NA	
	I	Were analytical duplicates analyzed at the appropriate frequency?	NA	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	NA	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Mercury Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 10/09/2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25100305, PB25100306, PB25100307, PB25100606

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Mercury Laboratory Review Checklist

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey

Reviewer Name: Kelsey Huff

LRC Date: 10/09/2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25100305, PB25100306, PB25100307, PB25100606

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  (b) Dilution factors
  (c) Preparation methods
  (d) Cleanup methods
  (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  (a) Calculated recovery (%R)
  (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  (a) LCS spiking amounts
  (b) Calculated %R for each analyte
  (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  (a) Samples associated with the MS/MSD clearly identified
  (b) MS/MSD spiking amounts
  (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  (d) Calculated %Rs and relative percent differences (RPDs)
  (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  (a) The amount of analyte measured in the duplicate
  (b) The calculated RPD
  (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Elizabeth Hoitink	Elizabeth L Hoitink Digitally signed by Elizabeth L Hoitink Date 2025.10.02 12:53:38 -04'00'	Chemist	10-02-2025
Name (printed)	Signature	Official Title	Date

ICP-MS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 10-02-2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25091702, PB25091704, PB25091801, QC2509106, QC2509157, QC2509160, QC2509171

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

ICP-MS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	No	ER3
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

ICP-MS Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 10-02-2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25091702, PB25091704, PB25091801, QC2509106, QC2509157, QC2509160, QC2509171

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

ICP-MS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey CCR

Reviewer Name: Elizabeth Hoitink

LRC Date: 10-02-2025

Laboratory Job Number: 252402

Prep Batch Number(s): PB25091702, PB25091704, PB25091801, QC2509106, QC2509157, QC2509160, QC2509171

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.
ER3	252402-015 matrix spike failed Na. 252402-016 matrix spike failed Be, Na. 252402-016-01 matrix spike failed Be.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252381 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-31
Lab Number: 252381-001
Date Collected: 09/08/2025 12:31 EDT
Customer Description:
Preparation:
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.22	mg/L	2	0.10	0.02		JCF	09/19/2025 18:43	EPA 300.1 -1997, Rev. 1.0
Chloride	14.0	mg/L	2	0.06	0.02		JCF	09/19/2025 18:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.10	mg/L	2	0.06	0.02		JCF	09/19/2025 18:43	EPA 300.1 -1997, Rev. 1.0
Sulfate	69.5	mg/L	2	0.60	0.04		JCF	09/19/2025 18:43	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	260	mg/L	1	50	20		BLB	09/15/2025 07:06	SM 2540C-2020

Customer Sample ID: AD-30
Lab Number: 252381-002
Date Collected: 09/09/2025 09:44 EDT
Customer Description:
Preparation:
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.23	mg/L	2	0.10	0.02		JCF	09/19/2025 19:06	EPA 300.1 -1997, Rev. 1.0
Chloride	16.8	mg/L	2	0.06	0.02		JCF	09/19/2025 19:06	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.04	mg/L	2	0.06	0.02	J1	JCF	09/19/2025 19:06	EPA 300.1 -1997, Rev. 1.0
Sulfate	91.1	mg/L	2	0.60	0.04		JCF	09/19/2025 19:06	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	J8, U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	210	mg/L	1	50	20		BLB	09/15/2025 07:06	SM 2540C-2020

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252381 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-28
Customer Description:
Lab Number: 252381-003
Preparation:
Date Collected: 09/09/2025 10:29 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.09	mg/L	2	0.10	0.02	J1	JCF	09/19/2025 19:29	EPA 300.1 -1997, Rev. 1.0
Chloride	4.79	mg/L	2	0.06	0.02		JCF	09/19/2025 19:29	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.62	mg/L	2	0.06	0.02		JCF	09/19/2025 19:29	EPA 300.1 -1997, Rev. 1.0
Sulfate	22.7	mg/L	2	0.60	0.04		JCF	09/19/2025 19:29	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	100	mg/L	1	50	20		BLB	09/15/2025 07:06	SM 2540C-2020

Customer Sample ID: AD-27
Customer Description:
Lab Number: 252381-004
Preparation:
Date Collected: 09/10/2025 09:25 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.36	mg/L	2	0.10	0.02		JCF	09/19/2025 19:51	EPA 300.1 -1997, Rev. 1.0
Chloride	14.0	mg/L	2	0.06	0.02		JCF	09/19/2025 19:51	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.24	mg/L	2	0.06	0.02		JCF	09/19/2025 19:51	EPA 300.1 -1997, Rev. 1.0
Sulfate	60.5	mg/L	2	0.60	0.04		JCF	09/19/2025 19:51	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	210	mg/L	1	50	20		BLB	09/15/2025 06:39	SM 2540C-2020

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252381 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-32
Customer Description:
Lab Number: 252381-005
Preparation:
Date Collected: 09/08/2025 11:36 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.29	mg/L	2	0.10	0.02		JCF	09/19/2025 20:37	EPA 300.1 -1997, Rev. 1.0
Chloride	10.1	mg/L	2	0.06	0.02		JCF	09/19/2025 20:37	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.34	mg/L	2	0.06	0.02		JCF	09/19/2025 20:37	EPA 300.1 -1997, Rev. 1.0
Sulfate	53.0	mg/L	2	0.60	0.04		JCF	09/19/2025 20:37	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	7	mg/L	1	20	5	J8, J1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	170	mg/L	1	50	20		BLB	09/15/2025 06:39	SM 2540C-2020

Customer Sample ID: AD-33
Customer Description:
Lab Number: 252381-006
Preparation:
Date Collected: 09/08/2025 12:23 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.72	mg/L	2	0.10	0.02		JCF	09/19/2025 21:00	EPA 300.1 -1997, Rev. 1.0
Chloride	11.3	mg/L	2	0.06	0.02		JCF	09/19/2025 21:00	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.31	mg/L	2	0.06	0.02		JCF	09/19/2025 21:00	EPA 300.1 -1997, Rev. 1.0
Sulfate	49.1	mg/L	2	0.60	0.04		JCF	09/19/2025 21:00	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	170	mg/L	1	50	20		BLB	09/15/2025 06:45	SM 2540C-2020

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252381 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-34
Lab Number: 252381-007
Date Collected: 09/09/2025 09:14 EDT
Customer Description:
Preparation:
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.16	mg/L	5	0.25	0.05	J1	JCF	09/19/2025 22:53	EPA 300.1 -1997, Rev. 1.0
Chloride	7.54	mg/L	5	0.15	0.05		JCF	09/19/2025 22:53	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.17	mg/L	5	0.15	0.05		JCF	09/19/2025 22:53	EPA 300.1 -1997, Rev. 1.0
Sulfate	955	mg/L	50	15	1		JCF	09/19/2025 22:31	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	1670	mg/L	1	50	20		BLB	09/15/2025 07:06	SM 2540C-2020

Customer Sample ID: AD-36
Lab Number: 252381-008
Date Collected: 09/08/2025 09:57 EDT
Customer Description:
Preparation:
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.92	mg/L	2	0.10	0.02		JCF	09/19/2025 21:22	EPA 300.1 -1997, Rev. 1.0
Chloride	18.8	mg/L	2	0.06	0.02		JCF	09/19/2025 21:22	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.12	mg/L	2	0.06	0.02		JCF	09/19/2025 21:22	EPA 300.1 -1997, Rev. 1.0
Sulfate	4.99	mg/L	2	0.60	0.04		JCF	09/19/2025 21:22	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	J8, U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	60	mg/L	1	50	20		BLB	09/15/2025 06:45	SM 2540C-2020

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252381 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: Duplicate
Lab Number: 252381-009
Date Collected: 09/09/2025 13:00 EDT

Customer Description:
Preparation:
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

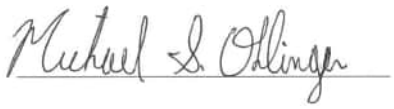
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.28	mg/L	2	0.10	0.02		JCF	09/19/2025 21:45	EPA 300.1 -1997, Rev. 1.0
Chloride	24.8	mg/L	2	0.06	0.02		JCF	09/19/2025 21:45	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.37	mg/L	2	0.06	0.02		JCF	09/19/2025 21:45	EPA 300.1 -1997, Rev. 1.0
Sulfate	41.5	mg/L	2	0.60	0.04		JCF	09/19/2025 21:45	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	51	mg/L	1	20	5		MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	220	mg/L	1	50	20		BLB	09/15/2025 07:12	SM 2540C-2020

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
J8 - Concentration estimated. Per the method, this Low Alkalinity sample (< 20 mg/L) was titrated to a fixed pH 4.4.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Michael Ohlinger (614-836-4184)
Dave Conover (614-836-4219)

Project Name: Pirkey PP CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
◉ Routine (28 days for Monitoring Wells)

Site Contact: | Date:

For Lab Use Only:
COC/Order #: 252381

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) initials	Mercury (250 mL bottle, pH<2, HNO3)	Dissolved Mercury (Field-filter 250 mL bottle, then pH<2, HNO3)	F, Cl, SO4, Br, TDS, Alkalinity (1 L bottle, Cool, 0-6C)	Ra-226, Ra-228 (Three (six every 10th*) 1 L bottles, pH<2, HNO3)				Sample Specific Notes:
AD-27	9/10/2025	825	G	GW	1				X					
AD-28	9/9/2025	929	G	GW	1				X					
AD-30	9/9/2025	844	G	GW	1				X					
AD-31	9/8/2025	1131	G	GW	1				X					
AD-32	9/8/2025	1036	G	GW	1				X					
AD-33	9/8/2025	1123	G	GW	1				X					
AD-34	9/9/2025	814	G	GW	1				X					
AD-36	9/9/2025	857	G	GW	1				X					
Duplicate	9/8/2025	832	G	GW	1				X					Collection time 1200
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by: Matt Hamilton	Company: Eagle	Date/Time: 9-11-25 1400	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 9/12/25 0940

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

Package Type: (Cooler) Box Bag Envelope

Delivery Type: UPS (FedEX) USPS Other _____

Plant/Customer Pirkey **Total # of Containers RECEIVED in Job:** 9

Opened By EGM

Date/Time 9/12/25 0940

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? (Y) / N or N/A

Initial/Date: EGM 9/12/25 or (ice) / no ice

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 01/31/2026)

Was container in good condition? (Y) / N Comments NA

Was Chain of Custody received? (Y) / N Comments NA

Requested turnaround: Routine If **RUSH**, who was notified? NA

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) N or N/A

Initial/Date: EGM 9/12/25

***pH paper:* mfr LabRat ,PN LRS-4801 ,LOT# X000RWDG21 ,EXPIR DATE 09/30/2026

*** Note changes to pH paper in comments below***

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: NA (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments NA (See Prep Book)

Was COC filled out properly? Y / (N) Comments The Duplicate sample was listed w/ the incorrect time on the COC.

Were samples labeled properly? (Y) / N Comments

Were correct containers used? (Y) / N Comments /NA

Was the customer contacted? If Yes: Person Contacted: Pryce Warren

Lab ID# 252381 Initial & Date & Time : EGM 9/12/25 1004

Logged by EGM Comments: Duplicate bottle was labeled w/ a different time than COC.

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 9

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev 10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 252381 **Initial/ Date:** EGW 9/12/25 **Peer Review Initial/ Date:** AMR 9.12.25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
9	252381 -001		9
	-002		
	-003		
	-004		
	-005		
	-006		
	-007		
	-008		
	-009	Incorrect time	

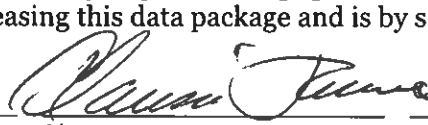
Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Clarissa Jameson		Chemical Lab Tech Principle	10/3/2025
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey PP CCR

Reviewer Name: Clarissa Jameson

LRC Date: 10/3/2025

Laboratory Job Number: 252381

Prep Batch Number(s): QC2509119

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey PP CCR

Reviewer Name: Clarissa Jameson

LRC Date: 10/3/2025

Laboratory Job Number: 252381

Prep Batch Number(s): QC2509119

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey PP CCR

Reviewer Name: Clarissa Jameson

LRC Date: 10/3/2025

Laboratory Job Number: 252381

Prep Batch Number(s): QC2509119

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Sandra Williams	Sandra D. Williams	Chemist	09/22/2025
Name (printed)	Signature	Official Title	Date

TDS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 09/22/2025

Laboratory Job Number: 252381

Prep Batch Number(s): QC2509103

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 09/22/2025

Laboratory Job Number: 252381

Prep Batch Number(s): QC2509103

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 09/22/2025

Laboratory Job Number: 252381

Prep Batch Number(s): QC2509103

Exception Report No.	Description

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger	Michael Ohlinger	Chemist	09/17/25
Name (printed)	Signature	Official Title	Date

Alkalinity Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 09/17/25

Laboratory Job Number: 252380, 252381, 252382

Prep Batch Number(s): QC2509094

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 09/17/25

Laboratory Job Number: 252380, 252381, 252382

Prep Batch Number(s): QC2509094

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 09/17/25

Laboratory Job Number: 252380, 252381, 252382

Prep Batch Number(s): QC2509094

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<0.5*MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252382 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-12
Customer Description:
Lab Number: 252382-001
Preparation:
Date Collected: 09/08/2025 10:38 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.25	mg/L	2	0.10	0.02		CRJ	09/30/2025 16:57	EPA 300.1 -1997, Rev. 1.0
Chloride	4.61	mg/L	2	0.06	0.02		CRJ	09/30/2025 16:57	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.07	mg/L	2	0.06	0.02		CRJ	09/30/2025 16:57	EPA 300.1 -1997, Rev. 1.0
Sulfate	3.11	mg/L	2	0.60	0.04		CRJ	09/30/2025 16:57	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	J8, U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	70	mg/L	1	50	20		BLB	09/15/2025 07:12	SM 2540C-2020

Customer Sample ID: AD-8
Customer Description:
Lab Number: 252382-002
Preparation:
Date Collected: 09/09/2025 10:45 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.74	mg/L	2	0.10	0.02		CRJ	09/30/2025 17:43	EPA 300.1 -1997, Rev. 1.0
Chloride	5.85	mg/L	2	0.06	0.02		CRJ	09/30/2025 17:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.36	mg/L	2	0.06	0.02		CRJ	09/30/2025 17:43	EPA 300.1 -1997, Rev. 1.0
Sulfate	103	mg/L	10	3.0	0.2		CRJ	09/30/2025 17:20	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	90	mg/L	1	20	5		MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	280	mg/L	1	50	20		BLB	09/15/2025 07:12	SM 2540C-2020

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252382 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-7R
Customer Description:
Lab Number: 252382-003
Preparation:
Date Collected: 09/08/2025 10:36 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	1.36	mg/L	2	0.10	0.02		CRJ	09/30/2025 18:28	EPA 300.1 -1997, Rev. 1.0
Chloride	27.5	mg/L	2	0.06	0.02		CRJ	09/30/2025 18:28	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14	mg/L	2	0.06	0.02		CRJ	09/30/2025 18:28	EPA 300.1 -1997, Rev. 1.0
Sulfate	34.1	mg/L	2	0.60	0.04		CRJ	09/30/2025 18:28	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	180	mg/L	1	50	20		BLB	09/15/2025 07:56	SM 2540C-2020

Customer Sample ID: AD-4
Customer Description:
Lab Number: 252382-004
Preparation:
Date Collected: 09/10/2025 11:03 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.21	mg/L	2	0.10	0.02		CRJ	09/30/2025 20:00	EPA 300.1 -1997, Rev. 1.0
Chloride	3.91	mg/L	2	0.06	0.02		CRJ	09/30/2025 20:00	EPA 300.1 -1997, Rev. 1.0
Fluoride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	09/30/2025 20:00	EPA 300.1 -1997, Rev. 1.0
Sulfate	19.0	mg/L	2	0.60	0.04		CRJ	09/30/2025 20:00	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	J8, U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	150	mg/L	1	50	20		BLB	09/15/2025 06:45	SM 2540C-2020

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 252382 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-3
Customer Description:
Lab Number: 252382-005
Preparation:
Date Collected: 09/09/2025 12:21 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.08	mg/L	2	0.10	0.02	J1	CRJ	09/30/2025 19:14	EPA 300.1 -1997, Rev. 1.0
Chloride	6.41	mg/L	2	0.06	0.02		CRJ	09/30/2025 19:14	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.07	mg/L	2	0.06	0.02		CRJ	09/30/2025 19:14	EPA 300.1 -1997, Rev. 1.0
Sulfate	31.5	mg/L	2	0.60	0.04		CRJ	09/30/2025 19:14	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	J8, U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	150	mg/L	1	50	20		BLB	09/15/2025 07:56	SM 2540C-2020

Customer Sample ID: AD-2
Customer Description:
Lab Number: 252382-006
Preparation:
Date Collected: 09/09/2025 11:31 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.42	mg/L	2	0.10	0.02		CRJ	09/30/2025 20:23	EPA 300.1 -1997, Rev. 1.0
Chloride	25.4	mg/L	2	0.06	0.02		CRJ	09/30/2025 20:23	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.26	mg/L	2	0.06	0.02		CRJ	09/30/2025 20:23	EPA 300.1 -1997, Rev. 1.0
Sulfate	271	mg/L	10	3.0	0.2		CRJ	10/01/2025 09:14	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	520	mg/L	1	50	20		BLB	09/15/2025 06:45	SM 2540C-2020

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252382 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-13
Customer Description:
Lab Number: 252382-007
Preparation:
Date Collected: 09/08/2025 09:32 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.26	mg/L	2	0.10	0.02		CRJ	09/30/2025 23:04	EPA 300.1 -1997, Rev. 1.0
Chloride	26.1	mg/L	2	0.06	0.02		CRJ	09/30/2025 23:04	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.39	mg/L	2	0.06	0.02		CRJ	09/30/2025 23:04	EPA 300.1 -1997, Rev. 1.0
Sulfate	44.5	mg/L	2	0.60	0.04		CRJ	09/30/2025 23:04	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	49	mg/L	1	20	5		MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	210	mg/L	1	50	20		BLB	09/15/2025 06:52	SM 2540C-2020

Customer Sample ID: AD-16
Customer Description:
Lab Number: 252382-008
Preparation:
Date Collected: 09/10/2025 12:05 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.22	mg/L	2	0.10	0.02		CRJ	09/30/2025 23:27	EPA 300.1 -1997, Rev. 1.0
Chloride	30.5	mg/L	2	0.06	0.02		CRJ	09/30/2025 23:27	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.08	mg/L	2	0.06	0.02		CRJ	09/30/2025 23:27	EPA 300.1 -1997, Rev. 1.0
Sulfate	8.80	mg/L	2	0.60	0.04		CRJ	09/30/2025 23:27	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	110	mg/L	1	50	20		BLB	09/15/2025 07:56	SM 2540C-2020

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252382 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-17
Lab Number: 252382-009
Date Collected: 09/09/2025 11:25 EDT
Customer Description:
Preparation:
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.22	mg/L	2	0.10	0.02		CRJ	09/30/2025 23:49	EPA 300.1 -1997, Rev. 1.0
Chloride	20.0	mg/L	2	0.06	0.02		CRJ	09/30/2025 23:49	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.18	mg/L	2	0.06	0.02		CRJ	09/30/2025 23:49	EPA 300.1 -1997, Rev. 1.0
Sulfate	2.84	mg/L	2	0.60	0.04		CRJ	09/30/2025 23:49	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	60	mg/L	1	50	20		BLB	09/15/2025 07:56	SM 2540C-2020

Customer Sample ID: AD-18
Lab Number: 252382-010
Date Collected: 09/10/2025 09:42 EDT
Customer Description:
Preparation:
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.06	mg/L	2	0.10	0.02	J1	CRJ	10/01/2025 00:12	EPA 300.1 -1997, Rev. 1.0
Chloride	5.92	mg/L	2	0.06	0.02		CRJ	10/01/2025 00:12	EPA 300.1 -1997, Rev. 1.0
Fluoride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	10/01/2025 00:12	EPA 300.1 -1997, Rev. 1.0
Sulfate	7.57	mg/L	2	0.60	0.04		CRJ	10/01/2025 00:12	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	150	mg/L	1	50	20		BLB	09/15/2025 08:03	SM 2540C-2020

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252382 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Customer Sample ID: AD-22
Customer Description:
Lab Number: 252382-011
Preparation:
Date Collected: 09/08/2025 11:20 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.65	mg/L	2	0.10	0.02		CRJ	10/01/2025 01:21	EPA 300.1 -1997, Rev. 1.0
Chloride	84.9	mg/L	25	0.8	0.3		CRJ	10/01/2025 00:58	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.21	mg/L	2	0.06	0.02		CRJ	10/01/2025 01:21	EPA 300.1 -1997, Rev. 1.0
Sulfate	221	mg/L	25	7.5	0.5		CRJ	10/01/2025 00:58	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	J8, U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	530	mg/L	1	50	20		BLB	09/15/2025 06:52	SM 2540C-2020

Customer Sample ID: AD-23
Customer Description:
Lab Number: 252382-012
Preparation:
Date Collected: 09/10/2025 12:23 EDT
Date Received: 09/12/2025 09:40 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.34	mg/L	2	0.10	0.02		CRJ	10/01/2025 02:07	EPA 300.1 -1997, Rev. 1.0
Chloride	11.1	mg/L	2	0.06	0.02		CRJ	10/01/2025 02:07	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.04	mg/L	2	0.06	0.02	J1	CRJ	10/01/2025 02:07	EPA 300.1 -1997, Rev. 1.0
Sulfate	7.44	mg/L	2	0.60	0.04		CRJ	10/01/2025 02:07	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	U1	MGK	09/16/2025 14:39	SM 2320B-2021
TDS, Filterable Residue	60	mg/L	1	50	20		BLB	09/15/2025 08:03	SM 2540C-2020

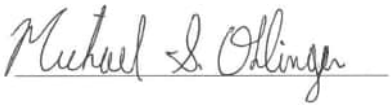
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 252382 **Customer: Pirkey Power Station** **Date Reported: 10/14/2025**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J8 - Concentration estimated. Per the method, this Low Alkalinity sample (< 20 mg/L) was titrated to a fixed pH 4.4.

U1 - Not detected at or below method detection limit (MDL).

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Michael Ohlinger (614-836-4184)
Dave Conover (614-836-4219)

Project Name: Pirkey PP Semi-Annual CCR
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (In Calendar Days)
◉ Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 252382

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	Mercury (250 mL bottle, pH<2, HNO3)	Dissolved Mercury (Field-filter 250 mL bottle, then pH<2, HNO3)	F, Cl, SO4, Br, TDS, Alkalinity (1 L bottle, Cool, 0-6C)	Ra-226, Ra-228 (Three (six every 10th*) 1 L bottles, pH<2, HNO3)				Sample Specific Notes:
AD-2	9/9/2025	1031	G	GW	1				X					
AD-3	9/9/2025	1121	G	GW	1				X					
AD-4	9/10/2025	1003	G	GW	1				X					
AD-7R	9/8/2025	936	G	GW	1				X					
AD-8	9/9/2025	945	G	GW	1				X					
AD-12	9/8/2025	938	G	GW	1				X					
AD-13	9/8/2025	932	G	GW	1				X					collection time 0832
AD-16	9/10/2025	1105	G	GW	1				X					
AD-17	9/9/2025	1025	G	GW	1				X					
AD-18	9/10/2025	842	G	GW	1				X					
AD-22	9/8/2025	1020	G	GW	1				X					
AD-23	9/10/2025	1123	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

TG-32 needed

Relinquished by: Matt Hamilton	Company: Eagle	Date/Time: 9-11-25 1400	Received by	Date/Time
Relinquished by:	Company:	Date/Time:	Received by	Date/Time
Relinquished by	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 9/12/25 0940

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

Package Type	Delivery Type
(Cooler) Box Bag Envelope	UPS (FedEX) USPS
	Other _____

Plant/Customer Pirkey **Total # of Containers RECEIVED in Job:** 12

Opened By EGM

Date/Time 9/12/25 0940

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? (Y) N or N/A

Initial/Date: EGM 9/12/25 (on ice) / no ice

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 01/31/2026)

Was container in good condition? (Y) / N Comments NA

Was Chain of Custody received? (Y) / N Comments NA

Requested turnaround: Routine If **RUSH**, who was notified? NA

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Were pH requirements met for required samples, per BN-water-900? (Y) N or N/A

Initial/Date: EGM 9/12/25

***pH paper:* mfr LabRat ,PN LRS-4801 ,LOT# X000RWDG21 ,EXPIR DATE 09/30/2026

*** Note changes to pH paper in comments below***

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: NA (See Prep Book)

(Dissolved) Is sample filtration requested? Y / (N) Comments NA (See Prep Book)

Was COC filled out properly? Y / (N) Comments The listed time for AD-13 was incorrect on the CoC.

Were samples labeled properly? (Y) / N Comments

Were correct containers used? (Y) / N Comments

Was the customer contacted? If Yes: Person Contacted: Pryce Warren

Lab ID# 252382 Initial & Date & Time : EGM 9/12/25 1004

Logged by EGM Comments: AD-13 had a different collection time on bottle than CoC.

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 12

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 252382 **Initial/ Date:** EGM 9/12/25 **Peer Review Initial/ Date:** AMR 9.12.25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name) EGM 9/12/25	Comments /Nonconformities	Peer Review Test Count from COC
0	252382-001		6
	-002		
	-003		
	-004	NA	
	-005		
	-006		
	-007	Incorrect time on CoC	
	-008		
	-009		
	-010	NA	
	-011		
	-012		

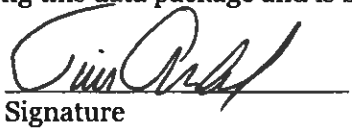
Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Tim Arnold		Chemist Principal	10/2/25
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey PP Semi-Annual CCR

Reviewer Name: Tim Arnold

LRC Date: 10/2/25

Laboratory Job Number: 252382

Prep Batch Number(s): QC2510008

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey PP Semi-Annual CCR

Reviewer Name: Tim Arnold

LRC Date: 10/2/25

Laboratory Job Number: 252382

Prep Batch Number(s): QC2510008

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey PP Semi-Annual CCR

Reviewer Name: Tim Arnold

LRC Date: 10/2/25

Laboratory Job Number: 252382

Prep Batch Number(s): QC2510008

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Sandra Williams	Sandra D. Williams	Chemist	09/22/2025
Name (printed)	Signature	Official Title	Date

TDS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 09/22/2025

Laboratory Job Number: 252382

Prep Batch Number(s): QC2509103

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 09/22/2025

Laboratory Job Number: 252382

Prep Batch Number(s): QC2509103

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Power Station

Reviewer Name: Sandra Williams

LRC Date: 09/22/2025

Laboratory Job Number: 252382

Prep Batch Number(s): QC2509103

Exception Report No.	Description

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

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- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my 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 in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger	Michael Ohlinger	Chemist	09/17/25
Name (printed)	Signature	Official Title	Date

Alkalinity Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 09/17/25

Laboratory Job Number: 252380, 252381, 252382

Prep Batch Number(s): QC2509094

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 09/17/25

Laboratory Job Number: 252380, 252381, 252382

Prep Batch Number(s): QC2509094

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Alkalinity Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Pirkey Plant

Reviewer Name: Michael Ohlinger

LRC Date: 09/17/25

Laboratory Job Number: 252380, 252381, 252382

Prep Batch Number(s): QC2509094

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<0.5*MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."