

June 2024 Semiannual Groundwater Monitoring Report

Sandy Creek Energy Station
McLennan County, Texas

Sandy Creek Energy Station
2161 Rattlesnake Road
Riesel, Texas 76682

SCS ENGINEERS

SCS Project 16224008.00 | August 2024

1901 Central Drive, Suite 550
Bedford, TX 76021
817-571-2288

August 21, 2024
SCS Project No. 16224008.00

Mr. Luke Johnson
Compliance Manager
NAES Corporation
2161 Rattlesnake Road
Riesel, Texas 76682

Subject: Sandy Creek Energy Station
McLennan County, Texas
June 2024 Semiannual Groundwater Monitoring Report Submittal

Dear Mr. Johnson:

SCS Engineers (SCS) is pleased to submit the June 2024 Semiannual Groundwater Monitoring Report to the Sandy Creek Energy Station (SCES), in accordance with Title 40, Code of Federal Regulation (CFR) Part §257.105(h)(6), and the site Groundwater Sampling and Analysis Plan (GWSAP), prepared by SCS, dated March 2, 2016.

Please contact Robert Fowler at (501) 672-9320 if you have comments or require additional information.

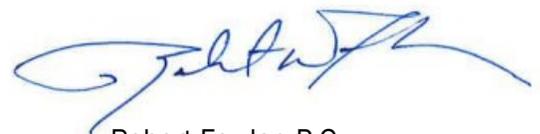


Asher Boudreaux, P.G.
Project Professional
SCS ENGINEERS
TBPE Registration No. F-3407



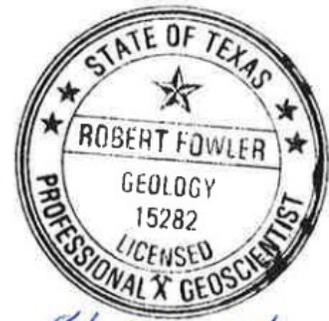
Brett DeVries 8/8/24

Brett DeVries, Ph.D., P.E.
Senior Project Manager
SCS ENGINEERS



Robert Fowler, P.G.
Project Manager
SCS ENGINEERS

Attachment: June 2024 Semiannual Groundwater Monitoring Report



8/21/2024



June 2024 Semiannual Groundwater Monitoring Report

Sandy Creek Energy Station McLennan County, Texas

Prepared For:

Sandy Creek Energy Station
2161 Rattlesnake Road
Riesel, Texas 76682

SCS ENGINEERS

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1.0	Introduction and Background.....	2
2.0	Groundwater Monitoring Summary.....	3
2.1	Groundwater Monitoring System.....	3
2.2	June 2024 Semiannual Monitoring Event.....	3
2.3	Results and Statistical Analysis.....	3
3.0	Recommendations.....	5
4.0	Groundwater Flow Rate and Direction Calculations.....	6

Figures

Figure 1.	Groundwater Contour Map.....	7
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Tables

Table 1.	Sandy Creek Energy Station Groundwater Monitoring System.....	2
Table 2.	Sandy Creek Energy Station June 2024 Sampling Results and Statistical Limits.....	3

Appendices

- Appendix A: June 2024 Groundwater Monitoring Field Forms
- Appendix B: June 2024 Laboratory Report with Chain of Custody
- Appendix C: Historical Analytical Data
- Appendix D: Time Series Graphs

1.0 INTRODUCTION AND BACKGROUND

SCS Engineers (SCS) is submitting this June 2024 Semiannual Groundwater Monitoring Report for the Sandy Creek Energy Station (SCES) landfill. This report is submitted in accordance with 40 CFR §257.105(h)(6), 30 TAC 352.931, and the site Groundwater Sampling and Analysis Plan (GWSAP) prepared by SCS and sealed on January 13, 2022. This report includes results for the June 2024 semiannual detection monitoring event at SCES, conducted on June 14, 2024.

SCES is a pulverized coal-fired electric generation facility which operates a landfill for disposal of dry scrubber ash and bottom ash generated during the coal combustion process at the facility. Incidental wastes generated during the operation of the facility may also be disposed in the landfill, as described in the initial registration notification to TCEQ and the most recent version of the Operations Plan for the facility. The landfill is currently comprised of CCR disposal cells, Cells 1 and 2, which commenced receiving waste in early 2013 and October 2014, respectively. Additionally, a portion of Cell 3 (includes subcells 3A through 3D) was constructed in 2021. The approximate area of currently constructed Cells 1, 2, and 3 are 10.0, 14.3, and 10.3 acres, respectively.

Sampling of groundwater monitoring wells is conducted in accordance with 40 CFR §257.93, 30 TAC §352.931, and the GWSAP. The current ground water monitoring network consists of six monitoring wells designated as BW-1, MW-1, MW-2, MW-3, MW-4, and MW-5 and are depicted on Figure 1.

In accordance with 40 CFR §257.94(b), and 30 TAC 352.941 quarterly background monitoring must be performed for each well for eight consecutive quarters (i.e., eight independent samples collected for each well). The Appendix III and IV constituents monitored during the first eight quarters include 18 inorganic compounds, total dissolved solids, radium-226, and radium-228. The constituents monitored in subsequent events and during the June 2024 semiannual detection monitoring event include Appendix III constituents only. MW-1, MW-2, MW-3, MW-4, MW-5, and BW-1 have completed the quarterly background monitoring and are currently in detection monitoring.

2.0 GROUNDWATER MONITORING SUMMARY

2.1 GROUNDWATER MONITORING SYSTEM

The current groundwater monitoring system at the landfill consists of six wells, all of which are in detection monitoring (see **Table 1** below). Monitoring well BW-1 serves as an upgradient monitoring point and the remaining five monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5) serve as downgradient monitoring points. **Figure 1** depicts monitoring well locations at SCES.

Table 1 – Sandy Creek Energy Station Landfill Groundwater Monitoring System

Well ID (U/D) ¹	Status	Top of Casing Elevation (ft msl) ²	Well Depth (ft, bgs) ²	Screen Interval (ft, bgs) ²	Water Level Elevation (ft msl, on 6/14/2024)
BW-1 (U)	Detection	485.57	38.63	28.30-38.30	469.57
MW-1 (D)	Detection	465.87	34.23	23.90-33.90	455.69
MW-2 (D)	Detection	442.15	19.63	9.30-19.30	431.81
MW-3 (D)	Detection	430.06	16.23	5.98-15.98	422.3
MW-4 (D)	Detection	436.91	30.3	20.00-30.00	427.18
MW-5 (D)	Detection	454.52	35.3	25.00-35.00	433.22

¹ (U) = upgradient, (D) = downgradient; ² Top of Casing Elevation, Well Depth, and Screen Interval information obtained from Table 1 – Monitoring Well and Piezometer Construction Details and Groundwater Elevations prepared by Geosyntec Consultants, dated March 11, 2016 and the November 2020 Groundwater Monitoring Well Install Report prepared by SCS Engineers dated January 22, 2021; ft msl = feet above mean sea level; ft bgs = feet below ground surface

2.2 JUNE 2024 SEMIANNUAL MONITORING EVENT

All six wells (MW-1, MW-2, MW-3, MW-4, MW-5, and BW-1) were purged and sampled on June 14, 2024, using disposable PVC bailers. Quality Assurance/Quality Control (QA/QC) samples obtained included one duplicate (DUP). Field forms and laboratory results for this event are provided in **Appendices A & B**, respectively, and summarized in **Table 2**. The Laboratory Review Checklist was reviewed by SCS, and the data was determined to conform to the most current National Environmental Laboratory Accreditation Conference (NELAC) standards.

2.3 RESULTS AND STATISTICAL ANALYSIS

A summary of the June 2024 laboratory results and statistical limits in each well–constituent pair is provided in **Table 2**. Time series graphs of Appendix III constituent concentrations are provided in **Appendix D**. Statistical limits were determined in accordance with 40 CFR §257.93(f)(3 and 4)(g) and the GWSAP using the software program Sanitas®. Statistical limits were determined in the Background Evaluation Report Update completed by SCS Engineers on October 6, 2023. Statistical limits were presented using Shewhart-CUSUM control charts, non-parametric prediction limits, or parametric prediction limits as deemed appropriate by background data distributions.

Table 2 – Sandy Creek Energy Station Landfill June 2024 Sampling Results and Statistical Limits

MW-ID	Constituent	Lab Result (mg/L)	Statistical Limit*	Exceedance
MW-1 (D)	Boron (mg/L)	1.10	1.661	No
	Calcium (mg/L)	500	603.5	No
	Chloride (mg/L)	140	253	No
	pH at 25 °C	7.20	6.2 - 8.3	No
	Sulfate (mg/L)	2300	3299	No
	TDS (mg/L)	3500	5444	No
	Fluoride (mg/L)	ND	1.2	No
MW-2 (D)	Boron (mg/L)	1.10	3.533	No
	Calcium (mg/L)	470	827.1	No
	Chloride (mg/L)	1000	3709	No
	pH at 25 °C	6.70	6.7 - 7.5	No
	Sulfate (mg/L)	2900	4671	No
	TDS (mg/L)	5500	13374	No
	Fluoride (mg/L)	ND	1.3	No
MW-3 (D)	Boron (mg/L)	0.93	1.565	No
	Calcium (mg/L)	420	697.5	No
	Chloride (mg/L)	170	595.7	No
	pH at 25 °C	6.70	6.5 - 7.3	No
	Sulfate (mg/L)	1800	3926	No
	TDS (mg/L)	4400	8507	No
	Fluoride (mg/L)	ND	0.662	No
MW-4 (D)	Boron (mg/L)	4.90	6.58	No
	Calcium (mg/L)	460	641.8	No
	Chloride (mg/L)	790	1892	No
	pH at 25 °C	7.20	5.7 - 9.1	No
	Sulfate (mg/L)	2800	3416	No
	TDS (mg/L)	6000	7432	No
	Fluoride (mg/L)	ND	0.55	No
MW-5 (D)	Boron (mg/L)	3.30	4.5	No

MW-ID	Constituent	Lab Result (mg/L)	Statistical Limit*	Exceedance
	Calcium (mg/L)	530	706.6	No
	Chloride (mg/L)	1100	1986	No
	pH at 25 °C	7.10	6.2 - 8.2	No
	Sulfate (mg/L)	3300	4154	No
	TDS (mg/L)	7300	9806	No
	Fluoride (mg/L)	ND	1.139	No
BW-1 (U)	Boron (mg/L)	3.40	4.837	No
	Calcium (mg/L)	600	738.4	No
	Chloride (mg/L)	1200	1502	No
	pH at 25 °C	6.9	6.2 - 7.9	No
	Sulfate (mg/L)	2500	3770	No
	TDS (mg/L)	6300	7320	No
	Fluoride (mg/L)	ND	0.94	No
*Calculated in 2023 Background Evaluation Report Update (U)=upgradient, (D)=downgradient				

3.0 CONCLUSION

No statistically significant increases (SSIs) were indicated for any Appendix III constituents during the June 2024 detection monitoring event at the SCES landfill. Due to the lack of confirmed SSIs for Appendix III constituents during the June 2024 detection monitoring event, the facility will continue detection monitoring for all constituents listed in 40 CFR §257 Appendix III during semiannual groundwater monitoring events, in accordance with 40 CFR §257.94(a). The Appendix IV constituent list will be analyzed if any confirmed statistical exceedances of the Appendix III list are indicated in future events. The next planned groundwater monitoring event is a second semiannual detection monitoring event scheduled for the fourth quarter of 2024.

4.0 GROUNDWATER FLOW RATE AND DIRECTION CALCULATIONS

In accordance with 40 CFR Part §257.93(c), the groundwater flow rate and direction in the uppermost aquifer in the area of the existing groundwater monitoring wells were calculated.

Flow Rate Calculation

$$V_a = \frac{KI}{7.5N} \quad (\text{Driscoll, 1986, Groundwater and Wells})$$

Where:

- V_a = Actual Velocity of Groundwater Flow (ft/day)
- K = Hydraulic Conductivity (gpd/ft²)
- I = Hydraulic Gradient (ft/ft)
- N = Effective Porosity (%)

Then:

- K = 2.0×10^{-4} cm/sec (geometric mean hydraulic conductivity obtained from slug tests performed by Geosyntec in 2010)

Find K equivalent in units of gpd/ft²:

$$(1 \text{ cm/sec} = 21,200 \text{ gallons/day/ft}^2)$$

$$2.0 \times 10^{-4} \text{ cm/sec} \times 21,200 \text{ gallons/day/ft}^2 = 4.24 \text{ gpd/ft}^2$$

Find I: $\frac{\text{BW-1 elevation} - \text{MW-3 elevation}}{\text{distance between wells}} = \frac{469.57 \text{ ft} - 422.30 \text{ ft}}{2,350 \text{ ft}} = 0.0201 \text{ ft/ft}$

- I = 0.0201 ft/ft (ave. gradient across the site, from June 2024 water levels)
- N = 6% (representative effective porosity for clay from Morris and Johnson, 1967)

Therefore:

$$V_a = \frac{4.24 \text{ gpd/ft}^2 \times (0.0201 \text{ ft/ft})}{7.5 (0.06)} = 0.189 \text{ ft/day}$$

$$(0.189 \text{ ft/day})(365 \text{ days/year}) = \mathbf{69.126 \text{ ft/year}}$$

Conclusion

The June 2024 site groundwater flow rate is **69.126 ft/year**. The gradient was measured using BW-1 and MW-3. The June 2024 groundwater flow direction is to the south-southwest. The groundwater flow rate and direction are consistent with conditions previously observed at the site. See **Figure 1** for details, provided in accordance with 40 CFR Part §257.93(c).

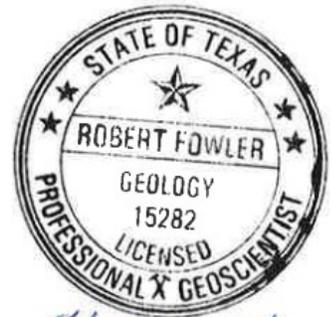


Figure 1. Groundwater Contour Map

Appendix A

June 2024 Groundwater Monitoring Field Forms

Groundwater Monitoring Form

Facility name: Sandy Creek Energy Station
Permittee: Sandy Creek Energy Associates, L.P.
County: McLennan

1. Facility Type: Power Station
2. Monitor well no.: BW-1
3. Date of sampling: 6/14/2024

Name of sampler: Asher B
Affiliation of sampler: SCS Engineers
If split sampled, with whom? N/A
Integrity of well: Good
Installation date: 9/22/2015

Most recent previous sampling: 12/20/2023
Date of water level measurements: 6/14/2024
Datum reference point: Top of Casing
Datum elevation*: 485.57
Depth to water(below datum)*: 16.00
4. Water level elevation*: 469.57

5. Purging/Sampling method: Bailer (Enter bailer or pump)
Were low-flow methods used? yes no (check one)
If yes, what volume was purged? N/A gal.
6. Well volumes purged: 3.0
7. Was the well dry before purging? yes no (check one)
8. Was the well dry after purging? yes no (check one)
9. How long before sampling? 3
10. Unit of measure? hours (Enter value as days, hours, or mins.)

11. Sample event: Detection
- Background - Corrective Action
- Detection - Other
- Assessment
12. Sample schedule: Semi-Annual
- Quarterly - Fourth Year
- Semi-Annual - Other
- Annual
13. Sample type: Regular
- Regular - Split
- Duplicate - Other
- Resample

Field Measurements:

14. pH 7.85
15. Spec. cond. 9.1
17. Temp. 24.59
19. Turbidity 41.3

16. mS/cm
18. F or C (check one)
20. NTU

Laboratory:

21. Name Eurofins Dallas Phone: (214) 902-0300
Address: 9701 Harry Hines Blvd

Representative's Signature: *Anita Patel* Date: 8/28/24

Site Operator's Signature: *Luke Johnson* Date: 8/28/24

* Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (msl).

Groundwater Monitoring Form

Facility name: Sandy Creek Energy Station
Permittee: Sandy Creek Energy Associates, L.P.
County: McLennan

1. Facility Type: Power Station
2. Monitor well no.: MW-1
3. Date of sampling: 6/14/2024

Name of sampler: Asher B.
Affiliation of sampler: SCS Engineers
If split sampled, with whom? N/A
Integrity of well: Good
Installation date: 9/21/2015

Most recent previous sampling: 12/20/2023
Date of water level measurements: 6/14/2024
Datum reference point: Top of Casing
Datum elevation*: 465.87
Depth to water(below datum)*: 10.18
4. Water level elevation*: 455.69

5. Purging/Sampling method: Bailer (Enter bailer or pump)
Were low-flow methods used? yes no (check one)
If yes, what volume was purged? N/A gal.
6. Well volumes purged: 1.8
7. Was the well dry before purging? yes no (check one)
8. Was the well dry after purging? yes no (check one)
9. How long before sampling? 3
10. Unit of measure? hours (Enter value as days, hours, or mins.)

11. Sample event: Detection
- Background - Corrective Action
- Detection - Other
- Assessment
12. Sample schedule: Semi-Annual
- Quarterly - Fourth Year
- Semi-Annual - Other
- Annual
13. Sample type: Regular
- Regular - Split
- Duplicate - Other
- Resample

Field Measurements:

14. pH 8.87
15. Spec. cond. 4.83
17. Temp. 24.99
19. Turbidity 5.2

16. mS/cm
18. F or C (check one)
20. NTU

Laboratory:

21. Name Eurofins Dallas Phone: (214) 902-0300
Address: 9701 Harry Hines Blvd

Representative's Signature: Anita Patel Date: 8/28/24

Site Operator's Signature: Luke Johnson Date: 8/28/24

* Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (msl).

Groundwater Monitoring Form

Facility name: Sandy Creek Energy Station
Permittee: Sandy Creek Energy Associates, L.P.
County: McLennan

1. Facility Type: Power Station
2. Monitor well no.: MW-2
3. Date of sampling: 6/14/2024

Name of sampler: Asher B.
Affiliation of sampler: SCS Engineers
If split sampled, with whom? N/A
Integrity of well: Good
Installation date: 9/23/2015

Most recent previous sampling: 12/20/2023
Date of water level measurements: 6/14/2024
Datum reference point: Top of Casing
Datum elevation*: 442.15
Depth to water(below datum)*: 10.34
4. Water level elevation*: 431.81

5. Purging/Sampling method: Bailer (Enter bailer or pump)
Were low-flow methods used? yes no (check one)
If yes, what volume was purged? N/A gal.
6. Well volumes purged: 2.3
7. Was the well dry before purging? yes no (check one)
8. Was the well dry after purging? yes no (check one)
9. How long before sampling? 2.5
10. Unit of measure? hours (Enter value as days, hours, or mins.)

11. Sample event: Detection
- Background - Corrective Action
- Detection - Other
- Assessment
12. Sample schedule: Semi-Annual
- Quarterly - Fourth Year
- Semi-Annual - Other
- Annual
13. Sample type: Regular
- Regular - Split
- Duplicate - Other
- Resample

Field Measurements:

14. pH 7.62
15. Spec. cond. 6.62
17. Temp. 23.95
19. Turbidity 3.3

16. mS/cm
18. F or C (check one)
20. NTU

Laboratory:

21. Name Eurofins Dallas Phone: (214) 902-0300
Address: 9701 Harry Hines Blvd

Representative's Signature: *Anita Patel* Date: 8/28/24

Site Operator's Signature: *Luke Johnson* Date: 8/28/24

* Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (msl).

Groundwater Monitoring Form

Facility name: Sandy Creek Energy Station
Permittee: Sandy Creek Energy Associates, L.P.
County: McLennan

1. Facility Type: Power Station
2. Monitor well no.: MW-3
3. Date of sampling: 6/14/2024

Name of sampler: Asher B.
Affiliation of sampler: SCS Engineers
If split sampled, with whom? N/A
Integrity of well: Good
Installation date: 9/1/2010

Most recent previous sampling: 12/20/2023
Date of water level measurements: 6/14/2024
Datum reference point: Top of Casing
Datum elevation*: 430.06
Depth to water(below datum)*: 7.76
4. Water level elevation*: 422.30

5. Purging/Sampling method: Bailer (Enter bailer or pump)
Were low-flow methods used? yes no (check one)
If yes, what volume was purged? N/A gal.
6. Well volumes purged: 3.0
7. Was the well dry before purging? yes no (check one)
8. Was the well dry after purging? yes no (check one)
9. How long before sampling? 2.5
10. Unit of measure? hours (Enter value as days, hours, or mins.)

11. Sample event: Detection
- Background - Corrective Action
- Detection - Other
- Assessment
12. Sample schedule: Semi-Annual
- Quarterly - Fourth Year
- Semi-Annual - Other
- Annual
13. Sample type: Regular
- Regular - Split
- Duplicate - Other
- Resample

Field Measurements:

14. pH 7.89
15. Spec. cond. 6.23
17. Temp. 25.58
19. Turbidity 12.9

16. mS/cm
18. F or C (check one)
20. NTU

Laboratory:

21. Name Eurofins Dallas Phone: (214) 902-0300
Address: 9701 Harry Hines Blvd

Representative's Signature: Anita Patel Date: 8/28/24

Site Operator's Signature: Luke Johnson Date: 8/28/24

* Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (msl).

Groundwater Monitoring Form

Facility name: Sandy Creek Energy Station
Permittee: Sandy Creek Energy Associates, L.P.
County: McLennan

1. Facility Type: Power Station
2. Monitor well no.: MW-4
3. Date of sampling: 6/14/2024

Name of sampler: Asher B.
Affiliation of sampler: SCS Engineers
If split sampled, with whom? N/A
Integrity of well: Good
Installation date: 11/2/2020

Most recent previous sampling: 12/20/2023
Date of water level measurements: 6/14/2024
Datum reference point: Top of Casing
Datum elevation*: 436.91
Depth to water(below datum)*: 9.73
4. Water level elevation*: 427.18

5. Purging/Sampling method: Bailer (Enter bailer or pump)
Were low-flow methods used? yes no (check one)
If yes, what volume was purged? N/A gal.
6. Well volumes purged: 2.3
7. Was the well dry before purging? yes no (check one)
8. Was the well dry after purging? yes no (check one)
9. How long before sampling? 2
10. Unit of measure? hours (Enter value as days, hours, or mins.)

11. Sample event: Background
- Background - Corrective Action
- Detection - Other
- Assessment
12. Sample schedule: Semi-Annual
- Quarterly - Fourth Year
- Semi-Annual - Other
- Annual
13. Sample type: Regular
- Regular - Split
- Duplicate - Other
- Resample

Field Measurements:

14. pH 8.03
15. Spec. cond. 8.31
17. Temp. 26.40
19. Turbidity 0.2

16. mS/cm
18. F or C (check one)
20. NTU

Laboratory:

21. Name Eurofins Dallas Phone: (214) 902-0300
Address: 9701 Harry Hines Blvd

Representative's Signature: Anita Pato Date: 8/28/24

Site Operator's Signature: Luke Johnson Date: 8/28/24

* Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (msl)

Groundwater Monitoring Form

Facility name: Sandy Creek Energy Station
Permittee: Sandy Creek Energy Associates, L.P.
County: McLennan

1. Facility Type: Power Station
2. Monitor well no.: MW-5
3. Date of sampling: 6/14/2024

Name of sampler: Asher B.
Affiliation of sampler: SCS Engineers
If split sampled, with whom? N/A
Integrity of well: Good
Installation date: 11/2/2020

Most recent previous sampling: 12/20/2023
Date of water level measurements: 6/14/2024
Datum reference point: Top of Casing
Datum elevation*: 454.52
Depth to water(below datum)*: 21.30
4. Water level elevation*: 433.22

5. Purging/Sampling method: Bailer (Enter bailer or pump)
Were low-flow methods used? yes no (check one)
If yes, what volume was purged? N/A gal.
6. Well volumes purged: 3.0
7. Was the well dry before purging? yes no (check one)
8. Was the well dry after purging? yes no (check one)
9. How long before sampling? 2
10. Unit of measure? hours (Enter value as days, hours, or mins.)

11. Sample event: Background
- Background - Corrective Action
- Detection - Other
- Assessment
12. Sample schedule: Semi-Annual
- Quarterly - Fourth Year
- Semi-Annual - Other
- Annual
13. Sample type: Regular
- Regular - Split
- Duplicate - Other
- Resample

Field Measurements:

14. pH 8.04
15. Spec. cond. 9.7
17. Temp. 25.64
19. Turbidity 0

16. mS/cm
18. F or C (check one)
20. NTU

Laboratory:

21. Name Eurofins Dallas Phone: (214) 902-0300
Address: 9701 Harry Hines Blvd

Representative's Signature: *Anita Patel* Date: 8/28/24

Site Operator's Signature: *Luke Johnson* Date: 8/28/24

* Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (msl).

Groundwater Monitoring Form

Facility name: Sandy Creek Energy Station
Permittee: Sandy Creek Energy Associates, L.P.
County: McLennan

1. Facility Type: Power Station
2. Monitor well no.: DUP
3. Date of sampling: 6/14/2024

Name of sampler: Asher B.
Affiliation of sampler: SCS Engineers
If split sampled, with whom? N/A
Integrity of well: N/A
Installation date: N/A

Most recent previous sampling: N/A
Date of water level measurements: N/A
Datum reference point: Top of Casing
Datum elevation*: N/A
Depth to water(below datum)*: N/A
4. Water level elevation*: N/A

5. Purging/Sampling method: N/A (Enter bailer or pump)
Were low-flow methods used? yes no (check one)
If yes, what volume was purged? N/A gal.
6. Well volumes purged: N/A
7. Was the well dry before purging? yes no (check one)
8. Was the well dry after purging? yes no (check one)
9. How long before sampling? N/A
10. Unit of measure? N/A (Enter value as days, hours, or mins.)

11. Sample event: Background
- Background - Corrective Action
- Detection - Other
- Assessment
12. Sample schedule: Semi-Annual
- Quarterly - Fourth Year
- Semi-Annual - Other
- Annual
13. Sample type: Duplicate
- Regular - Split
- Duplicate - Other
- Resample

Field Measurements:

14. pH N/A
15. Spec. cond. N/A
17. Temp. N/A
19. Turbidity N/A

16. mS/cm
18. F or C (check one)
20. NTU

Laboratory:

21. Name Eurofins Dallas Phone: (214) 902-0300
Address: 9701 Harry Hines Blvd

Representative's Signature: Anita Patel Date: 8/28/24

Site Operator's Signature: Luke Johnson Date: 8/28/24

* Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (msl).

Appendix B

June 2024 Laboratory Report with Chain of Custody

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Asher Boudreaux
SCS Engineers
1901 Central Avenue
Suite 550
Bedford, Texas 76021

Generated 7/1/2024 5:52:12 PM

JOB DESCRIPTION

Sandy Creek Groundwater

JOB NUMBER

870-27839-1

Eurofins Dallas

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
7/1/2024 5:52:12 PM

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Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	7
QC Sample Results	11
QC Association Summary	16
Lab Chronicle	19
Certification Summary	22
Method Summary	23
Sample Summary	24
Chain of Custody	25
Receipt Checklists	26

Definitions/Glossary

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: SCS Engineers
Project: Sandy Creek Groundwater

Job ID: 870-27839-1

Job ID: 870-27839-1

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Job Narrative 870-27839-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 6/15/2024 12:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C.

HPLC/IC

Method 9056A_ORGFM_28D: The instrument blank/CCB for analytical batch 860-167926 contained Chloride and Sulfate greater than the method detection limit (MDL), and were not reanalyzed because associated sample(s) results were greater than 10X the value found in the instrument blank/CCB. The data have been qualified and reported.

Method 9056A_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 860-167926 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 9056A_ORGFM_28D: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-2 (870-27839-3), MW-3 (870-27839-4), MW-4 (870-27839-5), MW-5 (870-27839-6) and DUP (870-27839-7). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 860-168510 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 9056A_ORGFM_28D: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 860-168510 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 9056A_ORGFM_28D: The instrument blank/CCB for analytical batch 860-168510 contained Chloride greater than the method detection limit (MDL), and were not reanalyzed because associated sample(s) results were greater than 10X the value found in the instrument blank/CCB. The data have been reported.

Method 9056A_ORGFM_28D: The instrument blank for analytical batch 860-168510 contained Bromide, Chloride and Sulfate greater than the method detection limit (MDL), and were not reanalyzed because associated sample(s) results were greater than 10X the value found in the instrument blank/CCB. The data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

Method 6020B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 860-166842 and analytical batch 860-167113 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Case Narrative

Client: SCS Engineers
Project: Sandy Creek Groundwater

Job ID: 870-27839-1

Job ID: 870-27839-1 (Continued)

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1

2

3

4

5

6

7

8

9

10

11

12

13

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Client Sample Results

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Client Sample ID: BW-1

Lab Sample ID: 870-27839-1

Date Collected: 06/14/24 16:50

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1200		2.5	2.5	mg/L			06/25/24 23:38	10
Fluoride	ND		0.50	0.10	mg/L			06/25/24 23:31	1
Sulfate	2500		20	20	mg/L			06/28/24 06:09	100

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.4		0.080	0.080	mg/L		06/19/24 08:00	06/20/24 12:03	20
Calcium	600		1.5	1.5	mg/L		06/19/24 08:00	06/19/24 20:43	50

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	6.9	HF			SU			06/25/24 19:48	1
Temperature (SW846 9040C)	18.2	HF			Degrees C			06/25/24 19:48	1
Corrosivity (SW846 9040C)	6.9	HF			SU			06/25/24 19:48	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	6300		40	40	mg/L			06/18/24 09:50	1

Client Sample ID: MW-1

Lab Sample ID: 870-27839-2

Date Collected: 06/14/24 17:10

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140		0.50	0.25	mg/L			06/25/24 23:46	1
Fluoride	ND		0.50	0.10	mg/L			06/25/24 23:46	1
Sulfate	2300		20	20	mg/L			06/28/24 07:09	100

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.080	0.080	mg/L		06/19/24 08:00	06/20/24 12:05	20
Calcium	500		1.5	1.5	mg/L		06/19/24 08:00	06/19/24 20:45	50

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.2	HF			SU			06/25/24 19:58	1
Temperature (SW846 9040C)	18.0	HF			Degrees C			06/25/24 19:58	1
Corrosivity (SW846 9040C)	7.2	HF			SU			06/25/24 19:58	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3500		40	40	mg/L			06/18/24 09:50	1

Client Sample ID: MW-2

Lab Sample ID: 870-27839-3

Date Collected: 06/14/24 17:25

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.10	mg/L			06/26/24 00:01	1
Sulfate	2900		20	20	mg/L			06/28/24 06:54	100

Client Sample Results

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Client Sample ID: MW-2

Lab Sample ID: 870-27839-3

Date Collected: 06/14/24 17:25

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1000		2.5	2.5	mg/L			06/26/24 00:08	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.080	0.080	mg/L		06/19/24 08:00	06/20/24 12:08	20
Calcium	470		1.5	1.5	mg/L		06/19/24 08:00	06/19/24 20:51	50

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	6.7	HF			SU			06/25/24 19:57	1
Temperature (SW846 9040C)	18.6	HF			Degrees C			06/25/24 19:57	1
Corrosivity (SW846 9040C)	6.7	HF			SU			06/25/24 19:57	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	5500		40	40	mg/L			06/18/24 09:50	1

Client Sample ID: MW-3

Lab Sample ID: 870-27839-4

Date Collected: 06/14/24 18:15

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.10	mg/L			06/26/24 00:16	1

Method: SW846 9056A - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	170		2.5	2.5	mg/L			06/26/24 00:23	10
Sulfate	1800		2.0	2.0	mg/L			06/26/24 00:23	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.93		0.080	0.080	mg/L		06/19/24 08:00	06/20/24 12:10	20
Calcium	420		1.5	1.5	mg/L		06/19/24 08:00	06/19/24 20:53	50

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	6.7	HF			SU			06/25/24 19:46	1
Temperature (SW846 9040C)	16.8	HF			Degrees C			06/25/24 19:46	1
Corrosivity (SW846 9040C)	6.7	HF			SU			06/25/24 19:46	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4400		40	40	mg/L			06/18/24 09:50	1

Client Sample ID: MW-4

Lab Sample ID: 870-27839-5

Date Collected: 06/14/24 18:00

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.10	mg/L			06/26/24 00:46	1
Sulfate	2800		20	20	mg/L			06/28/24 06:39	100

Client Sample Results

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Client Sample ID: MW-4

Lab Sample ID: 870-27839-5

Date Collected: 06/14/24 18:00

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	790		2.5	2.5	mg/L			06/26/24 00:53	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	4.9		0.40	0.40	mg/L		06/19/24 08:00	06/20/24 12:12	100
Calcium	460		1.5	1.5	mg/L		06/19/24 08:00	06/19/24 20:55	50

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.2	HF			SU			06/25/24 19:54	1
Temperature (SW846 9040C)	17.3	HF			Degrees C			06/25/24 19:54	1
Corrosivity (SW846 9040C)	7.2	HF			SU			06/25/24 19:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	6000		40	40	mg/L			06/18/24 09:50	1

Client Sample ID: MW-5

Lab Sample ID: 870-27839-6

Date Collected: 06/14/24 17:45

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.10	mg/L			06/26/24 01:01	1
Sulfate	3300		20	20	mg/L			06/28/24 08:17	100

Method: SW846 9056A - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100		2.5	2.5	mg/L			06/26/24 01:08	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.3		0.40	0.40	mg/L		06/19/24 08:00	06/20/24 12:14	100
Calcium	530		1.5	1.5	mg/L		06/19/24 08:00	06/19/24 20:57	50

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.1	HF			SU			06/25/24 19:45	1
Temperature (SW846 9040C)	16.0	HF			Degrees C			06/25/24 19:45	1
Corrosivity (SW846 9040C)	7.1	HF			SU			06/25/24 19:45	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7300		100	100	mg/L			06/18/24 09:50	1

Client Sample ID: DUP

Lab Sample ID: 870-27839-7

Date Collected: 06/14/24 16:50

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140		0.50	0.25	mg/L			06/26/24 01:16	1
Fluoride	ND		0.50	0.10	mg/L			06/26/24 01:16	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Client Sample ID: DUP

Lab Sample ID: 870-27839-7

Date Collected: 06/14/24 16:50

Matrix: Water

Date Received: 06/15/24 12:15

Method: SW846 9056A - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1800		2.0	2.0	mg/L			06/26/24 01:23	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.080	0.080	mg/L		06/19/24 08:00	06/20/24 12:16	20
Calcium	500		1.5	1.5	mg/L		06/19/24 08:00	06/19/24 20:59	50

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.2	HF			SU			06/25/24 19:55	1
Temperature (SW846 9040C)	18.7	HF			Degrees C			06/25/24 19:55	1
Corrosivity (SW846 9040C)	7.2	HF			SU			06/25/24 19:55	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3600		40	40	mg/L			06/18/24 09:50	1

QC Sample Results

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 860-167926/36
Matrix: Water
Analysis Batch: 167926

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			06/25/24 20:39	1
Fluoride	ND		0.50	0.10	mg/L			06/25/24 20:39	1
Sulfate	ND		0.50	0.20	mg/L			06/25/24 20:39	1

Lab Sample ID: LCS 860-167926/37
Matrix: Water
Analysis Batch: 167926

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	10.0	9.92		mg/L		99	90 - 110
Chloride	10.0	9.33		mg/L		93	90 - 110
Fluoride	10.0	9.51		mg/L		95	90 - 110
Sulfate	10.0	9.89		mg/L		99	90 - 110
Sulfur	3.33	3.30		mg/L		99	90 - 110

Lab Sample ID: LCSD 860-167926/38
Matrix: Water
Analysis Batch: 167926

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromide	10.0	9.91		mg/L		99	90 - 110	0	20
Chloride	10.0	9.33		mg/L		93	90 - 110	0	20
Fluoride	10.0	9.51		mg/L		95	90 - 110	0	20
Sulfate	10.0	9.77		mg/L		98	90 - 110	1	20
Sulfur	3.33	3.26		mg/L		98	90 - 110	1	30

Lab Sample ID: LLCS 860-167926/7
Matrix: Water
Analysis Batch: 167926

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	0.500	0.452	J	mg/L		90	50 - 150
Chloride	0.500	0.488	J	mg/L		98	50 - 150
Fluoride	0.500	0.467	J	mg/L		93	50 - 150
Sulfate	0.500	0.505		mg/L		101	50 - 150
Sulfur	0.167	ND		mg/L		101	50 - 150

Lab Sample ID: 880-45080-A-1 MS
Matrix: Water
Analysis Batch: 167926

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	ND	F1	10.0	9.03		mg/L		90	90 - 110
Chloride	16		10.0	25.7		mg/L		92	90 - 110
Fluoride	ND		10.0	9.43		mg/L		93	90 - 110
Sulfate	5.3		10.0	14.2		mg/L		90	90 - 110
Sulfur	1.8		3.33	4.75		mg/L		90	90 - 110

QC Sample Results

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-45080-A-1 MSD
Matrix: Water
Analysis Batch: 167926

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits			
Bromide	ND	F1	10.0	8.94	F1	mg/L		89	90 - 110	1	15	
Chloride	16		10.0	25.7		mg/L		93	90 - 110	0	15	
Fluoride	ND		10.0	9.46		mg/L		94	90 - 110	0	15	
Sulfate	5.3		10.0	14.3		mg/L		90	90 - 110	0	15	
Sulfur	1.8		3.33	4.75		mg/L		90	90 - 110	0	30	

Lab Sample ID: MB 860-168510/117
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.25	mg/L			06/28/24 07:32	1
Fluoride	ND		0.50	0.10	mg/L			06/28/24 07:32	1
Sulfate	ND		0.50	0.20	mg/L			06/28/24 07:32	1

Lab Sample ID: MB 860-168510/3
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.25	mg/L			06/27/24 15:27	1
Fluoride	ND		0.50	0.10	mg/L			06/27/24 15:27	1
Sulfate	ND		0.50	0.20	mg/L			06/27/24 15:27	1

Lab Sample ID: MB 860-168510/62
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.25	mg/L			06/28/24 00:41	1
Fluoride	ND		0.50	0.10	mg/L			06/28/24 00:41	1
Sulfate	ND		0.50	0.20	mg/L			06/28/24 00:41	1

Lab Sample ID: LCS 860-168510/118
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
Bromide	10.0	10.2		mg/L		102	90 - 110
Chloride	10.0	9.53		mg/L		95	90 - 110
Fluoride	10.0	9.71		mg/L		97	90 - 110
Sulfate	10.0	9.40		mg/L		94	90 - 110
Sulfur	3.33	3.13		mg/L		94	90 - 110

Lab Sample ID: LCS 860-168510/63
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
Bromide	10.0	10.2		mg/L		102	90 - 110

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QC Sample Results

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 860-168510/63
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.58		mg/L		96	90 - 110
Fluoride	10.0	9.70		mg/L		97	90 - 110
Sulfate	10.0	9.37		mg/L		94	90 - 110
Sulfur	3.33	3.12		mg/L		94	90 - 110

Lab Sample ID: LCSD 860-168510/119
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromide	10.0	10.0		mg/L		100	90 - 110	2	20
Chloride	10.0	9.53		mg/L		95	90 - 110	0	20
Fluoride	10.0	9.72		mg/L		97	90 - 110	0	20
Sulfate	10.0	9.39		mg/L		94	90 - 110	0	20
Sulfur	3.33	3.13		mg/L		94	90 - 110	0	30

Lab Sample ID: LCSD 860-168510/64
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromide	10.0	10.2		mg/L		102	90 - 110	0	20
Chloride	10.0	9.57		mg/L		96	90 - 110	0	20
Fluoride	10.0	9.72		mg/L		97	90 - 110	0	20
Sulfate	10.0	9.36		mg/L		94	90 - 110	0	20
Sulfur	3.33	3.12		mg/L		94	90 - 110	0	30

Lab Sample ID: LLCS 860-168510/7
Matrix: Water
Analysis Batch: 168510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	0.500	0.430	J	mg/L		86	50 - 150
Chloride	0.500	0.663		mg/L		133	50 - 150
Fluoride	0.500	0.469	J	mg/L		94	50 - 150
Sulfate	0.500	0.524		mg/L		105	50 - 150
Sulfur	0.167	ND		mg/L		105	50 - 150

Lab Sample ID: 870-27839-6 MS
Matrix: Water
Analysis Batch: 168510

Client Sample ID: MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	16	F1	10.0	28.5	F1	mg/L		126	90 - 110
Fluoride	ND		10.0	9.38		mg/L		93	90 - 110
Sulfur	520		3.33	522	4	mg/L		66	90 - 110

QC Sample Results

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 870-27839-6 MSD
Matrix: Water
Analysis Batch: 168510

Client Sample ID: MW-5
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Bromide	16	F1	10.0	27.4	F1	mg/L		115	90 - 110	4	15
Fluoride	ND		10.0	9.43		mg/L		93	90 - 110	1	15
Sulfur	520		3.33	524	4	mg/L		129	90 - 110	0	30

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 860-166842/1-A
Matrix: Water
Analysis Batch: 167113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 166842

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	ND		0.010	0.0040	mg/L		06/19/24 08:00	06/19/24 20:04	1
Calcium	ND		0.10	0.030	mg/L		06/19/24 08:00	06/19/24 20:04	1

Lab Sample ID: LCS 860-166842/2-A
Matrix: Water
Analysis Batch: 167113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 166842

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
Boron	0.100	0.0951		mg/L		95	80 - 120
Calcium	2.50	2.44		mg/L		98	80 - 120

Lab Sample ID: LCSD 860-166842/3-A
Matrix: Water
Analysis Batch: 167113

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 166842

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	Limit
		Result	Qualifier				Limits		
Boron	0.100	0.0973		mg/L		97	80 - 120	2	20
Calcium	2.50	2.46		mg/L		98	80 - 120	1	20

Lab Sample ID: 870-27833-E-4-B MS
Matrix: Water
Analysis Batch: 167113

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 166842

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				Limits
Boron	0.19	F1	0.100	0.393	F1	mg/L		203	75 - 125
Calcium	120		2.50	270	4	mg/L		6089	75 - 125

Lab Sample ID: 870-27833-E-4-C MSD
Matrix: Water
Analysis Batch: 167113

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 166842

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Boron	0.19	F1	0.100	0.409	F1	mg/L		219	75 - 125	4	20
Calcium	120		2.50	275	4	mg/L		6313	75 - 125	2	20

QC Sample Results

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Method: 9040C - pH

Lab Sample ID: 880-45066-I-1 DU
 Matrix: Water
 Analysis Batch: 168081

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
pH	7.9		8.0		SU		0.6	20
Temperature	16.6		15.9		Degrees C		4	20
Corrosivity	7.9		8.0		SU		0.6	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 860-166609/1
 Matrix: Water
 Analysis Batch: 166609

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB	MB	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Result	Qualifier					
Total Dissolved Solids	ND		5.0	5.0	mg/L			06/18/24 09:50	1

Lab Sample ID: LCS 860-166609/2
 Matrix: Water
 Analysis Batch: 166609

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Total Dissolved Solids	1000	984		mg/L		98	80 - 120

Lab Sample ID: LCSD 860-166609/3
 Matrix: Water
 Analysis Batch: 166609

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Total Dissolved Solids	1000	944		mg/L		94	80 - 120	4	10

Lab Sample ID: LLCS 860-166609/4
 Matrix: Water
 Analysis Batch: 166609

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LLCS	LLCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Total Dissolved Solids	5.00	ND		mg/L		90	50 - 150

Lab Sample ID: 860-76456-A-1 DU
 Matrix: Water
 Analysis Batch: 166609

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Total Dissolved Solids	470		443		mg/L		6	10

QC Association Summary

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

HPLC/IC

Analysis Batch: 167926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-1	BW-1	Total/NA	Water	9056A	
870-27839-1	BW-1	Total/NA	Water	9056A	
870-27839-2	MW-1	Total/NA	Water	9056A	
870-27839-3	MW-2	Total/NA	Water	9056A	
870-27839-3 - DL	MW-2	Total/NA	Water	9056A	
870-27839-4	MW-3	Total/NA	Water	9056A	
870-27839-4 - DL	MW-3	Total/NA	Water	9056A	
870-27839-5	MW-4	Total/NA	Water	9056A	
870-27839-5 - DL	MW-4	Total/NA	Water	9056A	
870-27839-6	MW-5	Total/NA	Water	9056A	
870-27839-6 - DL	MW-5	Total/NA	Water	9056A	
870-27839-7	DUP	Total/NA	Water	9056A	
870-27839-7 - DL	DUP	Total/NA	Water	9056A	
MB 860-167926/36	Method Blank	Total/NA	Water	9056A	
LCS 860-167926/37	Lab Control Sample	Total/NA	Water	9056A	
LCSD 860-167926/38	Lab Control Sample Dup	Total/NA	Water	9056A	
LLCS 860-167926/7	Lab Control Sample	Total/NA	Water	9056A	
880-45080-A-1 MS	Matrix Spike	Total/NA	Water	9056A	
880-45080-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 168510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-1	BW-1	Total/NA	Water	9056A	
870-27839-2	MW-1	Total/NA	Water	9056A	
870-27839-3	MW-2	Total/NA	Water	9056A	
870-27839-5	MW-4	Total/NA	Water	9056A	
870-27839-6	MW-5	Total/NA	Water	9056A	
MB 860-168510/117	Method Blank	Total/NA	Water	9056A	
MB 860-168510/3	Method Blank	Total/NA	Water	9056A	
MB 860-168510/62	Method Blank	Total/NA	Water	9056A	
LCS 860-168510/118	Lab Control Sample	Total/NA	Water	9056A	
LCS 860-168510/63	Lab Control Sample	Total/NA	Water	9056A	
LCSD 860-168510/119	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 860-168510/64	Lab Control Sample Dup	Total/NA	Water	9056A	
LLCS 860-168510/7	Lab Control Sample	Total/NA	Water	9056A	
870-27839-6 MS	MW-5	Total/NA	Water	9056A	
870-27839-6 MSD	MW-5	Total/NA	Water	9056A	

Metals

Prep Batch: 166842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-1	BW-1	Total/NA	Water	3010A	
870-27839-2	MW-1	Total/NA	Water	3010A	
870-27839-3	MW-2	Total/NA	Water	3010A	
870-27839-4	MW-3	Total/NA	Water	3010A	
870-27839-5	MW-4	Total/NA	Water	3010A	
870-27839-6	MW-5	Total/NA	Water	3010A	
870-27839-7	DUP	Total/NA	Water	3010A	
MB 860-166842/1-A	Method Blank	Total/NA	Water	3010A	
LCS 860-166842/2-A	Lab Control Sample	Total/NA	Water	3010A	

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QC Association Summary

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Metals (Continued)

Prep Batch: 166842 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 860-166842/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
870-27833-E-4-B MS	Matrix Spike	Total/NA	Water	3010A	
870-27833-E-4-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 167113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-1	BW-1	Total/NA	Water	6020B	166842
870-27839-2	MW-1	Total/NA	Water	6020B	166842
870-27839-3	MW-2	Total/NA	Water	6020B	166842
870-27839-4	MW-3	Total/NA	Water	6020B	166842
870-27839-5	MW-4	Total/NA	Water	6020B	166842
870-27839-6	MW-5	Total/NA	Water	6020B	166842
870-27839-7	DUP	Total/NA	Water	6020B	166842
MB 860-166842/1-A	Method Blank	Total/NA	Water	6020B	166842
LCS 860-166842/2-A	Lab Control Sample	Total/NA	Water	6020B	166842
LCSD 860-166842/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	166842
870-27833-E-4-B MS	Matrix Spike	Total/NA	Water	6020B	166842
870-27833-E-4-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020B	166842

Analysis Batch: 167245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-1	BW-1	Total/NA	Water	6020B	166842
870-27839-2	MW-1	Total/NA	Water	6020B	166842
870-27839-3	MW-2	Total/NA	Water	6020B	166842
870-27839-4	MW-3	Total/NA	Water	6020B	166842
870-27839-5	MW-4	Total/NA	Water	6020B	166842
870-27839-6	MW-5	Total/NA	Water	6020B	166842
870-27839-7	DUP	Total/NA	Water	6020B	166842

General Chemistry

Analysis Batch: 166609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-1	BW-1	Total/NA	Water	SM 2540C	
870-27839-2	MW-1	Total/NA	Water	SM 2540C	
870-27839-3	MW-2	Total/NA	Water	SM 2540C	
870-27839-4	MW-3	Total/NA	Water	SM 2540C	
870-27839-5	MW-4	Total/NA	Water	SM 2540C	
870-27839-6	MW-5	Total/NA	Water	SM 2540C	
870-27839-7	DUP	Total/NA	Water	SM 2540C	
MB 860-166609/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 860-166609/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 860-166609/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
LLCS 860-166609/4	Lab Control Sample	Total/NA	Water	SM 2540C	
860-76456-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 168081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-1	BW-1	Total/NA	Water	9040C	
870-27839-2	MW-1	Total/NA	Water	9040C	
870-27839-3	MW-2	Total/NA	Water	9040C	

QC Association Summary

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

General Chemistry (Continued)

Analysis Batch: 168081 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
870-27839-4	MW-3	Total/NA	Water	9040C	
870-27839-5	MW-4	Total/NA	Water	9040C	
870-27839-6	MW-5	Total/NA	Water	9040C	
870-27839-7	DUP	Total/NA	Water	9040C	
880-45066-I-1 DU	Duplicate	Total/NA	Water	9040C	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Lab Chronicle

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Client Sample ID: BW-1

Lab Sample ID: 870-27839-1

Date Collected: 06/14/24 16:50

Matrix: Water

Date Received: 06/15/24 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			167926	06/25/24 23:31	WP	EET HOU
Total/NA	Analysis	9056A		10			167926	06/25/24 23:38	WP	EET HOU
Total/NA	Analysis	9056A		100			168510	06/28/24 06:09	A1S	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		50			167113	06/19/24 20:43	DP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		20			167245	06/20/24 12:03	DP	EET HOU
Total/NA	Analysis	9040C		1			168081	06/25/24 19:48	RY	EET HOU
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	166609	06/18/24 09:50	TR	EET HOU

Client Sample ID: MW-1

Lab Sample ID: 870-27839-2

Date Collected: 06/14/24 17:10

Matrix: Water

Date Received: 06/15/24 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			167926	06/25/24 23:46	WP	EET HOU
Total/NA	Analysis	9056A		100			168510	06/28/24 07:09	A1S	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		50			167113	06/19/24 20:45	DP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		20			167245	06/20/24 12:05	DP	EET HOU
Total/NA	Analysis	9040C		1			168081	06/25/24 19:58	RY	EET HOU
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	166609	06/18/24 09:50	TR	EET HOU

Client Sample ID: MW-2

Lab Sample ID: 870-27839-3

Date Collected: 06/14/24 17:25

Matrix: Water

Date Received: 06/15/24 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			167926	06/26/24 00:01	WP	EET HOU
Total/NA	Analysis	9056A	DL	10			167926	06/26/24 00:08	WP	EET HOU
Total/NA	Analysis	9056A		100			168510	06/28/24 06:54	A1S	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		50			167113	06/19/24 20:51	DP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		20			167245	06/20/24 12:08	DP	EET HOU
Total/NA	Analysis	9040C		1			168081	06/25/24 19:57	RY	EET HOU
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	166609	06/18/24 09:50	TR	EET HOU

Lab Chronicle

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Client Sample ID: MW-3

Lab Sample ID: 870-27839-4

Date Collected: 06/14/24 18:15

Matrix: Water

Date Received: 06/15/24 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			167926	06/26/24 00:16	WP	EET HOU
Total/NA	Analysis	9056A	DL	10			167926	06/26/24 00:23	WP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		50			167113	06/19/24 20:53	DP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		20			167245	06/20/24 12:10	DP	EET HOU
Total/NA	Analysis	9040C		1			168081	06/25/24 19:46	RY	EET HOU
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	166609	06/18/24 09:50	TR	EET HOU

Client Sample ID: MW-4

Lab Sample ID: 870-27839-5

Date Collected: 06/14/24 18:00

Matrix: Water

Date Received: 06/15/24 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			167926	06/26/24 00:46	WP	EET HOU
Total/NA	Analysis	9056A	DL	10			167926	06/26/24 00:53	WP	EET HOU
Total/NA	Analysis	9056A		100			168510	06/28/24 06:39	A1S	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		50			167113	06/19/24 20:55	DP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		100			167245	06/20/24 12:12	DP	EET HOU
Total/NA	Analysis	9040C		1			168081	06/25/24 19:54	RY	EET HOU
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	166609	06/18/24 09:50	TR	EET HOU

Client Sample ID: MW-5

Lab Sample ID: 870-27839-6

Date Collected: 06/14/24 17:45

Matrix: Water

Date Received: 06/15/24 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			167926	06/26/24 01:01	WP	EET HOU
Total/NA	Analysis	9056A	DL	10			167926	06/26/24 01:08	WP	EET HOU
Total/NA	Analysis	9056A		100			168510	06/28/24 08:17	A1S	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		50			167113	06/19/24 20:57	DP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		100			167245	06/20/24 12:14	DP	EET HOU
Total/NA	Analysis	9040C		1			168081	06/25/24 19:45	RY	EET HOU
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	166609	06/18/24 09:50	TR	EET HOU

Lab Chronicle

Client: SCS Engineers
 Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Client Sample ID: DUP

Lab Sample ID: 870-27839-7

Date Collected: 06/14/24 16:50

Matrix: Water

Date Received: 06/15/24 12:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			167926	06/26/24 01:16	WP	EET HOU
Total/NA	Analysis	9056A	DL	10			167926	06/26/24 01:23	WP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		50			167113	06/19/24 20:59	DP	EET HOU
Total/NA	Prep	3010A			50 mL	50 mL	166842	06/19/24 08:00	MD	EET HOU
Total/NA	Analysis	6020B		20			167245	06/20/24 12:16	DP	EET HOU
Total/NA	Analysis	9040C		1			168081	06/25/24 19:55	RY	EET HOU
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	166609	06/18/24 09:50	TR	EET HOU

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200



Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Laboratory: Eurofins Houston

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-00759	08-03-24
Florida	NELAP	E871002	06-30-24
Louisiana (All)	NELAP	03054	06-30-24
Oklahoma	NELAP	1306	08-31-24
Oklahoma	State	2023-139	08-31-24
Texas	NELAP	T104704215	06-30-24
Texas	TCEQ Water Supply	T104704215	12-28-25
USDA	US Federal Programs	525-23-79-79507	03-20-26

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Method Summary

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET HOU
6020B	Metals (ICP/MS)	SW846	EET HOU
9040C	pH	SW846	EET HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET HOU
3010A	Preparation, Total Metals	SW846	EET HOU

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200



Sample Summary

Client: SCS Engineers
Project/Site: Sandy Creek Groundwater

Job ID: 870-27839-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
870-27839-1	BW-1	Water	06/14/24 16:50	06/15/24 12:15
870-27839-2	MW-1	Water	06/14/24 17:10	06/15/24 12:15
870-27839-3	MW-2	Water	06/14/24 17:25	06/15/24 12:15
870-27839-4	MW-3	Water	06/14/24 18:15	06/15/24 12:15
870-27839-5	MW-4	Water	06/14/24 18:00	06/15/24 12:15
870-27839-6	MW-5	Water	06/14/24 17:45	06/15/24 12:15
870-27839-7	DUP	Water	06/14/24 16:50	06/15/24 12:15

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Eurofins Dallas
 9701 Hany Hines Blvd
 Dallas, TX 75220
 Phone (214) 902-0300

Chain of Custody Record

eurofins | Environment Testing

Client Information
 Client Contact: Asher Bourdeaux
 Company: SCS Engineers
 Address: 1901 Central Avenue Suite 550
 Bedford, TX 76021
 Phone: [blank]
 Email: abourdeaux@scsengineers.com
 Project Name: Sandy Creek Groundwater
 Site: [blank]

Sampler: Asher Bourdeaux
 Phone: 817-368-0837
 Lab P/N: Patel, Anita
 Email: Anita.Patel@et.eurofins.com
 Carrier Tracking No(s): [blank]
 State of Origin: [blank]
 COC No: 870-9082-2645.1
 Page: Page 1 of 1
 Job #: [blank]
 Preservation Codes: [blank]

Due Date Requested: [blank]
 TAT Requested (days): [blank]
 Compliance Project: Yes No
 PO #: [blank]
 Purchase Order not required: Yes No
 WO #: 16224008.00
 Project #: 87001717
 SSOW#: [blank]

Analysis Requested: [blank]

Field Filtered Sample (Yes/No): [blank]
 pH 9040C, Anions 9066A_ORGFM_28D
 6010D - Total Metals - B and Ca
 2540C_Calcd - Solids, Total Dissolved (TDS)

870-27839 Chain of Custody

Total Number of Containers: [blank]

Special Instructions/Note: [blank]

Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=grab)	Matrix (Water, Soil, etc.)	Field Filtered Sample (Yes/No)	Analysis Requested	Total Number of Containers	Special Instructions/Note
BW-1	6/14/24	16:50		Water	X			
MW-1		17:10		Water	X			
MW-2		17:25		Water	X			
MW-3		18:15		Water	X			
MW-4		18:00		Water	X			
MW-5		17:45		Water	X			
DUP		16:50		Water	X			

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (Specify) [blank]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For [blank] Months

Special Instructions/QC Requirements: [blank]

Empty Kit Relinquished by: [blank] Date: [blank]

Relinquished by: Asher Bourdeaux
 Date/Time: 6/15/24 12:10
 Company: SCS Engineers

Relinquished by: [blank]
 Date/Time: [blank]
 Company: [blank]

Custody Seals Intact: Yes No
 Custody Seal No.: [blank]

Collected Temperature(s) °C and Other Remarks: [blank]

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 870-27839-1

Login Number: 27839

List Number: 1

Creator: Dabinett, Ian

List Source: Eurofins Dallas

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 870-27839-1

Login Number: 27839

List Number: 2

Creator: Baker, Jeremiah

List Source: Eurofins Houston

List Creation: 06/18/24 09:33 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



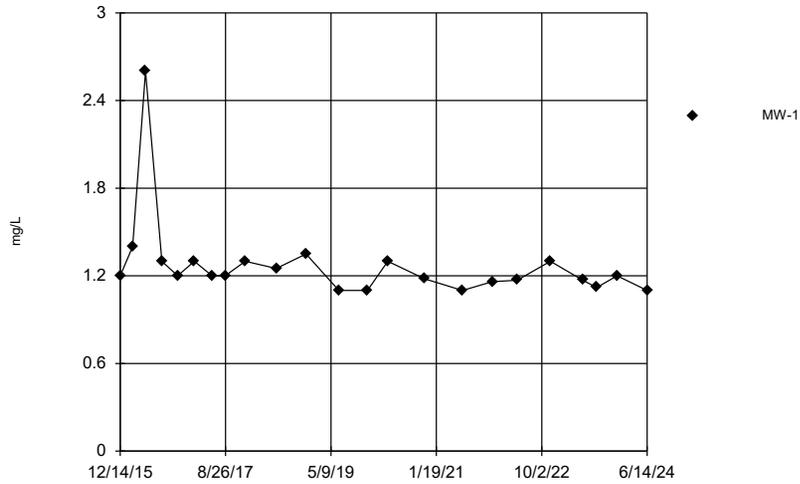
Appendix C

Historical Groundwater Analytical Data

Appendix D

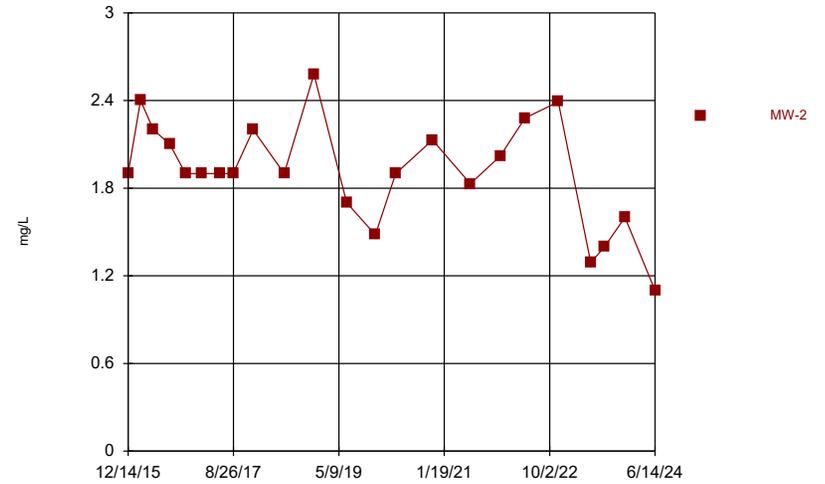
Time Series Graphs

Time Series



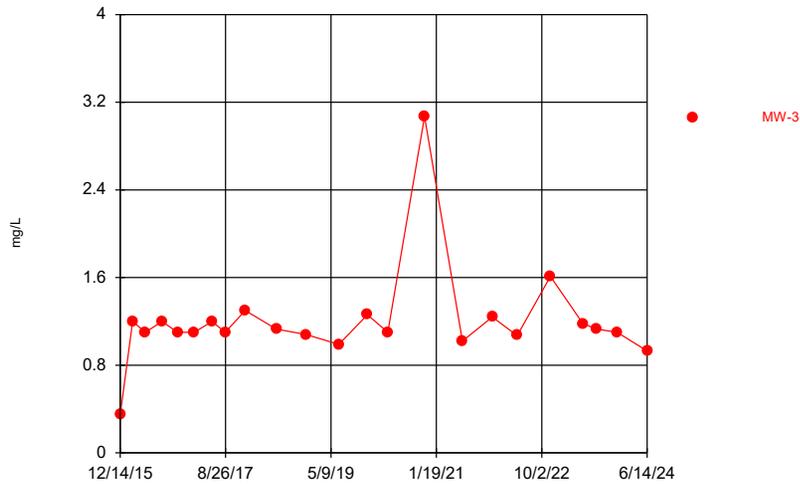
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Time Series



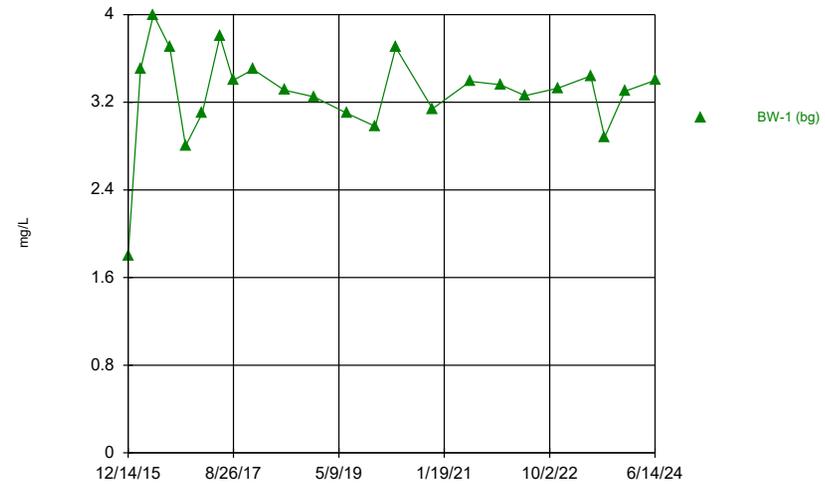
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 Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series



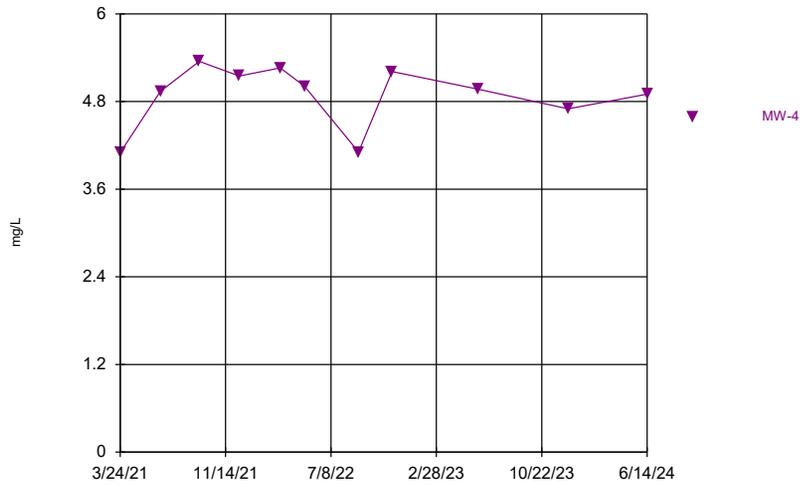
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 Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series



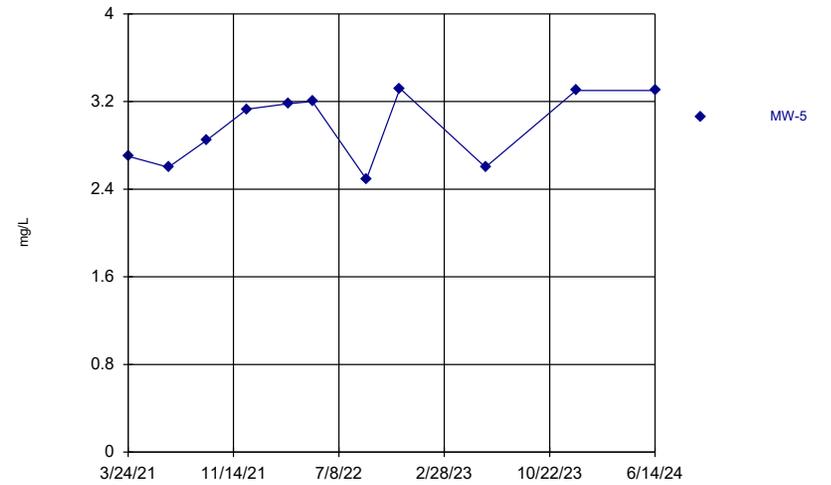
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Time Series



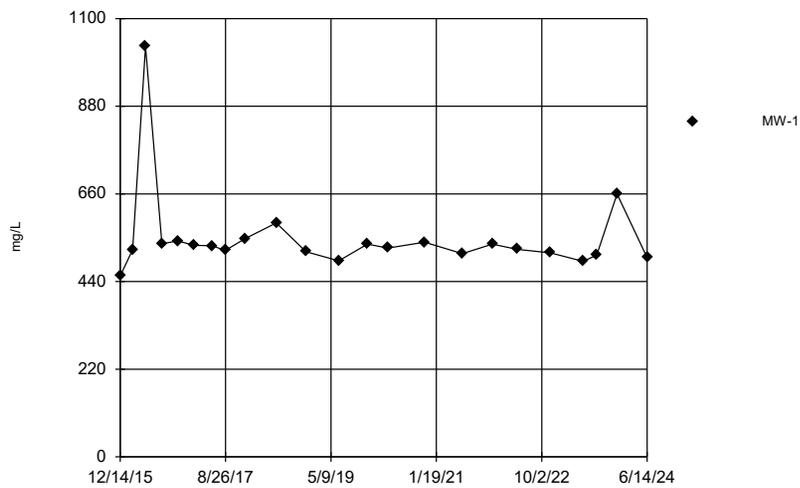
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Time Series



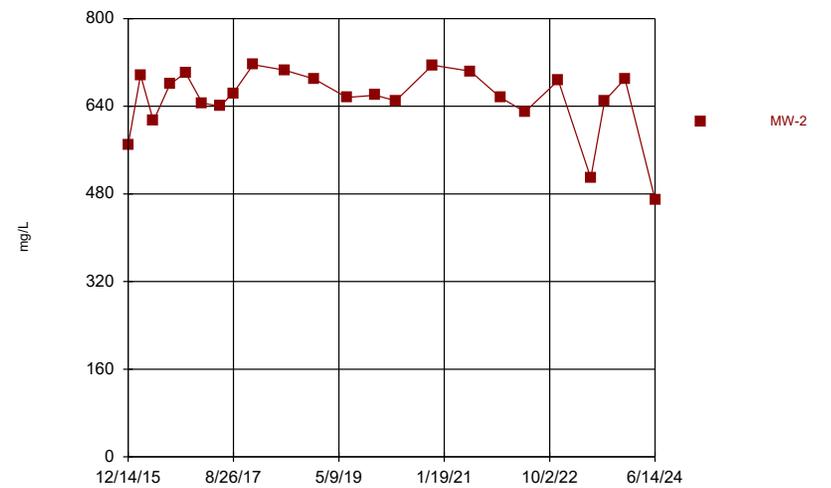
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Time Series



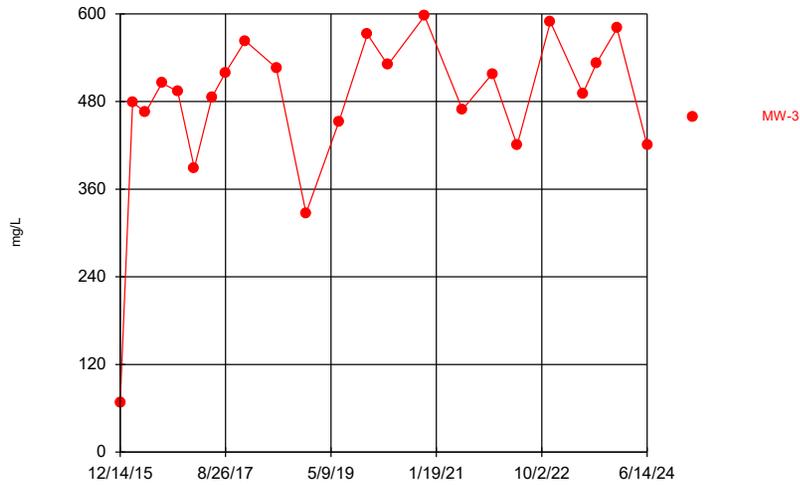
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 Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series

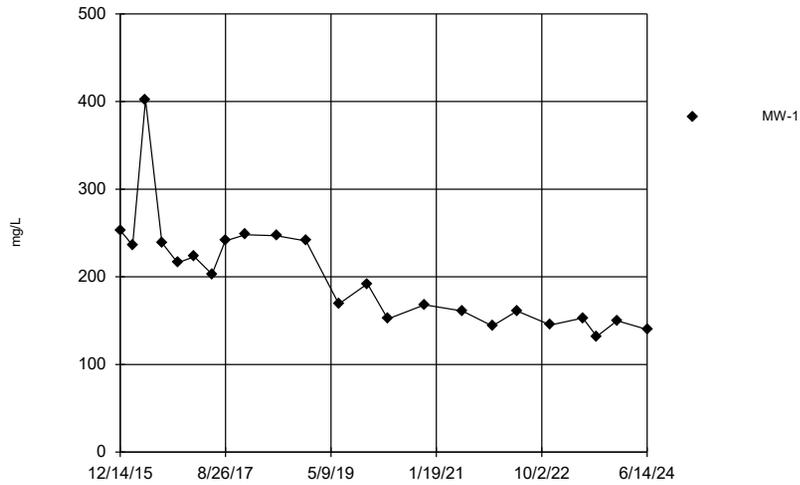


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Time Series

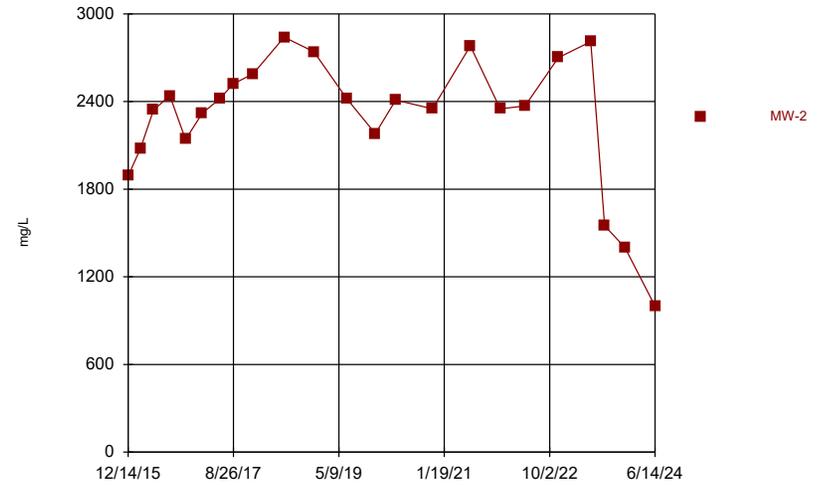


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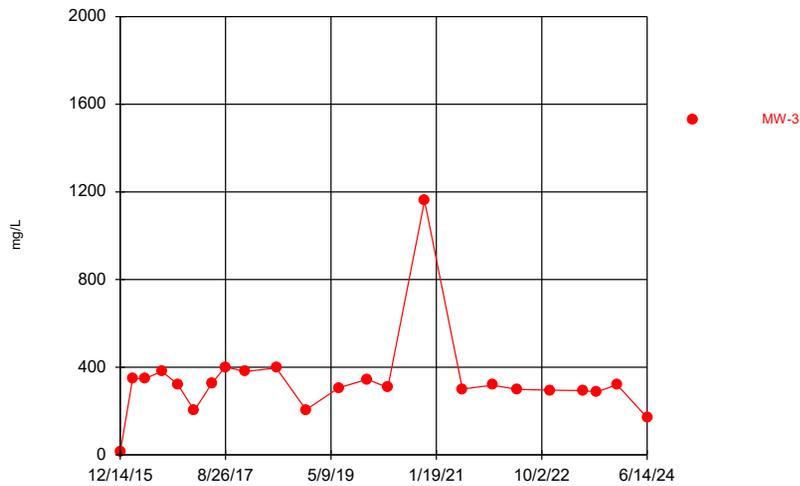
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Time Series



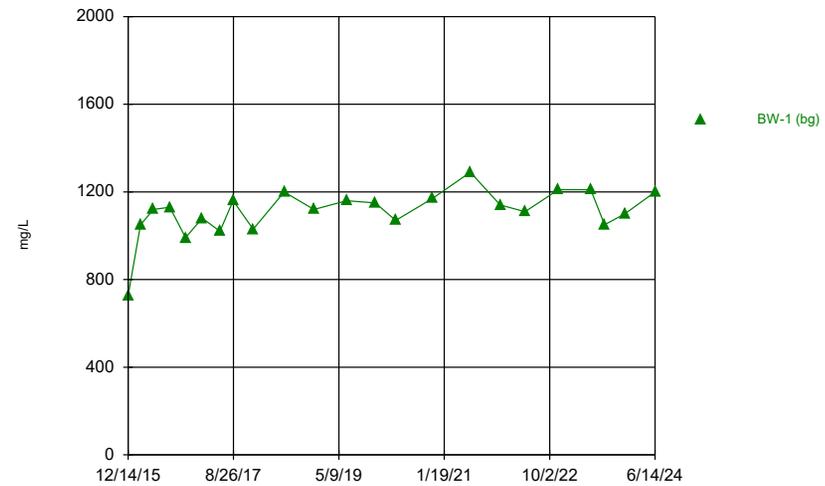
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Time Series



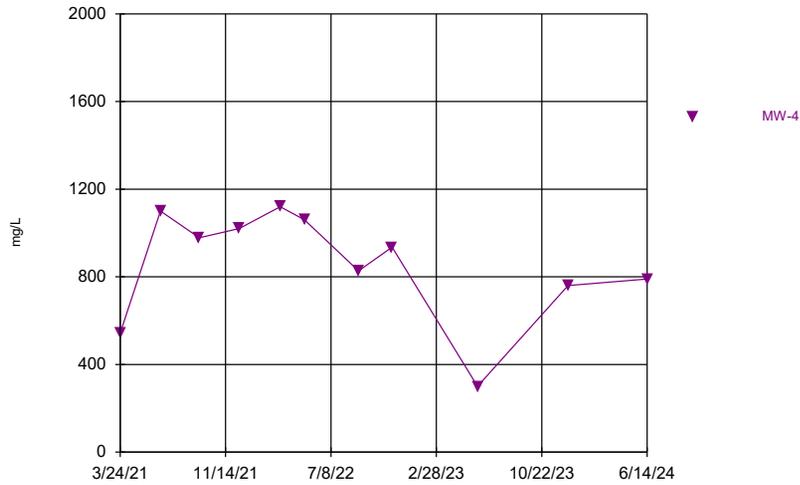
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Time Series



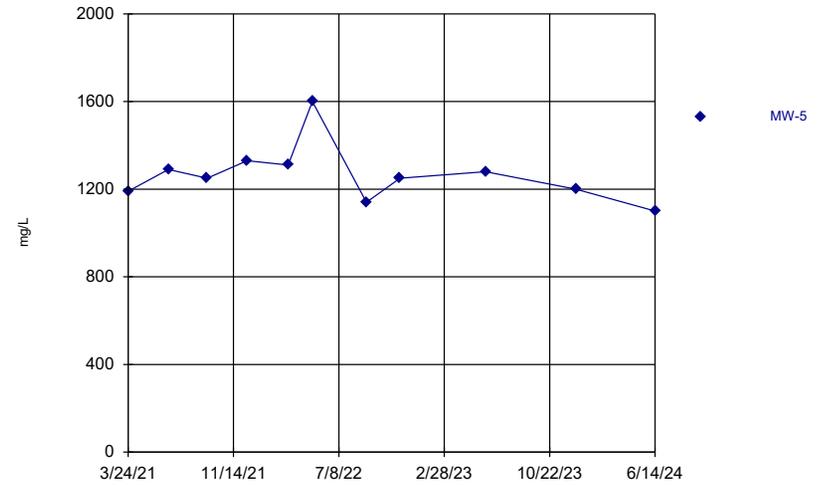
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Time Series



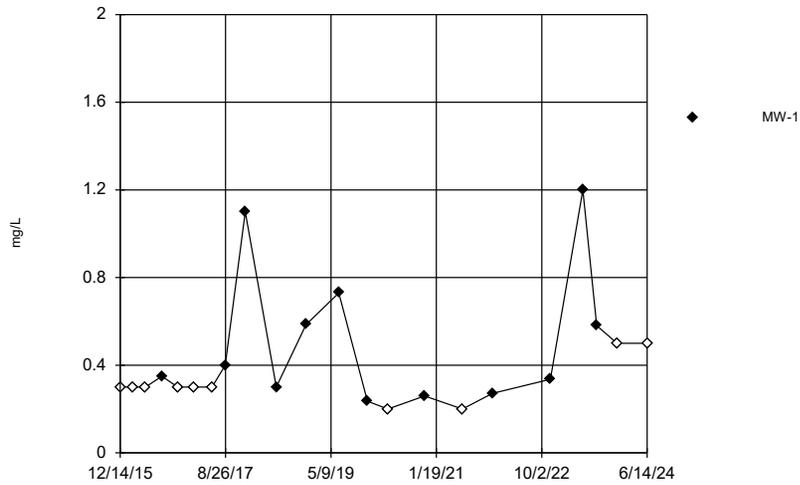
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Time Series



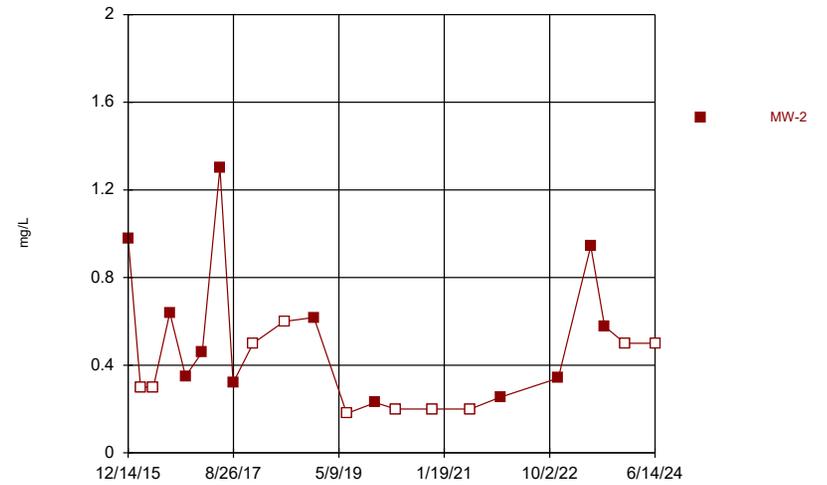
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 Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series



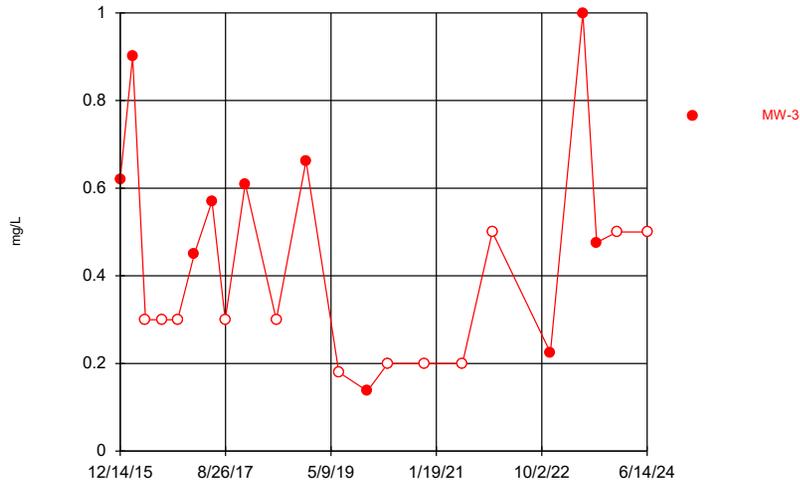
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Time Series



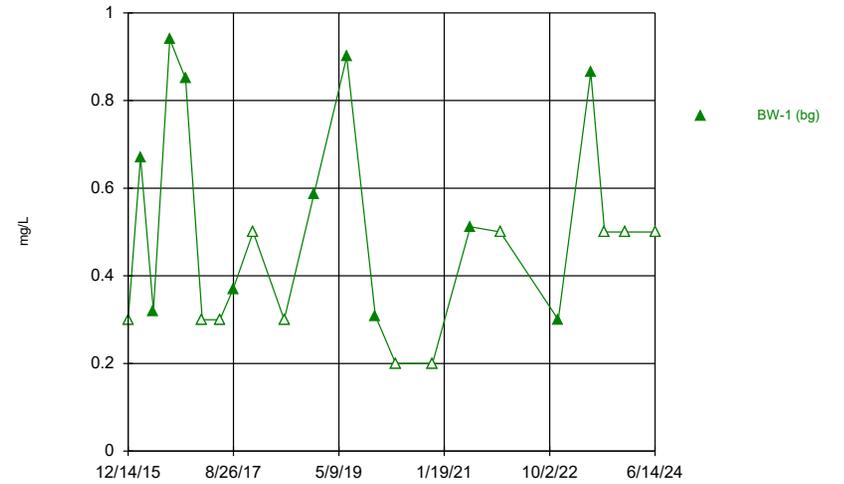
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Time Series



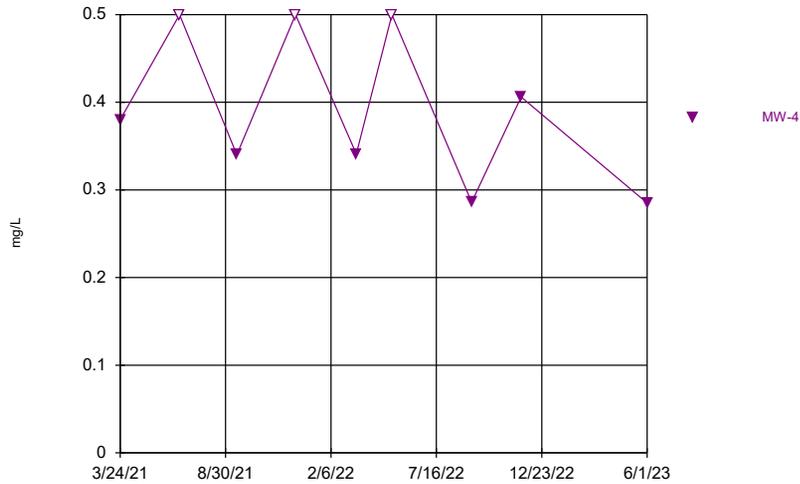
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Time Series



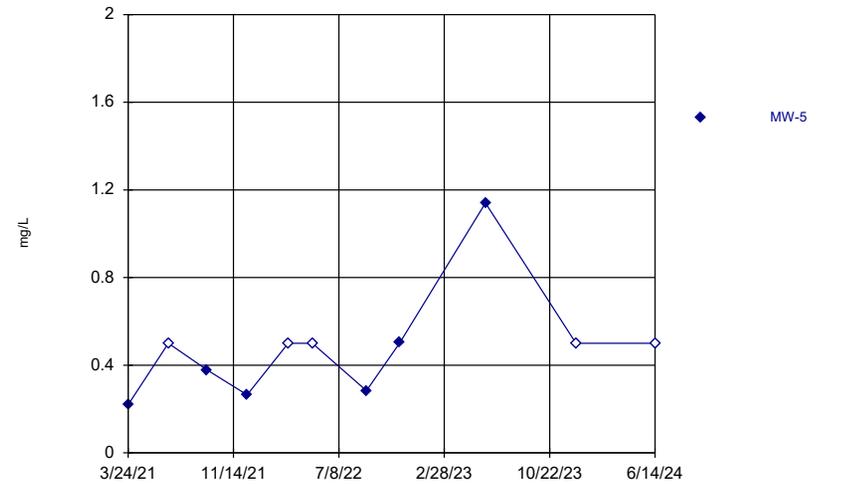
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Time Series



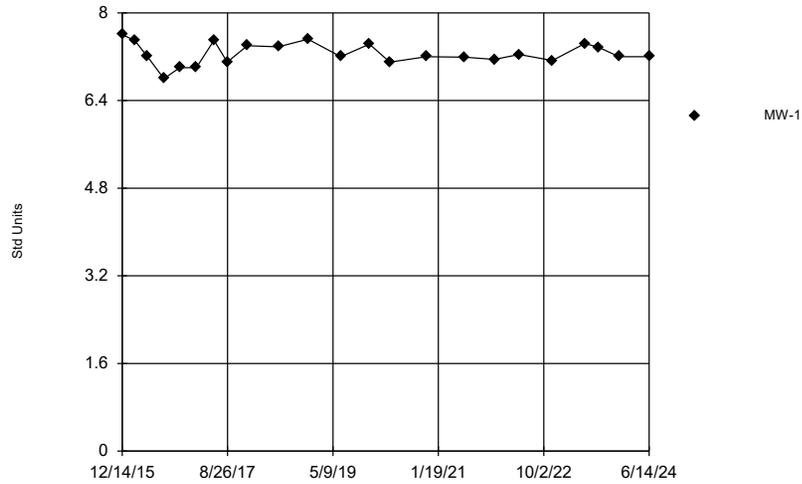
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Time Series



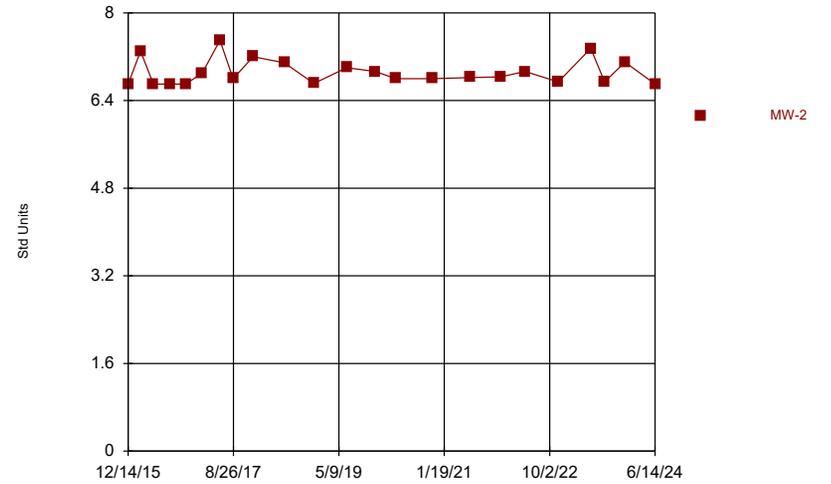
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Time Series



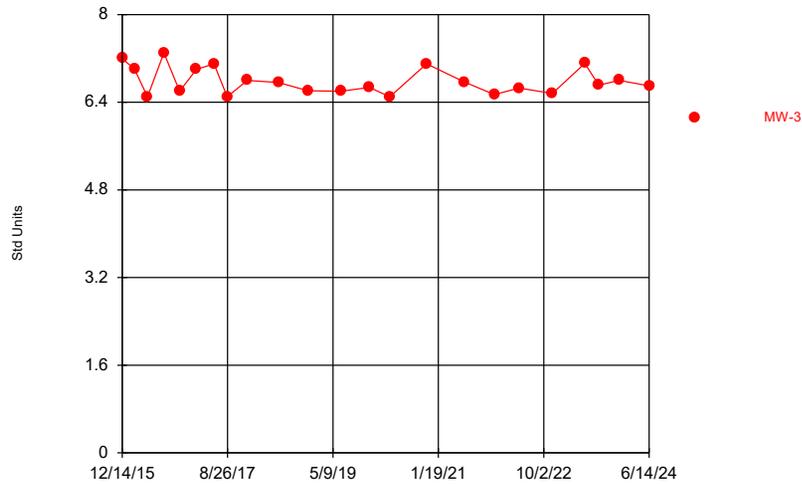
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Time Series



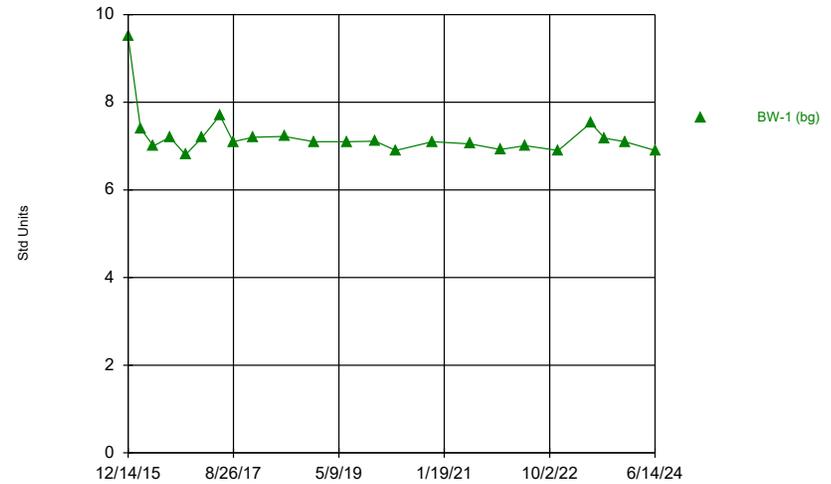
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Time Series



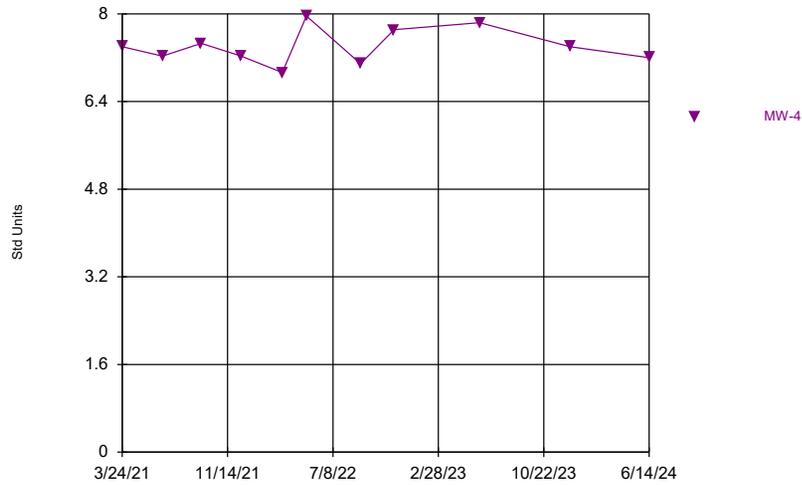
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Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series



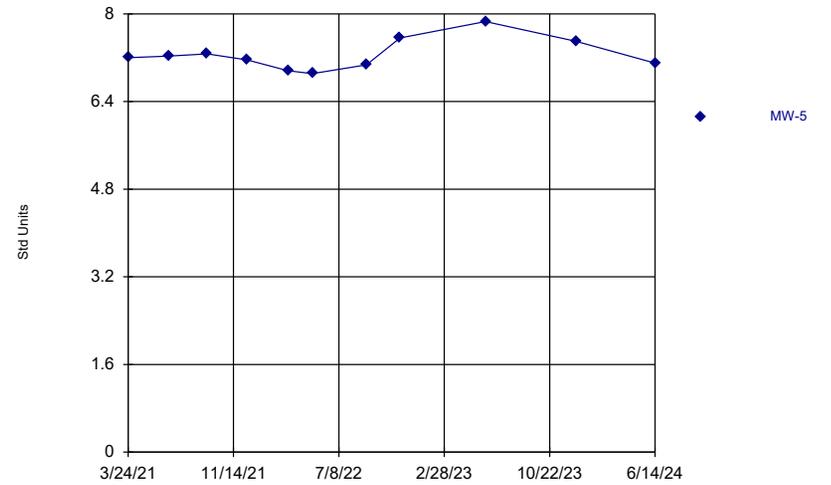
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Time Series



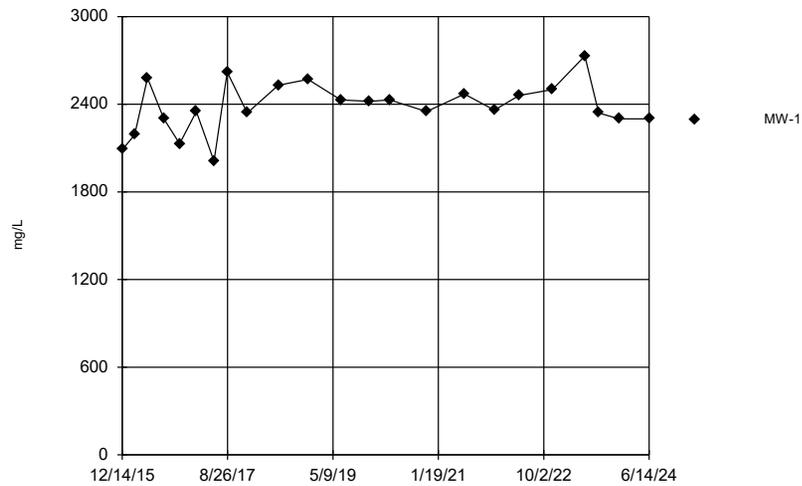
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Time Series



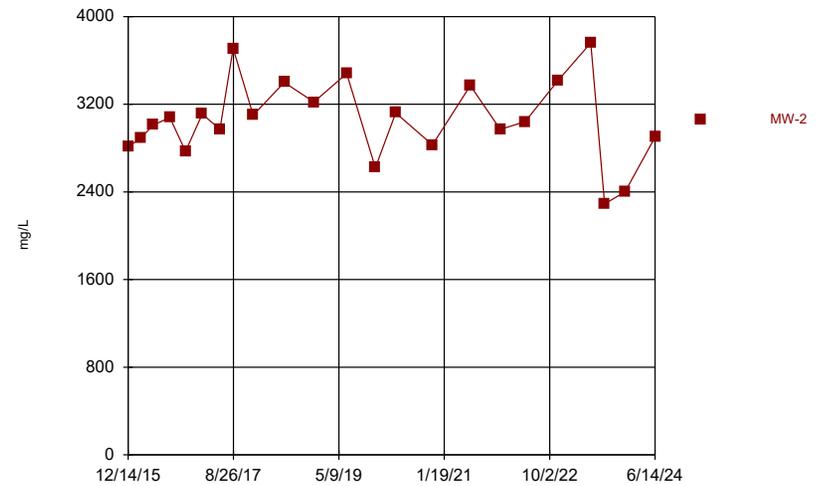
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Time Series



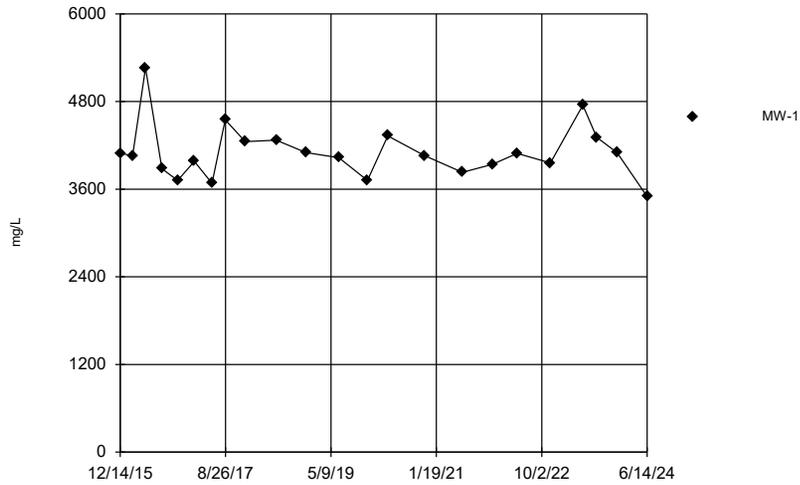
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Time Series



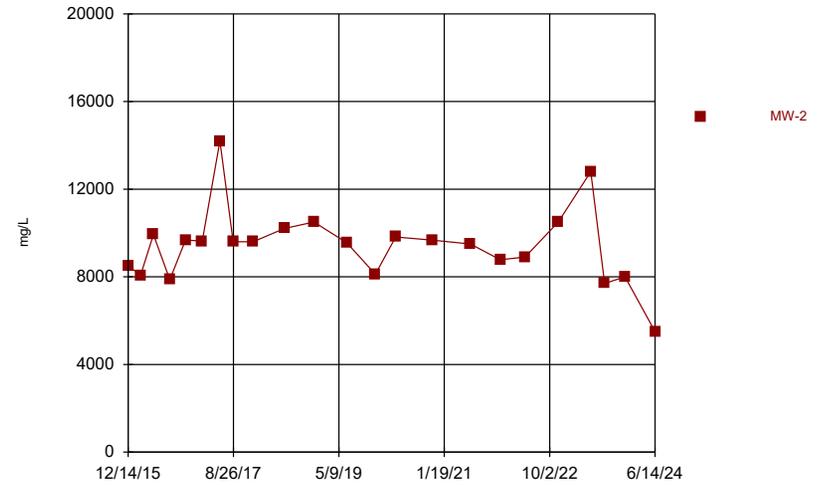
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Time Series



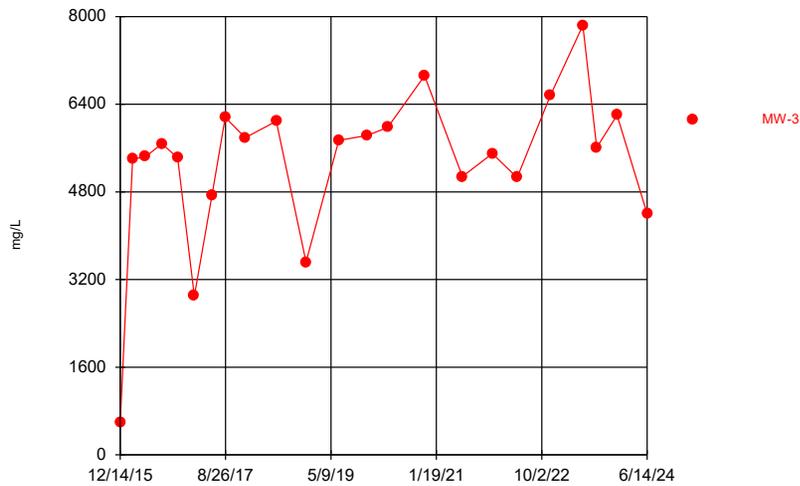
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Time Series



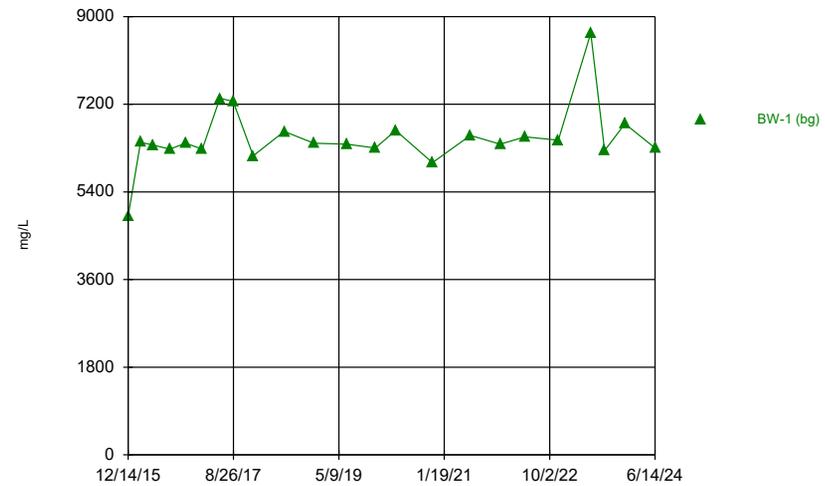
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Time Series



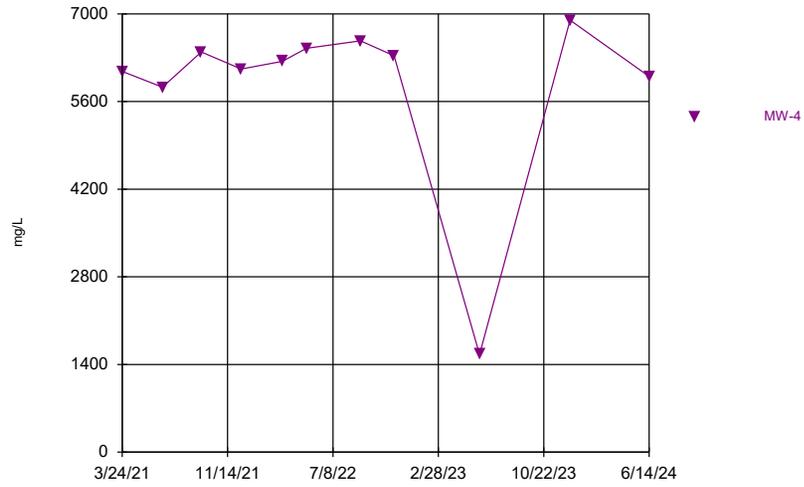
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 Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series



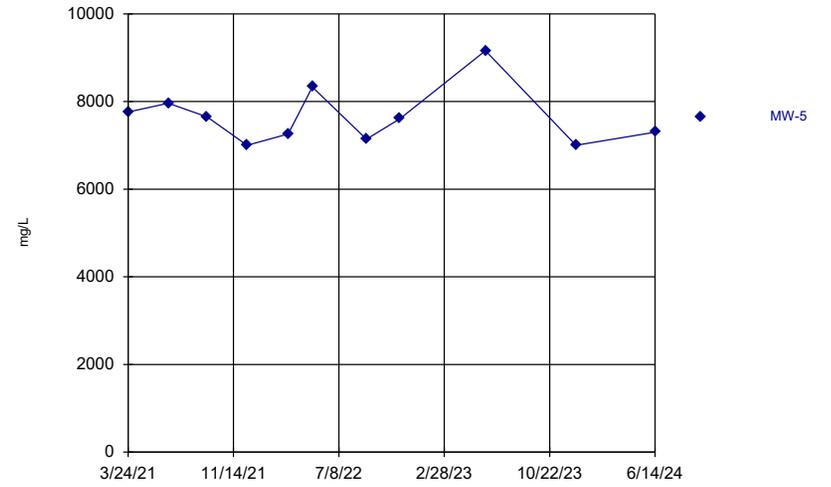
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 Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/7/2024 5:23 PM
Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/7/2024 5:23 PM
Sandy Creek Energy Station Client: Sandy Creek Data: Sandy Creek GWdata 06.2024