TRI-STATE

February 13, 2025

Ms. Hunter Ridley
Environmental Protection Specialist
Colorado Division of Reclamation, Mining & Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

RE: Colowyo Coal Company L.P.
Permit No. C-1981-019
2023 Annual Hydrology & Reclamation Report

Dear Ms. Ridley,

Tri-State Generation and Transmission Association, Inc. (Tri-State), is the parent company to Axial Basin Coal Company, which is the general partner to Colowyo Coal Company L.P (Colowyo). The Colowyo Mine operates under the Colorado Division of Reclamation, Mining, and Safety Permit No. C-1981-019.

Rule 2.04.13(1) states, by February 15, or other such date as agreed on, each permittee shall file an annual reclamation report covering the previous calendar years for all areas under bond, and Rule 4.05.13(4)(c) states, a hydrologic report shall be submitted to the Division annually with the date of the submittal determined in consultation with the permittee. Colowyo by permit is required to submit both reports annually by March 15. Therefore, enclosed please the Annual Reclamation Report and the Annual Hydrology Report for the calendar year 2024.

If you should have any additional questions or concerns, please feel free to contact Tony Tennyson at (970) 824-1232 at your convenience.

Sincerely,

DocuSigned by:
Chris Gilbreath
4BE980BE59E442F...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

GC:TT

Enclosure

cc: File: C.F 17.14
G474-11.3(21)f - G474-11.3(21)g

P.O. BOX 33695
DENVER, CO 80233-0695
303-452-6111
WWW.TRISTATE.COOP

COLOWYO COAL COMPANY L.P.

Permit No. C-1981-019

Annual Hydrology
Water Year January 1, 2024 to December 31, 2024

Annual Reclamation Report
Report Year 2024

LIST OF EXHIBITS

SECTION 1 – SURFACE AND GROUND WATER DATA

RULE REQUIREMENT

Rule 4.05.13(4)(c) Monitoring Report Requirements

(i) Water quantity data for the monitoring sites is presented in Exhibit 1A and 1C of this report.

(ii) Water quality data obtained from the monitoring sites is presented in Exhibit 1A through 1D of this report. Discharge monitoring reports are submitted to the Colorado Department of Public Health and Environment on a monthly basis. A copy is forwarded to the Division each month.

(iii) A written interpretation of the data was requested by the Division in a letter to Colowyo dated September 30, 2013. Colowyo has been providing a written interpretation of the data annually, beginning with the submittal of the 2013 annual hydrology report; therefore, compliance has been met for this Rule as requested by the Division.

All analytical results from surface and ground water monitoring have been tabulated and are kept on file at the Colowyo mine site. Historical data is presented in past annual hydrology reports. The monitoring timeframe for this annual hydrology report (water year) is from January 1, 2024, through December 31, 2024.

A description of the surface and ground water monitoring plan is located in Colowyo's Permit No. C-1981-008, Volume 15, Section 4.05.13. Please see Map 10A in the permit for monitoring locations. Monitoring of each location occurs on a quarterly basis

SURFACE WATER

Colowyo currently samples each surface water monitoring location for a variety of quality parameters. Of all the parameters that are analyzed for, several key indicator parameters are identified an analyzed in more depth within this report. These are lab pH, lab conductivity, TDS, sulfate, calcium, iron, magnesium, sodium, and flow rate. Summary of the indicator parameters for each surface water monitoring location is provided in a table format. Surface water monitoring sites within each corresponding drainage have been compiled together and analyzed together as up gradient and down gradient conditions where applicable.

Sampling results acquired during the water year from each surface water monitoring location are presented in Exhibit 1A. Exhibit 1B presents a graphical statistical analysis of the up and down gradient surface monitoring locations (where applicable) for each

drainage potentially impacted by Colowyo's mining operations. These drainages include Good Spring Creek, Taylor Creek, Jubb Creek, Little Collom Gulch, and Collom Gulch.

Good Spring Creek

Five surface water-monitoring locations have been established along Good Spring Creek.

New Upper Good Springs Creek (NUGSC) is a downstream site, located south of the mine along State Highway 13. Monitoring has occurred from 1992 to 2024.

Lower Good Spring Creek (LGSC) is a downstream site below NUGSC, located below active mining conditions along State Highway 13. Monitoring has occurred from 1982 to 2024.

Upper West Fork Good Spring Creek (UWFGSC) is an upstream site, located southwest of the mine along State Highway 13. Monitoring has occurred from the fourth quarter of 2007 to 2024.

The final two monitoring locations, EFGSC and LWFGSC are flow measurements only. The flows from these two locations are applied to create the actual flow for NUGSC.

NUGSC:

NUGSC Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	3.1	8.2	1507	1138	496	125.7	0.87	122.5	48.3
Std. Dev.	4.2	0.3	290	236	139	18.8	1.77	29.3	16.0
Range	43.3	1.2	2842	1250	770	165.6	12.00	226.9	121.1
Max	43.3	8.6	3600	1610	930	169.0	12.00	228.0	138.0
Min	0.0	7.4	758	360	160	3.4	0.00	1.1	16.9
Max at	5/8/23	5/15/07	3/6/98	8/6/01	7/8/02	8/2/02	5/8/23	8/2/02	11/10/08
Min at	3/8/23	10/21/2024	5/27/93	5/8/02	5/8/23	1/6/05	8/15/23	1/6/05	4/27/98

NUGSC Water Year Review

One minimum value changed for pH in 2024. No changes in maximum values. All other indicator sampling results for 2024 track within historical analysis. For the indicator parameters most are staying very stable with no trends apparent. Data for the water year for NUGSC is provided in Exhibit 1A.

LGSC:

LGSC Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	4.19	8.09	1734.87	1394.46	657.73	141.26	0.63	145.22	90.12
Std. Dev.	5.81	0.26	337.23	357.99	161.75	24.40	0.86	29.41	49.67
Range	57.14	2.5	3139	3420	815	198	8.81	225.3	323.3
Max	57.2	8.6	3300	4050	1050	208	8.84	226	343
Min	0.06	6.1	161	630	235	10	0.03	0.7	19.7
Max at	5/8/2023	6/11/2007	8/21/2018	11/8/2000	8/21/2018	12/28/1989	8/13/2008	12/4/1989	8/21/2018
Min at	12/6/1999	5/14/1992	6/23/1992	5/23/2005	5/23/2005	1/6/2005	2/1/1988	1/6/2005	4/17/2000

LGSC Water Year Review

No minimum or maximum values occurred at LGSC in 2024, and all indicator results for water year tracked consistent with historical analyses. For the indicator parameters most are staying very stable. Laboratory conductivity, TDS, pH, flow rate, and sodium are trending upward. Data for the water year for LGSC is provided in Exhibit 1A.

UWFGSC:

UWFGSC Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	1.14	8.4	945	686	214	95	1.75	75	9
Std. Dev.	2.00	0.3	218	160	77	16	2.81	21	3
Range	9.08	2.1	1027	620	306	71	16.75	93	15
Max	9.1	8.7	1330	930	358	121	16.8	120	19
Min	0.02	6.6	303	310	52	50	0.05	27	4
Max at	5/8/2023	5/11/2022	3/19/2014	9/15/2021	9/15/2021	11/10/2011	5/8/2023	9/15/2021	2/23/2010
Min at	10/31/2012	7/23/2024	4/15/2008	5/15/2019	5/8/2023	5/8/2023	10/31/2012	5/8/2023	5/15/2019

UWFGSC Water Year Review

A new minimum for lab pH occurred in 2024. All other sampling results for 2024 tracked in the same manner as historical analysis. The indicator parameters are staying stable with a general downward trend. Data for the water year for UWFGSC is provided in Exhibit 1A.

Good Spring Creek Impact Assessment

As shown on the graphs in Exhibit 1B for the indicator parameters, when comparing the up gradient and down gradient locations, LGSC tends to be historically higher for several of the indicator parameters including calcium, laboratory conductivity, magnesium, sodium, sulfate, and TDS. As discussed in Volume 1, Section 2.04.7, TDS concentrations showed an incremental increase (pre-mine) of 40 mg/l to 50 mg/l per mile of flow for Wilson and Good Spring Creeks prior to mining. Therefore, the increase in the indicator parameters are similar to surface water conditions found on Good Spring Creek prior to mining occurring.

Overall, the indicator parameters up gradient versus down gradient of mining are typically stable including calcium, iron, magnesium, and sulfate. Sodium, electrical conductivity, and TDS at LGSC are trending upward over time compared to the up-gradient locations, while pH at all up gradient and down gradient locations is decreasing. pH at the down gradient location LGSC is lower overall than NUGSC and UWFGSC.

TDS concentrations were predicted to increase in surface water during the post-mining period [Volume 1 Section 2.04.7 and Volume 12 Section 2.05.6(3)(b)(iii)] with sulfate being the dominate increasing ion. This impact would be due to infiltration through mine spoil material. Water flowing through the backfill spoil areas is expected to exhibit a temporary increase in TDS owing to rapid dissolution of relatively soluble minerals such as gypsum and calcite. The increase in TDS and major ions is predicated to be followed by a gradual decrease over time. Data from the down gradient location LGSC is showing increases in TDS as predicted. Please refer to Exhibit 1B for graphs presenting the long-term trends for LGSC in comparison to the up-gradient monitoring locations NUGSC and UWFGSC. The trends in the data presented including an increase in TDS due to mining are as predicated to occur within the Good Spring Creek watershed.

Base flows in Good Spring Creek were also anticipated to be decreased by approximately 7% for approximately 45 years due to mining [Volume 12 Section 2.05.6(3)(b)(iii)]. Data from the down gradient location LGSC is trending downward, while the up-gradient locations are remaining stable or slightly increasing (Exhibit 1B). However, the Colowyo Mine area has experienced drought conditions for many years and decreased flows in Good Spring Creek cannot fully be contributed to mining activities from Colowyo specifically, as overall precipitation over the long term in the area of Colowyo has been trending down. This predicted impact in decreased flows from mining activities has been minimized overall.

Taylor Creek

One surface water-monitoring location, Lower Taylor Creek (LTC) has been established along Taylor Creek and is a downstream site, located below active mining conditions near Moffat County Road 17. Monitoring has occurred from 1983 to 2024. Colowyo's mining area extends into the headwaters of Taylor Creek; therefore, no upstream monitoring location has been established for comparison of data to the down gradient LTC location.

LTC:

LTC Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	0.37	8.18	1881.25	1569.56	740.43	97.20	3.53	128.42	227.34
Std. Dev.	0.80	0.31	728.25	691.05	382.63	25.48	14.94	41.53	188.31
Range	6.3	1.7	3790	3056	1681	133	131.99	230	704
Max	6.3	8.7	3990	3200	1700	159	132	238	710
Min	0	7.0	200	144	19	26	0.01	8	6
Max at	4/29/1986	9/13/2016	7/23/2024	8/15/2023	10/24/2023	11/10/2011	2/28/1990	10/12/1988	8/15/2023
Min at	8/7/1985	2/22/1989	2/28/1990	2/28/1990	2/28/1990	2/5/2001	9/13/1995	2/28/1990	2/28/1990

LTC Water Year Review

Minimum values remained unchanged in 2024 but there a new maximum for lab conductivity occurred. For the indicator parameters, most trends are increasing including lab conductivity, iron, magnesium, sodium, sulfate and TDS. Calcium and pH are trending downward. Data for the water year for LTC is provided in Exhibit 1A.

Taylor Creek Impact Assessment

TDS concentrations were predicted to increase in surface water during the post-mining period [Volume 1 Section 2.04.7 and Volume 12 Section 2.05.6(3)(b)(iii)] with sulfate being the dominate increasing ion. This impact would be due to infiltration through mine spoil material. Water flowing through the backfill spoil areas is expected to exhibit a temporary increase in TDS owing to rapid dissolution of relatively soluble minerals such as gypsum and calcite. The increase in TDS and major ions is predicated to be followed by a gradual decrease over time. A significant acreage of reclamation has occurred in the Taylor Creek watershed, and data from LTC is showing increases in TDS and sulfate as predicted. Please refer to Exhibit 1B for graphs presenting the long-term trends for LTC. The trends in the data presented, including an increase in TDS, confirm predictions from mining activities occurring within the Taylor Creek watershed.

Base flows in Taylor Creek were also anticipated to be decreased by approximately 2% [Volume 12 Section 2.05.6(3)(b)(iii)] from mining activities in the South Taylor Pit. Data from LTC is trending downward (Exhibit 1B). The notable part of this downward trend is an extended period of minimal to zero flows recorded in at LTC. Prior to mining activities Taylor Creek was an ephemeral drainage at best, and Colowyo uses water from Taylor Creek as part of a water right held by Colowyo on Taylor Creek above LTC. In approximately 2011, flows from Taylor Creek became more consistent than was recorded from 2002, and have been more consistent than the previous years of minimal or no flow. If the years of low to zero flow were removed, the base flows in Taylor Creek would be consistent or increasing. Given this, the predicted impact of decreased flows has not occurred overall as flows in Taylor Creek have increased or have been more consistent since approximately 2011.

Jubb Creek

Two surface water-monitoring locations have been established along Jubb Creek. Confluence of Jubb Creek (CJC) represents the aggregate water quality in the Jubb Creek basin, downstream of mining impacted areas. Monitoring has occurred from the first quarter of 2011 through 2024.

West Fork of Jubb Creek (WFJC) represents conditions in the Jubb Creek watershed adjacent to the mining disturbance. Monitoring has occurred from the first quarter of 2011 through 2024.

CJC:

CJC Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	0.11	8.4	2046	1595	673	144	0.79	162	140
Std. Dev.	0.14	0.2	273	218	140	17	1.38	24	22
Range	0.79	1.0	1600	1430	921	79	8.88	141	163
Max	0.8	8.6	2520	2100	1100	180	8.93	210	190
Min	0.01	7.6	920	670	179	101	0.05	69	27
Max at	9/4/2019	8/18/2011	3/20/2024	7/30/2024	6/6/2024	7/30/2024	9/4/2019	7/30/2024	5/9/2023
Min at	8/20/2018	10/23/2024	3/22/2011	3/22/2011	3/22/2011	3/6/2019	8/18/2011	3/22/2011	3/22/2011

CJC Water Year Review

Four new maximum values for lab conductivity, TDS, sulfate, and calcium were recorded in 2024. The indicator parameters are all generally trending up with the exception of pH that is trending down. Data for the water year for CJC is provided in Exhibit 1A.

WFJC:

WFJC Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	0.04	8.37	1236.88	905.61	330.05	121.51	0.63	99.24	18.37
Std. Dev.	0.07	0.25	125.19	106.18	62.67	9.83	1.07	10.29	19.39
Range	0.48	1.2	858	680	415	54	3.95	64	126
Max	0.48	8.6	1740	1450	651	150	4	143	139
Min	0	7.4	882	770	236	96	0.05	79	13
Max at	5/8/2023	11/19/2013	3/22/2011	3/22/2011	3/22/2011	10/23/2024	7/30/2024	3/22/2011	3/22/2011
Min at	8/20/2018	7/30/2024	5/4/2011	5/4/2011	11/8/2011	9/18/2017	8/18/2011	5/4/2011	5/4/2011

WFJC Water Year Review

One new minimum for pH and two maximum values for calcium and iron were recorded in 2024. The indicator parameters are trending steady with the exception of iron which is trending upward. pH is trending downward. Data for the water year for WFJC is provided in Exhibit 1A.

Jubb Creek Impact Assessment

A complete data set from March of 2011 to December of 2024 is presented on the graphs in Exhibit 1B, which provides WFJC and CJC indicator parameters together on one graph. While reviewing this data, it needs to be noted that the Jubb Creek Haul Road disturbance commenced in 2017, and mining in the Collom Pit commenced in 2018; therefore, data acquired prior to 2017 represents the background condition prior to mining occurring.

Data results as shown for the indicator parameters establishes the down gradient location CJC tends to be higher overall than WFJC, except for pH. Iron is trending upward at both WFJC and CJC. All the remaining indicator parameters tend to track along with baseline conditions of Jubb Creek for both CJC and WFJC.

Potential mining impacts to Jubb Creek as described in Colowyo's permit were not anticipated to be statistically significant [Volume 15 Section 2.05.6(3)(b)(i & ii)]. To date, the data acquired and presented in this report indicates all the indicator parameter are tracking similar to pre-mine conditions except for iron at both the upgradient and downgradient locations. The remaining indicator parameters track similar to pre-mining conditions, which indicates that surface water impacts from the Jubb Creek Haul Road and Collom mining operations are being minimized on Jubb Creek.

Collom Gulch

Two surface water-monitoring locations have been established along Collom Gulch. Upper Collom Gulch (UCG) represents the water quality conditions in Collom Gulch upstream of the Collom mining area. Monitoring has occurred from the first quarter of 2011 through 2024.

Lower Collom Gulch (LCG) represents the conditions in Collom Gulch downstream of mining impacts. Monitoring has occurred from the first quarter of 2011 through 2024.

UCG:

UCG	Flow Rate	Lab pH	Lab Conduct	TDS -180	Sulfate	Ca	Fe	Mg	Na
Statistics	cfs	S.U.	umho/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Mean	0.46	8.5	656	453	98	71	2.20	42	15
Std. Dev.	1.69	0.3	155	134	63	16	4.72	15	14
Range	11.5	1.8	731	560	272	71	27.95	75	64
Max	11.5	8.7	1,140	830	273	118	28	97	70
Min	0	6.9	409	270	1	47	0.05	22	6
Max at	5/9/2023	8/1/2012	3/18/2014	7/23/2024	3/22/2011	3/22/2011	5/9/2023	3/22/2011	10/24/2023
Min at	3/13/2013	10/21/2024	5/9/2023	5/13/2019	11/8/2011	5/9/2023	8/18/2011	5/9/2023	5/13/2019

UCG Water Year Review

One minimum value for laboratory pH and one maximum value for TDS was recorded in 2024. The indicator parameters for calcium, lab conductivity, magnesium, lab pH, sulfate, and TDS are trending down. Iron and flow are trending up. Sodium appears to be stable. Data acquired in 2024 tracked within previously analysis acquired. Data for the water year for UCG is provided in Exhibit 1A.

LCG:

LCG Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	0.48	8.4	1007	691	205	101	1.15	67	29
Std. Dev.	1.61	0.2	169	146	76	13	1.75	16	16
Range	11.5	1.5	1139	1100	558	69	8.65	119	119
Max	11.5	8.7	1830	1540	658	138	8.7	159	133
Min	0	7.2	691	440	100	69	0.05	40	14
Max at	5/8/2023	8/20/2018	5/13/2019	5/13/2019	5/13/2019	5/13/2019	5/8/2023	5/13/2019	5/13/2019
Min at	12/10/2020	10/21/2024	5/4/2011	5/24/2017	5/24/2017	5/8/2023	8/18/2011	5/24/2017	3/22/2011

LCG Water Year Review

One minimum for laboratory pH was recorded and no maximums occurred in 2024. The indicator parameters at LCG have been stable over time. Data acquired in 2024 tracked within previously analysis acquired from this location. Data for the water year for LCG is provided in Exhibit 1A.

Collom Gulch Impact Assessment

A complete data set from March of 2011 to December of 2024 is presented on the graphs in Exhibit 1B, which provides UCG and LCG indicator parameters together on one graph. While reviewing this data, it should be noted that mining in the Collom Pit commenced in 2018; therefore, data acquired prior to 2018 represents the background condition prior to mining occurring.

Data results as shown from the indicator parameters express that the down gradient location LCG and up gradient UCG trend very similar over time for all the indicator parameters. Iron is trending upward at the up-gradient location UCG, while the down gradient LCG tends to remain constant. pH at both monitoring locations are trending downward. All the remaining indicator parameters tend to track along with baseline conditions of Collom Gulch.

Potential mining impacts to Collom Gulch as described Colowyo's permit were not anticipated to be statistically significant [Volume 15 Section 2.05.6(3)(b)(i & ii)]. To date, the data acquired and presented in this report indicates all the indicator parameter are tracking comparable to pre-mine conditions with influences from seasonal

fluctuations. This signifies that impacts from the Collom mining operations have not occurred as predicated to date.

Little Collom Gulch

One surface water monitoring location, LLCG, has been established along Little Collom Gulch and represents the conditions in Little Collom Gulch downstream of mining disturbances. The Collom mining area extends nearly to the headwaters of Little Collom Gulch; therefore, no upstream monitoring location can be established for comparison of data to the down gradient LLCG monitoring location.
LLCG:

LLCG Statistics	Flow Rate cfs	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	2.89	7.95	1512.50	892.50	377.50	127.50	1.82	104.00	94.75
Std. Dev.	5.74	0.61	117.01	496.88	184.10	15.00	3.45	4.90	23.77
Range	11.4996	1.3	260	1050	400	30	6.94	10	47
Max	11.5	8.5	1660	1200	520	140	7	110	120
Min	0.0004	7.2	1400	150	120	110	0.06	100	73
Max at	5/8/2023	8/15/2023	7/23/2024	7/23/2024	6/6/2024	6/6/2024	5/8/2023	8/15/2023	8/15/2023
Min at	8/15/2023	7/23/2024	5/8/2023	5/8/2023	8/15/2023	5/8/2023	7/23/2024	5/8/2023	6/6/2024

Little Collom Gulch Water Year Review

Until the second and third quarters of 2023 and 2024 samples had not been previously taken from LLCG since sampling was initiated at this location in 2011. Since the data set for LLCG is minimal with only four samples obtained to date, an analysis has not been completed for this monitoring location. A graphical representation of the four samples that have been taken are provided in Exhibit 1B.

Little Collom Gulch Impact Assessment

Potential mining impacts to Little Collom Gulch as described Colowyo's permit were not anticipated to be statistically significant [Volume 15 Section 2.05.6(3)(b)(i & ii)]. Very little surface water has ever been present in Little Collom Gulch and there has not been enough data obtain to define the water quality on Little Collom Gulch.

GROUNDWATER

Colowyo currently samples each ground water well for a variety of quality parameters. Of all the parameters that are analyzed for, several key indicator parameters are identified an analyzed in more depth within this report. These are lab pH, lab conductivity, TDS, sulfate, calcium, iron, magnesium, sodium, and water elevation. Summary of the indicator parameters, not including LGSW-1 and LWCW-1, for each ground water well is provided in a table format. Ground water wells within each corresponding drainage have been compiled together and analyzed together as up gradient and down gradient conditions where applicable.

LGSW-1 and LWCW-1 are points of compliance wells and data for each well for the water year is included in Exhibit 1C only. Indicator parameters are not analyzed nor provided for either of these wells. A data review narrative is provided for LGSW-1 and LWCW-1 in the Good Spring and Taylor Creek sections of the hydrology report.

Sampling results acquired during the water year from each ground water well are presented in Exhibit 1C. Exhibit 1D presents a graphical statistical analysis of the up and down gradient well (where applicable) for each drainage potentially impacted by Colowyo's mining operations. These drainages include Good Spring Creek, Taylor Creek, Jubb Creek, Little Collom Gulch, and Collom Gulch.

One well is located near the Gossard Loadout facility, which evaluates water quality adjacent to the Gossard Loadout facility, and another well is located down gradient of the confluence of Taylor and Wilson Creek and represents the further downstream point below all mining activities above Taylor and Wilson Creeks.

The Trout Creek well is a deep well that monitors potential impacts to the Trout Creek Sandstone, which is the only regional aquifer in the vicinity of the Colowyo Mine.

Good Spring Creek

Five ground water wells have been established along Good Spring Creek.

A-6 Well (A-6) is located south of the mine along State Highway 13, and this site represents up gradient, undisturbed or background conditions. Monitoring has occurred from 1984 through 2024.

A-7 Well (A-7) is located south of the mine along State Highway 13 and represents a potential down gradient condition below the South Taylor Pit operations. Monitoring started in the second quarter of 2008 and has continued through 2024.

A-8 Well (A-8) is located south of the mine, west of State Highway 13, and represents the condition up gradient of the South Taylor mining activities. Monitoring started in the second quarter of 2008 and has continued through 2024.

North Good Springs Well (NGSW) is located along State Highway 13 and this site represents the down gradient condition below mining activities. Monitoring has occurred from 1989 to 2024.

Lower Good Spring Well 1 (LGSW-1) is located along State Highway 13 and this site represents a further down gradient condition below mining activities. It is located further downstream on Good Spring Creek than NGSW. LGSW-1 is designated as a point of compliance well. Monitoring of LGSW-1 has occurred from the fourth quarter of 2021 through 2024.

Lower Wilson Confluence Well-1(LWCW-1) is located north of Moffat County Road 17, near the railroad tracks. This site is after Wilson and Taylor creeks confluence. LWCW-1 is designated as a point of compliance well. Monitoring of LWCW-1 has occurred from the fourth quarter of 2021 through 2024.

A-6:

A-6	Elev SWL	Lab pH	Lab Conduct	TDS -180	Sulfate	Calcium	Fe	Magnesium	Sodium
Statistics	ft MSL	S.U.	umho/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Mean	6897.9	7.8	1119.3	700.4	141.6	62.1	0.2	53.5	125.5
Std. Dev.	2.8	0.4	81.1	84.5	49.3	15.8	0.5	14.4	17.6
Range	14.5	1.9	512	770	334	121	3.796	128	133
Max	6902.5	8.6	1440.0	950.0	430.0	169.0	3.8	169.0	151.0
Min	6888.0	6.7	928.0	180.0	95.8	47.9	0.0	41.0	17.9
Max at	3/13/2007	11/30/1993	5/1/1985	3/29/2023	7/17/2001	11/18/1997	5/7/2024	11/18/1997	9/14/2020
Min at	7/31/2000	10/21/2002	5/5/2010	3/15/2006	5/15/2000	7/31/2000	3/22/2022	3/21/2011	4/27/1998

A-6 Water Year Review

A maximum value for iron occurred in 2024. Other indicator parameters for the water year tracked within similar results as previously acquired data. The indicator parameters indicate that pH is slightly increasing while most of the indicator parameters are stable except for iron which is decreasing at this location. Data for the water year for monitoring location A-6 is provided in Exhibit 1C.

A-7:

A-7 Statistics	Elev SWL ft MSL	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	6888.6	8.0	1541	1164	434	128	121	51	0.05
Std. Dev.	3.4	0.3	167	207	119	18	23	8	0.01
Range	21.5	1.6	1100	1160	794	112	151	43	0.05
Max	6904.9	8.4	2260	2100	1110	214	244	77	0.1
Min	6883.4	6.8	1160	940	316	102	93	34	0.05
Max at	11/12/2019	5/15/2019	6/18/2008	6/18/2008	6/18/2008	5/3/2011	6/18/2008	6/18/2008	8/17/2011
Min at	5/11/2022	10/21/2024	5/5/2010	9/19/2017	11/12/2019	11/30/2017	11/30/2017	5/20/2014	6/18/2008

A-7 Water Year Review

One minimum value for laboratory pH occurred 2024. The remaining indicator parameters for the water year tracked within similar results as previously acquired data. The indicator parameters indicate that sodium is slightly increasing while all the other indicator parameters are stable or decreasing at this location. Data for the water year for monitoring location A-7 is provided in Exhibit 1C.

A-8:

A-8 Statistics	Elev SWL ft MSL	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	7104.9	8.0	1219	915	330	117	97	16	0.06
Std. Dev.	4.9	0.3	333	331	195	30	37	6	0.05
Range	20.0	1.6	1443	1420	837	131	214	25	0.31
Max	7116.9	8.4	2330	2040	977	219	214	35	0.36
Min	7096.9	6.8	887	620	140	88	0	10	0.05
Max at	6/18/2008	5/21/2013	3/12/2013	3/12/2013	3/12/2013	3/12/2013	3/12/2013	3/12/2013	11/10/2008
Min at	2/20/2024	10/21/2024	5/5/2010	3/13/2012	8/15/2023	8/15/2023	6/6/2024	6/6/2024	6/18/2008

A-8 Water Year Review

Four minimum values were recorded in 2024 for water elevation, laboratory pH, magnesium, and sodium. In general, sampling results from 2024 tracked within historical analyses. The indicator parameters indicate that water quality at A-8 is stable or decreasing. Data for the water year for monitoring location A-8 is provided in Exhibit 1C.

NGSW:

NGSW Statistics	Elev to SWL ft MSL	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnes-ium mg/l	Sodium mg/l	Fe mg/l
Mean	6534.9	7.9	2120	1735	806	174	174	131	0.08
Std. Dev.	1.8	0.3	306	271	154	27	27	136	0.13
Range	10.0	1.7	1620	1410	1192	169	194	918	1.18
Max	6540.7	8.5	2770	2190	1340	262	270	950	1.19
Min	6530.7	6.8	1150	780	148	93	76	32	0.01
Max at	4/8/2002	8/19/1991	5/11/2022	4/27/2016	3/17/2009	3/13/2007	3/13/2007	10/23/2024	6/4/2020
Min at	4/15/1996	10/3/2000	4/27/1998	4/27/1998	5/5/2010	10/8/1998	4/27/1998	4/27/1998	11/18/1997

NGSW Water Year Review

A maximum value for sodium occurred in 2024 at NGSW. All other monitoring results acquired during the water year tracked within previous results. For the indicator parameters, TDS, sodium, pH, and laboratory conductivity are trending upward. Water year data for monitoring location NGSW is provided in Exhibit 1C.

LGSW-1:

LGSW-1 is designated as a point of compliance well on Good Spring Creek, and the sampling parameters for LGSW-1 can be found in Volume 2C, Exhibit 7, Item 19, Table 16. Please see Exhibit 1C for LGSW-1 analytical results for the 2024 water year.

Sampling results obtained from LGSW-1 for the water year indicate that two instances exceeded the Volume 2C, Exhibit 7, Item 19, Table 16. A sample obtained on February 19, 2024, results for iron (0.35 mg/L) exceeded the Table 16 threshold. The Division was notified accordingly on March 11, 2024 as required by Rule 4.05.13(1)(c)(i).

A sample obtained on May 7, 2024, result for iron (0.036 mg/l) exceeded the Table 16 thresholds. The Division was notified accordingly on June 3, 2024, as required by Rule 4.05.13(1)(c)(i).

Good Spring Creek Impact Assessment

For the indicator parameters, please see Exhibit 1D, when comparing the up gradient and down gradient locations, for all the indicator parameters, NGSW is trending higher than the up-gradient wells except for iron which is stable at NGSW.

Ground water impacts are not anticipated to be affected by mining, primarily because there is not a continuous, regional ground water system within the stratigraphic section that was or is mined [Volume 1 Sections 2.04.7, 4.05.11 and Volume 12 Sections

2.04.7(1), 2.05.6(3)(b)(iii)]. As discussed in Volume 1, Section 2.04.7, TDS concentrations showed an incremental increase (pre-mine) of 40 mg/l to 50 mg/l per mile of flow for Wilson and Good Spring Creeks. This predication could be apparent within the alluvial aquifer along Good Spring Creek and TDS values found farther down gradient along Good Spring Creek. Other contributing factors to the alluvial aquifer along Good Spring Creek are a private ranching operation (not owned by Colowyo) that Good Spring Creek bisects, and possibly discharges from Colowyo's sediment ponds. The sediment ponds on Good Spring Creek that may contribute are Prospect and Section 28 Ponds. Prospect Pond discharges are intermittent and typically associated with spring runoff events when receiving stream quality is also dimished. To date, it appears Section 28 Pond has never discharged.

Taylor Creek

One ground water well, MT-95-02, has been established along Taylor Creek and represents the down gradient condition below mining activities. Monitoring started in the first quarter of 2008 and has continued through 2024. An up gradient well location is not established for Taylor Creek as mining occurs in the headwaters of the Taylor Creek watershed.

MT-95-02:

MT-95-02 Statistics	Elev to SWL ft MSL	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	6435.3	8.0	2912	2404	944	212	205	225	0.05
Std. Dev.	0.6	0.3	445	353	171	22	20	85	0.02
Range	3.4	1.4	2200	1370	1364	149	123	316	0.12
Max	6437.9	8.4	4270	3300	1400	270	270	410	0.17
Min	6434.5	7.0	2070	1930	36	121	147	94	0.05
Max at	5/3/2011	5/15/2019	5/7/2024	3/20/2024	5/7/2024	11/30/2023	11/30/2023	8/21/2023	5/7/2024
Min at	3/5/2019	10/23/2024	5/5/2010	12/10/2020	3/20/2024	11/10/2011	11/10/2011	8/13/2008	3/11/2008

MT-95-02 Water Year Review

Maximum values for lab conductivity, TDS, sulfate, and iron were recorded during 2024 at MT-95-02. Water year data for monitoring location MT-95-02 is provided in Exhibit 1C.

LWCW-1:

LWCW-1 is designated as a point of compliance well below the confluence of Taylor and Wilson Creeks. The sampling parameters for LWCW-1 can be found in Volume 2C, Exhibit 7, Item 19, Table 16.

Sampling results obtained from LWCW-1 for the water year indicate that two instances exceeded the Volume 2C, Exhibit 7, Item 19, Table 16. A sample obtained

on February 19, 2024, results for iron (2.11 mg/L) and manganese (1.19 mg/l) exceeded the Table 16 threshold. Sampling results from a May 7, 2024, sample displayed arsenic (0.0022 mg/l), iron (6.18 mg/l), selenium (0.00265 mg/l), and manganese (3.22 mg/l) exceeded the Table 16 thresholds. The Division was notified accordingly on March 11, 2024 and June 3, 2024 as required by Rule 4.05.13(1)(c)(i).

Taylor Creek Impact Assessment

A complete data set for MT-95-02 from 2008 to December of 2024 is presented on the graphs in Exhibit 1D. For the indicator parameters calcium, lab conductivity, magnesium, sodium, sulfate, and TDS are trending upward. Iron has historically trended down, but it appears to be increasing in 2024. Lab pH dipped below its projected trend. TDS values were previously elevated (above 2,000 mg/l) when monitoring commenced at this location in 2008.

Ground water impacts are not anticipated to be affected by mining, primarily because there is not a continuous, regional ground water system within the stratigraphic section that was or is mined [Volume 1 Sections 2.04.7, 4.05.11 and Volume 12 Sections 2.04.7(1), 2.05.6(3)(b)(iii)]. TDS and other indicator parameters that are trending higher at MT-95-02 can be attributed to discharges from the East Taylor Pond which are being addressed with the Colorado Department of Public Health and Environment – Water Quality Division through compliance with Colowyo's Industrial Wastewater Discharge Permit.

Gossard Loadout

One ground water well has been established along the Gossard Loadout facility. The Gossard Well is located within the rail loop facility and represents the condition of groundwater associated with the Gossard Loadout Facility. Monitoring has occurred from 1983 to 2024.

Gossard:

GOSSARD Statistics	Elevation to SWL ft MSL	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Ca mg/l	Fe mg/l	Mg mg/l	Na mg/l
Mean	6330.2	8.0	2006	1498	589	115	0.69	138	170
Std. Dev.	2.7	0.3	257	261	175	24	2.84	26	25
Range	14.0	1.8	1310	1238	1025	190	28.99	202	221
Max	6339.1	8.6	2670	2200	1030	202	29	217	240
Min	6325.1	6.8	1360	962	5	12	0.01	15	19
Max at	10/3/2000	8/19/1991	11/22/2016	9/13/2016	11/22/2016	11/10/2011	11/19/1990	3/13/2007	3/13/2007
Min at	3/28/1991	10/23/2024	3/29/1985	3/13/1993	5/20/2014	11/30/1993	11/18/1994	11/30/1993	11/30/1993

Gossard Water Year Review

No minimum or maximum values occurred in 2024 at the Gossard Well. All sampling results are tracking within analytical trends. Water year data for the Gossard Well is provided in Exhibit 1C.

Gossard Impact Assessment

A complete data set for the Gossard well from 1983 to December of 2024 is presented on the graphs in Exhibit 1D. For the indicator parameters, laboratory conductivity, calcium, sodium, magnesium, lab pH, sulfate, and TDS are all trending up. However, the last several years of sampling events indicate that all parameters have decreased with the exception of iron which is remaining steady. Groundwater level appear to have stabilized for the last several years.

Ground water impacts are not anticipated to be affected by mining, primarily because there is not a continuous, regional ground water system within the stratigraphic section that was or is mined [Volume 1 Sections 2.04.7, 4.05.11 and Volume 12 Sections 2.04.7(1), 2.05.6(3)(b)(iii)]. Indicator parameters that are trending higher at the Gossard may be attributed to the conditions described for Taylor Creek in the *Taylor Creek Impact Assessment* for Surface Water provided previously in this hydrology report.

However, it is also possible that the alluvial aquifer along Wilson Creek is increasing in available water since the mass wasting event that occurred in the spring of 1984 along the entire length Wilson Creek above and below mining including the Gossard Loadout facility. As discussed in Volume 1, Section 2.04.7, TDS concentrations showed an incremental increase (pre-mine) of 40 mg/l to 50 mg/l per mile of flow for Wilson and Good Spring Creeks. Since Wilson Creek is not impacted by mining activities the trending upward values for TDS and the major ions may be attributed to this natural phenomenon rather than impacts from mining.

Little Collom Gulch

One ground water well, MLC-04-01, has been established along Little Collom Gulch. This site represents the down gradient condition below the Collom Pit. Monitoring started in the first quarter of 2011 and has continued through 2024.
MLC-04-01:

MLC-04-01 Statistics	Elev to SWL ft MSL *	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	44.6	8.1	1100	780	249	111	64	40	0.05
Std. Dev.	5.3	0.3	400	298	124	40	25	17	0.03
Range	27.4	1.5	1309	1080	502	130	86	73	0.25
Max	50.2	8.4	1610	1280	505	161	95	78	0.25
Min	22.8	6.9	301	200	3	31	9	5	0.000
Max at	11/27/2018	3/13/2013	3/18/2014	5/24/2021	5/15/2012	5/19/2014	5/19/2014	11/27/2018	3/14/2012
Min at	3/13/2018	10/21/2024	5/13/2019	5/13/2019	3/22/2011	5/13/2019	3/22/2011	3/22/2011	9/14/2020

*Water elevation is static water level depth from the top of casing.

MLC-04-01 Water Year Review

One minimum value for lab pH occurred in 2024. All the remaining indicator parameters from sampling results in 2024 track within previously acquired analytical results. Water year data for monitoring location MLC-04-01 is provided in Exhibit 1C.

Little Collom Gulch Impact Assessment

A complete data set from March of 2011 to December of 2024 is presented on the graphs in Exhibit 1D. While reviewing this data, it needs to be noted that the mining in the Collom Pit commenced in 2018; therefore, data acquired prior to 2017 represents the background condition prior to mining occurring.

Data results are shown for the indicator parameters (Exhibit 1D) established that MLC-04-01 long-term trends appear to be on a downward trend.

Impacts to ground water in Little Collom Gulch valley fill deposits were not anticipated to occur as described in Colowyo's permit [Volume 15 Section 2.05.6(3)(b)(i & ii)]. To date, the data acquired and presented in this report (Exhibit 1C and Exhibit 1D) indicates all the indicator parameter are tracking similar to pre-mine conditions. This demonstrates that ground water impacts to the Little Collom Gulch valley fill deposits have not occurred to date as predicted.

Collom Gulch

Two ground water wells have been established along Collom Gulch. MC-04-01 is located in Collom Gulch, and this site represents the condition adjacent to the Collom Pit. MC-04-02 is located in Collom Gulch, and this site represents the down gradient condition below the Collom Pit. Monitoring at both wells commenced in the first quarter of 2011 and has continued through 2024.

MC-04-01:

MC-04-01 Statistics	Elev to SWL ft MSL *	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	24.8	8.1	886	608	173	88	57	18	0.05
Std. Dev.	4.2	0.3	137	132	53	15	11	5	0.02
Range	34.2	1.8	889	990	253	95	62	36	0.13
Max	48.8	8.5	1270	1240	308	133	80	46	0.18
Min	14.6	6.7	381	250	55	38	18	10	0.05
Max at	3/13/2018	8/21/2023	6/4/2020	6/4/2020	5/19/2014	6/4/2020	5/23/2013	6/4/2020	3/14/2012
Min at	5/9/2023	7/23/2024	9/14/2020	9/14/2020	9/14/2020	9/14/2020	9/14/2020	9/14/2020	3/22/2011

*Water elevation is static water level depth from the top of casing.

MC-04-01 Water Year Review

One minimum value for laboratory pH and no maximum values were recorded in 2024 at MC-04-01. The indicator parameters for MC-04-01 are all trending downward or stable. Water year data for monitoring location MC-04-01 is provided in Exhibit 1C.

MC-04-02:

MC-04-02 Statistics	Elev to SWL ft MSL *	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	11.5	8.1	1279	871	250	123	76	62	0.07
Std. Dev.	1.0	0.3	132	96	41	18	12	31	0.11
Range	4.5	1.5	844	630	221	72	45	147	0.77
Max	14.1	8.4	1490	1010	321	148	92	160	0.82
Min	9.6	6.9	646	380	100	76	47	13	0.05
Max at	1/12/2015	9/18/2017	8/27/2014	11/1/2012	11/1/2012	8/27/2014	8/27/2014	12/14/2021	3/14/2012
Min at	5/24/2017	10/21/2024	8/20/2018	8/20/2018	12/10/2020	12/12/2022	12/12/2022	11/27/2018	3/22/2011

*Water elevation is static water level depth from the top of casing.

MC-04-02 Water Year Review

A minimum value for laboratory pH occurred in 2024. All sampling results tracking within previous analytical results acquired, including data acquired prior to mining commencing in 2018. The indicator parameters for MC-04-02 are trending downward or have been stable. Water year data for monitoring location MC-04-02 is provided in Exhibit 1C.

Collom Gulch Impact Assessment

A complete data set from March of 2011 to December of 2024 is presented on the graphs in Exhibit 1D. The graphs provided include MC-04-01 and MC-04-02 indicator parameters together on one graph for comparisons of both monitoring locations. While reviewing this data, it needs to be noted that the mining in the Collom Pit commenced in

2018; therefore, data acquired prior to 2017 represents the background condition prior to mining occurring.

Data results as shown for the indicator parameters (Exhibit 1D) establishes that MC-04-02 historically tracks higher for most of the indicator parameters, while both monitoring locations trend similar in regard to iron and pH. Overall, all the indicator parameters from both monitoring locations tend to track consistently over time showing consistent or decreasing values over time.

Impacts to ground water in the Collom Gulch valley fill deposits were not anticipated to occur as described in Colowyo's permit [Volume 15 Section 2.05.6(3)(b)(i & ii)]. To date, the data acquired and presented in this report (Exhibit 1C and Exhibit 1D) indicates all the indicator parameter are tracking similar to pre-mine conditions with most values decreasing overall. This demonstrates that ground water impacts to the Collom Gulch valley fill deposits have not occurred to date as predicated.

Jubb Creek

Two ground water wells have been established along Jubb Creek. MJ-95-01 is located in the West Fork Jubb Creek, and this site represents the down gradient condition below the Collom Pit. MJ-95-03 is located in the Jubb Creek just downstream of the confluence of the West and East Forks of Jubb Creek, and this site represents the condition down gradient of the Collom Pit. Monitoring started in the first quarter of 2011 and has continued through 2024.

MJ-95-01:

MJ-95-01 Statistics	Elev to SWL ft MSL *	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	13.8	7.9	1285	870	245	122	94	29	0.07
Std. Dev.	3.4	0.3	80	72	35	5	5	2	0.07
Range	22.0	1.3	350	520	288	18	23	11	0.44
Max	24.3	8.3	1420	1240	320	131	110	34	0.49
Min	2.25	7.04	1070	720	32	113	87	23	0.05
Max at	11/8/2011	11/27/2018	8/27/2014	5/24/2021	5/8/2023	5/19/2014	5/8/2023	9/14/2020	7/30/2024
Min at	5/8/2023	7/30/2024	5/4/2011	9/18/2017	12/14/2021	5/24/2017	3/14/2012	5/24/2017	3/22/2011

*Water elevation is static water level depth from the top of casing.

MJ-95-01 Water Year Review

A minimum value for laboratory pH and a maximum value for iron were recorded for 2024. Indicator parameters for MJ-95-01 are trending along the same path as pre-mining conditions with all indicator parameters trending in a stable manner with a few outliers in the data set. Water year data for monitoring location MJ-95-01 is provided in Exhibit 1C.

MJ-95-03:

MJ-95-03 Statistics	Elev to SWL ft MSL *	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	20.2	8.1	2245	1811	803	147	192	141	0.06
Std. Dev.	0.9	0.2	152	82	53	8	10	11	0.03
Range	6.2	1.4	720	400	284	31	57	55	0.17
Max	22.0	8.4	2480	2000	970	161	217	166	0.22
Min	15.8	7.0	1760	1600	686	130	160	111	0.05
Max at	9/14/2022	11/27/2018	5/11/2022	7/30/2024	6/6/2024	9/14/2020	3/22/2011	3/22/2011	3/14/2012
Min at	11/8/2011	10/23/2024	5/4/2011	5/24/2017	11/8/2011	3/24/2022	3/24/2022	12/10/2020	3/22/2011

*Water elevation is static water level depth from the top of casing.

MJ-95-03 Water Year Review

A minimum value for laboratory pH and two maximum values for TDS and sulfate occurred in 2024 at MJ-95-03. Indicator parameters for MJ-95-03 are trending along the same path as pre-mining conditions with all indicator parameters trending in a stable manner.. Water year data for monitoring location MJ-95-03 is provided in Exhibit 1C.

Jubb Creek Impact Assessment

A complete data set from March of 2011 to December of 2024 is presented on the graphs in Exhibit 1D. The graphs provided include MJ-95-01 and MJ-95-03 indicator parameters together on one graph for comparisons of both monitoring locations. While reviewing this data, it needs to be noted that the Jubb Creek Haul Road disturbance commenced in 2017, and mining in the Collom Pit commenced in 2018; therefore, data acquired prior to 2017 represents the background condition prior to mining occurring.

Data results as shown for the indicator parameters (Exhibit 1D), establishes that MJ-95-03 historically tracks higher for all indicator parameters, while both monitoring locations trend similar regarding iron. Overall, all the indicator parameters from both monitoring locations tend to track consistently over time.

Potential mining impacts to Jubb Creek as described in Colowyo's permit were not anticipated to be statistically significant [Volume 15 Section 2.05.6(3)(b)(i & ii)]. To date, the data acquired and presented in this report indicates all the indicator parameter are tracking similar to pre-mine conditions, which indicates that ground water impacts within the Jubb Creek watershed are being minimized.

Trout Creek Sandstone Aquifer

One deep ground water well has been established into the Trout Creek Sandstone and is located on the northeastern edge of the Collom Pit. This well represents the regional aquifer condition of the Trout Creek Sandstone aquifer. Monitoring started in the first quarter of 2017 and has continued through 2024.

Trout Creek Well:

Trout Creek Well Statistics	Elev to SWL ft MSL *	Lab pH S.U.	Lab Conduct umho/cm	TDS -180 mg/l	Sulfate mg/l	Calcium mg/l	Magnesium mg/l	Sodium mg/l	Fe mg/l
Mean	588.3	9.3	1102	696	230	5	18	222	0.07
Std. Dev.	1.8	0.2	48	28	23	3	6	20	0.03
Range	5.6	0.9	228	140	109	12	28	80	0.17
Max	591.0	9.5	1220	800	309	16	38	260	0.22
Min	585.4	8.6	992	660	200	4	10	180	0.05
Max at	9/18/2017	8/20/2018	3/15/2017	3/15/2017	3/15/2017	3/15/2017	3/15/2017	6/6/2023	3/13/2018
Min at	6/6/2024	3/6/2019	9/14/2022	3/9/2020	3/29/2023	10/23/2024	10/23/2024	11/29/2017	3/15/2017

*Water elevation is static water level depth from the top of casing.

Trout Creek Well Water Year Review

Two minimum values for calcium and water elevation occurred in 2024 at the Trout Creek Well, and no maximum values occurred. All other indicator parameters tracked within previous analytical results. Water year data for the Trout Creek well is provided in Exhibit 1C.

Trout Creek Well Impact Assessment

A complete data set from the first quarter of 2017 to December of 2024 is presented on the graphs in Exhibit 1D. Impacts to Trout Creek Sandstone aquifer were not anticipated to occur as described in Colowyo's permit [Volume 15 Section 2.05.6(3)(b)(i & ii)]. To date, the data acquired and presented in this report indicates all the indicator parameter are tracking similar to pre-mine conditions (in this case only data from 2017), which demonstrates that ground water impacts to the Trout Creek Sandstone aquifer have not occurred to date as predicated.

SPOIL SPRING DEVELOPMENT

Several springs have been identified on the reclaimed surface at the Colowyo Mine. These springs are the result of groundwater movement from groundwater complexes that were present pre-mining, whose waters pass through regraded overburden subsurface from the highwall (non-mined areas) and emerge at a location down gradient in the

reclaimed surface. Colowyo has detected three springs that originate from non-mined areas in the highwall and percolate through the regraded spoil and emerge on the reclaimed surface. One spring is located just south of the East Taylor Pond in reclamation parcel WP014. Two additional springs have been located in the East Pit reclamation parcel EP057, south of the Final East Pit Ditch where the final highwall was regraded to PMT.

Exhibit 1A

Surface Water Data

Water Year January 1, 2024, to December 31, 2024

Colowyo Mine
Site - LGSC
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	2/19/2024	**5/7/2024**	**7/30/2024**	**10/21/2024**
As, tot rec, ug/L	0.67	0.8	0.98	0.87
Ca, diss, mg/L	170	120	160	160
Fe, tot, mg/L	0.34	1.2	0.67	0.56
FlowStreamInst, cfs	9.11	18.6	7.91	7.15
HCO3, mg/L	560	360	530	540
Hg, tot rec, ug/L	<0.20	<0.20	<0.20	<0.02
Mg, diss, mg/L	170	100	170	180
Mn, tot rec, ug/L	150	110	140	170
Na, diss, mg/L	170	74	190	190
NH3 as N, diss, mg/L	<0.1	<0.10	<0.10	<0.0
NO2 + NO3, diss, mg/L	2.1	1.7	1.6	1.3
NO2, diss, mg/L	<0.01	<0.01	<0.01	1.3
NO3, diss, mg/L	2.1	<0.010	<0.010	<0.01
P, tot, mg/L	<0.1	<0.10	<0.10	<0.2
Pb, tot rec, ug/L	0.019	0.99	0.59	0.32
pH (field), SU	8.2	8.48	8.1	8.2
pH (lab), pH	8.1	8.2	7.8	7.4
Se, tot rec, mg/L	7.3	4.6	7	7.4
SO4, diss, mg/L	840	490	920	1100
Spec. Cond. (field), umhos/cm	2490	1028	3650	2550
Spec. Cond. (lab), umhos/cm	2090	1510	2310	2550
TDS, mg/L	1800	1100	1900	2100
Temp (Celcius), degrees C	5.3	6.9	16.5	9
TSS, mg/L	14	38	23	14
Zn, tot rec, mg/L	<0.02	<0.02	<0.02	<0.02

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Site - NUGSC
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	2/20/2024	**5/7/2024**	**7/23/2024**	**10/21/2024**
As, tot rec, ug/L	0.48	2.3	0.94	0.72
Ca, diss, mg/L	130	93	110	120
Fe, tot, mg/L	0.27	6.3	1	0.55
HCO3, mg/L	380	300	390	380
FlowStreamInst, cfs	1.45	14.92	1.31	2.34
Hg, tot, ug/L	<0.20	0.2	<0.20	<0.20
Mg, diss, mg/L	150	66	110	120
Mn, tot rec, ug/L	30	240	76	25
Na, diss, mg/L	30	26	45	47
NH3 as N, diss, mg/L	<0.10	0.1	<0.10	<0.10
NO2 + NO3, diss, mg/L	7.2	1.5	3.2	3
NO2, diss, mg/L	<0.010	<0.010	0.014	3
NO3, diss, mg/L	7.2	0.01	3.2	3.04
P, tot, mg/L	<0.10	0.37	<0.10	<0.10
Pb, tot rec, ug/L	0.27	6.1	1.1	0.54
pH (field), SU	8.57	8.56	8.28	8.3
pH (lab), pH	8.3	8.1	7.8	7.4
Se, tot rec, mg/L	21	5.1	12	12
SO4, diss, mg/L	650	230	450	510
Spec. Cond. (field), umhos/cm	1681	5240	1460	1532
Spec. Cond. (lab), umhos/cm	1610	1010	1470	1560
TDS, mg/L	1200	670	1100	1200
Temp (Celcius), degrees C	3.9	7.8	18.9	10
TSS, mg/L	15	430	97	24
Zn, tot rec, mg/L	<40	36	<20	<20

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Site - UWFGSC
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/21/2024**
As, tot rec, ug/L	Frozen	1.6	1.2	0.44
Ca, diss, mg/L		68	89	85
Fe, tot, mg/L		4	2	0.096
FlowStreamInst, cfs		1.3	0.02	0.28
HCO3, mg/L		280	320	300
Hg, tot rec, ug/L		<0.20	<0.20	<0.20
Mg, diss, mg/L		40	69	65
Mn, tot rec, mg/L		120	82	<0.01
Na, diss, mg/L		5.5	9.2	8
NH3 as N, diss, mg/L		<0.10	<0.10	<0.10
NO2 + NO3, diss, mg/L		1.3	1.7	1.4
NO2, diss, mg/L		<0.010	0.021	1.4
NO3, diss, mg/L		1.3	1.7	1.41
P, tot, mg/L		0.27	0.17	<0.1
Pb, tot rec, ug/L		3.4	2	0.12
pH (field), SU		8.63	8.58	8.5
pH (lab), pH		8	6.6	7.2
Se, tot rec, mg/L		3.5	5.9	5.2
SO4, diss, mg/L		120	180	200
Spec. Cond. (field), umhos/cm		651	884	912
Spec. Cond. (lab), umhos/cm		629	910	886
TDS, mg/L		450	600	580
Temp (Celcius), degrees C		20.7	16.6	7.6
TSS, mg/L		320	98	5
Zn, tot rec, mg/L		<0.02	<0.02	<0.02

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Site - LTC
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	2/20/2024	**5/7/2024**	**7/23/2024**	**10/21/2024**
As, tot rec, mg/L	Frozen	0.69	1.1	8.9
Ca, diss, mg/L		130	88	81
Fe, tot, mg/L		0.24	0.16	21
FlowStreamInst, cfs		1.33	0.49	1.16
HCO3, mg/L		420	300	370
Hg, tot rec, mg/L		<0.20	<0.20	<0.0
Mg, diss, mg/L		170	180	110
Mn, tot rec, mg/L		<0.02	<0.02	480
Na, diss, mg/L		440	610	390
NH3 as N, diss, mg/L		<0.10	<0.10	<0.0
NO2 + NO3, diss, mg/L		0.38	<0.020	0.54
NO2, diss, mg/L		0.01	<0.010	0.54
NO3, diss, mg/L		0.01	<0.020	<0.0
P, tot, mg/L		0.2	<0.10	0.82
Pb, tot rec, mg/L		0.27	3.5	23
pH (field)		8.21	8.67	8.5
pH (lab)		8.3	8.3	7.3
Se, tot rec, mg/L		1.3	0.7	2.2
SO4, diss, mg/L		1400	1600	940
Spec. Cond. (field), umhos/cm		1493	6000	4360
Spec. Cond. (lab), umhos/cm		3470	3990	2830
TDS, mg/L		2600	3000	2000
Temp (Celcius), degrees C		5.9	17.3	7.2
TSS, mg/L		13	<5.0	700
Zn, tot rec, mg/L		<0.04	<0.04	<0.04

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Site - CJC
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	3/20/2024	**6/6/2024**	**7/30/2024**	**10/23/2024**
As, tot rec, mg/L	0.52	1.1	0.69	0.68
Ca, diss, mg/L	160	160	180	170
Fe, tot, mg/L	0.24	1.2	0.22	0.55
FlowStreamInst, cfs	0.1	0.12	0.12	0.09
HCO3, mg/L	570	600	610	620
Hg, tot rec, ug/L	<0.20	<0.20	<0.20	<0.20
Mg, diss, mg/L	180	200	210	210
Mn, tot rec, mg/L	120	220	67	99
Na, diss, mg/L	140	150	160	150
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO2 + NO3, diss, mg/L	0.084	0.28	0.097	0.088
NO2, diss, mg/L	<0.010	<0.010	<0.01	<0.010
NO3, diss, mg/L	0.084	0.28	<0.010	0.088
P, tot, mg/L	<0.10	<0.10	<0.20	<0.10
Pb, tot rec, mg/L	0.14	0.65	<0.20	0.37
pH (field)	8.19	8.16	8.16	7.7
pH (lab)	8.1	7.9	7.7	7.6
Se, tot rec, mg/L	2.6	1.6	1.6	1.1
SO4, diss, mg/L	860	1100	960	930
Spec. Cond. (field), umhos/cm	4520	3860	3860	2570
Spec. Cond. (lab), umhos/cm	2520	2360	2500	2480
TDS, mg/L	1900	2000	2100	1900
Temp (Celcius), degrees C	4.7	9.4	12.7	7.2
TSS, mg/L	5	54	<5.0	8
Zn, tot rec, mg/L	<0.02	<0.02	<0.02	<0.02

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Site - WFJC
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	3/20/2024	**6/6/2024**	**7/30/2024**	**10/23/2024**
As, tot rec, mg/L	1.5	0.69	1.5	1.5
Ca, diss, mg/L	130	120	130	150
Fe, tot, mg/L	3.8	1.03	4	3.7
FlowStreamInst, cfs	0.0323	0.17	0.06	0.0095
HCO3, mg/L	410	350	410	440
Hg, tot rec, ug/L	<0.20	<0.20	<0.20	<0.20
Mg, diss, mg/L	95	88	98	100
Mn, tot rec, mg/L	240	61	240	360
Na, diss, mg/L	16	13	15	19
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO2 + NO3, diss, mg/L	1.3	0.82	0.37	0.39
NO2, diss, mg/L	<0.010	<0.010		<0.010
NO3, diss, mg/L	1.3	0.82	<0.010	0.39
P, tot, mg/L	0.23	<0.10	0.24	0.22
Pb, tot rec, mg/L	4.3	0.99	3.7	3.6
pH (field)	8.2	8.16		8
pH (lab)	8.1	8	7.4	7.5
Se, tot rec, mg/L	12	13	10	9.5
SO4, diss, mg/L	370	370	350	310
Spec. Cond. (field), umhos/cm	1306	12.31		1358
Spec. Cond. (lab), umhos/cm	1320	1190	1240	1310
TDS, mg/L	900	860	920	930
Temp (Celcius), degrees C	8.1	9.4		5.9
TSS, mg/L	180	66	340	49
Zn, tot rec, mg/L	0.029	<0.02	0.023	<0.02

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Site - LCG
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/21/2024**
As, tot rec, ug/L	0.59	1.1	0.72	0.74
Ca, diss, mg/L	120	98	110	120
Fe, tot, mg/L	0.75	1.8	0.41	0.34
FlowStreamInst, cfs	0.22	1.07	0.27	0.1
HCO3, mg/L	390	390	390	410
Hg, tot rec, ug/L	<0.20	<0.20	<0.20	<0.20
Mg, diss, mg/L	79	61	68	75
Mn, tot rec, mg/L	310	260	390	290
Na, diss, mg/L	33	24	29	34
NH3 as N, diss, mg/L	0.1	<0.10	<0.10	<0.1
NO2 + NO3, diss, mg/L	0.93	0.59	0.27	0.3
NO2, diss, mg/L	<0.010	0.031	<0.010	0.3
NO3, diss, mg/L	0.93	0.56	0.27	<0.1
P, tot, mg/L	<0.10	0.11	<0.10	<0.1
Pb, tot rec, ug/L	0.32	1.2	0.12	0.23
pH (field)	8.37	8.15	8.19	8.3
pH (lab)	8.2	7.8	7.7	7.2
Se, tot rec, mg/L	3.9	2.9	1.7	2.4
SO4, diss, mg/L	280	200	180	280
Spec. Cond. (field), umhos/cm	1222	994	1089	1173
Spec. Cond. (lab), umhos/cm	1160	964	1100	1170
TDS, mg/L	800	660	710	800
Temp (Celcius), degrees C	6	14.9	11.7	7.5
TSS, mg/L	24	98	9	15
Zn, tot rec, mg/L	<0.02	<0.02	<0.02	<0.02

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Site - UCG
Water Year 1/1/2024 - 12/31/2024

	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/21/2024**
As, tot rec, mg/L	Frozen	1.3	0.98	0.77
Ca, diss, mg/L		60	68	51
Fe, tot, mg/L		2.8	1.5	1
FlowStreamInst, cfs		0.22	0.01	0.01
HCO3, mg/L		260	140	220
Hg, tot rec, ug/L		<0.20	<0.20	<0.0
Mg, diss, mg/L		30	41	26
Mn, tot rec, mg/L		74	46	<0.0
Na, diss, mg/L		8.7	11	8.4
NH3 as N, diss, mg/L		0.86	<0.10	<0.0
NO2 + NO3, diss, mg/L		1.1	0.72	0.1
NO2, diss, mg/L		0.12	0.013	0.1
NO3, diss, mg/L		0.93	0.71	<0.0
P, tot, mg/L		0.29	0.14	0.13
Pb, tot rec, mg/L		2.4	1.4	1
pH (field)		8.58	8.67	8.4
pH (lab)		7.9	8.4	6.9
Se, tot rec, mg/L		2.2	1.8	0.9
SO4, diss, mg/L		75	94	65
Spec. Cond. (field), umhos/cm		561	641	534
Spec. Cond. (lab), umhos/cm		541	663	514
TDS, mg/L		340	830	340
Temp (Celcius), degrees C		16.5	14.2	5.2
TSS, mg/L		230	92	28
Zn, tot rec, mg/L		<0.02	<0.02	<0.02

< = Analytical Result was not detected at the reporting limit

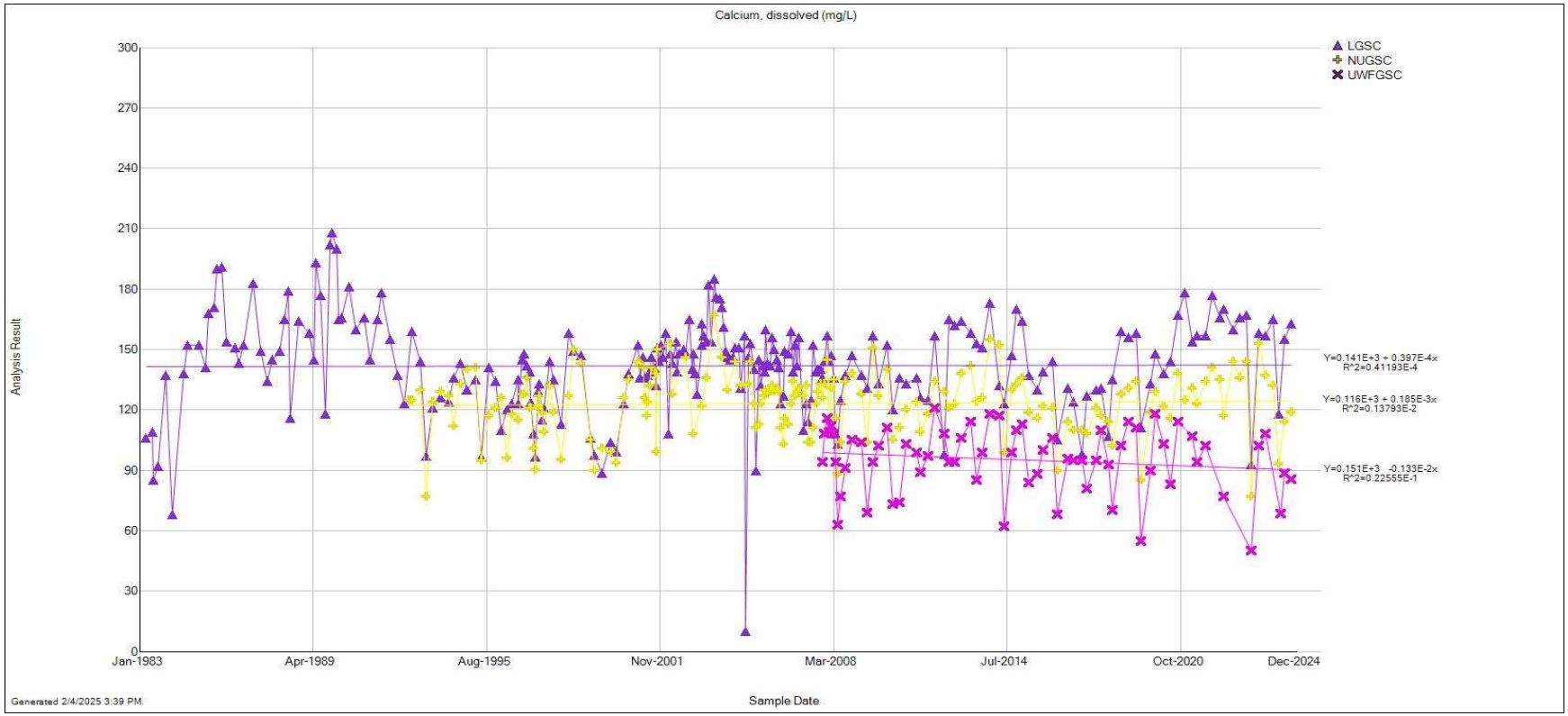
Colowyo Mine
Site - LLCG
Water Year 1/1/2024 - 12/31/2024

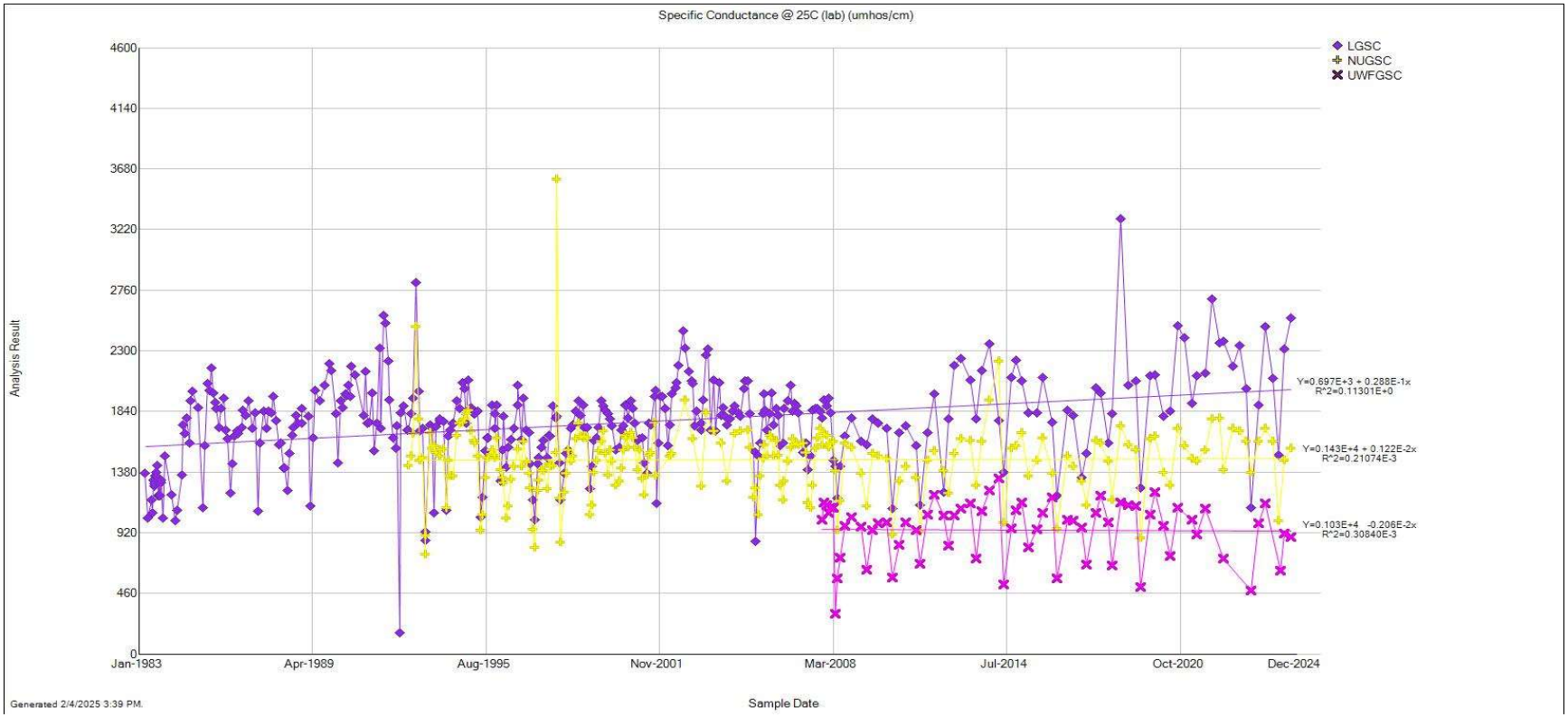
	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/23/2024**
As, tot rec, mg/L	Frozen	0.77	0.75	Dry
Ca, diss, mg/L		140	140	
Fe, tot, mg/L		0.067	<0.060	
FlowStreamInst, cfs		0.01	0.04	
HCO3, mg/L		430	410	
Hg, tot rec, ug/L		<0.20	<0.20	
Mg, diss, mg/L		100	106	
Mn, tot rec, mg/L		<0.01	<0.01	
Na, diss, mg/L		73	76	
NH3 as N, diss, mg/L		<0.10	<0.10	
NO2 + NO3, diss, mg/L		0.025	0.035	
NO2, diss, mg/L		<0.010	<0.010	
NO3, diss, mg/L		0.025	0.035	
P, tot, mg/L		<0.10	<0.10	
Pb, tot rec, mg/L		0.12	0.13	
pH (field)		8.31	8.08	
pH (lab)		7.7	7.2	
Se, tot rec, mg/L		2.3	1.8	
SO4, diss, mg/L		520	500	
Spec. Cond. (field), umhos/cm		1620	1644	
Spec. Cond. (lab), umhos/cm		1550	1660	
TDS, mg/L		1100	1200	
Temp (Celcius), degrees C		17.9	12.4	
TSS, mg/L		10	<5.0	
Zn, tot rec, mg/L		<0.02	<0.02	

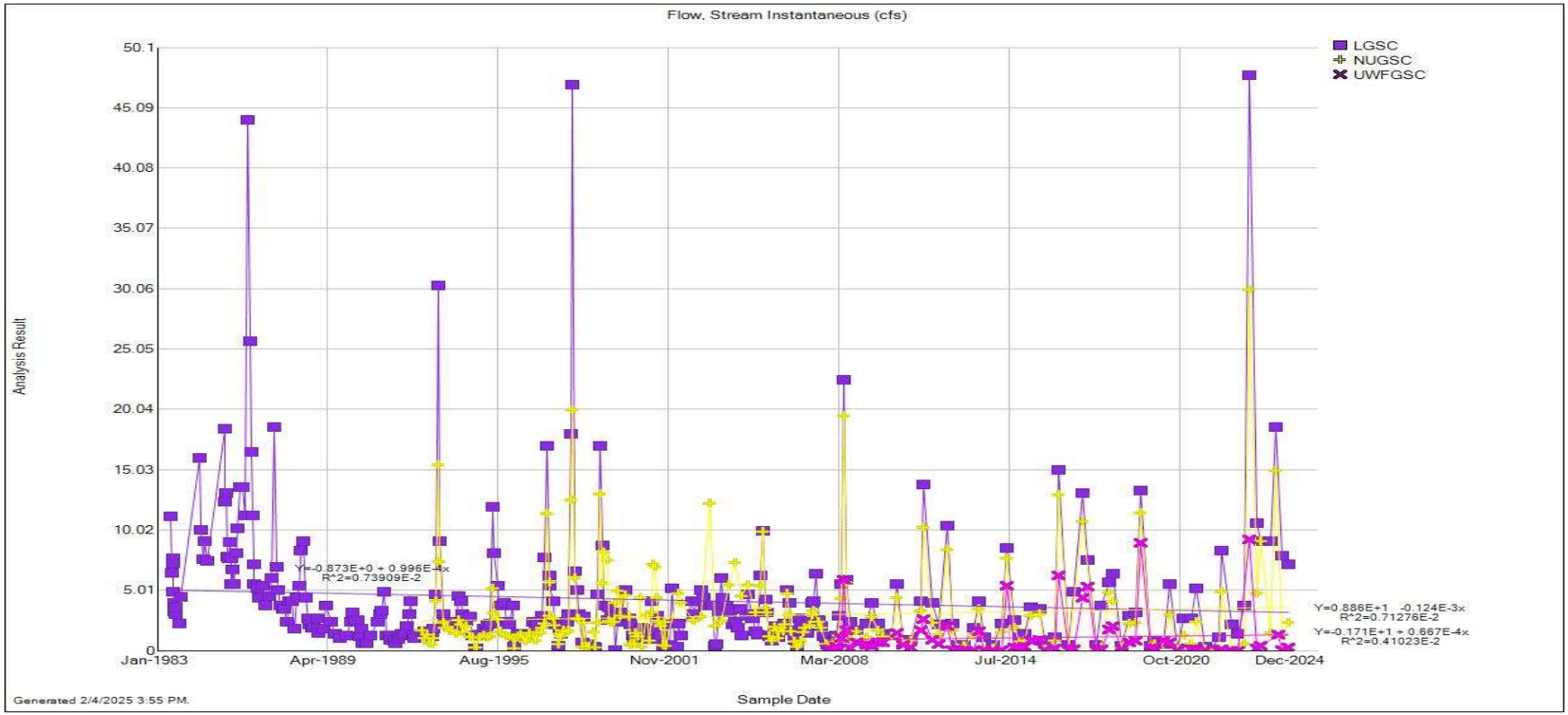
< = Analytical Result was not detected at the reporting limit

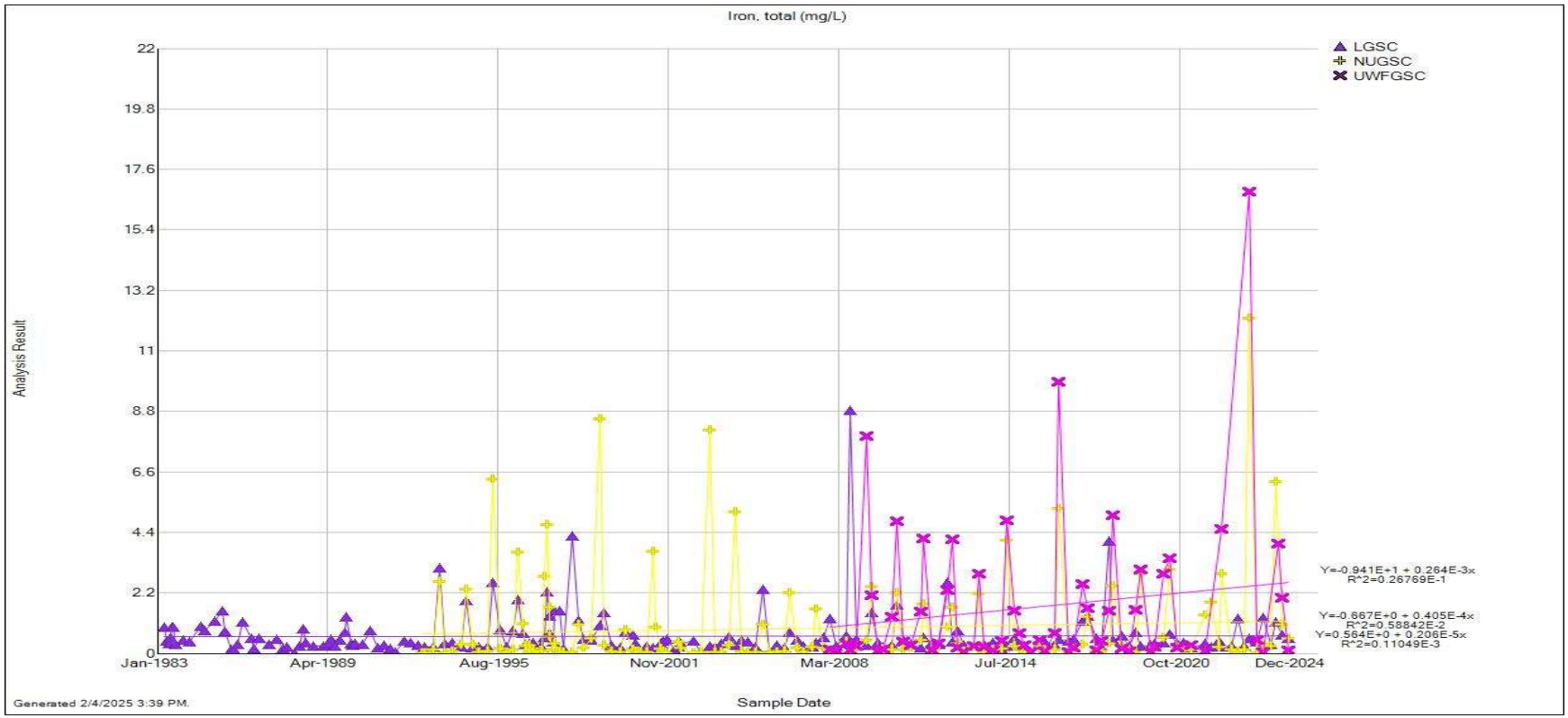
Exhibit 1B

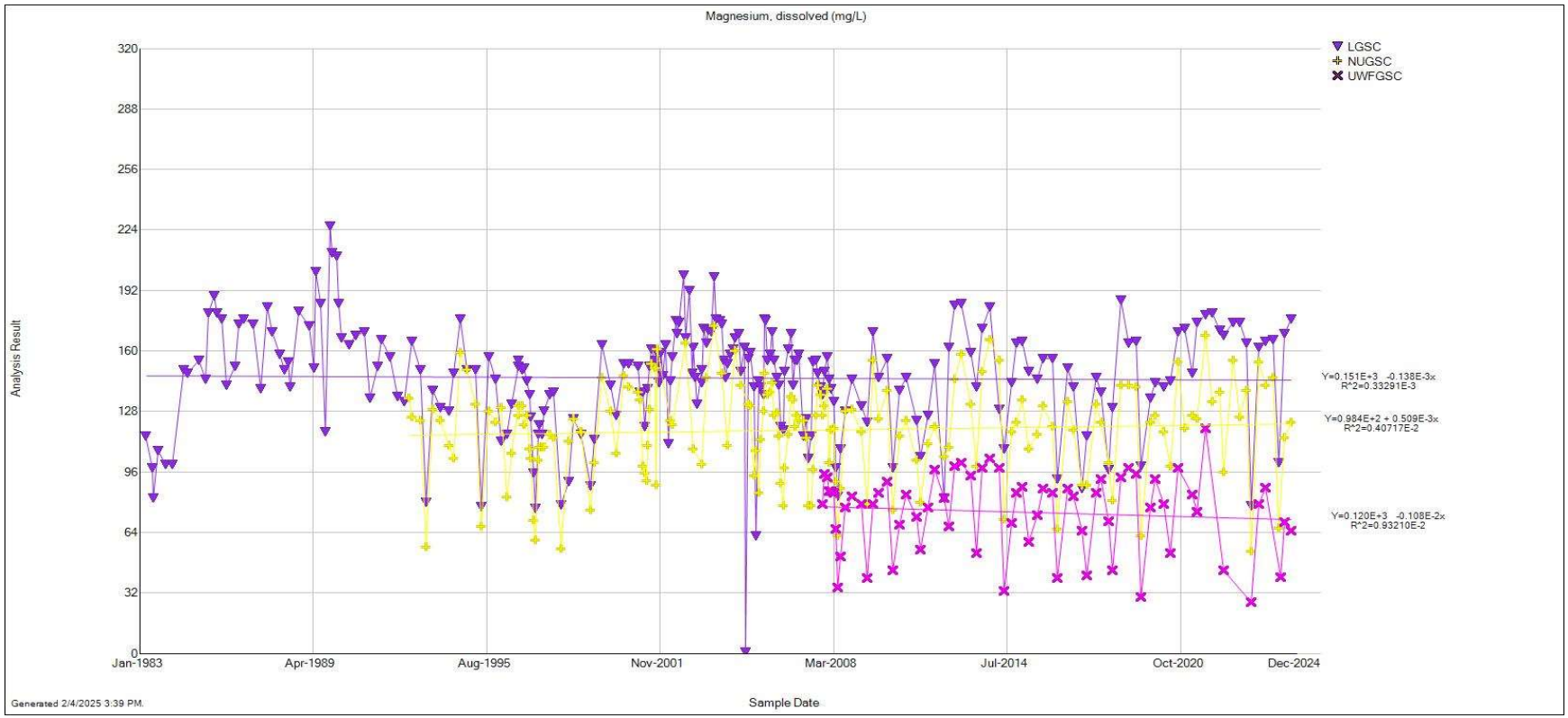
Surface Water Graphs

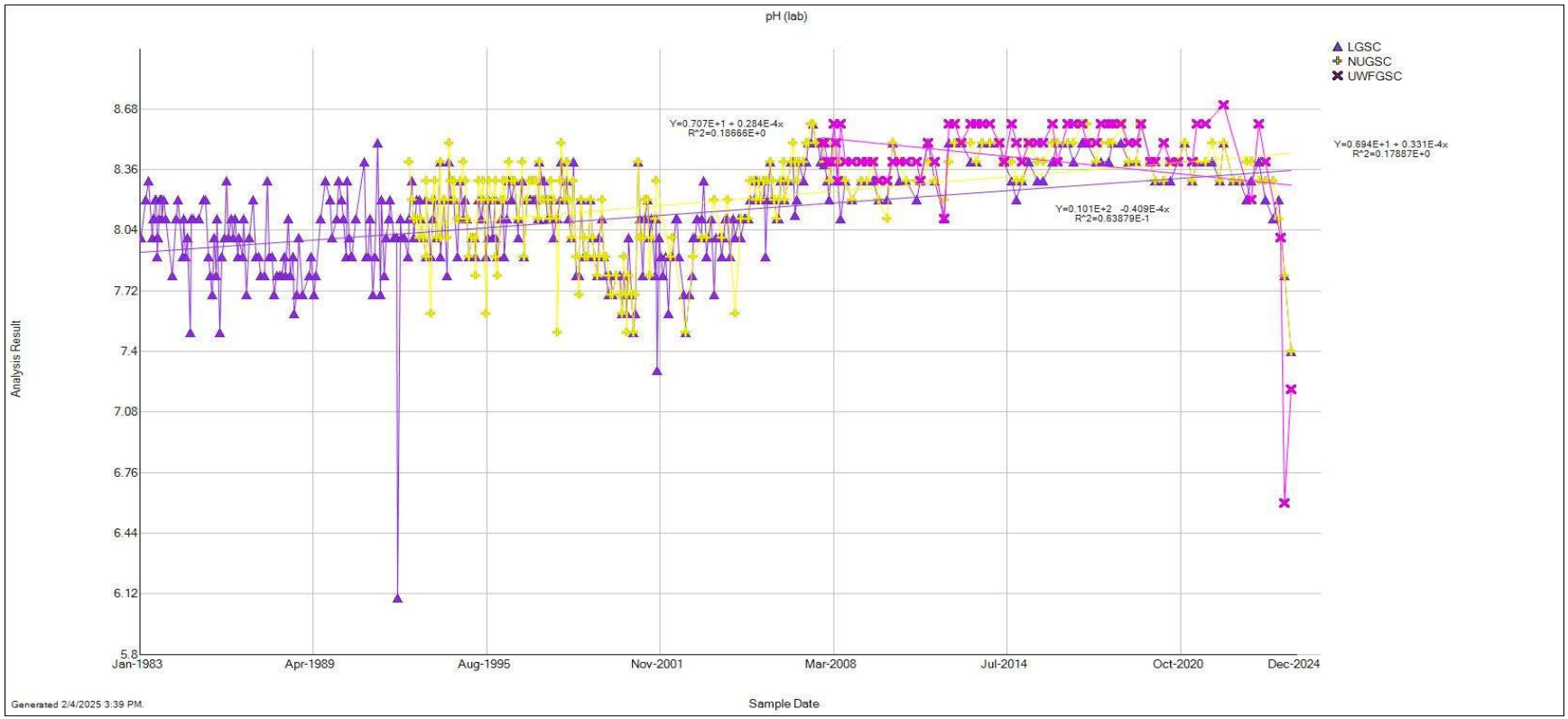

Calcium, dissolved (mg/L)
LGSC
NUGSC
UWFGSC
Analysis Result
300
270
240
210
180
150
120
90
60
30
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=0.141E+3 + 0.397E-4x
R^2=0.41193E-4
Y=0.116E+3 + 0.185E-3x
R^2=0.13793E-2
Y=0.151E+3 -0.133E-2x
R^2=0.22555E-1
Generated 2/4/2025 3:39 PM.
Sample Date

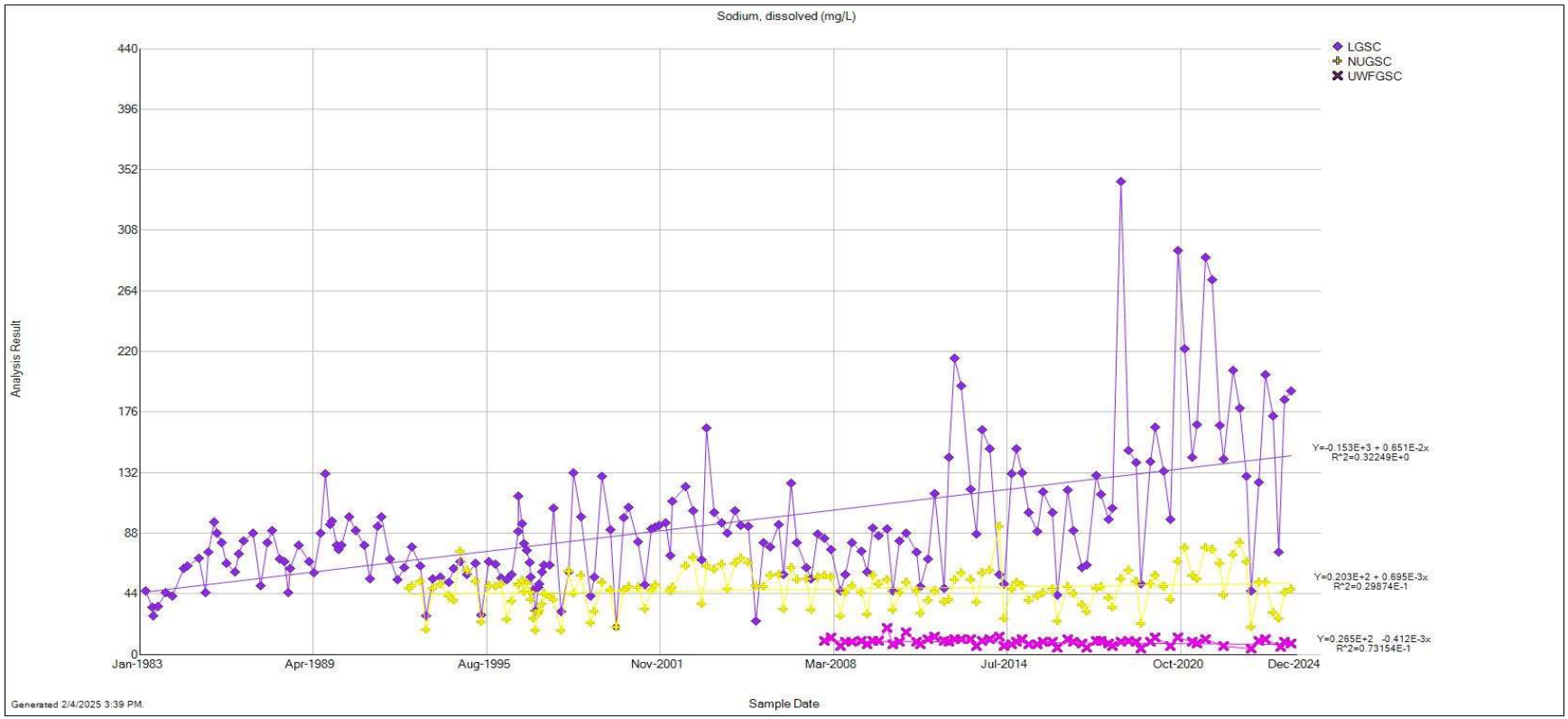

Specific Conductance @ 25C (lab) (umhos/cm)
LGSC
NUGSC
UWFGSC
Analysis Result
4600
4140
3680
3220
2760
2300
1840
1380
920
460
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Y=0.697E+3 + 0.288E-1x
R^2=0.11301E+0
Y=0.143E+4 + 0.122E-2x
R^2=0.21074E-3
Y=0.103E+4 -0.206E-2x
R^2=0.30840E-3
Generated 2/4/2025 3:39 PM.

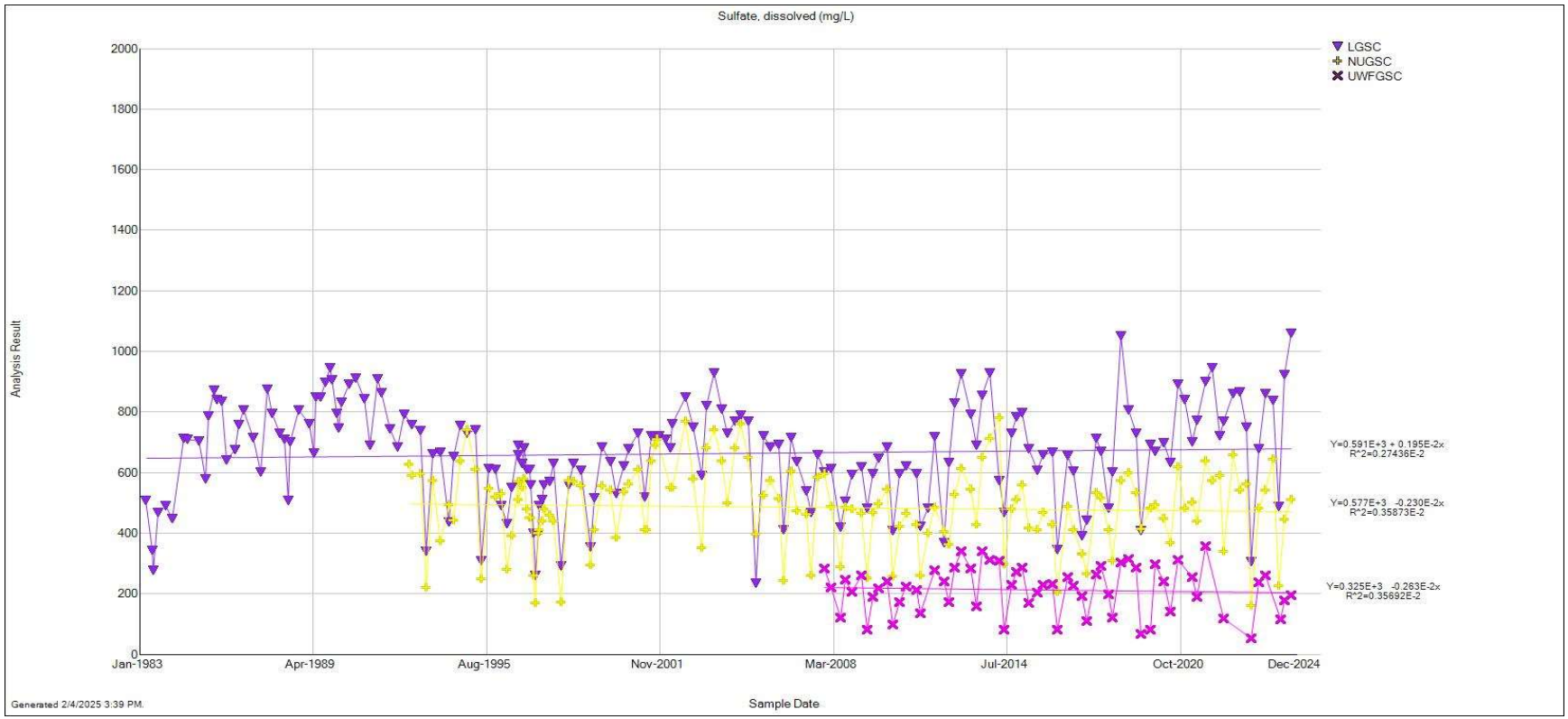

Flow, Stream Instantaneous (cfs)
LGSC
NUGSC
UWFGSC
Analysis Result
50.1
45.09
40.08
35.07
30.06
25.05
20.04
15.03
10.02
5.01
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=-0.873E+0 + 0.996E-4x
R^2=0.73909E-2
Y=0.886E+1 -0.124E-3x
R^2=0.71276E-2
Y=-0.171E+1 + 0.667E-4x
R^2=0.41023E-2
Generated 2/4/2025 3:55 PM.
Sample Date

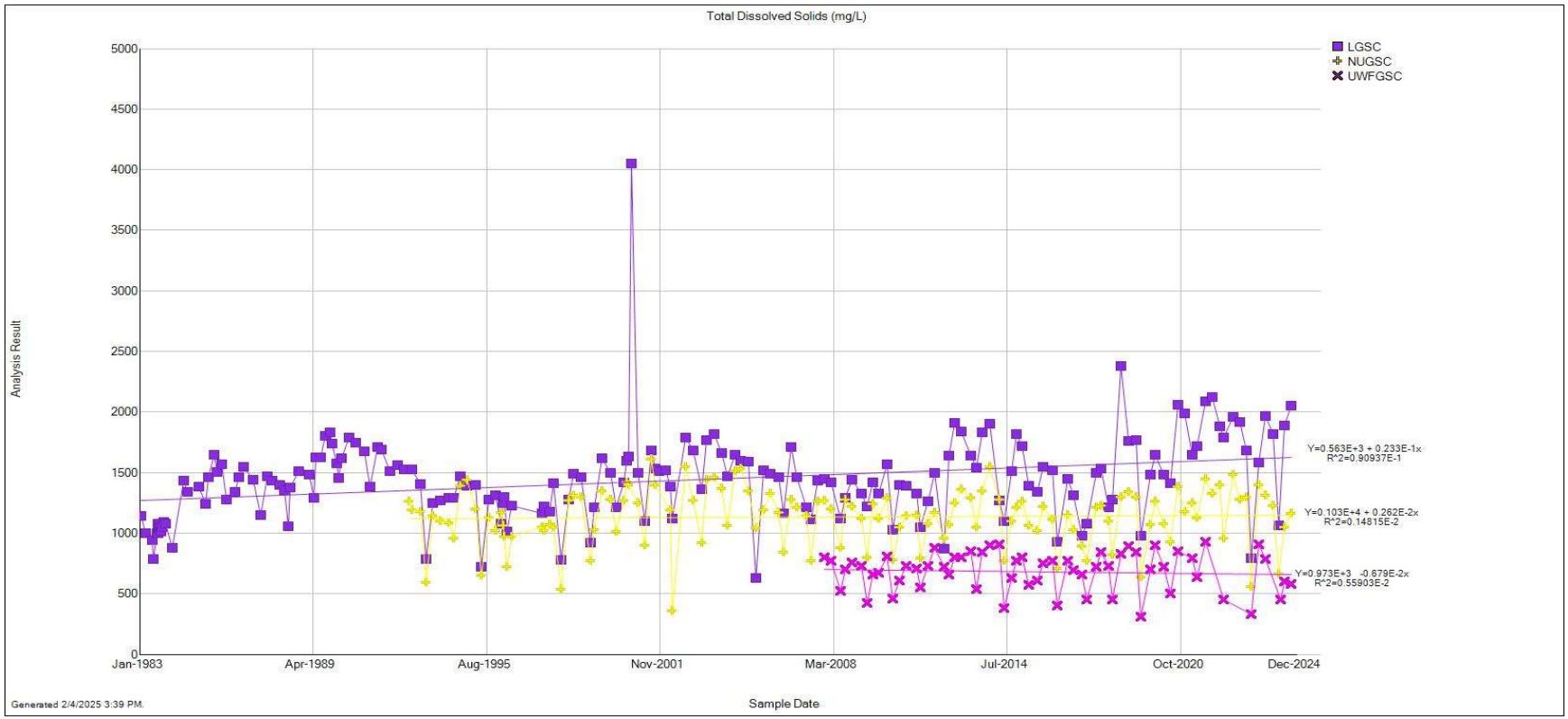

Iron, total (mg/L)
LGSC
NUGSC
UWFGSC
Analysis Result
22
19.8
17.6
15.4
13.2
11
8.8
6.6
4.4
2.2
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=-0.941E+1 + 0.264E-3x
R^2=0.26769E-1
Y=-0.667E+0 + 0.405E-4x
R^2=0.58842E-2
Y=0.564E+0 + 0.206E-5x
R^2=0.11049E-3
Generated 2/4/2025 3:39 PM.
Sample Date

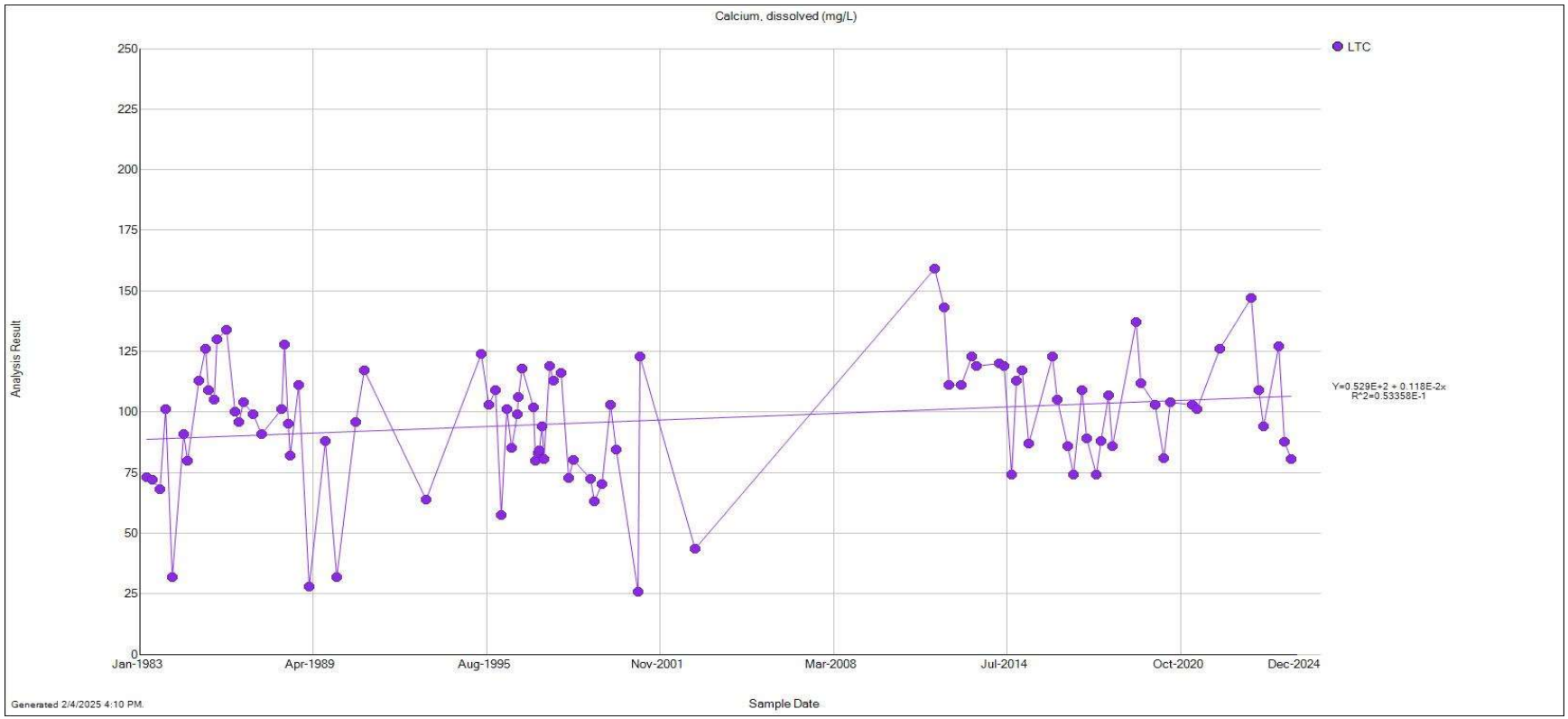

Magnesium, dissolved (mg/L)
LGSC
NUGSC
UWFGSC
Analysis Result
320
288
256
224
192
160
128
96
64
32
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=0.151E+3 -0.138E-3x
R^2=0.33291E-3
Y=0.984E+2 + 0.509E-3x
R^2=0.40717E-2
Y=0.120E+3 -0.108E-2x
R^2=0.93210E-2
Generated 2/4/2025 3:39 PM.
Sample Date

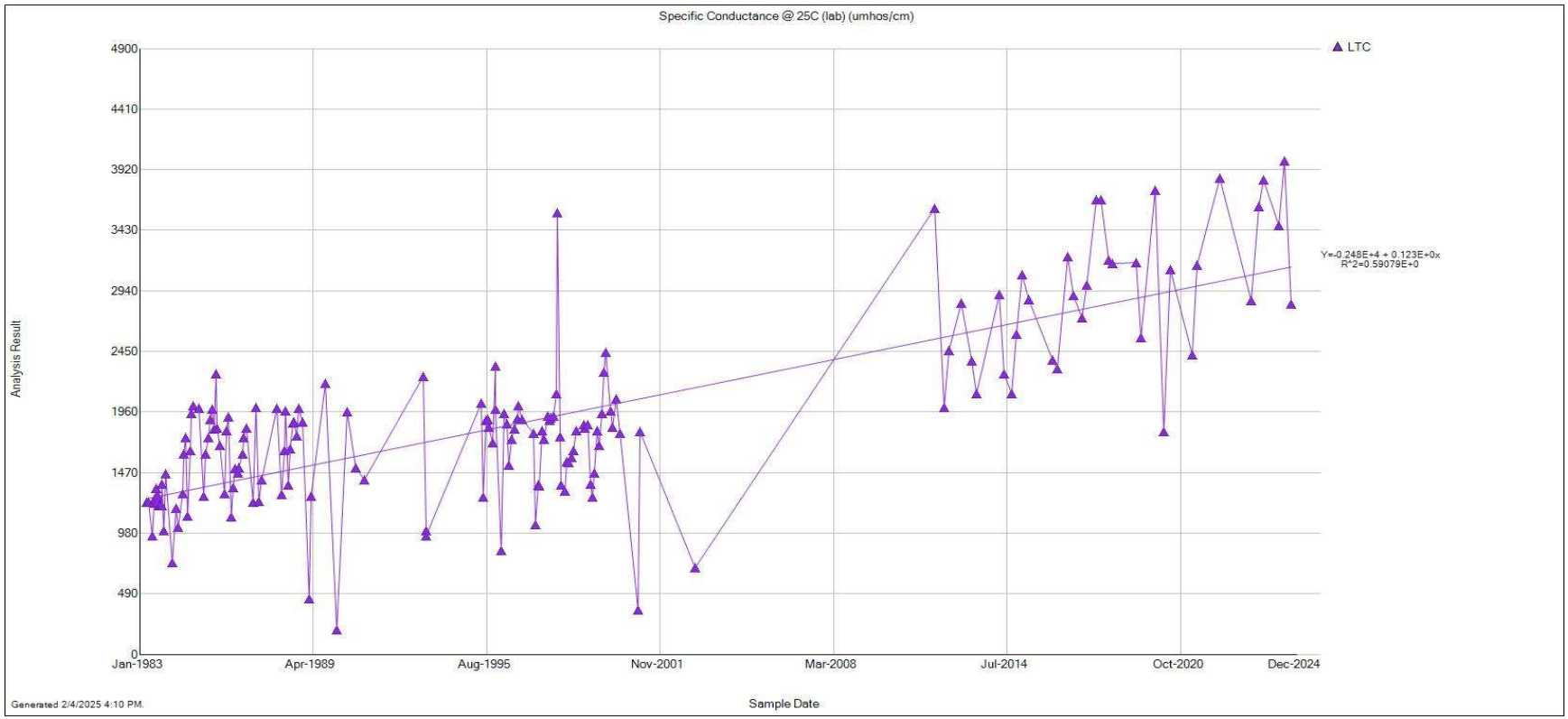

pH (lab)
LGSC
NUGSC
UWFGSC
Y=0.707E+1 + 0.284E-4x
R^2=0.18666E+0
Y=0.694E+1 + 0.331E-4x
R^2=0.17887E+0
Y=0.101E+2 -0.409E-4x
R^2=0.63879E-1
8.68
8.36
8.04
7.72
7.4
7.08
6.76
6.44
6.12
5.8
Analysis Result
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 3:39 PM.

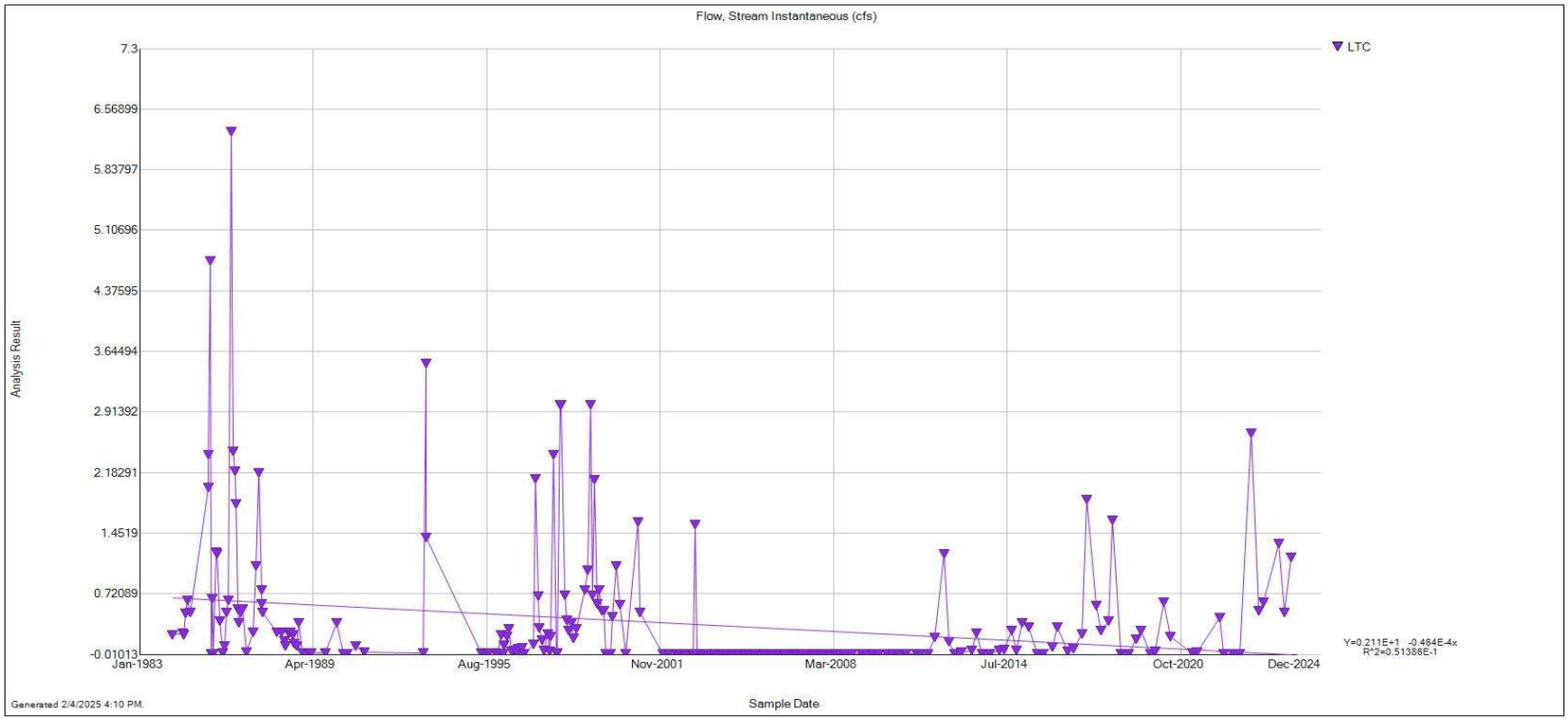

Sodium, dissolved (mg/L)
LGSC
NUGSC
UWFGSC
Analysis Result
440
396
352
308
264
220
176
132
88
44
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=-0.153E+3 + 0.651E-2x
R^2=0.32249E+0
Y=0.203E+2 + 0.695E-3x
R^2=0.29874E-1
Y=0.265E+2 -0.412E-3x
R^2=0.73154E-1
Generated 2/4/2025 3:39 PM.
Sample Date

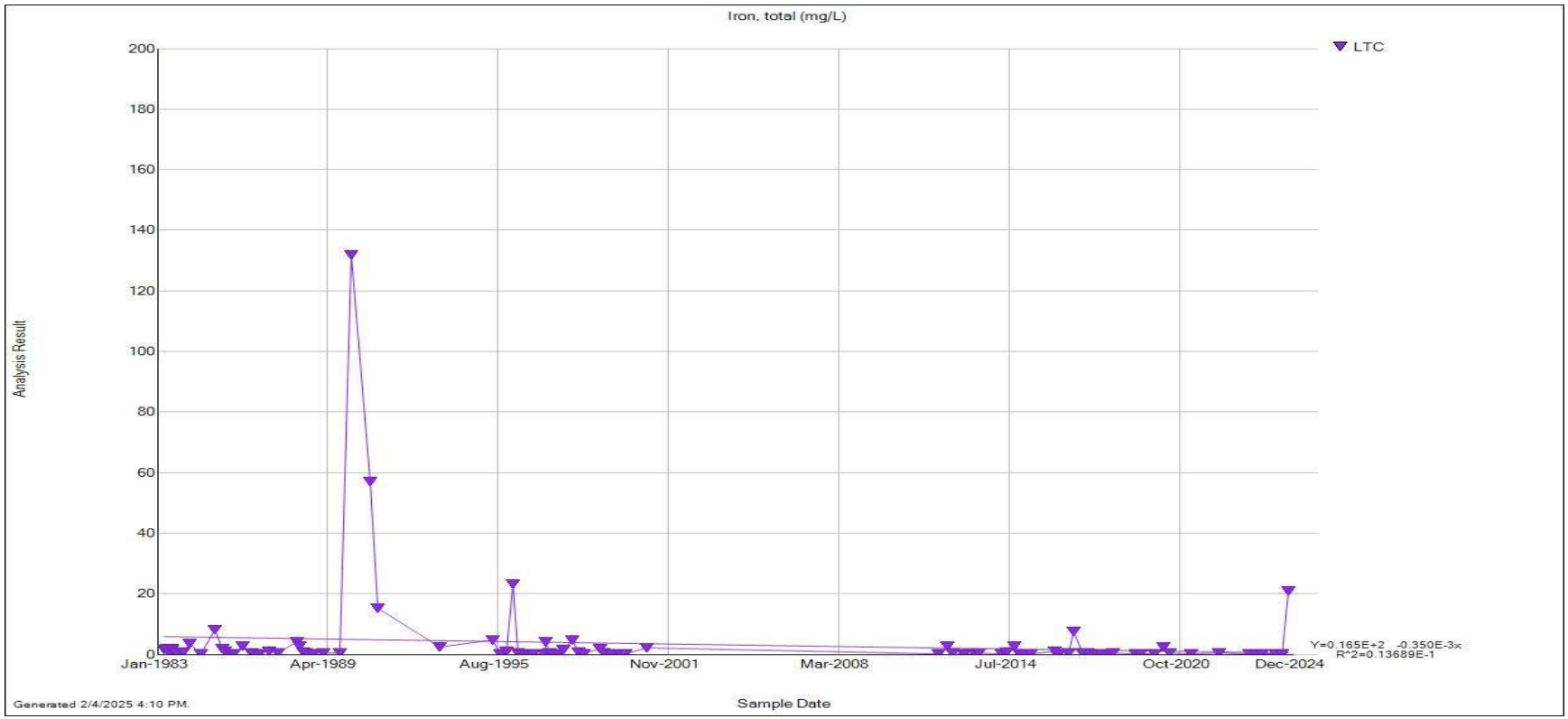

Sulfate, dissolved (mg/L)
LGSC
NUGSC
UWFGSC
Y=0.591E+3 + 0.195E-2x
R^2=0.27436E-2
Y=0.577E+3 -0.230E-2x
R^2=0.35873E-2
Y=0.325E+3 -0.263E-2x
R^2=0.35692E-2
Analysis Result
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 3:39 PM.

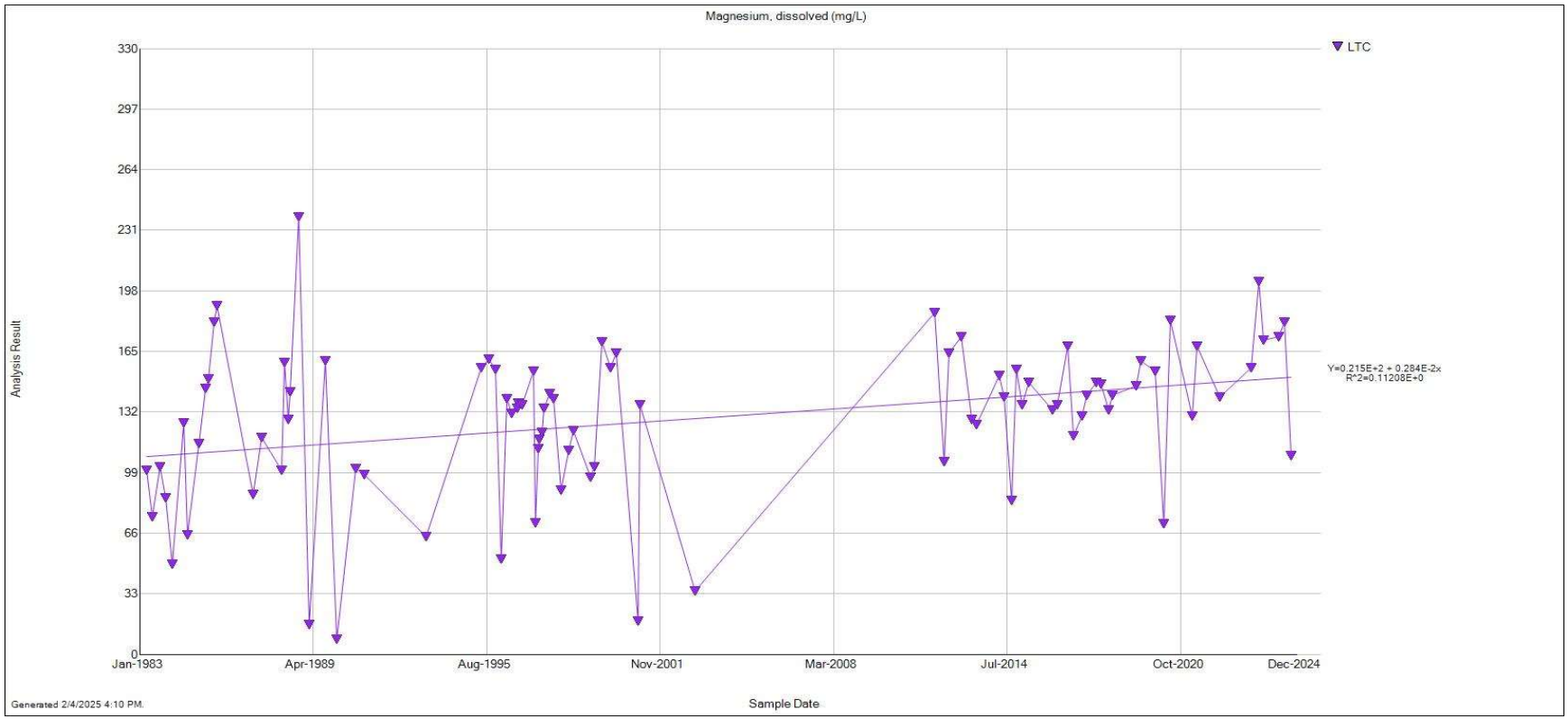

Total Dissolved Solids (mg/L)
LGSC
NUGSC
UWFGSC
Analysis Result
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=0.563E+3 + 0.233E-1x
R^2=0.90937E-1
Y=0.103E+4 + 0.262E-2x
R^2=0.14815E-2
Y=0.973E+3 -0.679E-2x
R^2=0.55903E-2
Generated 2/4/2025 3:39 PM.
Sample Date

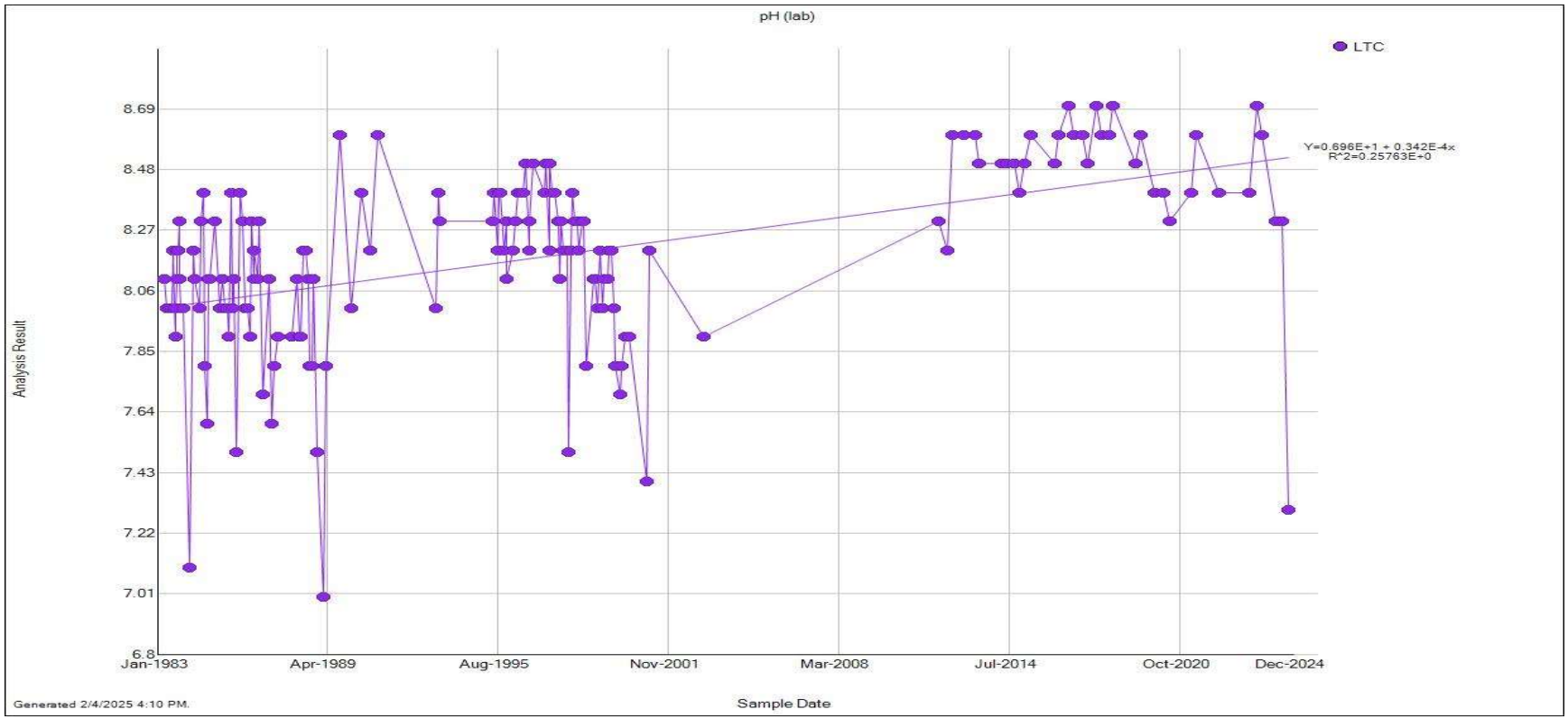

Calcium, dissolved (mg/L)
LTC
Y=0.529E+2 + 0.118E-2x
R^2=0.53358E-1
Analysis Result
250
225
200
175
150
125
100
75
50
25
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 4:10 PM.

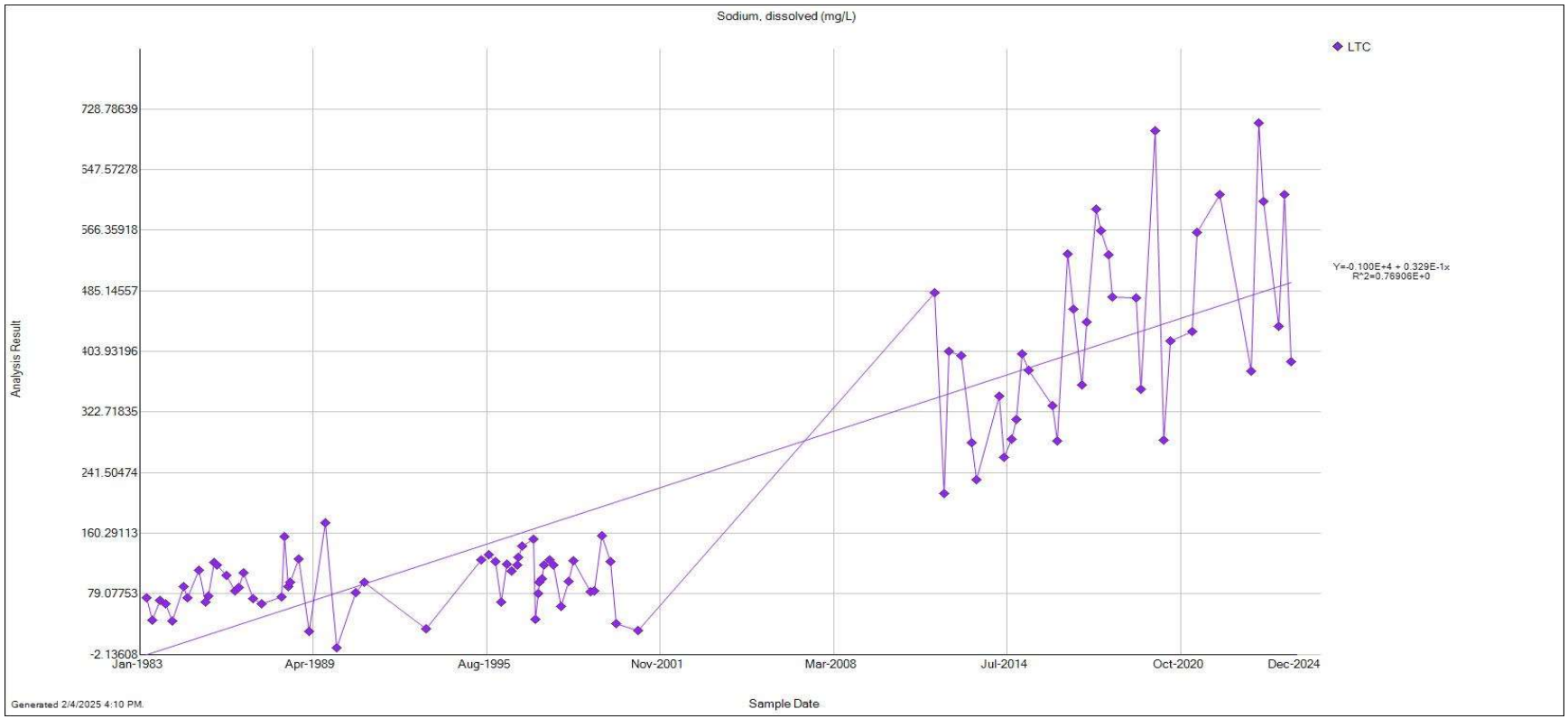

Specific Conductance @ 25C (lab) (umhos/cm)
LTC
Y=-0.248E+4 + 0.123E+0x
R^2=0.59079E+0
Analysis Result
4900
4410
3920
3430
2940
2450
1960
1470
980
490
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 4:10 PM.

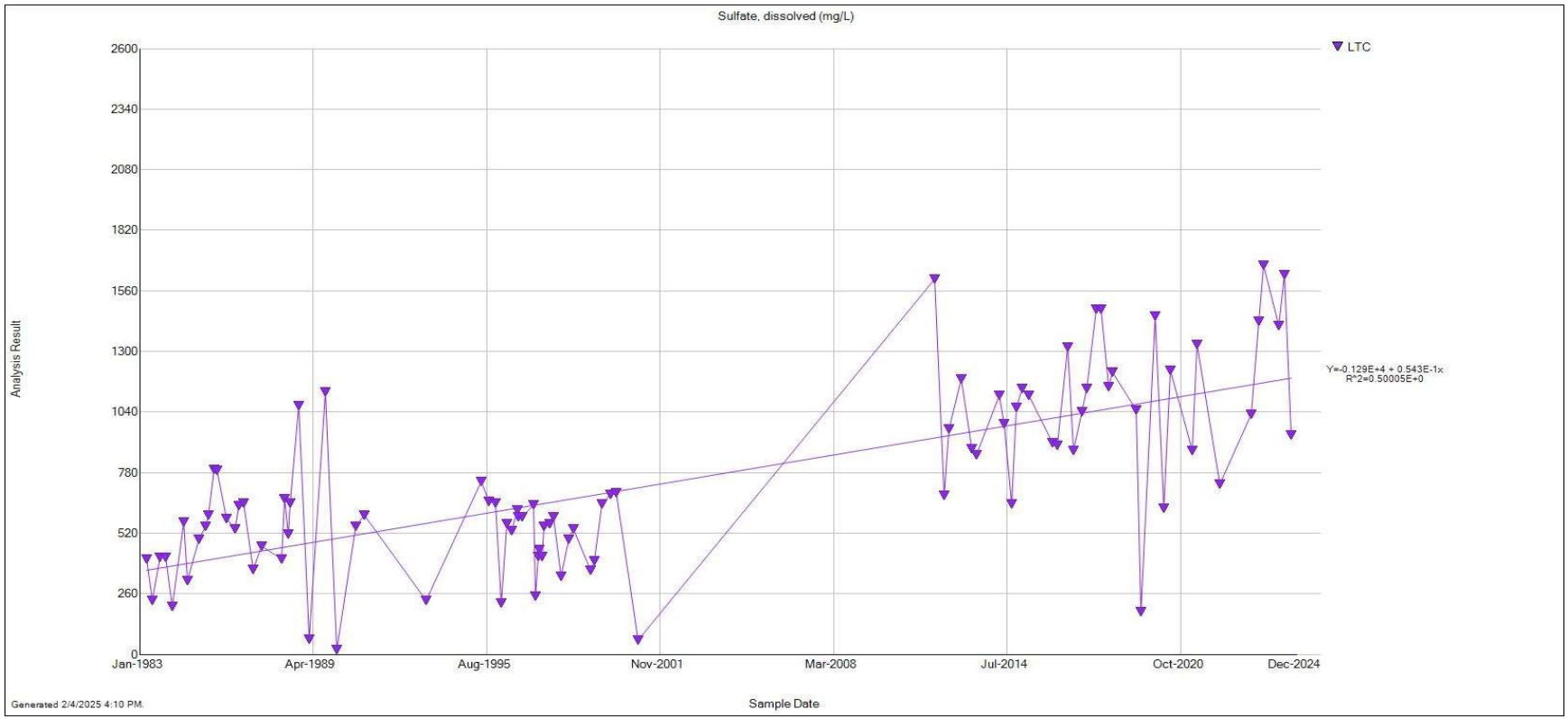

Flow, Stream Instantaneous (cfs)
LTC
7.3
6.56899
5.83797
5.10696
4.37595
3.64494
2.91392
2.18291
1.4519
0.72089
-0.01013
Analysis Result
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Y=0.211E+1 -0.464E-4x
R^2=0.51386E-1
Generated 2/4/2025 4:10 PM.

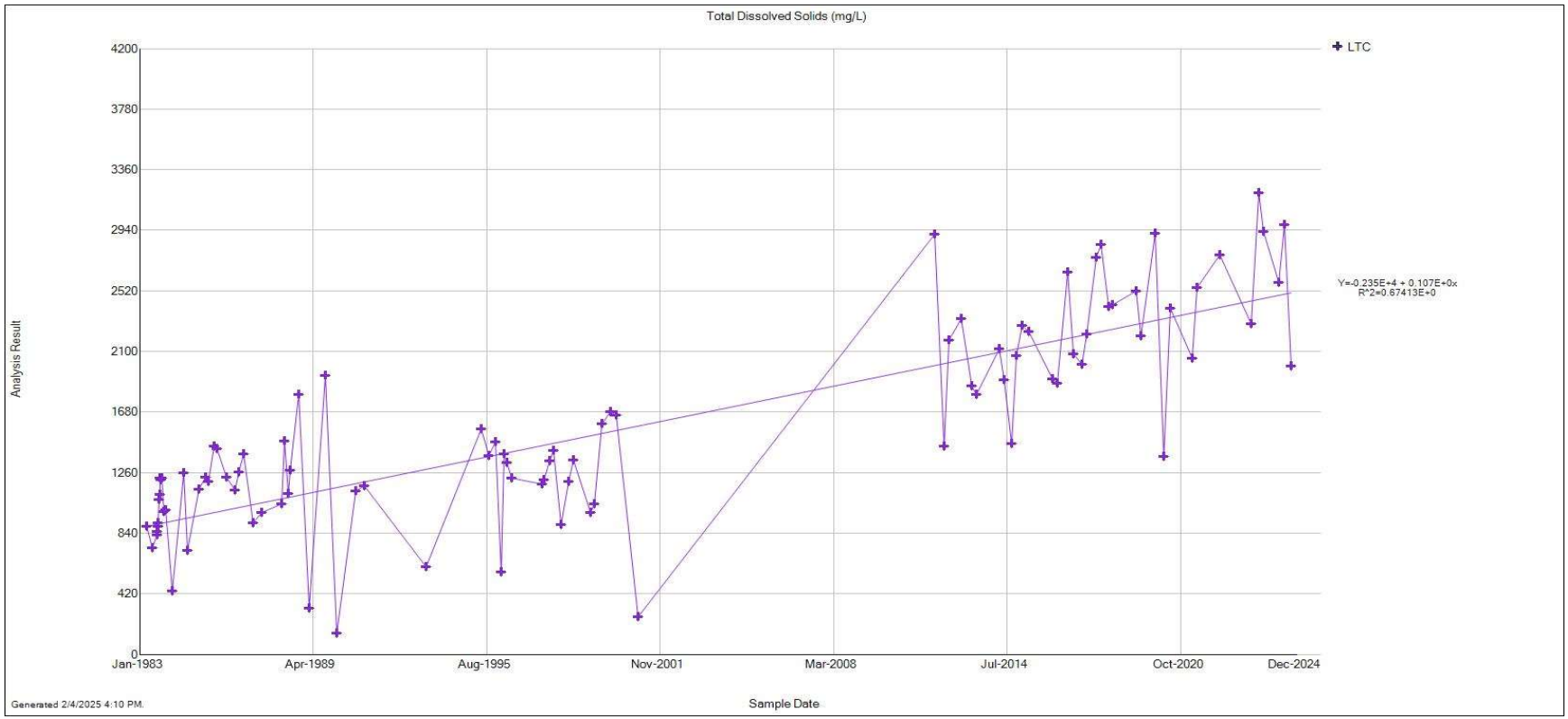

Iron, total (mg/L)
LTC
200
180
160
140
120
100
80
60
40
20
0
Analysis Result
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=0.165E+2 -0.350E-3x
R^2=0.13689E-1
Generated 2/4/2025 4:10 PM.
Sample Date

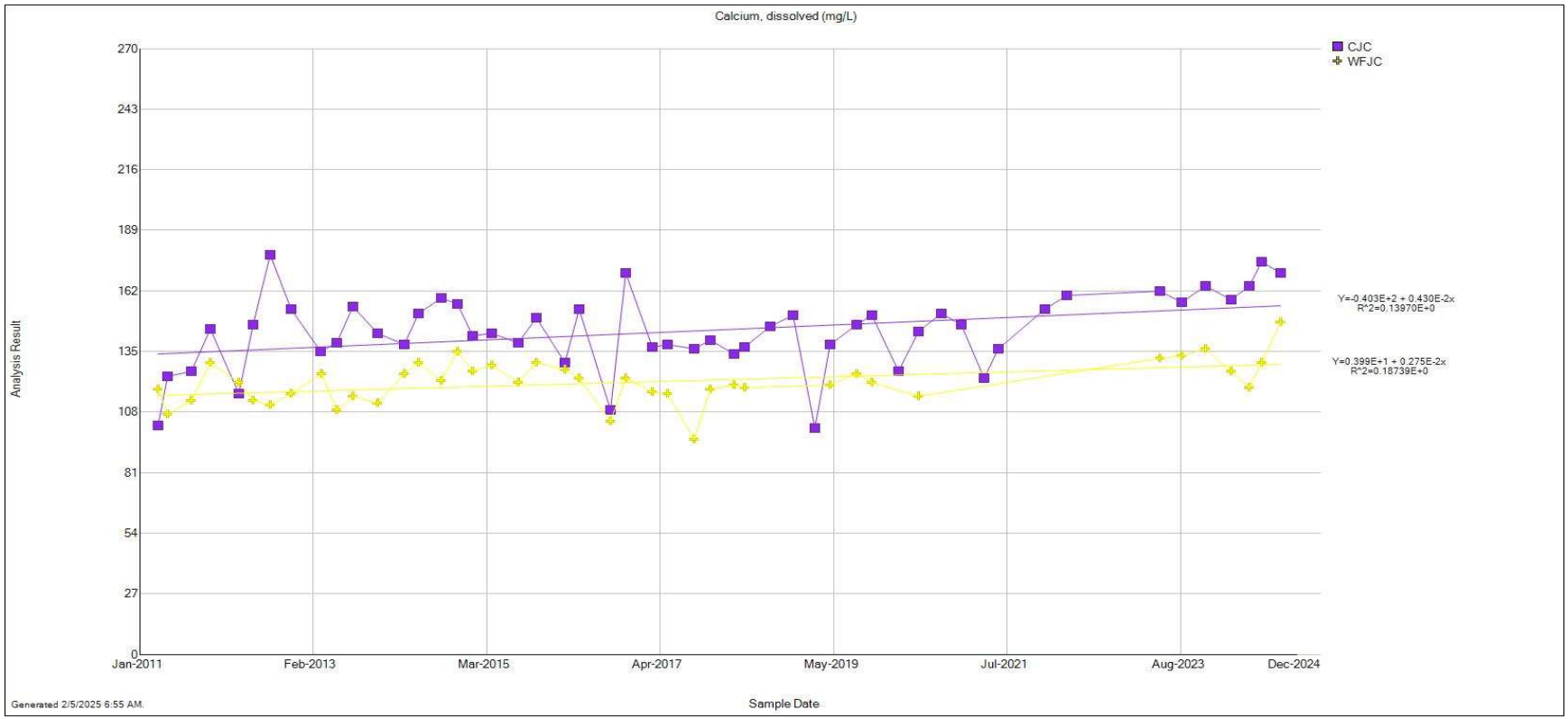

Magnesium, dissolved (mg/L)
LTC
Y=0.215E+2 + 0.284E-2x
R^2=0.11208E+0
Analysis Result
330
297
264
231
198
165
132
99
66
33
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 4:10 PM.

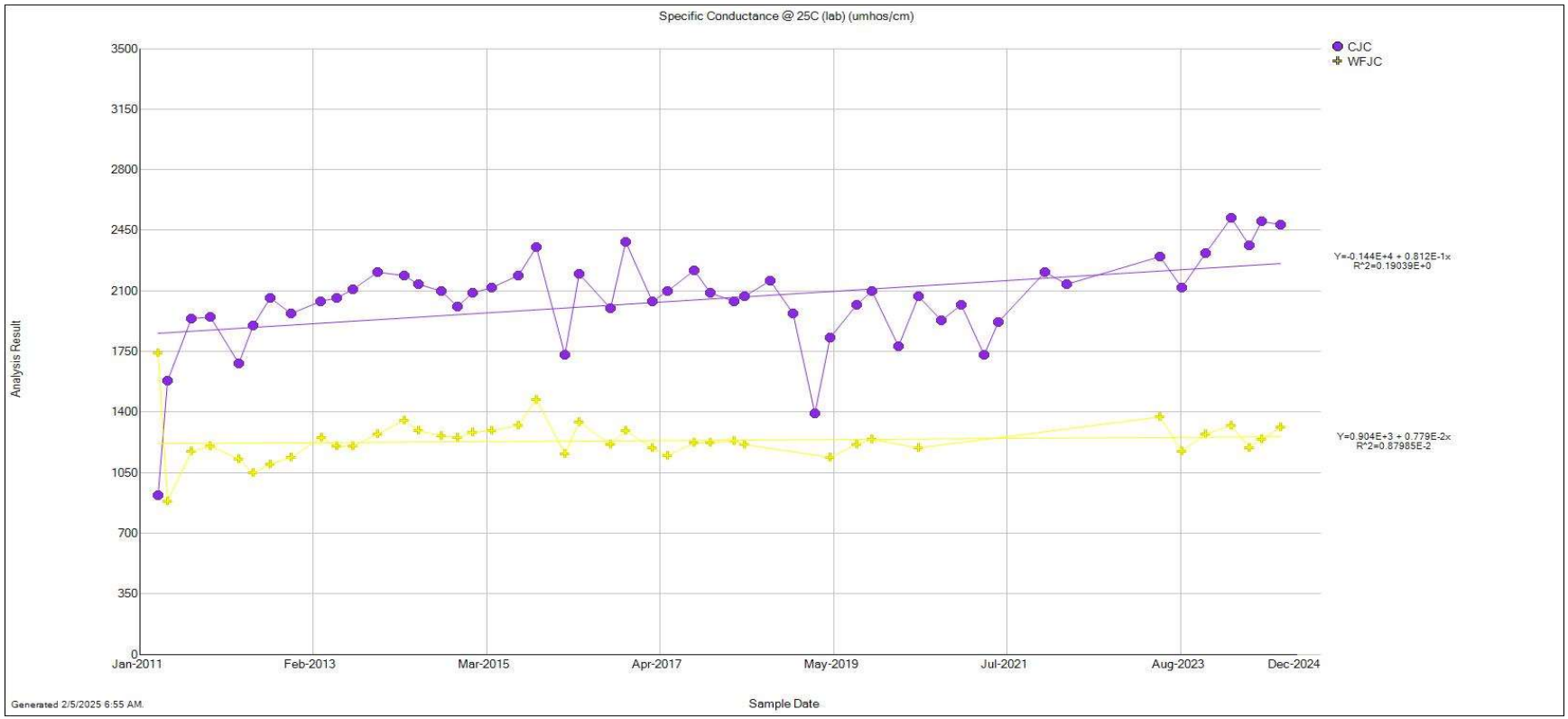

pH (lab)
LTC
Y=0.696E+1 + 0.342E-4x
R^2=0.25763E+0
Analysis Result
8.69
8.48
8.27
8.06
7.85
7.64
7.43
7.22
7.01
6.8
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Generated 2/4/2025 4:10 PM.
Sample Date

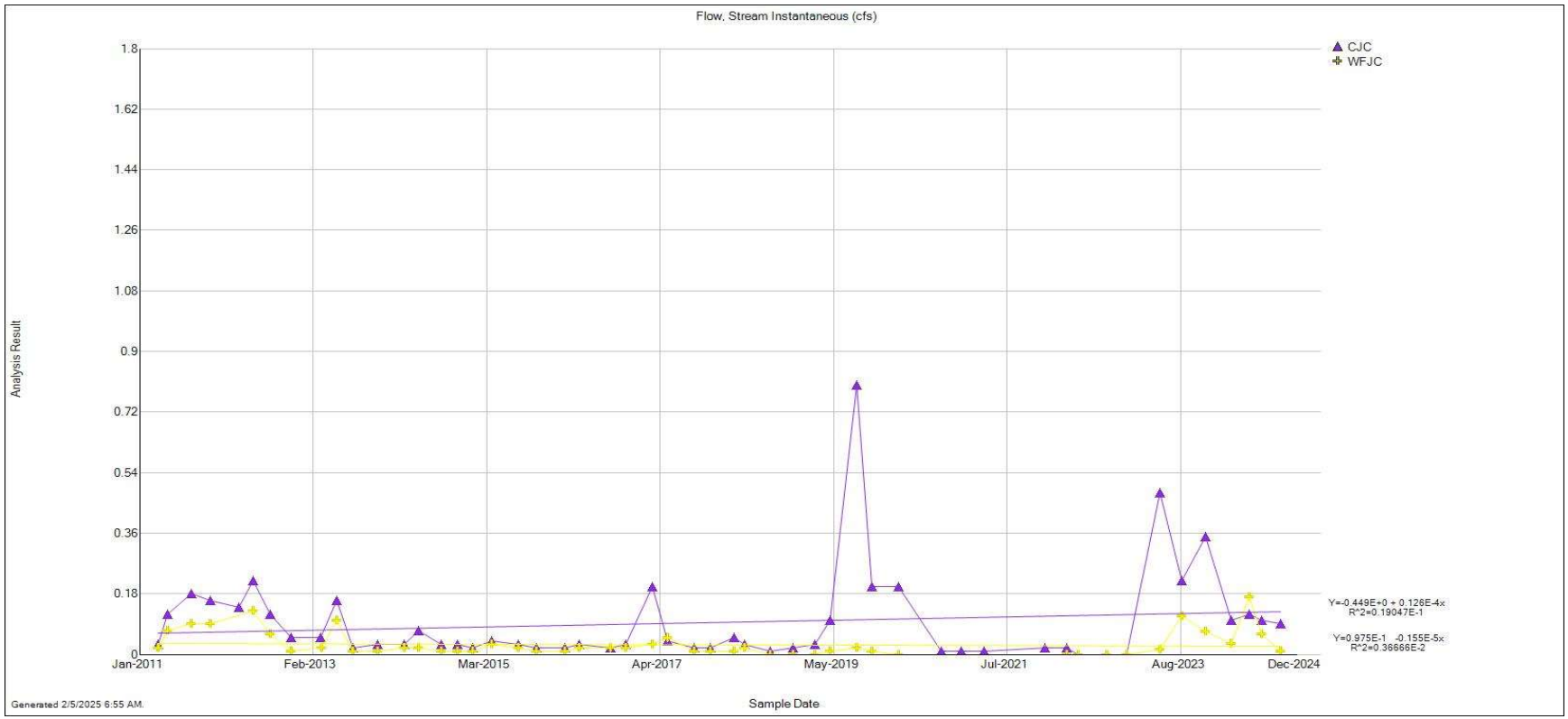

Sodium, dissolved (mg/L)
LTC
Y=-0.100E+4 + 0.329E-1x
R^2=0.76906E+0
Analysis Result
728.78639
547.57278
366.35918
485.14557
403.93196
322.71835
241.50474
160.29113
79.07753
-2.13608
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 4:10 PM.

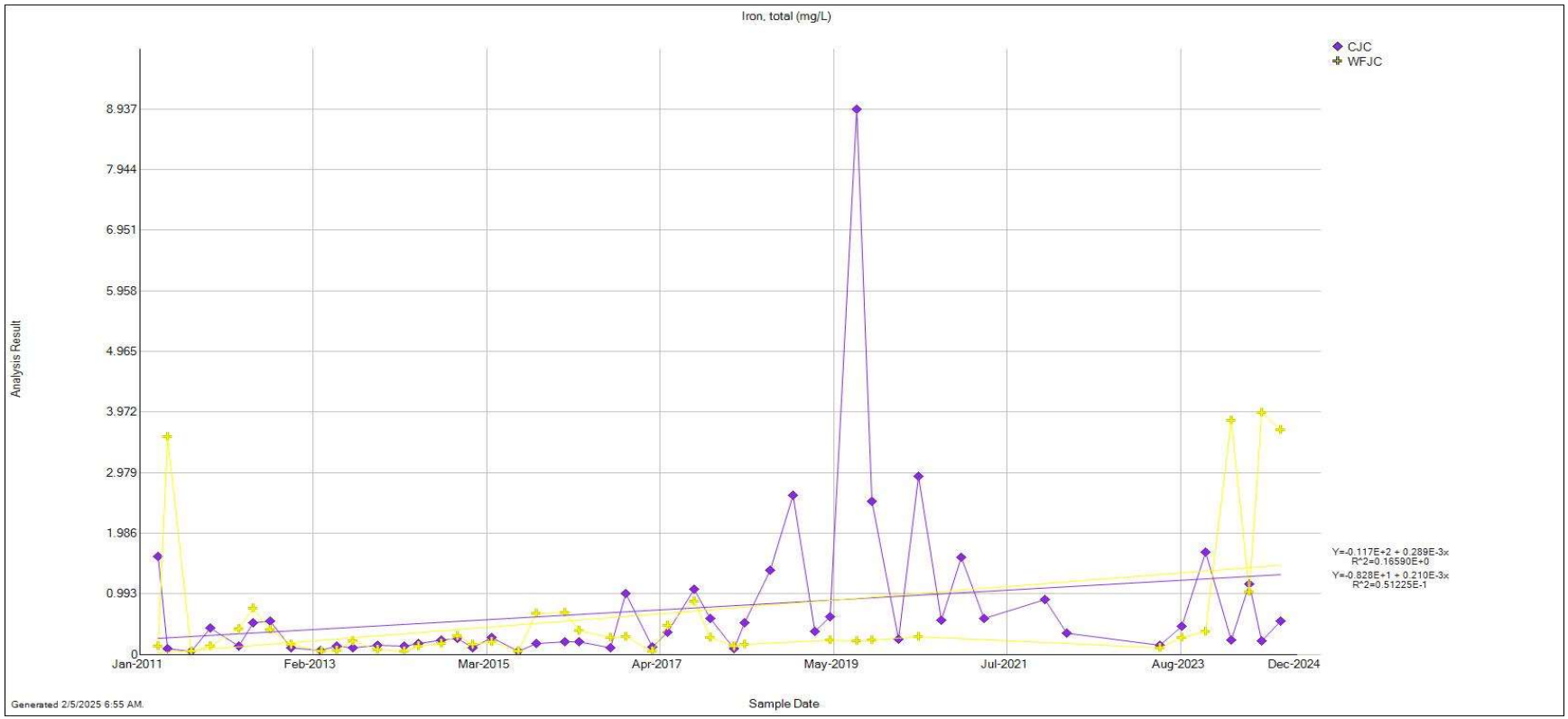

Sulfate, dissolved (mg/L)
LTC
Y=-0.129E+4 + 0.543E-1x
R^2=0.50005E+0
Analysis Result
2600
2340
2080
1820
1560
1300
1040
780
520
260
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 4:10 PM.

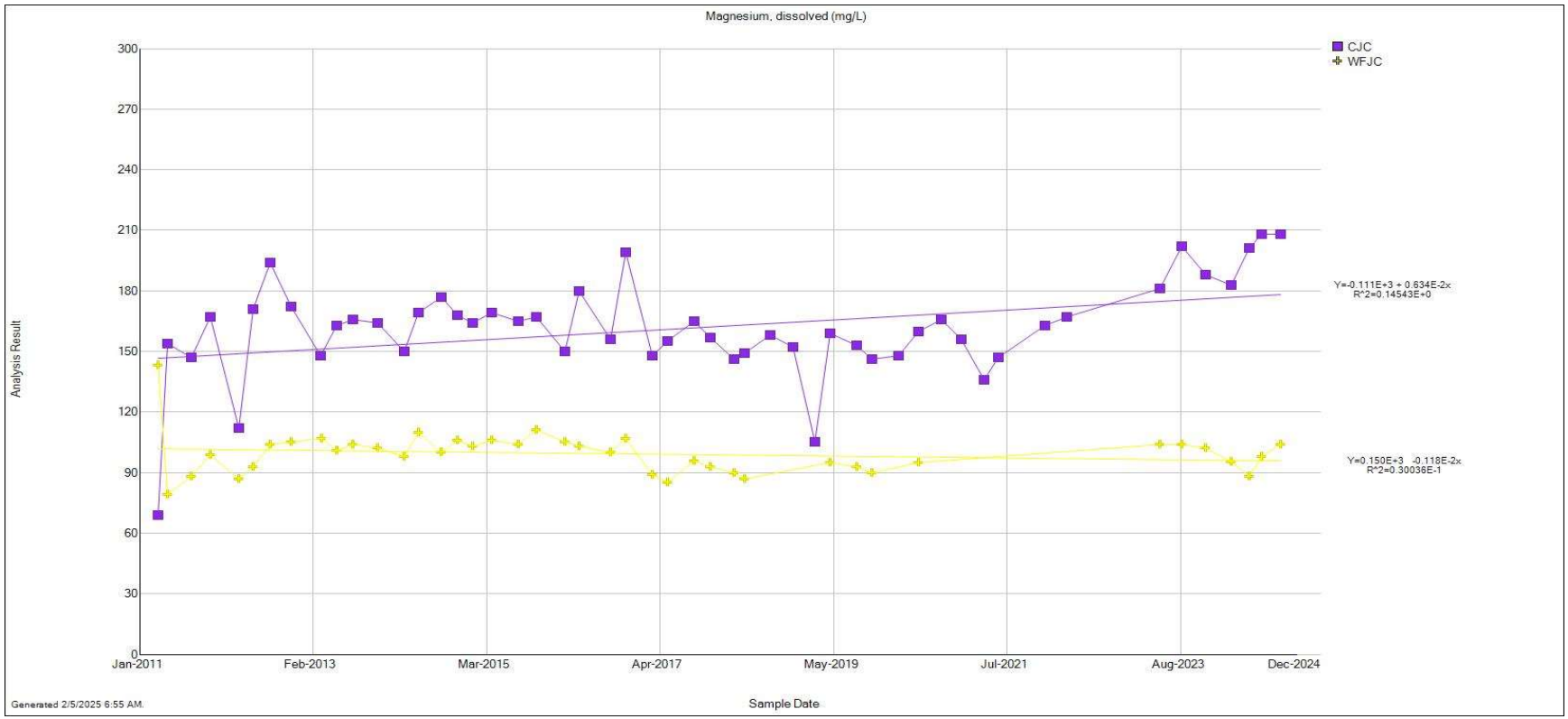

Total Dissolved Solids (mg/L)
LTC
Y=-0.235E+4 + 0.107E+0x
R^2=0.67413E+0
Analysis Result
4200
3780
3360
2940
2520
2100
1680
1260
840
420
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/4/2025 4:10 PM.

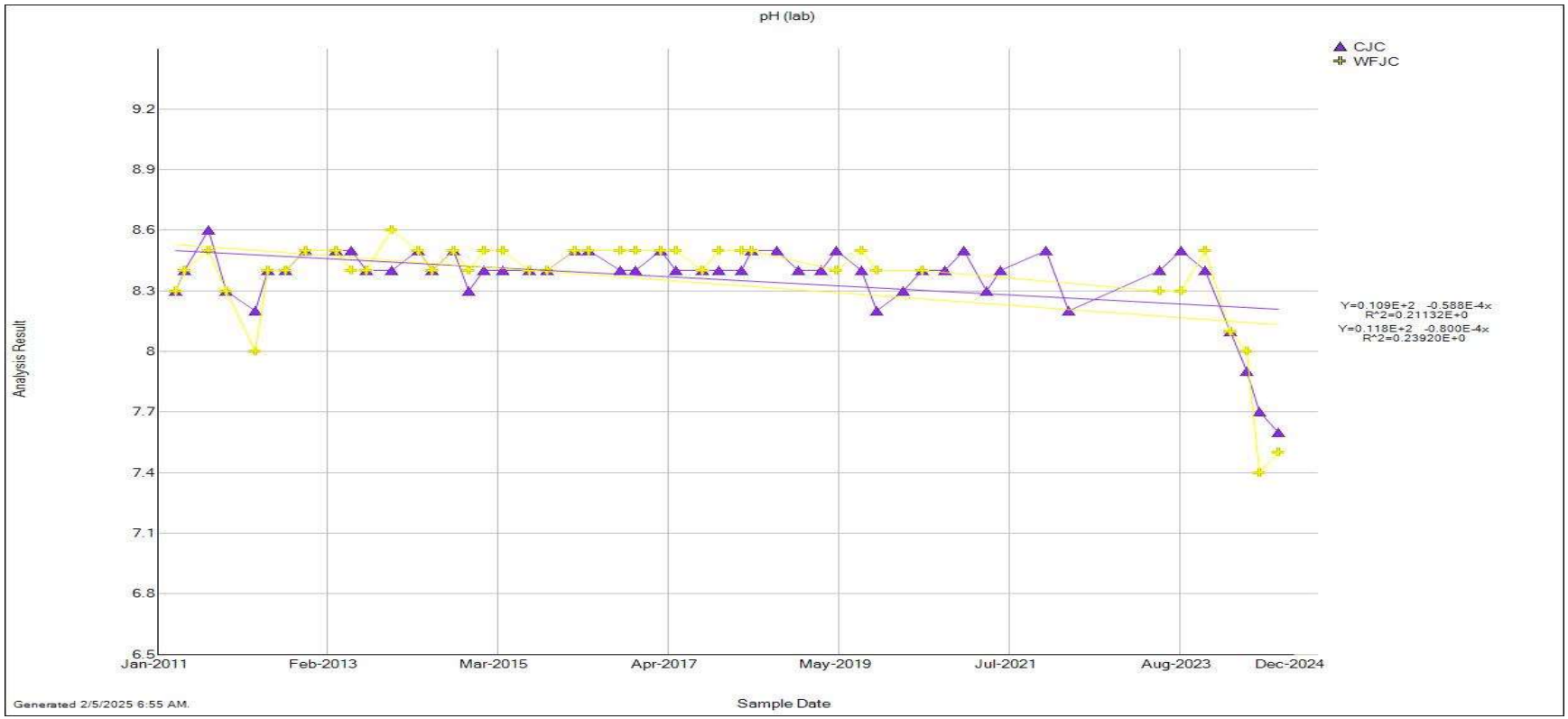

Calcium, dissolved (mg/L)
CJC
WFJC
Y=-0.403E+2 + 0.430E-2x
R^2=0.13970E+0
Y=0.399E+1 + 0.275E-2x
R^2=0.18739E+0
Analysis Result
270
243
216
189
162
135
108
81
54
27
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 6:55 AM.
Sample Date

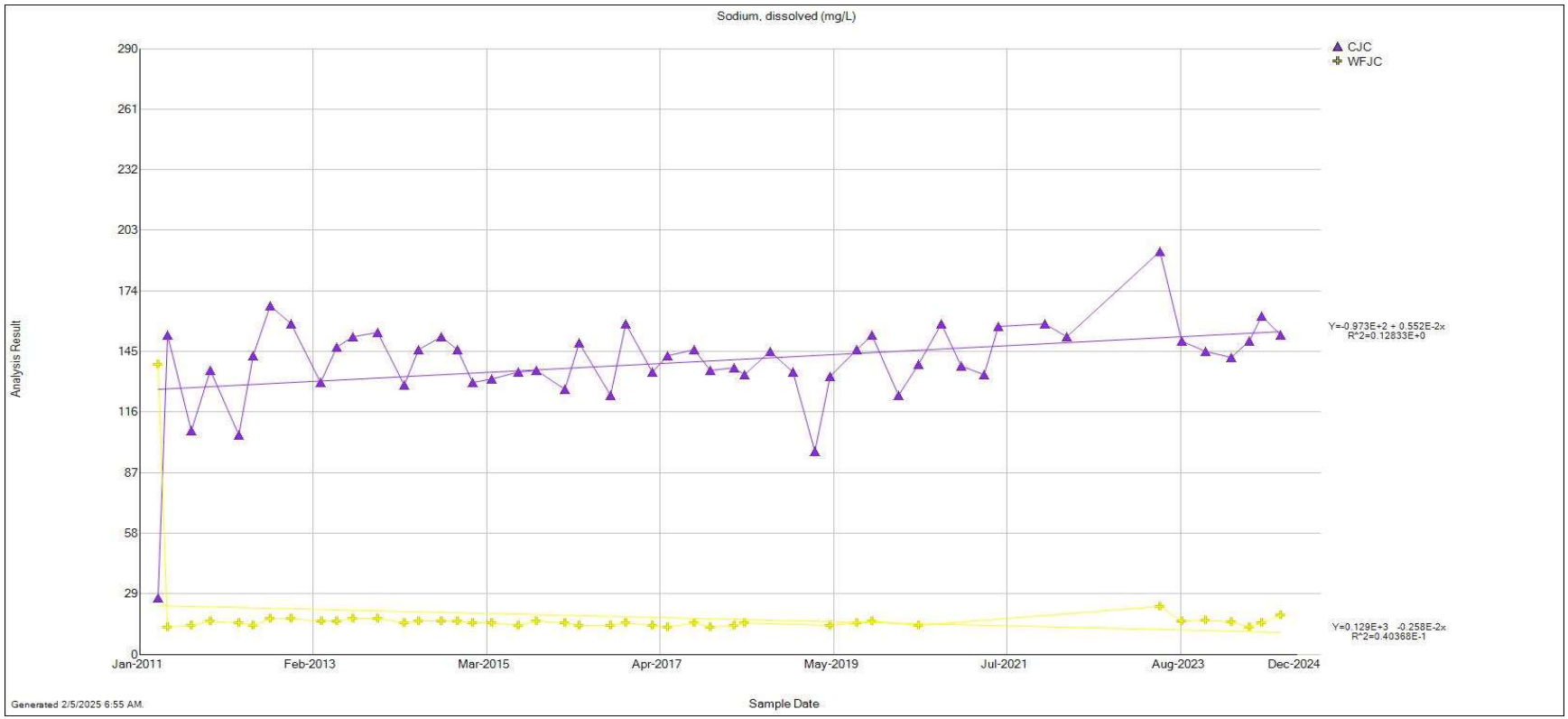

Specific Conductance @ 25C (lab) (umhos/cm)
CJC
WFJC
Y=-0.144E+4 + 0.812E-1x
R^2=0.19039E+0
Y=0.904E+3 + 0.779E-2x
R^2=0.87985E-2
Analysis Result
3500
3150
2800
2450
2100
1750
1400
1050
700
350
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/5/2025 6:55 AM.

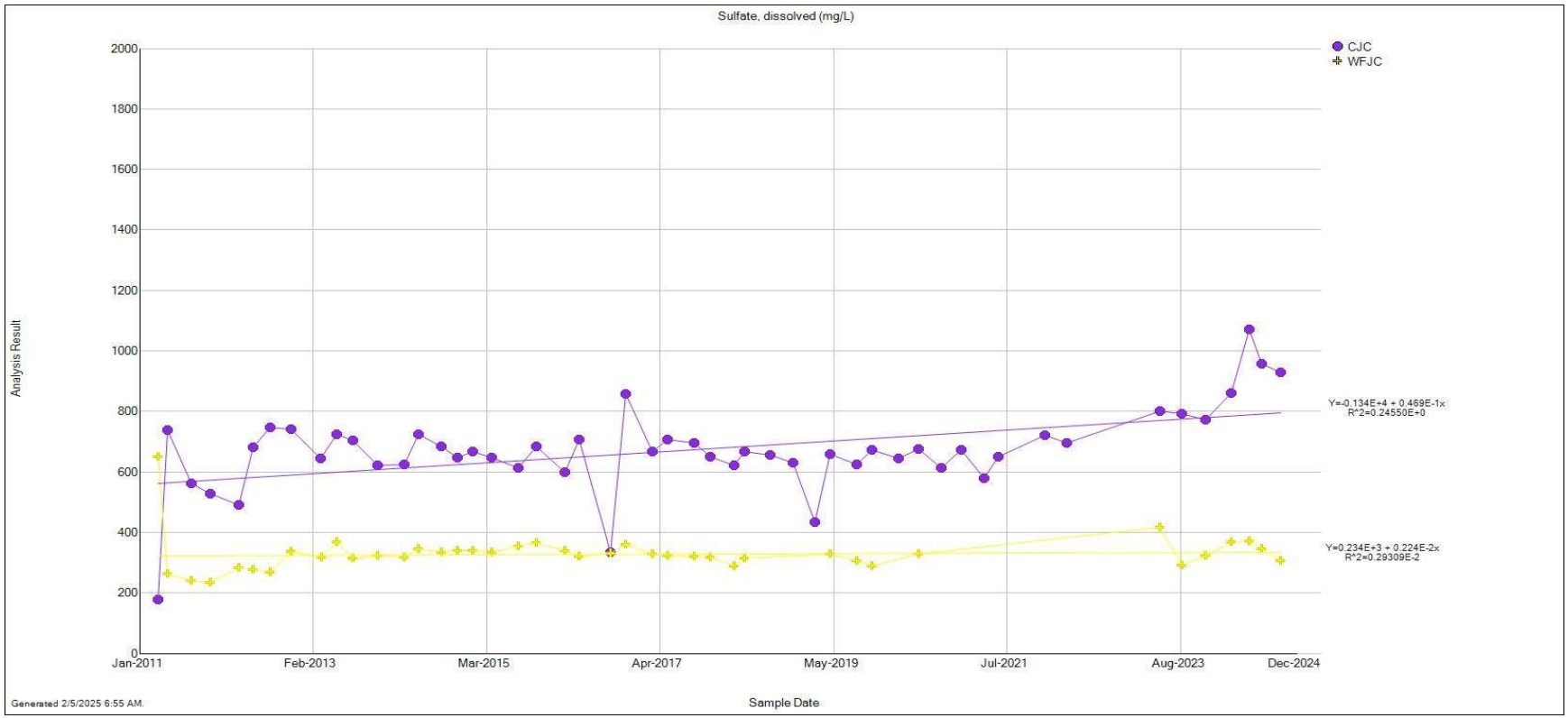

Flow, Stream Instantaneous (cfs)
CJC
WFJC
1.8
1.62
1.44
1.26
1.08
0.9
0.72
0.54
0.36
0.18
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=-0.449E+0 + 0.126E-4x
R^2=0.19047E-1
Y=0.975E-1 -0.155E-5x
R^2=0.36666E-2
Generated 2/5/2025 6:55 AM.

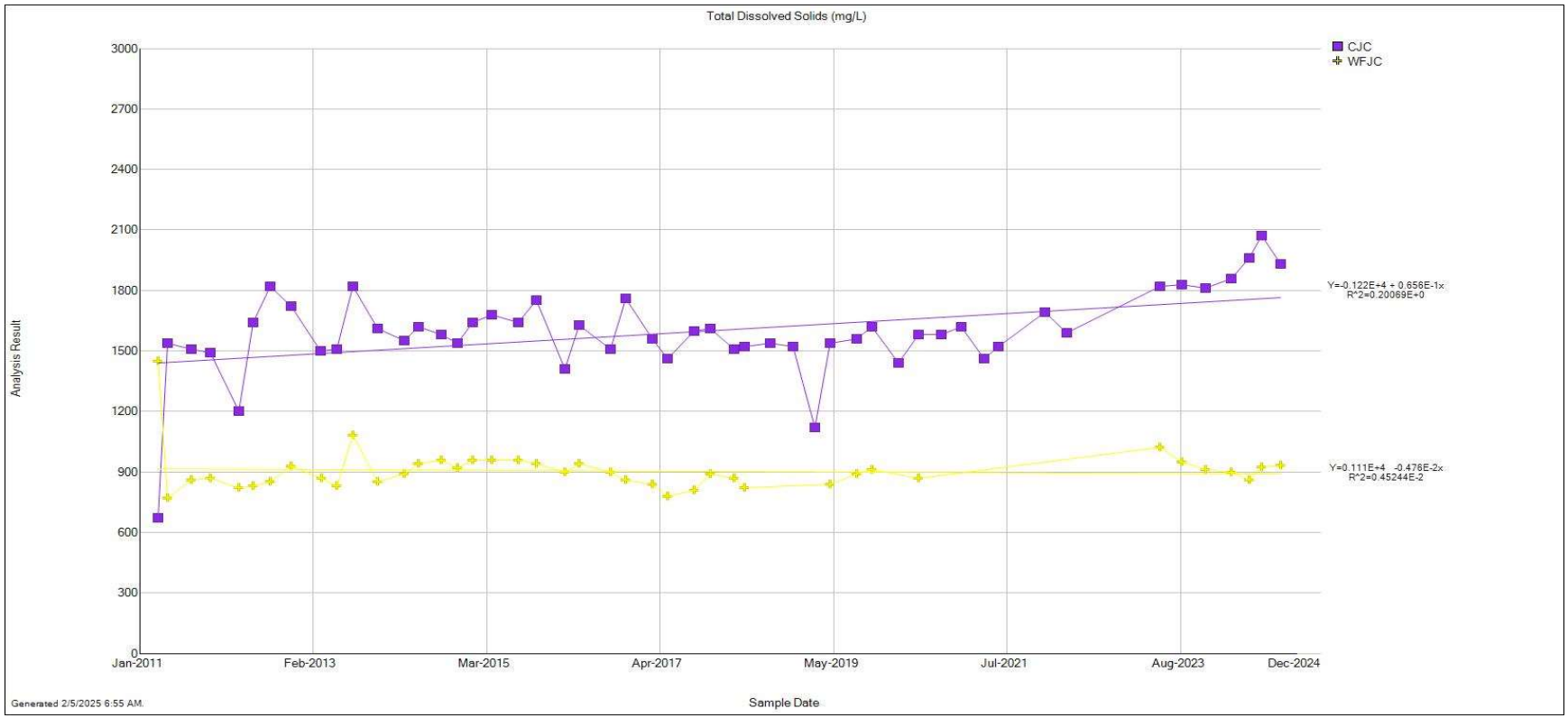

Iron, total (mg/L)
CJC
WFJC
8.937
7.944
6.951
5.958
4.965
3.972
2.979
1.986
0.993
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=-0.117E+2 + 0.289E-3x
R^2=0.16590E+0
Y=-0.828E+1 + 0.210E-3x
R^2=0.51225E-1
Generated 2/5/2025 6:55 AM.

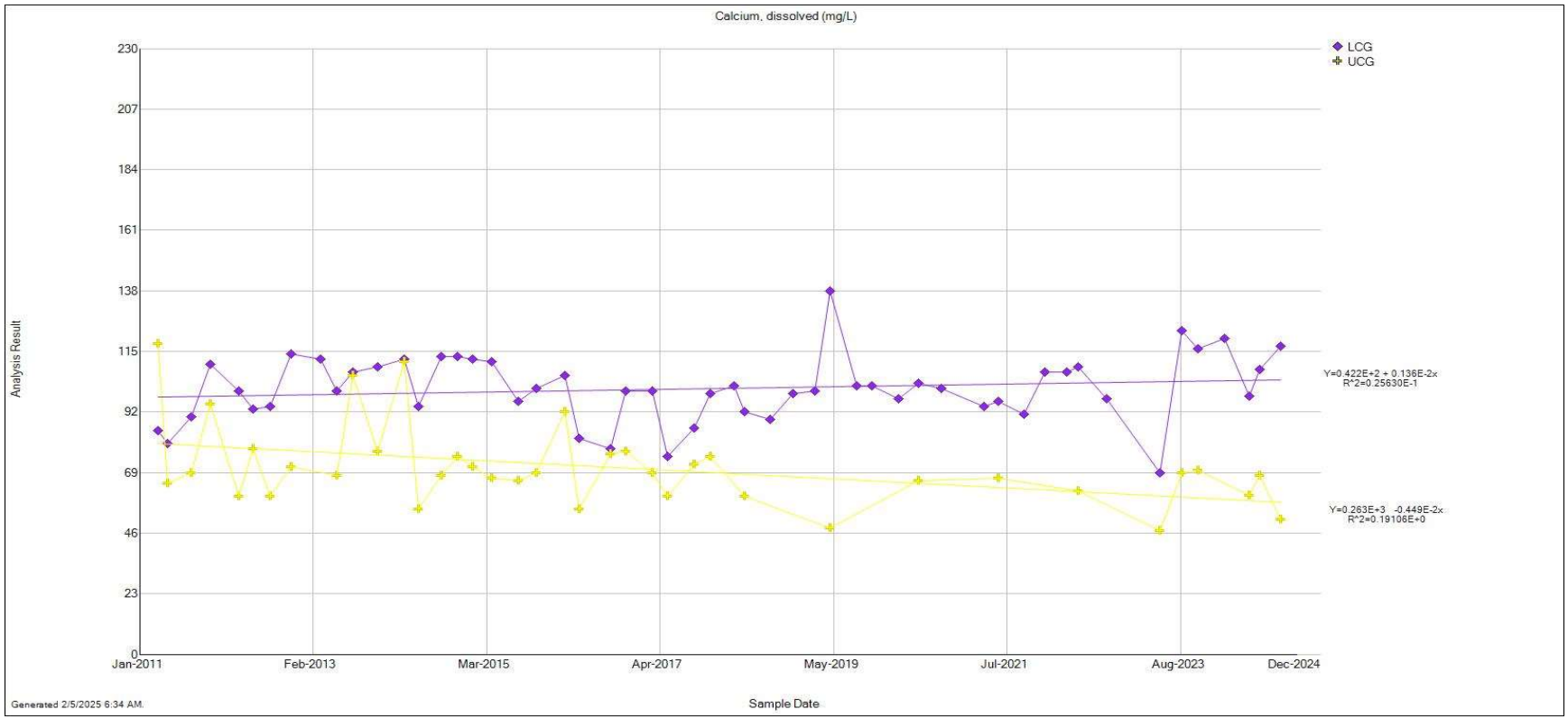

Magnesium, dissolved (mg/L)
CJC
WFJC
Y=-0.111E+3 + 0.634E-2x
R^2=0.14543E+0
Y=0.150E+3 -0.118E-2x
R^2=0.30036E-1
Analysis Result
Sample Date
Generated 2/5/2025 6:55 AM.
300
270
240
210
180
150
120
90
60
30
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024

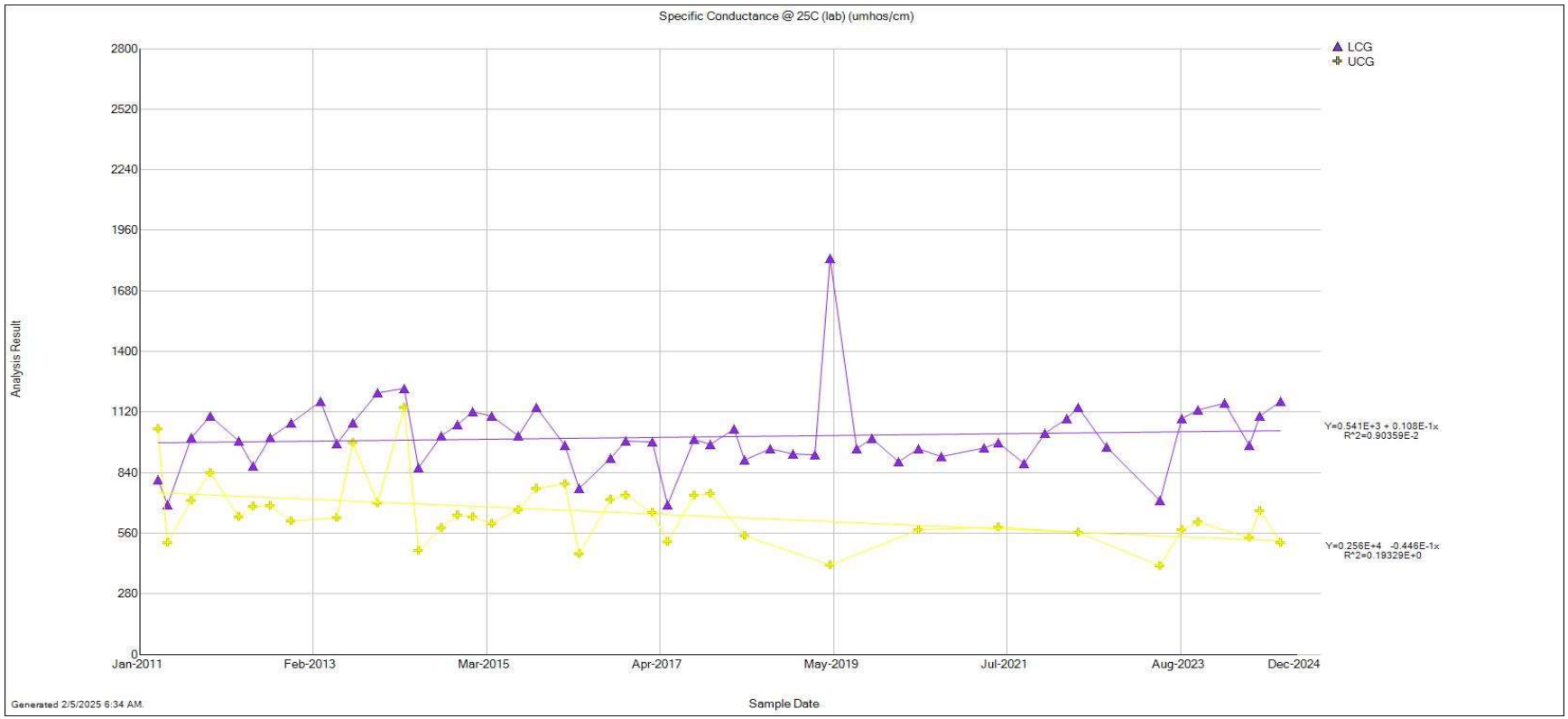

pH (lab)
CJC
WFJC
Y=0.109E+2 -0.588E-4x
R^2=0.21132E+0
Y=0.118E+2 -0.800E-4x
R^2=0.23920E+0
Analysis Result
9.2
8.9
8.6
8.3
8
7.7
7.4
7.1
6.8
6.5
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 6:55 AM.
Sample Date

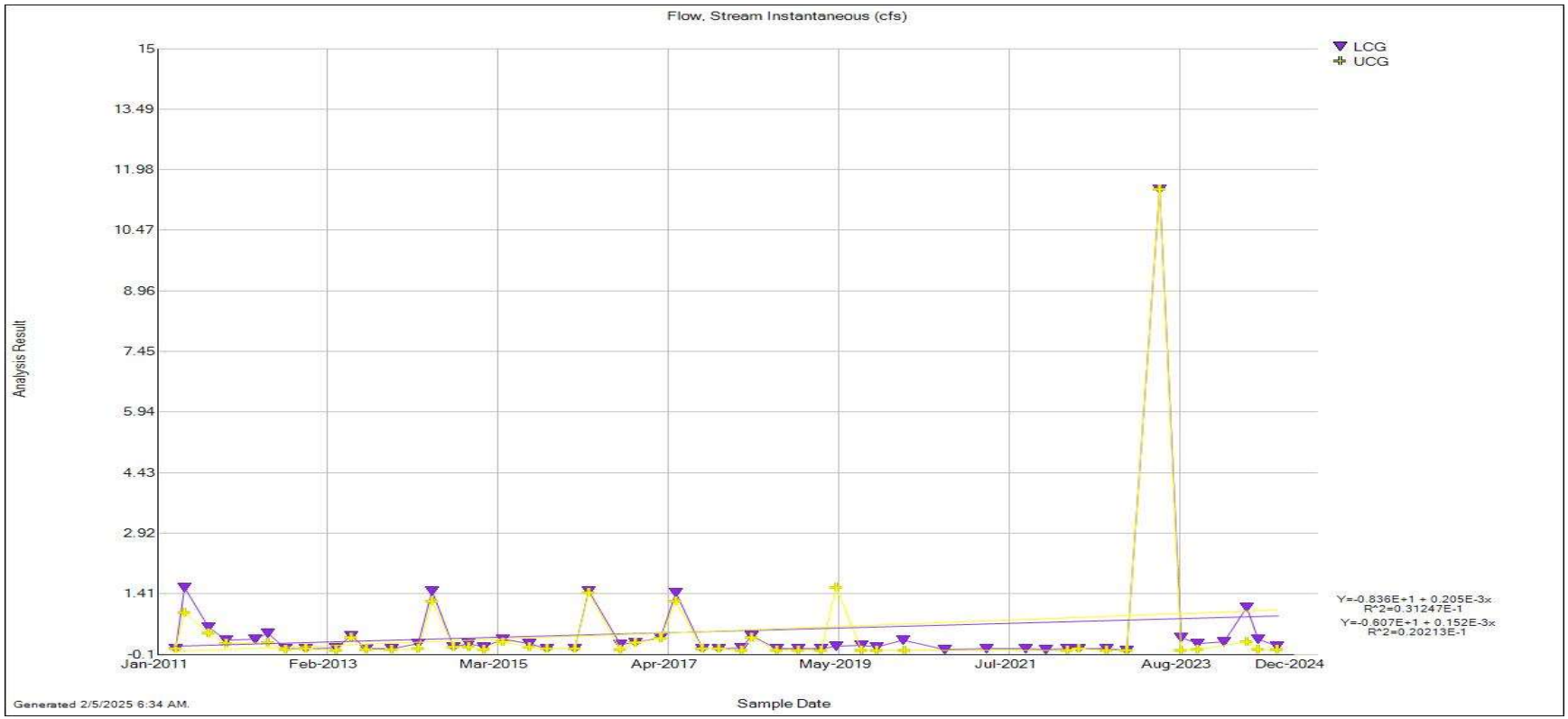

Sodium, dissolved (mg/L)
CJC
WFJC
Y=-0.973E+2 + 0.552E-2x
R^2=0.12833E+0
Y=0.129E+3 -0.258E-2x
R^2=0.40388E-1
Analysis Result
290
261
232
203
174
145
116
87
58
29
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 6:55 AM.
Sample Date

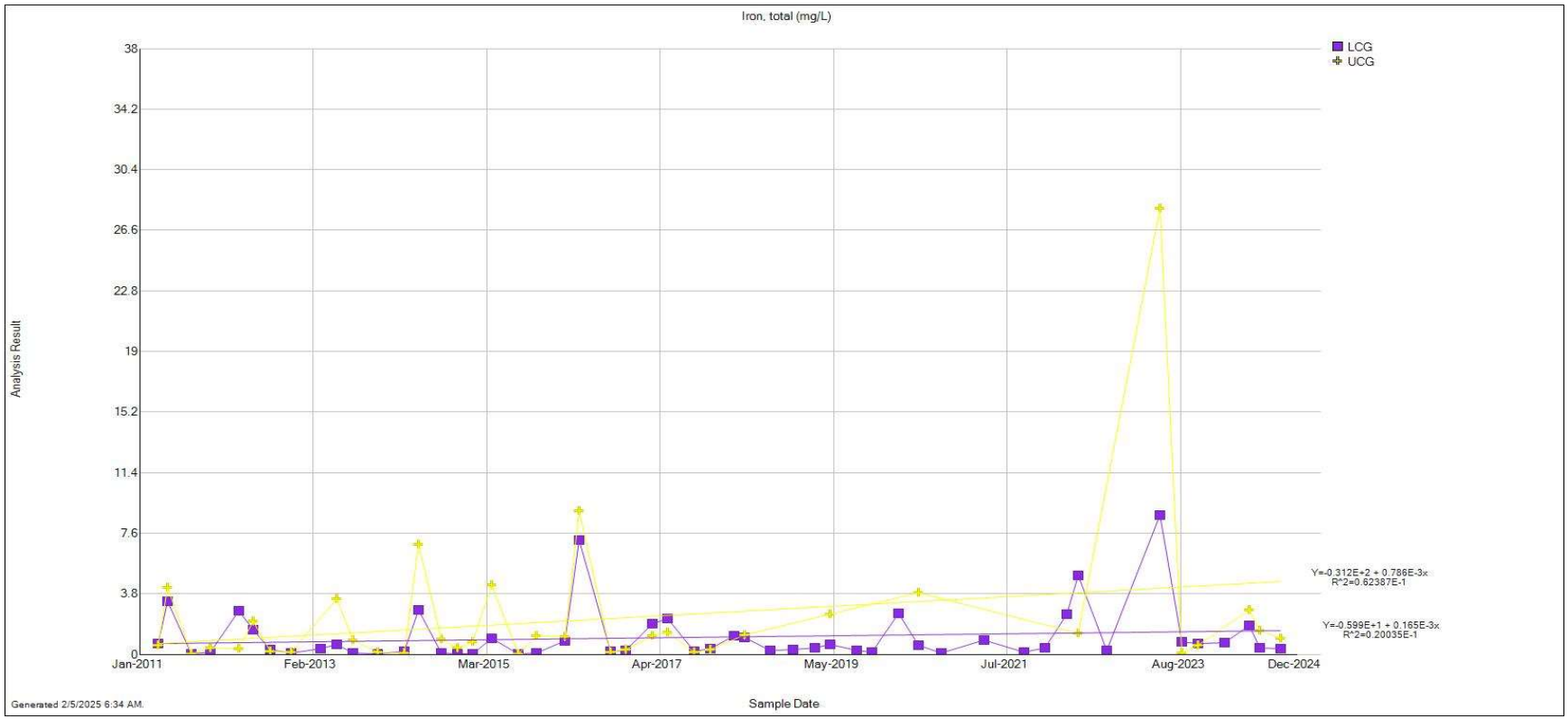

Sulfate, dissolved (mg/L)
CJC
WFJC
Y=-0.134E+4 + 0.469E-1x
R^2=0.24550E+0
Y=0.234E+3 + 0.224E-2x
R^2=0.29309E-2
Analysis Result
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 6:55 AM.
Sample Date

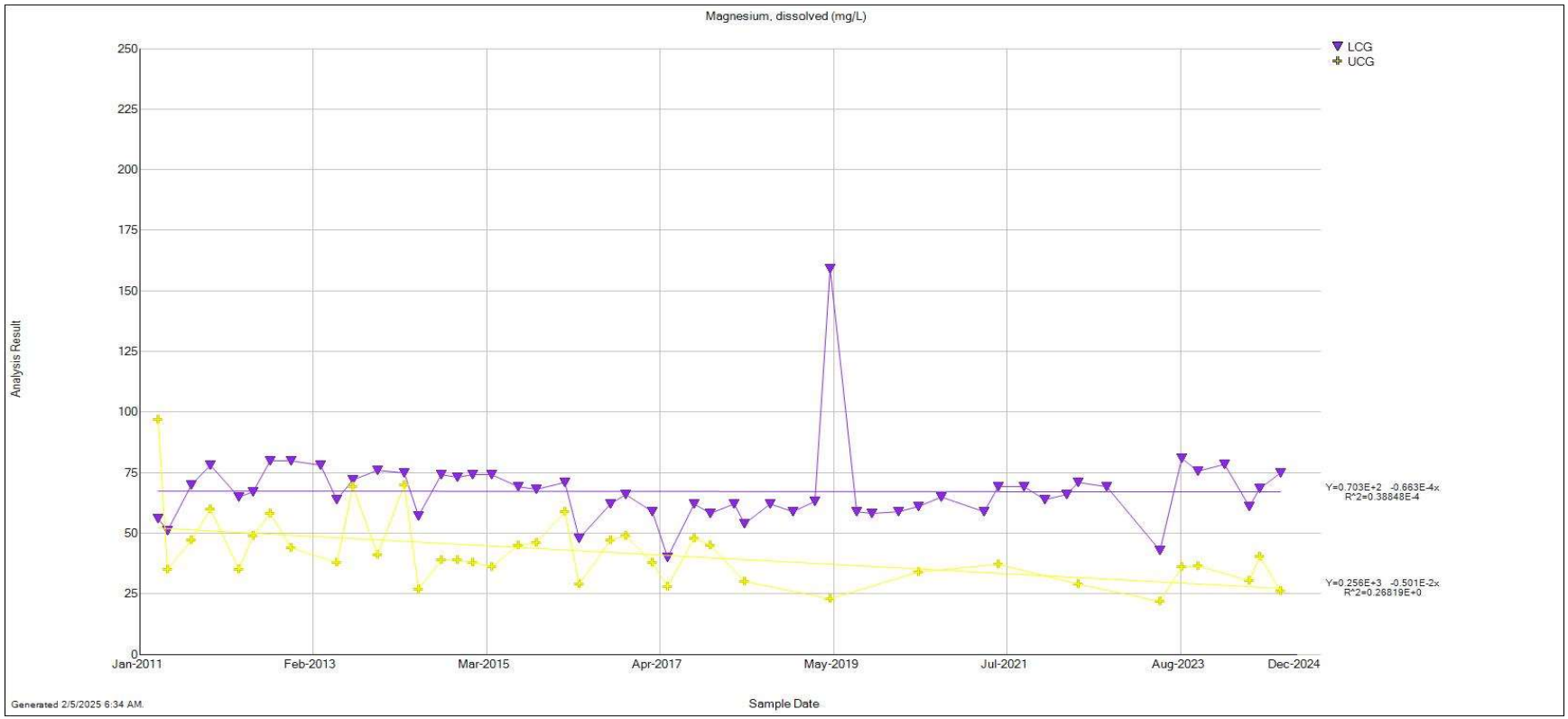

Total Dissolved Solids (mg/L)
CJC
WFJC
Y=-0.122E+4 + 0.656E-1x
R^2=0.20069E+0
Y=0.111E+4 -0.476E-2x
R^2=0.45244E-2
Analysis Result
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/5/2025 6:55 AM.

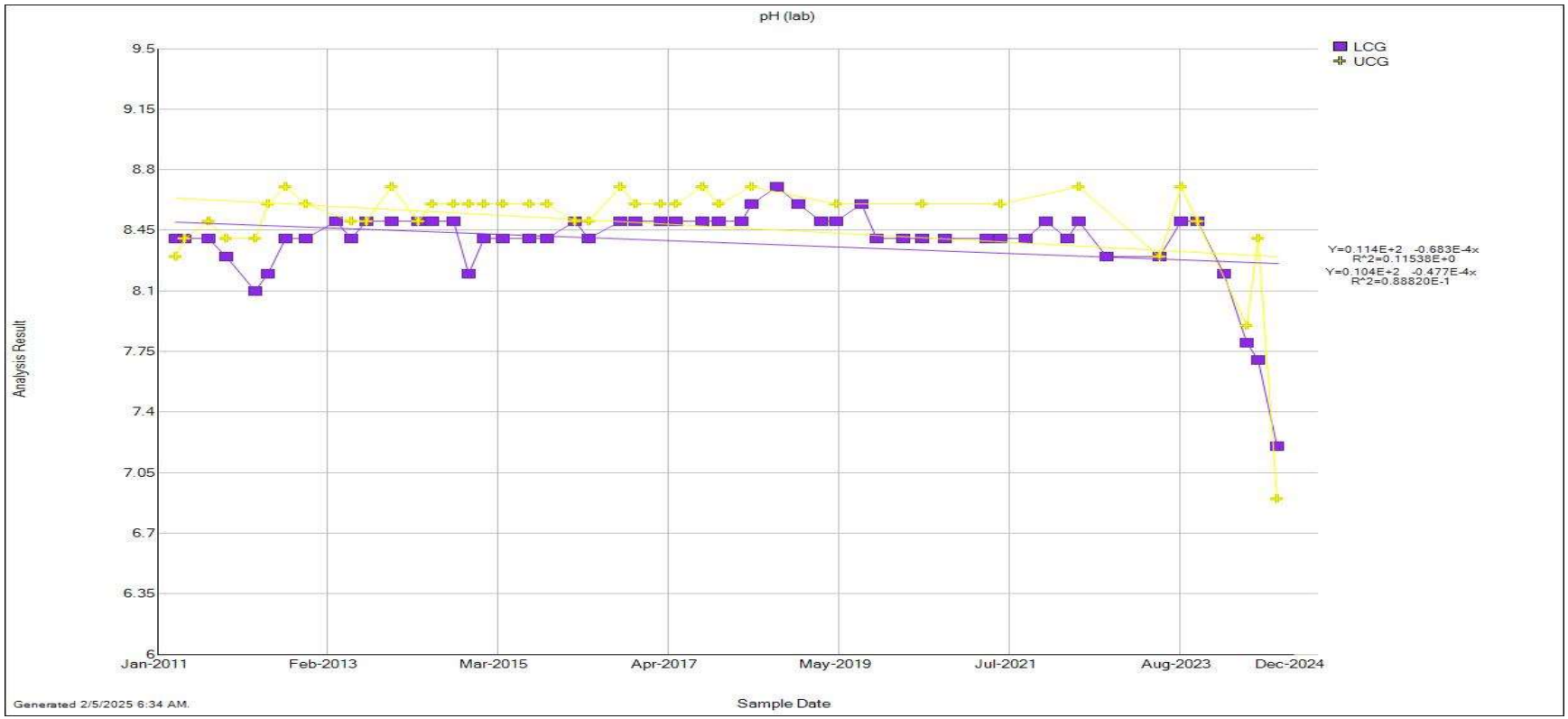

Calcium, dissolved (mg/L)
LCG
UCG
230
207
184
161
138
115
92
69
46
23
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.422E+2 + 0.136E-2x
R^2=0.25630E-1
Y=0.263E+3 -0.449E-2x
R^2=0.19108E+0
Generated 2/5/2025 6:34 AM.

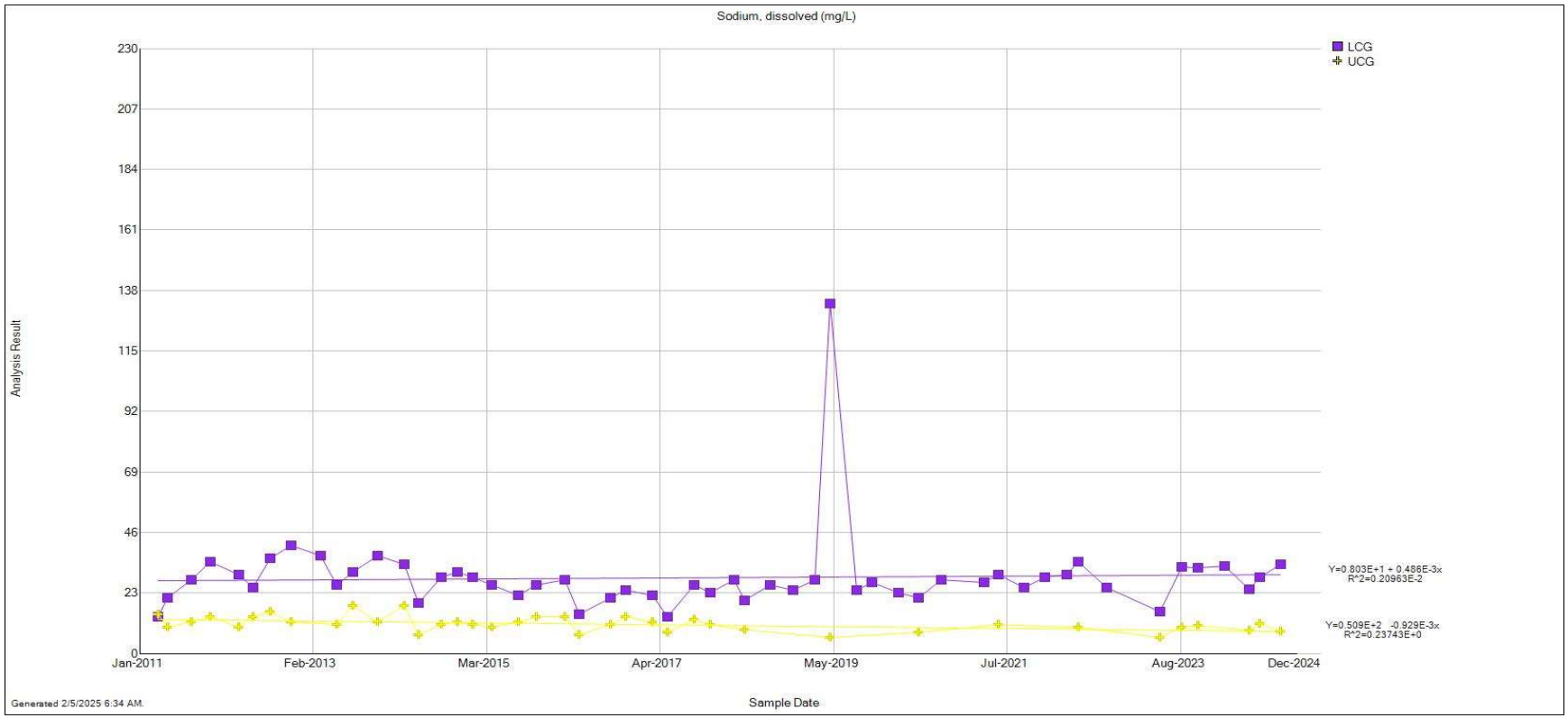

Specific Conductance @ 25C (lab) (umhos/cm)
LCG
UCG
2800
2520
2240
1960
1680
1400
1120
840
560
280
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.541E+3 + 0.108E-1x
R^2=0.90359E-2
Y=0.256E+4 -0.446E-1x
R^2=0.19329E+0
Generated 2/5/2025 6:34 AM.

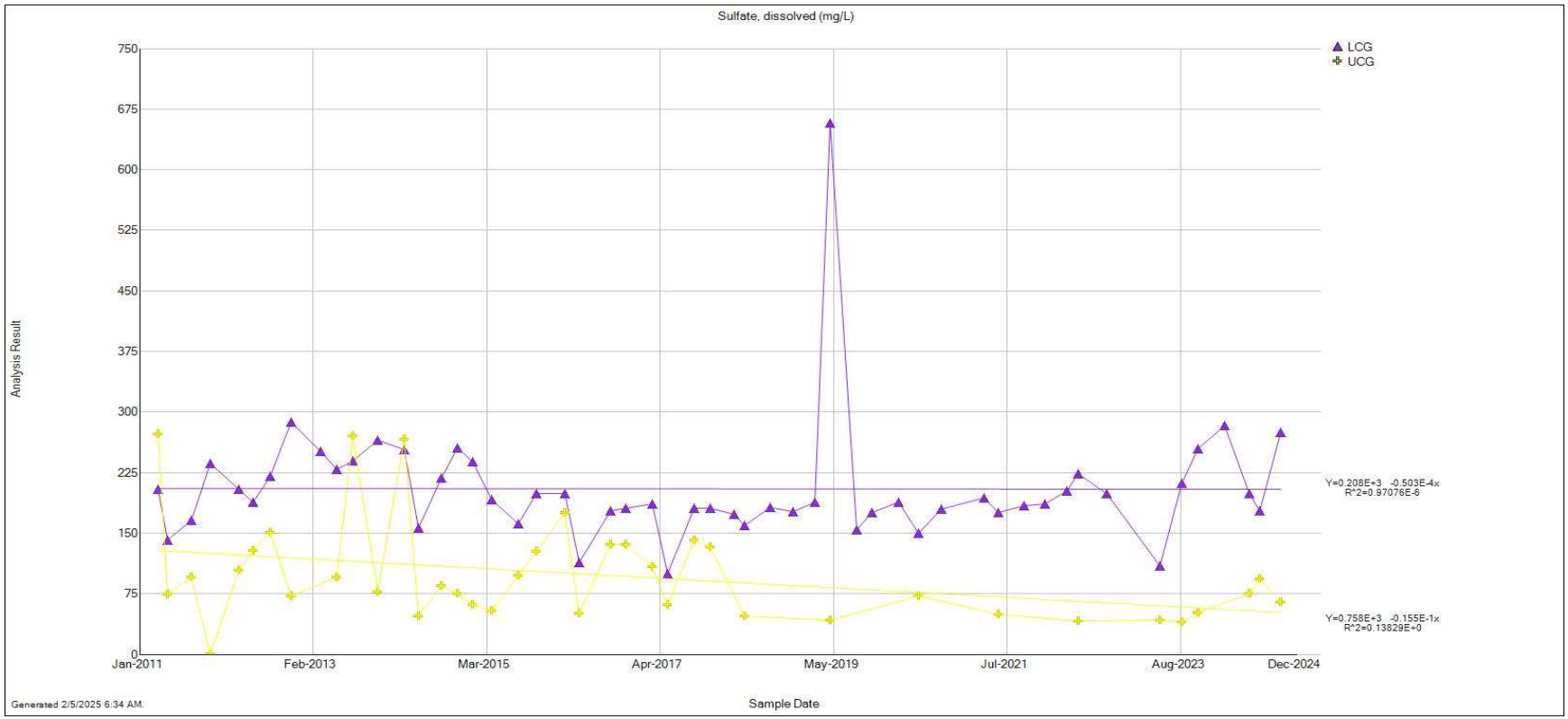

Flow, Stream Instantaneous (cfs)
LCG
UCG
15
13.49
11.98
10.47
8.96
7.45
5.94
4.43
2.92
1.41
-0.1
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=-0.836E+1 + 0.205E-3x
R^2=0.31247E-1
Y=-0.607E+1 + 0.152E-3x
R^2=0.20213E-1
Generated 2/5/2025 6:34 AM.
Sample Date

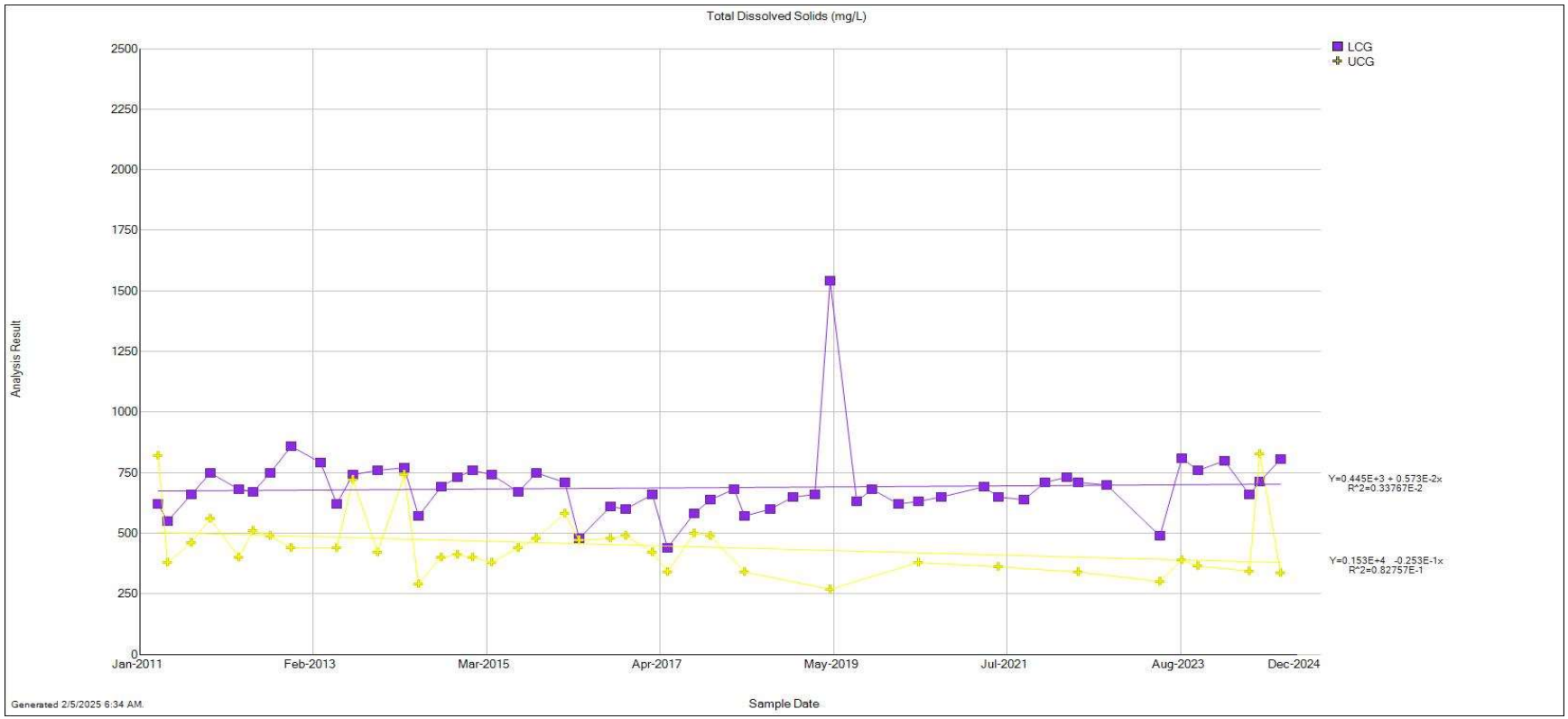

Iron, total (mg/L)
LCG
UCG
38
34.2
30.4
26.6
22.8
19
15.2
11.4
7.6
3.8
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=-0.312E+2 + 0.786E-3x
R^2=0.62387E-1
Y=-0.599E+1 + 0.165E-3x
R^2=0.20035E-1
Generated 2/5/2025 6:34 AM.

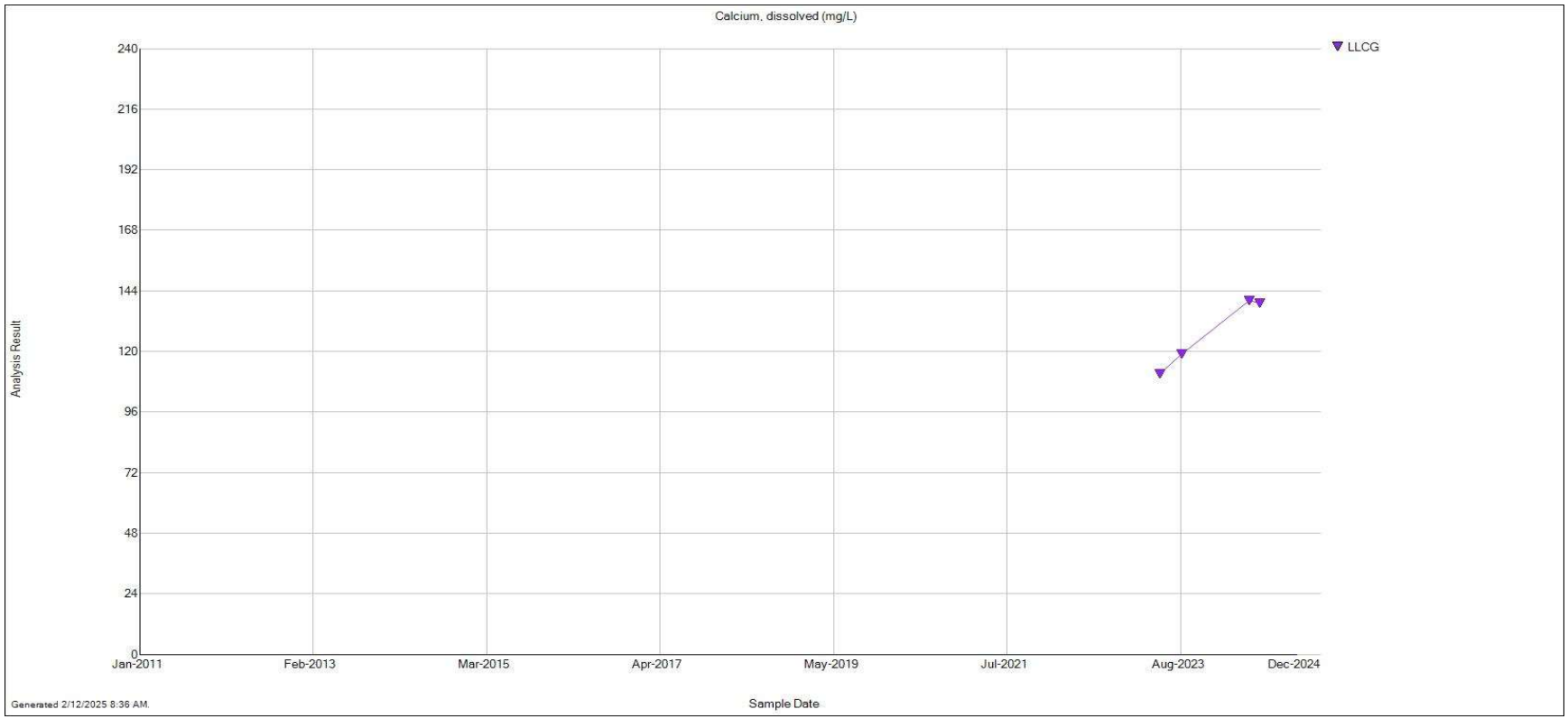

Magnesium, dissolved (mg/L)
LCG
UCG
Analysis Result
250
225
200
175
150
125
100
75
50
25
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.703E+2 -0.663E-4x
R^2=0.38848E-4
Y=0.256E+3 -0.501E-2x
R^2=0.26819E+0
Generated 2/5/2025 6:34 AM.
Sample Date

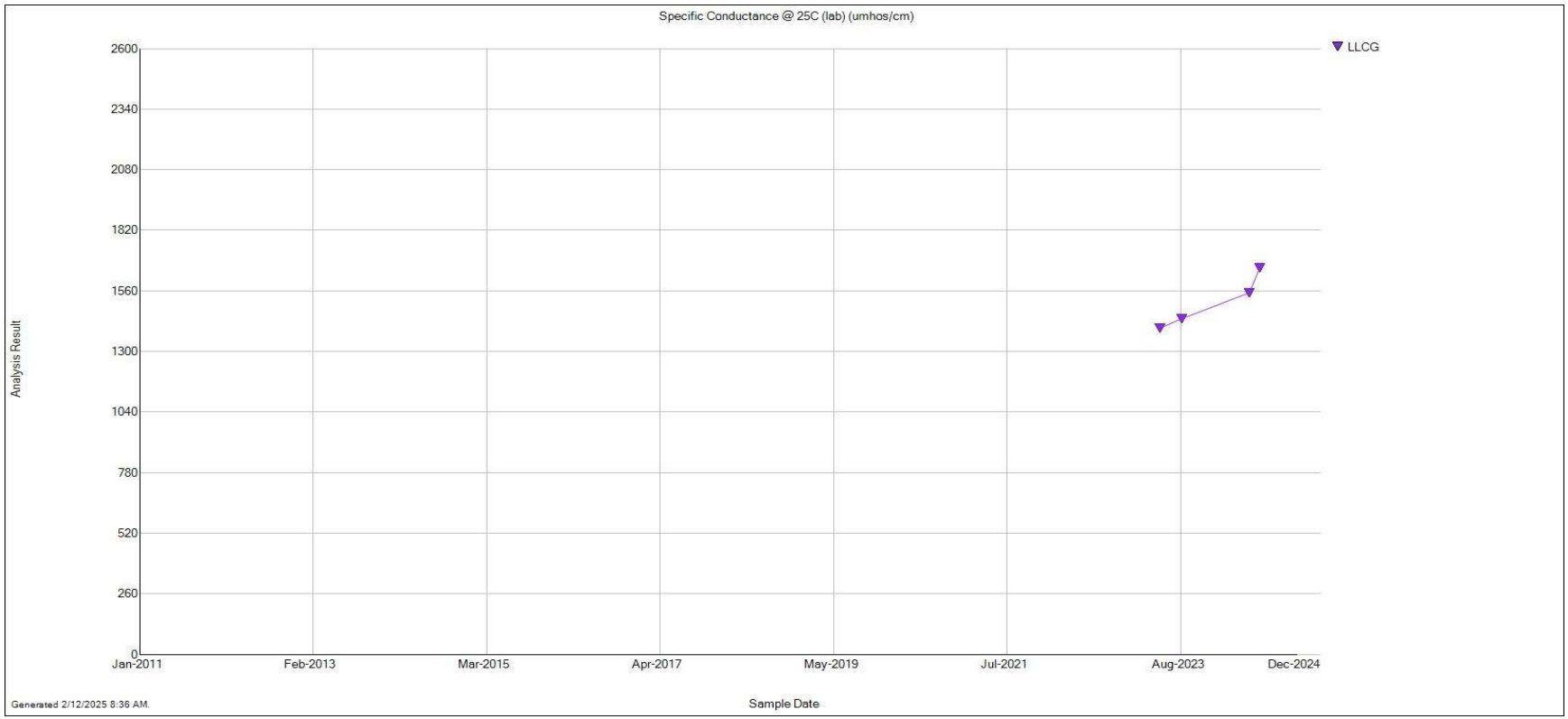

pH (lab)
LCG
UCG
9.5
9.15
8.8
8.45
8.1
7.75
7.4
7.05
6.7
6.35
6
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.114E+2 -0.683E-4x
R^2=0.11538E+0
Y=0.104E+2 -0.477E-4x
R^2=0.88820E-1
Generated 2/5/2025 6:34 AM.

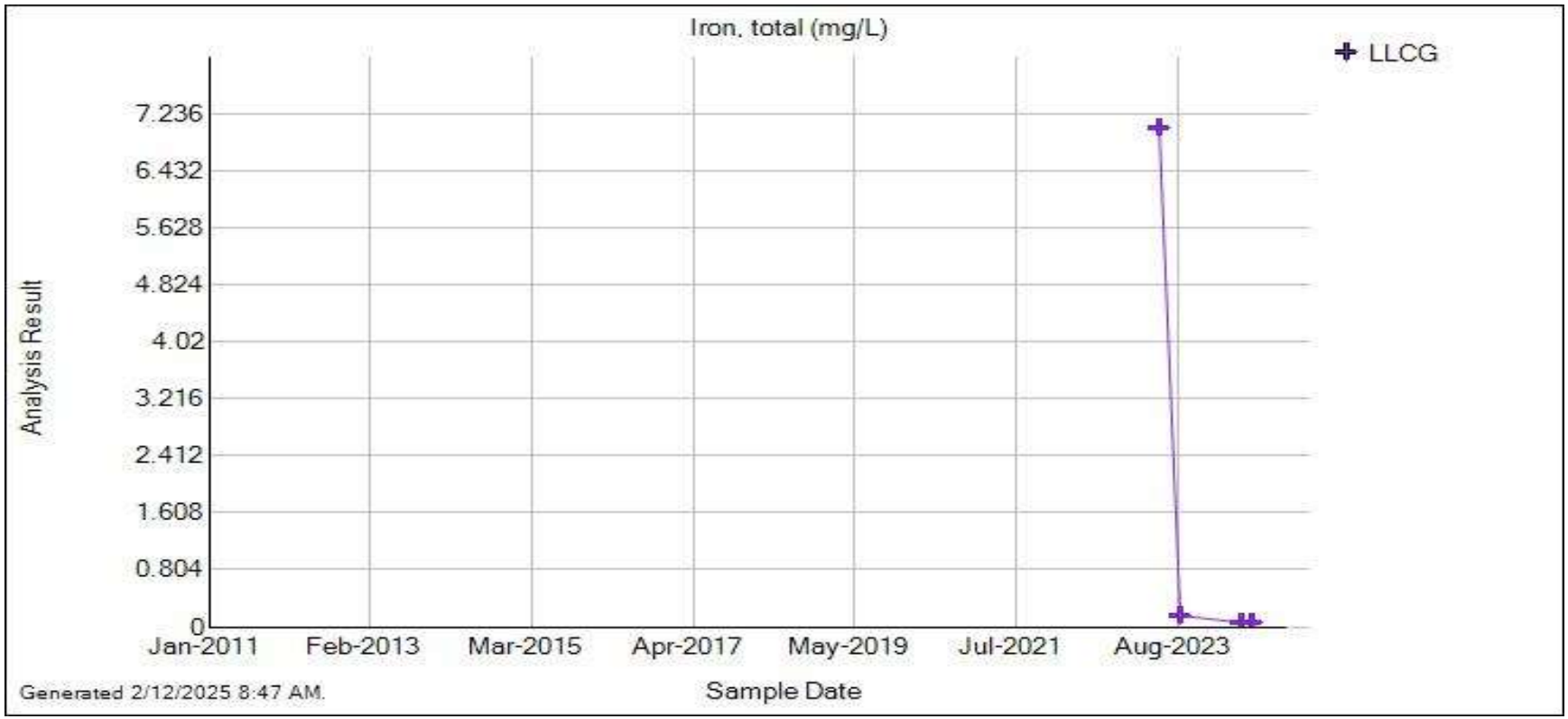

Sodium, dissolved (mg/L)
LCG
UCG
230
207
184
161
138
115
92
69
46
23
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.803E+1 + 0.486E-3x
R^2=0.20963E-2
Y=0.509E+2 -0.929E-3x
R^2=0.23743E+0
Generated 2/5/2025 6:34 AM.

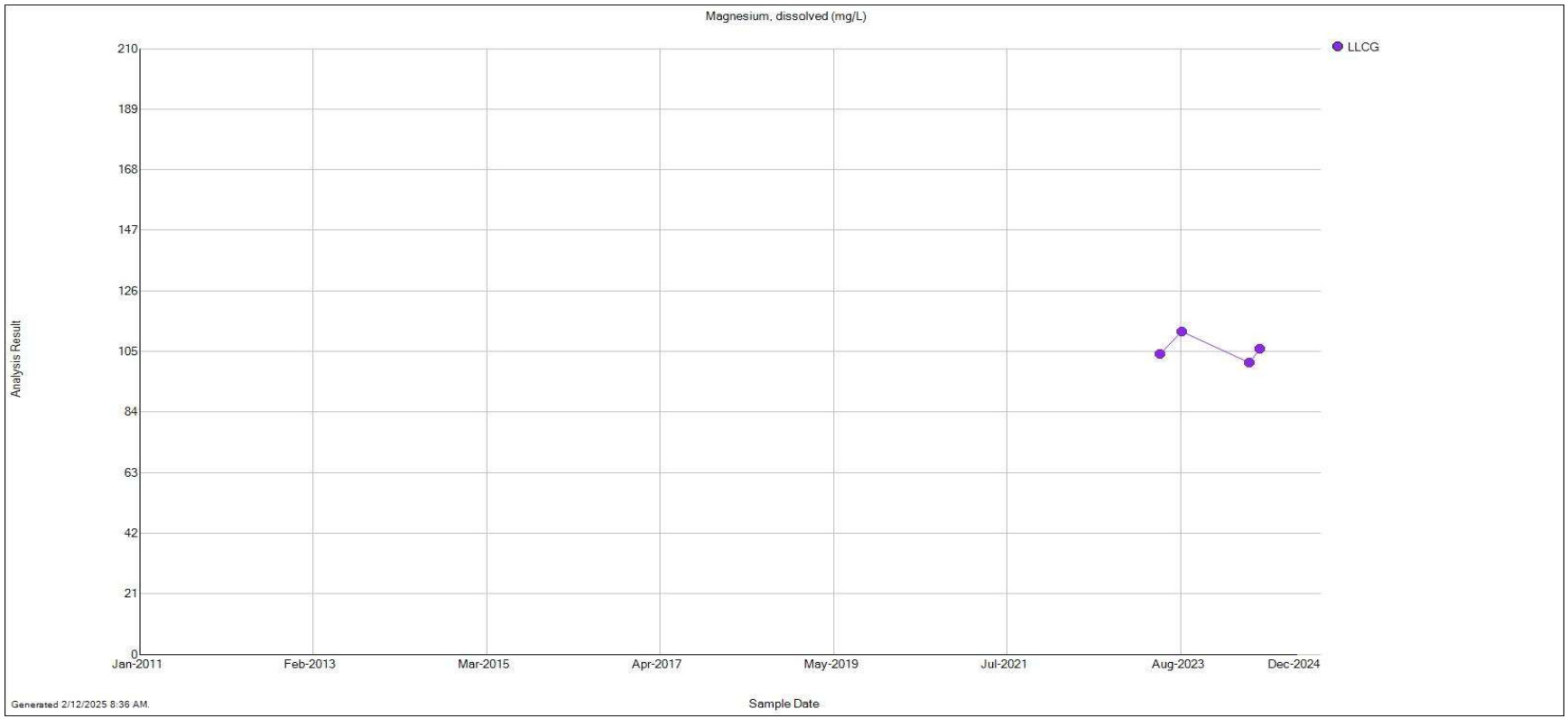

Sulfate, dissolved (mg/L)
LCG
UCG
750
675
600
525
450
375
300
225
150
75
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.208E+3 -0.503E-4x
R^2=0.97076E-6
Y=0.758E+3 -0.155E-1x
R^2=0.13829E+0
Generated 2/5/2025 6:34 AM.

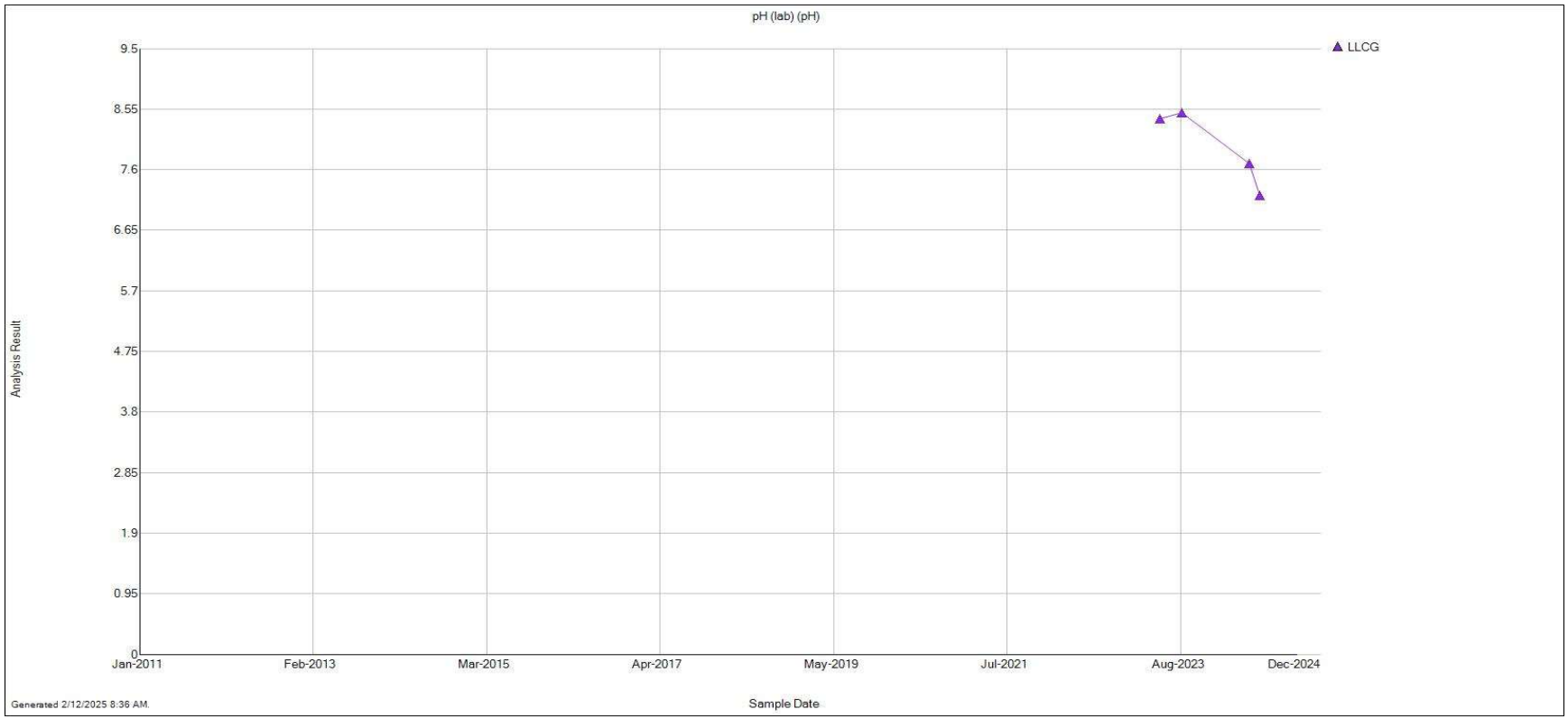

Total Dissolved Solids (mg/L)
LCG
UCG
Analysis Result
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.445E+3 + 0.573E-2x
R^2=0.33767E-2
Y=0.153E+4 -0.253E-1x
R^2=0.82757E-1
Generated 2/5/2025 6:34 AM.
Sample Date

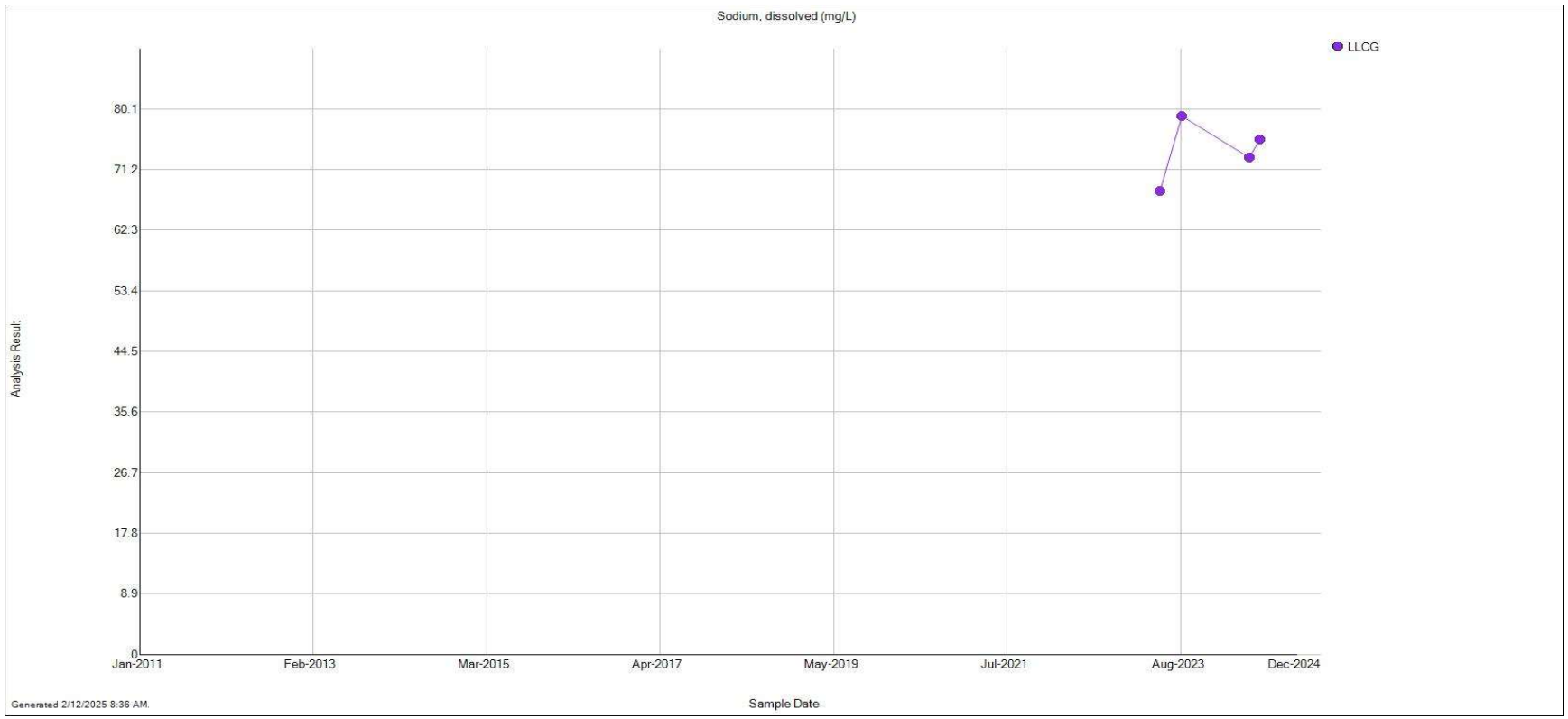

Calcium, dissolved (mg/L)
LLCG
240
216
192
168
144
120
96
72
48
24
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/12/2025 8:36 AM.

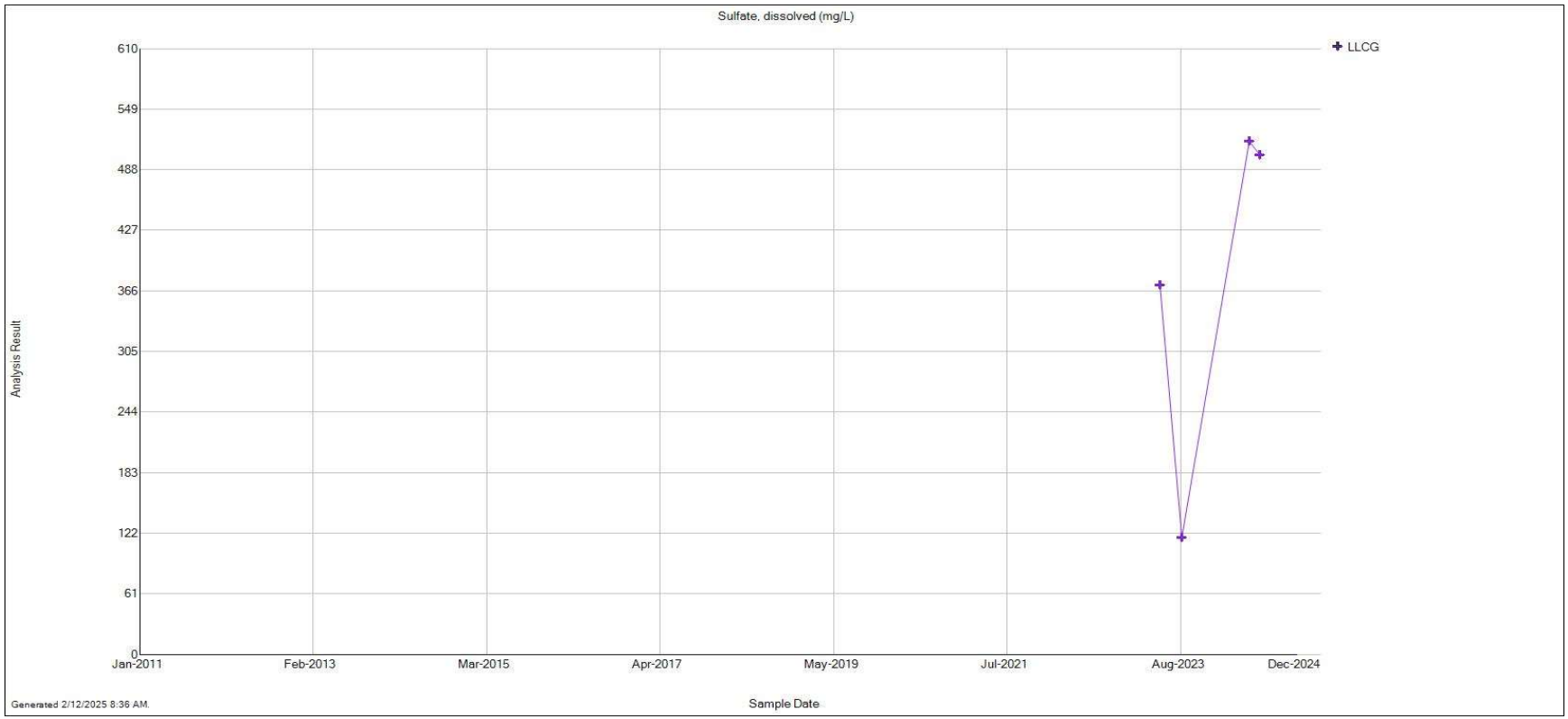

Specific Conductance @ 25C (lab) (umhos/cm)
LLCG
2600
2340
2080
1820
1560
1300
1040
780
520
260
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/12/2025 8:36 AM.


Iron, total (mg/L)
LLCG
Analysis Result
7.236
6.432
5.628
4.824
4.02
3.216
2.412
1.608
0.804
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Sample Date
Generated 2/12/2025 8:47 AM.


Magnesium, dissolved (mg/L)
LLCG
Analysis Result
210
189
168
147
126
105
84
63
42
21
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/12/2025 8:36 AM.
Sample Date


pH (lab) (pH)
LLCG
9.5
8.55
7.6
6.65
5.7
4.75
3.8
2.85
1.9
0.95
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/12/2025 8:36 AM.


Sodium, dissolved (mg/L)
LLCG
Analysis Result
80.1
71.2
62.3
53.4
44.5
35.6
26.7
17.8
8.9
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/12/2025 8:36 AM.
Sample Date


Sulfate, dissolved (mg/L)
LLCG
610
549
488
427
366
305
244
183
122
61
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/12/2025 8:36 AM.

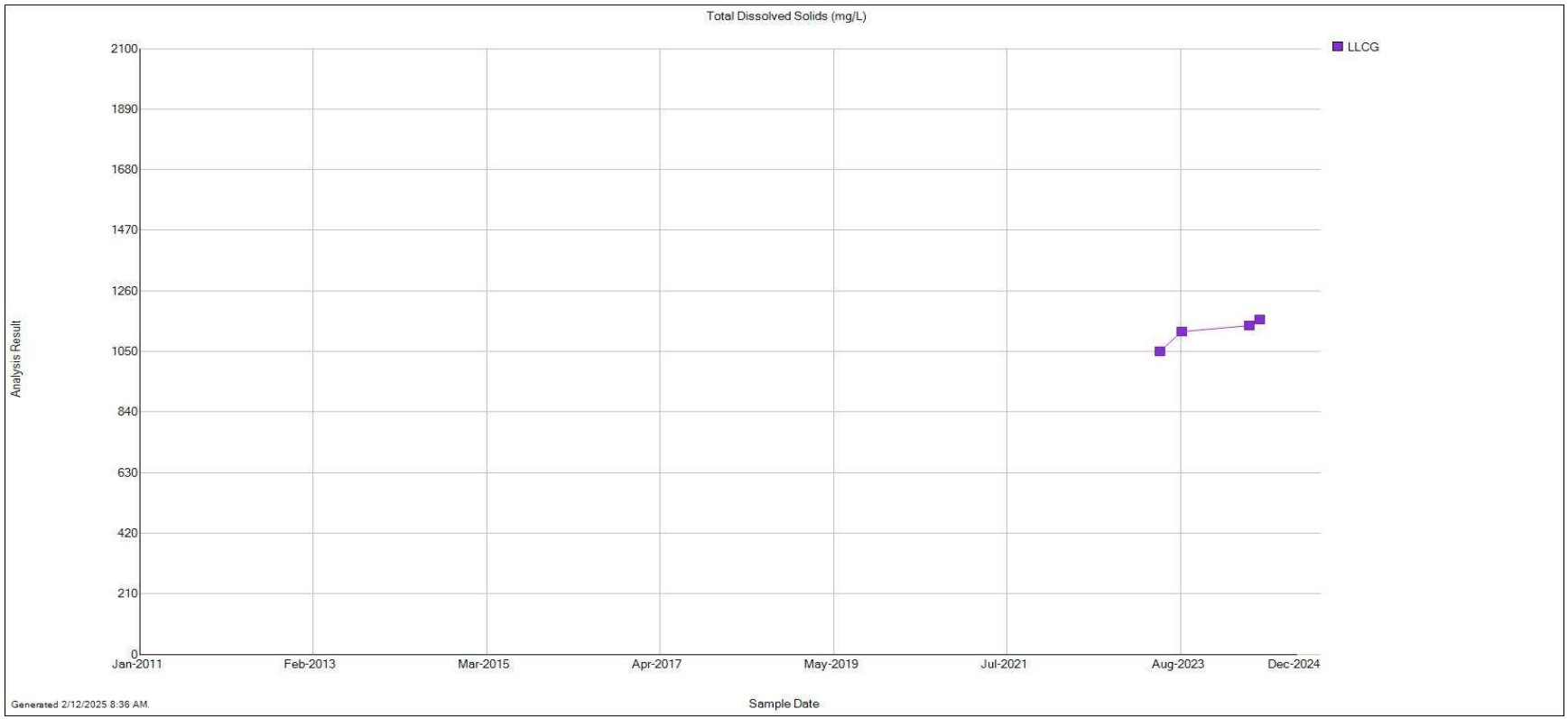

Total Dissolved Solids (mg/L)
LLCG
2100
1890
1680
1470
1260
1050
840
630
420
210
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/12/2025 8:36 AM.

Exhibit 1C

Ground Water Data

Water Year January 1, 2024, to December 31, 2024

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: A-6

	Sample Date			
	2/20/2024	**5/7/2024**	**7/23/2024**	**10/21/2024**
As, diss, mg/L	<0.00020	0.0012	0.00036	0.0012
Ca, diss, mg/L	78	79	61	59
Fe, diss, mg/L	<0.060	3.8	0.21	0.097
GW Depth (TOC), ft	5.91	4.4	8.95	10.75
HCO3, mg/L	440	470	520	510
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	67	68	52	49
Mn, diss, mg/L	0.058	0.061	0.063	0.181
Na, diss, mg/L	110	110	130	130
NH3 as N, diss, mg/L	1.5	1.3	1.4	<0.02
NO3, diss, mg/L	0.58	0.59	0.061	<0.02
Orthophosphate, diss, mg/L	<0.30	0.59	<0.30	<0.30
Pb, diss, mg/L	<0.00010	0.00026	0.00011	<0.00010
pH (field), SU	7.29	7.38	7.21	7.3
pH (lab), pH	7.8	7.9	6.9	6.9
Se, diss, mg/L	0.0051	0.0013	0.00031	<0.00025
SO4, diss, mg/L	240	220	150	144
Spec. Cond. (field),	1322	1308	1299	1169
Spec. Cond. (lab),	1160	1340	1210	1170
TDS, mg/L	810	830	740	724
Temp (Celcius), degrees C	7.29	7.0	12.1	8.8
Zn, diss, mg/L	<0.020	0.096	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: A-7

	Sample Date			
	2/20/2024	**5/7/2024**	**7/23/2024**	**10/21/2024**
As, diss, mg/L	0.00038	0.00036	0.00033	0.00039
Ca, diss, mg/L	130	130	130	130
Fe, diss, mg/L	<0.060	<0.060	<0.060	<0.060
GW Depth (TOC), ft	29.58	28	29.89	32.45
HCO3, mg/L	440	440	430	430
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	120	120	120	120
Mn, diss, mg/L	<0.010	<0.010	<0.010	<0.010
Na, diss, mg/L	57	57	53	57
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO3, diss, mg/L	4.6	5	4.5	<0.010
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	<0.00010	<0.00010	<0.00010
pH (field), pH	7.64	7.42	7.31	7.3
pH (lab), pH	7.8	7.9	7.3	6.8
Se, diss, mg/L	0.012	0.015	0.016	0.01
SO4, diss, mg/L	470	450	420	440
Spec. Cond. (field),	1666	1615	1633	1595
Spec. Cond. (lab),	1470	1660	1620	1580
TDS, mg/L	1100	1100	1100	1100
Temp (Celcius), degrees C	7.34	7.4	11.4	7.8
Zn, diss, mg/L	<0.020	0.065	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: A-8

	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/21/2024**
As, diss, mg/L	0.00052	0.0005	0.00057	0.00056
Ca, diss, mg/L	100	94	91	140
Fe, diss, mg/L	<0.060	<0.060	<0.060	0.066
GW Depth (TOC), ft	20.56	16.9	23.6	26.91
HCO3, mg/L	330	360	360	350
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	77	71	69	0.18
Mn, diss, mg/L	<0.010	<0.010	<0.010	0.18
Na, diss, mg/L	10	9.7	10	16
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO3, diss, mg/L	2.9	<0.010	2.2	8.2
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	<0.00010	<0.00010	0.00025
pH (field), pH	7.47	7.44	7.45	7.4
pH (lab), pH	7.8	7.1	7.5	6.8
Se, diss, mg/L	0.0078	0.0057	0.0052	0.016
SO4, diss, mg/L	250	200	180	470
Spec. Cond. (field),	1066	948	1026	1356
Spec. Cond. (lab),	891	946	988	1400
TDS, mg/L	700	640	620	1100
Temp (Celcius), degrees C	7.47	8.7	10.6	9.2
Zn, diss, mg/L	<0.020	<0.020	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: NGSW

	Sample Date			
	2/19/2024	**5/7/2024**	**7/30/2024**	**10/23/2024**
As, diss, mg/L	0.0012	0.00098	0.00086	0.00094
Ca, diss, mg/L	170	180	180	180
Fe, diss, mg/L	0.41	0.24	0.12	0.18
GW Depth (TOC), ft	7.9	6	10.21	10
HCO3, mg/L	600	610	580	610
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	170	180	180	180
Mn, diss, mg/L	1.1	1.2	1.3	1.2
Na, diss, mg/L	170	170	170	170
NH3 as N, diss, mg/L	0.28	0.23	0.4	0.25
NO3, diss, mg/L	<0.020	0.024	<0.020	<0.020
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	<0.00010	<0.00020	<0.00010
pH (field), SU	7.41	7.35	7.34	7
pH (lab), pH	7.9	7.9	7	7.1
Se, diss, mg/L	0.00016	0.00013	0.0013	0.0002
SO4, diss, mg/L	800	920	930	950
Spec. Cond. (field),	2450	2450	4200	2520
Spec. Cond. (lab),	2160	2550	2450	2460
TDS, mg/L	1800	2000	2000	1900
Temp (Celcius), degrees C	9.4	7.6	11.8	9.8
Zn, diss, mg/L	<0.020	0.1	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: MT-95-02

	Sample Date			
	3/20/2024	**5/7/2024**	**7/30/2024**	**10/23/2024**
As, diss, mg/L	0.00059	0.00047	0.00061	<0.00040
Ca, diss, mg/L	250	250	250	260
Fe, diss, mg/L	<0.060	0.17	<0.060	<0.12
GW Depth (TOC), ft	25.4	25.4	25.85	25.85
HCO3, mg/L	660	630	620	610
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	250	250	260	260
Mn, diss, mg/L	<0.010	0.028	0.01	<0.020
Na, diss, mg/L	370	370	370	380
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO3, diss, mg/L	1.9	1.6	1.4	1.4
Orthophosphate, diss, mg/L	<0.30	<0.60	<0.30	<0.60
Pb, diss, mg/L	<0.00020	0.0004	<0.00020	<0.00020
pH (field), SU	7.19	7.26	7.17	6.8
pH (lab), pH	7.8	7.9	7.1	7.0
Se, diss, mg/L	0.01	0.0079	0.0077	0.0079
SO4, diss, mg/L	36	1400	1300	1300
Spec. Cond. (field),	6460	6300	6520	6430
Spec. Cond. (lab),	4250	4270	4010	4190
TDS, mg/L	3300	3200	3300	3300
Temp (Celcius), degrees C	11.0	8.4	11.3	10.6
Zn, diss, mg/L	0.094	0.069	<0.020	<0.040

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: Gossard

	Sample Date			
	2/19/2024	**6/6/2024**	**7/23/2024**	**10/23/2024**
As, diss, mg/L	<0.00020	0.00026	0.00027	0.00027
Ca, diss, mg/L	120	120	130	130
Fe, diss, mg/L	<0.060	<0.060	<0.060	<0.060
GW Depth (TOC), ft	18	18.04	18.58	19
HCO3, mg/L	490	510	480	480
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	140	140	150	150
Mn, diss, mg/L	<0.010	<0.010	<0.010	<0.010
Na, diss, mg/L	180	170	180	180
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO3, diss, mg/L	0.53	<0.010	0.54	0.52
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	<0.00010	<0.00010	<0.00010
pH (field), pH	7.52	7.48	7.54	7.49
pH (lab), pH	7.9	7.6	6.9	6.8
Se, diss, mg/L	0.0062	0.0064	0.007	0.0062
SO4, diss, mg/L	700	720	770	730
Spec. Cond. (field),	2170	3520	2280	2170
Spec. Cond. (lab),	1950	2060	2240	2180
TDS, mg/L	1600	1600	1600	1600
Temp (Celcius), degrees C	10.3	15.5	11.3	9.8
Zn, diss, mg/L	<0.020	<0.020	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: MLC-04-01

	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/21/2024**
As, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Ca, diss, mg/L	150	150	150	160
Fe, diss, mg/L	<0.060	<0.060	<0.060	<0.060
GW Depth (TOC), ft	37.16	33.05	33.45	34.2
HCO3, mg/L	420	460	410	420
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	84	88	91	92
Mn, diss, mg/L	<0.010	<0.010	<0.010	<0.010
Na, diss, mg/L	55	56	58	59
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO3, diss, mg/L	0.91	<0.010	0.83	0.96
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	0.00016	0.00013	<0.00010
pH (field), pH	7.36	7.34	7.34	7.4
pH (lab), pH	7.8	7.6	7.1	6.9
Se, diss, mg/L	0.013	0.014	0.015	0.017
SO4, diss, mg/L	400	430	440	410
Spec. Cond. (field),	1535	1560	1580	1516
Spec. Cond. (lab),	1290	1450	1570	1550
TDS, mg/L	1000	1100	1100	1100
Temp (Celcius), degrees C	7.36	14	12.2	10
Zn, diss, mg/L	<0.020	<0.020	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: MC-04-01

	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/21/2024**
As, diss, mg/L	0.00028	0.00026	0.00033	0.00027
Ca, diss, mg/L	96	82	79	85
Fe, diss, mg/L	<0.060	<0.060	0.063	<0.060
GW Depth (TOC), ft	23.8	21.8	24.6	26.35
HCO3, mg/L	320	300	320	320
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	64	55	54	56
Mn, diss, mg/L	<0.010	<0.010	0.011	<0.010
Na, diss, mg/L	18	17	16	16
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO3, diss, mg/L	1.8	<0.010	1.2	1.4
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	<0.00010	<0.00010	<0.00010
pH (field), pH	7.4	7.31	7.34	7.4
pH (lab), pH	7.8	7.4	6.7	6.7
Se, diss, mg/L	0.0062	0.0062	0.0053	0.0051
SO4, diss, mg/L	200	180	160	160
Spec. Cond. (field),	969	932	895	841
Spec. Cond. (lab),	807	811	848	857
TDS, mg/L	620	560	530	540
Temp (Celcius), degrees C	7	10.2	9.6	7.2
Zn, diss, mg/L	<0.020	<0.020	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: MC-04-02

	Sample Date			
	2/20/2024	**6/6/2024**	**7/23/2024**	**10/21/2024**
As, diss, mg/L	0.00092	0.00078	0.00083	0.0015
Ca, diss, mg/L	140	130	130	140
Fe, diss, mg/L	<0.060	<0.060	0.31	0.25
GW Depth (TOC), ft	11.58	9.9	11.2	11.7
HCO3, mg/L	490	510	500	490
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	84	80	85	85
Mn, diss, mg/L	0.44	0.42	0.44	0.51
Na, diss, mg/L	40	39	38	35
NH3 as N, diss, mg/L	0.32	0.19	0.22	0.3
NO3, diss, mg/L	0.08	<0.010	<0.020	0.021
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	0.0017	<0.00010	<0.00010
pH (field), pH	7.38	7.39	7.35	7.4
pH (lab), pH	7.9	7.6	7.1	6.9
Se, diss, mg/L	<0.00010	<0.00010	0.00016	<0.00010
SO4, diss, mg/L	260	270	250	250
Spec. Cond. (field),	1345	1307	1311	1219
Spec. Cond. (lab),	1120	1260	1350	1310
TDS, mg/L	880	890	890	860
Temp (Celcius), degrees C	7.38	12.2	12	9.7
Zn, diss, mg/L	<0.020	0.02	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: MJ-95-01

	Sample Date			
	3/20/2024	**6/6/2024**	**7/30/2024**	**10/23/2024**
As, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Ca, diss, mg/L	120	120	130	130
Fe, diss, mg/L	0.13	<0.060	0.49	0.086
GW Depth (TOC), ft	11.95	9.12	15.22	15.2
HCO3, mg/L	520	500	500	520
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	92	95	96	100
Mn, diss, mg/L	0.028	0.024	0.034	0.022
Na, diss, mg/L	29	24	31	30
NH3 as N, diss, mg/L	1.5	0.97	1.8	1.6
NO3, diss, mg/L	0.097	0.02	0.2	0.14
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	<0.00010	<0.00010	0.00025	0.00012
pH (field), pH	7.1	7.14	7.04	7.08
pH (lab), pH	7.6	7.7	7.5	6.9
Se, diss, mg/L	0.0014	0.0041	0.00052	0.001
SO4, diss, mg/L	290	310	240	240
Spec. Cond. (field),	1398	1310	1329	1327
Spec. Cond. (lab),	1210	1270	1300	1340
TDS, mg/L	870	940	920	920
Temp (Celcius), degrees C	8.3	8.6	10.2	7.5
Zn, diss, mg/L	<0.020	<0.020	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: MJ-95-03

	Sample Date			
	3/20/2024	**6/6/2024**	**7/30/2024**	**10/23/2024**
As, diss, mg/L	0.00036	0.00034	0.00056	0.00038
Ca, diss, mg/L	150	150	150	160
Fe, diss, mg/L	<0.060	<0.060	0.072	<0.060
GW Depth (TOC), ft	18.61	19	19.25	19.22
HCO3, mg/L	590	590	560	560
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	190	200	200	210
Mn, diss, mg/L	<0.010	<0.010	0.027	<0.010
Na, diss, mg/L	140	140	140	140
NH3 as N, diss, mg/L	<0.10	<0.10	<0.10	<0.10
NO3, diss, mg/L	1.4	<0.010	1.7	1.9
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	0.00024	0.00012	0.00037	0.0012
pH (field), pH	7.51	7.43	7.34	7.08
pH (lab), pH	7.8	7.8	7.2	7
Se, diss, mg/L	0.0073	0.0075	0.0068	0.0076
SO4, diss, mg/L	840	970	910	880
Spec. Cond. (field),	2400	2470	3940	2410
Spec. Cond. (lab),	2310	2290	2360	2440
TDS, mg/L	1800	1900	2000	1900
Temp (Celcius), degrees C	9.3	11.1	11.5	10.5
Zn, diss, mg/L	0.095	<0.020	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: TroutCreekWell

	Sample Date			
	3/20/2024	**6/6/2024**	**7/30/2024**	**10/23/2024**
As, diss, mg/L	0.00081	0.00083	0.00097	0.00092
Ca, diss, mg/L	4	3.9	4	3.8
Fe, diss, mg/L	0.066	<0.060	<0.060	<0.060
GW Depth (TOC), ft	586.3	585.4	585.5	585.7
HCO3, mg/L	180	<2.0	<2.0	<2.0
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	10	11	9.8	9.6
Mn, diss, mg/L	<0.010	<0.010	<0.010	<0.010
Na, diss, mg/L	220	220	220	230
NH3 as N, diss, mg/L	1.7	1.6	1.9	1.7
NO3, diss, mg/L	<0.020	<0.010	<0.020	<0.020
Orthophosphate, diss, mg/L	<0.30	<0.30	<0.30	<0.30
Pb, diss, mg/L	0.0024	0.0021	0.0022	0.002
pH (field), pH	9.62	9.58	9.57	9.12
pH (lab), pH	9.1	9.1	9	9
Se, diss, mg/L	0.00012	<0.00010	0.00022	0.00024
SO4, diss, mg/L	260	240	210	210
Spec. Cond. (field),	1154	1174	1124	1113
Spec. Cond. (lab),	1040	1100	1110	1120
TDS, mg/L	690	680	670	680
Temp (Celcius), degrees C	9.8	16.8	12.2	9.9
Zn, diss, mg/L	0.099	<0.020	<0.020	<0.020

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: LGSW-1

	Sample Date			
	2/19/2024	**5/7/2024**	**7/30/2024**	**10/21/2024**
As, diss, mg/L	0.00026	0.00044	0.0004	0.00031
Fe, diss, mg/L	*0.35	*0.36	<0.060	<0.060
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mn, diss, mg/L	0.08	0.095	0.079	0.075
NO2 + NO3, diss, mg/L	0.68	0.84	0.16	0.03
NO2, diss, mg/L	<0.010	0.014	0.011	0.03
NO3, diss, mg/L	0.68	0.83	0.15	<0.010
pH (field), pH	7.43	7.43	7.35	7.37
Se, diss, mg/L	0.00095	0.005	0.0023	0.00077
SO4, diss, mg/L	870	800	850	640
TDS, mg/L	1800	1700	1700	1500
Zn, diss, mg/L	<0.020	0.094	<0.020	<0.020

* = Exceeded Table 16 Values (Volume 2C, Exhibit 7, Item 19)

< = Analytical Result was not detected at the reporting limit

Colowyo Mine
Date Range: 01/01/2024 to 12/31/2024
Well: LWCW-1

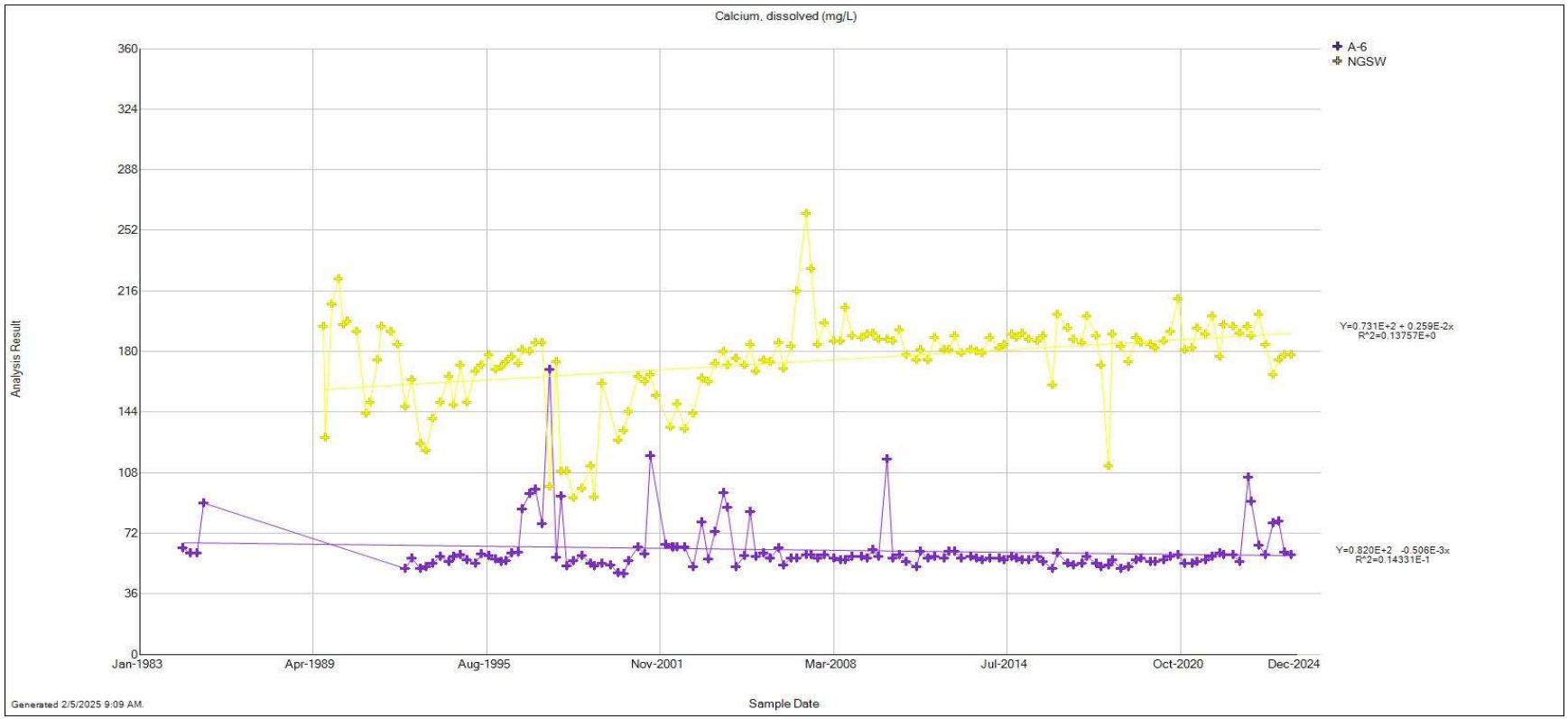
	Sample Date			
	2/19/2024	**5/7/2024**	**7/23/2024**	**10/23/2024**
As, diss, mg/L	0.00098	0.0022	0.0004	0.00036
Fe, diss, mg/L	*2.1	*6.2	0.11	<0.060
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mn, diss, mg/L	*1.2	*3.2	0.067	0.13
NO2 + NO3, diss, mg/L	0.082	0.15	0.081	0.022
NO2, diss, mg/L	<0.010	<0.010	<0.010	<0.010
NO3, diss, mg/L	0.082	0.15	0.081	0.022
pH (field), pH	7.44	7.50	7.37	7.11
Se, diss, mg/L	0.0011	0.0027	0.0014	0.00018
SO4, diss, mg/L	590	680	690	800
TDS, mg/L	1300	1400	1500	1800
Zn, diss, mg/L	<0.020	0.16	<0.020	<0.020

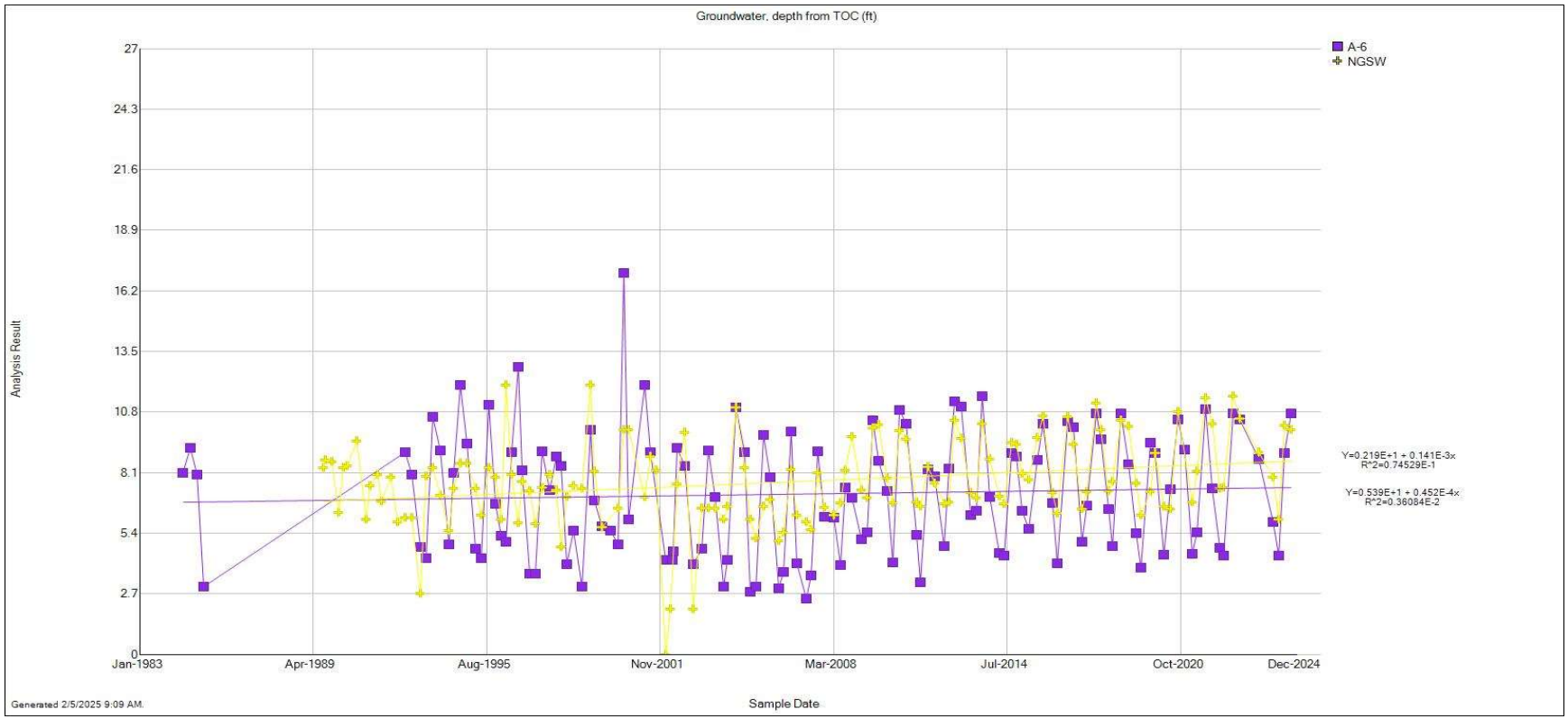
* = Exceeded Table 16 Values (Volume 2C, Exhibit 7, Item 19)

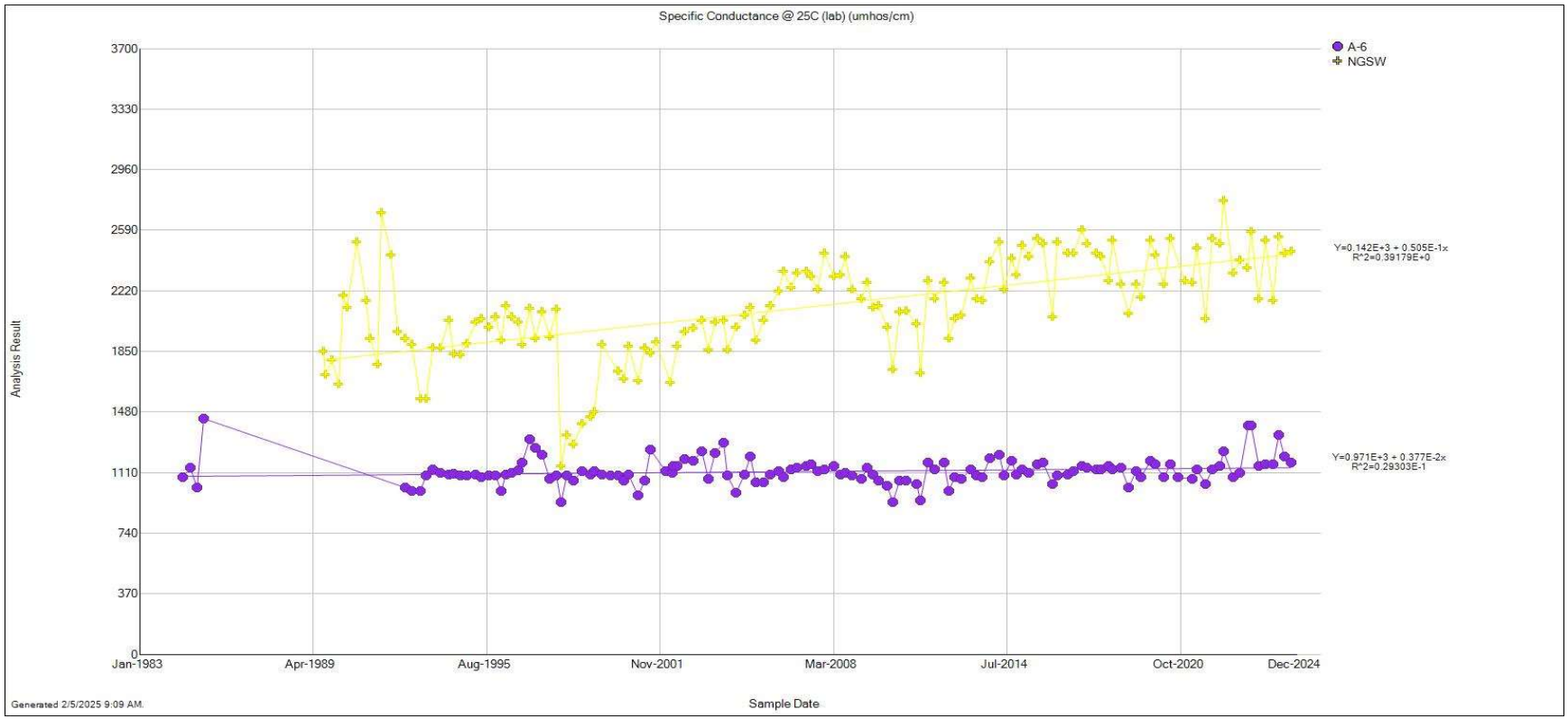
< = Analytical Result was not detected at the reporting limit

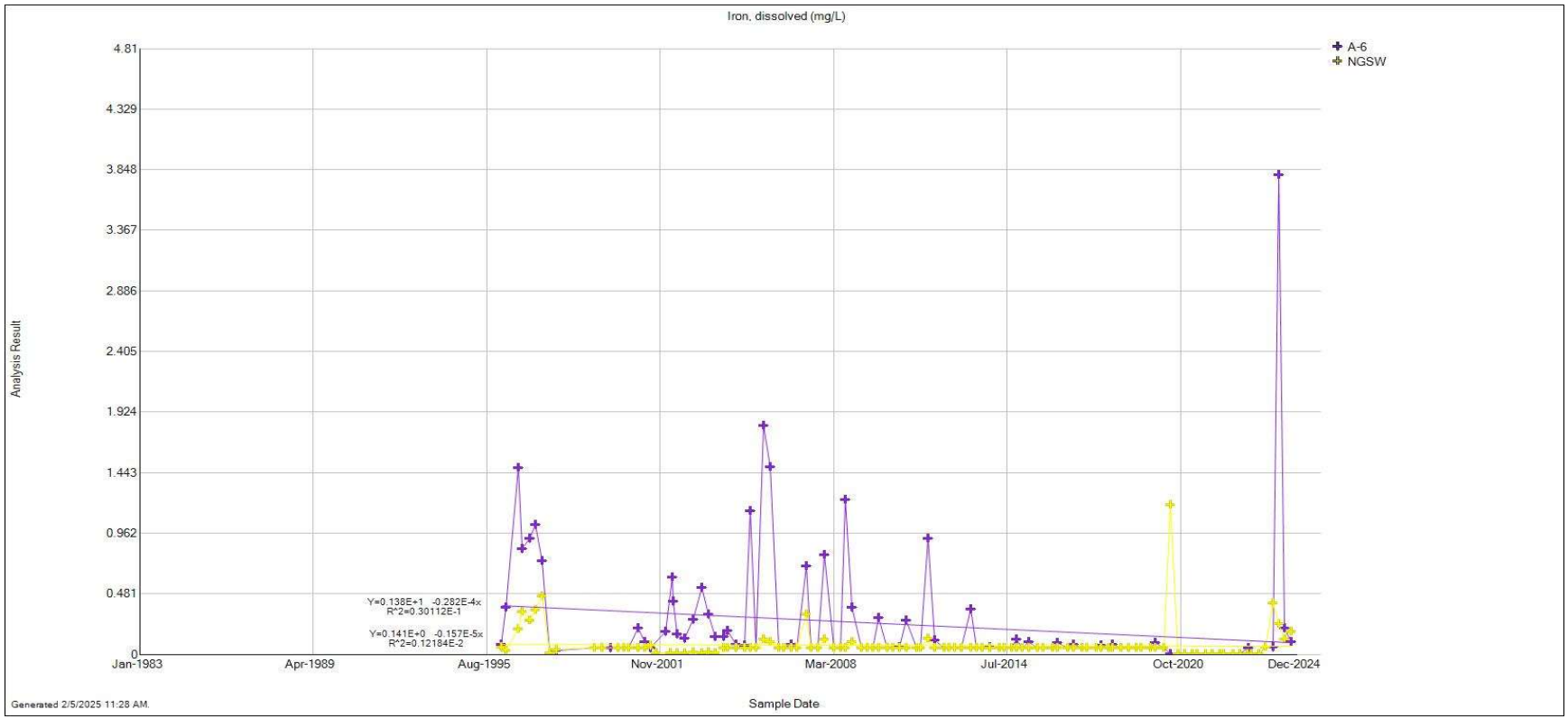
Exhibit 1D

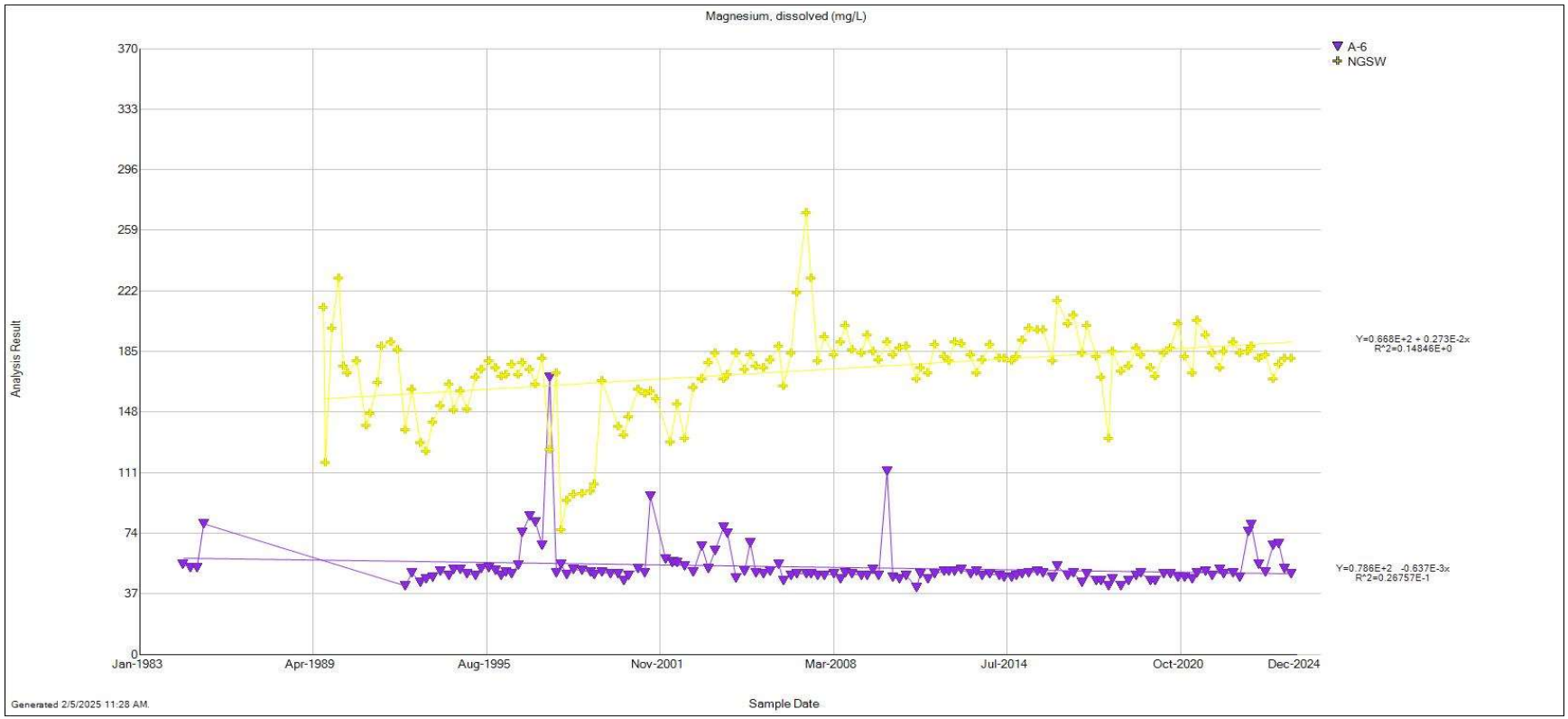
Ground Water Graphs

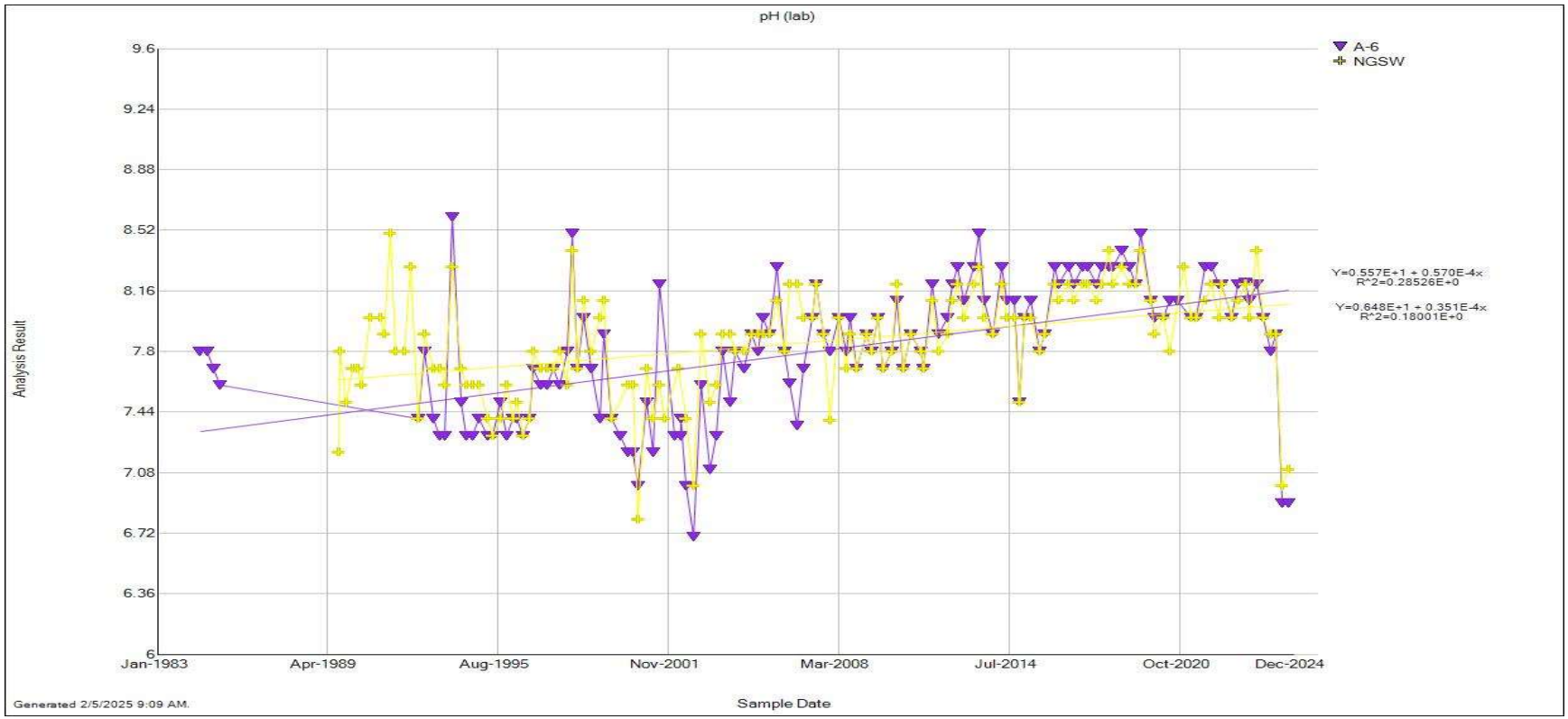

Calcium, dissolved (mg/L)
A-6
NGSW
Y=0.731E+2 + 0.259E-2x
R^2=0.13757E+0
Y=0.820E+2 -0.506E-3x
R^2=0.14331E-1
Analysis Result
360
324
288
252
216
180
144
108
72
36
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:09 AM.

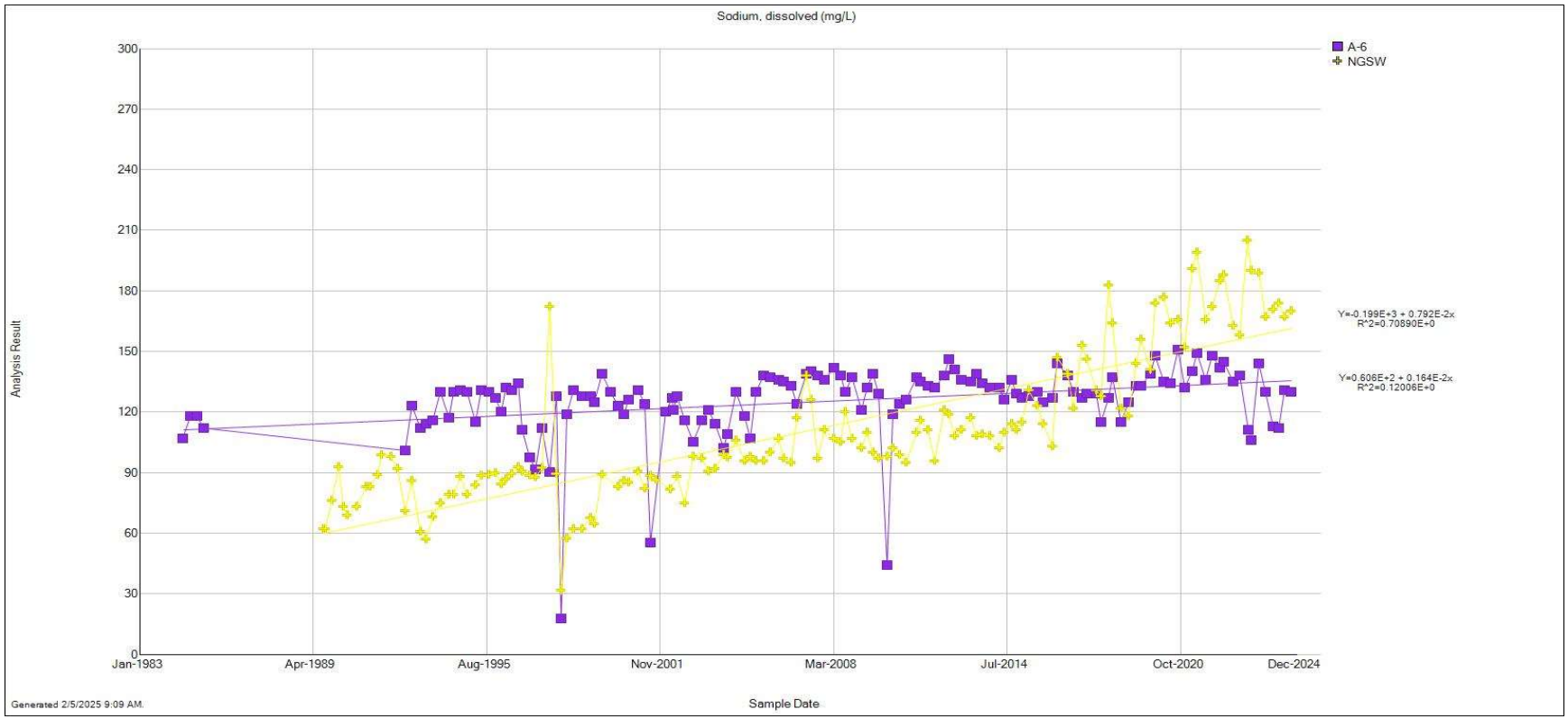

Groundwater, depth from TOC (ft)
A-6
NGSW
27
24.3
21.6
18.9
16.2
13.5
10.8
8.1
5.4
2.7
0
Analysis Result
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Y=0.219E+1 + 0.141E-3x
R^2=0.74529E-1
Y=0.539E+1 + 0.452E-4x
R^2=0.36084E-2
Generated 2/5/2025 9:09 AM.

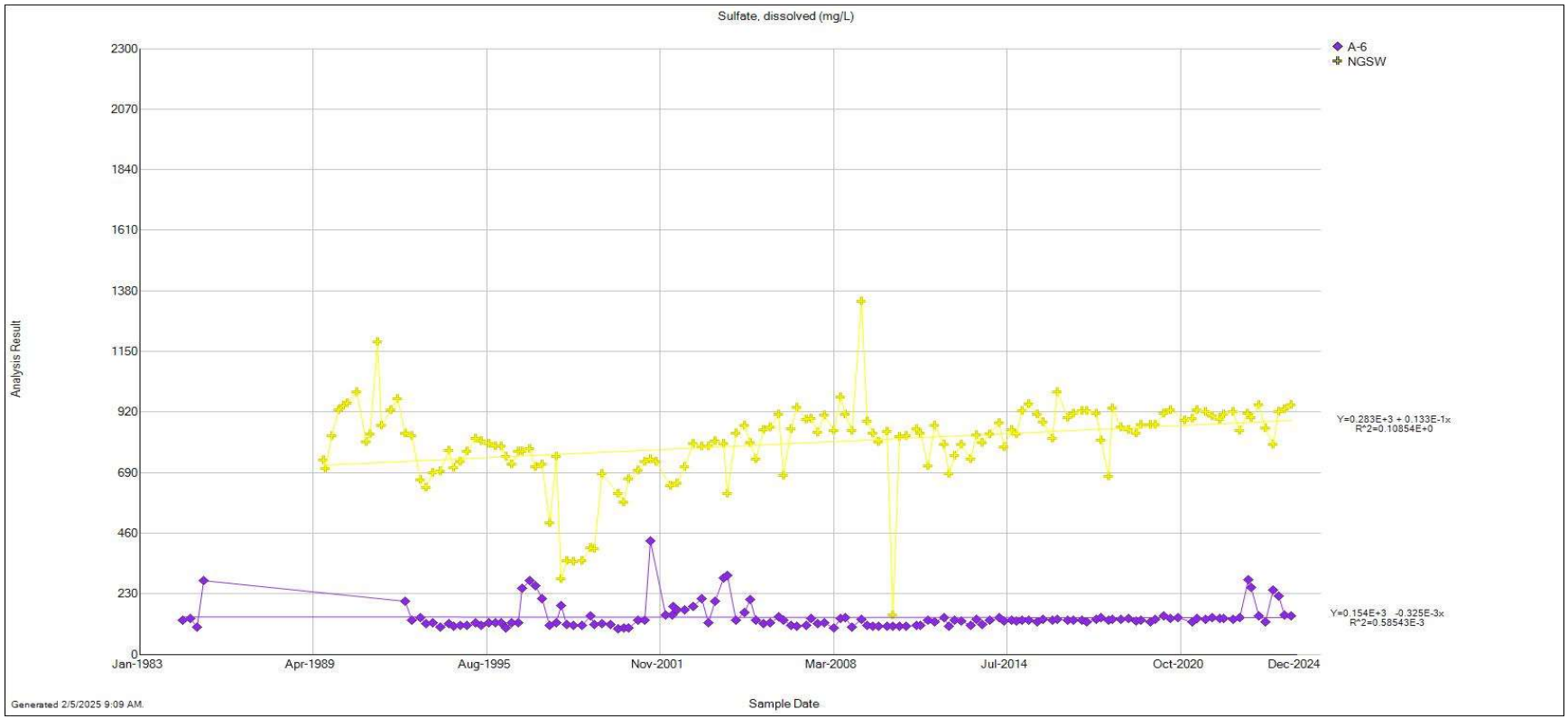

Specific Conductance @ 25C (lab) (umhos/cm)
A-6
NGSW
Y=0.142E+3 + 0.505E-1x
R^2=0.39179E+0
Y=0.971E+3 + 0.377E-2x
R^2=0.29303E-1
Analysis Result
3700
3330
2960
2590
2220
1850
1480
1110
740
370
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:09 AM.

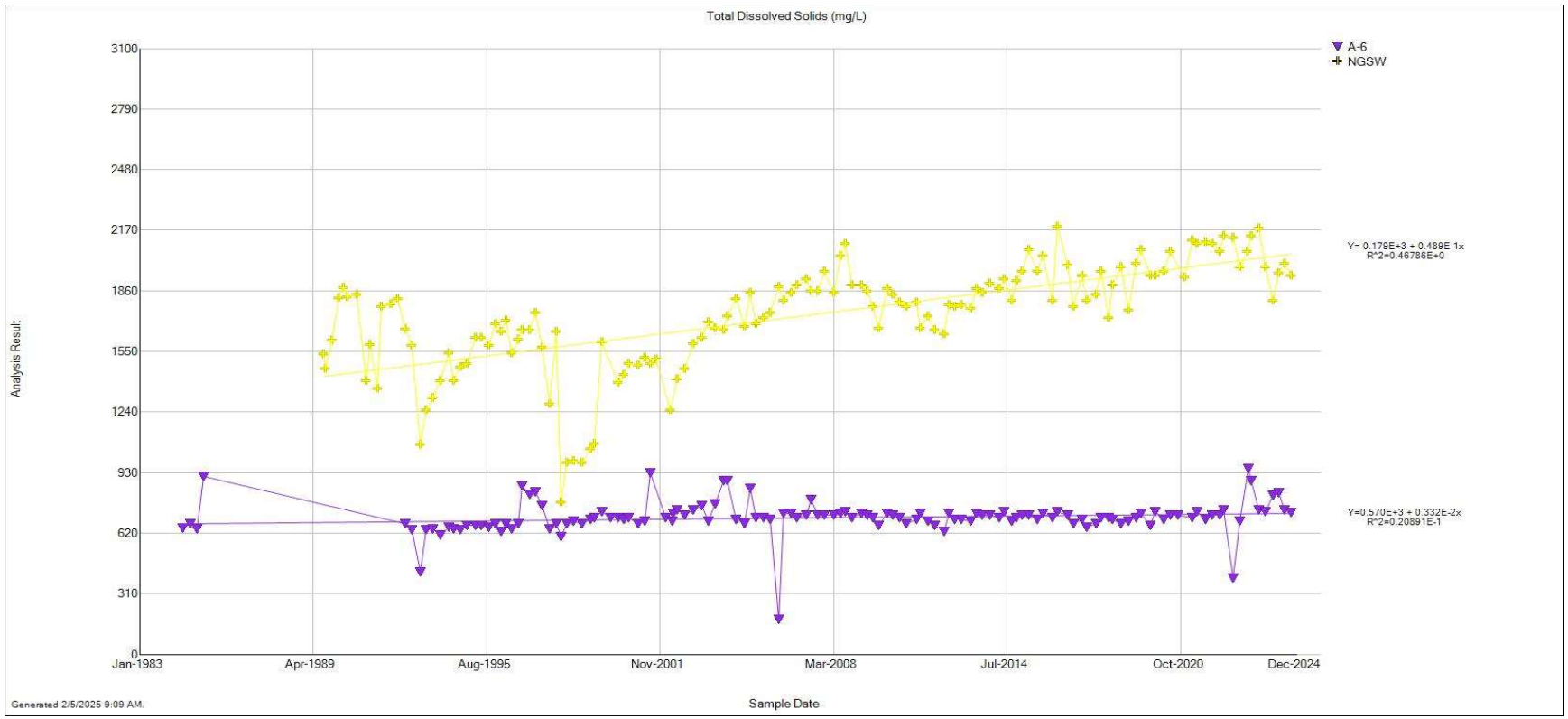

Iron, dissolved (mg/L)
A-6
NGSW
4.81
4.329
3.848
3.367
2.886
2.405
1.924
1.443
0.962
0.481
0
Analysis Result
Y=0.138E+1 -0.282E-4x
R^2=0.30112E-1
Y=0.141E+0 -0.157E-5x
R^2=0.12184E-2
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 11:28 AM.

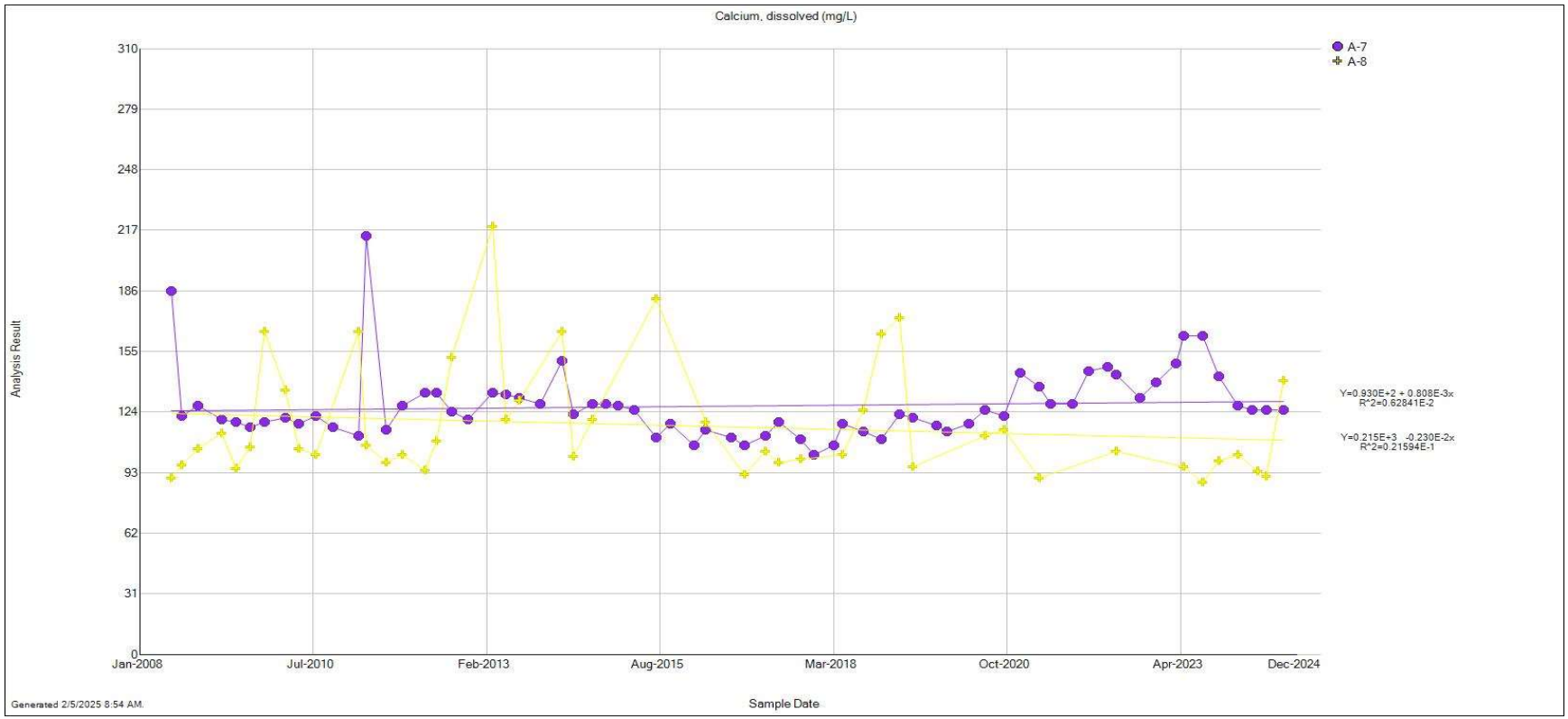

Magnesium, dissolved (mg/L)
A-6
NGSW
Y=0.668E+2 + 0.273E-2x
R^2=0.14846E+0
Y=0.786E+2 -0.637E-3x
R^2=0.26757E-1
Analysis Result
370
333
296
259
222
185
148
111
74
37
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 11:28 AM.

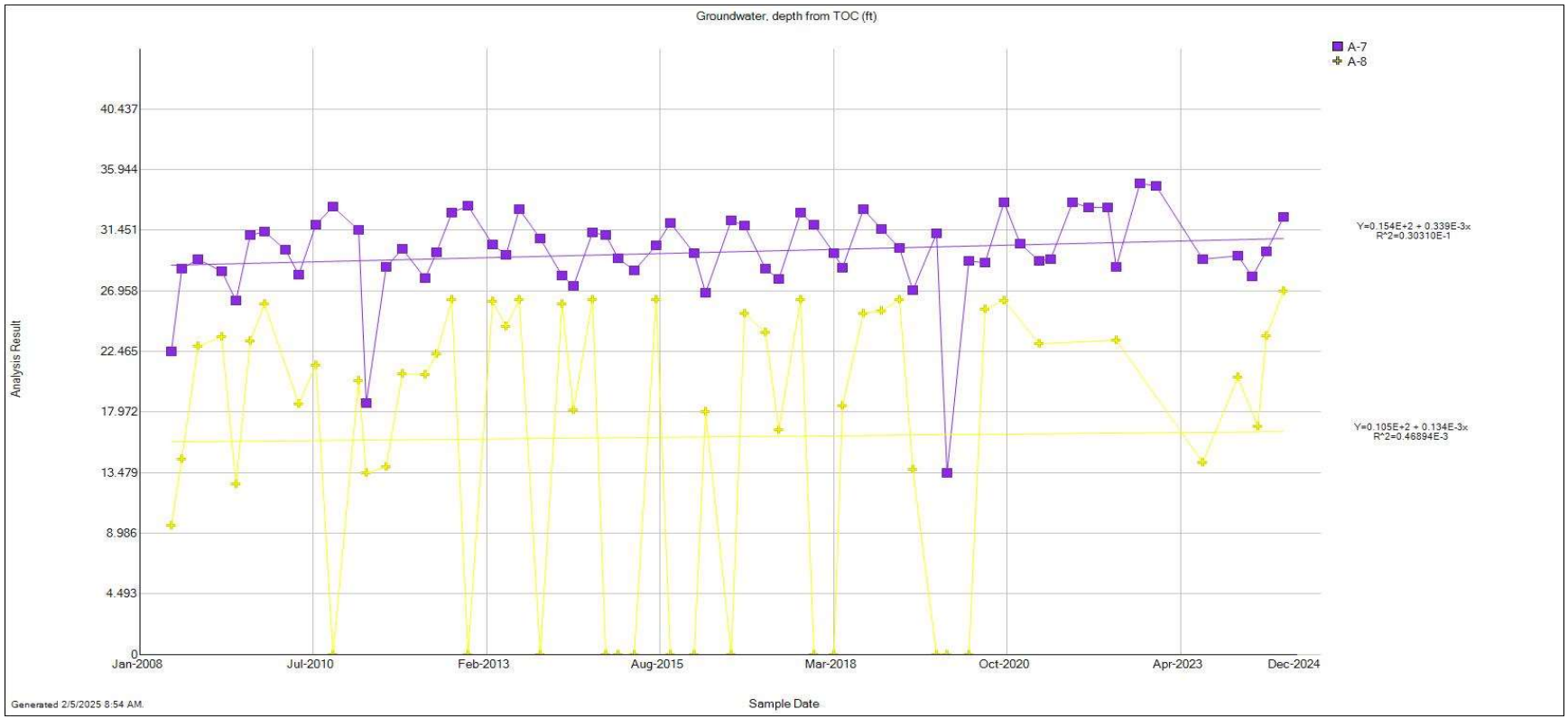

pH (lab)
A-6
NGSW
Y=0.557E+1 + 0.570E-4x
R^2=0.28526E+0
Y=0.648E+1 + 0.351E-4x
R^2=0.18001E+0
Analysis Result
9.6
9.24
8.88
8.52
8.16
7.8
7.44
7.08
6.72
6.36
6
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Generated 2/5/2025 9:09 AM.
Sample Date

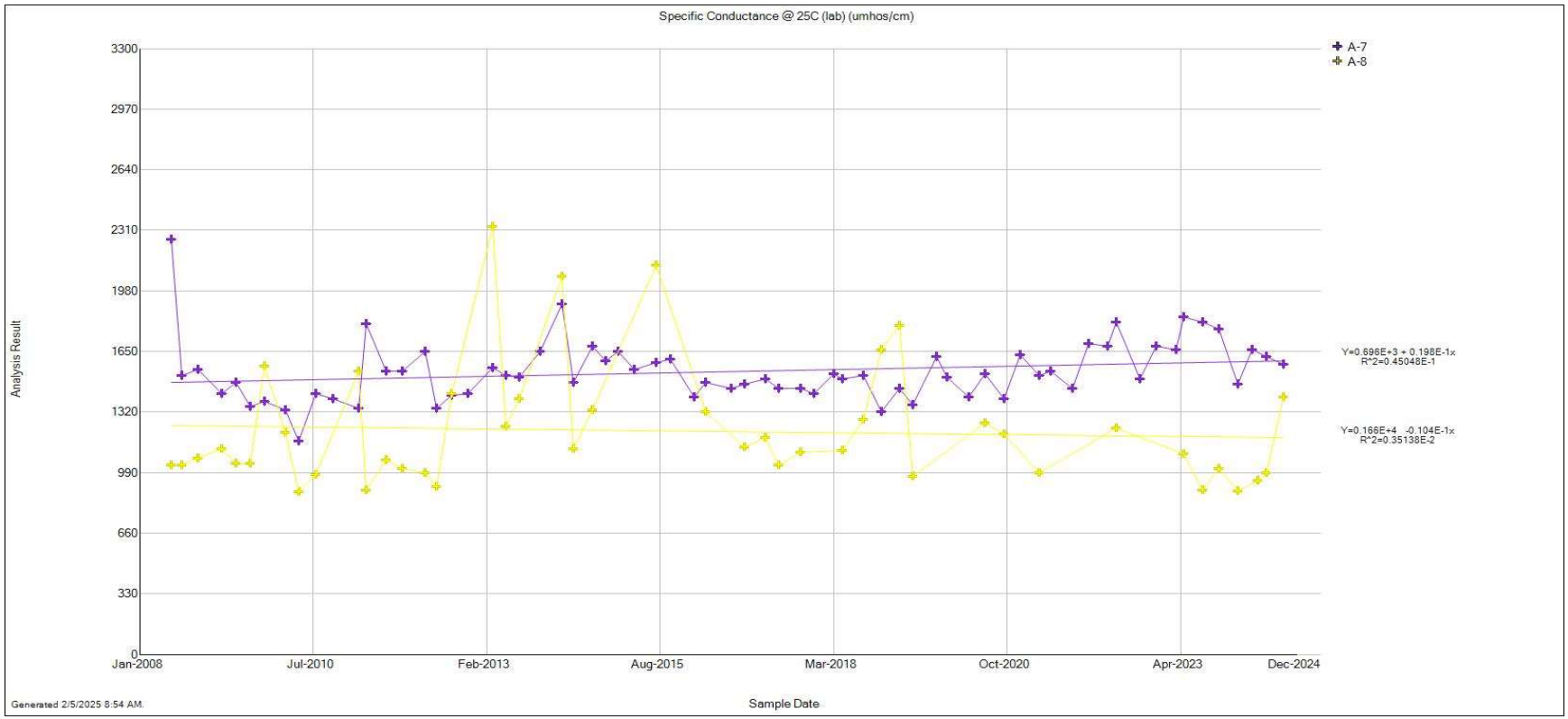

Sodium, dissolved (mg/L)
A-6
NGSW
Y=-0.199E+3 + 0.792E-2x
R^2=0.70890E+0
Y=0.606E+2 + 0.164E-2x
R^2=0.12006E+0
Analysis Result
300
270
240
210
180
150
120
90
60
30
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:09 AM.

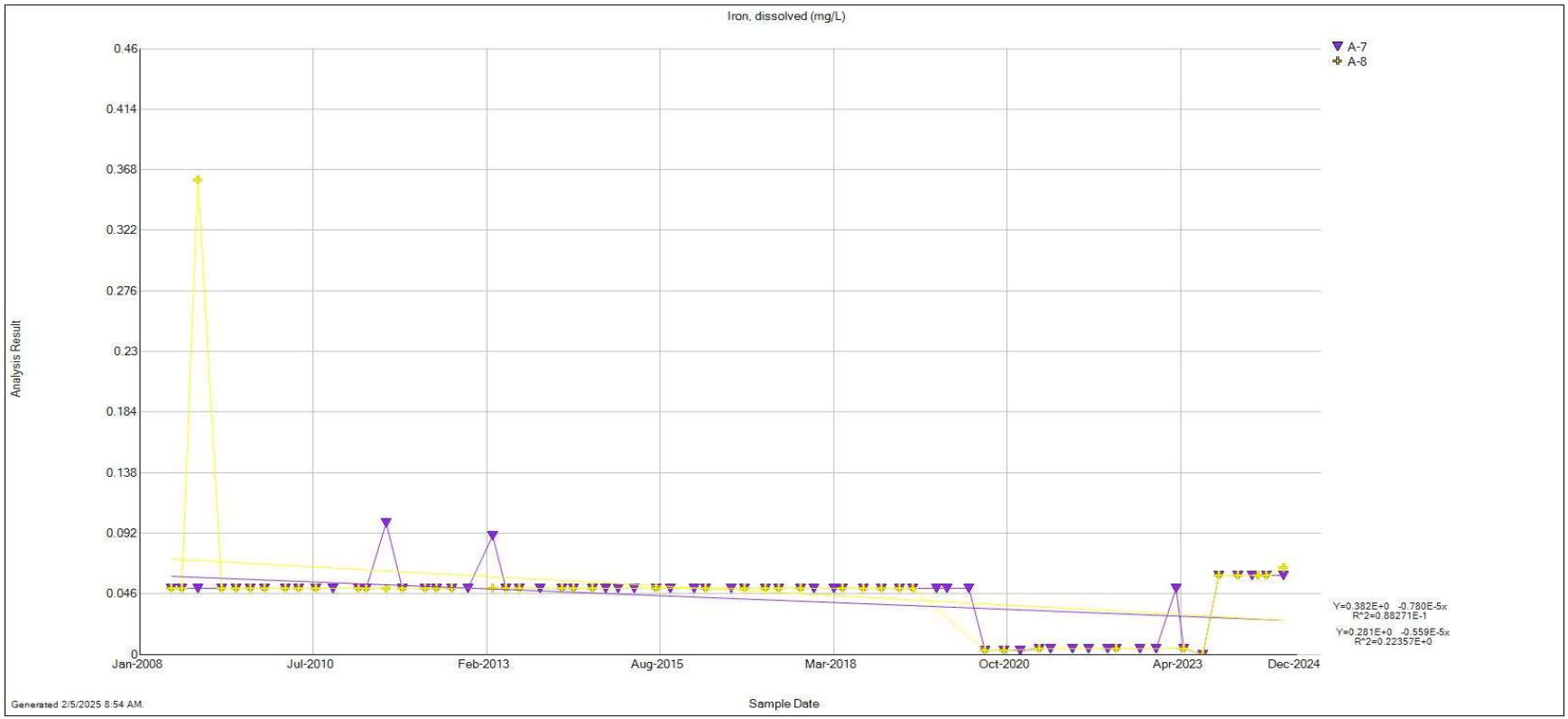

Sulfate, dissolved (mg/L)
A-6
NGSW
2300
2070
1840
1610
1380
1150
920
690
460
230
0
Analysis Result
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Y=0.283E+3 + 0.133E-1x
R^2=0.10854E+0
Y=0.154E+3 + -0.325E-3x
R^2=0.58543E-3
Generated 2/5/2025 9:09 AM.

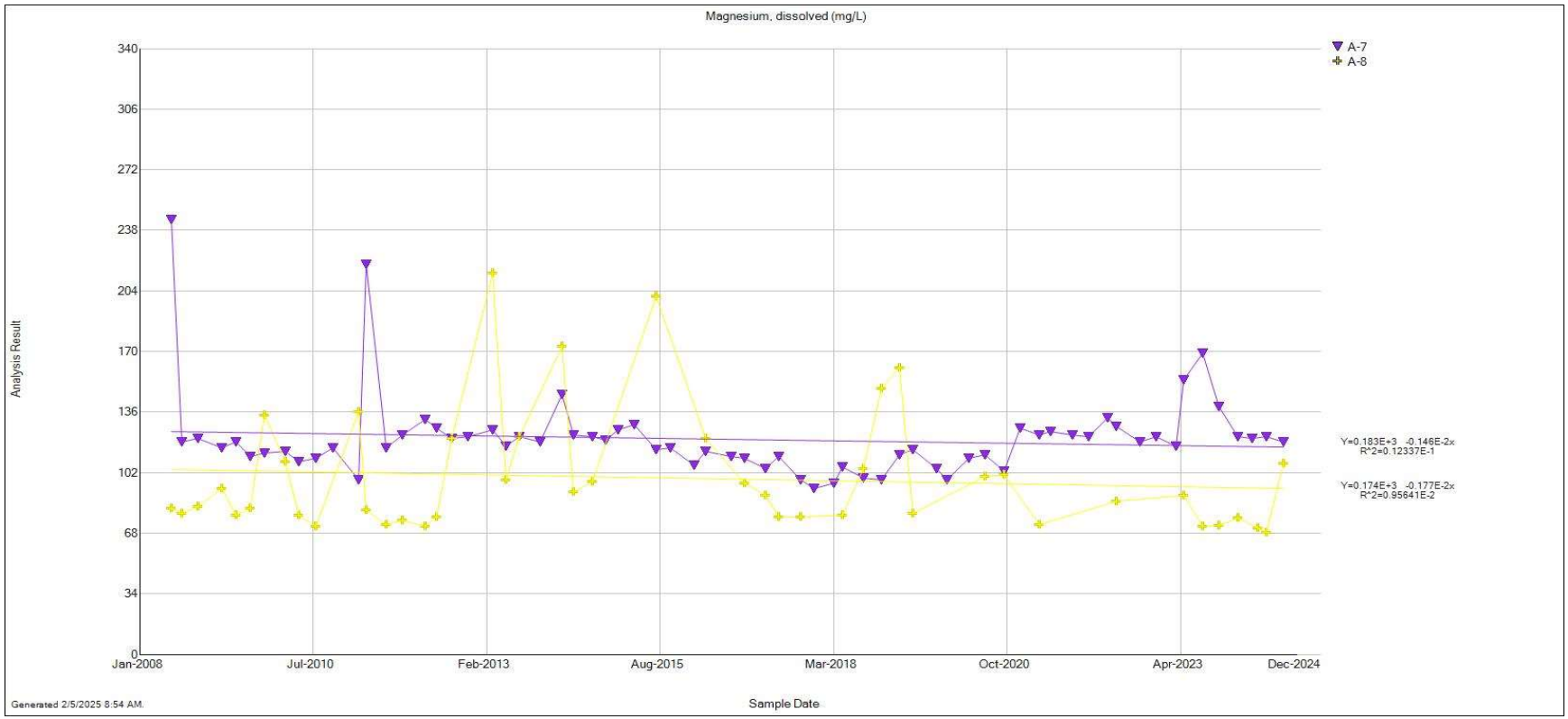

Total Dissolved Solids (mg/L)
A-6
NGSW
Y=-0.179E+3 + 0.489E-1x
R^2=0.46786E+0
Y=0.570E+3 + 0.332E-2x
R^2=0.20891E-1
Analysis Result
3100
2790
2480
2170
1860
1550
1240
930
620
310
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Generated 2/5/2025 9:09 AM.
Sample Date

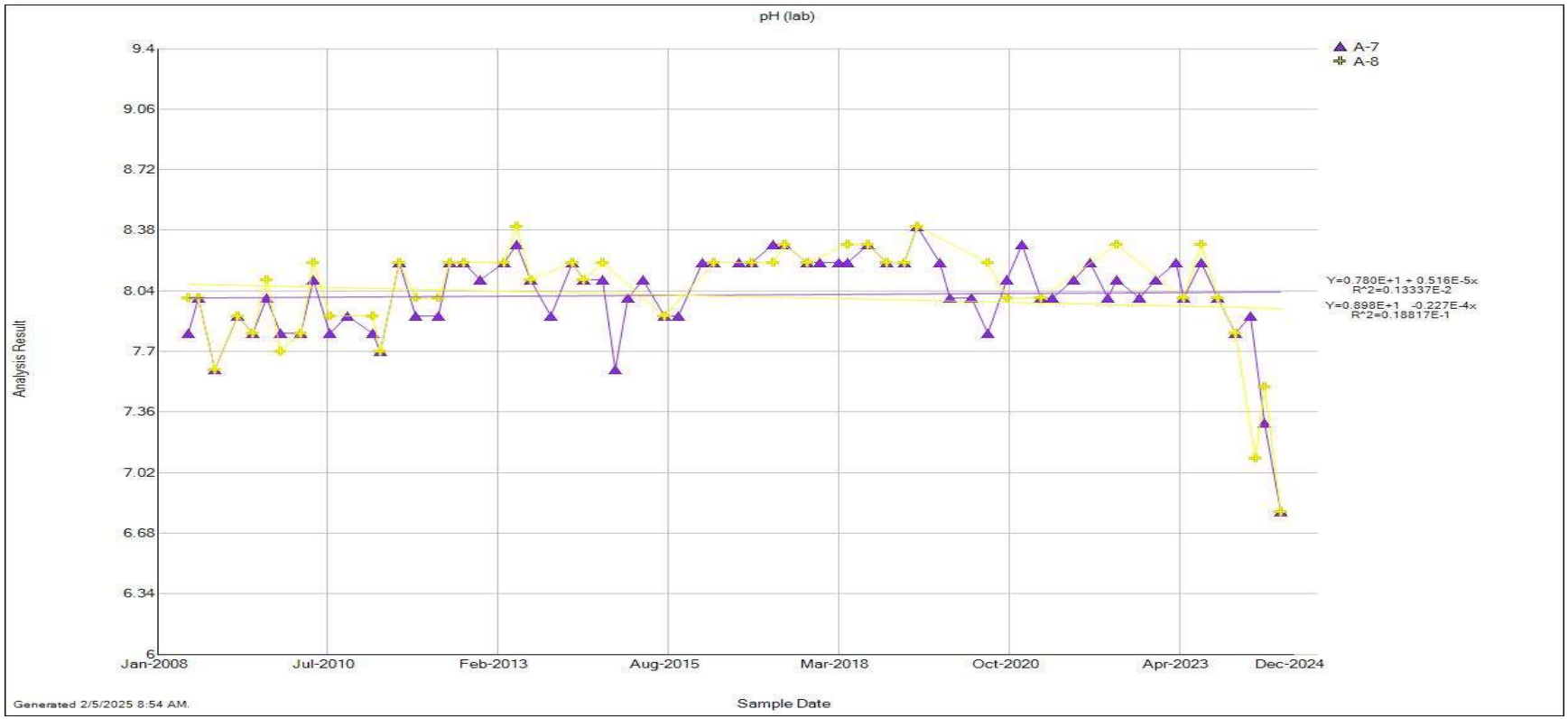

Calcium, dissolved (mg/L)
A-7
A-8
310
279
248
217
186
155
124
93
62
31
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.930E+2 + 0.808E-3x
R^2=0.62841E-2
Y=0.215E+3 -0.230E-2x
R^2=0.21594E-1
Generated 2/5/2025 8:54 AM.

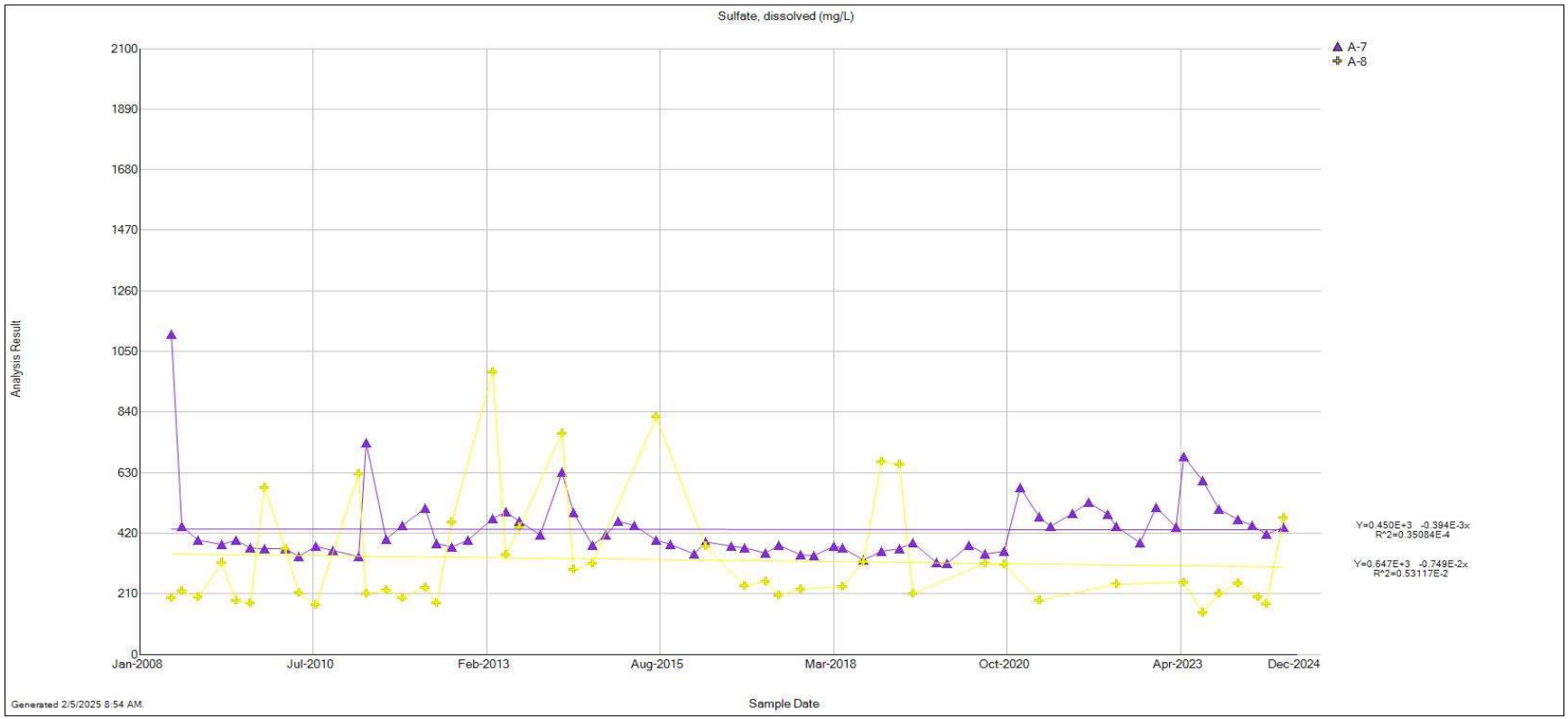

Groundwater, depth from TOC (ft)
A-7
A-8
40.437
35.944
31.451
26.958
22.465
17.972
13.479
8.986
4.493
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.154E+2 + 0.339E-3x
R^2=0.30310E-1
Y=0.105E+2 + 0.134E-3x
R^2=0.46894E-3
Generated 2/5/2025 8:54 AM.

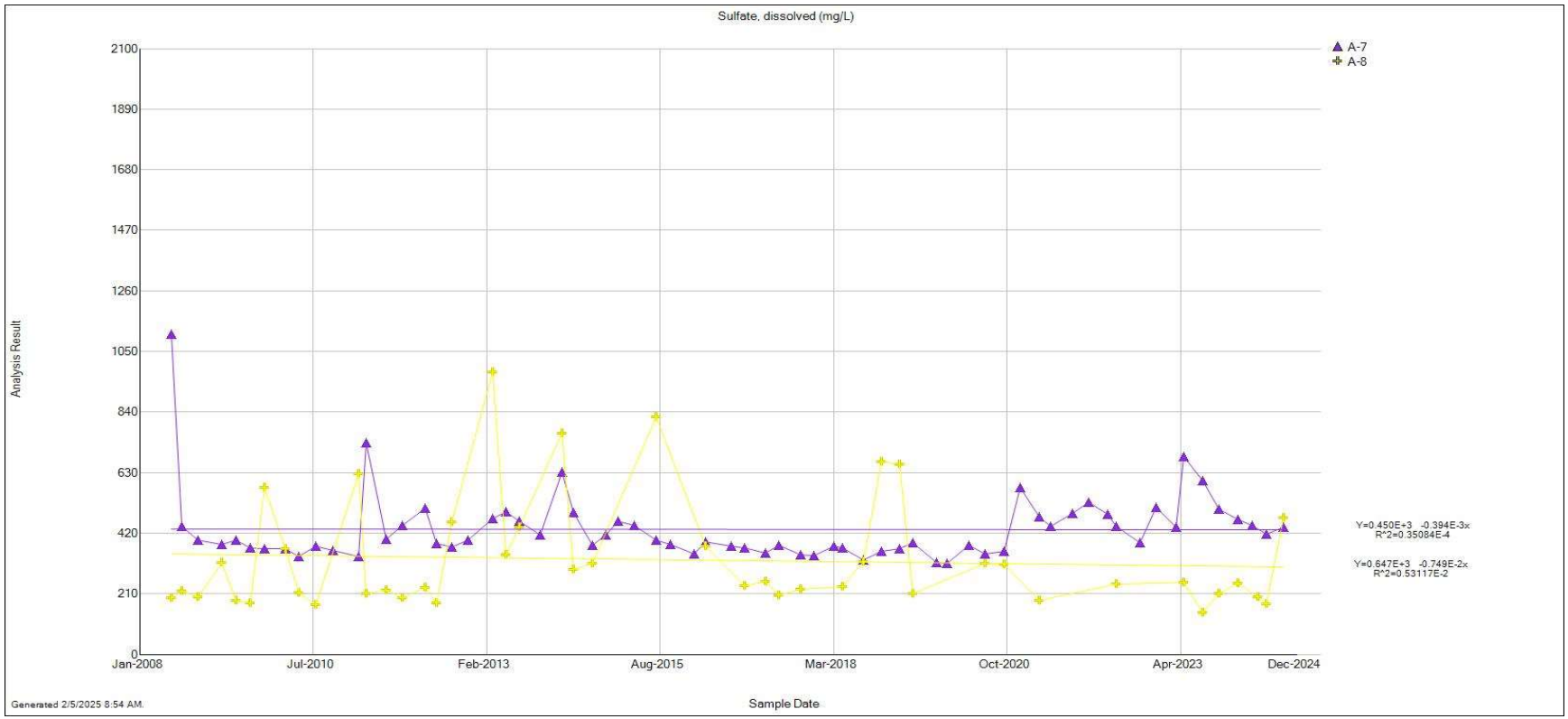

Specific Conductance @ 25C (lab) (umhos/cm)
A-7
A-8
Analysis Result
3300
2970
2640
2310
1980
1650
1320
990
660
330
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Y=0.696E+3 + 0.198E-1x
R^2=0.45048E-1
Y=0.166E+4 -0.104E-1x
R^2=0.35138E-2
Generated 2/5/2025 8:54 AM.
Sample Date

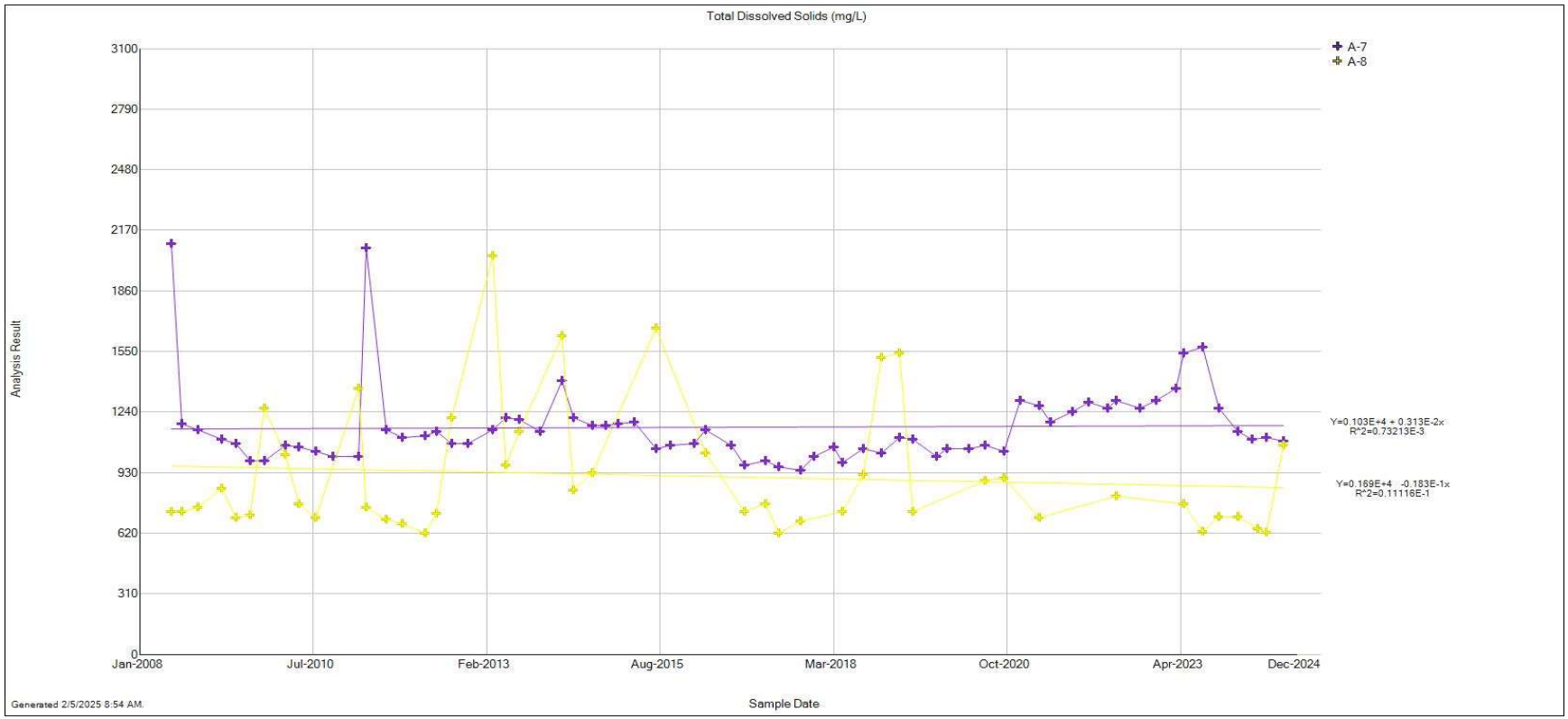

Iron, dissolved (mg/L)
A-7
A-8
0.46
0.414
0.368
0.322
0.276
0.23
0.184
0.138
0.092
0.046
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.382E+0 -0.780E-5x
R^2=0.88271E-1
Y=0.281E+0 -0.559E-5x
R^2=0.22357E+0
Generated 2/5/2025 8:54 AM.

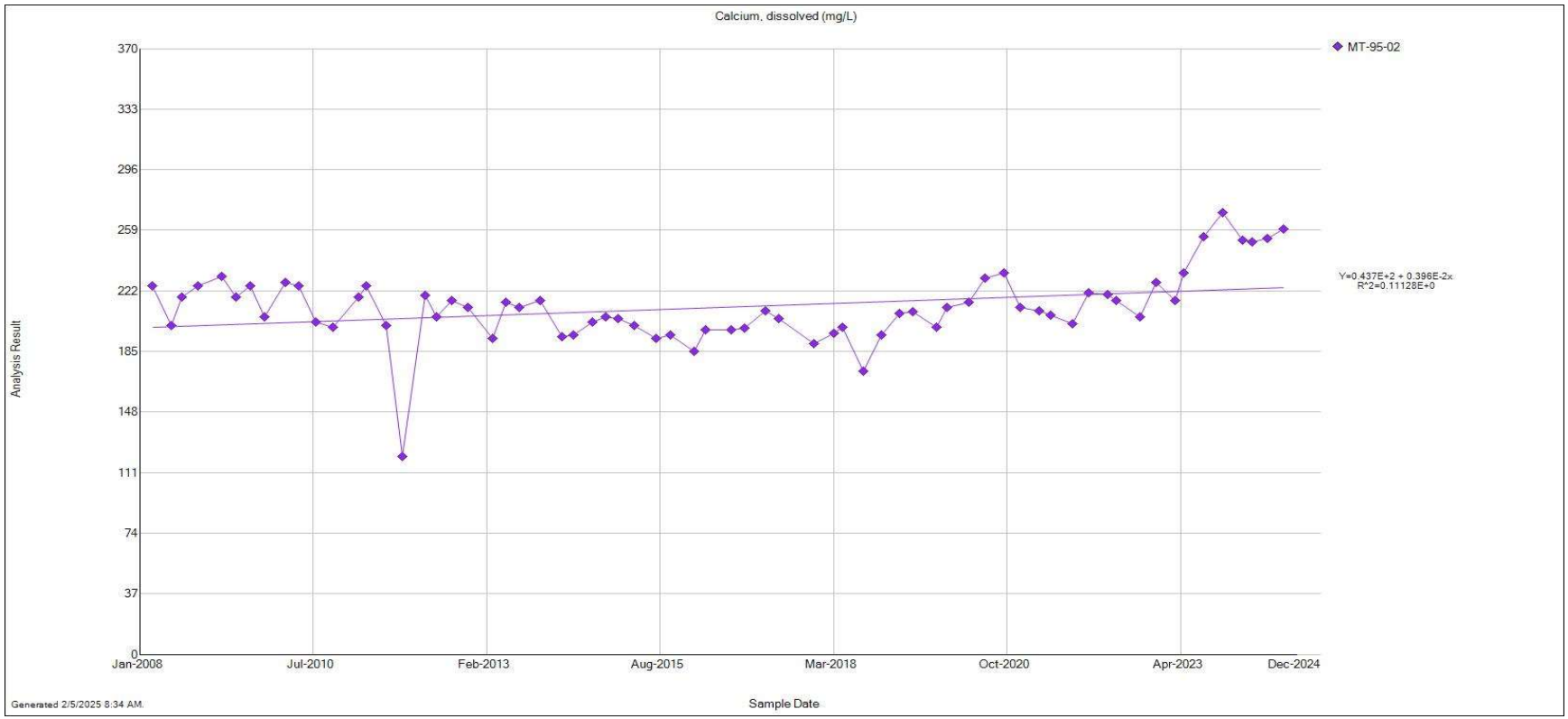

Magnesium, dissolved (mg/L)
A-7
A-8
340
306
272
238
204
170
136
102
68
34
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.183E+3 -0.146E-2x
R^2=0.12337E-1
Y=0.174E+3 -0.177E-2x
R^2=0.95641E-2
Generated 2/5/2025 8:54 AM.

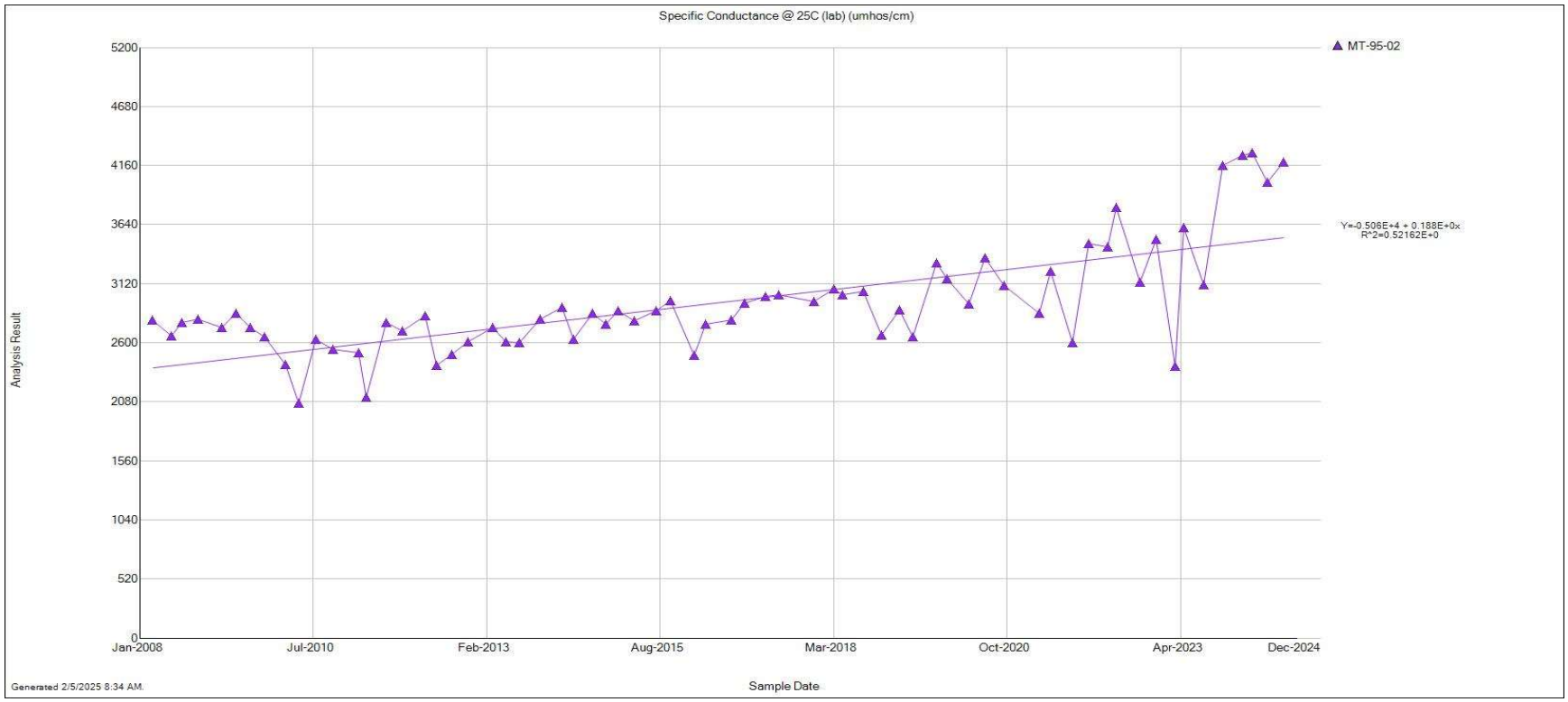

pH (lab)
A-7
A-8
9.4
9.06
8.72
8.38
8.04
7.7
7.36
7.02
6.68
6.34
6
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.780E+1 + 0.516E-5x
R^2=0.13337E-2
Y=0.898E+1 -0.227E-4x
R^2=0.18817E-1
Generated 2/5/2025 8:54 AM.

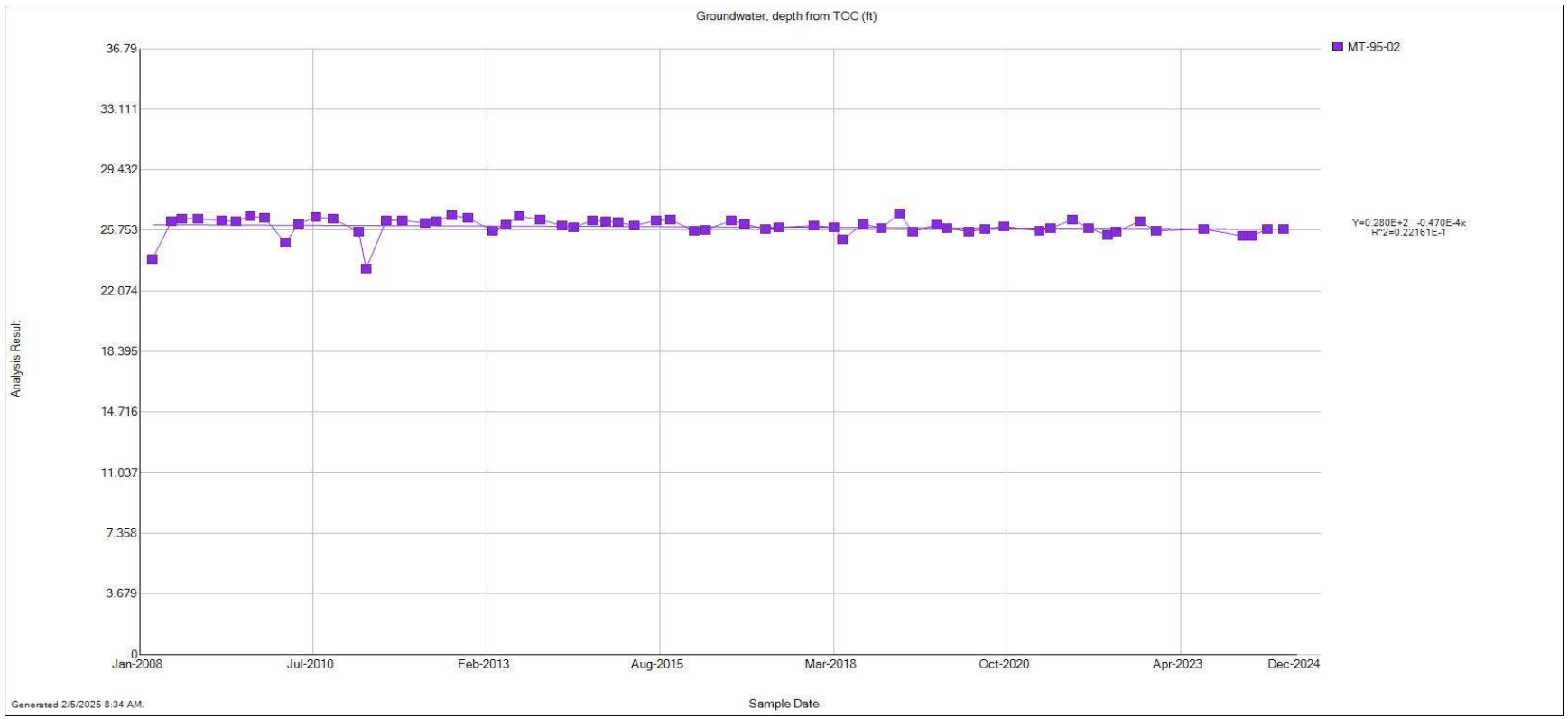

Sulfate, dissolved (mg/L)
A-7
A-8
2100
1890
1680
1470
1260
1050
840
630
420
210
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.450E+3 -0.394E-3x
R^2=0.35084E-4
Y=0.647E+3 -0.749E-2x
R^2=0.53117E-2
Generated 2/5/2025 8:54 AM.

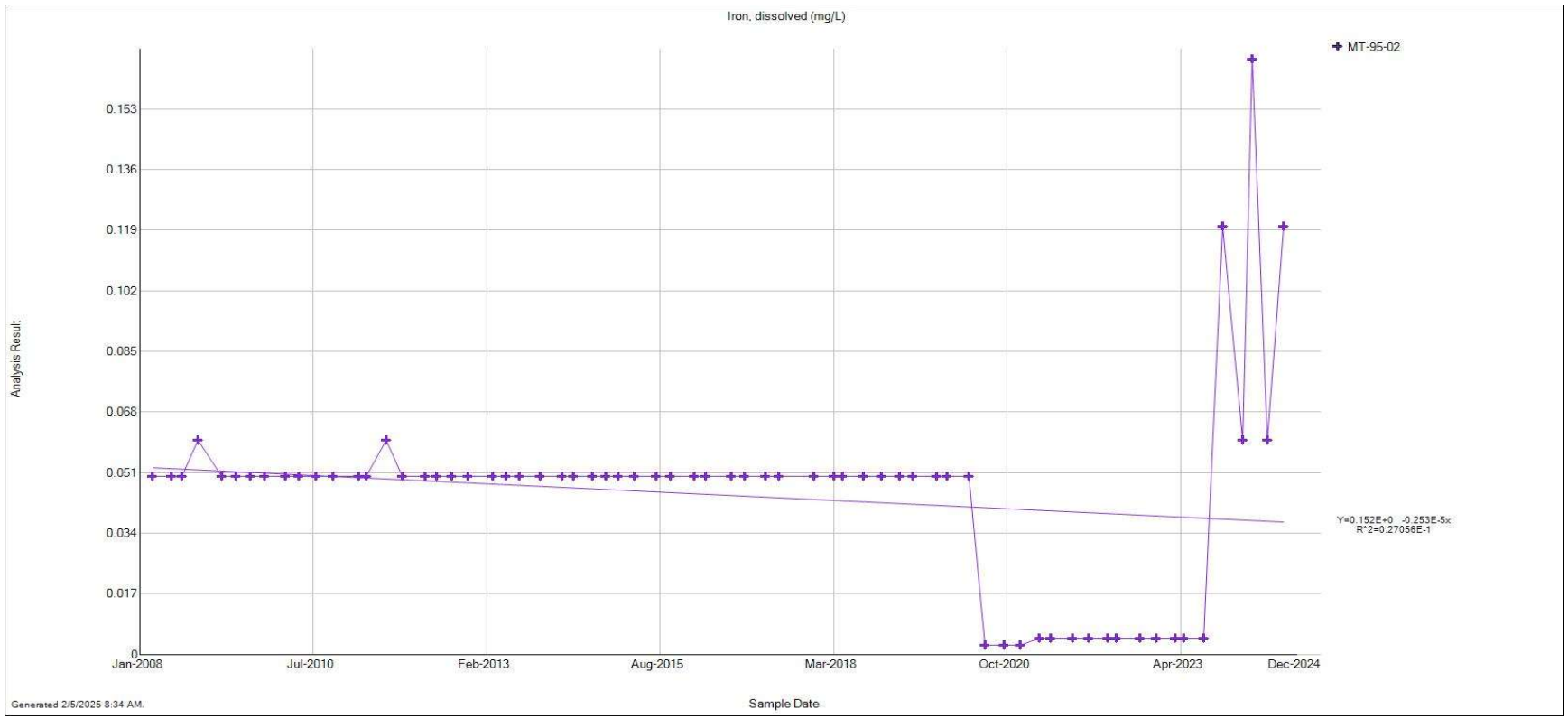

Sulfate, dissolved (mg/L)
A-7
A-8
2100
1890
1680
1470
1260
1050
840
630
420
210
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.450E+3 -0.394E-3x
R^2=0.35084E-4
Y=0.647E+3 -0.749E-2x
R^2=0.53117E-2
Generated 2/5/2025 8:54 AM.

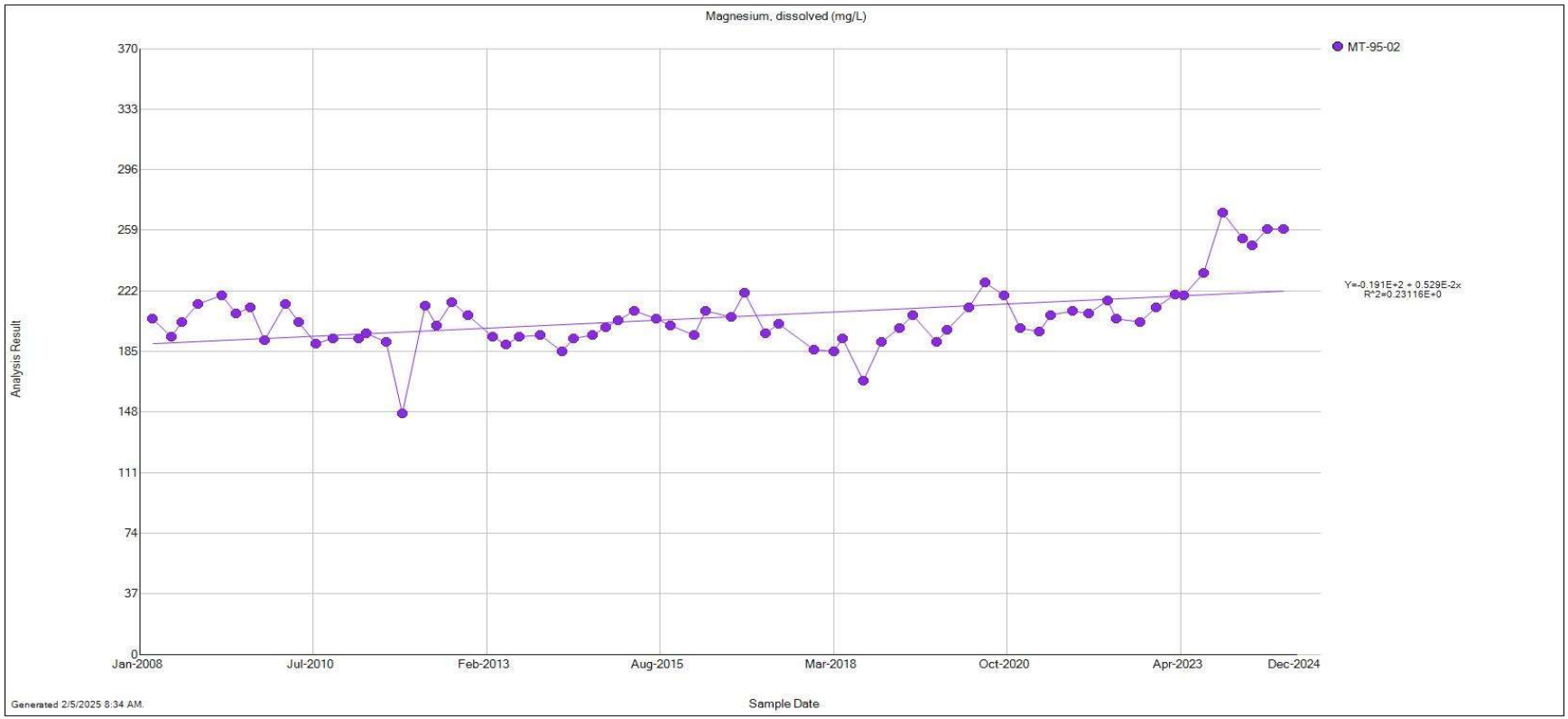

Total Dissolved Solids (mg/L)
A-7
A-8
3100
2790
2480
2170
1860
1550
1240
930
620
310
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Y=0.103E+4 + 0.313E-2x
R^2=0.73213E-3
Y=0.169E+4 -0.183E-1x
R^2=0.11116E-1
Generated 2/5/2025 8:54 AM.

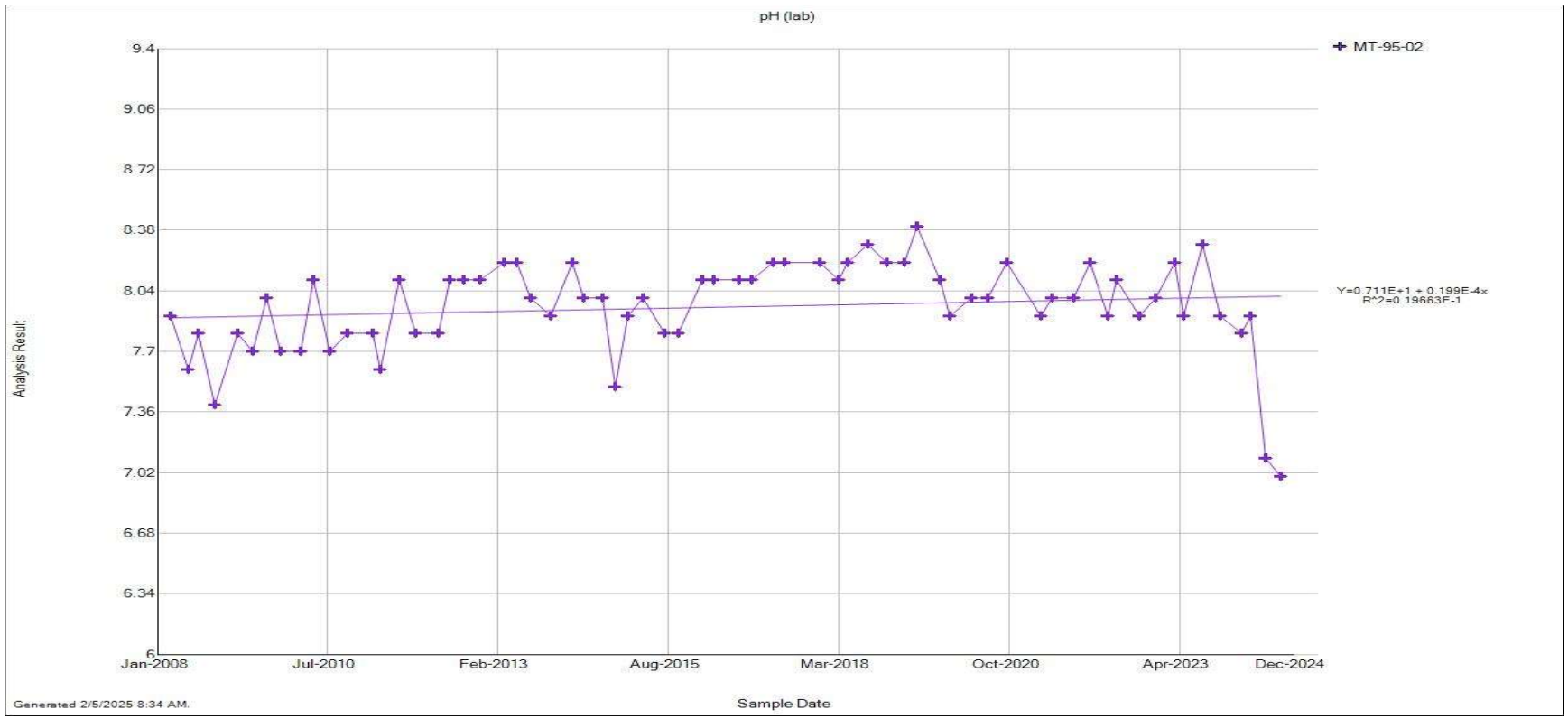

Calcium, dissolved (mg/L)
MT-95-02
Y=0.437E+2 + 0.396E-2x
R^2=0.11128E+0
Analysis Result
370
333
296
259
222
185
148
111
74
37
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Generated 2/5/2025 8:34 AM.

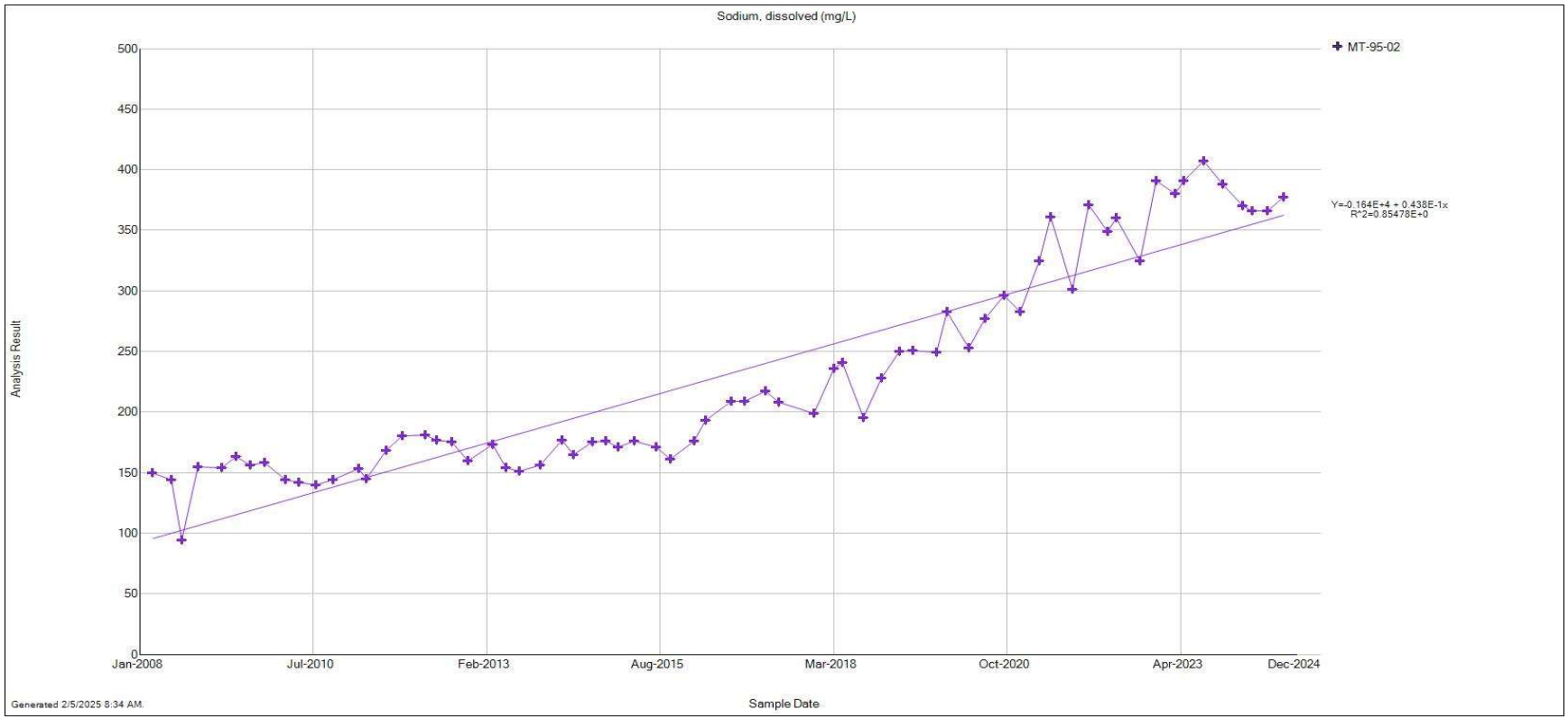

Specific Conductance @ 25C (lab) (umhos/cm)
MT-95-02
Y=-0.506E+4 + 0.188E+0x
R^2=0.52162E+0
Analysis Result
5200
4680
4160
3640
3120
2600
2080
1560
1040
520
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Generated 2/5/2025 8:34 AM.
Sample Date

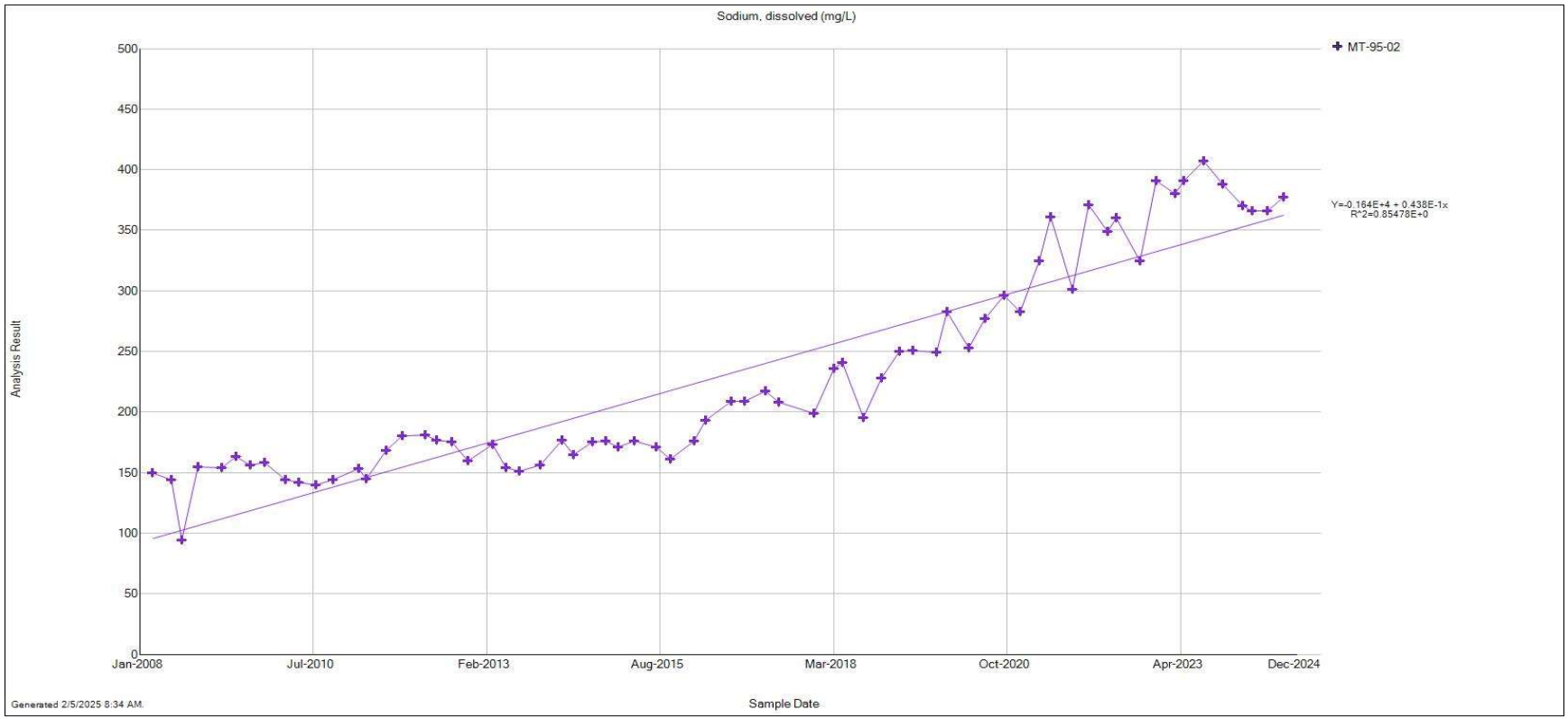

Groundwater, depth from TOC (ft)
MT-95-02
Y=0.280E+2 -0.470E-4x
R^2=0.22161E-1
36.79
33.111
29.432
25.753
22.074
18.395
14.716
11.037
7.358
3.679
0
Analysis Result
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Generated 2/5/2025 8:34 AM.

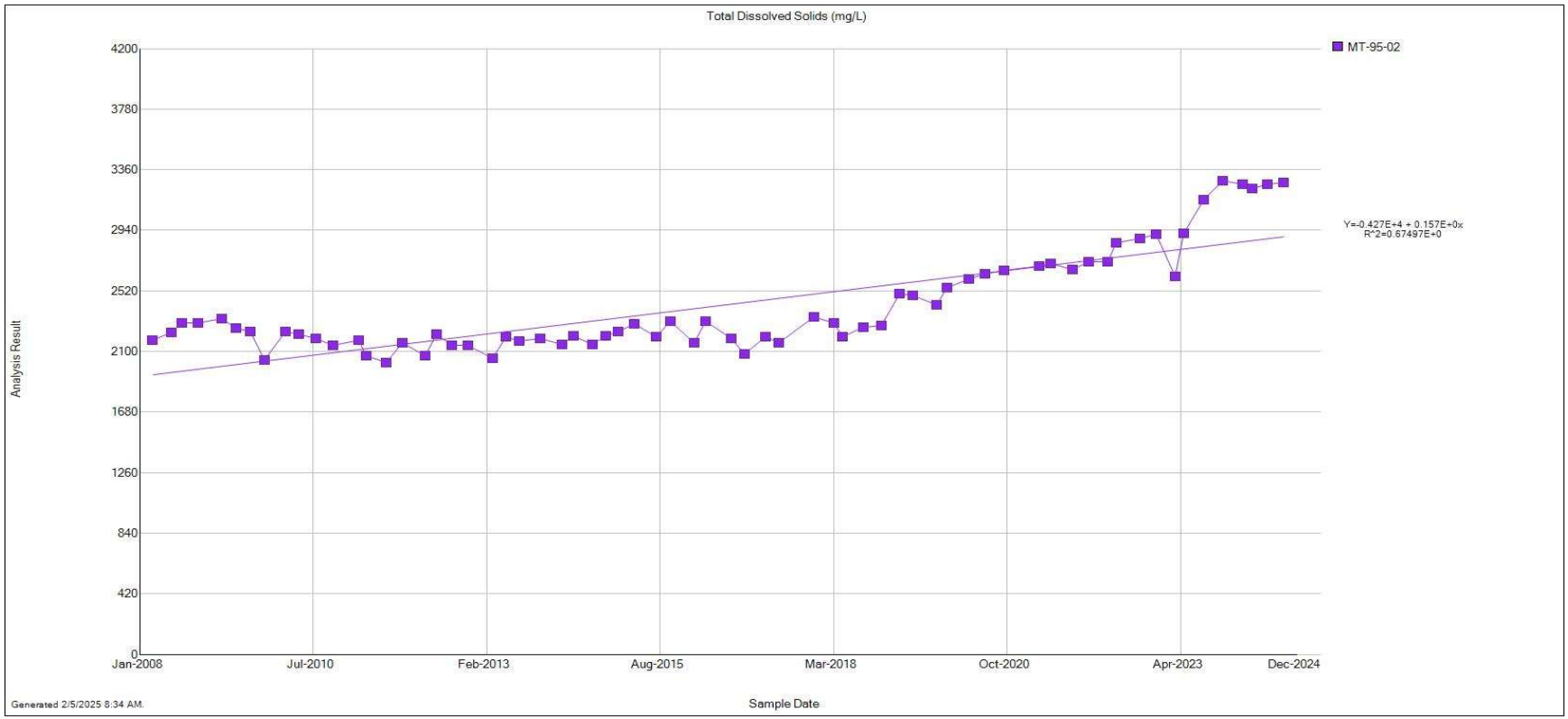

Iron, dissolved (mg/L)
MT-95-02
Analysis Result
0.153
0.136
0.119
0.102
0.085
0.068
0.051
0.034
0.017
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Y=0.152E+0 -0.253E-5x
R^2=0.27056E-1
Generated 2/5/2025 8:34 AM.
Sample Date

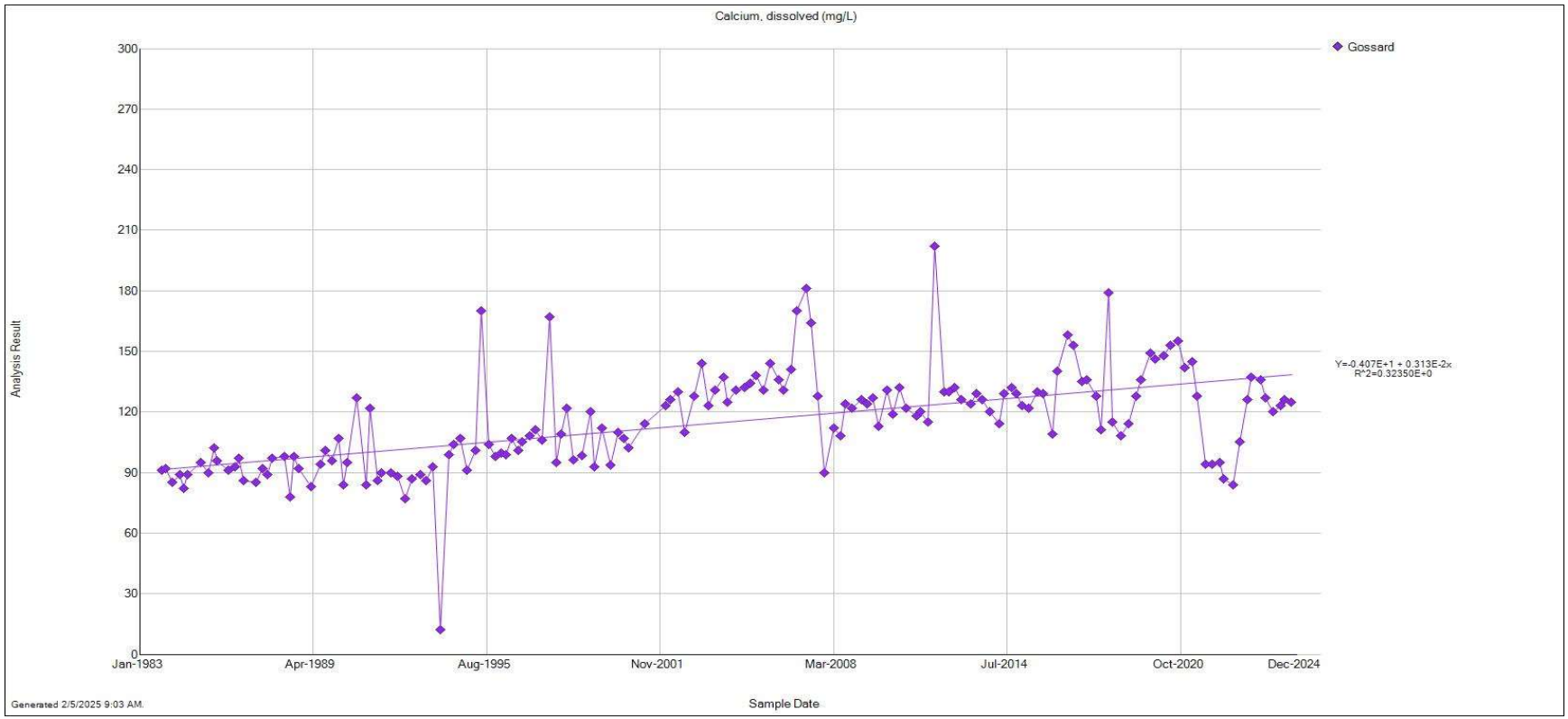

Magnesium, dissolved (mg/L)
MT-95-02
Y=-0.191E+2 + 0.529E-2x
R^2=0.23116E+0
Analysis Result
370
333
296
259
222
185
148
111
74
37
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Generated 2/5/2025 8:34 AM.

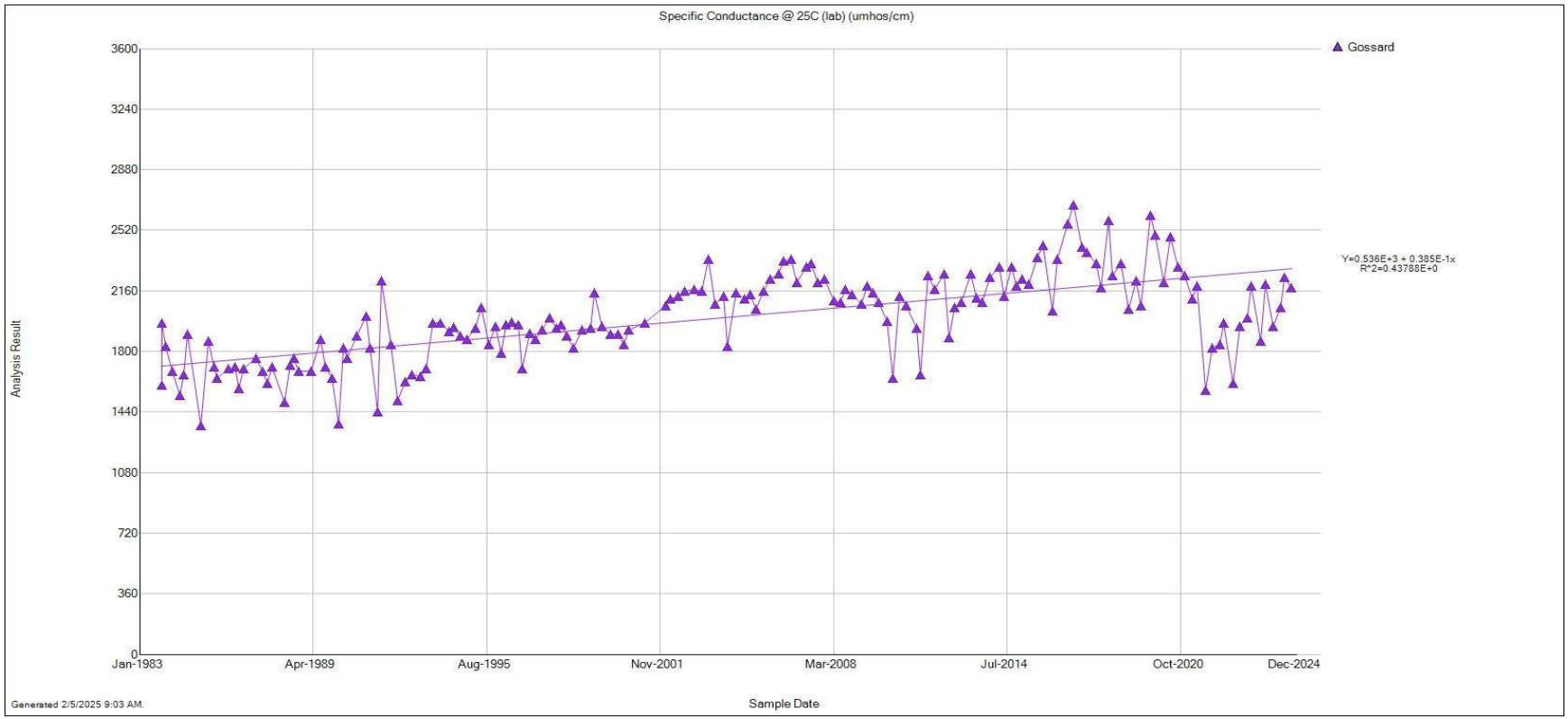

pH (lab)
MT-95-02
Y=0.711E+1 + 0.199E-4x
R^2=0.19663E-1
Analysis Result
9.4
9.06
8.72
8.38
8.04
7.7
7.36
7.02
6.68
6.34
6
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Generated 2/5/2025 8:34 AM.
Sample Date

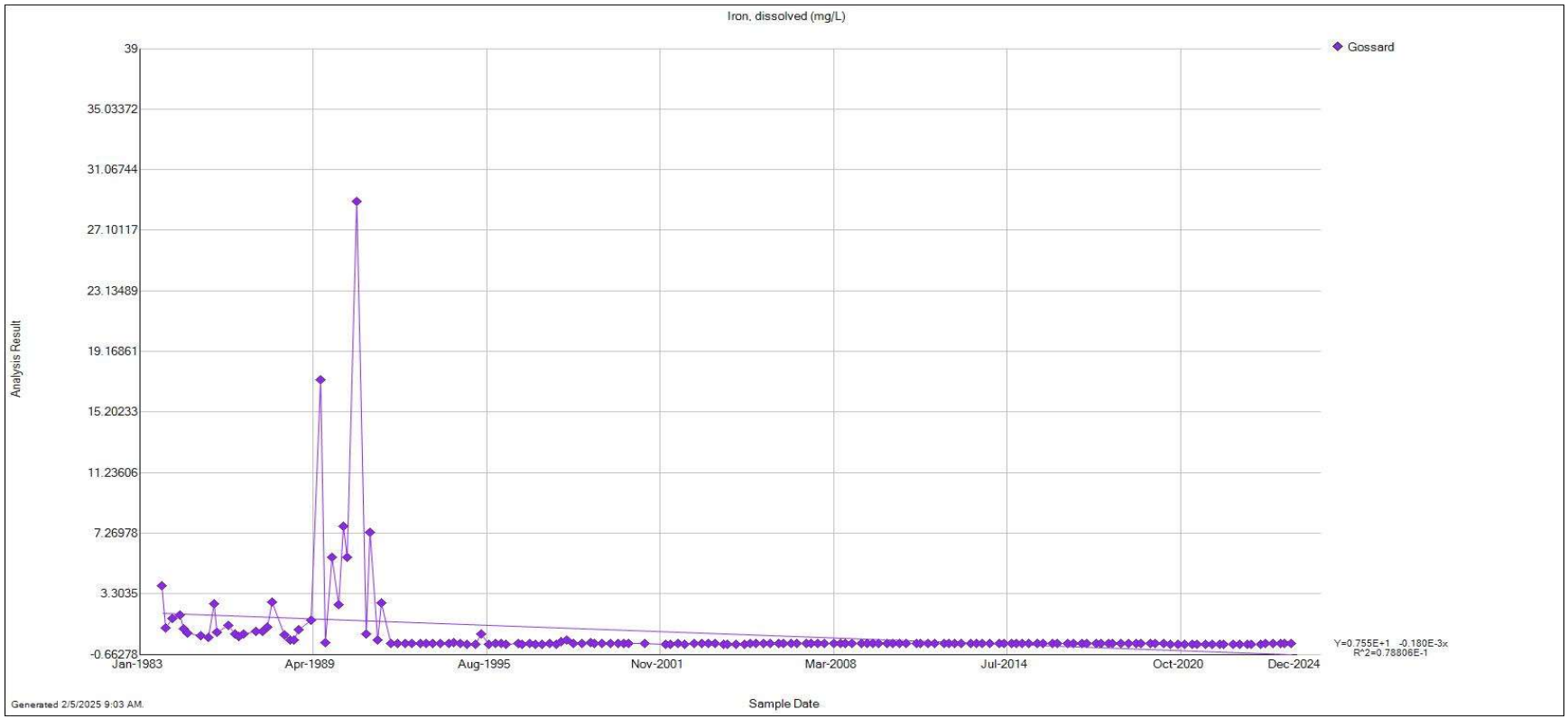

Sodium, dissolved (mg/L)
MT-95-02
Y=-0.164E+4 + 0.438E-1x
R^2=0.85478E+0
Analysis Result
500
450
400
350
300
250
200
150
100
50
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Generated 2/5/2025 8:34 AM.

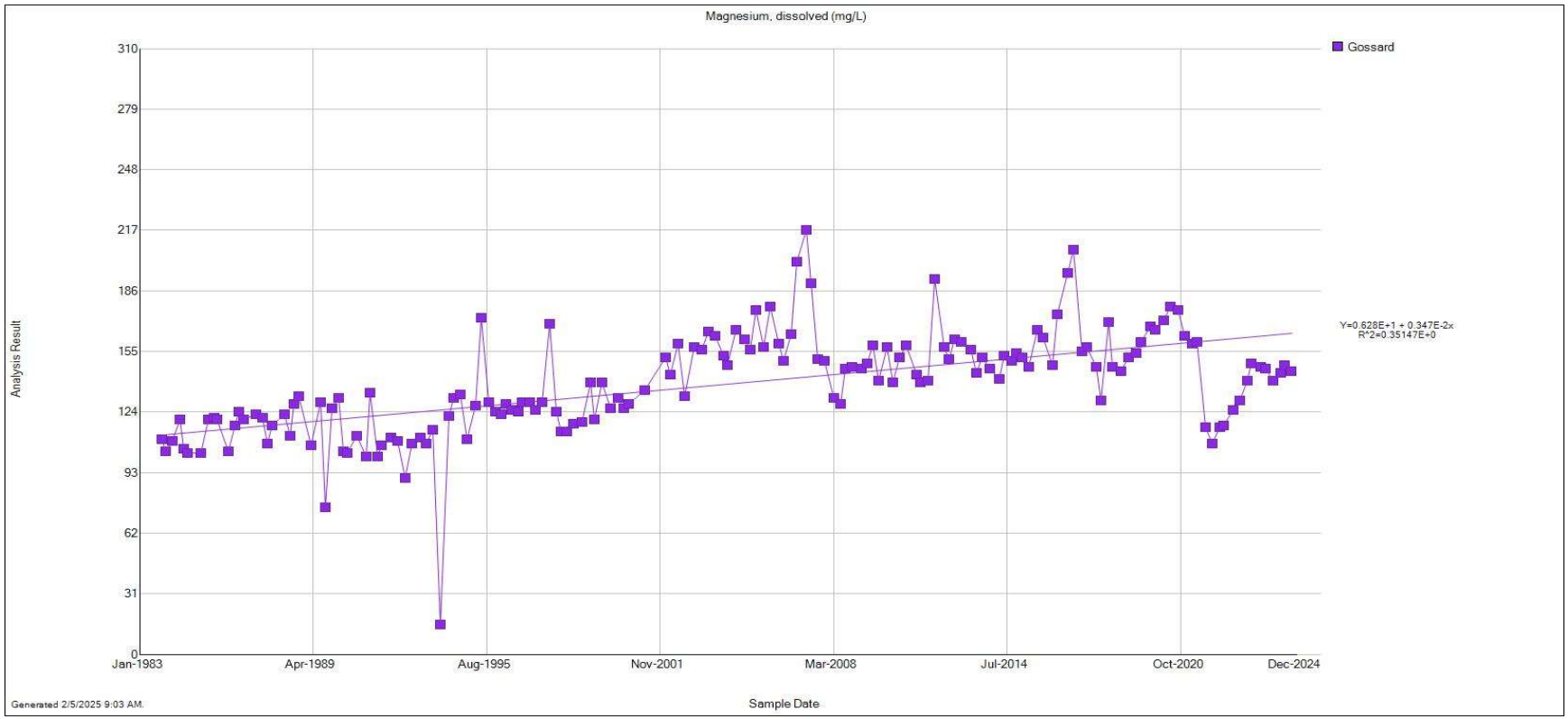

Sodium, dissolved (mg/L)
MT-95-02
Y=-0.164E+4 + 0.438E-1x
R^2=0.85478E+0
Analysis Result
500
450
400
350
300
250
200
150
100
50
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Sample Date
Generated 2/5/2025 8:34 AM.

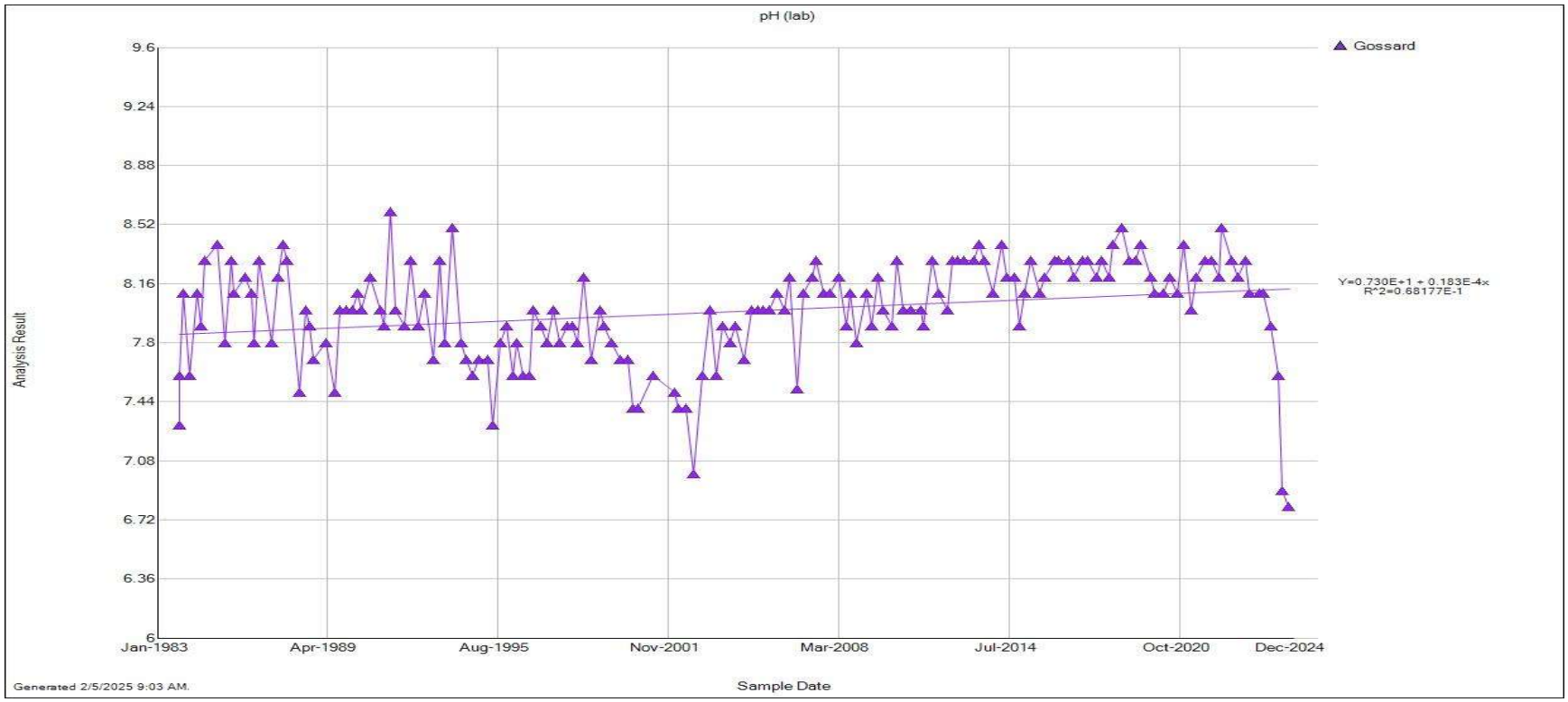

Total Dissolved Solids (mg/L)
MT-95-02
Y=-0.427E+4 + 0.157E+0x
R^2=0.67497E+0
Analysis Result
4200
3780
3360
2940
2520
2100
1680
1260
840
420
0
Jan-2008
Jul-2010
Feb-2013
Aug-2015
Mar-2018
Oct-2020
Apr-2023
Dec-2024
Generated 2/5/2025 8:34 AM.
Sample Date

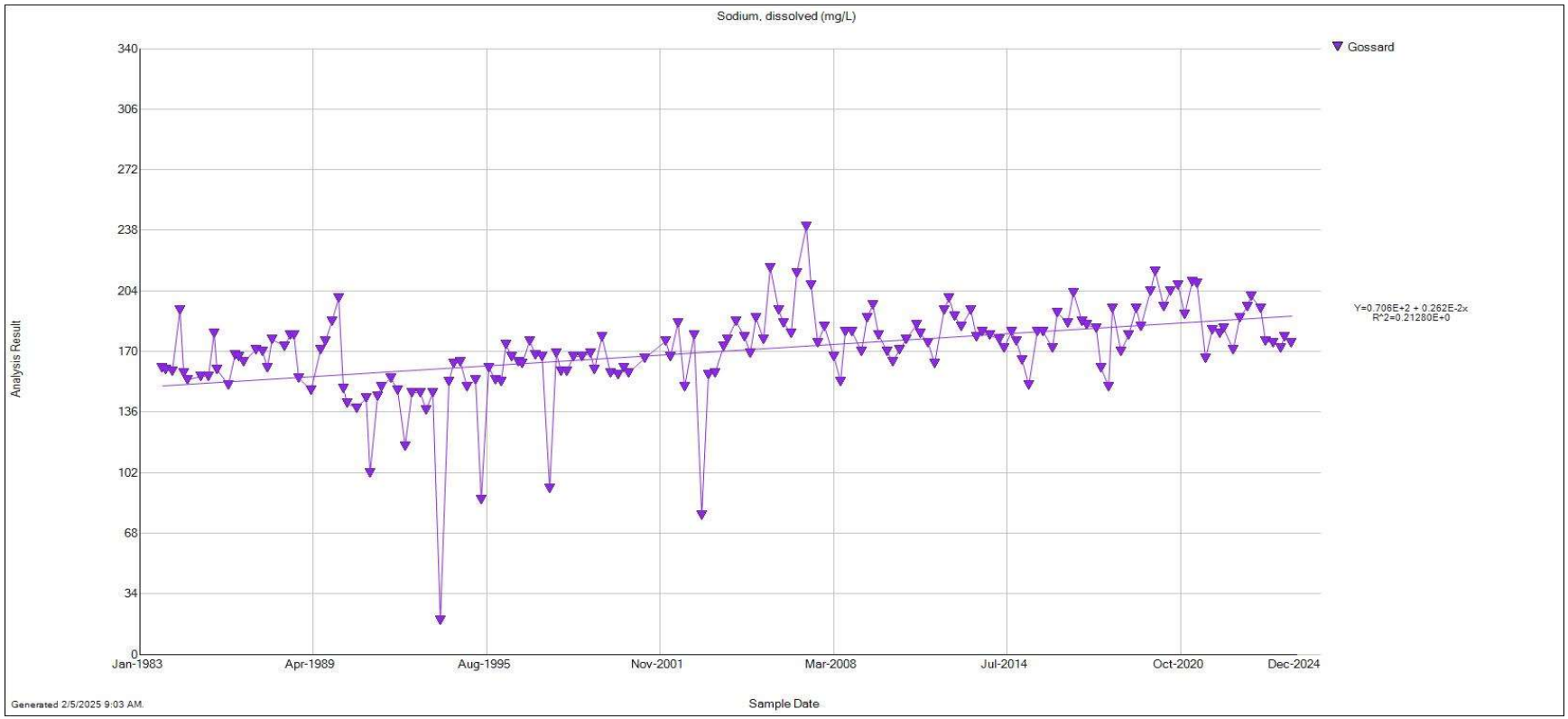

Calcium, dissolved (mg/L)
Gossard
Y=-0.407E+1 + 0.313E-2x
R^2=0.32350E+0
Analysis Result
300
270
240
210
180
150
120
90
60
30
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:03 AM.

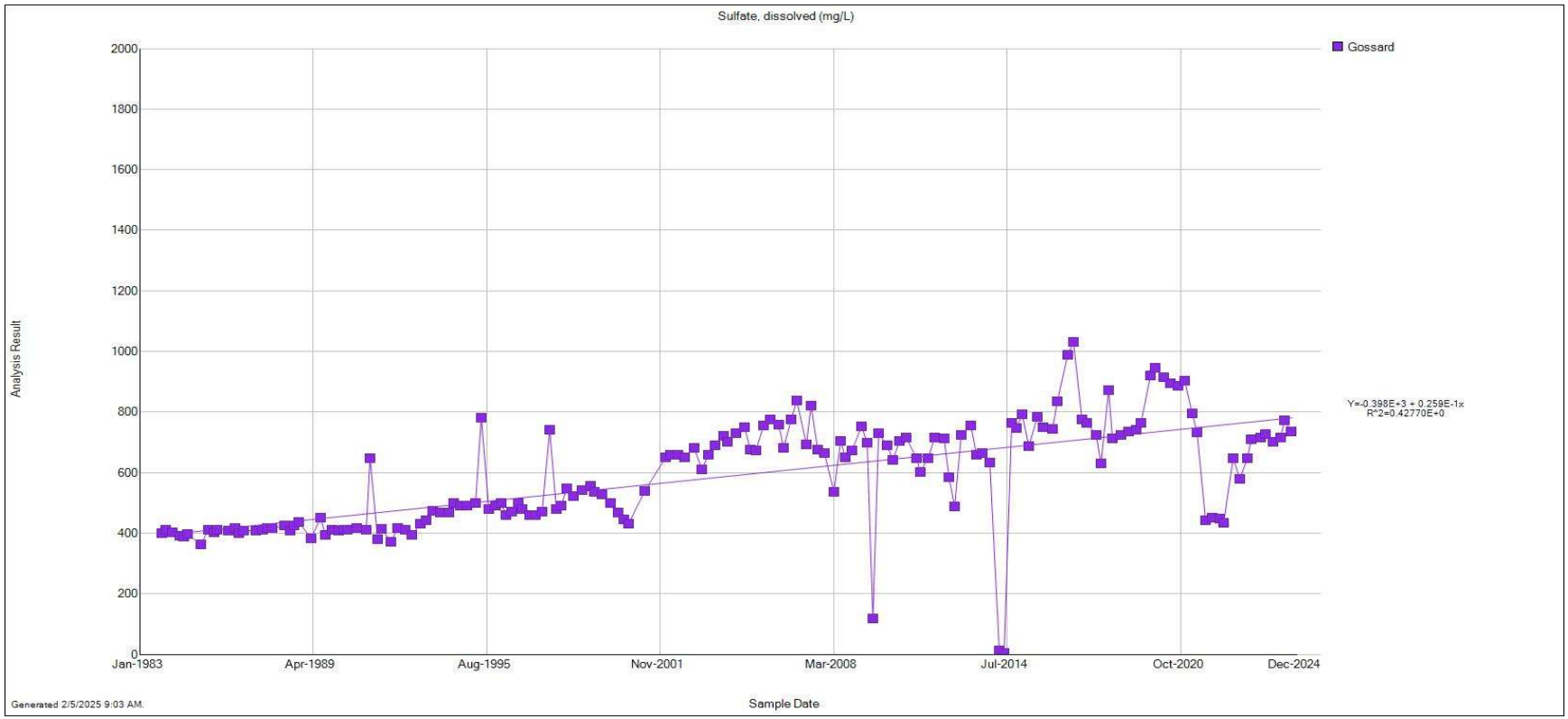

Specific Conductance @ 25C (lab) (umhos/cm)
Gossard
Y=0.536E+3 + 0.385E-1x
R^2=0.43788E+0
Analysis Result
3600
3240
2880
2520
2160
1800
1440
1080
720
360
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:03 AM.

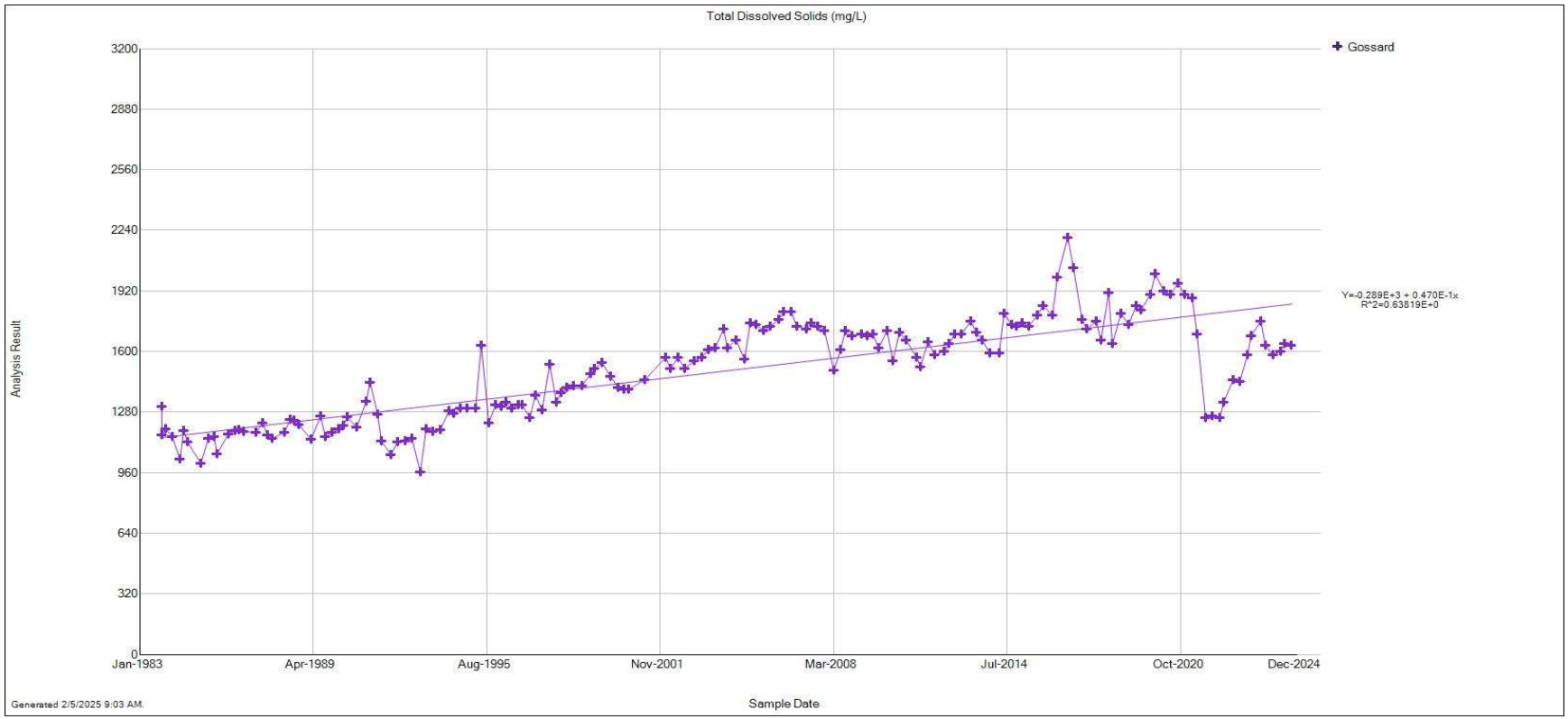

Iron, dissolved (mg/L)
Gossard
39
35.03372
31.06744
27.10117
23.13489
19.16861
15.20233
11.23606
7.26978
3.3035
-0.66278
Analysis Result
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Y=0.755E+1 -0.180E-3x
R^2=0.78806E-1
Generated 2/5/2025 9:03 AM.

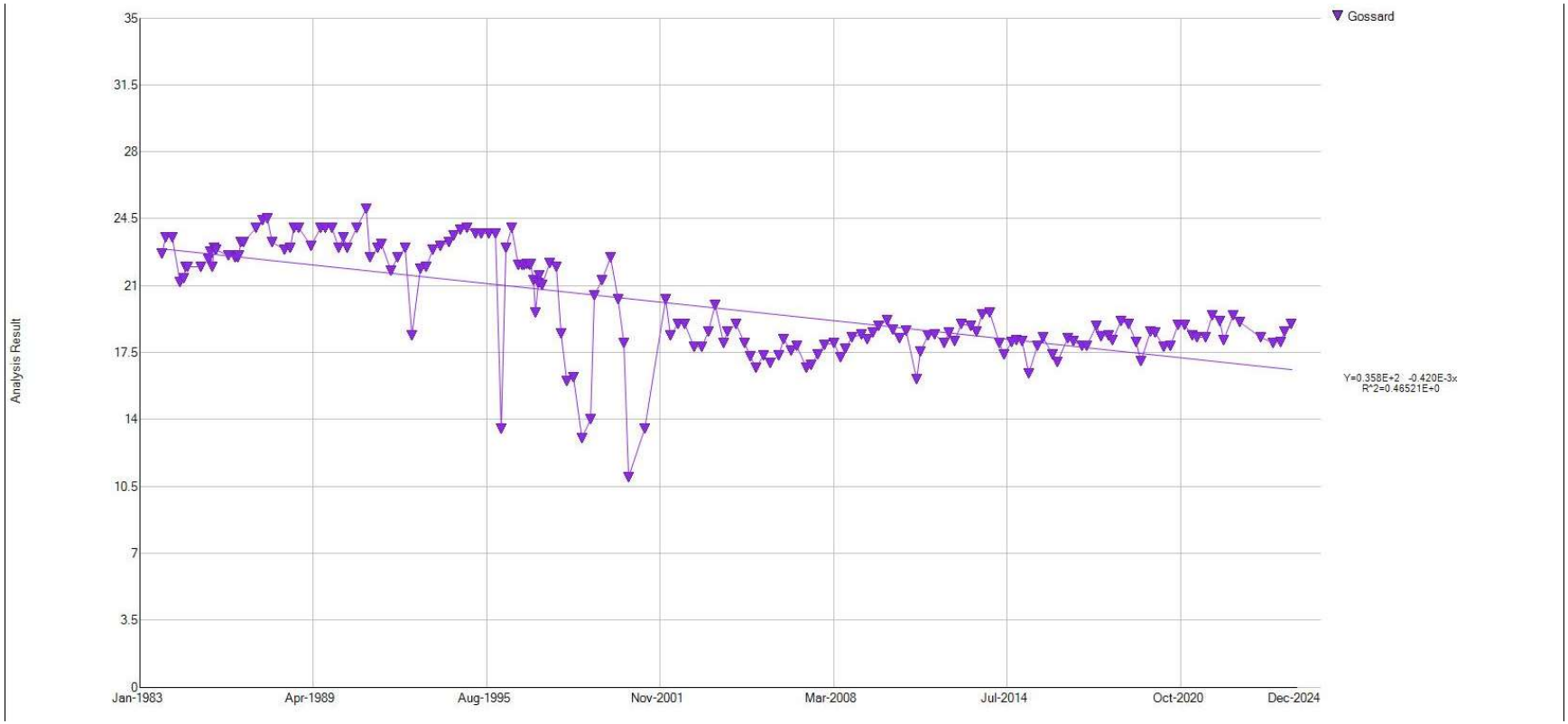

Magnesium, dissolved (mg/L)
Gossard
Y=0.628E+1 + 0.347E-2x
R^2=0.35147E+0
Analysis Result
310
279
248
217
186
155
124
93
62
31
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:03 AM.

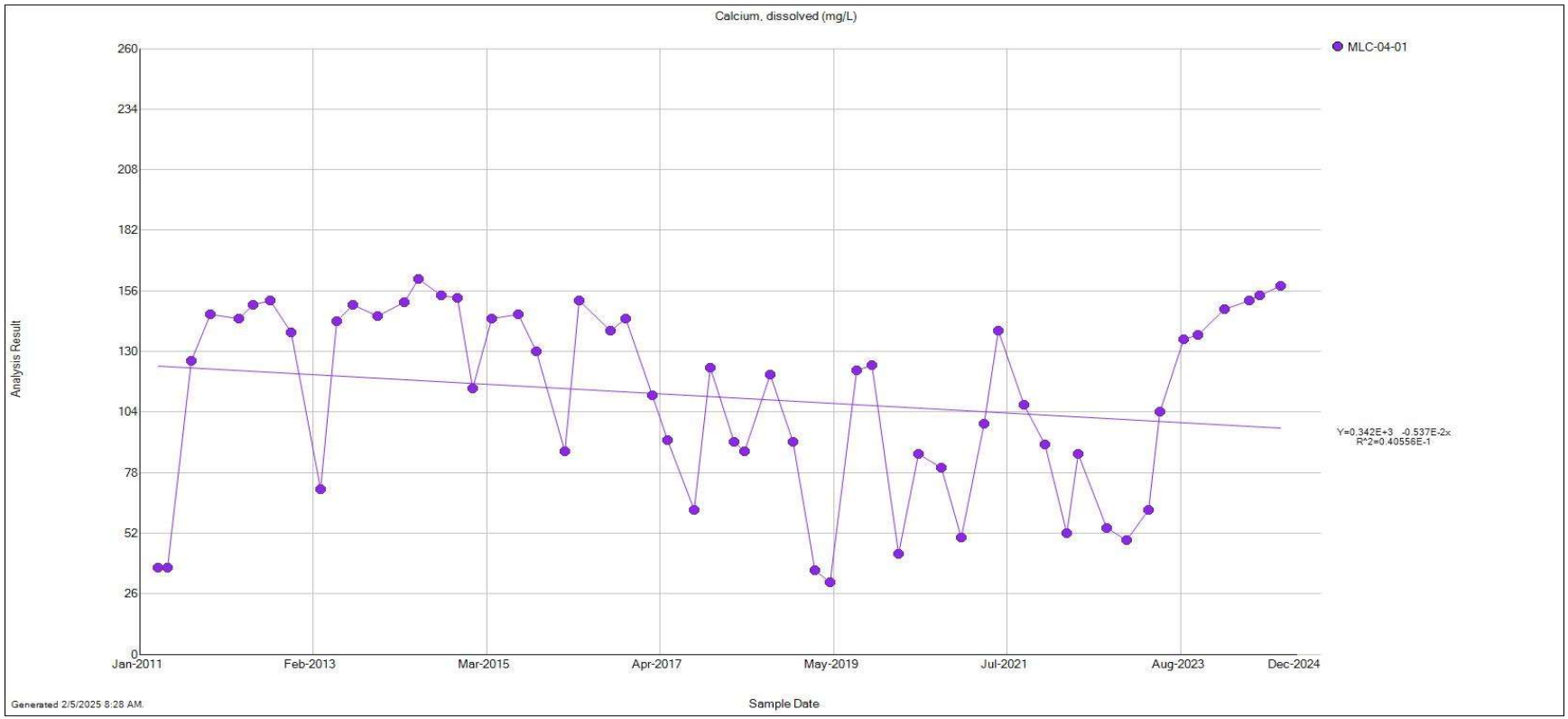

pH (lab)
Gossard
Y=0.730E+1 + 0.183E-4x
R^2=0.68177E-1
Analysis Result
9.6
9.24
8.88
8.52
8.16
7.8
7.44
7.08
6.72
6.36
6
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:03 AM.

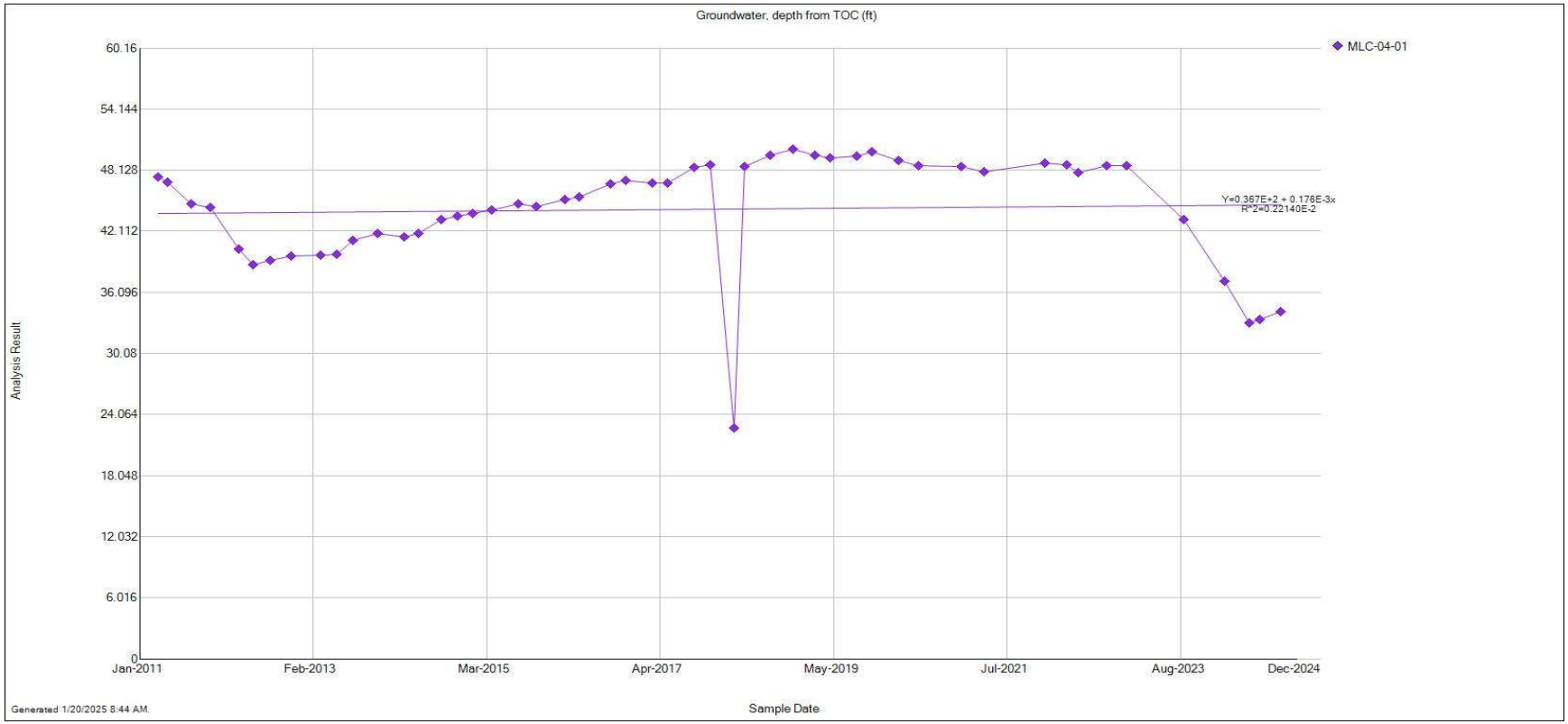

Sodium, dissolved (mg/L)
Gossard
Y=0.706E+2 + 0.262E-2x
R^2=0.21280E+0
Analysis Result
340
306
272
238
204
170
136
102
68
34
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:03 AM.

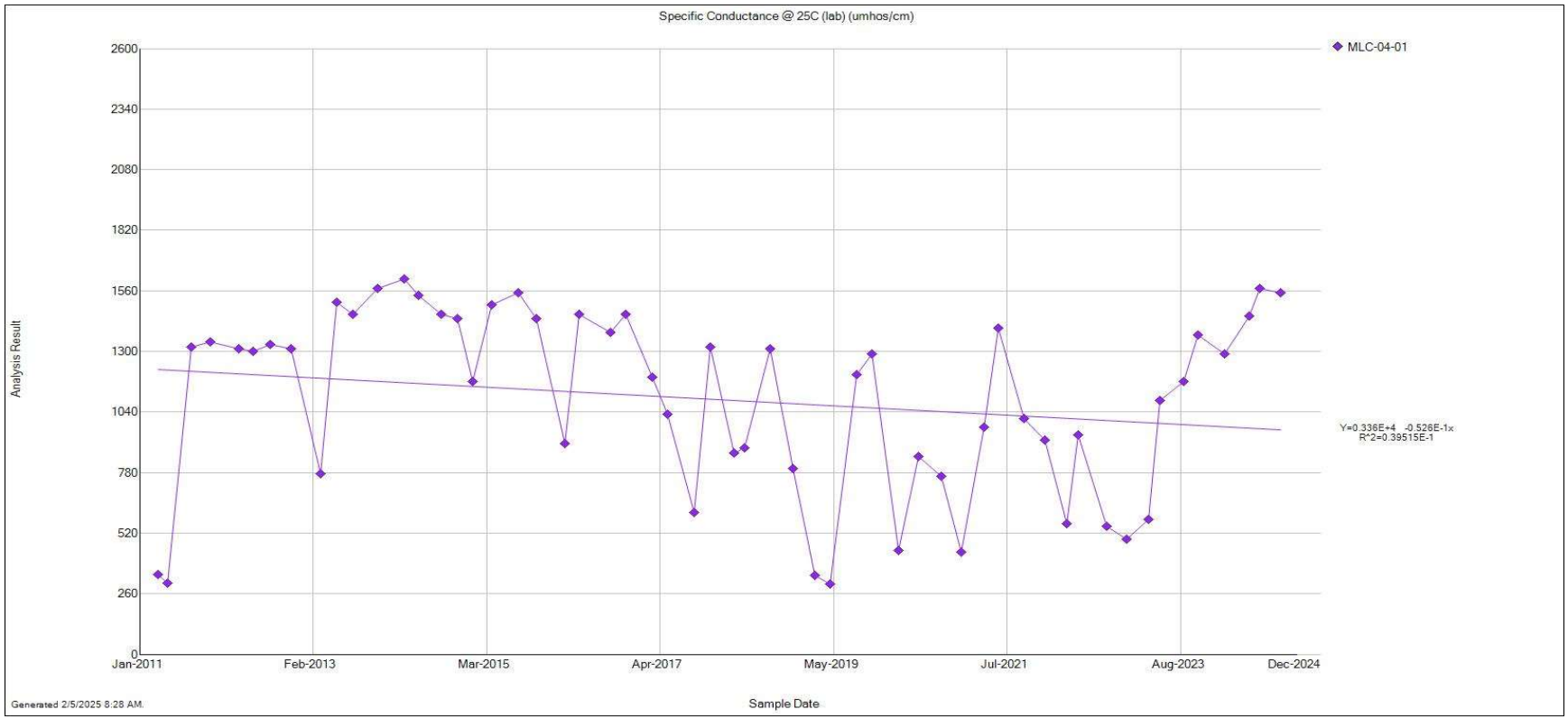

Sulfate, dissolved (mg/L)
Gossard
Y=-0.398E+3 + 0.259E-1x
R^2=0.42770E+0
Analysis Result
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Sample Date
Generated 2/5/2025 9:03 AM.

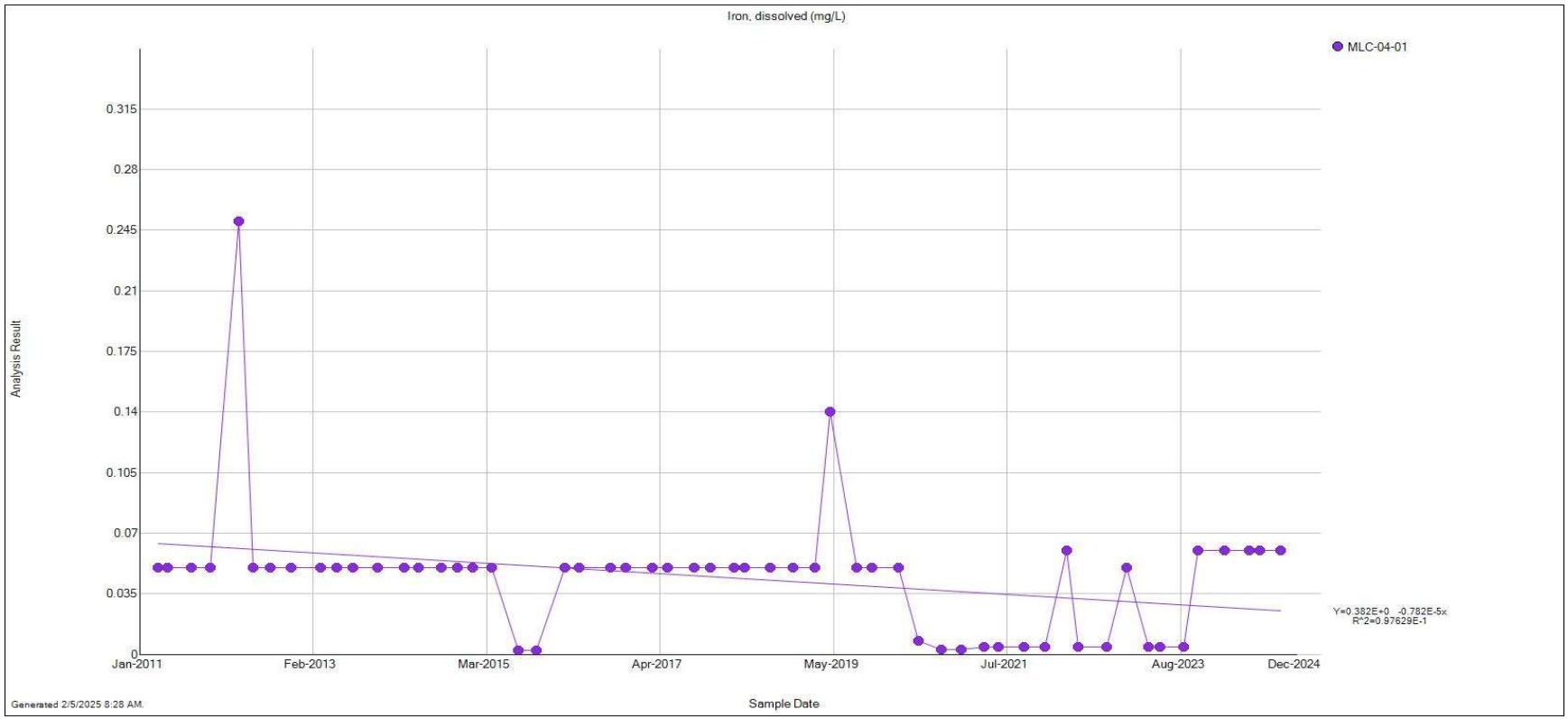

Total Dissolved Solids (mg/L)
Gossard
Y=-0.289E+3 + 0.470E-1x
R^2=0.63819E+0
Analysis Result
3200
2880
2560
2240
1920
1600
1280
960
640
320
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Generated 2/5/2025 9:03 AM.
Sample Date

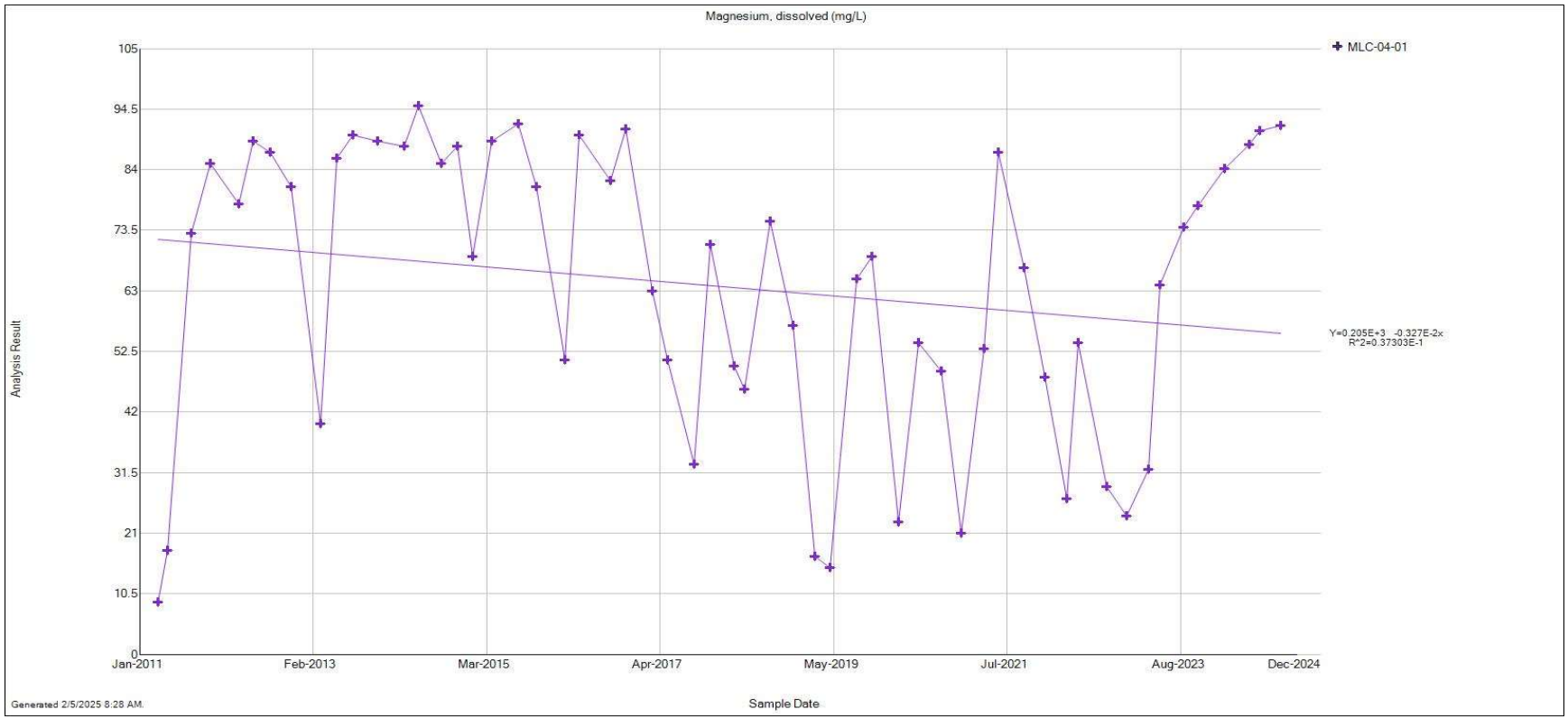

Gossard
Analysis Result
35
31.5
28
24.5
21
17.5
14
10.5
7
3.5
0
Jan-1983
Apr-1989
Aug-1995
Nov-2001
Mar-2008
Jul-2014
Oct-2020
Dec-2024
Y=0.358E+2 -0.420E-3x
R^2=0.46521E+0

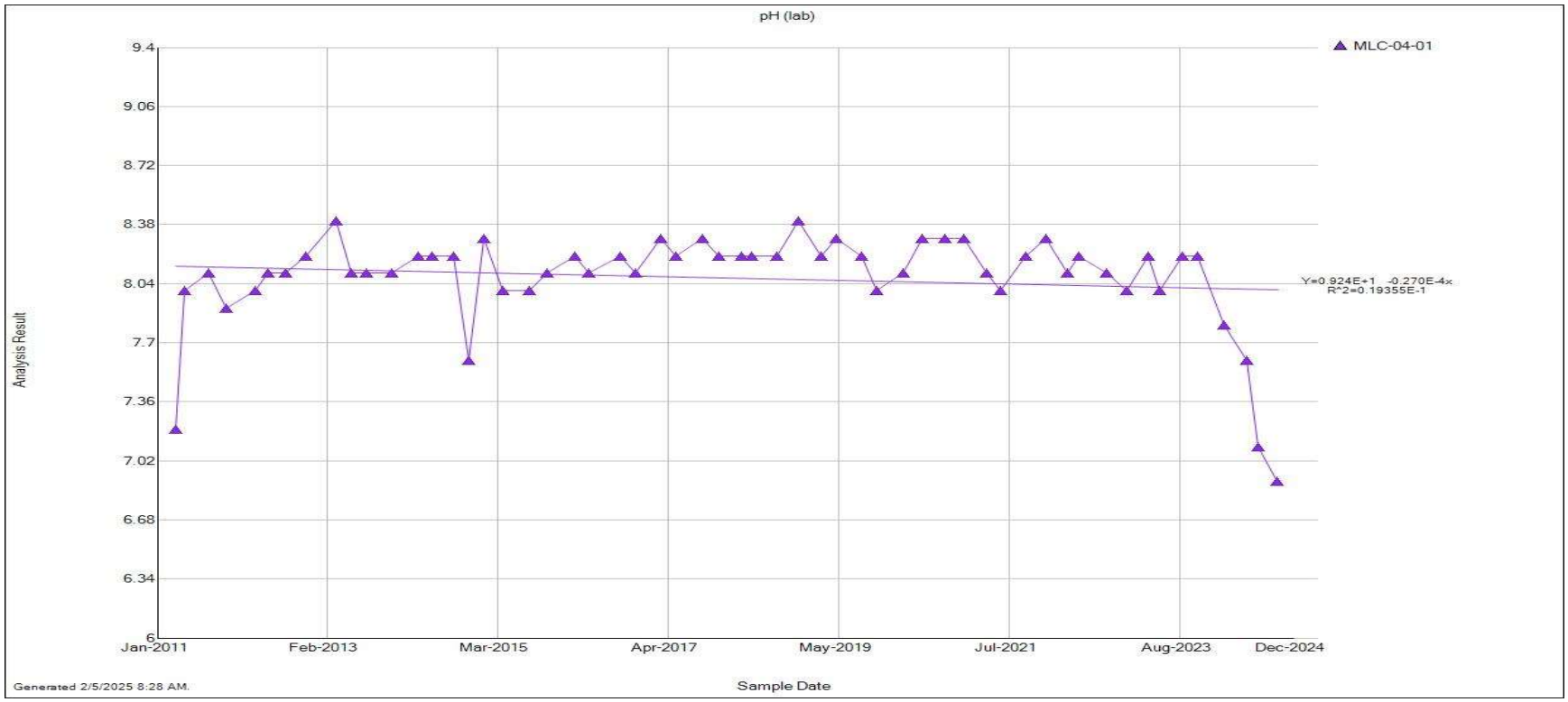

Calcium, dissolved (mg/L)
MLC-04-01
Analysis Result
260
234
208
182
156
130
104
78
52
26
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.342E+3 -0.537E-2x
R^2=0.40556E-1
Generated 2/5/2025 8:28 AM.
Sample Date

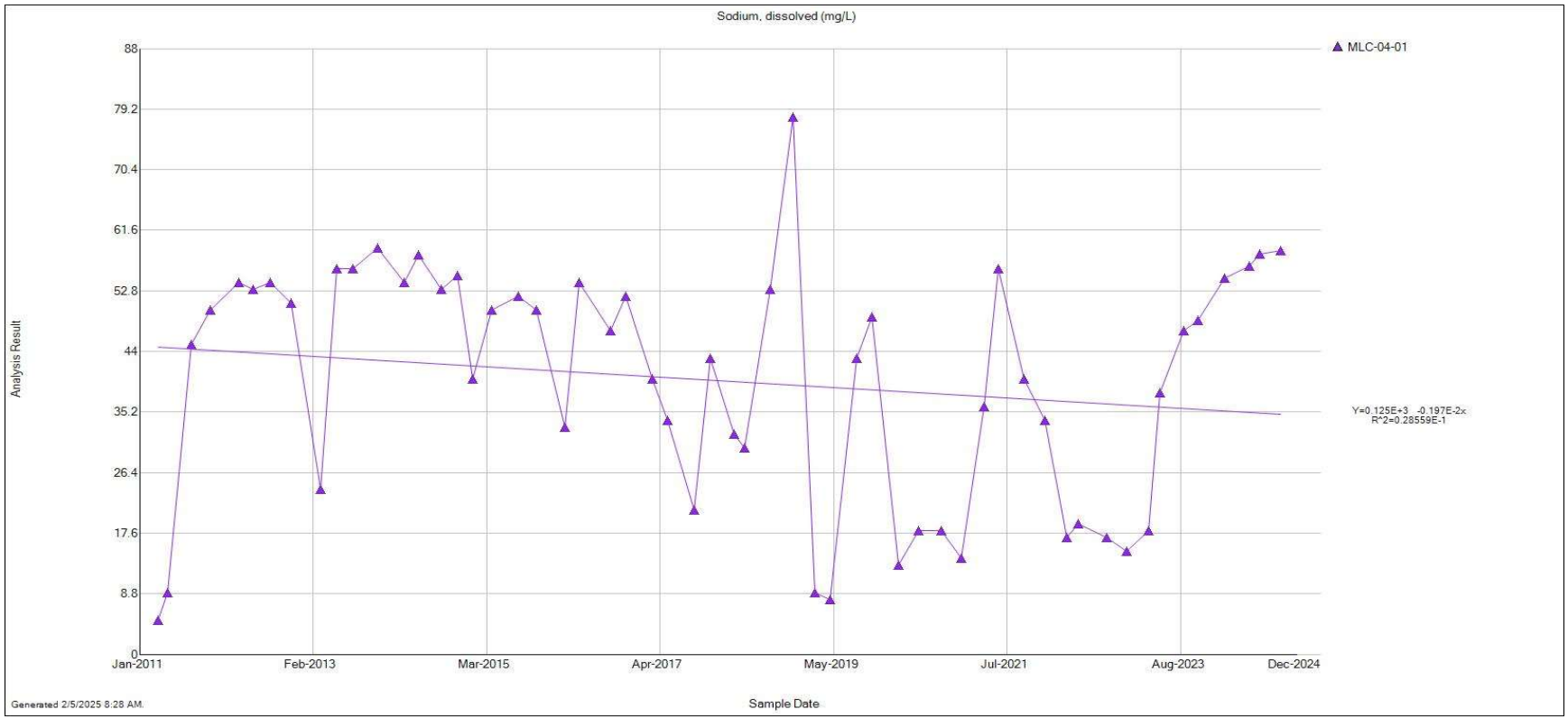

Groundwater, depth from TOC (ft)
MLC-04-01
Y=0.367E+2 + 0.178E-3x
R^2=0.22140E-2
60.16
54.144
48.128
42.112
36.096
30.08
24.064
18.048
12.032
6.016
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 1/20/2025 8:44 AM.

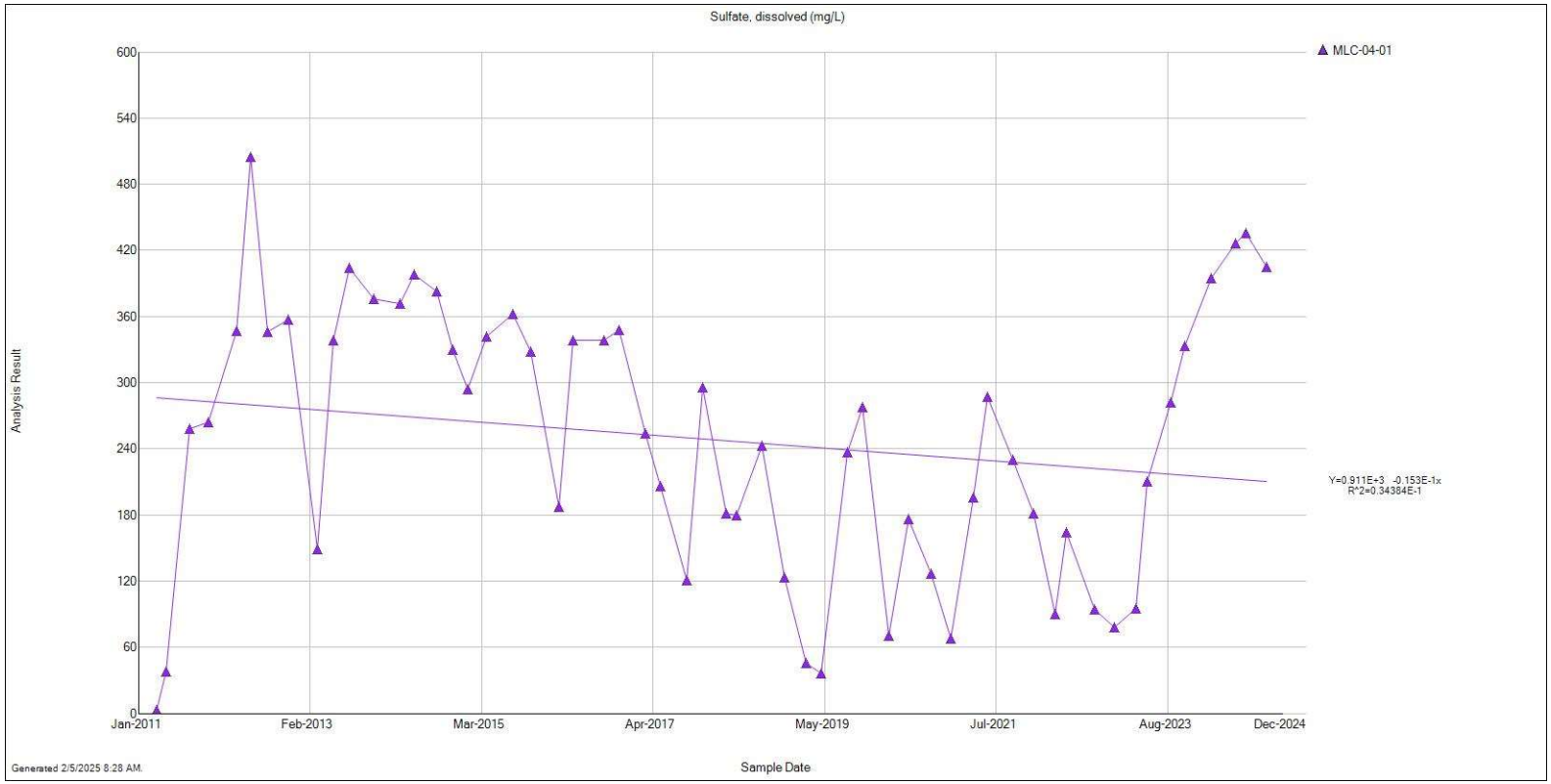

Specific Conductance @ 25C (lab) (umhos/cm)
MLC-04-01
Analysis Result
2600
2340
2080
1820
1560
1300
1040
780
520
260
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.336E+4 -0.526E-1x
R^2=0.39515E-1
Generated 2/5/2025 8:28 AM.
Sample Date

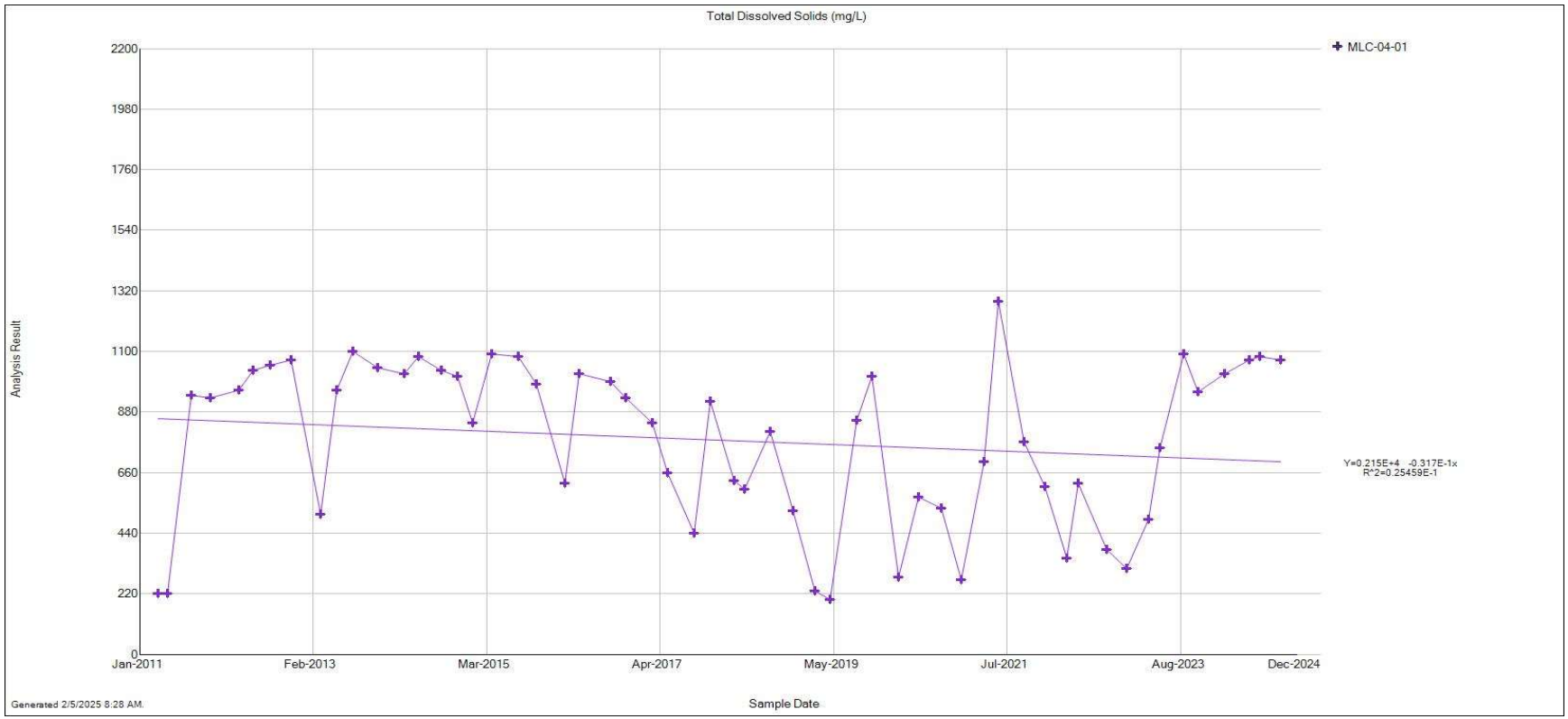

Iron, dissolved (mg/L)
MLC-04-01
Analysis Result
0.315
0.28
0.245
0.21
0.175
0.14
0.105
0.07
0.035
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.382E+0 -0.782E-5x
R^2=0.97629E-1
Generated 2/5/2025 8:28 AM.
Sample Date

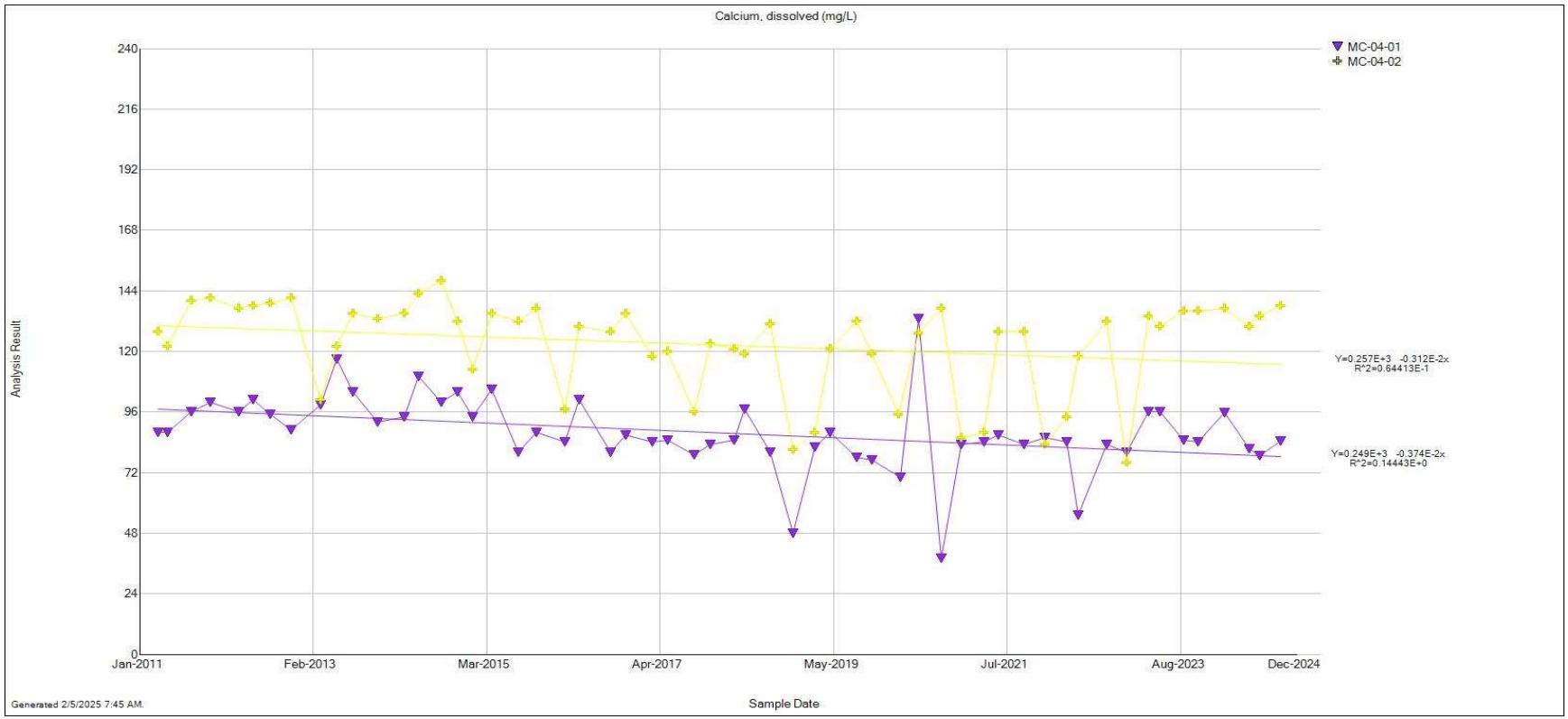

Magnesium, dissolved (mg/L)
MLC-04-01
Y=0.205E+3 -0.327E-2x
R^2=0.37303E-1
Analysis Result
105
94.5
84
73.5
63
52.5
42
31.5
21
10.5
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/5/2025 8:28 AM.

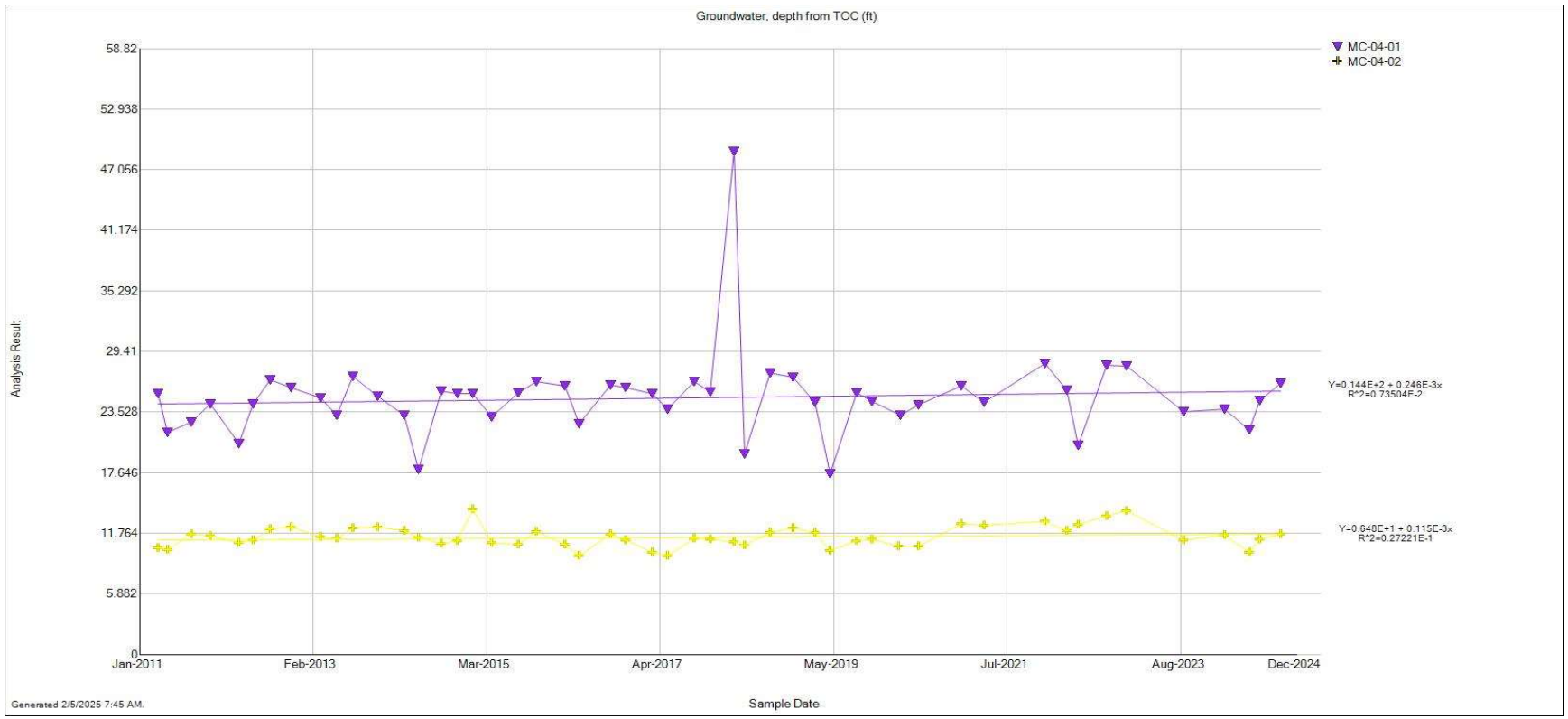

pH (lab)
MLC-04-01
Y=0.924E+1 -0.270E-4x
R^2=0.19355E-1
Analysis Result
9.4
9.06
8.72
8.38
8.04
7.7
7.36
7.02
6.68
6.34
6
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 8:28 AM.
Sample Date

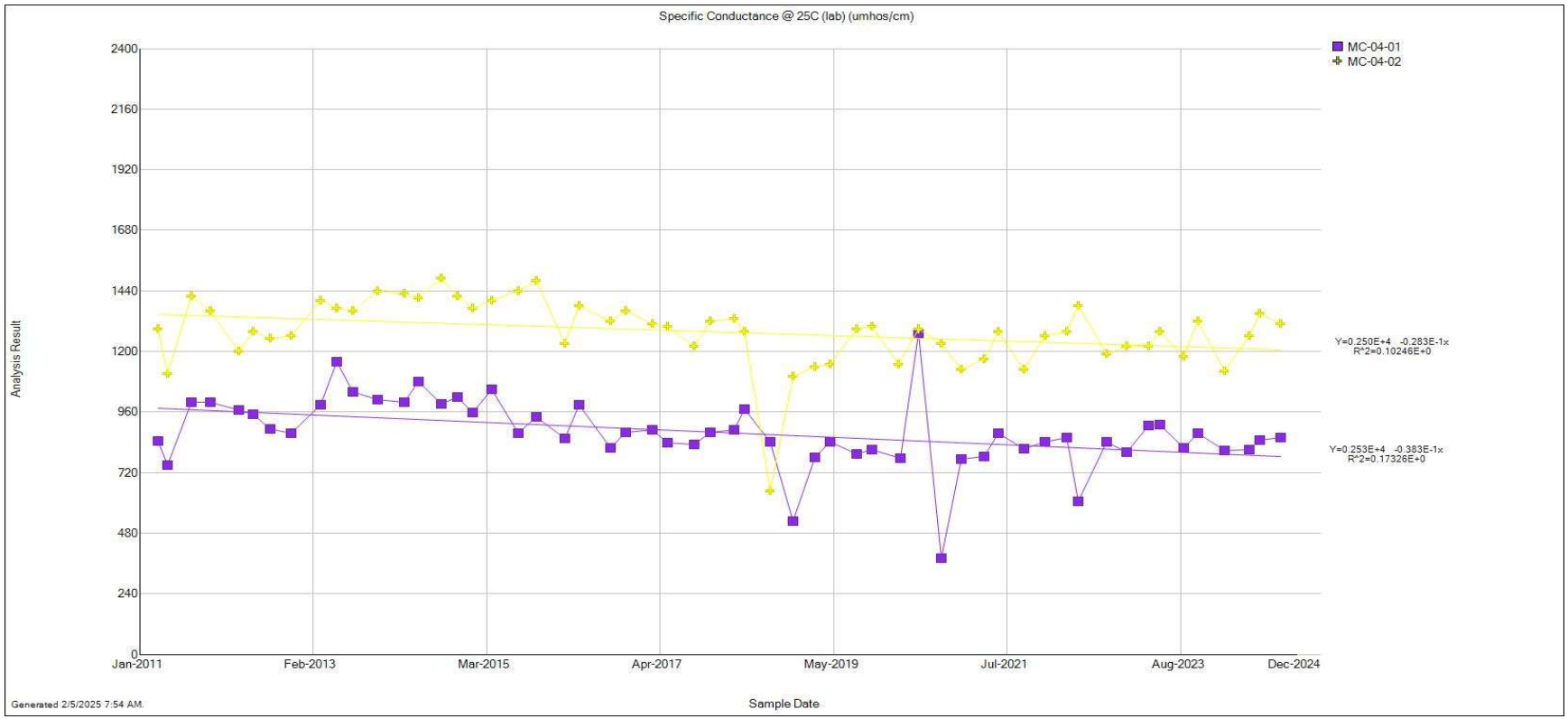

Sodium, dissolved (mg/L)
MLC-04-01
Analysis Result
88
79.2
70.4
61.6
52.8
44
35.2
26.4
17.6
8.8
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.125E+3 -0.197E-2x
R^2=0.28559E-1
Generated 2/5/2025 8:28 AM.
Sample Date

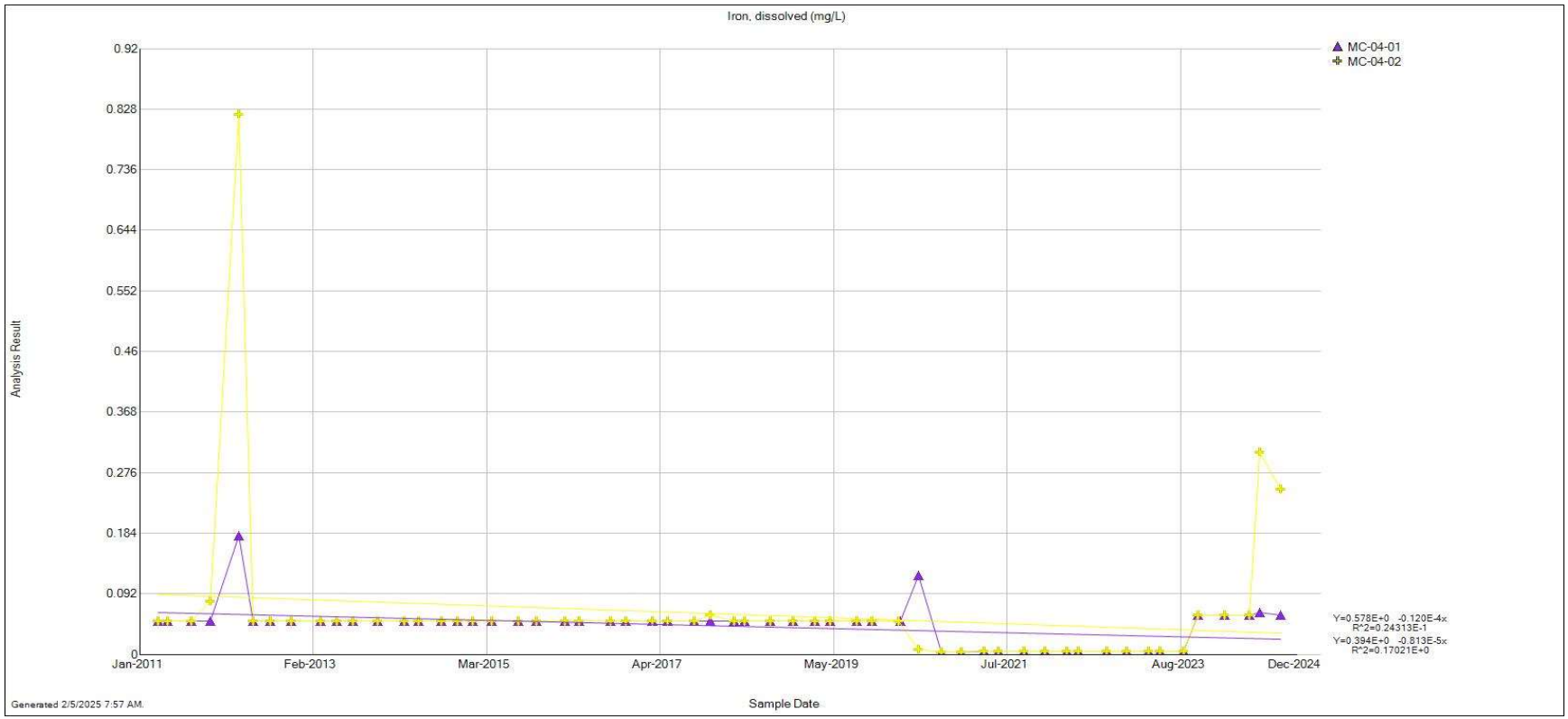

Sulfate, dissolved (mg/L)
MLC-04-01
Analysis Result
600
540
480
420
360
300
240
180
120
60
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.911E+3 -0.153E-1x
R^2=0.34384E-1
Generated 2/5/2025 8:28 AM.
Sample Date

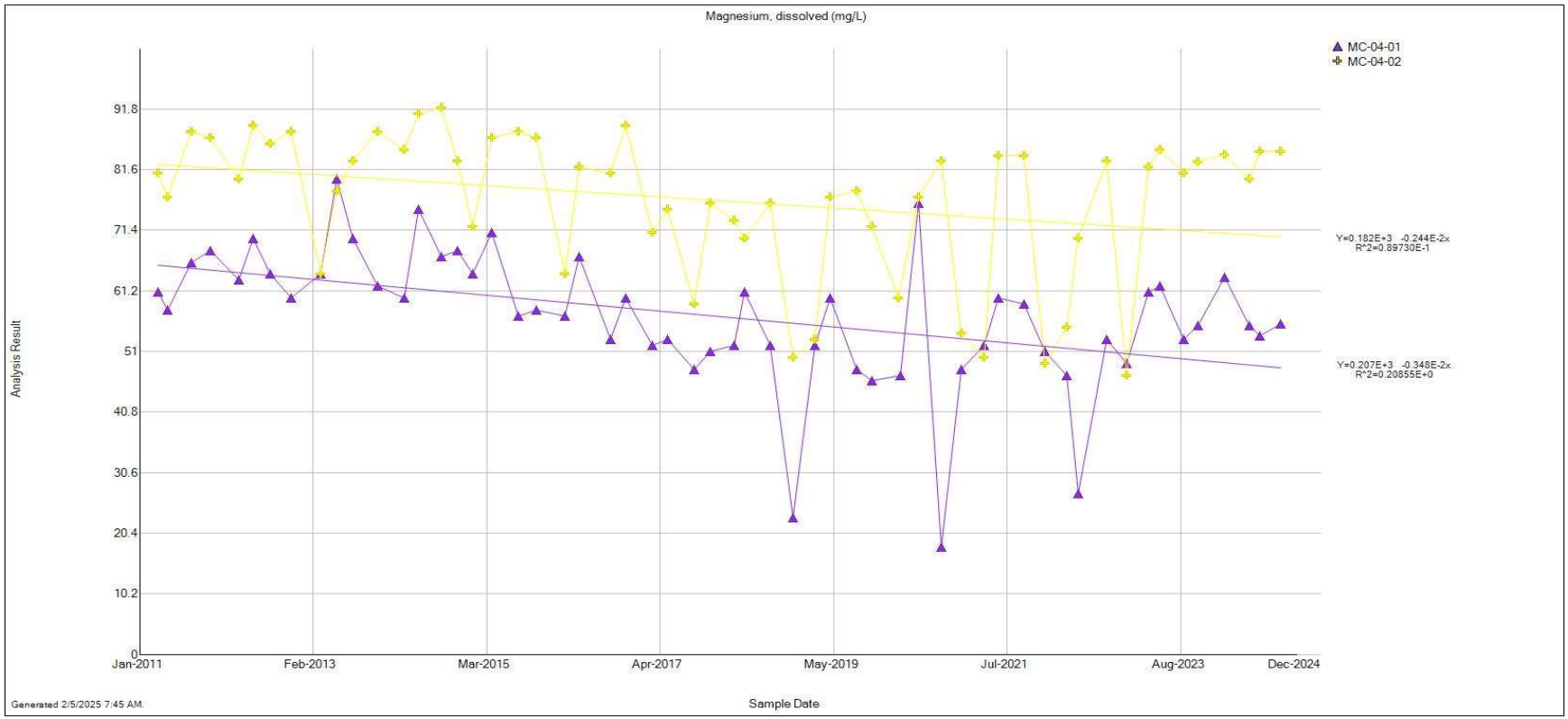

Total Dissolved Solids (mg/L)
MLC-04-01
Analysis Result
2200
1980
1760
1540
1320
1100
880
660
440
220
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.215E+4 -0.317E-1x
R^2=0.25459E-1
Generated 2/5/2025 8:28 AM.
Sample Date

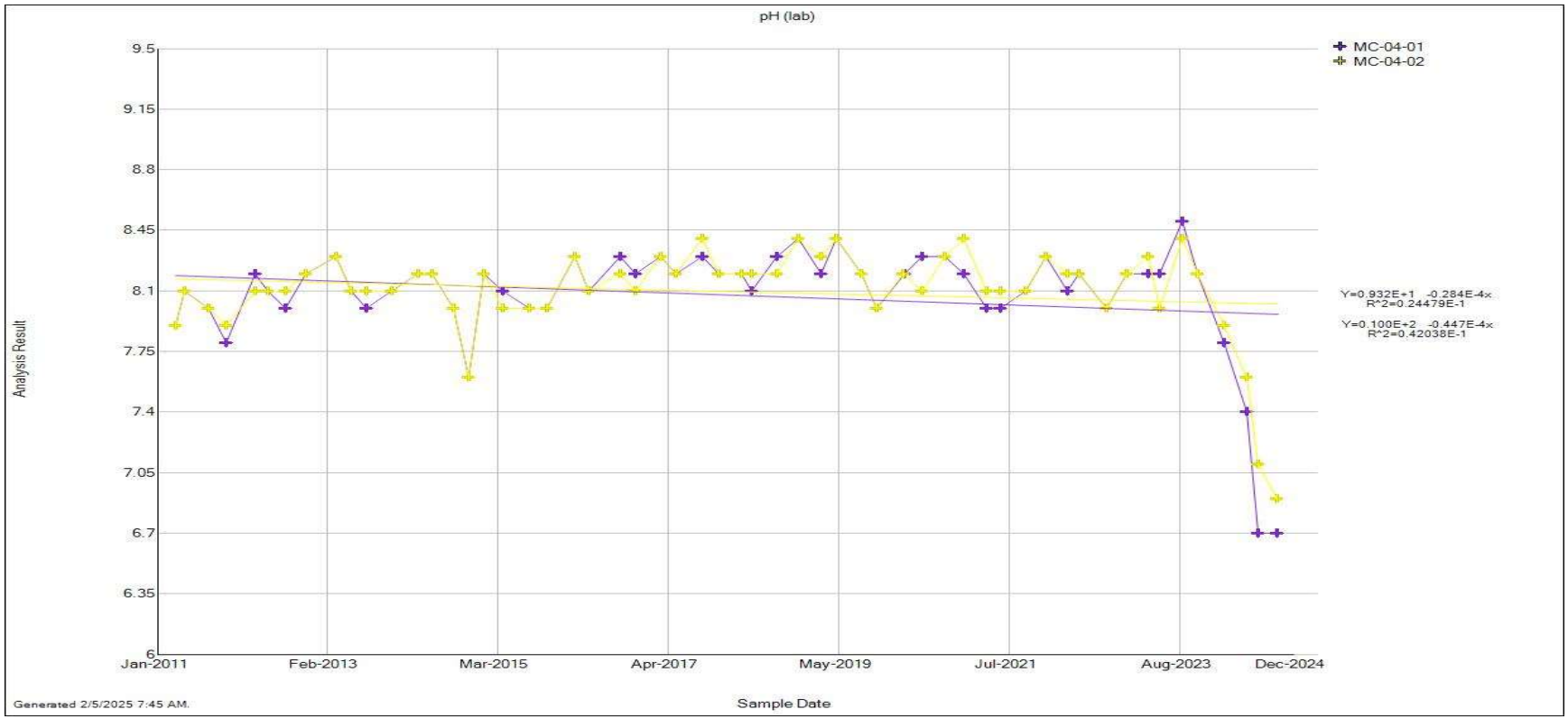

Calcium, dissolved (mg/L)
MC-04-01
MC-04-02
Y=0.257E+3 -0.312E-2x
R^2=0.64413E-1
Y=0.249E+3 -0.374E-2x
R^2=0.14443E+0
Analysis Result
240
216
192
168
144
120
96
72
48
24
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 7:45 AM.
Sample Date

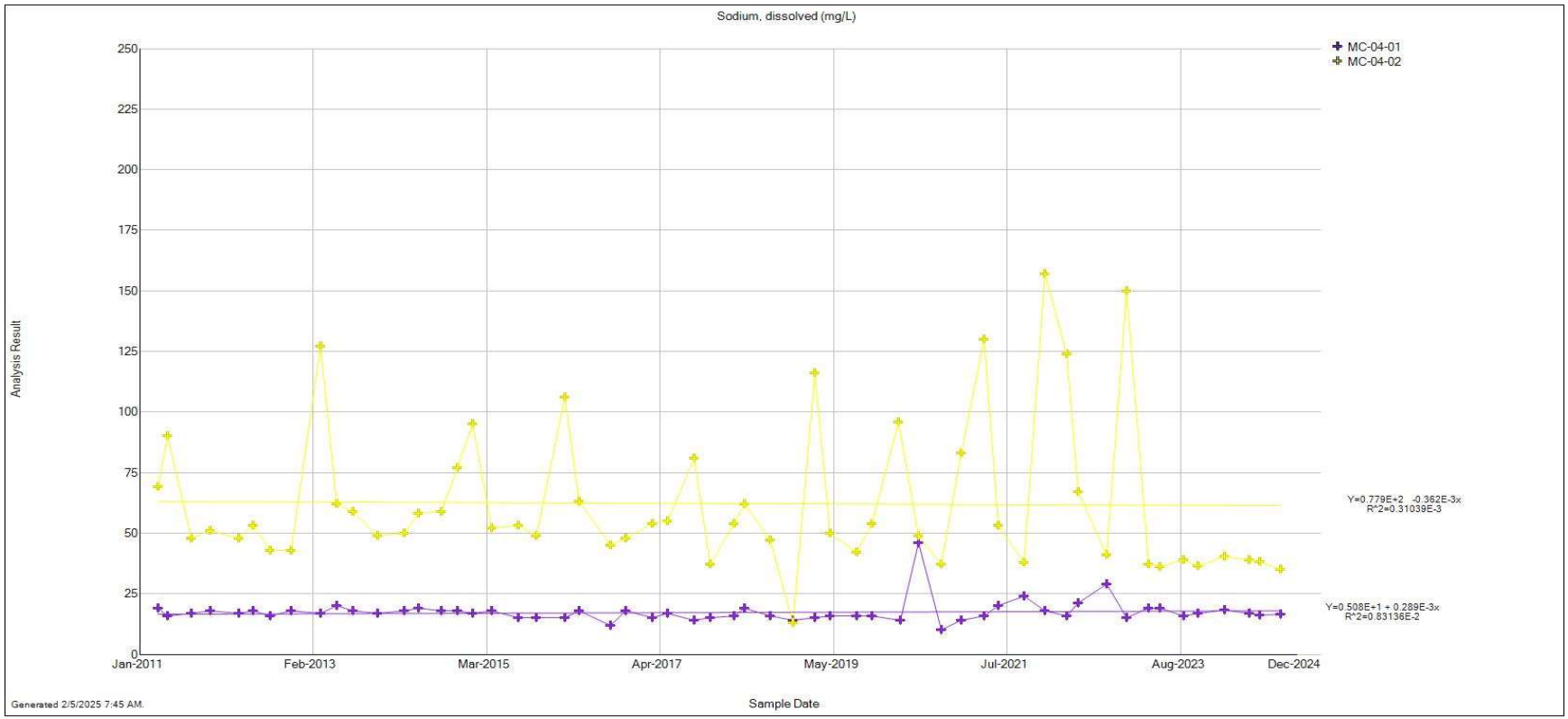

Groundwater, depth from TOC (ft)
MC-04-01
MC-04-02
58.82
52.938
47.056
41.174
35.292
29.41
23.528
17.646
11.764
5.882
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.144E+2 + 0.246E-3x
R^2=0.73504E-2
Y=0.648E+1 + 0.115E-3x
R^2=0.27221E-1
Generated 2/5/2025 7:45 AM.

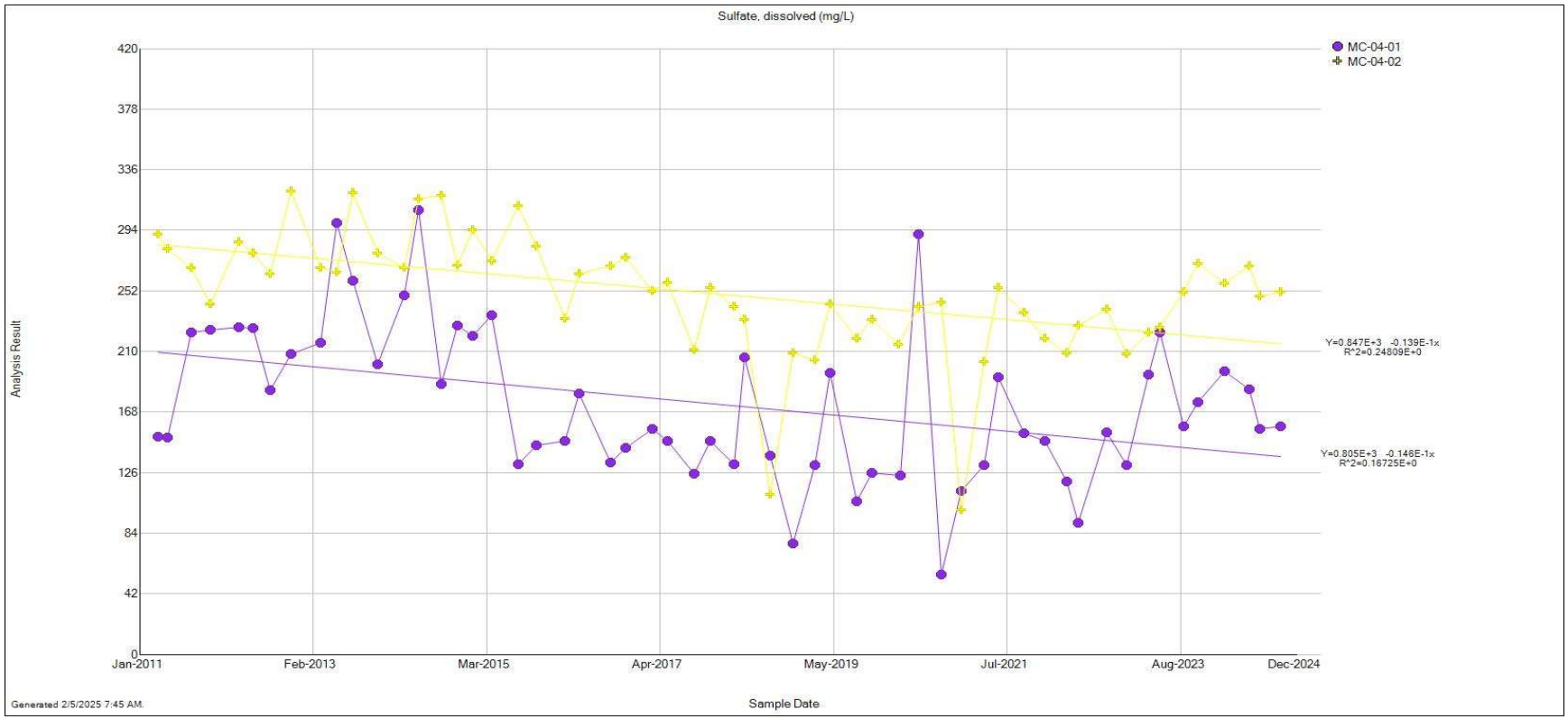

Specific Conductance @ 25C (lab) (umhos/cm)
MC-04-01
MC-04-02
Y=0.250E+4 -0.283E-1x
R^2=0.10246E+0
Y=0.253E+4 -0.383E-1x
R^2=0.17326E+0
Analysis Result
2400
2160
1920
1680
1440
1200
960
720
480
240
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/5/2025 7:54 AM.

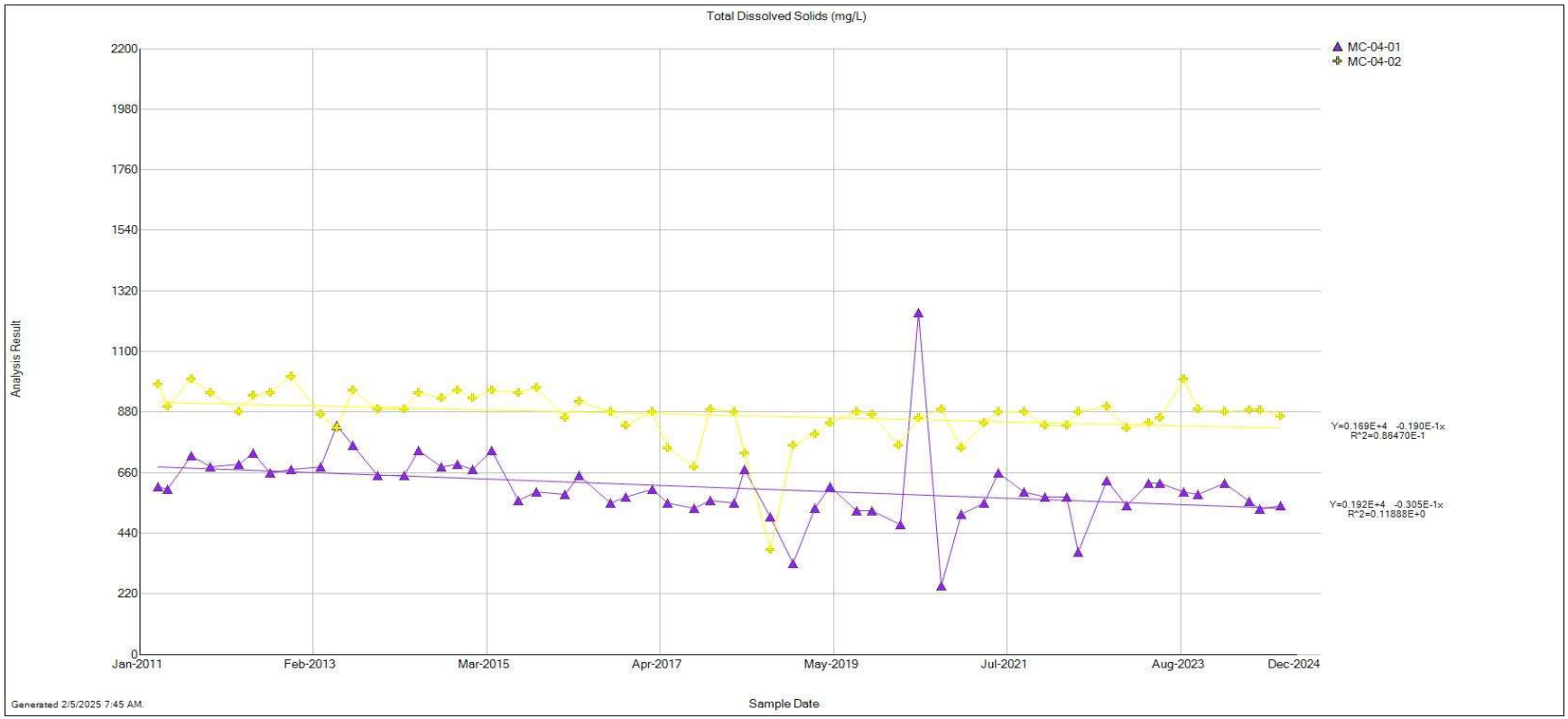

Iron, dissolved (mg/L)
MC-04-01
MC-04-02
0.92
0.828
0.736
0.644
0.552
0.46
0.368
0.276
0.184
0.092
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.578E+0 -0.120E-4x
R^2=0.24313E-1
Y=0.394E+0 -0.813E-5x
R^2=0.17021E+0
Generated 2/5/2025 7:57 AM.

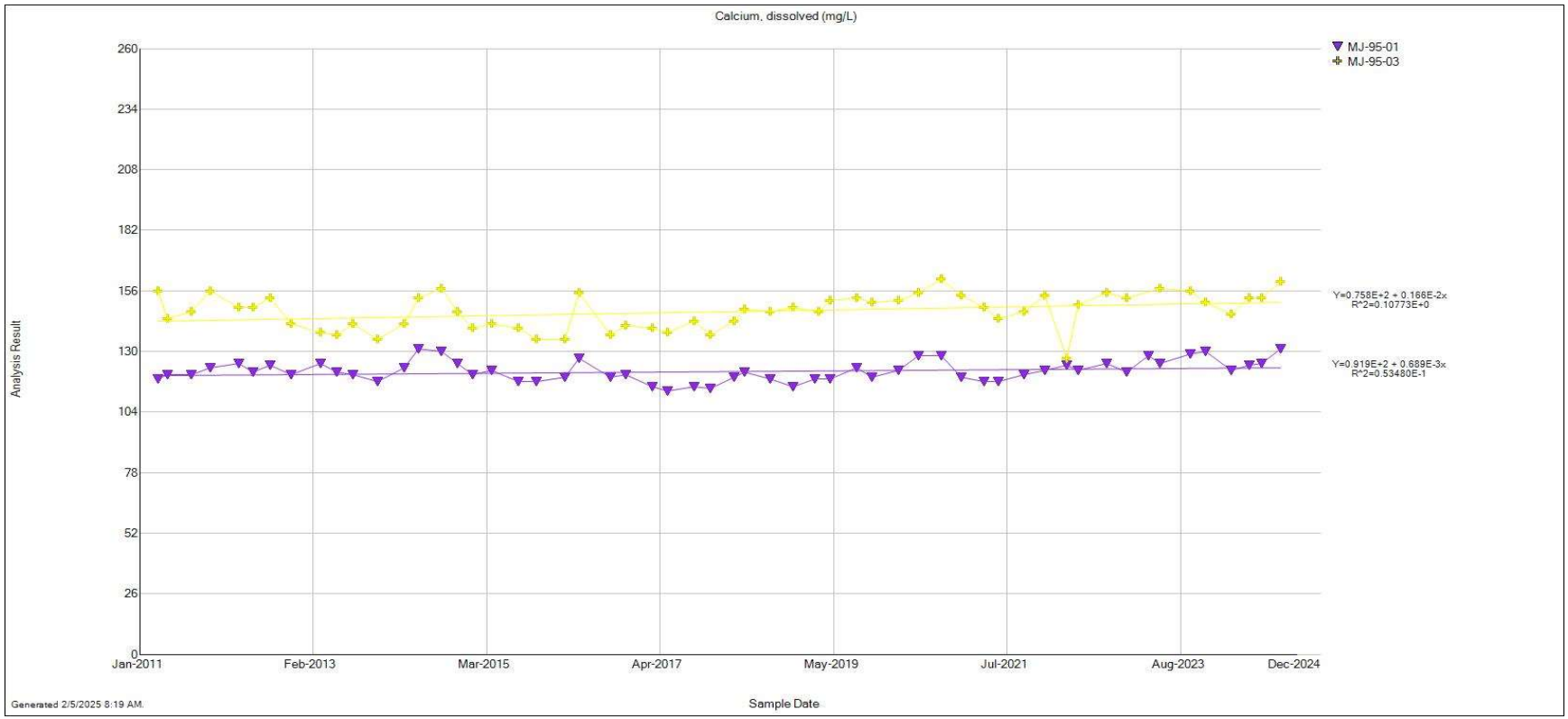

Magnesium, dissolved (mg/L)
MC-04-01
MC-04-02
Y=0.182E+3 -0.244E-2x
R^2=0.89730E-1
Y=0.207E+3 -0.348E-2x
R^2=0.20855E+0
Analysis Result
91.8
81.6
71.4
61.2
51
40.8
30.6
20.4
10.2
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 7:45 AM.
Sample Date

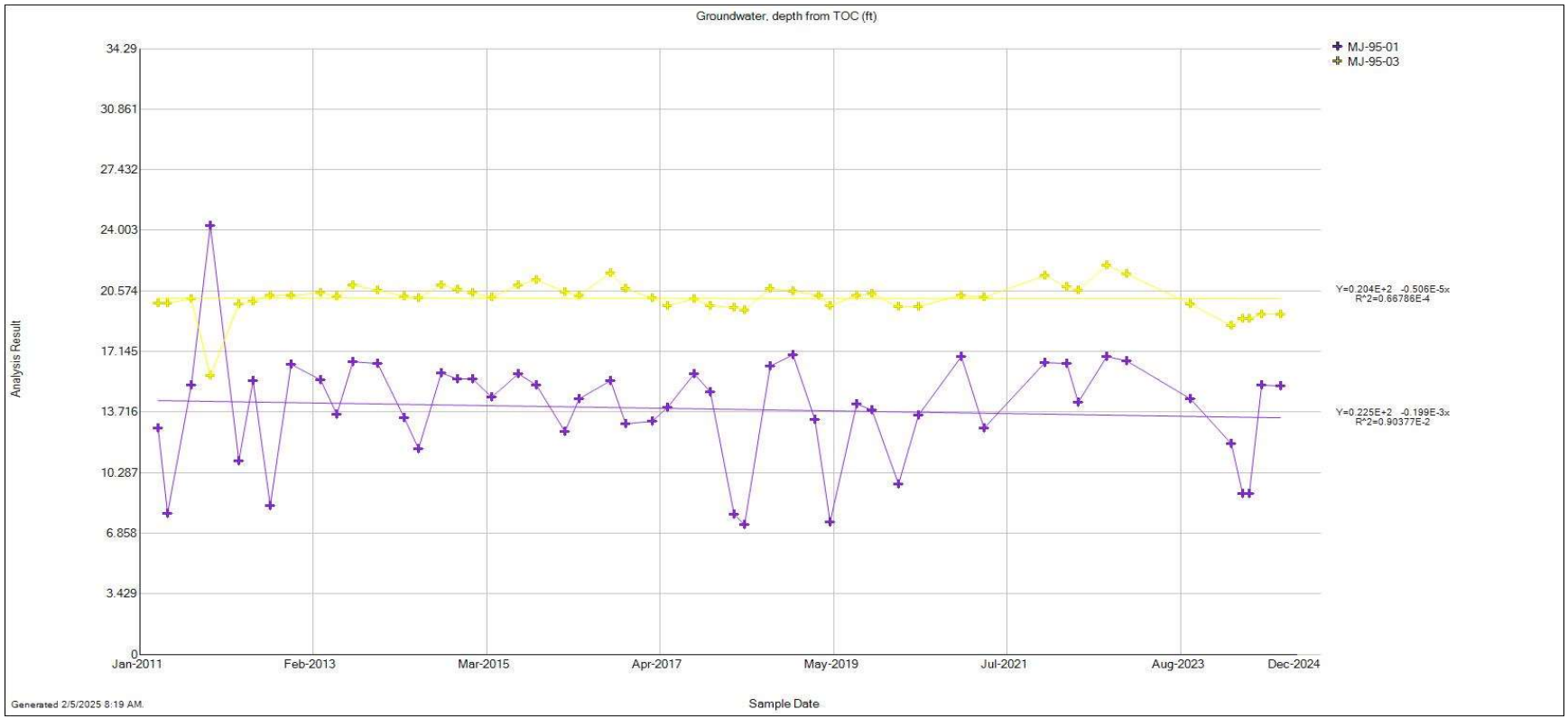

pH (lab)
MC-04-01
MC-04-02
Y=0.932E+1 -0.284E-4x
R^2=0.24479E-1
Y=0.100E+2 -0.447E-4x
R^2=0.42038E-1
Analysis Result
9.5
9.15
8.8
8.45
8.1
7.75
7.4
7.05
6.7
6.35
6
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 7:45 AM.
Sample Date

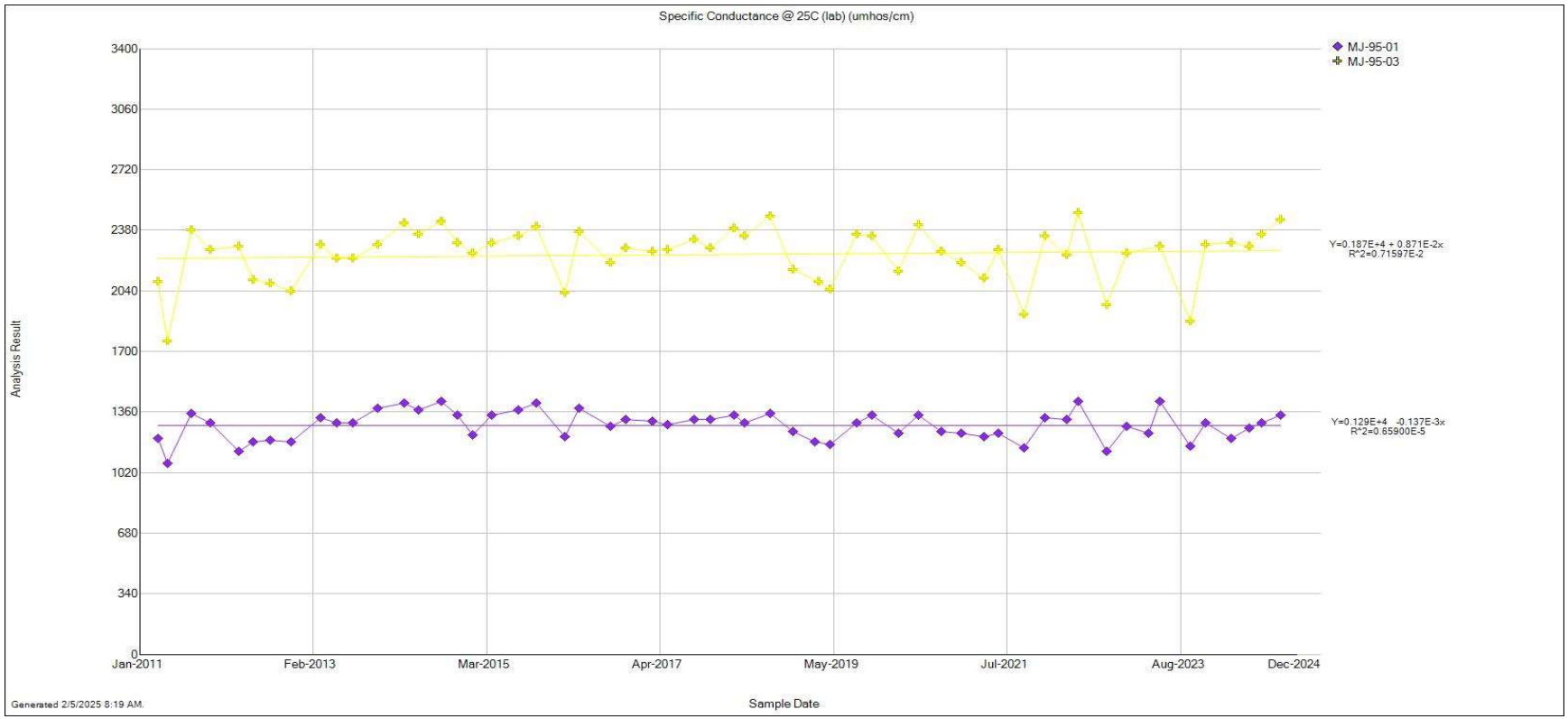

Sodium, dissolved (mg/L)
MC-04-01
MC-04-02
Analysis Result
250
225
200
175
150
125
100
75
50
25
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Y=0.779E+2 -0.362E-3x
R^2=0.31039E-3
Y=0.508E+1 + 0.289E-3x
R^2=0.83136E-2
Generated 2/5/2025 7:45 AM.
Sample Date

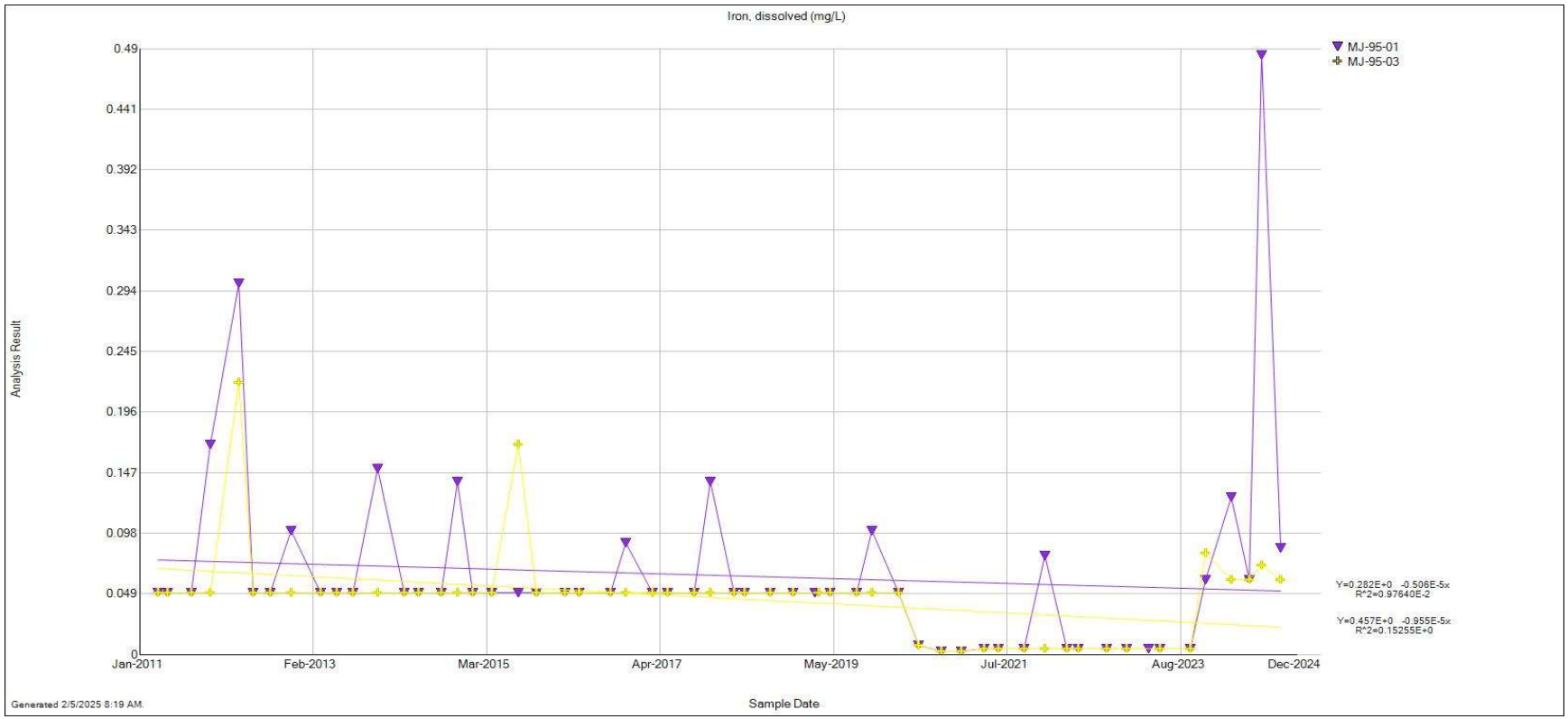

Sulfate, dissolved (mg/L)
MC-04-01
MC-04-02
Y=0.847E+3 -0.139E-1x
R^2=0.24809E+0
Y=0.805E+3 -0.146E-1x
R^2=0.16725E+0
Analysis Result
420
378
336
294
252
210
168
126
84
42
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 7:45 AM.
Sample Date

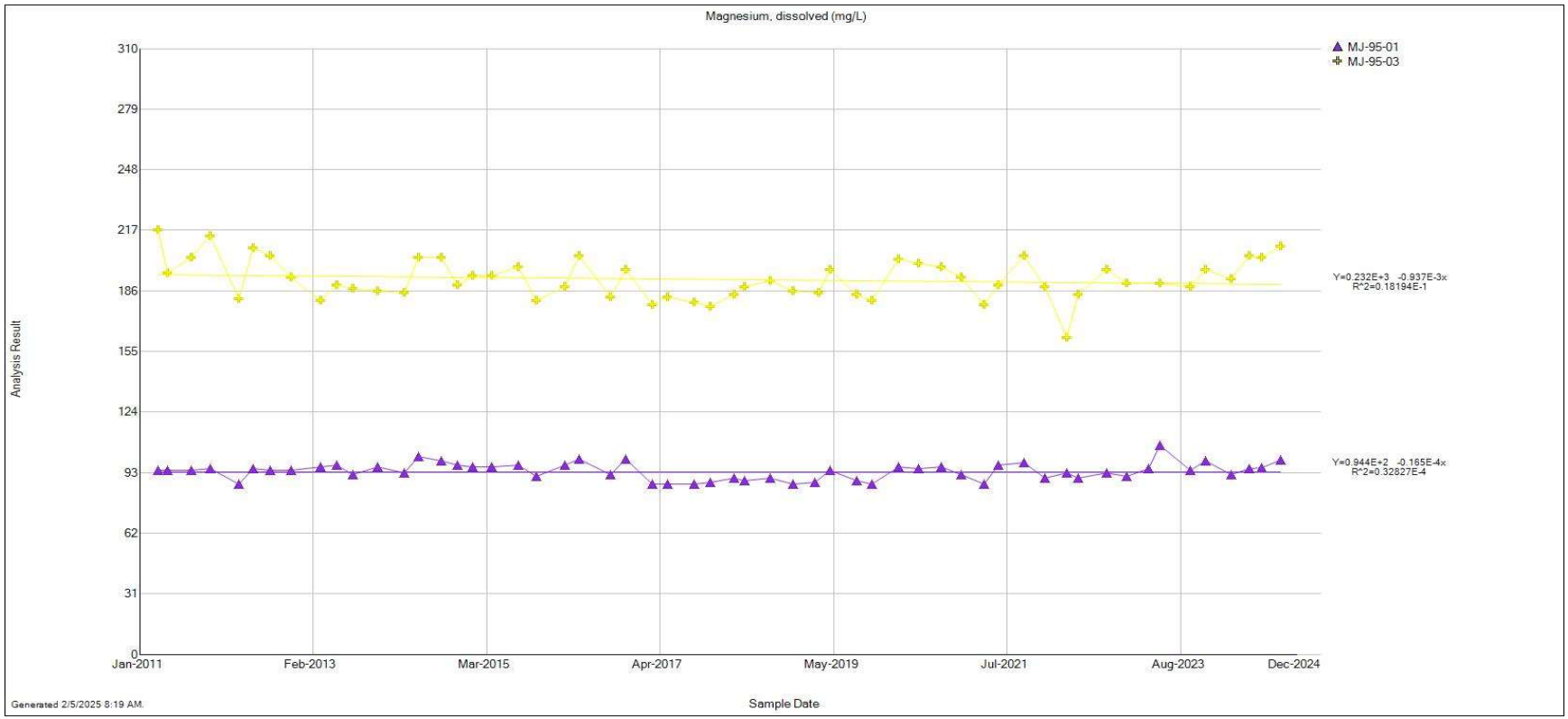

Total Dissolved Solids (mg/L)
MC-04-01
MC-04-02
Y=0.169E+4 -0.190E-1x
R^2=0.86470E-1
Y=0.192E+4 -0.305E-1x
R^2=0.11888E+0
Analysis Result
2200
1980
1760
1540
1320
1100
880
660
440
220
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/5/2025 7:45 AM.

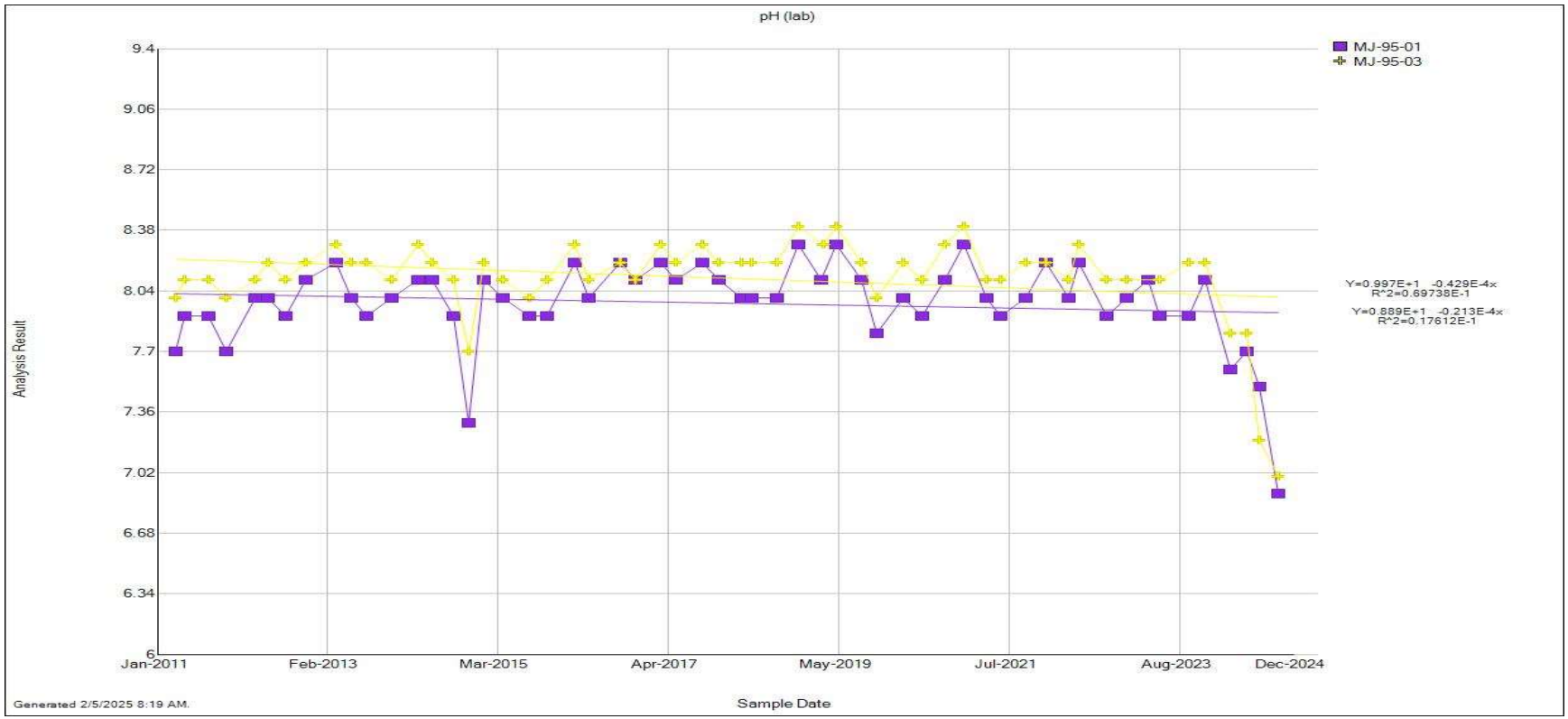

Calcium, dissolved (mg/L)
MJ-95-01
MJ-95-03
Y=0.758E+2 + 0.166E-2x
R^2=0.10773E+0
Y=0.919E+2 + 0.689E-3x
R^2=0.53480E-1
Analysis Result
260
234
208
182
156
130
104
78
52
26
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 8:19 AM.
Sample Date

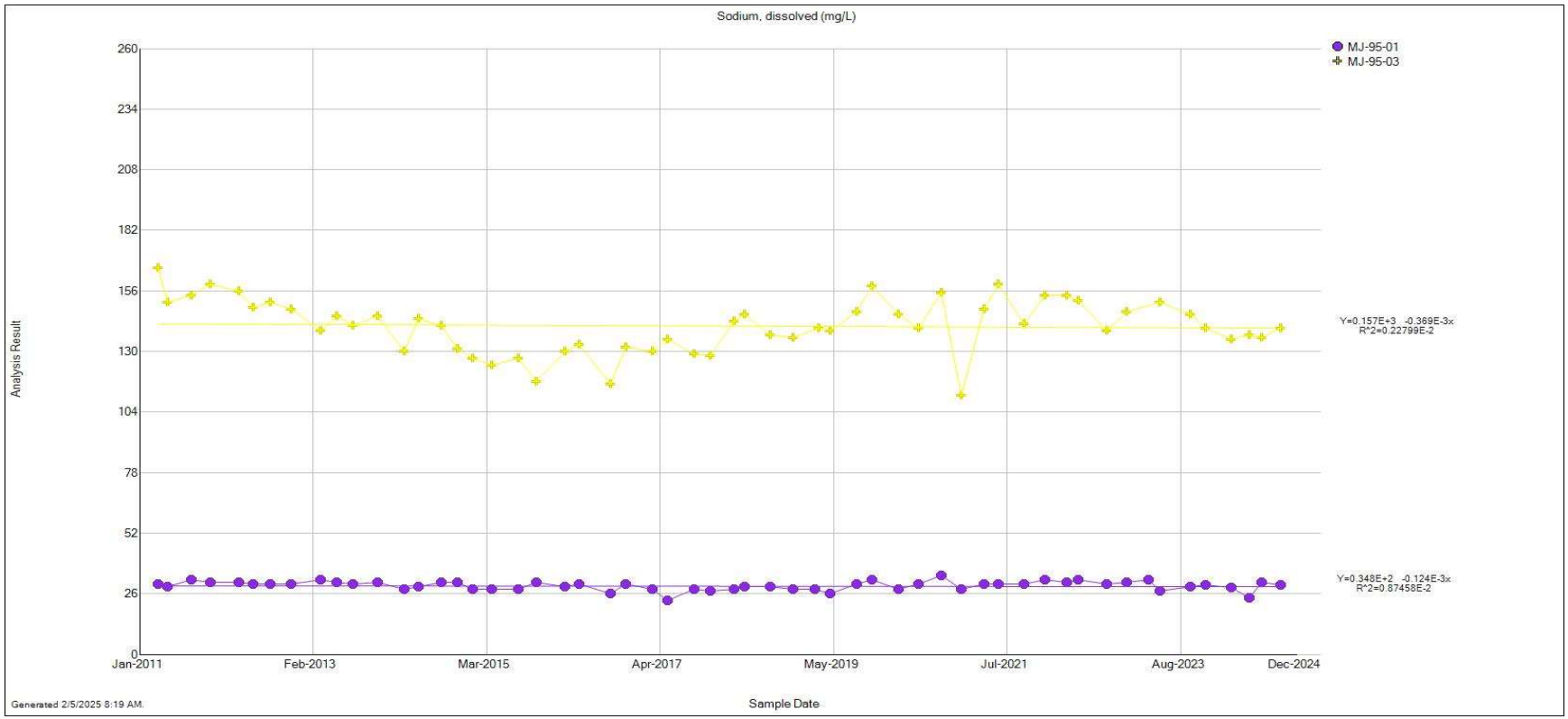

Groundwater, depth from TOC (ft)
MJ-95-01
MJ-95-03
34.29
30.861
27.432
24.003
20.574
17.145
13.716
10.287
6.858
3.429
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.204E+2 -0.506E-5x
R^2=0.66786E-4
Y=0.225E+2 -0.199E-3x
R^2=0.90377E-2
Generated 2/5/2025 8:19 AM.

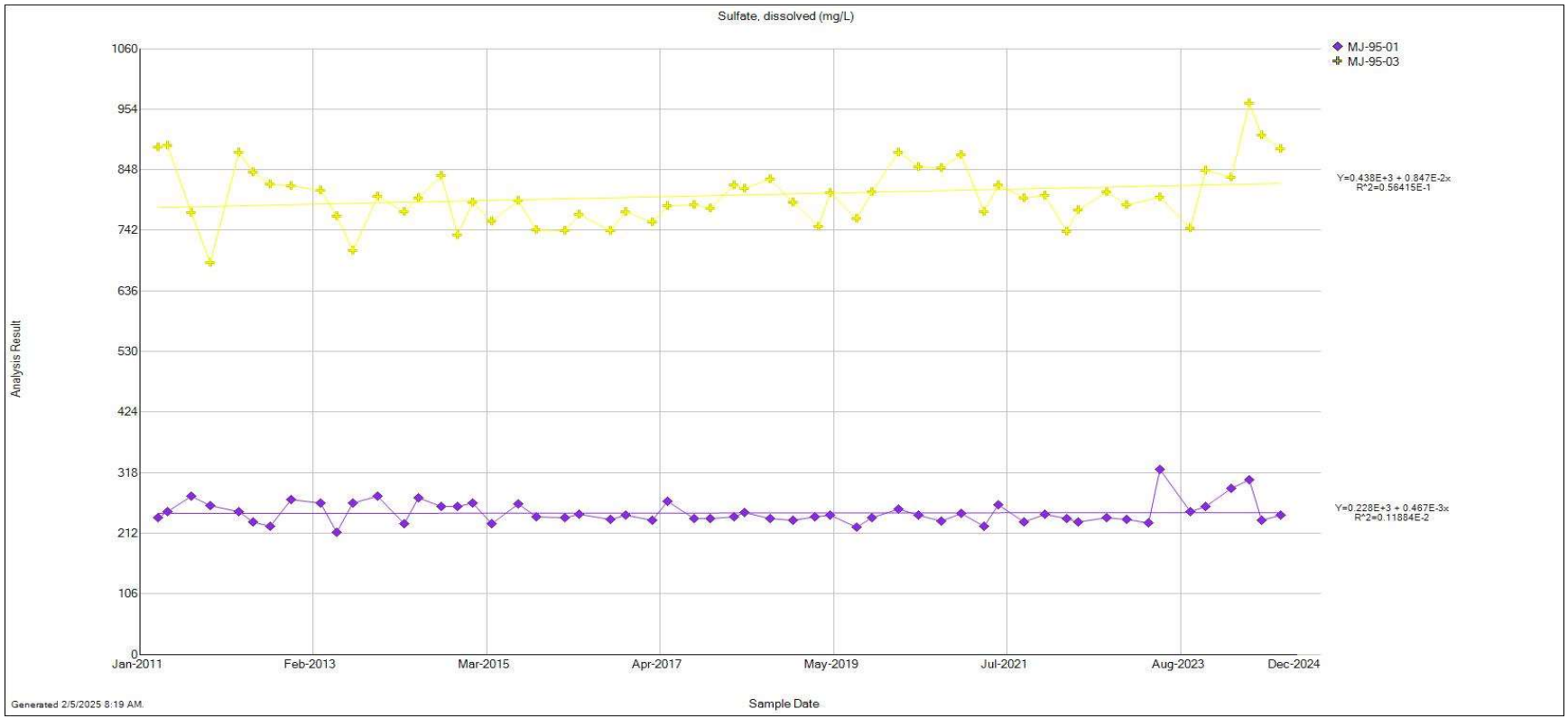

Specific Conductance @ 25C (lab) (umhos/cm)
MJ-95-01
MJ-95-03
Y=0.187E+4 + 0.871E-2x
R^2=0.71597E-2
Y=0.129E+4 -0.137E-3x
R^2=0.65900E-5
Analysis Result
3400
3060
2720
2380
2040
1700
1360
1020
680
340
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 8:19 AM.
Sample Date

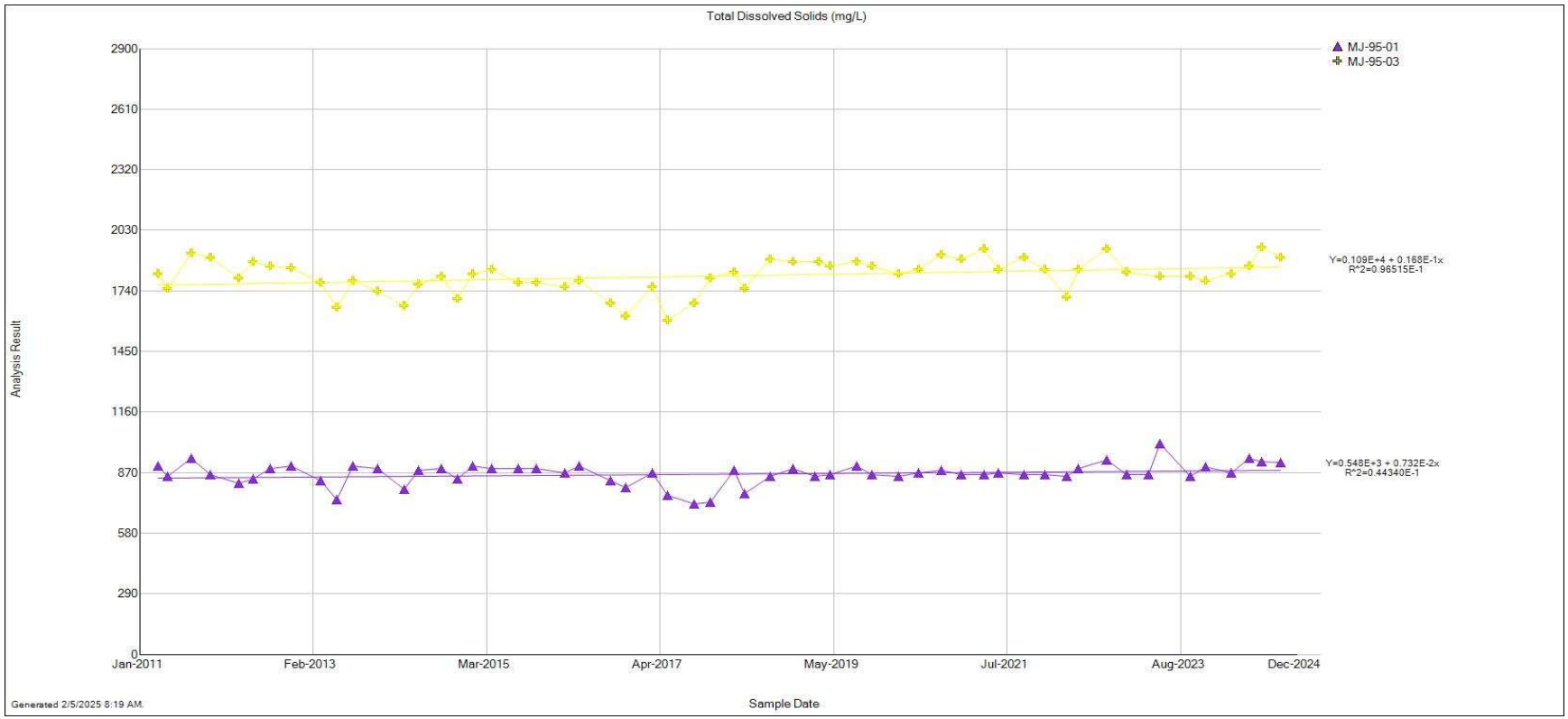

Iron, dissolved (mg/L)
MJ-95-01
MJ-95-03
0.49
0.441
0.392
0.343
0.294
0.245
0.196
0.147
0.098
0.049
0
Analysis Result
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Y=0.282E+0 -0.506E-5x
R^2=0.97640E-2
Y=0.457E+0 -0.955E-5x
R^2=0.15255E+0
Generated 2/5/2025 8:19 AM.

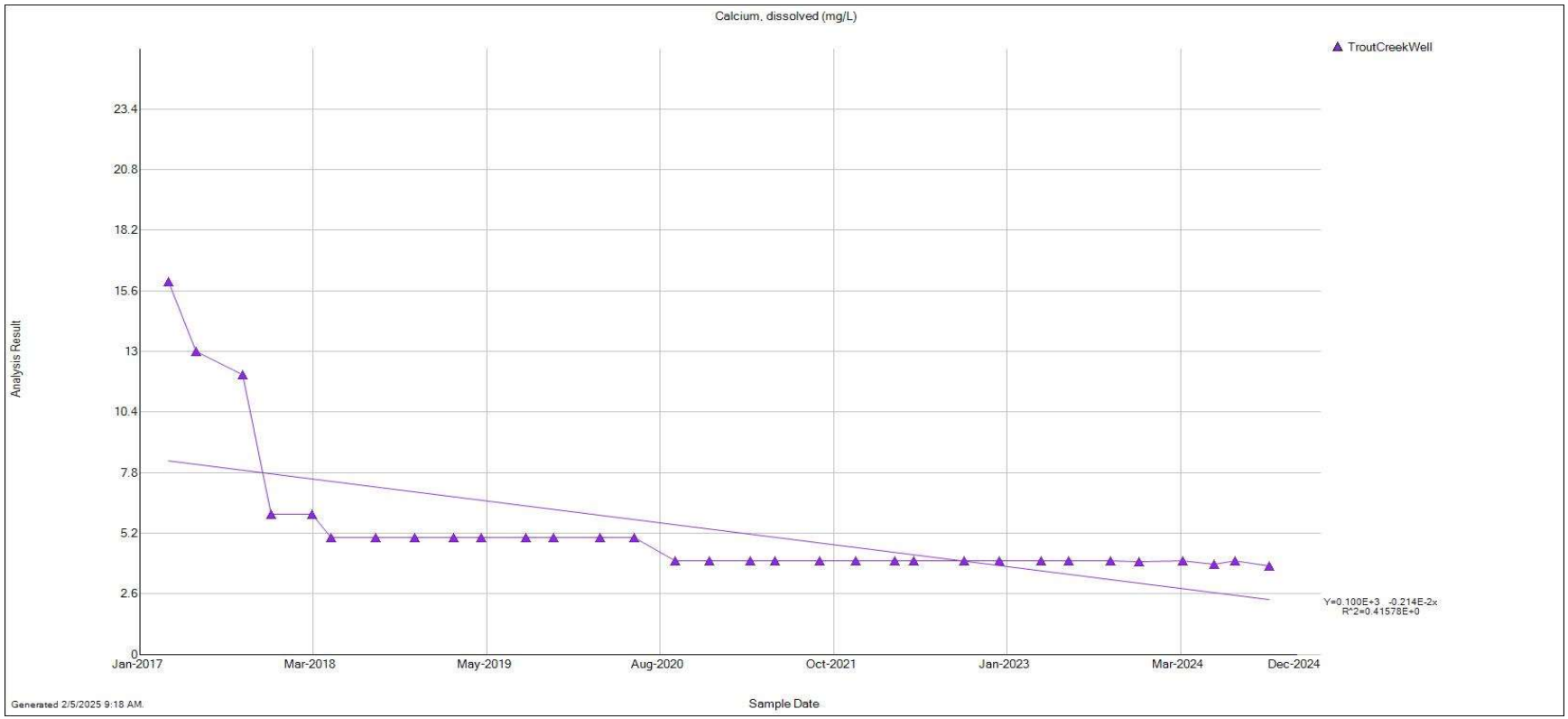

Magnesium, dissolved (mg/L)
MJ-95-01
MJ-95-03
Y=0.232E+3 -0.937E-3x
R^2=0.18194E-1
Y=0.944E+2 -0.165E-4x
R^2=0.32827E-4
Analysis Result
310
279
248
217
186
155
124
93
62
31
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 8:19 AM.
Sample Date

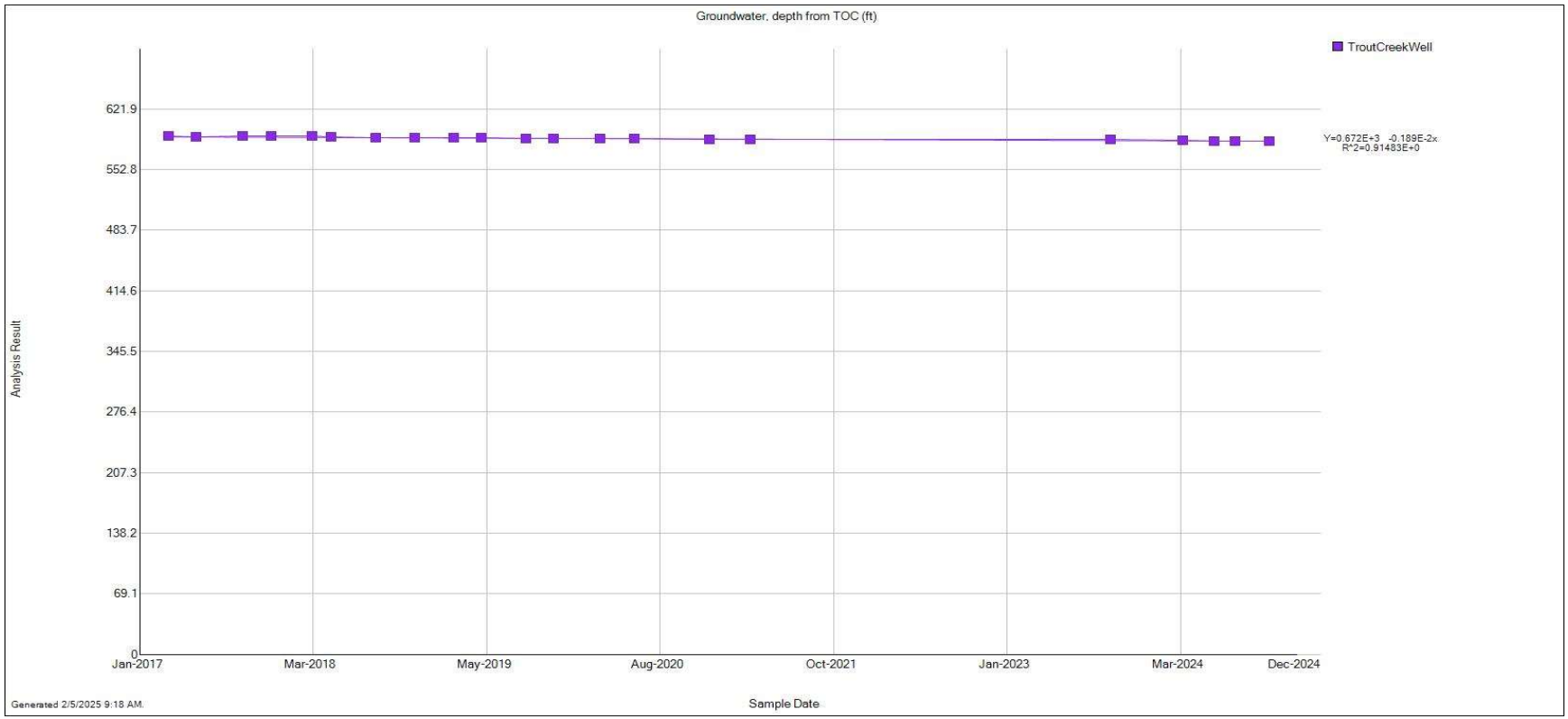

pH (lab)
MJ-95-01
MJ-95-03
Y=0.997E+1 -0.429E-4x
R^2=0.69738E-1
Y=0.889E+1 -0.213E-4x
R^2=0.17612E-1
Analysis Result
9.4
9.06
8.72
8.38
8.04
7.7
7.36
7.02
6.68
6.34
6
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 8:19 AM.
Sample Date

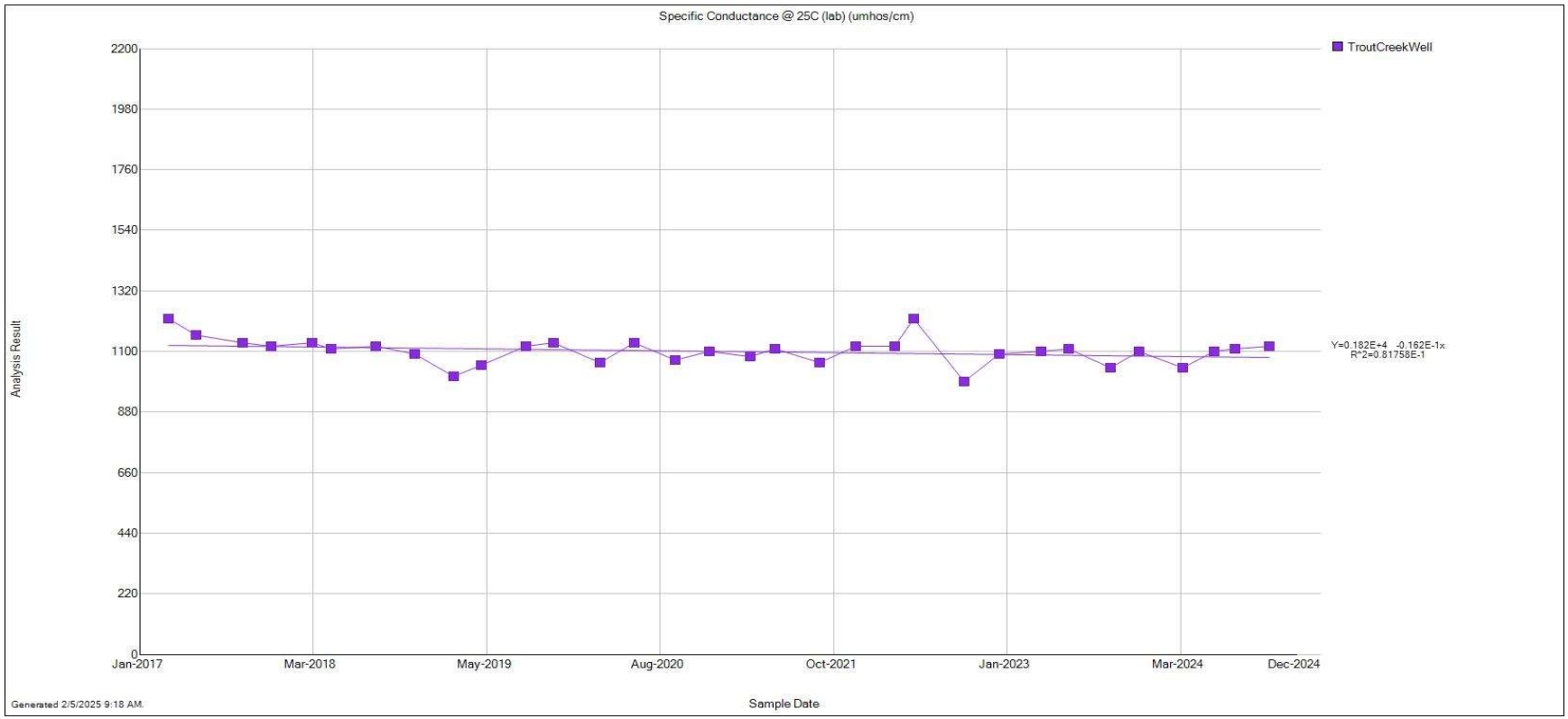

Sodium, dissolved (mg/L)
MJ-95-01
MJ-95-03
Y=0.157E+3 -0.369E-3x
R^2=0.22799E-2
Y=0.348E+2 -0.124E-3x
R^2=0.87458E-2
Analysis Result
260
234
208
182
156
130
104
78
52
26
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Sample Date
Generated 2/5/2025 8:19 AM.

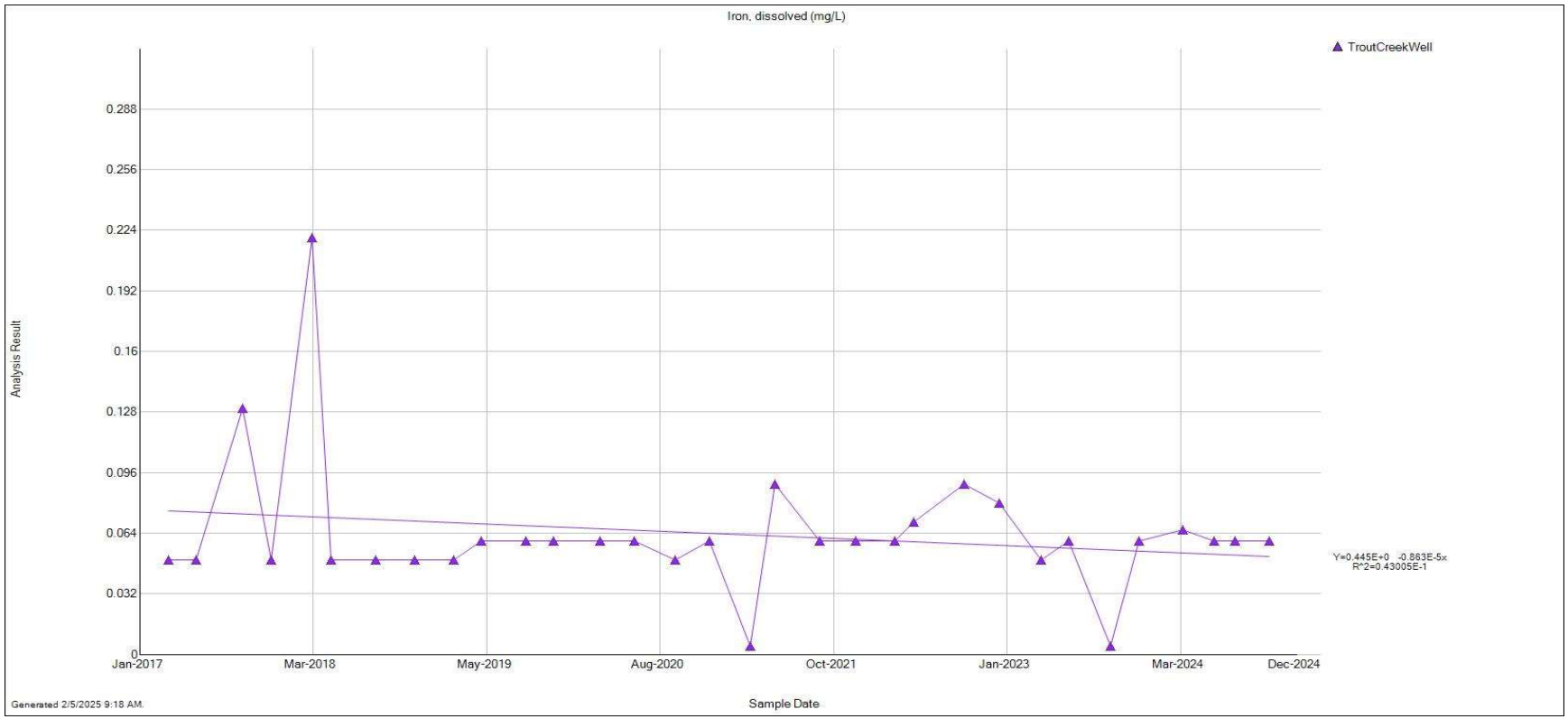

Sulfate, dissolved (mg/L)
MJ-95-01
MJ-95-03
Y=0.438E+3 + 0.847E-2x
R^2=0.56415E-1
Y=0.228E+3 + 0.467E-3x
R^2=0.11884E-2
Analysis Result
1060
954
848
742
636
530
424
318
212
106
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 8:19 AM.
Sample Date

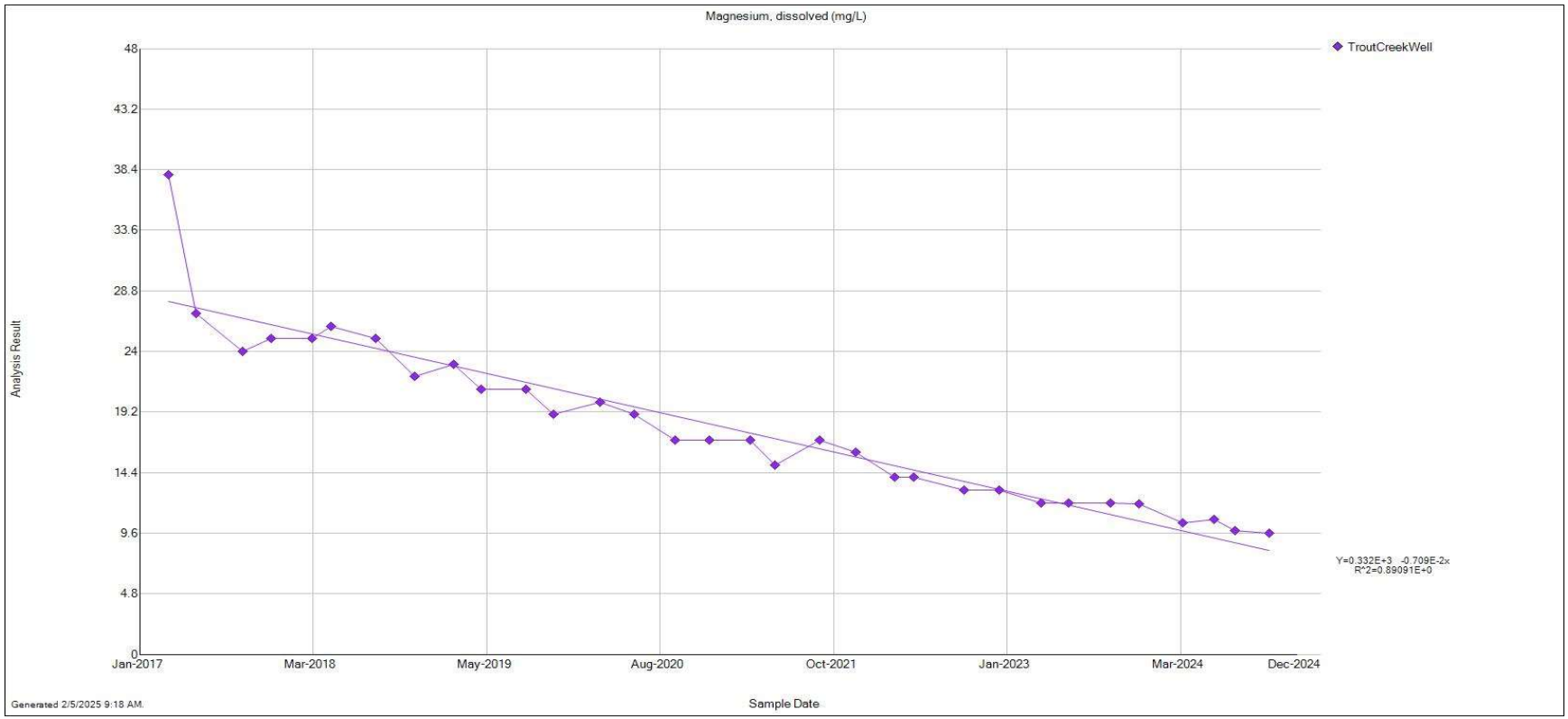

Total Dissolved Solids (mg/L)
MJ-95-01
MJ-95-03
Y=0.109E+4 + 0.168E-1x
R^2=0.96515E-1
Y=0.548E+3 + 0.732E-2x
R^2=0.44340E-1
Analysis Result
2900
2610
2320
2030
1740
1450
1160
870
580
290
0
Jan-2011
Feb-2013
Mar-2015
Apr-2017
May-2019
Jul-2021
Aug-2023
Dec-2024
Generated 2/5/2025 8:19 AM.
Sample Date

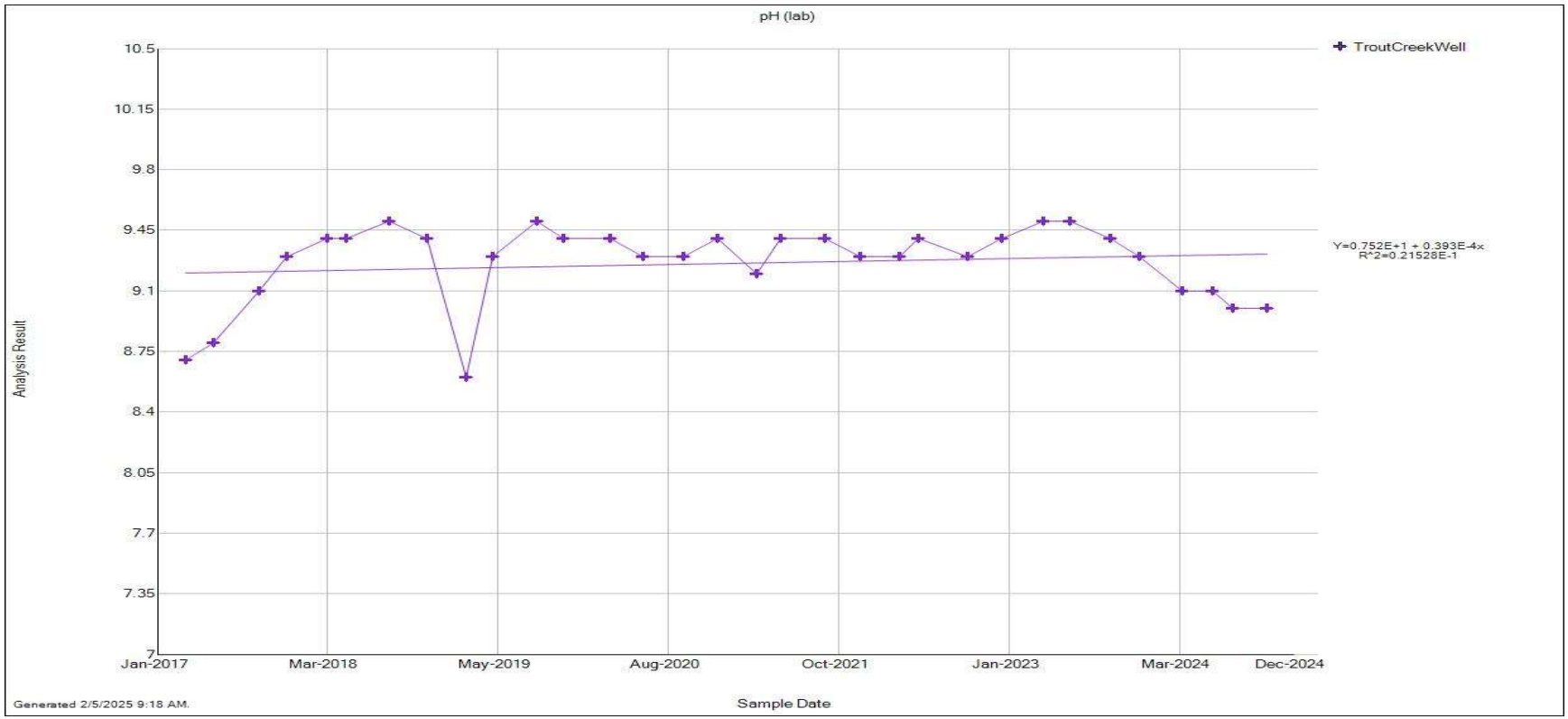

Calcium, dissolved (mg/L)
TroutCreekWell
Analysis Result
23.4
20.8
18.2
15.6
13
10.4
7.8
5.2
2.6
0
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Y=0.100E+3 -0.214E-2x
R^2=0.41578E+0
Generated 2/5/2025 9:18 AM.
Sample Date

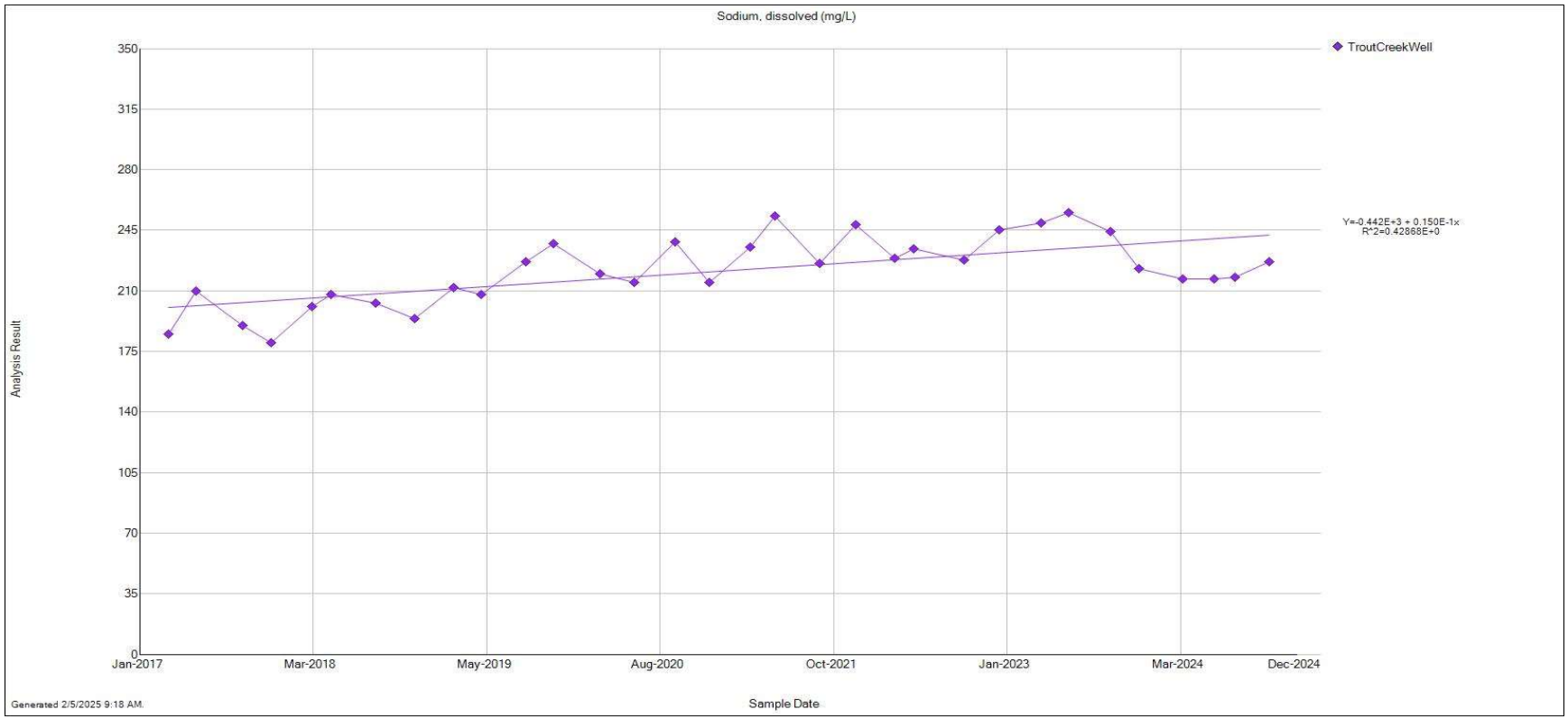

Groundwater, depth from TOC (ft)
TroutCreekWell
Y=0.672E+3 -0.189E-2x
R^2=0.91483E+0
621.9
552.8
483.7
414.6
345.5
276.4
207.3
138.2
69.1
0
Analysis Result
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Sample Date
Generated 2/5/2025 9:18 AM.

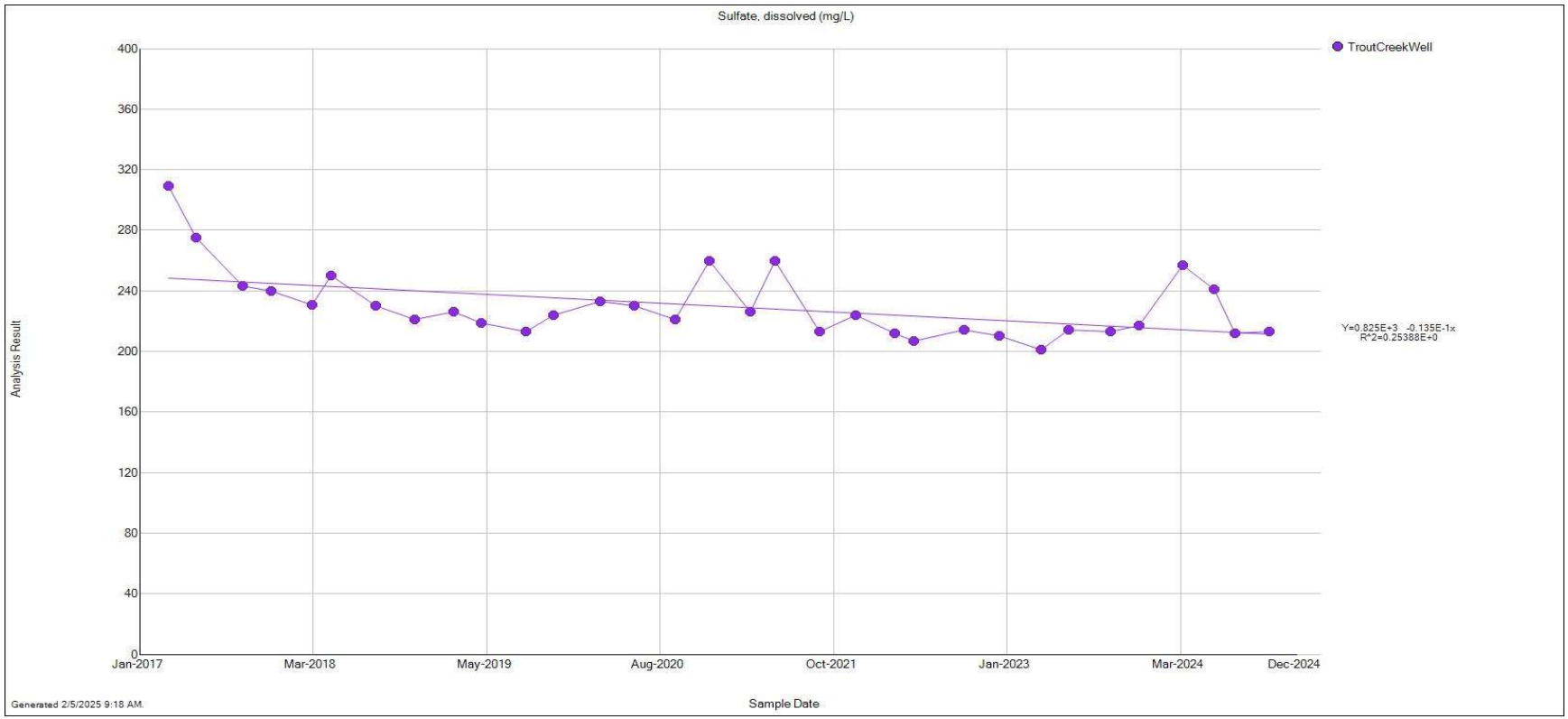

Specific Conductance @ 25C (lab) (umhos/cm)
TroutCreekWell
Y=0.182E+4 -0.162E-1x
R^2=0.81758E-1
Analysis Result
2200
1980
1760
1540
1320
1100
880
660
440
220
0
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Sample Date
Generated 2/5/2025 9:18 AM.

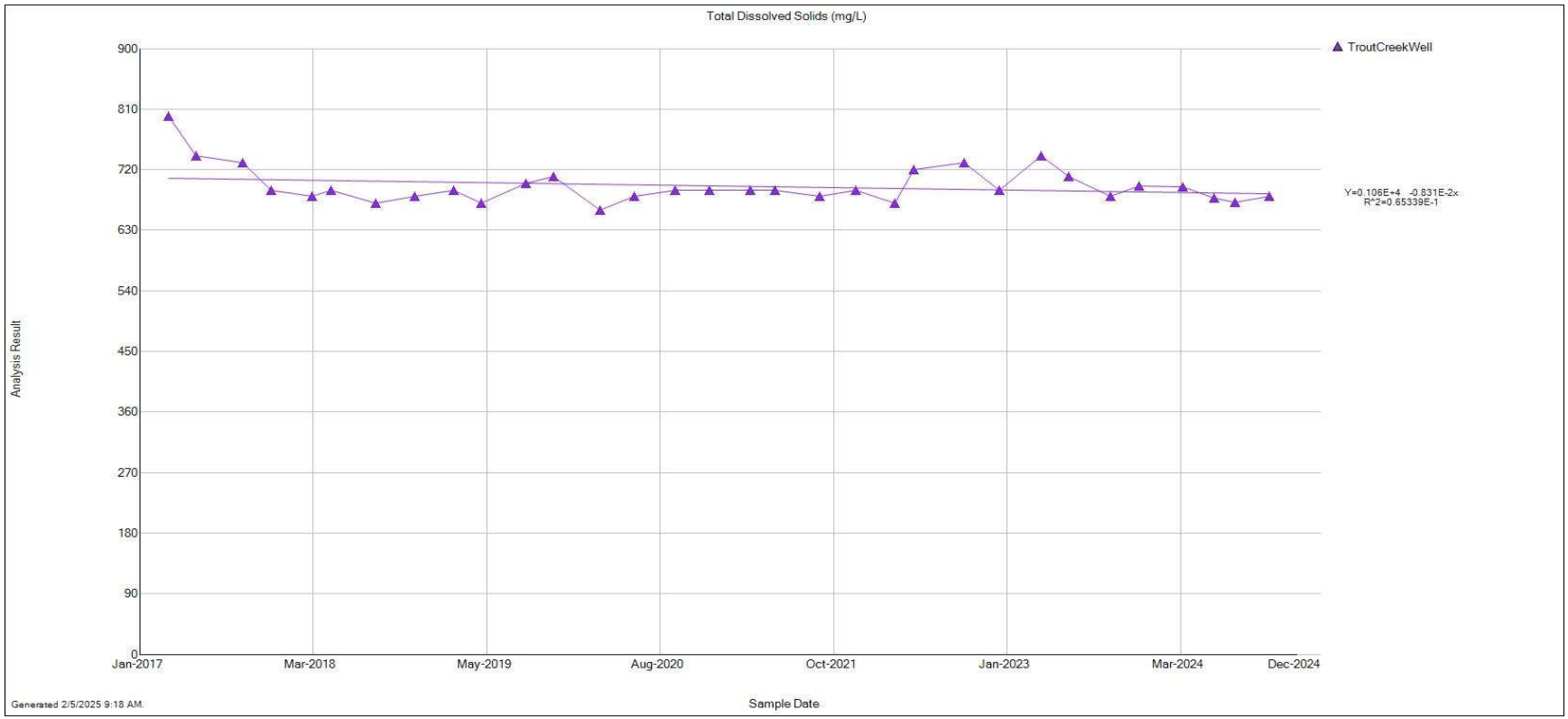

Iron, dissolved (mg/L)
TroutCreekWell
Analysis Result
0.288
0.256
0.224
0.192
0.16
0.128
0.096
0.064
0.032
0
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Y=0.445E+0 -0.863E-5x
R^2=0.43005E-1
Generated 2/5/2025 9:18 AM.
Sample Date


Magnesium, dissolved (mg/L)
TroutCreekWell
Analysis Result
48
43.2
38.4
33.6
28.8
24
19.2
14.4
9.6
4.8
0
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Y=0.332E+3 -0.709E-2x
R^2=0.89091E+0
Generated 2/5/2025 9:18 AM.
Sample Date


pH (lab)
TroutCreekWell
Y=0.752E+1 + 0.393E-4x
R^2=0.21528E-1
Analysis Result
10.5
10.15
9.8
9.45
9.1
8.75
8.4
8.05
7.7
7.35
7
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Generated 2/5/2025 9:18 AM.
Sample Date


Sodium, dissolved (mg/L)
TroutCreekWell
Y=-0.442E+3 + 0.150E-1x
R^2=0.42868E+0
Analysis Result
350
315
280
245
210
175
140
105
70
35
0
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Sample Date
Generated 2/5/2025 9:18 AM.


Sulfate, dissolved (mg/L)
TroutCreekWell
Y=0.825E+3 -0.135E-1x
R^2=0.25388E+0
Analysis Result
400
360
320
280
240
200
160
120
80
40
0
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Sample Date
Generated 2/5/2025 9:18 AM.


Total Dissolved Solids (mg/L)
TroutCreekWell
Y=0.106E+4 -0.831E-2x
R^2=0.65339E-1
Analysis Result
900
810
720
630
540
450
360
270
180
90
0
Jan-2017
Mar-2018
May-2019
Aug-2020
Oct-2021
Jan-2023
Mar-2024
Dec-2024
Sample Date
Generated 2/5/2025 9:18 AM.

SECTION 2 – CDRMS ARR FORM AND SUPPORT DOCUMENTS

RULE REQUIREMENT

Rule 2.04.13(1) (a-f)

2.04.13(1) by April 1, or other such date as agreed on, each permittee shall file an annual reclamation report covering the previous calendar year for all areas under bond. The report shall include, but not be limited to, text, discussion and maps which address:

- the name and address of the permittee and permit number
- location and number of acres disturbed during that year
- location and number of acres backfilled and graded during that year
- location and number of acres topsoiled during that year
- the species, location and number of acres of vegetation planted during that year, including any augmented seeding or cultural practices
- location, number of acres and date of planting for all previously re-vegetated areas

PERMITTEE

Colowyo Coal Company L.P.
5731 State Highway 13
Meeker, CO 81647

DISTURBED ACRES

During 2024, 23.9 acres of additional disturbance occurred onsite. Please see Exhibit 2 for the locations of areas disturbed during 2024.

At the end of 2024, the total disturbance was 5,240.4 acres. Of this, 2,165.8 acres are in long-term facilities, and the active mining area comprised of 1,062.1 acres.

BACKFILLAND GRADED ACRES

During 2024, 29.5 acres were backfilled and graded. To date, 2,012.5 acres have been backfilled and graded. Please see Exhibit 2 for the locations of all areas that have been backfilled and graded to date.

TOPSOIL REPLACEMENT & SEEDING ACRES

During 2024, 41.7 acres were topsoiled, and 95.8 acres were permanently seeded. Please see Exhibit 2 for all locations that have been topsoiled and seeded to date at Colowyo and Figure 2-2 for more detailed description of each reclamation areas at Colowyo.

The species seeded on Colowyo's reclamation areas follow the approved seed mixtures located in Volume 1.

Figure 2-1 Annual Reclamation Report Form provides a detailed description of the acreages presented above.

Figure 2-1 –Annual Reclamation Report Form

Colorado Division of Reclamation, Mining and Safety

Annual Reclamation Report for Calendar Year – 2024

Colowyo Mine	C-1981-019	Colowyo Coal Company L.P.
Mine Name	Permit Number	Permittee

5731 State Highway 13 Meeker, CO 81641

Address

This report, required by Rule 2.04.13, is due by February 15 of each year, or other date, as agreed upon by the Division. It should include text, discussion, and maps, at a minimum, in addition to any other reclamation monitoring data as required by the approved permit. The location of the acreage reported under each land status category and year of seeding (if applicable) should be clearly identified on a map included with the report.

Land Category	Last Year's Cumulative Total (from last year's ARR)	This Calendar Year			Cumulative Total
		Acres Added (+)	Acres Subtracted (-)		
Acreage in Active Mining Areas[1]	1,085.5	0	23.4	=	1,062.1

Land Category	Last Year's Cumulative Total (from last year's ARR)	This Calendar Year			Cumulative Total
		Acres Added (+)	Acres Subtracted (-)		
Acres Disturbed[2]	5,216.5	24.7	0	=	5,241.2
Acres Backfilled and Graded	1,983.0	30.3	0	=	2,013.3
Acres Topsoiled	1,958.0	41.7	0.0	=	1999.7

Acreage in Long-term Facilities[3]	Last Year's Cumulative Total (from last year's ARR)	This Calendar Year			Cumulative Total
		Acres Added (+)	Acres Subtracted (-)		
Non-Permanent Facilities	2,144.3	17.8	0.0	=	2,162.1
Permanent Facilities (permitted)	3.7	0	0	=	3.7
Totals	2,148.0			=	2,165.8

Acres Seeded (permanent)	Last Year's Cumulative Total (from last year's ARR)	This Calendar Year			Cumulative Total
		Acres Added (+)	Acres Subtracted (-)		
9 Years and Less	617.9	10.9	0	=	628.6
10 Years and Greater	1,252.1	85.9	0	=	1,338.0
Totals	1,870.0			=	1,966.6

Bond Release	Last Year's Cumulative Total (from last year's ARR)	This Calendar Year			Cumulative Total
		Acres Added (+)	Acres Subtracted (-)		
Phase I Released	2,005.2	0	0	=	2,005.2
Phase II Released	1,829.5	0	0	=	1,829.5
Phase III Released	720.9	0	0	=	720.9

Figure 2-2 – Colowyo Reclamation Table

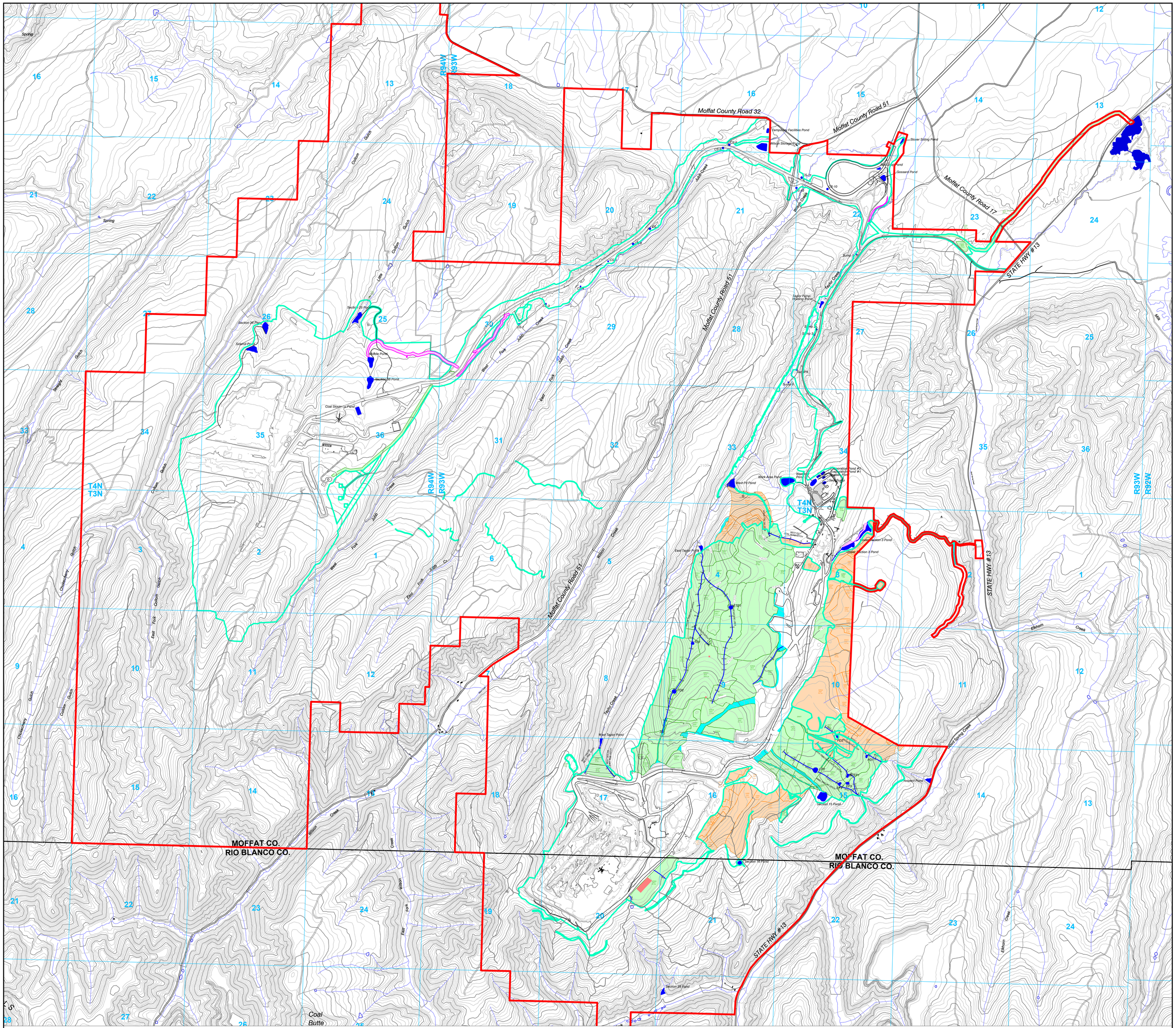
Colowyo Reclamation Table

Area	Reclamation Period			Status			Ecosystem Targeted Seeding		Notes:
	Year	Acreage (Seeded)	Revegetated Years	Bond Release Phase 1	Bond Release Phase 2	Bond Release Phase 3	Sagebrush Steppe Acres	Grazingland Acres	
East Pit									
EP010	1988	1.9	37	Apr-98	Aug-01	Aug-12	NA	NA	
EP011	1989	8.1	36	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP012	1990	6.2	35	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP013	1990	30.0	35	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP014	1991	11.8	34	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP015	1991	8.1	34	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP020	1993	3.9	32	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP025	1994	23.9	31	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP026	1995	15.9	30	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
EP030	1997	4.1	28	Jun-11	Jun-11	Aug-12	NA	NA	Phase III Released.
EP032	1998	14.1	27	Jun-11	Jun-11	Aug-12	NA	NA	Phase III Released.
EP034	1999	6.9	26	Jun-11	Jun-11	Aug-12	NA	NA	Phase III Released.
EP038	2001	3.5	24	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released.
EP039	2003	4.3	22	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released.
EP040	2003	10.5	22	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released.
EP041	2003	29.5	22	Jun-11	Jun-11	Nov-18	NA	NA	Phase III Released.
EP042	2002	9.7	23	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released.
EP043	2002	10.2	23	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released.
EP044	2003	6.0	22	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released.
EP045	2003	6.1	22	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released.
EP046	2005	96.7	20	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released.
EP047	2005	0.0	20	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released.
EP047	2006	1.9	19	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released.
EP049	2006	0.8	19	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released.
EP050	2006	0.0	19	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released.
EP050	2007	75.9	18	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released. Reduced by 1.6 acres due to redisturbance for an access road.
EP051	2009	32.0	16	Apr-12	Nov-18		NA	NA	8.0 ac Redisturbed in 2010 Reseeded in 2010
EP052	2010	36.6	15	Apr-12	Nov-18		NA	NA	37.0 Acres Seeded in 2011. Reduced by 0.4 acres in 2023 due to access road and stockpond construction.
EP053	2010	17.4	15	Apr-12	Nov-18		NA	NA	17.4 Acres Seeded 2011
EP054	2010	17.4	15	Apr-12	Nov-18		NA	NA	
EP055	2010	8.8	15	Apr-12	Nov-18		NA	NA	
EP056	2011	33.0	14	Apr-12			0.0	33.0	Reduced by 1.8 acres for Section 15 Ditch and Access Road in 2023.
EP057	2012	64.7	13	Aug-13	Nov-18		0.0	64.7	Reduced by 4.4 acres in 2023 due to access road.
EP058	2014	31.2	11	Jan-16	Oct-19		0.0	31.2	Reduced by 2.2 acres in 2023 due to access road and Section 15 Ditch.
EP059	2016	28.1	9	Jan-18	Oct-20		0.0	28.1	Reseeded 30.9 acres in the fall of 2020. Reduced by 2.8 acres in 2023 due to access road and Section 15 Ditch.
EP060	2017	5.5	8	Aug-18	Oct-20		0.9	4.6	Redisturbance Topsoil Pile and Road No Backfill
EP061	2018	14.2	7	Sep-19	Jan-24		14.2	0.0	All Regrade occurred with EP057 and EP059. Reduce by .3 acres in 2023 due to an access road.
EP062	2019	7.0	6	Jun-21			7.0	0.0	Topsoil pile footprint reclaimed. Reseeded 7.0 acres in fall of 2020. Supplemental Sagebrush seeding spring of 2023. Reseeded (drill and broadcast) in spring of 2024.
Grand Totals		**685.9**					**22.1**	**161.6**	
West Pit									
WP001	1995	6.2	30	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released.
WP002	1995	32.7	30	Apr-98	Aug-01	Aug-12	NA	NA	Phase III Released
WP003	1995	7.0	30	Jun-11	Jun-11	Nov-18	NA	NA	Phase III Released
WP004	1996	8.9	29	Jun-11	Jun-11	Nov-18	NA	NA	Phase III Released
WP005	1997	6.1	28	Jun-11	Jun-11	Aug-12	NA	NA	Phase III Released
WP006	1998	2.0	27	Jun-11	Jun-11	Aug-12	NA	NA	Phase III Released
WP007	1999	7.9	26	Jun-11	Jun-11	Aug-12	NA	NA	Phase III Released
WP008	2000	10.1	25	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released
WP009	2001	0.5	24	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released
WP010	2001	5.2	24	Jun-11			NA	NA	August 2021 - Sprayed Entire Unit with Esplanade Herbicide
WP011	2001	1.7	24	Jun-11	Jun-11	Feb-17	NA	NA	Phase III Released
WP012	2002	0.0	23	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released
WP013	2006	4.0	19	Apr-12	Nov-18	Nov-18	NA	NA	Phase III Released
WP014	2009	47.3	16	Apr-12	Nov-18		NA	NA	6 Acres Redisturbed in 2010 Reseeded in 2010. Moved 4.4 acres to WP019.
WP015	2010	94.0	15	Apr-12	Nov-18		NA	NA	69.7 acres re-seeded in 2013.
WP016	2011	146.1	14	Apr-12	Nov-18		NA	NA	34.1 Acres Seeded in 2012/17.7 acres regraded 2011/3.7 acres moved to WP023
WP017	2013	12.6	12	Apr-12	Nov-18		0.0	12.6	
WP018	2013	31.2	12	Aug-13	Nov-18		7.1	24.1	
WP019	2013	35.9	12	Jan-16	Nov-18		1.5	34.4	
WP020	2013	95.8	12	Jan-16	Nov-18		86.6	9.2	
WP021	2015	75.4	10	Sep-16	Oct-20		0.0	75.9	
WP022	2016	0.5	9	Aug-18	Oct-20		0.5	0.0	This was surface disturbance only or an access road. No topsoil stripping or regrade occurred.
WP023	2016	105.4	9	Jan-18	Oct-20		0.0	105.4	
WP024	2017	98.2	8	Aug-18	Oct-20		17.3	0.0	
WP025	2017	23.3	8	Apr-12	Oct-20		23.3	0.0	
WP026	2018	52.7	7	Aug-18	Jan-24		0.0	52.7	Reduced by 1.5 acres in 2023 for redisturbance of topsoil only for a topsoil pile.
WP027	2018	17.8	7	Aug-18	Jan-24		0.0	17.8	Reduced by 0.8 acres in 2023 for redisturbance for topsoil only for a topsoil pile.
WP028	2018	17.9	7	Sep-19	Jan-24		0.0	17.9	
WP029	2018	38.2	7	Sep-19	Jan-24		0.0	38.2	
WP030	2019	12.1	6	Jun-21			12.1	0.0	Reseeded 12.1 acres in the fall of 2020. Supplemental Sagebrush seeding spring of 2023.
WP031	2019	46.5	6	Jul-20			13.3	32.5	Reseeded 10 Acres in the fall of 2020. 0.7 acres were added in 2023 that were missed during orginial survey. Reseeded unit (drilled and broadcast) in spring of 2024.
WP032	2015	10.5	10	Sep-16	Jan-24		0.0	10.5	
WP033	2021	3.3	4				0.0	3.3	
WP034	2021	10.0	4				0.0	10.0	
WP035	2024	54.1	1				13.2	40.9	
WP036	2024	14.4	1				14.4	0.0	
WP037	2024	11.6	1				4.3	7.3	
WP038	2024	15.7	1				0.0	15.7	
Grand Totals		**1,162.8**					**189.3**	**485.4**	

Figure 2-2 – Colowyo Reclamation Table Continued

Colowyo Reclamation Table

Area	Reclamation Period			Status			Ecosystem Targeted Seeding		Notes:
	Year	Acreage (Seeded)	Revegetated Years	Bond Release Phase 1	Bond Release Phase 2	Bond Release Phase 3	Sagebrush Steppe Acres	Grazingland Acres	
Section 16 Pit									
16002	1993	6.2	32	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
16003	1993	25.9	32	Apr-98	Aug-01	Jan-18	NA	NA	Phase III Released
16005	1994	3.9	31	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
16006	1994	50.5	31	Apr-98	Aug-01	Jan-18	NA	NA	Phase III Released
16008	1995	41.2	30	Apr-98	Aug-01	Jan-18	NA	NA	Phase III Released
16009	1996	1.3	29	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
16010	1996	10.0	29	Jun-11	Jun-11	Jan-18	NA	NA	Phase III Released
16011	1997	6.2	28	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
16012	1997	2.0	28	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
16013	1997	3.2	28	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
16014	1998	7.4	27	Jun-11	Jun-11	Jan-18	NA	NA	Phase III Released
16015	1998	2.0	27	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
16016	1999	22.7	26	Jun-11	Jan-18	Jan-18	NA	NA	Phase III Released
Grand Totals		**182.5**							
South Taylor Pit									
ST001	2011	46.1	14	Jan-16			19.1	23.7	Only 44.8 acres Phase I released in 2016-19.1 ac Sagebrush Steep/3.3 acres study area/23.7 ac Grassland
ST002	2012	6.3	13	Aug-13	Oct-19		0.0	6.3	
ST003	2013	1.2	12	Jan-16	Oct-19		0.0	1.2	
ST004	2014	12.2	11	Jan-16			0.0	12.2	Only 4.5 acres Phase I released in 2016
ST005	2016	1.4	9	Aug-18			1.4	0.0	Wildland Fire Area no backfill and grading occurred or topsoil stripping
Grand Totals		**67.2**					**20.5**	**43.4**	67.2 Acres seeded as grazingland.
Gossard Loadout/Facilities Areas									
GF01	2016	3.4	9	Aug-18	Oct-20		3.4	0.0	Lower Admin Building
GF03	2017	17.7	8				17.7	0.0	This was the raw water pipeline.
GF04	2017	10.4	8				0.0	10.4	
Grand Total		**31.5**					**21.1**	**10.4**	31.5 Acres seeded as grazingland.
Collom									
C01	2016	0.3	9	Aug-18			0.3	0.0	This was brushing only.
C02	2016	0.2	9	Aug-18			0.2	0.0	This was brushing only.
C03	2016	0.1	9				0.1	0.0	This was brushing only.
C05	2016	0.1	9	Aug-18			0.1	0.0	This was brushing only.
C06	2018	14.8	7				15.0	0.0	
C07	2022	0.2	3				0.0	0.2	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C08	2022	1.0	3				0.0	1.0	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C09	2022	0.3	3				0.0	0.3	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C10	2022	0.2	3				0.0	0.2	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C11	2022	0.1	3				0.0	0.1	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C12	2022	0.2	3				0.0	0.2	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C13	2022	0.2	3				0.0	0.2	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C14	2022	0.1	3				0.0	0.1	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C15	2022	0.1	3				0.0	0.1	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
C16	2022	0.5	3				0.0	0.5	This was surface disturbance only for a fire line. No backfilling or topsoil replacement occurred.
Grand Total		**18.4**					**15.7**	**2.9**	



LEGEND

- Permit Boundary
- Disturbance Boundary
- Post-Mine Channels Constructed to Date
- Tall Shrub Study Areas
- Roads
- Phase III Released Areas
- Reclamation Areas
- Regraded Areas
- 2024 Disturbance Areas
- Stock Pond or Sediment Pond

N W E S

0' 1500' 3000' 4500'

CONTOUR INTERVAL 25 FT.
AUGUST 2022 TOPOGRAPHY

Coordinates in NAD 27 Colorado North Zone, US Foot

ANNUAL REPORT MAP
Colowyo Mine

Colowyo Coal Company
3731 State Highway 13
Meeker, Colorado 81641

SCALE: 1" = 1500'
DATE: 1/13/2020
DWG. BY: J.Tony
APPROVED BY:

DWG NO.
EXHIBIT 2

No.	REVISION	DATE	BY	CHK
9	Updated Topography, Reclamation Areas, Topsoil Exemption, and 2021 Disturbance	12/28/21	Tony	AA
10	Updated Topography, Reclamation Areas, and 2022 Disturbance	2/13/23	Tony	Tony
11	Updated Reclamation Areas and 2023 Disturbance	12/12/23	Tony	Tony
12	Updated Reclamation Areas and 2024 Disturbance	1/14/25	Tony	Tony

SECTION 3 – REGRADED OVERBURDEN SAMPLING

RULE REQUIREMENT

Rule 2.04.13(2) the Permittee may provide additional monitoring information as required by the approved permit.

Specific overburden sample levels can be referenced in Volume 1 Section 2.05.3.

GENERAL DISCUSSION

Colowyo sampled 8 locations of regraded overburden during 2024. Results from both samples did not exceed parameter thresholds. Please see Figure 3-1 for analytical results for all samples taken in 2024.

Figure 3-1 – Regraded Overburden Analytical Results

GRID #	DATE	EC (mmhos/cm)	pH	SAR
EE-22	7/25/2024	1.65	7.8	1.46
X-23	7/25/2024	1.91	7.5	0.85
Z-23	7/25/2024	2.58	7.7	1.12
EE-23	8/1/2024	3.12	7.3	1.71
EE-24	8/1/2024	4.63	7.5	4.33
FF-22	7/25/2024	1.6	7.6	1.32
FF-23	8/1/2024	1.47	7.5	0.39
FF-24	8/1/2024	0.98	7.9	1.66

SECTION 4 – INTERIM REVEGETATION MONITORING REPORT

RULE REQUIREMENT

Rule 2.04.13(2) the Permittee may provide additional monitoring information as required by the approved permit.

GENERAL DISCUSSION

The Interim Revegetation Monitoring Report can be found in Exhibit 4.

Exhibit 4

Interim Vegetation Report

Colowyo Mine

Permit No. C-1981-019

2024 Revegetation Monitoring Report

February, 2025

CEDAR CREEK
ASSOCIATES, INC.

Table of Contents

Colowyo Mine

Permit Number: C-1981-019

2024 Revegetation Monitoring Report

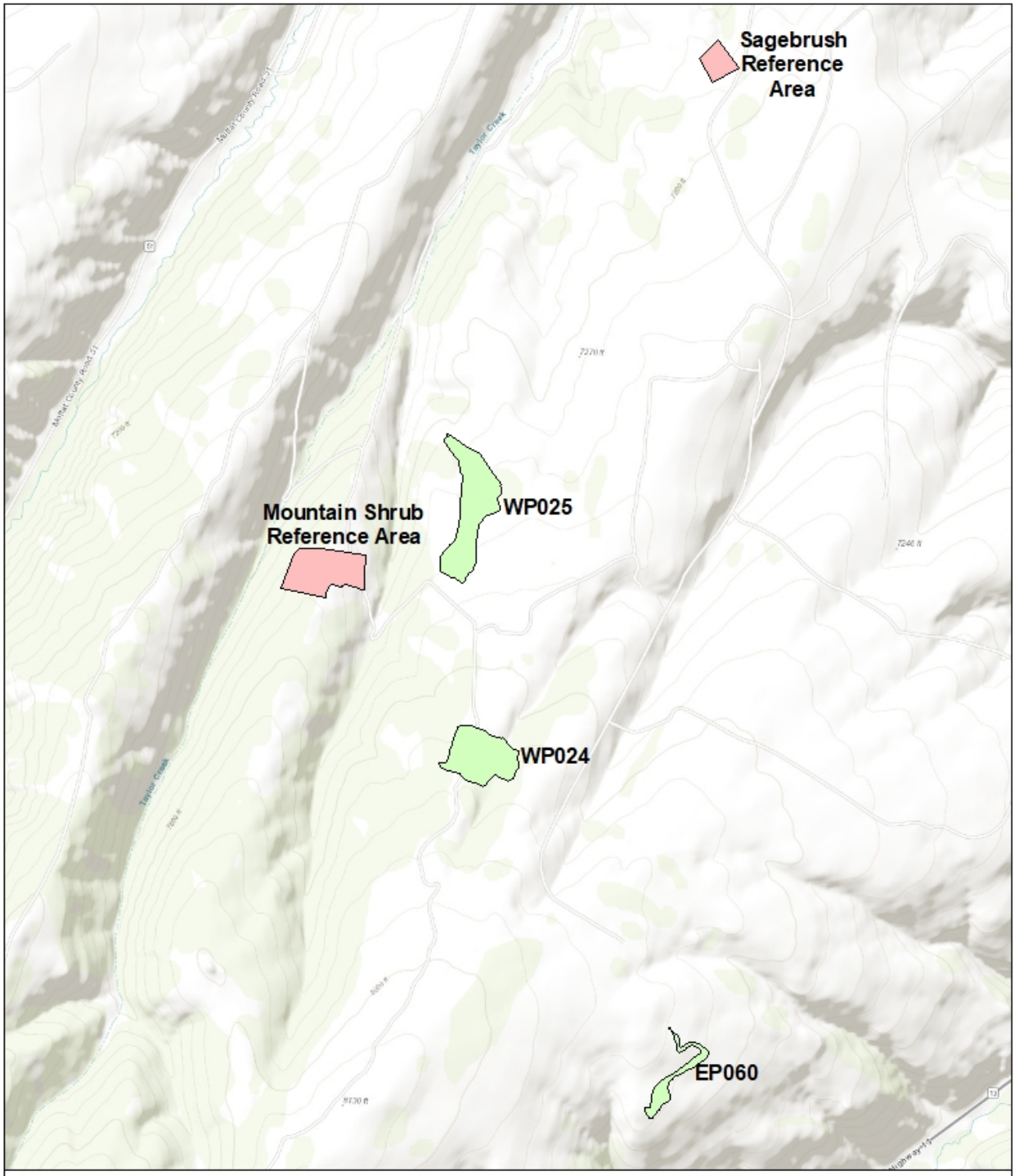
Revegetation Units:	Reference Areas:
EP060 WP024 WP025	Mountain Shrub Sagebrush

1.0 INTRODUCTION

Cedar Creek Associates, Inc. (Cedar Creek) was contracted in 2024 by Colowyo Coal Company L.P. (Colowyo) to implement a revegetation monitoring program within selected revegetated units at the Colowyo Mine. Monitoring was performed in the interest of ascertaining progress toward revegetation success in general accordance with Rule 3.03, Release of Performance Bonds. The revegetated areas evaluated in 2024 consisted of one unit within the East Pit and two units within the West Pit. Units evaluated in 2024 range in size from 5.5 acres to 98.2 acres. At the time of sampling, revegetation within evaluated units had experienced 7 growing seasons following completion of seeding. In addition, two reference areas (Mountain Shrub – 1980 and Sagebrush – 1981) were sampled to provide cover and production comparison values to facilitate an evaluation of progress toward success for the reclaimed units. The location of each unit and associated reference areas evaluated in 2024 are indicated on Map 1, and the sample points within each area are provided on "in-text" maps for each unit in Section 3.0.

Field sampling for the directly measurable variables of ground cover, woody plant density (WPD), current annual production (seventh growing season units only) and species diversity was systematically conducted within the designated units from August 11th through August 14th 2024. Field efforts in 2024 were conducted under the direct supervision of Cedar Creek's Senior Reclamation Ecologist and Soil Specialist, Mr. Jesse H. Dillon.

Descriptions of vegetation sampling methodologies utilized in 2024 are presented in the Colowyo permit (Volume 1, section 4.15.11). Raw data tables and summaries are presented in Appendix A. In this manner, only the most salient information is provided in the main body of this document. Acreages presented in this document were determined by Colowyo's technical services department.

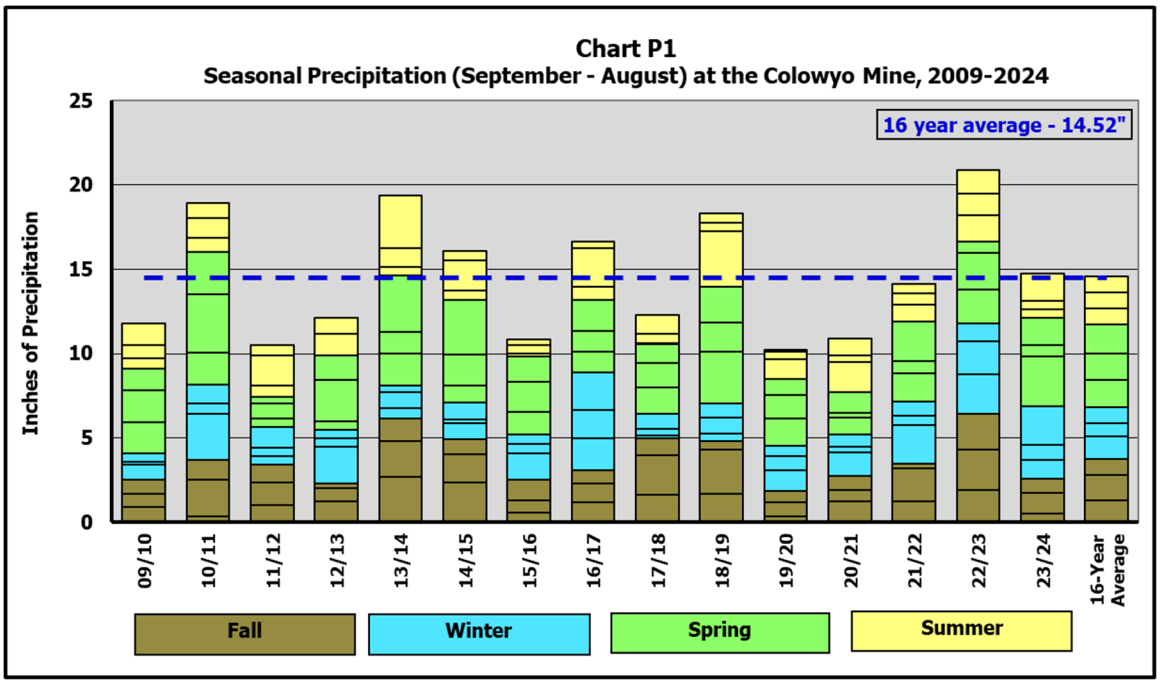

Sagebrush Reference Area
Mountain Shrub Reference Area
WP025
WP024
EP060
Taylor Creek
Colowyo Mine - Revegetation Monitoring
2024 Monitoring Units
0
1,400
2,800
5,600 Feet
N
W
E
S
Year 7 Units
Reference Areas
CEDAR CREEK ASSOCIATES INC

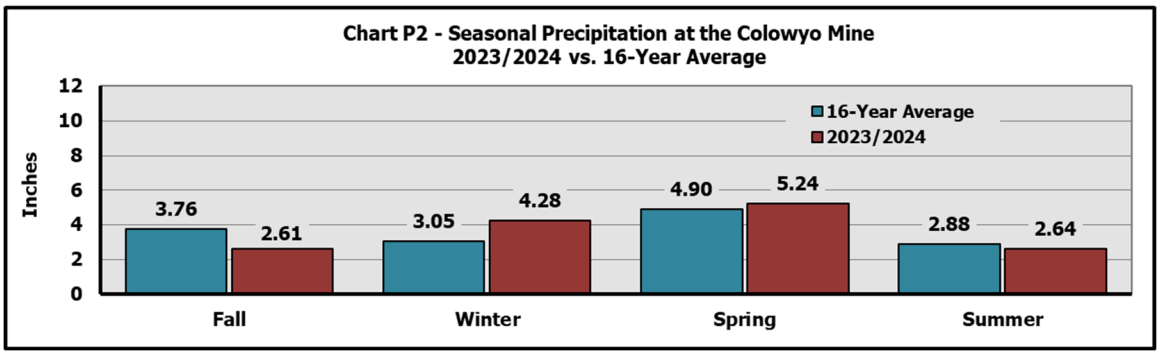
1.1 Climate Data

Precipitation data presented on Table P and Charts P1 and P2 were collected at the North MET weather station located at the Colowyo Mine. Table P presents precipitation accumulated annually at Colowyo over the past 15 years along with the 16-year average (2009-current). Charts P1 and P2 display historical precipitation data organized by growing season. Precipitation in the project area for the 2023/2024 growing season (September 2023 through August 2024) was determined to be 101% of average when compared to the 16-year average (14.8 in. vs. 14.6 in.).

Perusal of Chart P2 indicates that 2023 fall precipitation was below average with 2.61 inches, 69% of the 16-year average in fall. Winter of 2023 was above average with 4.28 inches, 140% of the 16-year average in winter. Spring of 2024 was near average levels with 5.24 inches, 107% of the 16-year average. Summer of 2024 was near average levels with 2.64 inches, 92% of the 16-year average. In general, growing season precipitation (April – August) has been below average, since 2016 there have been 6 years with below average precipitation during the growing season (67% of the past 9 years). Many of these years exhibited drought-like conditions during the growing season, particularly 2016, 2018, and 2020 where precipitation reached 70% or less of the average growing season precipitation. 2024 growing season was slightly better reaching 80% of the average, similar to the 2021 and 2022 growing seasons. In 2024, the spring and summer months (Chart P2) appear to be favorable, however when you look at each month of the growing season individually you see the majority of the precipitation came at the end (August was 177% of the average), which is less valuable to the cool season grasses which are dominant at Colowyo. Therefore, collected data are reflective of at or below average vegetative vigor and production, especially as perennial plant communities survived most of the growing season with below average precipitation.

Table P - Annual Precipitation at the Colowyo Mine, 2010-2024													
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
2010	0.20	0.47	1.84	1.92	1.30	0.57	0.79	1.32	0.34	2.20	1.17	2.75	**14.87**
2011	0.58	1.13	1.91	3.45	2.48	0.85	1.20	0.86	1.04	1.32	1.04	0.55	**16.41**
2012	0.47	1.22	0.54	0.87	0.41	0.64	1.78	0.65	1.26	0.78	0.25	2.20	**11.07**
2013	0.49	0.51	0.52	2.46	1.43	0.00	1.29	0.91	2.70	2.09	1.39	0.60	**14.39**
2014	0.94	0.41	1.90	1.26	3.32	0.54	1.11	3.11	2.35	1.71	0.88	0.91	**18.44**
2015	0.26	1.00	0.98	1.85	3.27	0.51	1.81	0.58	0.58	0.71	1.23	1.58	**14.36**
2016	0.56	0.53	1.38	1.74	1.53	0.17	0.50	0.32	1.18	1.10	0.80	1.93	**11.74**
2017	1.67	2.19	1.23	1.23	1.85	0.80	2.28	0.37	1.64	2.33	1.04	0.14	**16.77**
2018	0.39	0.92	1.53	1.46	1.12	0.03	0.60	1.11	1.71	2.62	0.47	0.45	**12.41**
2019	0.95	0.87	3.02	1.76	2.14	3.25	0.53	0.55	0.33	0.87	0.67	1.20	**16.14**
2020	0.87	0.58	1.61	1.40	0.98	1.18	0.41	0.13	1.27	0.63	0.86	1.37	**11.29**
2021	0.38	0.72	0.98	0.29	1.24	1.76	0.38	0.99	1.26	1.96	0.27	2.25	**12.48**
2022	0.58	0.84	1.69	0.71	2.33	1.01	0.68	0.55	1.91	2.40	2.11	2.36	**17.17**
2023	1.96	1.03	2.03	2.15	0.70	1.53	1.33	1.39	0.50	1.24	0.87	1.11	**15.84**
2024	0.85	2.32	2.97	0.67	1.60	0.50	0.48	1.66	0.63	1.96	1.47	0.40	**15.51**
19 Year Avg.	**0.78**	**0.93**	**1.64**	**1.55**	**1.71**	**0.97**	**0.97**	**0.94**	**1.23**	**1.54**	**0.96**	**1.29**	**14.52**





2.0 REVEGETATION SUCCESS STANDARDS

Colowyo has made the commitment to establish reclaimed plant communities that meet the designated post mining land use of rangeland, with the subcomponents of grazingland and wildlife habitat [Volume 1, Section 2.05.5]. Areas designated as grazingland for the post mining land use will aim to establish vegetation communities comprised of species primarily selected for palatability and production, with incidental wildlife habitat, implemented on those lands with slopes greater than 10%. Areas designated for wildlife habitat as the post mining land use will aim to establish a sagebrush steppe vegetation community and will be limited to those lands with slopes less than 10%.

Three reference areas selected to represent the three major vegetative communities are utilized to evaluate revegetation success at Colowyo; the Mountain Shrub reference area, Sagebrush reference area, and Collom Aspen reference area. The comparison between the reclamation area and the reference area occurs as follows:

East and West Pit Reclamation Areas - Reclaimed areas shall be compared to weighted parameters from the Mountain Shrub reference area (55% weight) and the Sagebrush reference area (45% weight) in accordance with Rule 4.15.7(4)(b).

Reference areas are utilized to test revegetation success for the metrics of herbaceous cover and herbaceous production, while woody plant density and diversity metrics are compared against technical standards. The success criteria for each revegetation metric are described below:

Herbaceous Cover - For revegetation targeting (and achieving) the rangeland land use subcomponents of grazingland and wildlife habitat, herbaceous cover of the revegetated area will be considered adequate for final bond release if it is not less than 90% of the herbaceous cover as determined from the reference areas with a 90% statistical confidence utilizing a standard students statistical t-test comparison of the means, as described in Rule 4.15.8 (3) (a).

Herbaceous Production - For revegetation targeting the rangeland land use subcomponents of grazingland and wildlife habitat, herbaceous production of the revegetated area will be considered adequate for final bond release if it is not less than 90% of the herbaceous production, as determined from the reference areas with a 90% statistical confidence utilizing a standard students statistical t-test comparison of the means, as described in Rule 4.15.8 (4).

Woody Plant Density - Where shrubs establish to form wildlife habitat, they will be segregated into low and high-density areas, each with a separate woody plant density success criterion. On high-density areas (areas of shrub concentration), the standard shall be 375 live woody plants per acre.

At least one-half of these totals shall be sagebrush species, big sagebrush (*Artemisia tridentata*) or silver sagebrush (*Artemisia cana*). In low-density areas, the standard shall be 200 plants per acre. Furthermore, Colowyo will establish wildlife habitat areas, comprised of both low and high-density areas, on approximately 20% of the acres in each bond release evaluation, with at least 50% of those acres representing high-density areas. The grazingland acres will not be subject to woody plant density standards.

Diversity - The revegetation objective for diversity will be to establish at least four native* perennial species, each more than 3% composition, minimum of two of which are grasses and a minimum of one which is a forb, with the following caveat; If no single forb species exceeds 3% composition, the forb requirement can be met if:

a) at least two native* perennial forbs combined comprise at least 2% composition, or;
b) at least four native* perennial forbs combined comprise at least 1% composition.

The dominant species will contribute to the appropriate structure and stability of the post-mining vegetative community.

* The limitation to native status will not apply to introduced (and CDRMS approved taxa) specifically planted for an approved use such as Orchard grass or Cicer milkvetch.

3.0 RESULTS

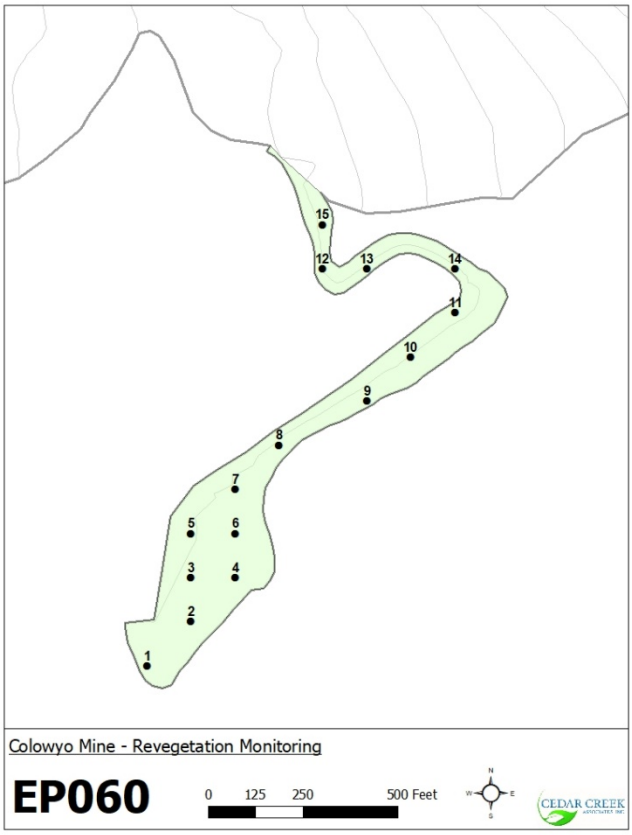
In 2024, the three evaluated units (EP060, WP024, and WP025) are currently undergoing their seventh growing season and were assessed with ground cover, diversity, production and woody plant density sampling protocols. Summaries of the results of all units are presented in in-text compendia, with additional summaries and raw data presented in Appendix A. Reference Area results are summarized in Appendix A along with additional raw data.

Considering the 2024 evaluation effort, observed revegetation at Colowyo is generally in fair condition and on a path to demonstrate success. As seems to be normal for Colowyo revegetation. However, based on past history it is unlikely these units will need remediation (herbicide treatment), except in rare occasions, given that precipitation patterns in the area tend to favor seeded perennials over time. The unfavorable precipitation in 2024 growing season likely slowed the progress of the dominate communities within the reclamation but was not detrimental. These year 7 units are capable of surviving these periods of climatic stresses and it is expected that the revegetated communities will continue to mature.

The following sections (Sections 3.1 to 3.5) provide a brief narrative of the results from each individual unit evaluated by Cedar Creek. Also included for each unit is a map indicating the 2024 sample points and a one-page summary (compendium) of all pertinent data collected from the unit in 2024 and previous years, if applicable.

3.1 East Pit

3.1.1 EP060 – Year 7 Unit



EP060 is comprised of approximately 5.5 acres of generally flat revegetation. This unit was seeded in 2017 and therefore underwent its seventh growing season in 2024 (Compendium 1). Averages ground cover, diversity, and WPD were determined from fifteen transects in 2024. Average production was determined by 5 quadrats in 2024.

Cover by desirable perennial plants in 2024 averaged 42.0% which is an increase from Year 2 sampling (6.2%). Annual forbs initially exhibited elevated cover in Year 2, but have decreased substantially in 2024 with 0.3% average cover. Noxious weeds other than cheatgrass have contributed less than 1% in year 2 and did not contribute to cover in year 7. Cheatgrass has contributed less than 1% in years 2 and 7. Annual forbs and grasses tend to decrease on Colowyo's reclamation as perennial plant communities develop.

There were 19 total species observed on this unit in 2024. There were six native perennial grasses with >3% relative cover, however, no single perennial forb exceeded 3% relative cover. A total of 2 perennial forbs were present with a combined 0.9% relative cover in 2024.

Woody plant density averaged 348.0 stems per acre in 2024 with 99% comprised of sagebrush. This is a significant increase from the year 2 results (32.4 stems per acre). It is likely that this entire unit, will contribute to the low density target areas in support of the wildlife habitat.

Perennial herbaceous production averaged 1,486.0 pounds per acre in 2024, which is significantly above the success criteria of 279.7 pounds per acre.

Unit EP060 exhibited exceptional perennial cover, production, and WPD in Year 7. This unit did not meet the diversity success criteria, due to the relatively low contribution from perennial forbs. However it's still recommended that this unit be evaluated in 2026 for Year-9 bond release sampling.

Compendium 1 Updated in 2024

EP060

Location:	**East Pit**	Targeted Post-Mining Community:	**Grazingland Wildlife Habitat**
Acres:	**5.5**		
First Growing Season:	**2018**		

Ground Cover Results

Number of Ground Cover Transects = 15

	Average Ground Cover (%)			Relative Ground Cover (%)			Species Observed (#)		
	Year 2	Year 4	Year 7	Year 2	Year 4	Year 7	Year 2	Year 4	Year 7
Perennial Grasses	6.0		41.6	11.0		96.6	5		10
Perennial Forbs	0.2		0.4	0.4		0.9	2		2
Sub-shrubs	-		0.0	-		0.0	-		0
Shrubs & Trees	-		0.4	-		0.9	-		1
Annual Grass	1.1		0.3	2.0		0.8	2		1.0
Annual / Biennial Forbs	46.5		0.3	85.3		0.6	5		4
Noxious Weeds - Cheatgrass	0.5		0.1	1.0		0.2	1		1
Noxious Weeds - Other	0.2		0.0	0.4		0.0	2		0
Litter	14.7		37.3						
Rock	2.4		1.1						
Bareground	28.4		18.6						
Total	**100.0**	**0.0**	**100.0**	**100.0**	**0.0**	**100.0**	**17**	**-**	**19**
Total Plant Cover	**54.5**	**0.0**	**43.1**						
Total Perennial Cover	**6.2**	**0.0**	**42.4**	**11.4**	**0.0**	**98.5**			
Allowable Perennial Herbaceous Cover	**6.2**	**0.0**	**42.0**	**11.4**	**0.0**	**97.5**			

Woody Plant Density Results

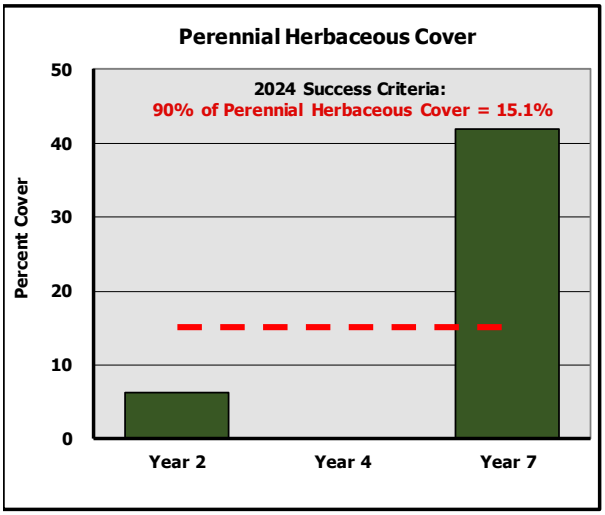
Number of Woody Plant Density Belts = 15

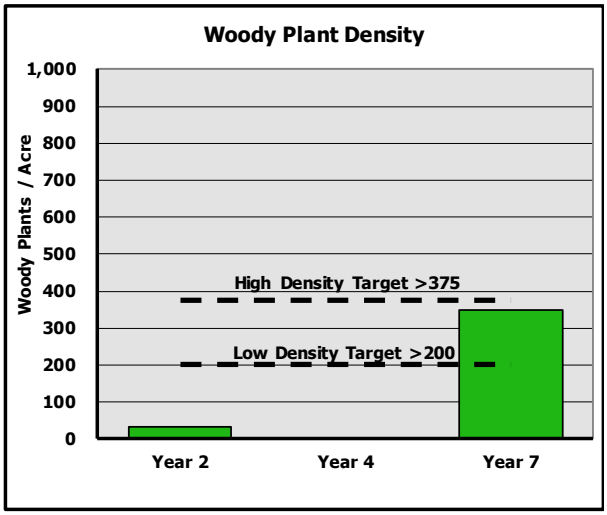
		Stems per Acre		
		Year 2	Year 4	Year 7
Artemisia tridentata	Big Sagebrush	29.7		345
Atriplex canescens	Four-wing Saltbush	2.7		3
Total		**32.4**	**0.0**	**348.0**
Sagebrush Contribution (%)		92%		99%
Percent of Transects Exceeding High-Density Standard (375 Stems per acre)		0%		20%
Percent of Transects Exceeding Low-Density Standard (Between 200 and 375 Stems per acre)		7%		20%

Production Results

		lbs per Acre
		Year 7
Perennial Grasses		1,486.0
Perennial Forbs		0.0
Sub-shrubs		0.0
Annual Grasses		0.0
Annual / Biennial Forbs		0.0
Noxious Weeds	Cheatgrass	0.0
	Other	0.0
Total Production		**1,486.0**
Total Perennial Production		**1,486.0**
Allowable Perennial Herb. Production		**1,486.0**

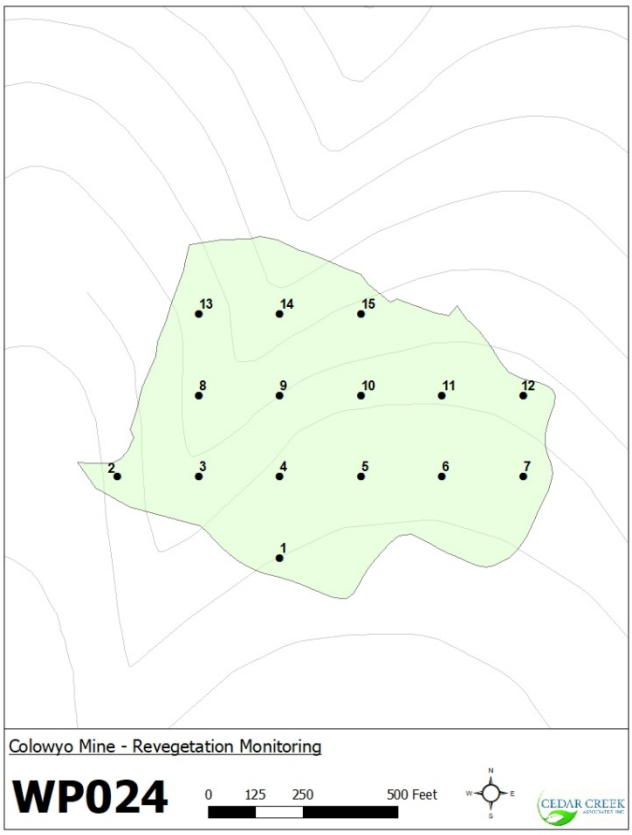
* Evolving post-mining vegetation communites (Wildlife Habitat) will be delineated after Year 7 evaluation, in preparation for bond release evaluation.





3.2 West Pit

3.2.1 WP024 – Year 7 Unit



Unit WP024 is comprised of approximately 98.2 acres of moderately to steeply sloped revegetation. This unit was seeded in 2017 and was undergoing its seventh growing season in 2024 (Compendium 2). Averages for ground cover, diversity, and WPD were determined by fifteen transects in 2024. Average production was determined by 5 quadrats in 2024.

Ground cover by desirable perennial plants averaged 26.4% cover in 2024. Annual forbs initially exhibited elevated cover in Year 2, but have decreased substantially in 2024 with 2.5% average cover. Noxious weeds other than cheatgrass have contributed less than 1% in years 2 and 7. Cheatgrass also contributed less than 1% in years 2 and 7. Annual forbs and grasses tend to decrease on Colowyo's reclamation as perennial plant communities develop.

There were 17 total species observed on this unit in 2024. There were six native perennial grasses with >3% relative cover however, no single perennial forbs exceeded 3% relative cover. Two perennial forbs were recorded with a combined 2.9% relative cover.

Woody plant density indicated 8.1 stems per acre in 2024, with 33% comprised of sagebrush. Given the low density, it is likely that this unit will be considered grazingland.

Perennial herbaceous production averaged 626.7 pounds per acre, which is significantly above the success criteria of 279.7 pounds per acre.

Unit WP024 exhibited excellent perennial cover, diversity, and production in Year 7, it is recommended that this unit be evaluated in 2026 for Year-9 bond release sampling.

Compendium 2 Updated in 2024

WP024

Location:	**West Pit**	Targeted Post-Mining Community:	**Grazingland**
Acres:	**98.2**		
First Growing Season:	**2018**		

Ground Cover Results

Number of Ground Cover Transects = 15

	Average Ground Cover (%)			Relative Ground Cover (%)			Species Observed (#)		
	Year 2	Year 4	Year 7	Year 2	Year 4	Year 7	Year 2	Year 4	Year 7
Perennial Grasses	1.6		25.5	3.6		86.85	7		9
Perennial Forbs	0.5		0.9	1.0		2.95	3		2
Sub-shrubs	-		0.0	-		0.0	-		0
Shrubs & Trees	-		0.0	-		0.00	-		0
Annual Grass	17.6		0.3	39.2		1.13	1		1
Annual / Biennial Forbs	24.9		2.5	55.6		8.39	7		3
Noxious Weeds - Cheatgrass	0.2		0.1	0.5		0.45	1		1
Noxious Weeds - Other	0.1		0.1	0.2		0.2	2		1
Litter	26.5		38.0						
Rock	1.7		2.1						
Bareground	26.9		30.5						
Total	**100.0**	**0.0**	**100.0**	**100.0**	**0.0**	**100.0**	**21**	**-**	**17**
Total Plant Cover	**44.9**	**0.0**	**29.4**						
Total Perennial Cover	**2.1**	**0.0**	**26.4**	**4.6**	**0.0**	**89.8**			
Allowable Perennial Herbaceous Cover	**2.1**	**0.0**	**26.4**	**4.6**	**0.0**	**89.8**			

Woody Plant Density Results

Number of Woody Plant Density belts = 15

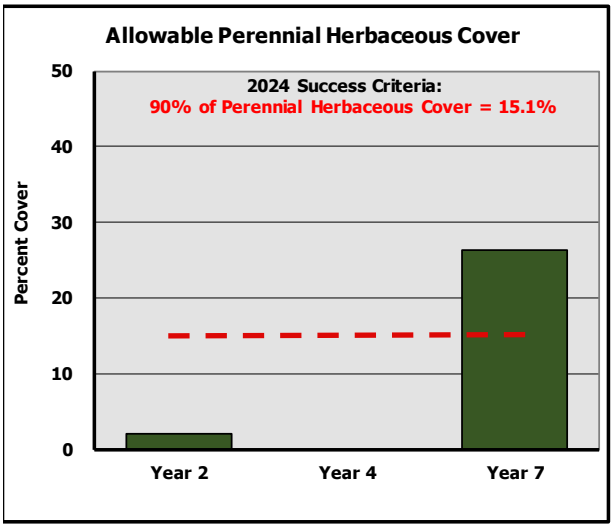
		Stems per Acre		
		Year 2	Year 4	Year 7
Artemisia tridentata	Big Sagebrush	5.4		2.7
Atriplex Canescens	Four-wing Saltbush	5.4		
Symphoricarpos rotundifolius	Roundleaf Snowberry			5.4
Total		**10.8**	**0.0**	**8.1**
Sagebrush Contribution (%)		50%		33%
Percent of Transects Exceeding High-Density Standard (375 Stems per acre)		0%		0%
Percent of Transects Exceeding Low-Density Standard (Between 200 and 375 Stems per acre)		0%		0%

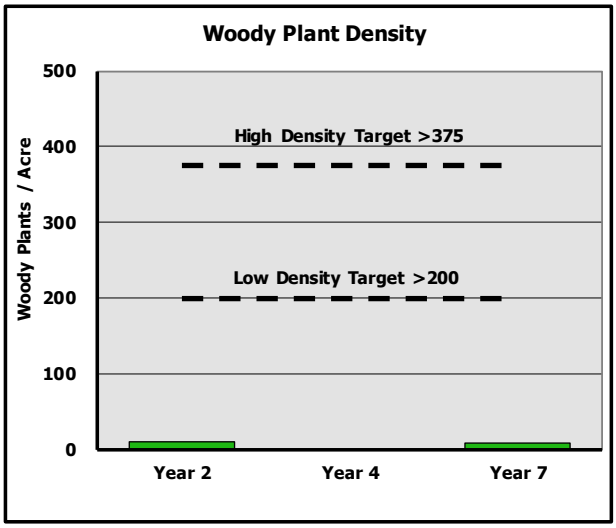
Production Results

Number of Production Plots = 5

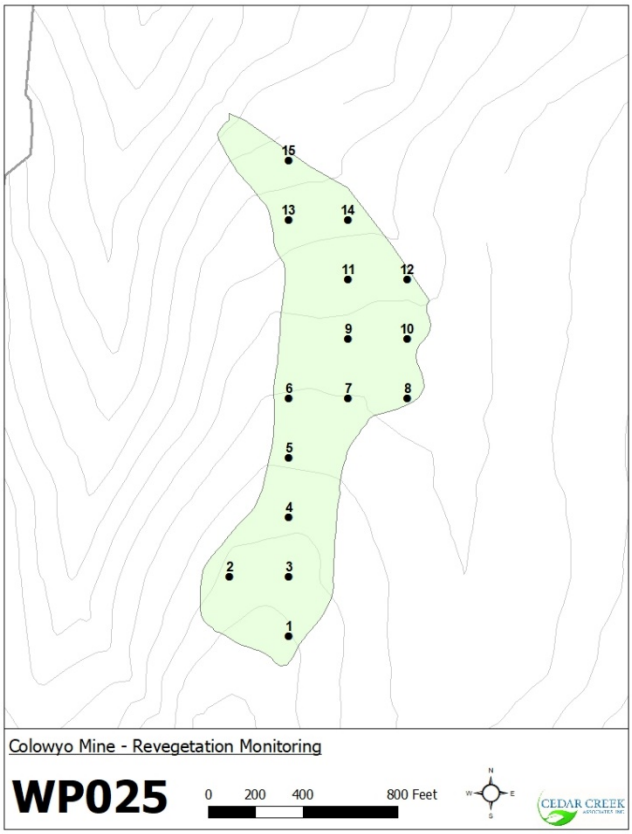
		lbs per Acre
		Year 7
	Perennial Grasses	618.1
	Perennial Forbs	8.6
	Sub-shrubs	0.0
	Annual Grasses	0.0
	Annual / Biennial Forbs	25.3
Noxious Weeds	Cheatgrass	7.8
	Other	0.0
	Total Production	**659.8**
	Total Perennial Production	**626.7**
	Allowable Perennial Herb. Production	**626.7**

* Evolving post-mining vegetation communites (Wildlife Habitat) will be delineated after Year 7 evaluation, in preparation for bond release evaluation.





3.2.2 WP025 – Year 7 Unit



Unit WP025 is comprised of approximately 23.3 acres of moderately to steeply sloped revegetation. This unit was seeded in 2017 and was undergoing its seventh growing season in 2024 (Compendium 3). Averages for ground cover, diversity, and WPD were determined by 15 transects in 2024. Average production was determined by 5 quadrats in 2024.

Ground cover by desirable perennial plants averaged 23.9% cover in 2024. Annual forbs initially exhibited elevated cover in Year 2, but have decreased substantially in 2024 with 3.9% average cover. Noxious weeds other than cheatgrass have contributed less than 1% in years 2 and 7. Cheatgrass contributed less than 3.7% in year 2 and has decreased to the point it did not contribute to cover in 2024. Annual forbs and grasses tend to decrease on Colowyo's reclamation as perennial plant communities develop.

There were 24 total species observed on this unit in 2024. There were eight native perennial grasses and one perennial forb with >3% relative cover.

Woody plant density indicated 151.1 stems per acre in 2024, consisting entirely of big sagebrush and silver sagebrush (100% relative density). It is likely that portions of this unit will contribute to the low density target areas in support of the wildlife habitat.

Perennial herbaceous production averaged 1,053.2 pounds per acre, which is significantly above the success criteria of 279.7 pounds per acre.

Unit WP025 exhibited excellent perennial cover, diversity, and production in Year 7. It is recommended that this unit be evaluated in 2026 for Year-9 bond release sampling.

Compendium 3 Updated in 2024

WP025

Location: **West Pit**
Acres: **23.3**
First Growing Season: **2018**
Targeted Post-Mining Community: **Grazingland**

Ground Cover Results

Number of Ground Cover Transects = 15

	Average Ground Cover (%)			Relative Ground Cover (%)			Species Observed (#)		
	Year 2	Year 4	Year 7	Year 2	Year 4	Year 7	Year 2	Year 4	Year 7
Perennial Grasses	9.5		21.5	21.3		76.30	8		11
Perennial Forbs	0.1		2.5	0.3		8.77	1		3
Sub-shrubs	-		0.0	-		0.0	-		0
Shrubs & Trees	-		0.1	-		0.47	-		1
Annual Grass	4.7		0.1	10.6		0.47	2		1
Annual / Biennial Forbs	26.3		3.9	59.2		13.98	9		8
Noxious Weeds - Cheatgrass	3.7		0.0	8.4		0.00	1		0
Noxious Weeds - Other	0.1		0.0	0.2		0.0	2		0
Litter	23.8		31.7						
Rock	0.8		1.3						
Bareground	30.9		38.9						
Total	**100.0**	**0.0**	**100.0**	**100.0**	**0.0**	**100.0**	**23**	**-**	**24**
Total Plant Cover	**44.5**	**0.0**	**28.1**						
Total Perennial Cover	**9.6**	**0.0**	**24.1**	**21.6**	**0.0**	**85.5**			
Allowable Perennial Herbaceous Cover	**9.6**	**0.0**	**23.9**	**21.6**	**0.0**	**85.1**			

Woody Plant Density Results

Number of Woody Plant Density belts = 15

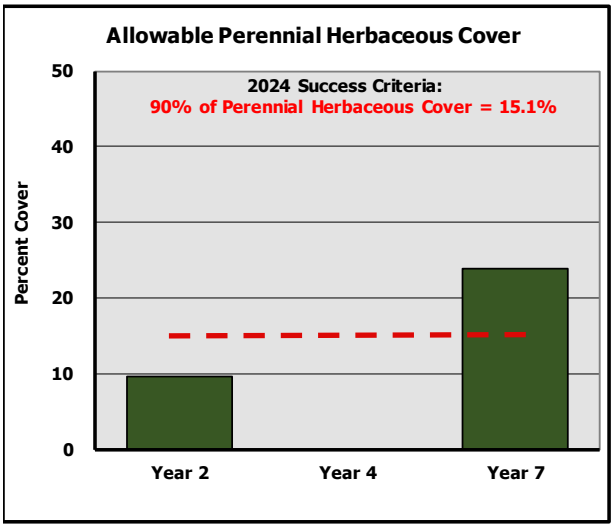
		Stems per Acre		
		Year 2	Year 4	Year 7
Artemisia cana	Silver Sagebrush			2.7
Artemisia tridentata vaseyana	Big Sagebrush	2.7		148.4
Atriplex Canescens	Four-wing Saltbush	2.7		
Total		**5.4**	**0.0**	**151.1**
Sagebrush Contribution (%)		50%		100%
Percent of Transects Exceeding High-Density Standard (375 Stems per acre)		0%		13%
Percent of Transects Exceeding Low-Density Standard (Between 200 and 375 Stems per acre)		0%		7%

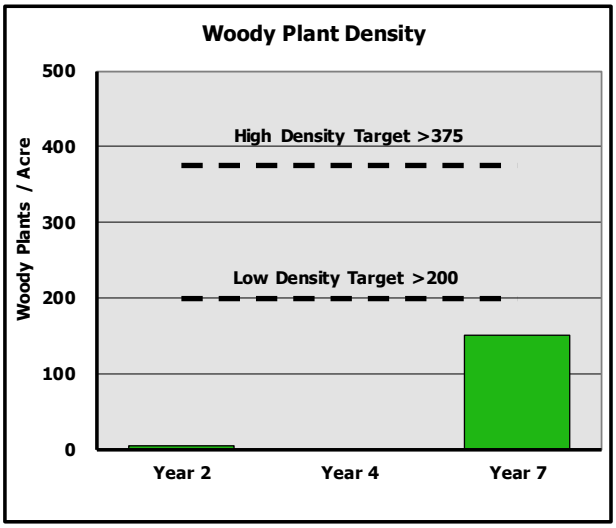
Production Results

Number of Production Plots = 5

		lbs per Acre
		Year 7
Perennial Grasses		1,053.2
Perennial Forbs		0.0
Sub-shrubs		0.0
Annual Grasses		0.0
Annual / Biennial Forbs		16.4
Noxious Weeds	Cheatgrass	0.0
	Other	0.0
Total Production		**1,069.6**
Total Perennial Production		**1,053.2**
Allowable Perennial Herb. Production		**1,053.2**

* Evolving post-mining vegetation communites (Wildlife Habitat) will be delineated after Year 7 evaluation, in preparation for bond release evaluation.

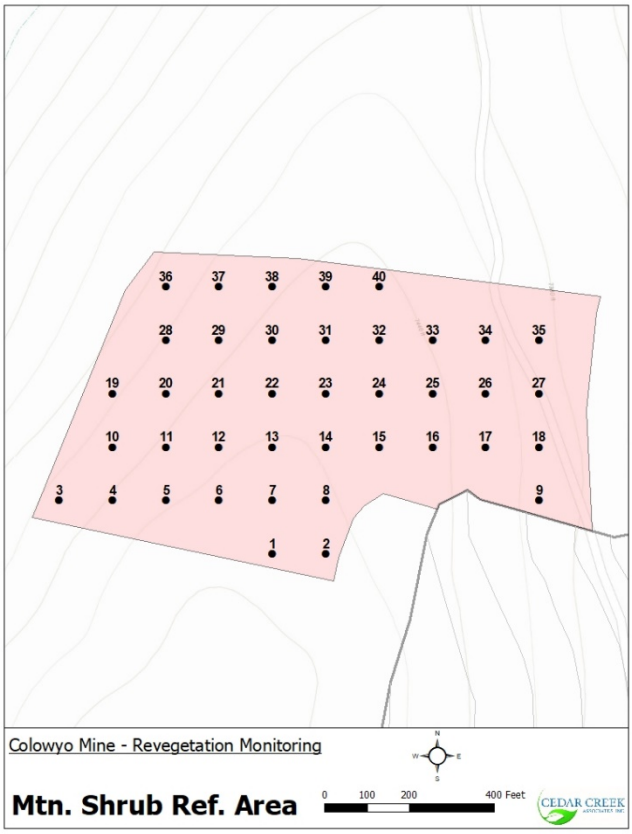




3.3 Reference Areas

3.3.1 Mountain Shrub Reference Area

The Mountain Shrub Reference Area is comprised of approximately 18 acres of gently to moderately sloping vegetation with a predominately northwestern aspect (mesic) and eastern aspect (xeric). Rationale for the larger reference area with two dominant aspects is to provide a better representation of the distribution of Mountain Shrub communities located on and around Colowyo Coal Mine properties. The xeric exposure tends to exhibit more elevated herbaceous parameters, given a modest reduction in the overstory. This reference area is located on the undisturbed ridge immediately west of the West Pit Area (Map 1). Averages for ground cover were determined by 20 transects. Averages for production were determined by 40 plots.

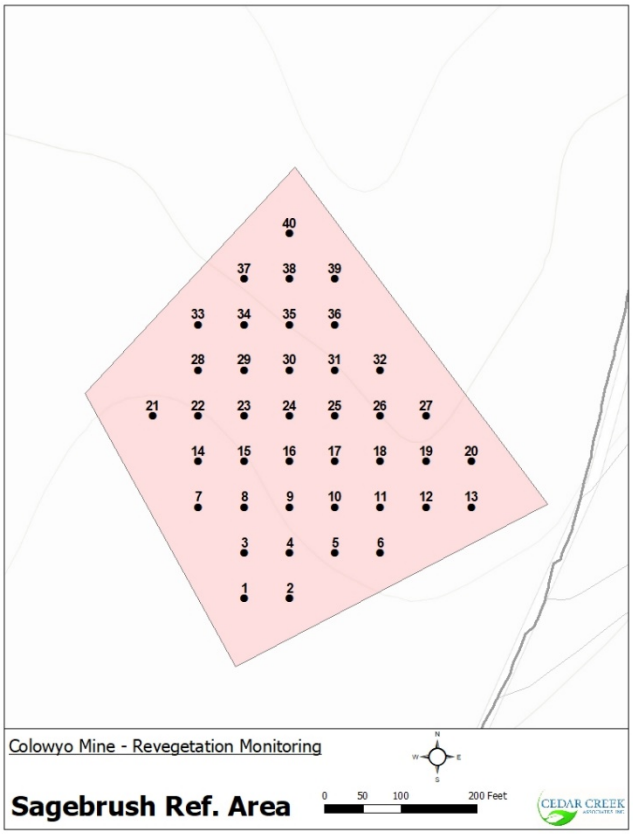


Ground cover in the Mountain Shrub Reference consisted of 42.4% live vegetation, 1.3% rock, 40.3% litter, and bare soil exposure of 16.1%. Perennial cover across the unit averaged 41.9% with annual and biennial cover averaging 0.4%. Cheatgrass was the only noxious weed observed in 2024, contributing 0.1% cover.

Perennial herbaceous production was 254.3 pounds per acre, comprised mostly of perennial grasses (210.2 pounds per acre). Perennial forbs contributed 44.1 pounds per acre and annuals followed with 6.5 pounds per acre. Noxious weeds contributed 0.2 pounds per acre.

3.3.2 Sagebrush Reference Area

The Sagebrush Reference Area is comprised of approximately 4.7 acres of gentle to moderately sloping topography that has a predominately northern aspect. This reference area is located on a gently sloping ridge north of the Administration / Facilities Area (Map 1). Averages for ground cover were determined by 20 transects. Averages for production were determined by 40 plots.



Ground cover in the Sagebrush Reference Area consisted of 39.3% live vegetation, 4.1% rock, 36.4% litter, and bare soil exposure of 20.4%. Perennial cover across the unit averaged 36.0%, with annual and biennial cover of 2.8%. Cheatgrass was the only noxious weed observed in 2024, contributing 0.5% cover.

Perennial herbaceous production was 379.8 pounds per acre, comprised primarily of perennial grasses (210.2 pounds per acre). Perennial forbs contributed 25.4 pounds per acre towards total production. Annuals contributed 11.4 pounds per acre and sub-shrubs with 202.9 pounds per acre. The noxious weed cheatgrass contributed 0.1 pounds per acre.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Overall, the revegetation at Colowyo evaluated by Cedar Creek in 2024 can generally be considered in good condition and is typical of reclamation efforts at most western coal mines. As revegetation units age, they typically "thicken" with desirable (seeded) perennial species and exhibit increased diversity, cover, and production. Overall, the recent precipitation conditions have not been conducive to revegetation development at Colowyo with below average growing season precipitation (April -August) observed in 2020 through 2022 and again in 2024. The Year 7 units are generally performing better than expected and are on track for bond release by Year 9, given the updated comparisons for vegetation parameters presented in the permit (Volume 1, Section 4.15.8; and Volume 15, Section 4.15.8).

Appendix A

Charts, Tables, and Raw Data

Table 1 Colowyo - Vegetation Cover - 2024

Average Ground Cover Summary

East Pit and West Pit

Percent Ground Cover Based on Point-Intercept Sampling

Area ——>	EP060	WP024	WP025	Mtn Shrub R.A.	Sagebrush R.A.	Weighted Reference Values
Weight ——>	100%	100%	100%	55%	45%	
Total Plant Cover	**43.07**	**29.40**	**28.13**	**42.35**	**39.25**	**40.96**
Rock	1.07	2.13	1.27	1.25	4.05	2.51
Litter	37.27	38.00	31.67	40.30	36.35	38.52
Bare ground	18.60	30.47	38.93	16.10	20.35	18.01
Total Perennial Cover	**42.40**	**26.40**	**24.07**	**41.90**	**36.00**	**39.25**
Total Annual Cover (Non-noxious)	0.60	2.80	4.07	0.40	2.75	1.46
Summary by Lifeform:						
Perennial Grasses	**41.60**	**25.53**	**21.47**	**13.00**	**16.05**	**14.37**
Annual Grasses	0.33	0.33	0.13	0.15	2.10	1.03
Noxious - Cheatgrass	0.07	0.13	-	0.05	0.50	0.25
Perennial Forbs	**0.40**	**0.87**	**2.47**	**2.80**	**2.00**	**2.44**
Annual & Biennial Forbs	0.27	2.47	3.93	0.25	0.65	**0.43**
Noxious / Aggressive Weeds	-	0.07	-	-	-	**-**
Sub-Shrubs	**-**	**-**	**-**	**-**	**2.60**	**1.17**
Shrubs & Trees	**0.40**	**-**	**0.13**	**26.10**	**15.35**	**21.26**
Sample Adequacy Calculations						
Mean=	43.07	29.40	28.13	42.35	39.25	
Variance=	124.64	49.97	97.27	125.08	92.09	
n=	15	15	15	20	20	
n_{min}=	12	10	22	12	11	

N=Native, I=Introduced, X=Noxious A=Annual, B=Biennial, P=Perennial

Table 2 Colowyo - Vegetation Cover - 2024

Relative Ground Cover Summary (Post-2008)

East Pit and West Pit

Area ——>	EP060	WP024	WP025	Mtn Shrub R.A.	Sagebrush R.A.
Weight ——>	100%	100%	100%	55%	45%
Summary by Lifeform:					
Perennial Grasses	**96.59**	**86.85**	**76.30**	**30.70**	**40.89**
Annual Grasses	0.77	1.13	0.47	0.35	**5.35**
Noxious - Cheatgrass	0.15	0.45	-	0.12	1.27
Perennial Forbs	0.93	**2.95**	**8.77**	**6.61**	**5.10**
Annual & Biennial Forbs	0.62	**8.39**	**13.98**	0.59	1.66
Noxious / Aggressive Weeds	-	0.23	-	-	-
Sub-Shrubs	-	-	-	-	**6.62**
Shrubs & Trees	0.93	-	0.47	**61.63**	**39.11**
Diversity (Number of Native Perennial Grasses and Native Perennial Forbs > 3% composition is at least 4 with minimum of 2 grasses and 1 forb species)					
(If no single forb species > 3%: a) Min. of 2 Native Perennial Forbs ≥ 2% combined composition, or b) Min. of 4 Native Perennial Forbs ≥ 1% combined composition)					
Number of Native Perennial Grasses >3% =	**6**	**6**	**8**	**2**	**4**
Number of Native Perennial Forbs >3% =	**0**	**0**	**1**	**0**	**0**
Total Number of Native Perennial Forbs =	**2**	**2**	**3**	**10**	**11**
Native Perennial Forb Composition =	**0.93**	**2.95**	**8.77**	**6.26**	**5.10**
Total Number of NPG and NPF Species =	**9**	**9**	**11**	**17**	**16**

N=Native, I=Introduced, X=Noxious A=Annual, B=Biennial, P=Perennial

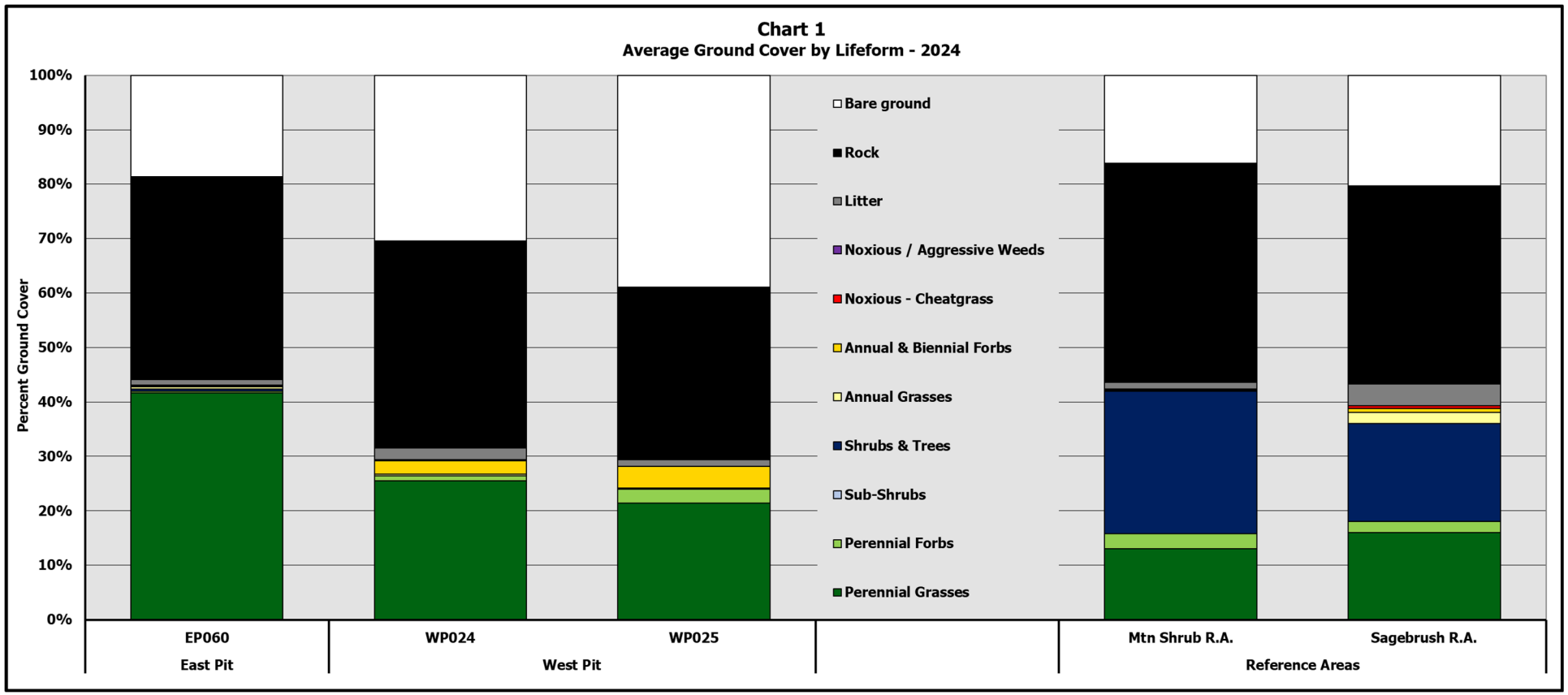


Chart 1
Average Ground Cover by Lifeform - 2024
Percent Ground Cover
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Bare ground
Rock
Litter
Noxious / Aggressive Weeds
Noxious - Cheatgrass
Annual & Biennial Forbs
Annual Grasses
Shrubs & Trees
Sub-Shrubs
Perennial Forbs
Perennial Grasses
EP060
WP024
WP025
Mtn Shrub R.A.
Sagebrush R.A.
East Pit
West Pit
Reference Areas

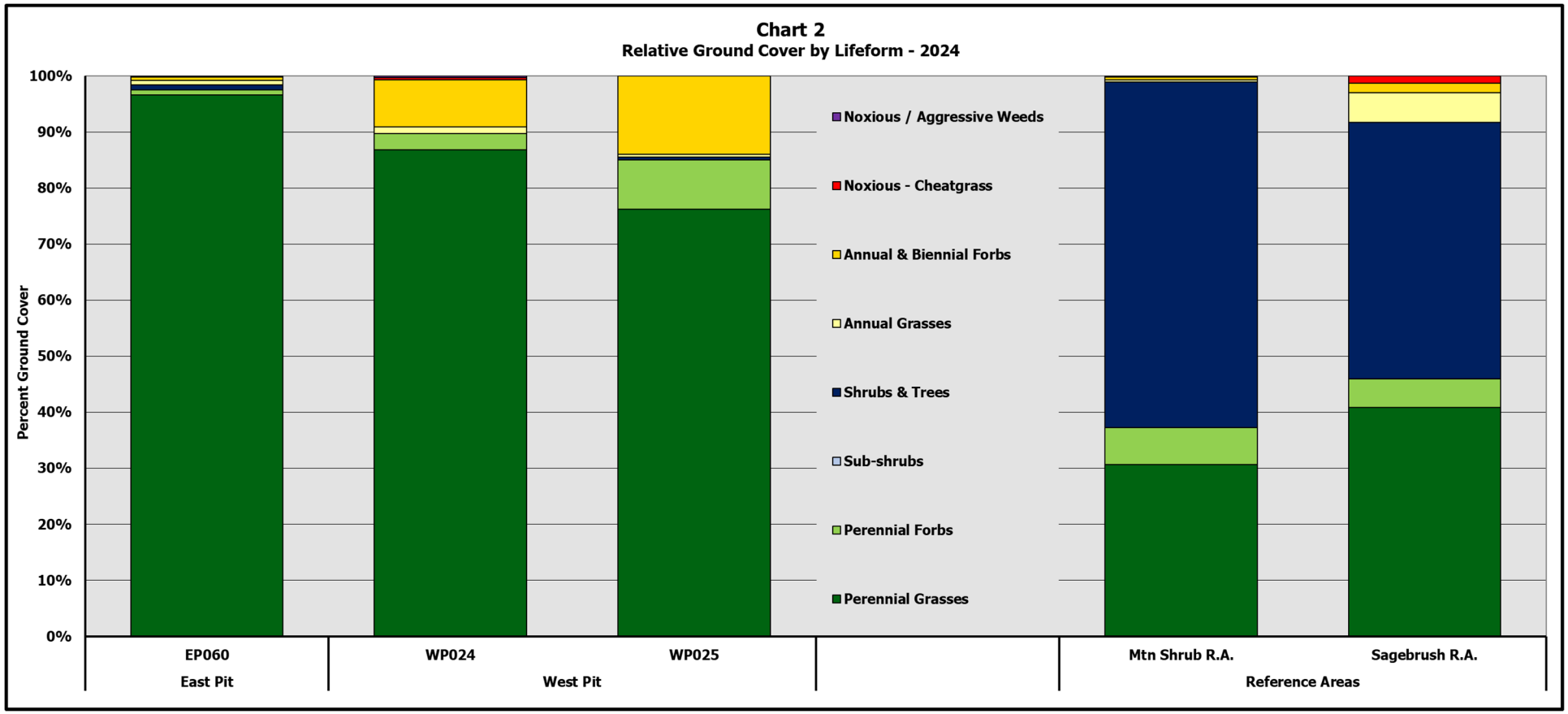


Chart 2
Relative Ground Cover by Lifeform - 2024
Percent Ground Cover
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Noxious / Aggressive Weeds
Noxious - Cheatgrass
Annual & Biennial Forbs
Annual Grasses
Shrubs & Trees
Sub-shrubs
Perennial Forbs
Perennial Grasses
EP060
WP024
WP025
Mtn Shrub R.A.
Sagebrush R.A.
East Pit
West Pit
Reference Areas

Table 3 Colowyo - Woody Plant Density - 2024

Summary of Areas Sampled

East Pit and West Pit

Woody Plants Per Acre

				East Pit	West Pit	
			Unit -->	**EP060**	**WP024**	**WP025**
			Growing Seasons -->	4	7	4
N	P	*Amelanchier alnifolia*	Serviceberry			
N	P	*Artemisia cana*	Silver Sagebrush			2.7
N	P	*Artemisia tridentata*	Big Sagebrush	345.3	2.7	148.4
N	P	*Atriplex canescens*	Four-wing Saltbush	2.7		
N	P	*Chrysothamnus viscidiflorus*	Low Rabbitbrush			
N	P	*Purshia tridentata*	Antelope Bitterbrush			
N	P	*Symphoricarpos rotundifolius*	Roundleaf Snowberry		5.4	
			Total Per Acre	**348.0**	**8.1**	**151.1**

Chart 3

Summary of Current Annual Production by Unit and Lifeform - 2024

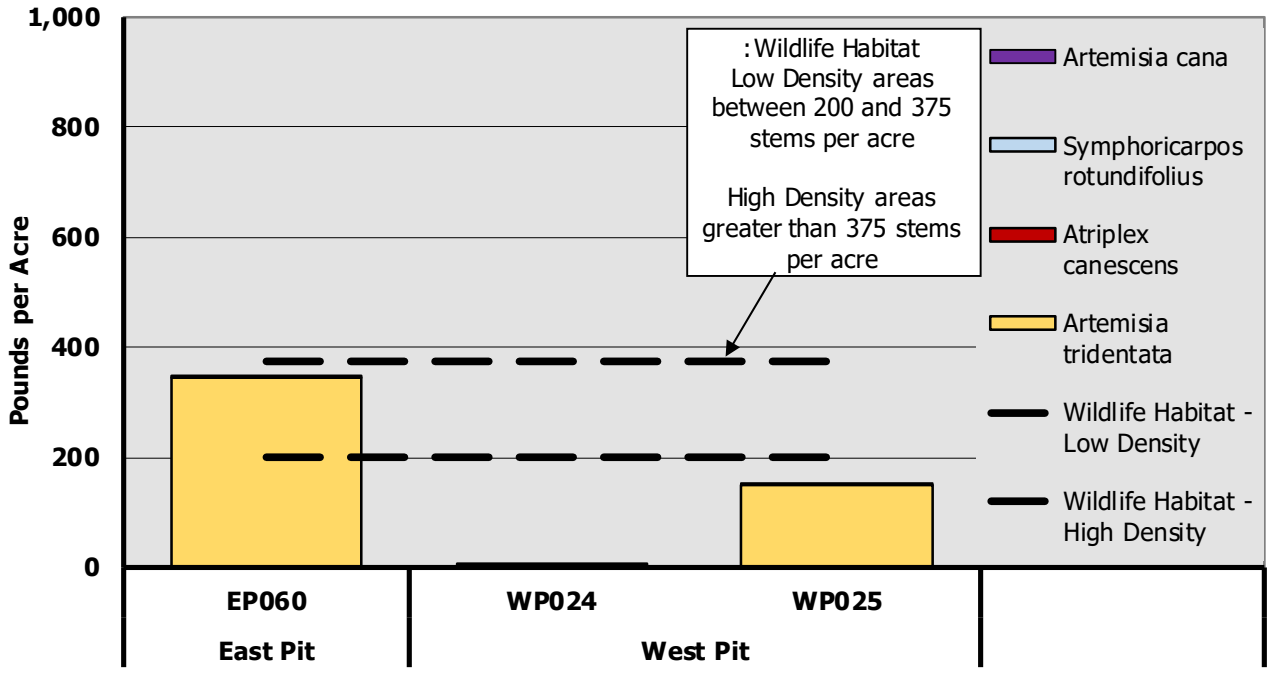


Table 4 Colowyo - Vegetation Production - 2024

Summary of Areas Sampled

Pounds (lbs) per Acre

	Area	Weight	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual Grasses*	*Annual Forbs*	*Noxious Weeds*		TOTAL Average	
								Cheatgrass	*Other*	lbs / ac	Perennial lbs / ac
Reclamation Units	WP024	100%	618.1	8.6	-	-	25.3	7.8	-	**659.8**	**626.7**
	WP025	100%	1,053.2	-	-	-	16.4	-	-	**1069.6**	**1,053.2**
	EP060	100%	1,486.0	-	-	-	-	-	-	**1486.0**	**1,486.0**
Reference Areas	Mountain Shrub	55%	210.2	44.1	-	0.5	6.0	-	0.2	**261.1**	**254.3**
	Sagebrush	45%	354.4	25.4	202.9	8.3	3.1	0.1	-	**594.1**	**582.7**
Weighted Averages	**West/East Pit Comparison**	**55%/45%**	**275.1**	**35.7**	**91.3**	**4.0**	**4.7**	**0.0**	**0.1**	**410.9**	**402.1**

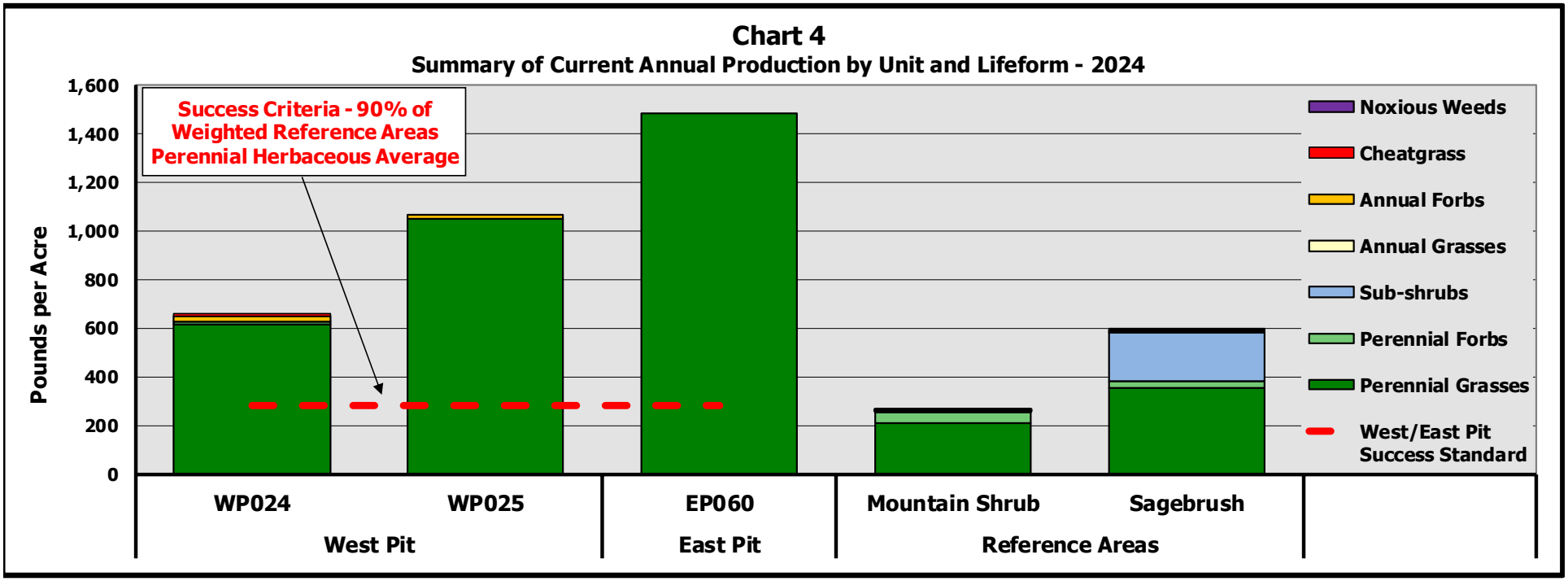


Table 5 Colowyo - Vegetation Cover - 2024

EP060 Unit

Raw Data - Individual Transects — **Percent Ground Cover Based on Point-Intercept Sampling**

			Transect No.——>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																					
I	P	*Agropyron cristatum*	Crested Wheatgrass												4			3	**0.47**	**1.08**	**13**
N	P	*Agropyron dasystachyum*	Thickspike Wheatgrass	15	16	17	18	22	20	13	12	10	18	3	1	7			**11.47**	**26.63**	**87**
I	P	*Agropyron intermedium*	Intermediate Wheatgrass						4				26						**2.00**	**4.64**	**13**
N	P	*Agropyron riparium*	Streambank Wheatgrass						1										**0.07**	**0.15**	**7**
N	P	*Agropyron smithii*	Western Wheatgrass	24	9	30	17	26	5	18	9	5		11	11	20	6	12	**13.53**	**31.42**	**93**
N	P	*Agropyron spicatum*	Bluebunch Wheatgrass	2		3						5		11	4	8	1	7	**2.73**	**6.35**	**53**
N	P	*Agropyron trachycaulum*	Slender Wheatgrass	11	13	3	3	10	9	11	9	19	2						**6.00**	**13.93**	**67**
I	P	*Bromus inermis*	Smooth Brome											2			8		**0.67**	**1.55**	**13**
I	A	*Bromus japonicus*	Japanese Brome	2	2								1						**0.33**	**0.77**	**20**
X	A	*Bromus tectorum*	Cheatgrass															1	**0.07**	**0.15**	**7**
N	P	*Elymus cinereus*	Basin Wildrye			4	3				3	1		12		3	18		**2.93**	**6.81**	**47**
N	P	*Nassela viridula*	Green Needlegrass				2			3	13	6	2						**1.73**	**4.02**	**33**
Forbs																					
I	P	*Astragalus cicer*	Cicer Milkvetch						1			4							**0.33**	**0.77**	**13**
I	B	*Lactuca serriola*	Prickly Lettuce															1	**0.07**	**0.15**	**7**
N	P	*Lupinus argenteus*	Silver Lupine											1					**0.07**	**0.15**	**7**
I	A	*Polygonum aviculare*	Prostrate Knotweed						1										**0.07**	**0.15**	**7**
I	A	*Salsola tragus*	Russian Thistle										1						**0.07**	**0.15**	**7**
I	B	*Tragopogon dubius*	False Salsify								1								**0.07**	**0.15**	**7**
Shrubs & Trees																					
N	P	*Artemisia tridentata*	Big Sagebrush				4					2							**0.40**	**0.93**	**13**
																			Mean		
			Total Plant Cover	**54**	**40**	**57**	**47**	**58**	**41**	**45**	**47**	**52**	**50**	**40**	**20**	**38**	**33**	**24**	**43.07**		
			Rock	1		2			4			1	4	2	2				**1.07**		
			Litter	39	38	17	36	38	25	24	20	38	24	58	27	59	66	50	**37.27**		
			Bare ground	6	22	24	17	4	30	31	33	9	22		51	3	1	26	**18.60**		
			Total Perennial Cover	**52**	**38**	**57**	**47**	**58**	**40**	**45**	**46**	**52**	**48**	**40**	**20**	**38**	**33**	**22**	**42.40**		

Diversity	**Number of Native Perennial Grasses >3% Rel. Cover = 6** **Number of Native Perennial Forbs > 3% Rel. Cover= 0**	**N. Pern. Forbs** **Count = 2** **Rel Cov = 0.93**
Sample Adequacy Calculations	**Plant Cover Mean = 43.07** **t= 1.345** **n = 15** **Variance = 124.64** n_{min} **= 12**	

N=Native, I=Introduced, X-Noxious A=Annual, B=Biennial, P=Perennial

Table 6 Colowyo - Vegetation Cover - 2024

WP024 Unit

Raw Data - Individual Transects — **Percent Ground Cover Based on Point-Intercept Sampling**

			Transect No.——>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																					
I	P	*Agropyron cristatum*	Crested Wheatgrass	2	1	7	1	12	6	2	2	11	3		8				**3.67**	**12.47**	**73**
N	P	*Agropyron dasystachyum*	Thickspike Wheatgrass	16	14		15	4	3	6	8	9	7	7	10	11	10	3	**8.20**	**27.89**	**93**
I	P	*Agropyron intermedium*	Intermediate Wheatgrass	1															**0.07**	**0.23**	**7**
N	P	*Agropyron smithii*	Western Wheatgrass	5	13	7	12	9	4		14	3				2	10	17	**6.40**	**21.77**	**73**
N	P	*Agropyron spicatum*	Bluebunch Wheatgrass	9	6	6	2	3	2				8	2	4		3		**3.00**	**10.20**	**67**
N	P	*Agropyron trachycaulum*	Slender Wheatgrass	2							8	1				4		4	**1.27**	**4.31**	**33**
I	A	*Bromus japonicus*	Japanese Brome									4				1			**0.33**	**1.13**	**13**
X	A	*Bromus tectorum*	Cheatgrass						2										**0.13**	**0.45**	**7**
N	P	*Elymus cinereus*	Basin Wildrye						4	5				3		2			**0.93**	**3.17**	**27**
N	P	*Nassela viridula*	Green Needlegrass				3	4		2			3	5		7	2	2	**1.87**	**6.35**	**53**
N	P	*Sitanion hystrix*	Bottlebrush Squirreltail						1						1				**0.13**	**0.45**	**13**
Forbs																					
N	P	*Astragalus bisulcatus*	Twogrooved Milkvetch			3												5	**0.53**	**1.81**	**13**
I	P	*Astragalus cicer*	Cicer Milkvetch							1							2	2	**0.33**	**1.13**	**20**
X	P	*Cirsium arvense*	Canada Thistle							1									**0.07**	**0.23**	**7**
N	A	*Epilobium brachycarpum*	Tall Annual Willowherb						2										**0.13**	**0.45**	**7**
I	B	*Lactuca serriola*	Prickly Lettuce		7	2			4		5			3				6	**1.80**	**6.12**	**40**
I	B	*Tragopogon dubius*	False Salsify				1					1	1		1	4			**0.53**	**1.81**	**33**
																			Mean		
			Total Plant Cover	**35**	**41**	**25**	**34**	**32**	**28**	**17**	**37**	**29**	**22**	**20**	**24**	**31**	**27**	**39**	**29.40**		
			Rock	1			2	1	6	2			3	2	5	1	4	5	**2.13**		
			Litter	32	38	29	31	52	33	57	38	51	48	60	19	41	18	23	**38.00**		
			Bare ground	32	21	46	33	15	33	24	25	20	27	18	52	27	51	33	**30.47**		
			Total Perennial Cover	**35**	**34**	**23**	**33**	**32**	**20**	**16**	**32**	**24**	**21**	**17**	**23**	**26**	**27**	**33**	**26.40**		

Diversity	**Number of Native Perennial Grasses >3% Rel. Cover = 6** **Number of Native Perennial Forbs > 3% Rel. Cover= 0**	**N. Perm. Forbs** **Count = 2** **Rel Cov = 2.95**
Sample Adequacy Calculations	**Plant Cover Mean = 29.40** **t= 1.345** **n = 15** **Variance = 49.97** n_{min} **= 10**	

N=Native, I=Introduced, X-Noxious A=Annual, B=Biennial, P=Perennial

Table 7 Colowyo - Vegetation Cover - 2024

WP025 Unit

Raw Data - Individual Transects — **Percent Ground Cover Based on Point-Intercept Sampling**

		Transect No.——>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																				
I	P	*Agropyron cristatum*	Crested Wheatgrass						4							3	1	**0.53**	**1.90**	**20**
N	P	*Agropyron dasystachyum*	Thickspike Wheatgrass			1			2	12	2	9	7	9	9	6		**3.80**	**13.51**	**60**
I	P	*Agropyron intermedium*	Intermediate Wheatgrass	8	12		6		2									**1.87**	**6.64**	**27**
N	P	*Agropyron smithii*	Western Wheatgrass							10	3	2	1	2	5	6	25	**3.60**	**12.80**	**53**
N	P	*Agropyron spicatum*	Bluebunch Wheatgrass	3	5	2	15		9	2	3	11	18	4	1			2	**5.00**	**17.77**	**80**
N	P	*Agropyron trachycaulum*	Slender Wheatgrass							6		2		4	2	1	3	**1.20**	**4.27**	**40**
I	P	*Bromus inermis*	Smooth Brome			4												**0.27**	**0.95**	**7**
I	A	*Bromus japonicus*	Japanese Brome												2			**0.13**	**0.47**	**7**
N	P	*Elymus cinereus*	Basin Wildrye		10						8	3		6		1		**1.87**	**6.64**	**33**
N	P	*Nassela viridula*	Green Needlegrass			4	4	3		2		1		4				**1.20**	**4.27**	**40**
N	P	*Poa secunda*	Sandberg Bluegrass			1			3	3	2	1	1			2	2	**1.00**	**3.55**	**53**
N	P	*Sitanion hystrix*	Bottlebrush Squirreltail				1			2			6	8				**1.13**	**4.03**	**27**
Forbs																				
N	A	*Alyssum alyssoides*	Pale Madwort								1							**0.07**	**0.24**	**7**
N	A	*Alyssum desertorum*	Desert Alyssum		3													**0.20**	**0.71**	**7**
N	P	*Astragalus bisulcatus*	Twogrooved Milkvetch								2	1						**0.20**	**0.71**	**13**
I	P	*Astragalus cicer*	Cicer Milkvetch	12		5					12		4					**2.20**	**7.82**	**27**
N	A	*Epilobium brachycarpum*	Tall Annual Willowherb														1	**0.07**	**0.24**	**7**
I	B	*Lactuca serriola*	Prickly Lettuce	2		3		3			1	1	2	1	1	6		**1.33**	**4.74**	**60**
N	P	*Linum lewisii*	Lewis Flax										1					**0.07**	**0.24**	**7**
I	A	*Pocilla biloba*	Twolobed Speedwell						4	3			2			4		**0.87**	**3.08**	**27**
I	A	*Polygonum aviculare*	Prostrate Knotweed						1		1							**0.13**	**0.47**	**13**
I	A	*Salsola tragus*	Russian Thistle						1									**0.07**	**0.24**	**7**
I	B	*Tragopogon dubius*	False Salsify		1		2	1	1				3	1	4	3	2	**1.20**	**4.27**	**60**
Shrubs & Trees																				
N	P	*Artemisia tridentata*	Big Sagebrush								2							**0.13**	**0.47**	**7**
																			Mean	
		Total Plant Cover	**25**	**31**	**20**	**28**	**6**	**15**	**22**	**37**	**44**	**37**	**30**	**36**	**23**	**32**	**36**		**28.13**	
		Rock	2	2	1	1	2	1	2	3				1	1	2	1		**1.27**	
		Litter	24	39	57	55	37	38	12	32	29	35	31	17	17	27	25		**31.67**	
		Bare ground	49	28	22	16	55	46	64	28	27	28	39	46	59	39	38		**38.93**	
		Total Perennial Cover	**23**	**27**	**17**	**26**	**3**	**14**	**15**	**33**	**42**	**36**	**23**	**34**	**16**	**19**	**33**		**24.07**	

Diversity

Number of Native Perennial Grasses >3% Rel. Cover = 8

Number of Native Perennial Forbs > 3% Rel. Cover= 1

N. Perm. Forbs — **Count = 3**, **Rel Cov = 8.77**

Sample Adequacy Calculations

Plant Cover Mean = 28.13 **t= 1.345** **n = 15**

Variance = 97.27 n_{min} **= 22**

N=Native, I=Introduced, X-Noxious A=Annual, B=Biennial, P=Perennial

Table 8 Colowyo - Vegetation Cover - 2024

Mountain Shrub Reference Area

Raw Data - Individual Transects — **Percent Ground Cover Based on Point-Intercept Sampling**

			Transect No.——>	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																										
I	P	*Agropyron intermedium*	Intermediate Wheatgrass							1	9												7	**0.85**	**2.01**	**15**
N	P	*Agropyron smithii*	Western Wheatgrass	2			6			7	1				1	2				2				**1.05**	**2.48**	**35**
N	P	*Agropyron spicatum*	Bluebunch Wheatgrass			1					1													**0.10**	**0.24**	**10**
I	P	*Bromus inermis*	Smooth Brome																				6	**0.30**	**0.71**	**5**
I	A	*Bromus japonicus*	Japanese Brome	1								1									1			**0.15**	**0.35**	**15**
N	P	*Bromus marginatus*	Mountain Brome					2	2									1			1			**0.30**	**0.71**	**20**
X	A	*Bromus tectorum*	Cheatgrass																			1		**0.05**	**0.12**	**5**
N	P	*Carex geyeri*	Geyer's Sedge	1	20	10		6	11				7	6	10		10	10	8		11	7	1	**5.90**	**13.93**	**70**
N	P	*Koeleria macrantha*	Prairie Junegrass									2								3				**0.25**	**0.59**	**10**
N	P	*Nassela viridula*	Green Needlegrass	4					4					1										**0.45**	**1.06**	**15**
N	P	*Stipa nelsonii*	Nelson Needlegrass	1	4	1	4		1		5		6	13	9		10	3	9		10			**3.80**	**8.97**	**65**
Forbs																										
N	P	*Achillea millefolium*	Common Yarrow							2				2	1			1		1				**0.15**	**0.35**	**15**
N	P	*Aster ascendens*	Creeping Aster							2				2		1			2					**0.35**	**0.83**	**20**
N	P	*Aster sp.*	Aster										1											**0.05**	**0.12**	**5**
N	P	*Cirsium centaureae*	Fringed Thistle							1	2													**0.15**	**0.35**	**10**
N	A	*Epilobium brachycarpum*	Tall Annual Willowherb														1							**0.05**	**0.12**	**5**
N	P	*Galium boreale*	Northern Bedstraw										3											**0.15**	**0.35**	**5**
I	B	*Lactuca serriola*	Prickly Lettuce									1												**0.05**	**0.12**	**5**
N	P	*Lathyrus laetivirens*	Aspen Pea			1			1	1									2	1		1	1	**0.40**	**0.94**	**35**
N	P	*Lupinus argenteus*	Silver Lupine		1	5			1						1		5		1	1	1	1		**0.85**	**2.01**	**45**
N	P	*Lupinus caudatus*	Tailcup Lupine	3										1			1	1				3		**0.45**	**1.06**	**25**
N	A	*Lupinus pusillus*	Rusty Lupine				2																	**0.10**	**0.24**	**5**
N	P	*Pseudostellaria jamesiana*	Tuber Starwort						1															**0.05**	**0.12**	**5**
I	P	*Taraxacum officinale*	Dandelion				1			1			1											**0.15**	**0.35**	**15**
N	P	*Vicia americana*	American Vetch			1																		**0.05**	**0.12**	**5**
N	A	Unknown species										1												**0.05**	**0.12**	**5**
Shrubs & Trees																										
N	P	*Amelanchier alnifolia*	Serviceberry		3		4			3				5			1		1		2		1	**1.00**	**2.36**	**40**
N	P	*Artemisia tridentata*	Big Sagebrush	20	3	10	27		9	8	11	4		4	5	13		11	6	15		4	16	**8.30**	**19.60**	**80**
N	P	*Chrysothamnus viscidiflorus*	Low Rabbitbrush				1							1								1		**0.15**	**0.35**	**15**
N	P	*Mahonia repens*	Creeping Barberry					2									12							**0.70**	**1.65**	**10**
N	P	*Quercus gambellii*	Gambel Oak		21			29	24			4	41		1				3	14				**6.85**	**16.17**	**40**
N	P	*Symphoricarpos oreophilus*	Mountain Snowberry		10	15	3	2	5	10	5	18	5	9	7	4		13	5		16	33	22	**9.10**	**21.49**	**85**
																								Mean		
			Total Plant Cover	**32**	**62**	**44**	**48**	**41**	**59**	**34**	**34**	**31**	**64**	**42**	**35**	**20**	**40**	**40**	**37**	**37**	**42**	**51**	**54**	**42.4**		
			Rock			3		2		1					1			3	11		3		1	**1.3**		
			Litter	44	35	48	51	42	36	45	54	36	19	49	57	22	43	38	34	45	40	29	39	**40.3**		
			Bare ground	24	3	5	1	15	5	20	12	33	17	9	7	58	17	19	18	18	15	20	6	**16.1**		
			Total Perennial Cover	**31**	**62**	**44**	**46**	**41**	**59**	**34**	**34**	**28**	**64**	**42**	**35**	**20**	**39**	**40**	**37**	**37**	**41**	**50**	**54**	**41.9**		

Diversity	**Number of Native Perennial Grasses >3% Rel. Cover = 2** **Number of Native Perennial Forbs > 3% Rel. Cover= 0**	**N. Pern. Forbs** **Count = 10** **Rel Cov = 6.26**
Sample Adequacy Calculations	**Plant Cover Mean = 42.4** **t= 1.328** **Variance = 125.08** n_{min} **= 12**	**n = 20**

N=Native, I=Introduced, X-Noxious A=Annual, B=Biennial, P=Perennial

Table 9 Colowyo - Vegetation Cover - 2024

Mountain Shrub Reference Area

Raw Data - Individual Transects — **Percent Ground Cover Based on Point-Intercept Sampling**

			Transect No.——>	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																										
I	P	*Agropyron cristatum*	Crested Wheatgrass				6																	0.30	0.76	5
N	P	*Agropyron dasystachyum*	Thickspike Wheatgrass			3			2		7	3	2		2	5			4	1		1		1.50	3.82	50
I	P	*Agropyron intermedium*	Intermediate Wheatgrass					6								9					3		2	1.00	2.55	20
N	P	*Agropyron smithii*	Western Wheatgrass	5	11	3	3		1		2	1	10			2	3	2	1	2			3	2.45	6.24	70
N	P	*Agropyron spicatum*	Bluebunch Wheatgrass		6	3	5	1	18		1	5	3	4	4	2		1		8	2	1	1	3.25	8.28	80
I	P	*Bromus inermis*	Smooth Brome		3					30			7			4	38					2		4.20	10.70	30
I	A	*Bromus japonicus*	Japanese Brome	15		2	4	1			4	11				3		1	1					2.10	5.35	45
X	A	*Bromus tectorum*	Cheatgrass	1	1	2	1				1			1				1					2	0.50	1.27	40
N	P	*Koeleria macrantha*	Prairie Junegrass	7		4	6	1	3			7						4	10	7	4	3		2.80	7.13	55
N	P	*Poa secunda*	Sandberg Bluegrass	1		1	3	2						1		1				2				0.55	1.40	35
Forbs																										
N	P	*Achillea millefolium*	Common Yarrow										2										2	0.20	0.51	10
N	P	*Astragalus tenellus*	Looseflower Milkvetch						1		1													0.10	0.25	10
N	P	*Balsamorhiza sagittata*	Arrowleaf Balsamroot																				1	0.05	0.13	5
N	P	*Cirsium undulatum*	Wavyleaf Thistle																				1	0.05	0.13	5
N	P	*Comandra umbellata*	Bastard Toadflax					1						2								1		0.20	0.51	15
N	P	*Helianthella uniflora*	Onelfower Helianthella														2						2	0.20	0.51	10
I	B	*Lactuca serriola*	Prickly Lettuce							1			9											0.50	1.27	10
N	P	*Linum lewisii*	Lewis Flax																			3		0.15	0.38	5
N	P	*Phlox hoodii*	Hood Phlox																	1	2	1		0.20	0.51	15
N	P	*Phlox longifolia*	Longleaf Phlox									1					1		1		2	1		0.30	0.76	25
N	P	*Sphaeralcea coccinea*	Scarlet Globemallow											1					1					0.10	0.25	10
N	P	*Stenotus armerioides*	Thrifty Goldenweed											1				5	3					0.45	1.15	15
I	B	*Tragopogon dubius*	False Salsify		1							1	1											0.15	0.38	15
Sub-Shrubs																										
N	P	*Gutierrezia sarothrae*	Broom Snakeweed	8		3		3			2	2		4		4		1	9	3	2	7		2.40	6.11	60
N	P	*Krascheninnikovia lanata*	Winterfat									1			3									0.20	0.51	10
Shrubs & Trees																										
N	P	*Amelanchier alnifolia*	Serviceberry		1			1	1			3		8	8	3		2	4		2	4	6	2.15	5.48	60
N	P	*Artemisia tridentata*	Big Sagebrush	9	8	18	8	8	8	18	7	6	12	24	29	7		15	4	1	10	10	2	10.20	25.99	95
N	P	*Chrysothamnus nauseosus*	Rubber Rabbitbrush																				6	0.30	0.76	5
N	P	*Chrysothamnus viscidiflorus*	Low Rabbitbrush							5			12				5						2	1.20	3.06	20
N	P	*Opuntia polyacantha*	Plains Pricklypear						1															0.05	0.13	5
N	P	*Symphoricarpos oreophilus*	Mountain Snowberry		5						1	1	1				1				1	3	16	1.45	3.69	40
																								Mean		
			Total Plant Cover	**46**	**36**	**39**	**36**	**24**	**35**	**54**	**26**	**42**	**59**	**46**	**46**	**40**	**50**	**32**	**38**	**25**	**28**	**37**	**46**	**39.3**		
			Rock	3			2	13	14		5	1		5	6			8	1	9	5	7	2	**4.1**		
			Litter	31	40	47	42	38	37	38	45	48	34	26	22	48	42	26	33	21	35	33	41	**36.4**		
			Bare ground	20	24	14	20	25	14	8	24	9	7	23	26	12	8	34	28	45	32	23	11	**20.4**		
			Total Perennial Cover	**30**	**34**	**35**	**31**	**23**	**35**	**53**	**21**	**30**	**49**	**45**	**46**	**37**	**50**	**30**	**37**	**25**	**28**	**37**	**44**	**36.0**		

Diversity	**Number of Native Perennial Grasses >3% Rel. Cover = 4** **Number of Native Perennial Forbs > 3% Rel. Cover= 0**	**N. Perm. Forbs** **Count = 11** **Rel Cov = 5.10**
Sample Adequacy Calculations	**Plant Cover Mean = 39.3** **t= 1.328** **Variance = 92.09** **n_{min} = 11**	**n = 20**

N=Native, I=Introduced, X-Noxious A=Annual, B=Biennial, P=Perennial

Table 10 Colowyo - Woody Plant Density - 2024

EP060 Unit

Raw Data - Individual Transects — **Sampling by 2m x 50m Belt Transects**

		Transect No.——>	5	7	8	9	10	2	3	1	4	6	15	12	13	14	11	Count	Per Acre
Shrubs & Trees																			
N	P	*Artemisia tridentata* Big Sagebrush	3	2	5	8	2	1	2	7	15	15	3	1	59	1	4	**128**	**345.3**
N	P	*Atriplex canescens* Four-wing Saltbush											1					**1**	**2.7**
		Total	**3**	**2**	**5**	**8**	**2**	**1**	**2**	**7**	**15**	**15**	**4**	**1**	**59**	**1**	**4**	**129**	**348.0**

Sample Adequacy Calculations

Mean = 8.6 **t= 1.345** **n = 15**

Variance = 215.40 **n_{min} = 527**

Table 12 Colowyo - Woody Plant Density - 2024

WP025 Unit

Raw Data - Individual Transects — **Sampling by 2m x 50m Belt Transects**

		Transect No.——>	1	2	3	4	5	15	13	14	11	12	6	10	9	8	7	Count	Per Acre
Shrubs & Trees																			
N	P	*Artemisia cana* Silver Sage						1										**1**	**2.7**
N	P	*Artemisia tridentata* Big Sagebrush						1		1	1			18	23	3	8	**55**	**148.4**
		Total	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**1**	**1**	**-**	**-**	**18**	**23**	**3**	**8**	**56**	**151.1**

Sample Adequacy Calculations

Mean = 3.7 **t= 1.345** **n = 15**

Variance = 51.64 **n_{min} = 670**

Table 13 Colowyo - Vegetation Production - 2024

EP060

Raw Data - Individual Transects — **Oven Dry Weight (grams per $0.5m^2$)**

Sample No.	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual Grasses*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL	
						Cheatgrass	*Other*	$g/0.5m^2$	lbs / ac
1	91.0							**91.0**	**1,621.1**
2	92.7							**92.7**	**1,651.4**
3	64.9							**64.9**	**1,156.1**
4	91.3							**91.3**	**1,626.4**
5	77.2							**77.2**	**1,375.2**
Average	**83.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**83.4**	**1,486.0**

Sampling Adequacy:			
	n= 5	**t = 1.533**	**var. = 146.837**
		Mean = 83.4	**n_{min} = 5**

Table 14 Colowyo - Vegetation Production - 2024

WP024

Raw Data - Individual Transects — **Oven Dry Weight (grams per $0.5m^2$)**

Sample No.	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual Grasses*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL	
						Cheatgrass	*Other*	$g/0.5m^2$	lbs / ac
1	53.5							**53.5**	**953.0**
2	35.1					1.3		**36.4**	**648.4**
3	28.3				3.1			**31.4**	**559.4**
4	32.7				0.5	0.7		**33.9**	**603.9**
5	23.9	2.4			3.5	0.2		**30.0**	**534.4**
Average	**34.7**	**0.5**	**0.0**	**0.0**	**1.4**	**0.4**	**0.0**	**37.0**	**659.8**

Sampling Adequacy:			
	n= 5	**t = 1.533**	**var. = 90.643**
		Mean = 37.0	**n_{min} = 16**

Table 15 Colowyo - Vegetation Production - 2024

WP025

Raw Data - Individual Transects — **Oven Dry Weight (grams per $0.5m^2$)**

Sample No.	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual Grasses*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL	
						Cheatgrass	*Other*	$g/0.5m^2$	lbs / ac
1	41.1				2.1			**43.2**	**769.6**
2	74.3							**74.3**	**1,323.6**
3	62.1							**62.1**	**1,106.2**
4	41.5							**41.5**	**739.3**
5	76.6				2.5			**79.1**	**1,409.1**
Average	**59.1**	**0.0**	**0.0**	**0.0**	**0.9**	**0.0**	**0.0**	**60.0**	**1,069.6**

Sampling Adequacy:			
	n= 5	**t = 1.533**	**var. = 299.548**
		Mean = 60.0	**n_{min} = 20**

Table 16 Colowyo - Vegetation Production - 2024

Mountain Shrub Reference Area

Raw Data - Individual Transects — **Oven Dry Weight (grams per 0.5m^2)**

Sample No.	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual Grasses*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL	
						Cheatgrass	*Other*	g/0.5m^2	lbs / ac
1	20.7	2.9			0.2			**23.8**	**424.0**
2	24.8			0.1				**24.9**	**443.6**
3	9.3							**9.3**	**165.7**
4	5.5	2.1						**7.6**	**135.4**
5	7.0	6.9						**13.9**	**247.6**
6	9.3	0.5		0.2	0.2			**10.2**	**181.7**
7	14.6	0.1			0.1			**14.8**	**263.6**
8	6.7	0.4		0.2				**7.3**	**130.0**
9	6.0				1.7			**7.7**	**137.2**
10	7.4	2.4						**9.8**	**174.6**
11	13.0	3.8						**16.8**	**299.3**
12	9.2	0.1						**9.3**	**165.7**
13	10.6	13.0						**23.6**	**420.4**
14	9.6				0.1			**9.7**	**172.8**
15	17.9	12.5					0.5	**30.9**	**550.5**
16	16.0	2.5			0.7			**19.2**	**342.0**
17	15.7			0.6	3.1			**19.4**	**345.6**
18	0.1	0.5			2.0			**2.6**	**46.3**
19	1.6	4.6						**6.2**	**110.4**
20	18.6							**18.6**	**331.3**
21	17.2	1.0						**18.2**	**324.2**
22	9.9	0.4						**10.3**	**183.5**
23	5.3	1.7						**7.0**	**124.7**
24	16.9	1.7			0.5			**19.1**	**340.2**
25	11.0	0.7						**11.7**	**208.4**
26	11.6				1.5			**13.1**	**233.4**
27	4.2				1.6			**5.8**	**103.3**
28	1.4	11.3						**12.7**	**226.2**
29	7.8	3.4						**11.2**	**199.5**
30	10.2	0.3						**10.5**	**187.0**
31	21.6				0.2			**21.8**	**388.3**
32	7.3	8.8						**16.1**	**286.8**
33	16.8							**16.8**	**299.3**
34	25.8				0.3			**26.1**	**464.9**
35	6.5							**6.5**	**115.8**
36	14.0	5.5						**19.5**	**347.4**
37	6.6				0.6			**7.2**	**128.3**
38	10.0	1.5						**11.5**	**204.9**
39	6.2	7.3			0.7			**14.2**	**253.0**
40	38.2	3.1						**41.3**	**735.7**
Average	**11.8**	**2.5**	**0.0**	**0.0**	**0.3**	**0.0**	**0.0**	**14.7**	**261.1**

Sampling Adequacy:			
	n= 40	**t = 1.304**	**var. = 60.966**
		Mean = 14.7	**n_{min} = 48**

Table 17 Colowyo - Vegetation Production - 2024

Sagebrush Reference Area

Raw Data - Individual Transects — **Oven Dry Weight (grams per 0.5m^2)**

Sample No.	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual Grasses*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL	
						Cheatgrass	*Other*	g/0.5m^2	lbs / ac
1	3.0	1.4	19.9			0.2		**24.5**	**436.4**
2	29.3	0.4	10.7	0.9	0.4			**41.7**	**742.8**
3	22.7			0.2				**22.9**	**407.9**
4	15.1	0.4	0.5	1.1				**17.1**	**304.6**
5	18.5		13.2	0.9	0.3			**32.9**	**586.1**
6	22.7		2.3	1.2	0.5			**26.7**	**475.6**
7	45.2		4.0	0.6				**49.8**	**887.1**
8	5.9	1.5	7.6	0.7				**15.7**	**279.7**
9	17.6		4.0					**21.6**	**384.8**
10	29.2	0.2		0.4				**29.8**	**530.9**
11	15.8	0.7	30.8	1.3	1.6			**50.2**	**894.3**
12	26.1				2.5			**28.6**	**509.5**
13	51.7							**51.7**	**921.0**
14	8.9				1.1			**10.0**	**178.1**
15	28.5		10.2					**38.7**	**689.4**
16	13.2	5.1		0.7				**19.0**	**338.5**
17	4.2		33.4	2.5				**40.1**	**714.3**
18	66.3							**66.3**	**1,181.1**
19	48.5				0.5			**49.0**	**872.9**
20	40.5							**40.5**	**721.5**
21	30.6		2.4	0.5				**33.5**	**596.8**
22	12.3	1.7	6.3	0.6				**20.9**	**372.3**
23	17.6	0.6	9.4	0.4				**28.0**	**498.8**
24	8.4	1.9	17.3					**27.6**	**491.7**
25	39.0		28.8	3.9				**71.7**	**1,277.3**
26	32.8	0.9		1.2				**34.9**	**621.7**
27	21.3		34.7					**56.0**	**997.6**
28	3.1	11.8	25.5	0.4				**40.8**	**726.8**
29	13.2	3.0	4.6	0.3				**21.1**	**375.9**
30	6.4	4.8	30.6	0.3				**42.1**	**750.0**
31	8.9	3.2	15.6					**27.7**	**493.4**
32	28.1	7.9	48.5	0.4				**84.9**	**1,512.4**
33	4.0	5.6	12.2					**21.8**	**388.3**
34	2.1	3.7	7.4					**13.2**	**235.1**
35	3.9		13.7					**17.6**	**313.5**
36	15.7		22.6	0.2				**38.5**	**685.8**
37	7.3		11.0					**18.3**	**326.0**
38	5.7	0.8	5.0					**11.5**	**204.9**
39	6.9		4.7					**11.6**	**206.6**
40	15.6	1.4	18.6					**35.6**	**634.2**
Average	**19.9**	**1.4**	**11.4**	**0.5**	**0.2**	**0.0**	**0.0**	**33.4**	**594.1**

Sampling Adequacy:			
	n= 40	**t = 1.304**	**var. = 290.235**
		Mean = 33.4	**n_{min} = 44**

SECTION 5 – TOPSOIL

RULE REQUIREMENT

Rule 2.04.13(2) the Permittee may provide additional monitoring information as required by the approved permit.

GENERAL DISCUSSION

In 2024, Colowyo removed topsoil and placed it in stockpile to support construction of multiple temporary conveyance ditches along the Collom Haul Road and construction of the Section 3 Pons. Figure 5-1 provides the topsoil pile location for all topsoil that was removed.

In 2024, topsoil was replaced on reclamation unit WP036, WP037, and WP038. Please see Exhibit 2 for locations of the reclamation unit where topsoil was replaced. Topsoil replacement depths were verified after laydown occurred and the locations sample and depths encountered are presented on Exhibit 5.

Figure 5-2 provides each topsoil stockpile and the corresponding volume of material contained within each pile. Figure 5-3 provides the overall topsoil balance at the end of the year 2024 for the entire Colowyo mine site.

Figure 5-1 – Topsoil Movements During Report Period

Topsoil Removal

Task	Activity	Topsoil Placement Area
1	Removed Topsoil for advancement of the Collom Pit	Pile 2 & 26A
2	Remove Topsoil for water control in West Pit	Pile 9A
3	Removed Topsoil for construction of Section 15 Ditch and Pond	Pile 16D

Topsoil Replacement

Task	Activity	Topsoil Pile Mined
1	Topsoil replaced on WP035	Topsoil Pile 16E

Areas Exempt from Topsoil Stripping

Task	Activity	Acres Exempt
1	None	

Topsoil Removal

Task	Activity	Topsoil Placement Area
1	Removed Topsoil for Construction of GD-3 Ditch	Pile 17G
2	Removed Topsoil for Construction of C-12 and C-13 Ditches	Windrow 18
3	Removed Topsoil for Construction of C-14 Ditch	Windrow 17
4	Removed Topsoil for Construction of Section 3 Ponds and Access Road	Pile 15F

Topsoil Replacement

Task	Activity	Topsoil Pile Mined
1	Topsoil replaced on WP036	Topsoil Pile 9B
2	Topsoil replaced on WP037	Topsoil Pile 9B
3	Topsoil replaced on WP038	Windrows 1, 2, and 3 and Pile 16E

Figure 5-2 - Topsoil Stockpile for Report Year

Topsoil Stockpile or Windrow Number	Volume (CY)
2A	50,537
9A	95
15A	1,130,663
15E	3,201
15F	22,515
15G	24,656
15I	14,889
16C	141,291
16D	942,498
16E	655,998
17A	5,982
17B	3,673
17C	1,396
17D	1,310
17E	735
17G	305
18	458,707
17F	1,460
20A	24,968
21A	25,615
21B	42,433
21C	19,262
21D	53,537
Subtotal	**3,625,726**

Topsoil Stockpile or Windrow Number	Volume (CY)
22A	60,196
25A	533,961
26A	1,029,425
26B	19,979
27A	12,316
28A	1,059
29A	35,631
30A	31,806
30B	21,631
36A	66,417
Windrow 6	120
Windrow 8	1,490
Windrow 9	9,781
Windrows 12A - G	5,437
Windrow 13	5,355
Windrow 14	2,135
Windrow 15	3,392
Windrow 17	4,035
Windrow 18	2,889
Collom Drill Pad Windrows	16,131
Subtotal	**1,863,186**

Grand Total 5,488,912

Figure 5-3 –Topsoil Balance

1	Disturbed Lands (See Figure 2-1)	5,239.1	acres
2	Lands with Redistributed Topsoil (See Figure 2-1)	1,999.7	acres
3	Lands Yet to be Retopsoiled (Line 1 Minus 2)	3,239.4	acres
4	Lands Yet to be Retopsoiled	141,108,000.0	sq. feet
5	Volume of Topsoil in Stockpiles (From Figure 5-2)	5,488,912	cu. yards*
6	Line 5 times 27	148,201,000	cu. ft
7	Average Replacement Depth Available (Line 6 divided by Line 4)	1.1	feet
8	Average Replacement Depth Available	12.6	inches

Note: Values presented above represent an estimate of areas and volumes as of the date shown above.
Stockpile inventories change frequently as mining plans vary.

WP037
2024
11.6 ac

WP036
2024
14.4 ac

WP035
2024
54.1 ac

WP038
2024
15.7 ac

WP033
2021
3.3 ac

WP034
2021
10.0 ac

Legend

RECLAIMED AREAS

X" TOPSOIL VERIFICATION LOCATION

NOTE: PLEASE SEE EXHIBIT 2A FOR LOCATION OF RECLAMATION AREAS SHOWN ABOVE.

0' 200' 400'

Contour Interval 25 FT.
June 2021 Topography

N W E S

Topsoil Depth Verification Locations

Colowyo Coal Company
5731 State Highway 13
Meeker, Colorado 81641

SCALE: 1" = 200'
DATE: 1/4/2021
DRWG. BY: Tony
APPROVED BY: AA
DRWG NO. Exhibit 5

No.	REVISION	DATE	BY	CHK
1	Revised for 2023 ARR	2/29/24	Tony	Tony
2	Revised for 2024 ARR	1/14/25	Tony	Tony

SECTION 6 –DITCH CONSTRUCTION CERTIFICATIONS

RULE REQUIREMENT

Rule 2.04.13(2) the Permittee may provide additional monitoring information as required by the approved permit.

Please see Volume 1 Section 2.04.13 for the requirement that these ditch construction certifications be included in the annual reclamation report.

GENERAL DISCUSSION

During 2024, there was not any post-mine channel construction. Further post-mine channel construction will be included in the Annual Reclamation Report.

SECTION 7 –WEED MANAGEMENT

RULE REQUIREMENT

Rule 2.04.13(2) the Permittee may provide additional monitoring information as required by the approved permit.

Please see Volume 1 Section 2.04.13 for the requirement that weed management be included in the annual reclamation report.

GENERAL DISCUSSION

Colowyo utilizes a combination of pickup mounted and UTV mounted boom/hand wand applicators to facilitate chemical control of noxious weeds within the entire permit boundary. Specifically, targeted weed species include A listed knapweed and purple looseftrife, B listed black henbane, bull thistle, Canada thistle, hoary cress, houndstongue, musk thistle, and C listed common burdock, common mullein, downy brome and halogeton.

The below noted reclamation parcels were specifically treated. However, Colowyo makes every attempt to spray all lands within the permit boundary where noxious weeks are present. It is not practical to map each location, and many are too small of patch or individual plant and are random in nature to map out effectively.

- East Pit Reclamation Units
    - Units EP051, EP052, EP056 through EP059
- West Pit Reclamation Units
    - Units WP010, WP014 through WP016, WP018 through WP034
- South Taylor Reclamation Units
    - Units ST001-ST004

Cheat grass was treated with Rejurva in reclamation units WP010

Please see Exhibit 2 for the reclamation units noted above.