TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC.
HEADQUARTERS: P.O. BOX 33695 DENVER, COLORADO 80233-0695 303-452-6111

December 21, 2020

Mrs. Janet Binns
Division of Reclamation, Mining and Safety
1313 Sherman Street, RM 215
Denver, Colorado 80203

**RE: Annual Hydrology Report**
**New Horizon Mine**
**Permit No. C-1981-008**

Dear Mrs. Binns:

Enclosed please find the Annual Hydrology Report for the 2020 Water Year (October 2019 – September 2020) for Elk Ridge Mining and Reclamation, LLC (Elk Ridge) New Horizon Mine. Tri-State Generation and Transmission Association, Inc. (Tri-State) is the parent to Elk Ridge, and in accordance with Rule 4.05.13(4)(c) is submitting the Annual Hydrology Report on behalf of the New Horizon Mine.

If you have any questions about the enclosed report, please contact Tony Tennyson at (970) 824-1232.

Sincerely,

DocuSigned by:
Daniel Casiraro
B70D69F114324DE...

Daniel J. Casiraro
Senior Manager
Environmental Services

DJC:TT:der

Enclosure

cc: Frank Ferris (via email)
G474.11.3(21)c-6

# 2020 Annual Hydrology Report

## Water Year October 1, 2019 to September 30, 2020

**Elk Ridge Mining and Reclamation, LLC**

**New Horizon Mine**

**Permit No. C-1981-008**

**Rule 4.05.13(4)(c) Annual Hydrology Report Requirements**

(i) Water quantity monitoring data for the water year is presented Appendix 1 and Appendix 2 of this report.

(ii) Water quality monitoring data for the water year is presented in Appendix 1 and Appendix 2 of this report. Discharge monitoring reports (DMR) are submitted to the Colorado Department of Public Health and Environment. Copies of each DMR are provided quarterly to the Division during the report year and are included in this report by reference only.

(iii) A written interpretation of the data has been requested by the Division in accordance with Rule 4.05.13(4)(c)(iii) and is included within this annual hydrology report.

The monitoring timeframe for this annual hydrology report is from October 1, 2019 through September 30, 2020.

A description of the surface and ground water monitoring plan including the monitoring frequency is located in Section 2.04.7. All monitoring locations are shown on Map 2.04-7-1A. This above cited information can be located in Permit No. C-1981-008.

**Surface Water**

Surface water monitoring sites are comprise of several sites, which comprise the current upstream and downstream condition and are briefly described below.

- SW-N103 represents the downstream condition on Calamity Draw.
- SW-N108 represents the upstream condition upstream Calamity Draw.
- SW-N1 is located on Tuttle Draw and represents the upstream condition above mining.
- SW-N3 is located on Tuttle Draw and represents the downstream condition below mining.
- SW-N104 is located at the inlet of the 26" HDPE pipe on the West Lateral Ditch upgradient of the mine permit area, and represents the water quality of irrigation water used at the New Horizon Mine, and by all irrigation water users in the vicinity of the mine.

Surface water monitoring data for the water year for all sites can be found in Appendix 1.

New Horizon currently samples each surface water site for a variety of quality parameters. Of all the parameters that are analyzed for, several key indicator parameters have been identified and are addressed annually for the hydrology report. These parameters are lab pH, lab conductivity, TDS, sulfate, calcium, iron, magnesium, and sodium. Water monitoring data for the water year can be found in Appendix 1, and summary graphs of the indicator parameters for all monitoring locations are provided in Appendix 2.

*SW-N108 and SW-N103 – Calamity Draw*

Data for sites SW-N108 (up gradient) and SW-N103 (down gradient), have been complied and are shown on the summary tables below and graphically. Summary tables for indicator parameters are provide below for each site and include data from 2000 to 2020 if available.

| SW-N103 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.2 | 0.1 | 0.4 | 8.4 | 8.0 | 2/18/11 | 8/28/18 |
| Lab Cond. (umhos/cm) | 2,162 | 947 | 2,220 | 3,310 | 1,090 | 2/20/19 | 8/18/16 |
| TDS (mg/l) | 1,899 | 990 | 2,365 | 3,120 | 755 | 2/20/19 | 8/18/16 |
| Sulfate (mg/l) | 1,079 | 624 | 1,634 | 2,050 | 416 | 2/10/15 | 9/18/19 |
| Calcium (mg/l) | 295 | 124 | 305 | 456 | 151 | 2/10/15 | 6/6/19 |
| Iron (tot rec ug/l)[1] | 665 | 465 | 1,510 | 1,730 | 220 | 8/27/13 | 2/18/13 |
| Magnesium (mg/l) | 125 | 77 | 192 | 232 | 40 | 3/16/12 | 8/18/16 |
| Sodium (mg/l) | 78 | 45 | 114 | 140 | 26 | 2/18/13 | 8/18/16 |

| SW-N108 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.1 | 0.3 | 1.3 | 8.4 | 7.1 | 8/21/12 | 8/16/02 |
| Lab Cond. (umhos/cm) | 1,976 | 988 | 2,622 | 3,440 | 818 | 3/15/05 | 8/16/08 |
| TDS (mg/l) | 1,699 | 998 | 2,885 | 3,410 | 525 | 3/16/05 | 9/17/08 |
| Sulfate (mg/l) | 1,000 | 662 | 2,040 | 2,290 | 250 | 3/9/05 | 8/29/08 |
| Calcium (mg/l) | 259 | 125 | 320 | 430 | 110 | 2/18/20 | 9/3/08 |
| Iron (tot rec ug/l)[1] | 1,625 | 2,221 | 10,930 | 11,100 | 170 | 2/24/04 | 2/24/06 |
| Magnesium (mg/l) | 124 | 82 | 245 | 275 | 30 | 3/1/05 | 5/16/18 |
| Sodium (mg/l) | 68 | 51 | 213 | 228 | 15 | 5/12/08 | 5/16/18 |

[1] Iron has been historically reported as total recoverable and it has been analyzed as total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports and with the laboratory. The indicator graphs in Appendix 4 provide historical data for iron in total recoverable and total dissolved.

A review of the water year data indicates one maximum was captured for calcium at the up gradient location SW-N108. No other minimums or maximums occurred during the report year.

Comparing the up gradient and down gradient condition for TDS, as shown on the graphs, SW-N103 and SW-N108 track almost identically showing season fluctuations and influences of irrigation. Both sites are trending downward in TDS values. With SW-N103 tracking similar to the SW-N108 it indicates impacts from mining and reclamation activities have been minimized.

*SW-N1, SW-N3, and SW-N104 – Tuttle Draw*

Data for sites SW-N1 (up gradient), SW-N3 (down gradient), and SW-N104 (inlet of West Lateral Ditch) have been complied and shown in summary tables below and graphically. Summary tables for indicator parameters are provide below for each site and include data from 2000 to 2020 if available.

| SW-N1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.3 | 0.3 | 1.4 | 8.5 | 7.1 | 2/18/11 | 11/13/18 |
| Lab Cond. (umhos/cm) | 946 | 606 | 2,613 | 2,910 | 297 | 9/26/12 | 6/5/19 |
| TDS (mg/l) | 714 | 568 | 2,509 | 2,690 | 181 | 9/26/12 | 8/24/07 |
| Sulfate (mg/l) | 323 | 300 | 1,653 | 1,700 | 48 | 9/26/12 | 6/5/19 |
| Calcium (mg/l) | 119 | 77 | 455 | 496 | 41 | 9/26/12 | 6/5/19 |
| Iron (tot rec ug/l)[1] | 1,258 | 1,763 | 8,890 | 9,050 | 160 | 8/16/07 | 2/24/06 |
| Magnesium (mg/l) | 54 | 50 | 196 | 204 | 8 | 9/26/12 | 8/17/07 |
| Sodium (mg/l) | 21 | 17 | 61 | 66 | 5 | 2/17/06 | 8/20/07 |

| SW-N3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.2 | 0.2 | 1.4 | 8.6 | 7.2 | 9/4/08 | 8/16/02 |
| Lab Cond. (umhos/cm) | 1,843 | 937 | 3,240 | 3,640 | 400 | 2/10/15 | 8/13/07 |
| TDS (mg/l) | 1,594 | 981 | 3,208 | 3,440 | 232 | 2/10/15 | 8/24/17 |
| Sulfate (mg/l) | 910 | 612 | 2,130 | 2,220 | 90 | 2/10/15 | 8/17/07 |
| Calcium (mg/l) | 253 | 136 | 504 | 558 | 54 | 8/31/02 | 8/17/07 |
| Iron (tot rec ug/l)[1] | 1,140 | 1,726 | 10,470 | 10,600 | 130 | 8/16/07 | 5/17/08 |
| Magnesium (mg/l) | 113 | 74 | 246 | 259 | 13 | 2/10/15 | 11/21/07 |
| Sodium (mg/l) | 59 | 46 | 204 | 212 | 8 | 2/20/12 | 8/20/07 |

[1] Iron has been historically reported as total recoverable and it has been analyzed as total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports and with the laboratory. The indicator graphs in Appendix 4 provide historical data for iron in total recoverable and total dissolved.

A review of the water year data indicates that all sample results trended within previous results, with the mean of all the indicator parameters remaining relatively constant. As shown on the graphs for all indicator parameters, SW-N3 is showing slight increases in laboratory conductivity, TDS, sulfate, and sodium, which is consistent with mining related impacts down gradient of a mining operation. Monitoring results also show normal seasonal fluctuations, including influences from local irrigation water.

| SW-N104 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.2 | 0.4 | 2.3 | 8.6 | 6.3 | 5/16/18 | 8/16/02 |
| Lab Cond. (umhos/cm) | 351 | 63 | 244 | 452 | 208 | 12/4/02 | 6/1/20 |
| TDS (mg/l) | 221 | 45 | 168 | 291 | 123 | 12/13/02 | 5/28/08 |
| Sulfate (mg/l) | 87 | 30 | 126 | 130 | 4 | 8/15/02 | 5/16/08 |
| Calcium (mg/l) | 56 | 11 | 39 | 73 | 34 | 9/24/04 | 6/1/20 |
| Iron (tot rec ug/l) | 1,580 | 2,073 | 8,680 | 8,780 | 100 | 8/16/07 | 9/21/04 |
| Magnesium (mg/l) | 7 | 1 | 6 | 9 | 3 | 12/5/02 | 6/1/20 |
| Sodium (mg/l) | 5 | 1 | 5 | 7 | 3 | 8/30/02 | 6/1/20 |

SW-N104 provides an overview of the water quality utilized for irrigation at New Horizon Mine, and it is representative of the quality of irrigation water utilized by every water user in the vicinity of the New Horizon. There are no trends or impacts associated with this data set as is it not impacted by mining activities, and New Horizon Mine does not have any control on the quality of water delivered through the Colorado Cooperative Company Ditch for irrigation purposes.

**Ground Water**

New Horizon currently samples each groundwater site for a variety of quality parameters. Of all the parameters that are analyzed for, several key indicator parameters are identified and are addressed annually for the hydrology report. These are lab pH, lab conductivity, TDS, sulfate, calcium, iron, magnesium, sodium and elevation. Water monitoring data for the water year can be found in Appendix 3, and summary graphs of the indicator parameters are provided in Appendix 4. Groundwater elevations where data is available are provided in Appendix 5.

*Wells GW-N16P1, GW-N17P1, and GW-N18P1*

GW-N16P1 monitors the underburden aquifer, GW-N17P1 monitors the Dakota coal aquifer, and GW-N18P1 monitors the overburden aquifer. This cluster of wells monitors the groundwater quality directly below to the mining area. It should be noted that vast majority of the reclamation areas, except for three remaining acres of a reclaimed haul raod, directly adjacent to this cluster of wells has been Phase III released and removed from the permit boundary terminating regulatory jurisdiction.

Summary of the indicator parameters for each well are provided as follows:

| GW-N16P1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.3 | 0.2 | 1.6 | 8.6 | 7.0 | 2/23/09 | 6/1/03 |
| Lab Cond. (umhos/cm) | 3,168 | 758 | 4,107 | 4,110 | 3 | 12/16/19 | 11/19/05 |
| TDS (mg/l) | 2,286 | 550 | 1,520 | 3,010 | 1,490 | 8/8/17 | 12/13/05 |
| Sulfate (mg/l) | 1,132 | 426 | 1,180 | 1,710 | 530 | 8/8/17 | 12/1/05 |
| Calcium (mg/l) | 43 | 16 | 45 | 65 | 20 | 6/24/19 | 2/17/06 |
| Iron (tot rec ug/l) | 95 | 70 | 340 | 350 | 10 | 9/24/20 | 3/23/10 |
| Manganese (mg/l)[1] | 0.02 | 0.02 | 0.07 | 0.08 | 0.003 | 3/8/05 | 9/13/04 |
| Sodium (mg/l) | 692 | 132 | 428 | 905 | 477 | 9/24/19 | 12/6/03 |
| Magnesium (mg/l) | 19 | 7 | 29 | 29 | 1 | 8/8/18 | 2/26/07 |

| GW-N17P1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.2 | 0.3 | 2.2 | 8.9 | 6.7 | 5/18/09 | 6/1/03 |
| Lab Cond. (umhos/cm) | 4,571 | 378 | 1,750 | 5,240 | 3,490 | 11/28/06 | 5/18/09 |
| TDS (mg/l) | 3,587 | 520 | 2,350 | 4,810 | 2,460 | 12/11/19 | 5/27/09 |
| Sulfate (mg/l) | 2,001 | 379 | 1,750 | 2,850 | 1,100 | 11/15/17 | 5/21/09 |
| Calcium (mg/l) | 130 | 114 | 369 | 381 | 12 | 8/28/18 | 9/9/02 |
| Iron (tot rec ug/l) | 2,822 | 6,635 | 29,490 | 29,500 | 10 | 8/8/17 | 3/23/10 |
| Manganese (mg/l)[1] | 0.07 | 0.08 | 0.30 | 0.30 | 0.003 | 2/26/18 | 8/27/03 |
| Sodium (mg/l) | 907 | 137 | 581 | 1,240 | 659 | 12/13/02 | 2/26/18 |
| Magnesium (mg/l) | 92 | 80 | 275 | 275 | 1 | 8/28/18 | 2/26/07 |

| GW-N18P1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 7.7 | 0.3 | 2.3 | 8.5 | 6.2 | 6/2/06 | 6/1/03 |
| Lab Cond. (umhos/cm) | 2,689 | 936 | 4,990 | 6,190 | 1,200 | 2/22/10 | 5/28/04 |
| TDS (mg/l) | 2,340 | 810 | 3,166 | 4,040 | 874 | 3/1/10 | 6/28/04 |
| Sulfate (mg/l) | 1,374 | 560 | 2,140 | 2,520 | 380 | 3/28/03 | 9/10/04 |
| Calcium (mg/l) | 367 | 104 | 420 | 592 | 172 | 3/16/20 | 9/15/04 |
| Iron (tot rec ug/l) | 677 | 2,651 | 16,690 | 16,700 | 10 | 2/23/10 | 8/11/16 |
| Manganese (mg/l)[1] | 0.11 | 0.27 | 1.44 | 1.44 | 0.003 | 8/29/08 | 6/2/03 |
| Sodium (mg/l) | 131 | 187 | 866 | 878 | 12 | 2/23/10 | 6/6/04 |
| Magnesium (mg/l) | 152 | 62 | 343 | 344 | 1 | 2/26/09 | 2/26/07 |

[1] Manganese has been historically reported as dissolved and it has been analyzed as total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports. The indicator graphs in Appendix 4 provide historical data for manganese in dissolved and total dissolved.

*Well GW-N3*

GW-N3 monitors a backfill aquifer up gradient in pre-law mine that was not part of the New Horizon Mine. The GW-N3 well is located north of Tuttle Draw and north of the New Horizon permit area.

Summary of the indicator parameters for GW-N3 is provided as follows:

| GW-N3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 7.7 | 0.1 | 0.7 | 8.0 | 7.3 | 2/25/08 | 5/14/08 |
| Lab Cond. (umhos/cm) | 2,549 | 230 | 1,200 | 3,050 | 1,850 | 3/8/07 | 7/26/18 |
| TDS (mg/l) | 2,258 | 176 | 810 | 2,530 | 1,720 | 12/10/19 | 5/20/15 |
| Sulfate (mg/l) | 1,306 | 120 | 582 | 1,500 | 918 | 11/14/12 | 5/17/16 |
| Calcium (mg/l) | 418 | 27 | 132 | 469 | 337 | 8/29/08 | 5/20/15 |
| Iron (tot rec ug/l) | 7,885 | 2,614 | 16,920 | 22,000 | 5,080 | 11/16/17 | 5/20/15 |
| Manganese (mg/l)[1] | 1.26 | 0.16 | 1.0 | 1.5 | 0.496 | 12/10/19 | 3/2/07 |
| Sodium (mg/l) | 57 | 10 | 59 | 101 | 42 | 3/2/07 | 5/20/15 |
| Magnesium (mg/l) | 147 | 16 | 76 | 184 | 108 | 3/2/07 | 5/20/15 |

[1] Manganese has been historically reported as dissolved and it has been analyzed at total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports. The indicator graphs in Appendix 4 provide historical data for manganese in dissolved and total dissolved.

A review of the water year for this well indicates maximums occurred for TDS and Manganese. As shown on the graphs for indicator parameters, the majority of the indicator parameters are trending down with the exception of iron, which is trending upward. This well is completed into pre-law mine backfill that is up gradient of the New Horizon Mine. The data provides water quality conditions for an pre-law mine saturated backfill; therefore the data is representative of impacts (increase in iron) from the pre-law mine's saturated backfill, and does not provided any potential value to evaluate impacts from the New Horizon Mine.

*Wells GW-N36, GW-N37, and GW-N38*

GW-N36 monitors the overburden aquifer, GW-N37 monitors the Dakota coal aquifer, and GW-N38 monitors the underburden aquifer. This cluster of wells represent the groundwater quality up gradient of the mining area.

Summary of the indicator parameters for each well are provided as follows:

| GW-N36 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 7.6 | 0.5 | 2.7 | 8.5 | 5.8 | 2/19/14 | 5/15/06 |
| Lab Cond. (umhos/cm) | 1,415 | 472 | 1,480 | 1,940 | 460 | 11/20/07 | 6/9/20 |
| TDS (mg/l) | 1,003 | 346 | 1,020 | 1,380 | 360 | 11/11/15 | 6/9/20 |
| Sulfate (mg/l) | 417 | 111 | 406 | 572 | 166 | 11/16/16 | 6/9/20 |
| Calcium (mg/l) | 148 | 51 | 176 | 216 | 40 | 2/23/11 | 5/23/18 |
| Iron (tot rec ug/l) | 774 | 860 | 4,441 | 4,490 | 49 | 9/22/20 | 6/9/20 |
| Manganese (mg/l)[1] | 0.12 | 0.08 | 0.37 | 0.40 | 0.032 | 8/29/08 | 5/20/15 |
| Sodium (mg/l) | 68 | 26 | 83 | 101 | 18 | 2/23/11 | 6/9/20 |
| Magnesium (mg/l) | 71 | 28 | 96 | 112 | 17 | 2/23/11 | 5/23/18 |

| GW-N37 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 4.9 | 0.6 | 2.5 | 6.4 | 3.9 | 5/18/16 | 5/15/06 |
| Lab Cond. (umhos/cm) | 495 | 73 | 266 | 612 | 346 | 5/13/06 | 7/26/18 |
| TDS (mg/l) | 314 | 34 | 167 | 393 | 226 | 5/25/06 | 7/25/17 |
| Sulfate (mg/l) | 194 | 31 | 123 | 270 | 147 | 5/23/06 | 7/26/18 |
| Calcium (mg/l) | 45 | 9 | 32 | 61 | 30 | 5/11/06 | 7/26/18 |
| Iron (tot rec ug/l) | 816 | 1,382 | 4,559 | 4,600 | 41 | 5/18/11 | 7/26/18 |
| Manganese (mg/l)[1] | 0.03 | 0.01 | 0.05 | 0.06 | 0.014 | 5/18/16 | 8/29/12 |
| Sodium (mg/l) | 17 | 2 | 8 | 22 | 14 | 5/31/17 | 5/20/15 |
| Magnesium (mg/l) | 19 | 4 | 16 | 27 | 11 | 5/11/06 | 7/26/18 |

| GW-N38 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.0 | 0.1 | 0.3 | 8.1 | 7.8 | 8/25/08 | 6/24/19 |
| Lab Cond. (umhos/cm) | 1,261 | 191 | 475 | 1,410 | 935 | 6/24/19 | 5/13/11 |
| TDS (mg/l) | 933 | 191 | 525 | 1,160 | 525 | 6/24/19 | 5/23/11 |
| Sulfate (mg/l) | 406 | 79 | 202 | 472 | 270 | 6/24/19 | 5/18/11 |
| Calcium (mg/l) | 268 | 47 | 118 | 308 | 190 | 8/17/09 | 5/16/11 |
| Iron (tot rec ug/l) | 3,667 | 2,826 | 5,370 | 6,860 | 1,490 | 6/24/19 | 5/18/11 |
| Manganese (mg/l)[1] | 0.0065 | 0.009 | 0.0201 | 0.0226 | 0.0025 | 6/24/19 | 8/29/08 |
| Sodium (mg/l) | 14 | 7 | 17 | 24 | 8 | 6/24/19 | 5/16/11 |
| Magnesium (mg/l) | 18 | 3 | 8 | 23 | 15 | 6/24/19 | 5/16/11 |

[1] Manganese has been historically reported as dissolved and it has been analyzed at total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports. The indicator graphs in Appendix 4 provide historical data for manganese in dissolved and total dissolved.

A review of the water year for this series of wells up gradient to the mining area indicates several minimums occurred at GW-N36 for laboratory conductivity, TDS, total recoverable iron, sulfate, and sodium. One maximum occurred at GW-36 for total recoverable iron. GW-38 was dry all water year. The wells in these series tracked within normal seasonal fluctuations. These three wells were not influenced by the mining and reclamation activities that occurred at New Horizon, and express the up gradient condition above mining.

*Wells GW-N39 and GW-N40*

GW-N39 monitors the alluvial aquifer which represents the up gradient condition on Calamity Draw. GW-N40 monitors the alluvial aquifer which represents the down gradient condition on Calamity Draw.

Summary of the indicator parameters for each well are provided as follows:

| GW-N39 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 7.5 | 0.3 | 1.5 | 7.9 | 6.4 | 7/26/17 | 8/16/02 |
| Lab Cond. (umhos/cm) | 2,837 | 218 | 1,140 | 3,260 | 2,120 | 3/15/05 | 7/26/18 |
| TDS (mg/l) | 2,668 | 177 | 950 | 3,230 | 2,280 | 9/4/02 | 5/18/16 |
| Sulfate (mg/l) | 1,573 | 136 | 760 | 2,020 | 1,260 | 8/15/02 | 5/18/16 |
| Calcium (mg/l) | 609 | 32 | 152 | 687 | 535 | 8/19/11 | 9/15/04 |
| Iron (tot rec ug/l) | 23,155 | 5,660 | 25,800 | 39,200 | 13,400 | 6/9/20 | 6/24/19 |
| Manganese (mg/l)[1] | 9.6 | 1.1 | 4.7 | 11.7 | 7.0 | 3/8/05 | 2/9/16 |
| Sodium (mg/l) | 40 | 8 | 33 | 64 | 31 | 3/9/05 | 2/9/16 |
| Magnesium (mg/l) | 102 | 18 | 99 | 174 | 75 | 8/30/02 | 2/9/16 |

| GW-N40 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 7.8 | 0.2 | 1.3 | 8.2 | 6.9 | 11/21/09 | 8/16/02 |
| Lab Cond. (umhos/cm) | 3,089 | 471 | 2,890 | 4,930 | 2,404 | 9/22/20 | 9/23/19 |
| TDS (mg/l) | 2,880 | 549 | 3,500 | 5,270 | 1,770 | 9/22/20 | 9/23/19 |
| Sulfate (mg/l) | 1,783 | 321 | 2,150 | 3,080 | 930 | 8/11/16 | 9/23/19 |
| Calcium (mg/l) | 486 | 76 | 365 | 650 | 285 | 3/19/03 | 9/23/19 |
| Iron (tot rec ug/l) | 2,837 | 4,590 | 25,800 | 26,000 | 200 | 11/22/10 | 11/21/11 |
| Manganese (mg/l)[1] | 2.19 | 0.76 | 4.35 | 4.61 | 0.26 | 2/15/18 | 9/17/05 |
| Sodium (mg/l) | 107 | 66 | 418 | 468 | 50 | 8/11/16 | 11/18/11 |
| Magnesium (mg/l) | 193 | 67 | 363 | 474 | 111 | 9/22/20 | 9/23/19 |

[1] Manganese has been historically reported as dissolved and it has been analyzed at total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports. The indicator graphs in Appendix 4 provide historical data for manganese in dissolved and total dissolved.

A review of the water year data indicates a maximum occurred for total recoverable iron at GW-N39. Several maximum values for laboratory electrical conductivity, TDS, and magnesium were recorded at GW-N40. As shown on the graphs for indicator parameters, calcium is trending down at GW-40, electrical conductivity at both wells tracks similar, iron is increasing at the up gradient GW-39 well, while magnesium is increasing at the down gradient GW-40 well. Laboratory pH for both wells tracks very similar, sodium is showing a slight increase at GW-40, while sulfate at both wells is trending downward. Finally, TDS tracks very similar for both wells.

*Wells GW-N41, GW-N42, and GW-N43*

GW-N41 monitors the overburden aquifer, GW-N42 monitors the Dakota coal aquifer, and GW-N43 monitors the underburden aquifer. This cluster of wells monitors groundwater quality up gradient of the mining area.

Summary of the indicator parameters for each well are provided as follows:

| GW-N41 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.0 | 0.4 | 2.1 | 8.3 | 6.2 | 7/26/17 | 6/1/03 |
| LabCond. (umhos/cm) | 733 | 128 | 592 | 1,020 | 428 | 5/29/07 | 5/20/09 |
| TDS (mg/l) | 450 | 76 | 363 | 609 | 246 | 5/30/07 | 6/9/09 |
| Sulfate (mg/l) | 114 | 32 | 134 | 180 | 46 | 5/19/07 | 5/27/09 |
| Calcium (mg/l) | 85 | 14 | 57 | 116 | 59 | 5/23/07 | 5/28/09 |
| Iron (tot rec ug/l) | 974 | 1147 | 3,430 | 3,480 | 50 | 9/22/20 | 7/26/17 |
| Manganese (mg/l)[1] | 0.006 | 0.015 | 0.084 | 0.087 | 0.003 | 9/23/19 | 6/2/03 |
| Sodium (mg/l) | 14 | 7 | 25 | 32 | 6 | 6/6/04 | 5/23/18 |
| Magnesium (mg/l) | 42 | 10 | 45 | 63 | 18 | 5/15/06 | 5/28/09 |

| GW-N42 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 6.0 | 0.5 | 0.9 | 6.5 | 5.9 | 5/26/02 | 8/16/02 |
| Lab Cond. (umhos/cm) | 709 | 84 | 152 | 764 | 612 | 5/26/02 | 6/1/03 |
| TDS (mg/l) | 469 | 72 | 131 | 517 | 386 | 9/4/02 | 6/16/03 |
| Sulfate (mg/l) | 243 | 74 | 140 | 300 | 160 | 8/15/02 | 6/6/03 |
| Calcium (mg/l) | 71 | 10 | 18 | 78 | 60 | 8/30/02 | 6/2/03 |
| Iron (tot rec ug/l) | - | - | - | - | - | - | - |
| Manganese (mg/l)[1] | 0.06 | .08 | 0.15 | 0.16 | 0.01 | 8/30/02 | 6/2/03 |
| Sodium (mg/l) | 33 | 6 | 3 | 36 | 30 | 6/4/03 | 6/9/02 |
| Magnesium (mg/l) | 37 | 5 | 9 | 41 | 32 | 6/9/02 | 6/2/03 |

| GW-N43 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 4.7 | 1.1 | 3.9 | 7.5 | 3.6 | 3/17/20 | 8/16/02 |
| Lab Cond. (umhos/cm) | 795 | 338 | 1,381 | 1,840 | 459 | 3/17/20 | 8/19/15 |
| TDS (mg/l) | 539 | 309 | 1,284 | 1,550 | 266 | 3/17/20 | 8/19/15 |
| Sulfate (mg/l) | 337 | 168 | 632 | 805 | 173 | 3/17/20 | 8/19/15 |
| Calcium (mg/l) | 75 | 41 | 160 | 193 | 33 | 3/17/20 | 9/23/19 |
| Iron (tot rec ug/l) | 839 | 1,684 | 7,210 | 7,390 | 180 | 3/17/20 | 5/31/17 |
| Manganese (mg/l)[1] | 0.30 | 0.22 | 0.90 | 1.02 | 0.12 | 5/14/08 | 8/19/15 |
| Sodium (mg/l) | 28 | 7 | 31 | 50 | 19 | 5/14/08 | 9/23/19 |
| Magnesium (mg/l) | 31 | 25 | 99 | 113 | 14 | 3/17/20 | 9/23/19 |

[1] Manganese has been historically reported as dissolved and it has been analyzed at total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports. The indicator graphs in Appendix 4 provide historical data for manganese in dissolved and total dissolved.

A review of the water year data indicates that a maximum value for total recoverable iron occurred at GW-N41. Well GW-N41 was dry for the March sample, and GW-N42 was dry for the entire water year. As shown on the graphs for indicator parameters (where data is available as GW-N42 is typically dry), GW-N41 and GW-N43 track similar with sampling results indicating normal seasonal fluctuations including influences for seasonal irrigation for the up gradient condition above where mining occurred.

*Wells GW-N44, GW-N45, and GW-N46*

GW-N44 monitors the overburden aquifer, GW-N45 monitors the Dakota coal aquifer, and GW-N46 monitors the underburden aquifer. This cluster of wells monitors the groundwater quality down gradient of the mining area.

Summary of the indicator parameters for each well are provided as follows:

| GW-N44 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 7.9 | 0.3 | 1.9 | 8.6 | 6.7 | 2/18/14 | 6/1/03 |
| Lab Cond. (umhos/cm) | 3,216 | 1,609 | 10,810 | 12,300 | 1,490 | 6/6/17 | 8/9/18 |
| TDS (mg/l) | 3,026 | 1,821 | 12,380 | 13,800 | 1,420 | 6/6/17 | 8/3/17 |
| Sulfate (mg/l) | 1,917 | 1,323 | 8,798 | 9,510 | 712 | 6/6/17 | 8/9/18 |
| Calcium (mg/l) | 372 | 80 | 362 | 514 | 152 | 3/13/02 | 6/6/17 |
| Iron (tot rec ug/l) | 5,037 | 12,232 | 61,573 | 61,600 | 27 | 5/17/12 | 6/26/19 |
| Manganese (mg/l)[1] | 0.43 | 0.67 | 4.51 | 4.51 | 0.00 | 2/27/18 | 8/23/11 |
| Sodium (mg/l) | 168 | 187 | 1,321 | 1,350 | 29 | 6/6/17 | 11/12/13 |
| Magnesium (mg/l) | 271 | 249 | 1,892 | 1,970 | 97 | 6/6/17 | 11/12/13 |

| GW-N45 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.2 | 0.2 | 1.7 | 8.8 | 7.1 | 2/19/14 | 6/1/03 |
| Lab Cond. (umhos/cm) | 7,393 | 3,364 | 12,840 | 14,700 | 1,860 | 5/20/15 | 6/6/17 |
| TDS (mg/l) | 7,602 | 5,119 | 17,140 | 18,600 | 1,460 | 11/14/12 | 6/6/17 |
| Sulfate (mg/l) | 4,604 | 3,877 | 13,030 | 13,400 | 370 | 8/17/15 | 12/28/01 |
| Calcium (mg/l) | 110 | 63 | 279 | 307 | 28 | 11/14/12 | 2/17/06 |
| Iron (tot rec ug/l) | 1,470 | 3,459 | 21,600 | 21,700 | 100 | 7/14/20 | 11/14/12 |
| Manganese (mg/l)[1] | 0.42 | 0.63 | 1.92 | 1.92 | .003 | 3/14/17 | 6/6/17 |
| Sodium (mg/l) | 1,067 | 255 | 1,479 | 1,520 | 41 | 11/14/12 | 6/6/17 |
| Magnesium (mg/l) | 858 | 847 | 2,734 | 2,800 | 66 | 11/14/12 | 3/13/02 |

| GW-N46 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter** | **Mean** | **Std dev** | **Range** | **Max.** | **Min.** | **Max at** | **Min at** |
| Lab pH | 8.5 | 0.2 | 2.1 | 8.8 | 6.7 | 2/25/08 | 6/1/03 |
| Lab Cond. (umhos/cm) | 3,168 | 198 | 910 | 3,580 | 2,670 | 2/17/06 | 12/20/01 |
| TDS (mg/l) | 2,176 | 104 | 550 | 2,540 | 1,990 | 7/19/05 | 11/12/13 |
| Sulfate (mg/l) | 747 | 63 | 264 | 860 | 596 | 1/9/02 | 2/18/14 |
| Calcium (mg/l) | 15 | 31 | 257 | 264 | 7 | 6/4/05 | 2/9/16 |
| Iron (tot rec ug/l) | 1,122 | 5,685 | 35,690 | 35,700 | 10 | 6/16/20 | 3/23/10 |
| Manganese (mg/l)[1] | 0.01 | 0.01 | 0.08 | 0.08 | 0.003 | 1/3/02 | 2/10/15 |
| Sodium (mg/l) | 750 | 44 | 216 | 833 | 617 | 3/9/05 | 2/9/16 |
| Magnesium (mg/l) | 9 | 3 | 24 | 30 | 6 | 6/4/05 | 2/9/16 |

[1] Manganese has been historically reported as dissolved and it has been analyzed at total dissolved for this water year. This discrepancy will be corrected in future hydrology monitoring reports. The indicator graphs in Appendix 4 provide historical data for manganese in dissolved and total dissolved.

A review of the water year for this series of wells down gradient to the mining area indicates two maximum values for total recoverable iron occurred at GW-N45 and GW-N46 during the water year. Given the extremely high results from these two samples, they appears to be outliers in the data set. No other minimum or and a maximum values were record. As shown on the graphs for the indicator parameters, laboratory electrical conductivity, calcium, magnesium, manganese, sulfate, sodium, and TDS are slightly trending upward at GW-N45. All the other parameters for the other wells track similar to each other and indicate normal fluctuations including influences from irrigation.

# Appendix 1
# Surface Water Monitoring Data

**New Horizon Mine**

**Analysis Results by Date (column) and Parameter (row)**

**Date Range: 10/01/2019 to 09/30/2020**

**Site: SW-N1**

| | 11/18/2019 | 2/18/2020 | 5/26/2020 | 8/25/2020 |
|---|---|---|---|---|
| Al, tot rec, ug/L | 210. | <50. | 1100. | 1400. |
| As, TD, mg/L | 0.00070 | <0.0010 | 0.00070 | 0.0020 |
| Ca, diss, mg/L | 180. | 170 | 60. | 110. |
| Cd, diss, mg/L | <0.000025 | <0.000025 | <0.000025 | <0.000025 |
| Cl, diss, mg/L | 16. | 19 | 4.4 | 7.4 |
| Cu, diss, mg/L | <0.00040 | <0.00040 | 0.0013 | 0.00090 |
| Fe, TD, mg/L | 0.20 | 0.05 | | 0.040 |
| HCO3, mg/L | 400. | 360 | 120. | 280. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| Mg, diss, mg/L | 93. | 99 | 15. | 34. |
| Mn, TD, mg/L | 0.25 | 0.32 | 0.0092 | 0.070 |
| Na, diss, mg/L | 31. | 32 | 8.2 | 13. |
| NH3 as N, diss, mg/L | <0.025 | <0.025 | <0.025 | <0.025 |
| NO2 + NO3, diss, mg/L | <0.010 | <0.010 | 0.050 | <0.010 |
| NO2, diss, mg/L | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | <0.010 | <0.010 | 0.050 | <0.010 |
| Pb, TD, mg/L | <0.00010 | <0.00050 | 0.00020 | <0.00025 |
| pH (field), pH | 7.630 | 7.54 | 7.900 | 8.500 |
| pH (lab), pH | 8.300 | 8.3 | 8.500 | 8.400 |
| PO4, tot, mg/L | 0.030 | 0.030 | 0.060 | 0.030 |
| SAR, ratio | 0.480 | 0.49 | 0.250 | 0.270 |
| Se, diss, mg/L | 0.00020 | 0.0003 | 0.00050 | 0.00020 |
| SO4, diss, mg/L | 480. | 560 | 110. | 190. |
| TDS, mg/L | 1200. | 2400 | 300. | 580. |
| TSS, mg/L | 8.0 | <2.5 | 21. | 21. |
| Zn, TD, mg/L | 0.0090 | <0.020 | <0.0050 | 0.080 |

**New Horizon Mine**
**Analysis Results by Date (column) and Parameter (row)**
**Date Range: 10/01/2019 to 09/30/2020**
**Site: SW-N3**

| | 11/18/2019 | 2/18/2020 | 5/26/2020 | 8/26/2020 |
|---|---|---|---|---|
| Al, tot rec, ug/L | <50. | <50. | 680. | 160. |
| As, TD, mg/L | 0.00050 | <0.00050 mfm | 0.00060 | 0.00080 |
| Ca, diss, mg/L | 440. | 420 | 110. | 270. |
| Cd, diss, mg/L | <0.000050 | <0.000050 | <0.000025 | <0.000025 |
| Cl, diss, mg/L | 17. | 19 | 6.5 | 12. |
| Cu, diss, mg/L | <0.0010 | <0.0010 | 0.0014 | <0.00040 |
| Fe, TD, mg/L | 0.060 | 0.07 | | 0.069 |
| HCO3, mg/L | 430. | 410 | 180. | 300. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| Mg, diss, mg/L | 190. | 190 | 42. | 110. |
| Mn, TD, mg/L | 0.54 | 0.61 | 0.049 | 0.35 |
| Na, diss, mg/L | 92. | 90 | 22. | 52. |
| NH3 as N, diss, mg/L | 0.94 | 0.72 | <0.025 | 0.39 |
| NO2 + NO3, diss, mg/L | 0.35 | 0.28 | 0.090 | 0.19 |
| NO2, diss, mg/L | 0.020 | <0.0050 | <0.0050 | 0.020 |
| NO3, diss, mg/L | 0.32 | 0.28 | 0.090 | 0.17 |
| Pb, TD, mg/L | <0.00010 | <0.00025 | 0.00020 | 0.00010 |
| pH (field), pH | 7.800 | 8.1 | 7.820 | 9.200 |
| pH (lab), pH | 8.200 | 8.3 | 8.500 | 8.200 |
| PO4, tot, mg/L | <0.015 | <0.015 | 0.060 | <0.015 |
| SAR, ratio | 0.930 | 0.93 | 0.450 | 0.680 |
| Se, diss, mg/L | <0.00010 | <0.00010 mfm | 0.00050 | 0.00020 |
| SO4, diss, mg/L | 1200. | 1700 | 350. | 930. |
| TDS, mg/L | 2900. | 2900 | 710. | 1700. |
| TSS, mg/L | 7.0 | 5 | 11. | 5.0 |
| Zn, TD, mg/L | <0.0040 | <0.010 | 0.11 | 0.0060 |

**New Horizon Mine**
**Analysis Results by Date (column) and Parameter (row)**
**Date Range: 10/01/2019 to 09/30/2020**
**Site: SW-N103**

| | 11/18/2019 | 2/19/2020 | 5/26/2020 | 8/26/2020 |
|---|---|---|---|---|
| Al, tot rec, ug/L | 200. | 100 | 300. | 1200. |
| As, TD, mg/L | 0.00050 | <0.00050 mfm | 0.0013 | 0.0020 |
| Ca, diss, mg/L | 450. | 440 | 180. | 210. |
| Cl, diss, mg/L | 21. | 25.7 | 10. | 11. |
| Cu, TD, mg/L | 0.002 | 0.004 | 0.002 | 0.004 |
| Cd, TD, mg/L | 0.0001 | 0.003 | 0.001 | 0.003 |
| Fe, TD, mg/L | 0.020 | 0.17 | 0.050 | 0.070 |
| HCO3, mg/L | 340. | 330 | 200. | 230. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| Mg, diss, mg/L | 180. | 200 | 57. | 61. |
| Mn, TD, mg/L | 0.42 | 0.12 | 0.24 | 0.32 |
| Na, diss, mg/L | 120. | 120 | 40. | 49. |
| NH3 as N, diss, mg/L | <0.025 | 0.26 | <0.025 | <0.025 |
| NO2 + NO3, diss, mg/L | 0.81 | 1 | 0.19 | 0.24 |
| NO2, diss, mg/L | * | * | * | * |
| NO3, diss, mg/L | * | * | * | * |
| Pb, TD, mg/L | <0.00010 | <0.00025 mfm | <0.00010 | <0.00025 |
| pH (lab), pH | 8.20 | 8.14 | 8.24 | 8.13 |
| pH (field), pH | 8.100 | 8.02 | 7.740 | 8.320 |
| PO4, tot, mg/L | ** | ** | ** | ** |
| P, tot, mg/l | 0.03 | 0.09 | 0.15 | 0.15 |
| SAR, ratio | 1.200 | 1.2 | 0.660 | 0.770 |
| Se, TD, mg/L | 0.009 | 0.008 | 0.006 | 0.005 |
| SO4, diss, mg/L | 1200. | 1600 | 520. | 710. |
| TDS, mg/L | 3000. | 3100 | 1000. | 1300. |
| TSS, mg/L | 5.0 | 8 | 8.0 | 28. |
| Zn, TD, mg/L | 0.0090 | <0.010 | <0.0050 | <0.015 |

*Due to laboratory errors Nitrite (NO2) and Nitrate (NO3) were not anaylzed.

**Due to laboratory error Phosphate was not analyzed, but Phospherous, total was anaylzed. Data for Phosporus has been provided.

**New Horizon Mine**
**Analysis Results by Date (column) and Parameter (row)**
**Date Range: 10/01/2019 to 09/30/2020**
**Site: SW-N104**

| | 5/4/2020 | 5/26/2020 | 6/1/2020 | 7/6/2020 | 8/3/2020 | 8/26/2020 | 9/1/2020 |
|---|---|---|---|---|---|---|---|
| Al, diss, ug/L | 0.06 | 1400. | <0.05 | <0.05 | <0.05 | 480. | |
| As, TD, mg/L | 0.0007 | 0.00070 | | | | <0.0010 | |
| Ca, diss, mg/L | 46. | 49. | 34. | 53. | 59. | 66. | 67. |
| Cl, diss, mg/L | 2.9 | 2.4 | 1.5 | 2.2 | 3.0 | 3.5 | 3.7 |
| Cd, TD, mg/L | 0.0001 | | | | | 0.0005 | |
| Cu, diss, mg/L | 0.0020 | | 0.0021 | 0.0022 | 0.0010 | | 0.0011 |
| Fe, tot rec, mg/L | 2050 | | 2780 | 65 | 580 | | 220 |
| HCO3, mg/L | 85.5 | 77.2 | 56 | 79.4 | 85.2 | 88.3 | 88.3 |
| Hg, diss, mg/L | | <0.00010 | | | | <0.00010 | |
| Mg, diss, mg/L | 6.2 | 5.3 | 3.4 | 5.4 | 6.0 | 7.3 | 7.7 |
| Mn, diss, mg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Na, diss, mg/L | 4.4 | 4.1 | 2.5 | 4.0 | 4.5 | 5.5 | 5.8 |
| NH3 as N, diss, mg/L | <0.050 | <0.025 | <0.025 | <0.025 | <0.025 | <0.025 | <0.025 |
| NO2 + NO3, diss, mg/L | 0.11 | 0.090 | 0.15 | 0.12 | 0.25 | <0.010 | <0.010 |
| NO2, diss, mg/L | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | | <0.0050 |
| NO3, diss, mg/L | 0.11 | | 0.15 | 0.12 | 0.25 | | <0.010 |
| Pb, diss, mg/L | 0.0002 | | 0.0003 | 0.0003 | 0.0001 | | <0.0001 |
| pH (field), pH | 8.400 | 8.210 | 8.300 | 7.000 | 9.200 | 8.800 | 8.400 |
| pH (lab), pH | 8.300 | 8.22 | 8.1 | 8.200 | 8.200 | 8.22 | 8.300 |
| SAR, ratio | | 0.150 | | | | 0.170 | |
| Se, diss, mg/L | 0.0006 | | 0.0003 | 0.0004 | 0.0004 | | 0.0004 |
| SO4, diss, mg/L | 58. | 65. | 50. | 91. | 99. | 120. | 120. |
| TDS, mg/L | 200. | 200. | 150. | 210. | 250. | 280. | 270. |
| TSS, mg/L | | 37. | | | | 17. | |
| Zn, diss, mg/L | <0.02 | | <0.02 | <0.02 | <0.02 | <0.030 | <0.02 |

**New Horizon Mine**

**Analysis Results by Date (column) and Parameter (row)**

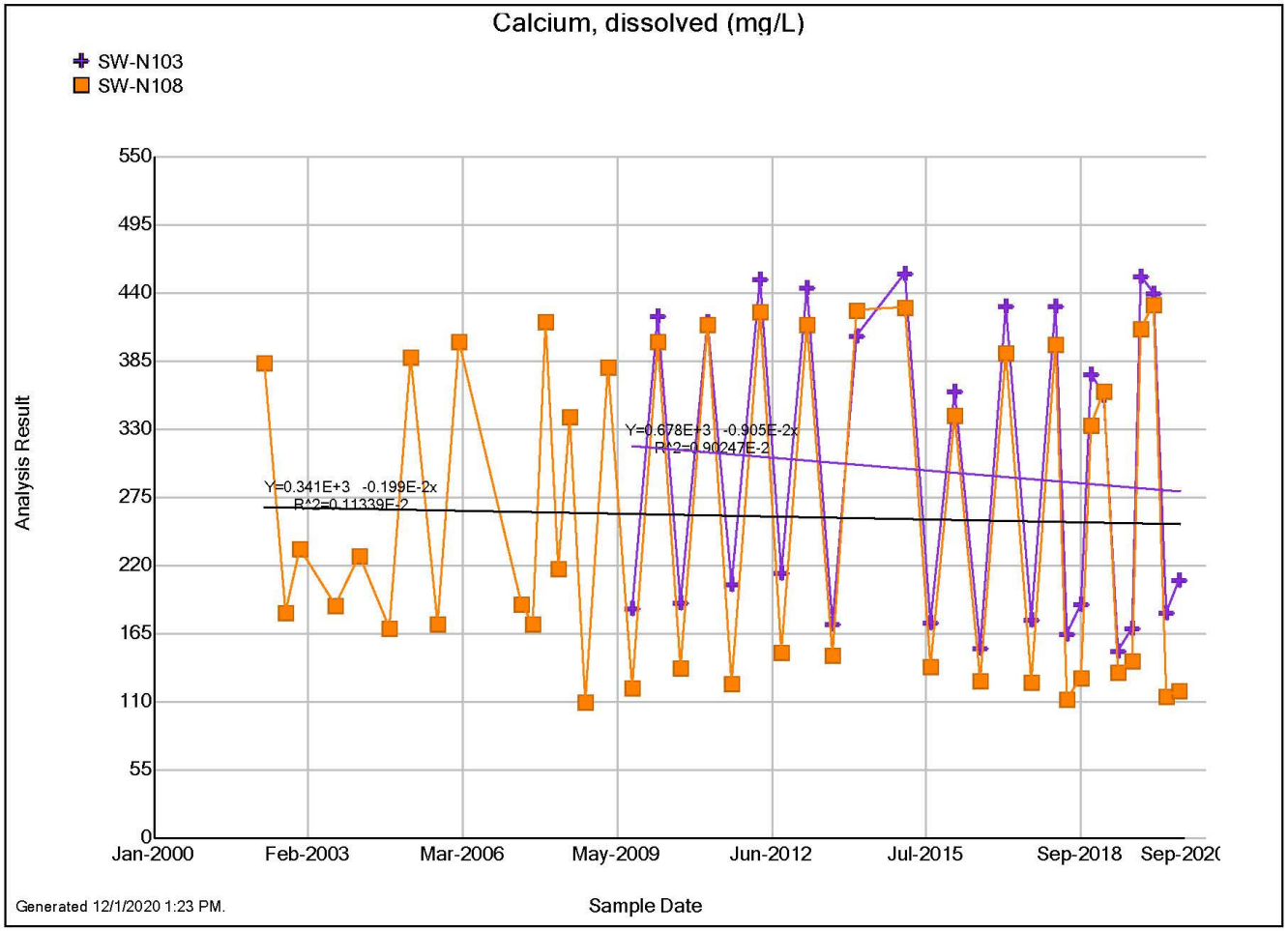
**Date Range: 10/01/2019 to 09/30/2020**

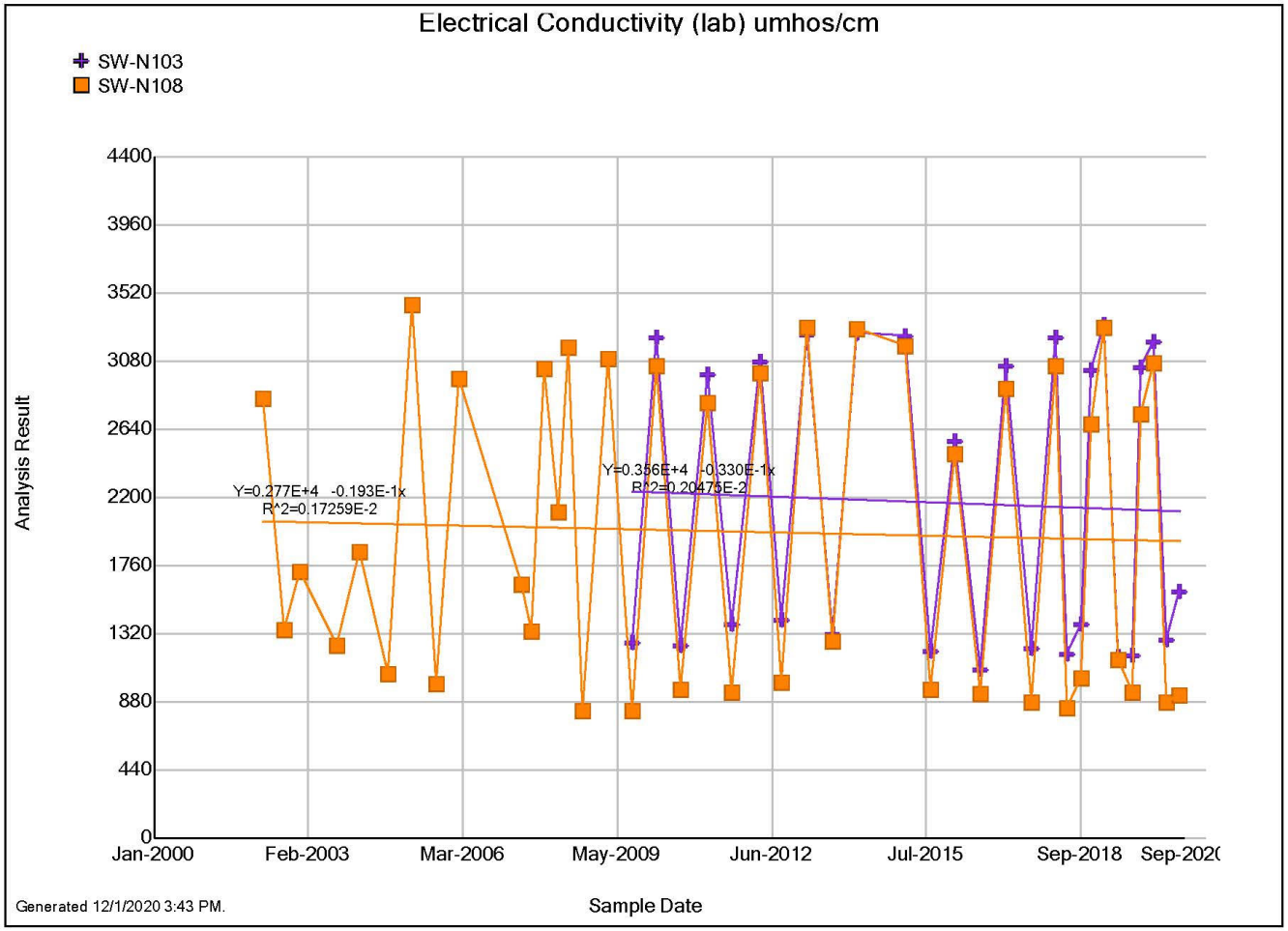
**Site: SW-N108**

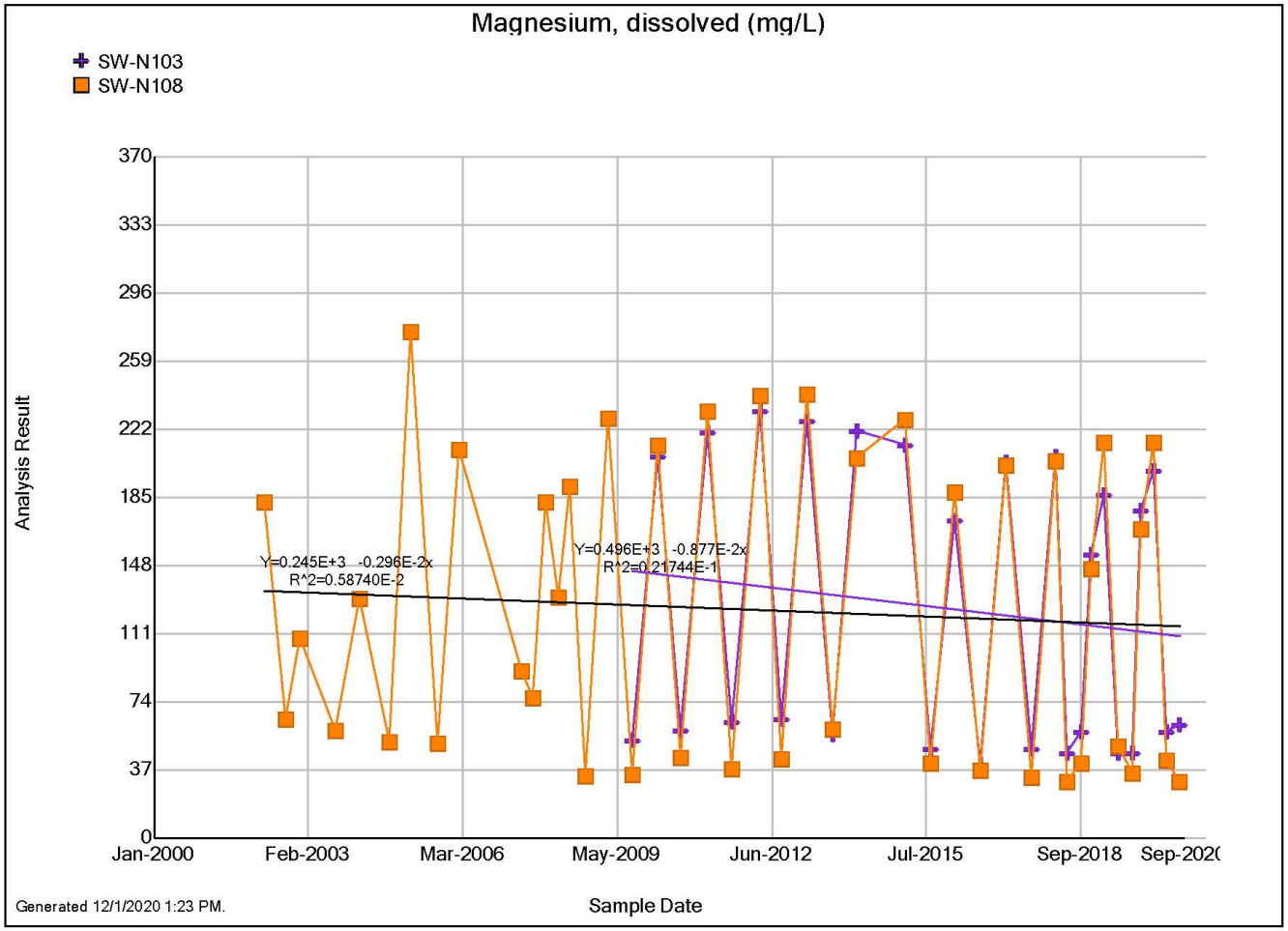
| | 11/18/2019 | 2/18/2020 | 5/26/2020 | 8/26/2020 |
|---|---|---|---|---|
| Al, tot rec, ug/L | 200. | 100 | 840. | 1400. |
| As, TD, mg/L | <0.00050 | <0.00020 | 0.0011 | <0.0010 |
| Ca, diss, mg/L | 410. | 430 | 110. | 120. |
| Cd, TD, mg/L | 0.0003 | 0.0002 | 0.0001 | 0.0005 |
| Cu, TD, mg/L | 0.004 | 0.002 | 0.002 | 0.008 |
| Cl, diss, mg/L | 18. | 24 | 7.4 | 7.6 |
| Fe, TD, mg/L | 0.050 | 0.14 | 0.10 | <0.035 |
| HCO3, mg/L | 310. | 370 | 180. | 180. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| Mg, diss, mg/L | 170. | 220 | 42. | 30. |
| Mn, TD, mg/L | 1.7 | 2.3 | 0.16 | 0.13 |
| Na, diss, mg/L | 78. | 96 | 22. | 23. |
| NH3 as N, diss, mg/L | 0.24 | 0.42 | <0.025 | <0.025 |
| NO2 + NO3, diss, mg/L | 0.39 | 0.29 | 0.060 | 0.050 |
| NO2, diss, mg/L | * | * | * | * |
| NO3, diss, mg/L | * | * | * | * |
| Pb, TD, mg/L | <0.00025 | <0.00010 | <0.00010 | <0.00050 |
| pH (lab), pH | 8.09 | 8.10 | 8.22 | 8.19 |
| pH (field), pH | 7.40 | 8.10 | 7.62 | 8.40 |
| SAR, ratio | 0.830 | 0.96 | 0.440 | 0.500 |
| Se, TD, mg/L | 0.0013 | 0.0009 | 0.001 | 0.001 |
| SO4, diss, mg/L | 1100. | 1700 | 280. | 310. |
| TDS, mg/L | 2700. | 2900 | 660. | 650. |
| TSS, mg/L | <2.5 | 7 | 19. | 35. |
| Zn, TD, mg/L | 0.050 | 0.043 | <0.0050 | <0.030 |

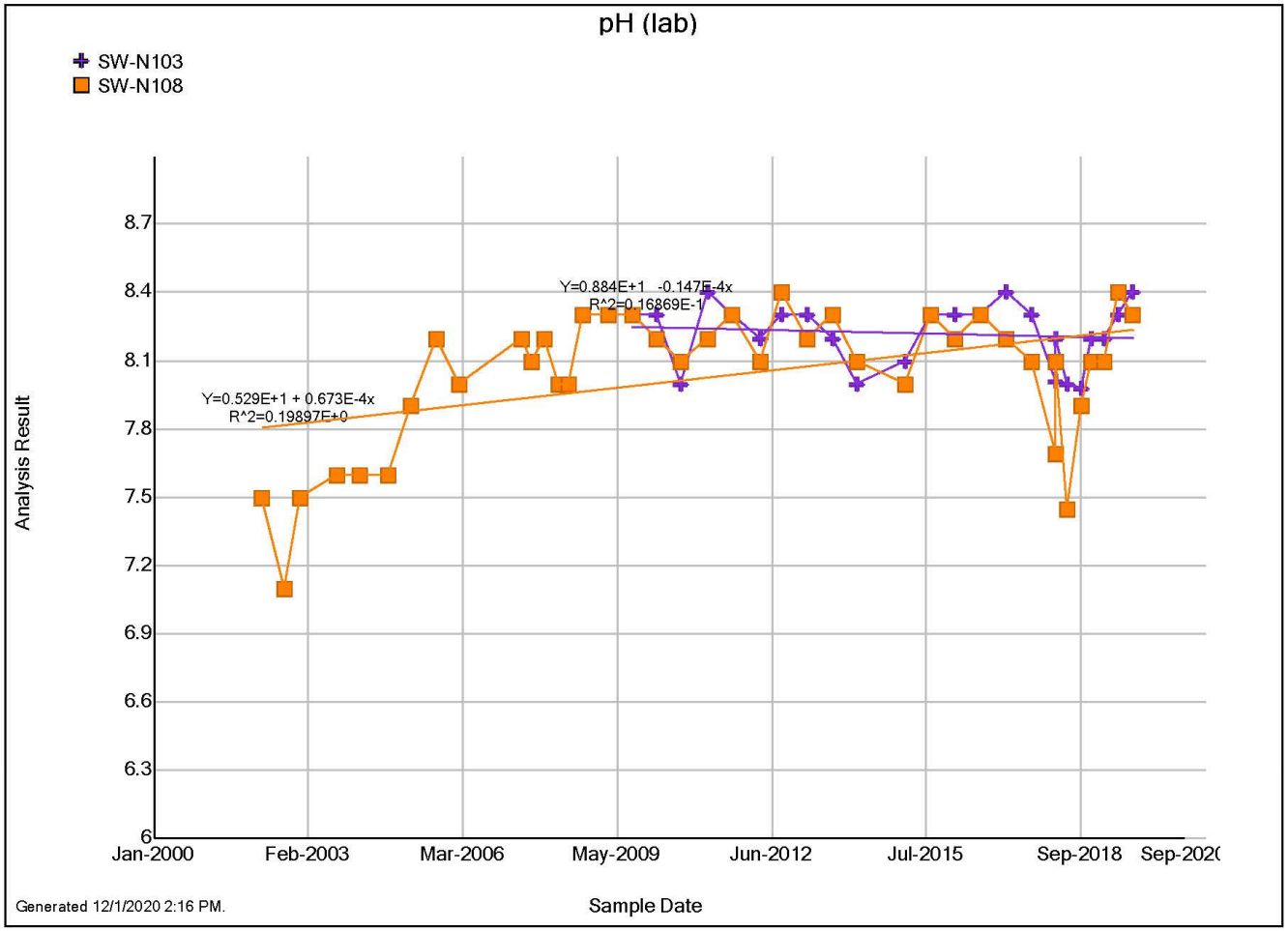
*Due to a laboratory errors Nitrite (NO2) and Nitrate (NO3) were not analyzed.

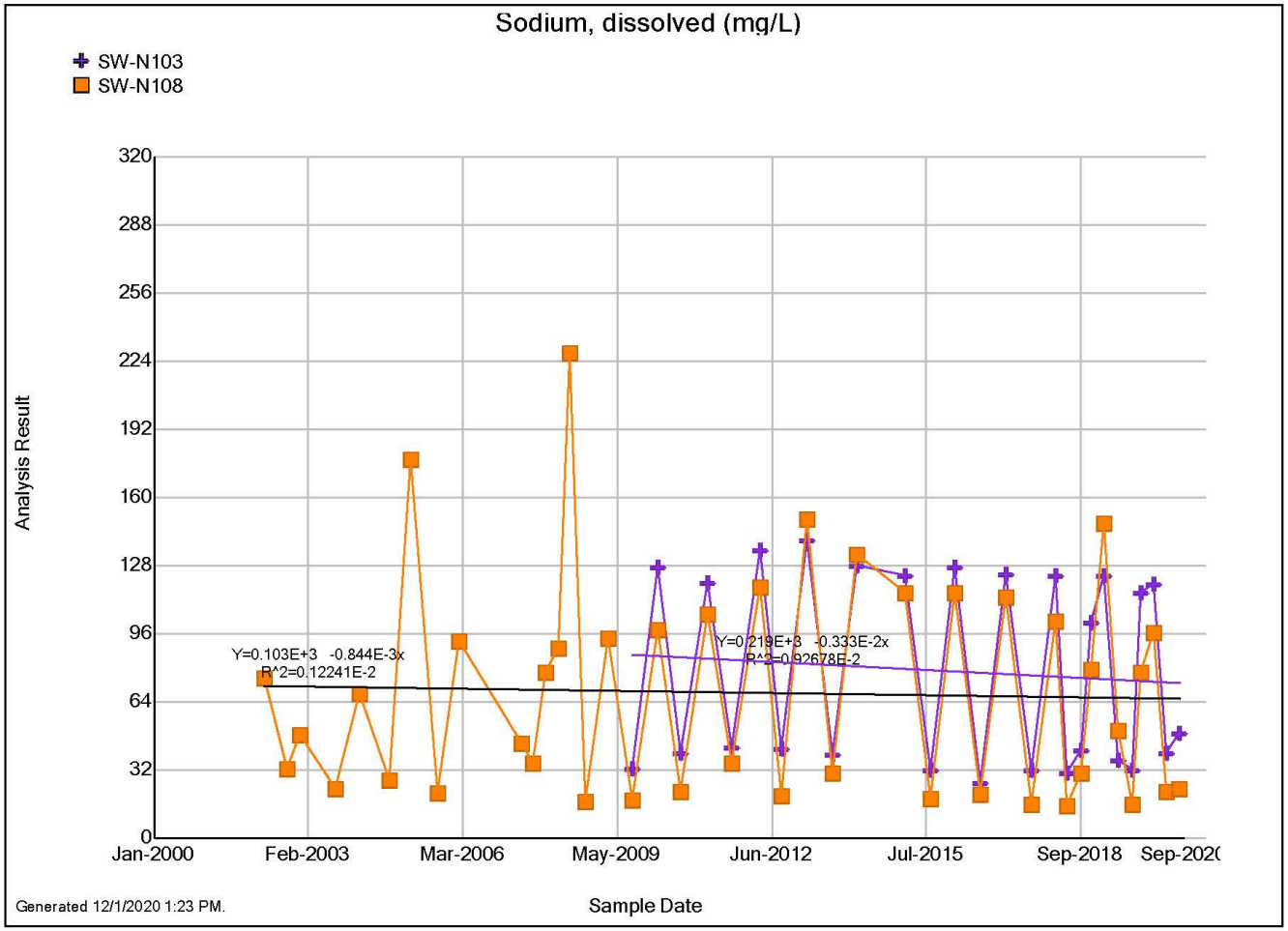
# Appendix 2
# Surface Water Monitoring Graphs

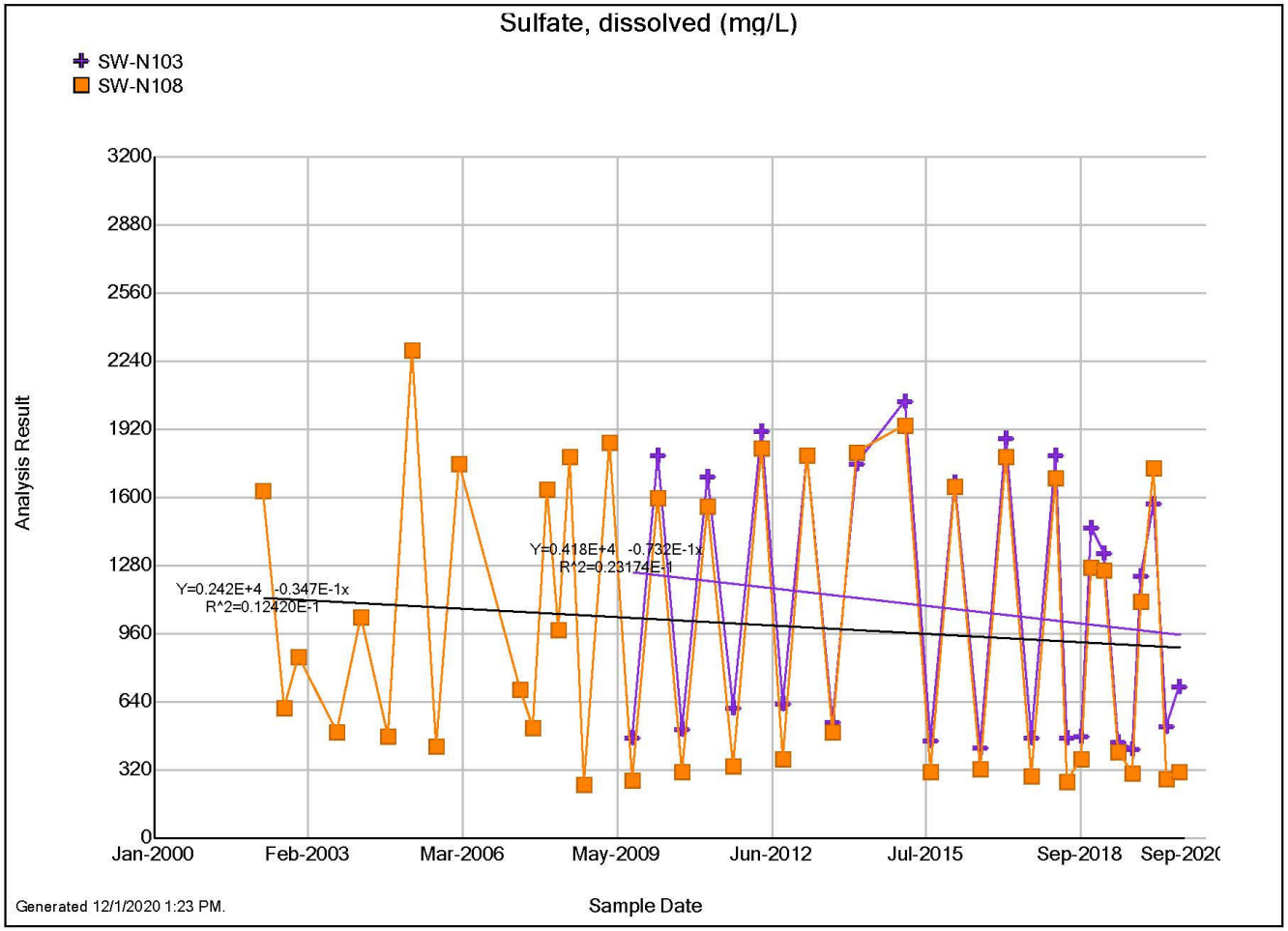

Calcium, dissolved (mg/L)
SW-N103
SW-N108
Analysis Result
550
495
440
385
330
275
220
165
110
55
0
Y=0.678E+3 -0.905E-2x
R^2=0.90247E-2
Y=0.341E+3 -0.199E-2x
R^2=0.11339E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/1/2020 1:23 PM.
Sample Date

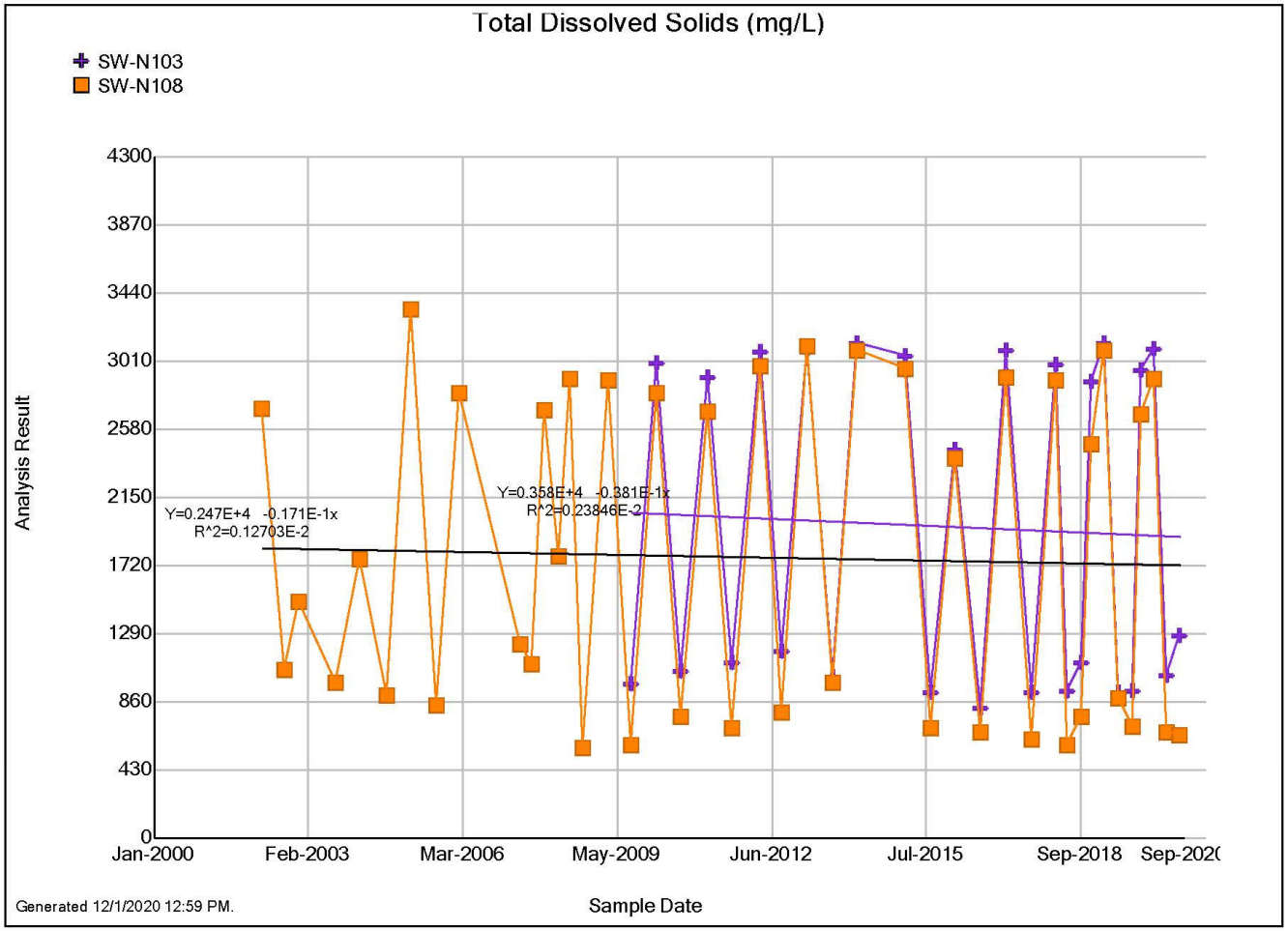

Electrical Conductivity (lab) umhos/cm
SW-N103
SW-N108
Analysis Result
4400
3960
3520
3080
2640
2200
1760
1320
880
440
0
Y=0.277E+4 -0.193E-1x
R^2=0.17259E-2
Y=0.356E+4 -0.330E-1x
R^2=0.20475E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/1/2020 3:43 PM.
Sample Date

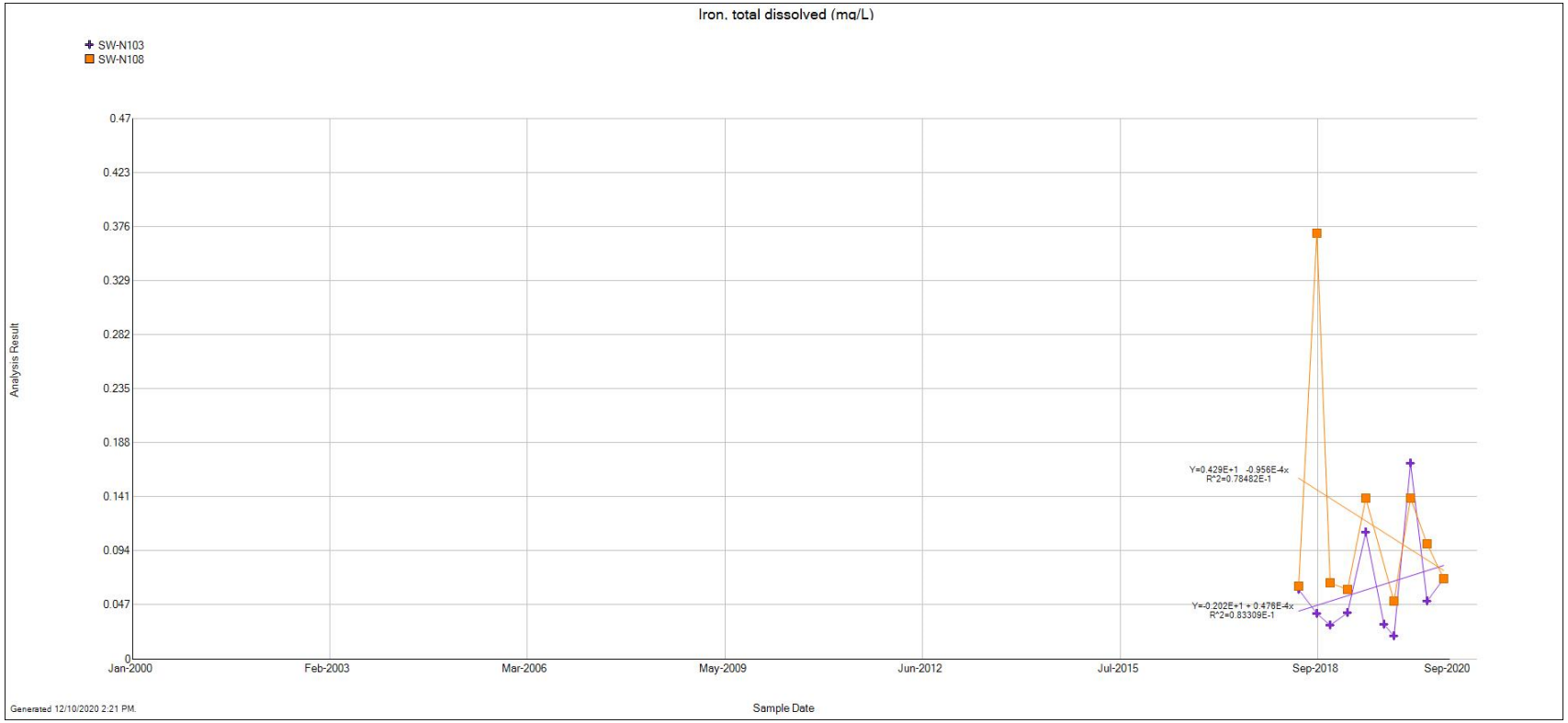

Magnesium, dissolved (mg/L)
SW-N103
SW-N108
Analysis Result
370
333
296
259
222
185
148
111
74
37
0
Y=0.245E+3 -0.296E-2x
R^2=0.58740E-2
Y=0.496E+3 -0.877E-2x
R^2=0.21744E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/1/2020 1:23 PM.
Sample Date

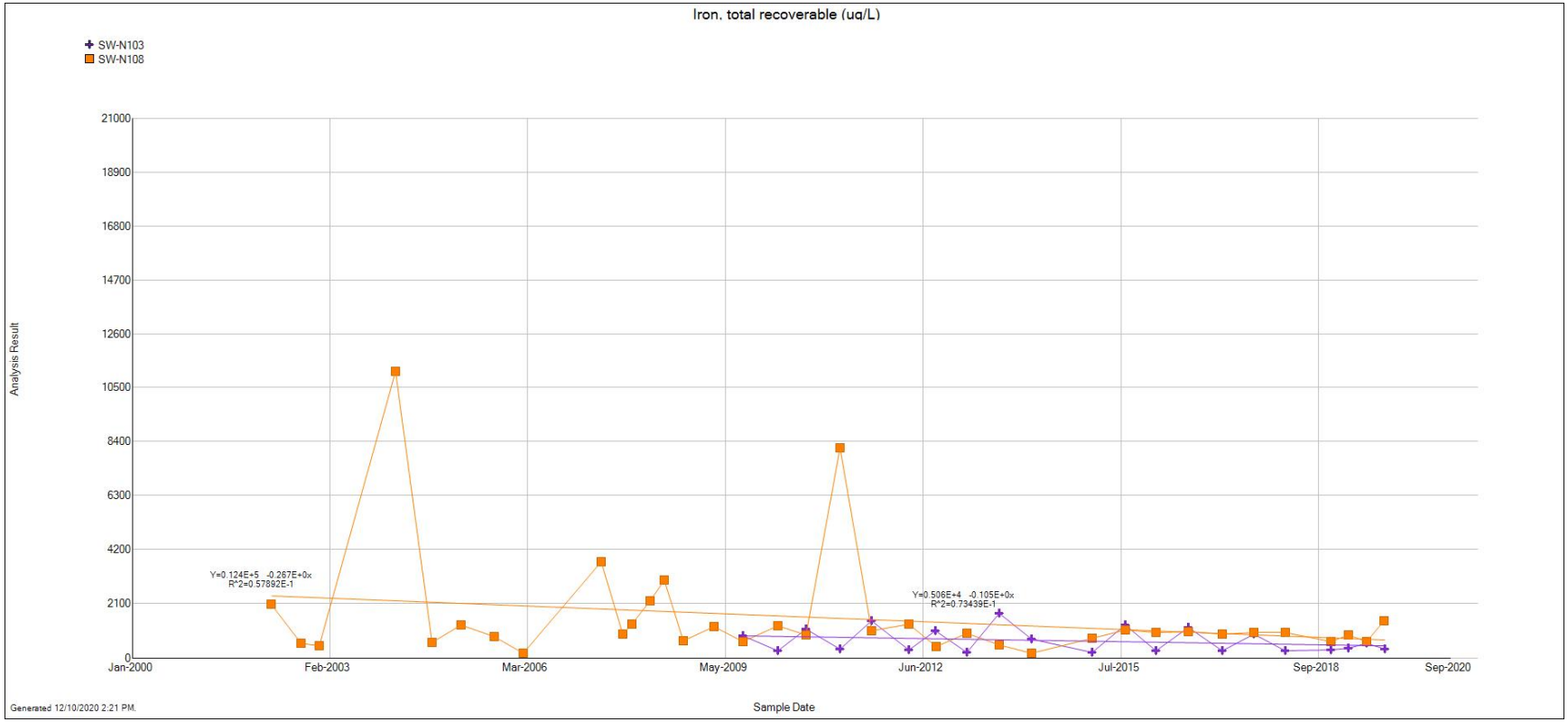

pH (lab)
SW-N103
SW-N108
Y=0.884E+1 -0.147E-4x
R^2=0.16869E-1
Y=0.529E+1 + 0.673E-4x
R^2=0.19897E+0
Analysis Result
8.7
8.4
8.1
7.8
7.5
7.2
6.9
6.6
6.3
6
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/1/2020 2:16 PM.
Sample Date

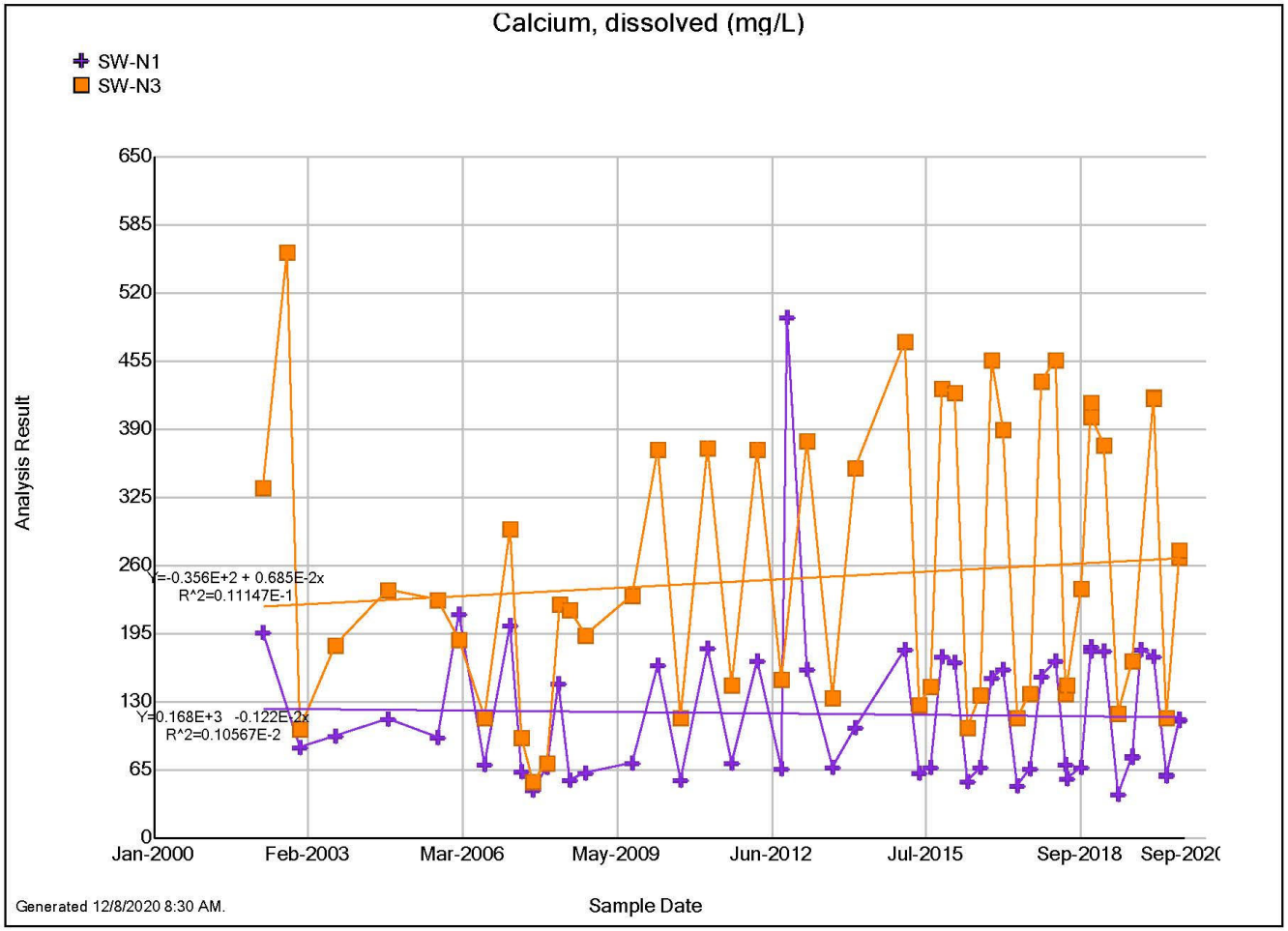

Sodium, dissolved (mg/L)
SW-N103
SW-N108
320
288
256
224
192
160
128
96
64
32
0
Analysis Result
Y=0.103E+3 -0.844E-3x
R^2=0.12241E-2
Y=0.219E+3 -0.333E-2x
R^2=0.92678E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/1/2020 1:23 PM.
Sample Date

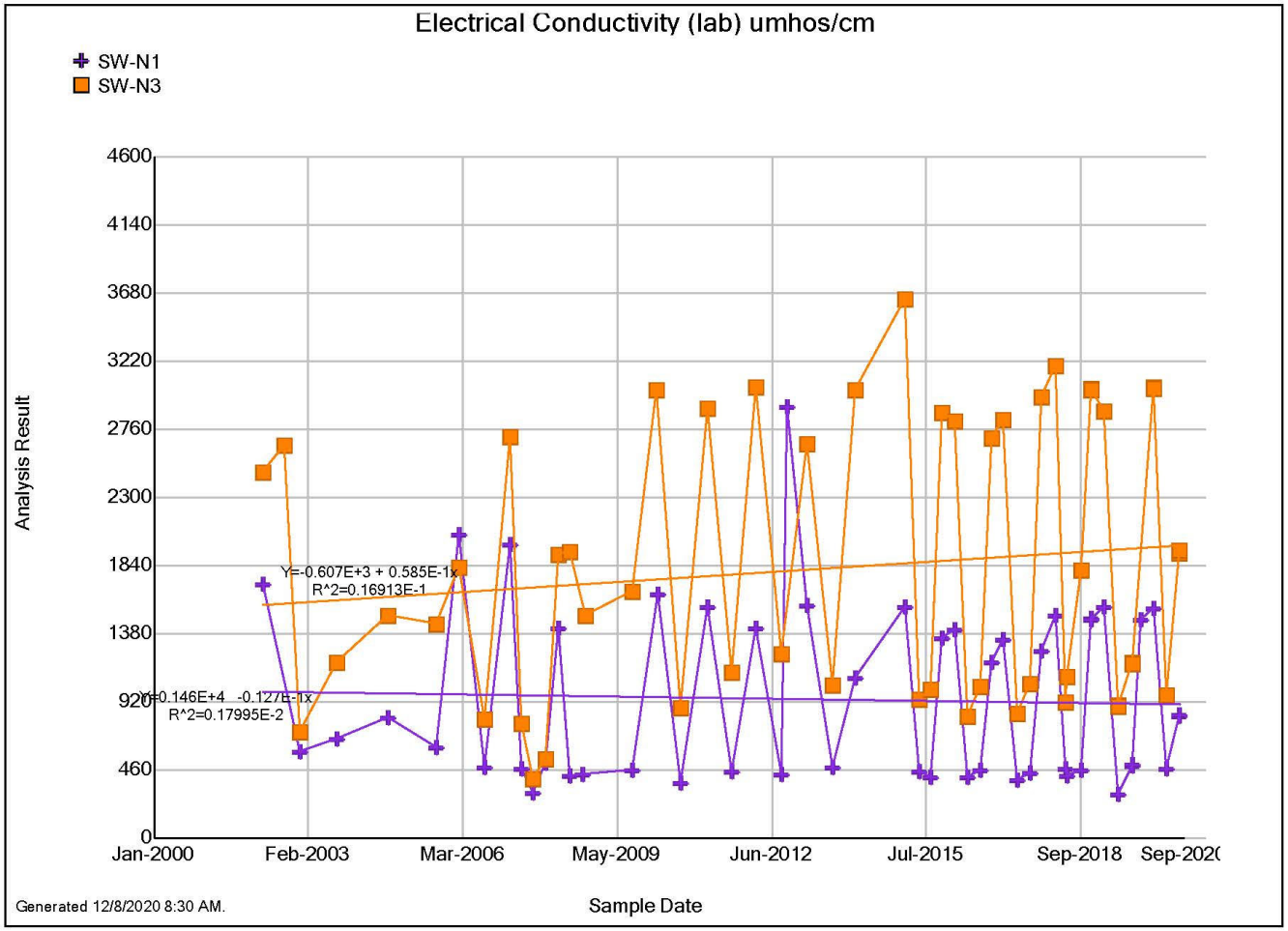

Sulfate, dissolved (mg/L)
SW-N103
SW-N108
Analysis Result
3200
2880
2560
2240
1920
1600
1280
960
640
320
0
Y=0.242E+4 -0.347E-1x
R^2=0.12420E-1
Y=0.418E+4 -0.732E-1x
R^2=0.23174E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/1/2020 1:23 PM.
Sample Date

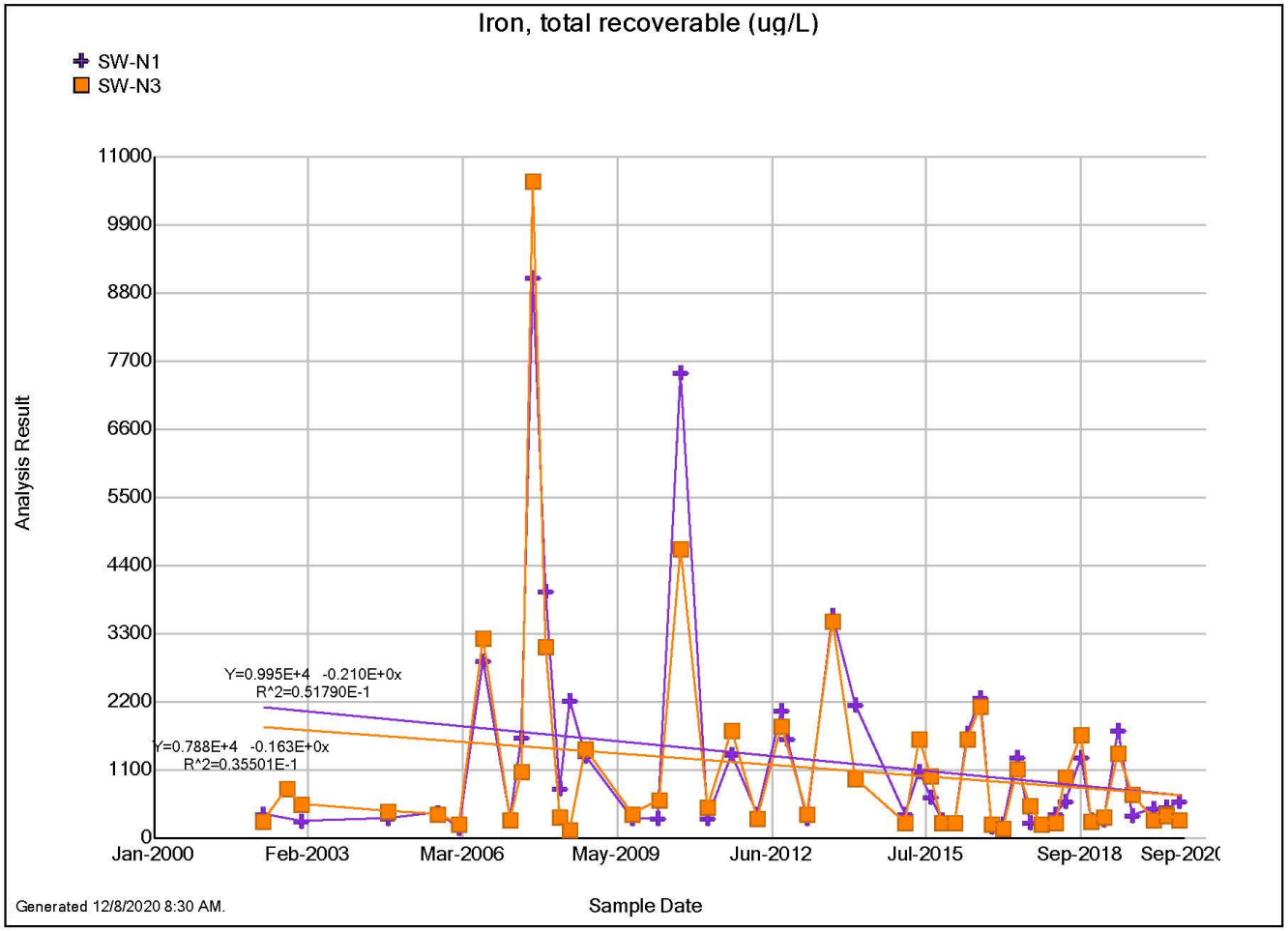

Total Dissolved Solids (mg/L)
SW-N103
SW-N108
4300
3870
3440
3010
2580
2150
1720
1290
860
430
0
Analysis Result
Y=0.247E+4 -0.171E-1x
R^2=0.12703E-2
Y=0.358E+4 -0.381E-1x
R^2=0.23846E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/1/2020 12:59 PM.
Sample Date

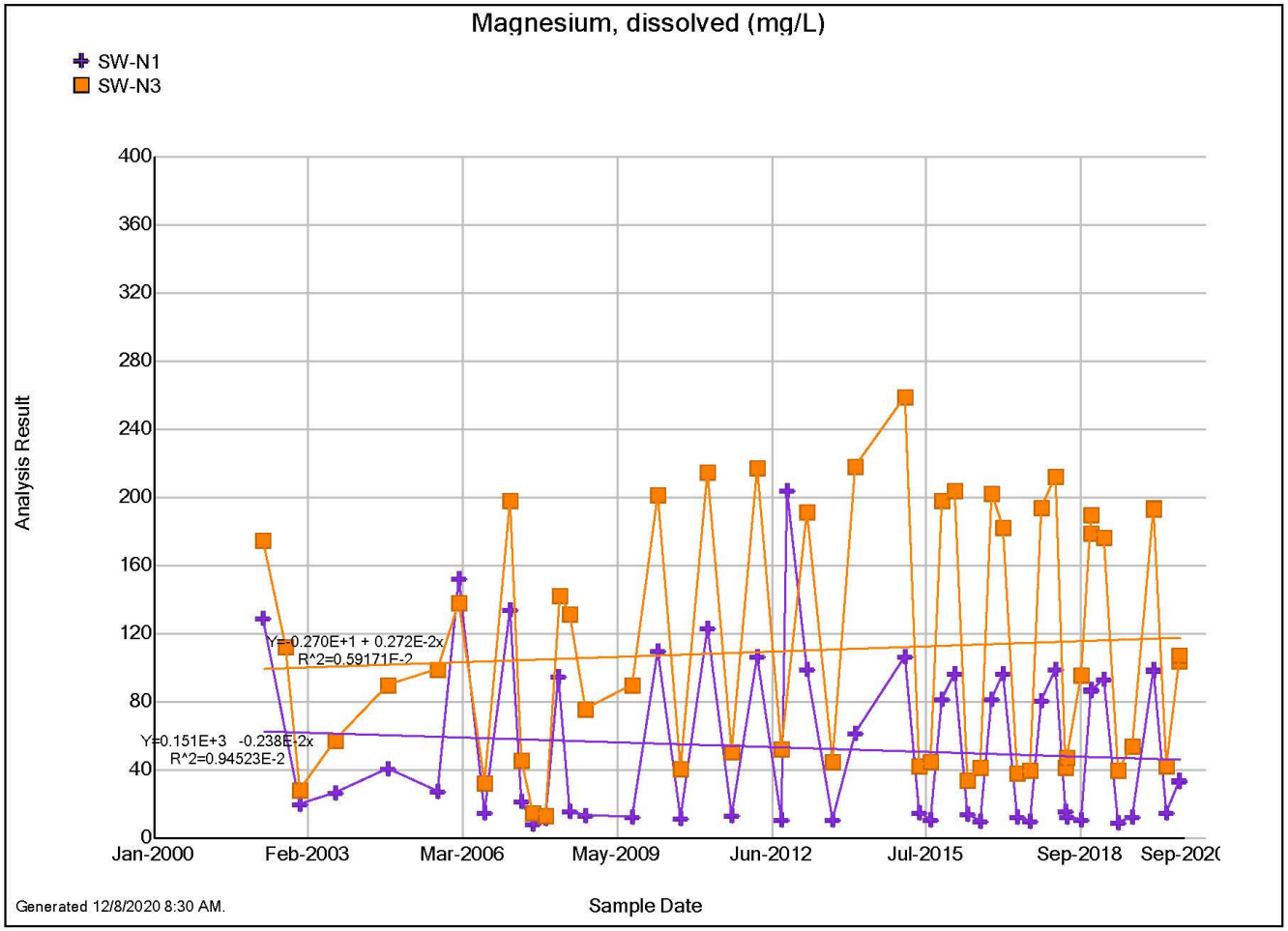

Iron, total dissolved (mg/L)
SW-N103
SW-N108
0.47
0.423
0.376
0.329
0.282
0.235
0.188
0.141
0.094
0.047
0
Analysis Result
Y=0.429E+1 -0.956E-4x
R^2=0.78482E-1
Y=-0.202E+1 + 0.476E-4x
R^2=0.83309E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/10/2020 2:21 PM.
Sample Date

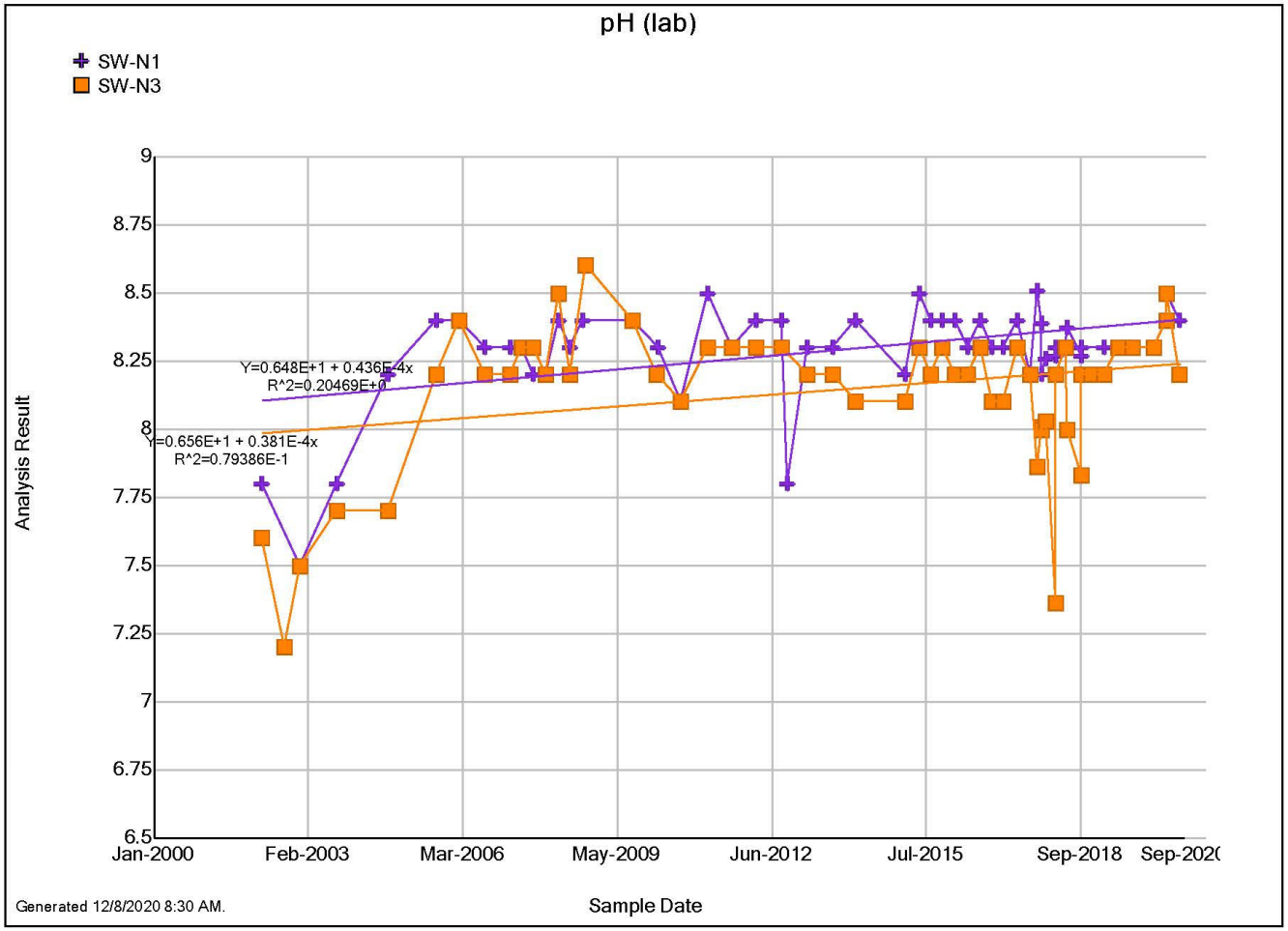

Iron, total recoverable (ug/L)
SW-N103
SW-N108
Analysis Result
21000
18900
16800
14700
12600
10500
8400
6300
4200
2100
0
Y=0.124E+5 -0.267E+0x
R^2=0.57892E-1
Y=0.506E+4 -0.105E+0x
R^2=0.73439E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/10/2020 2:21 PM.
Sample Date

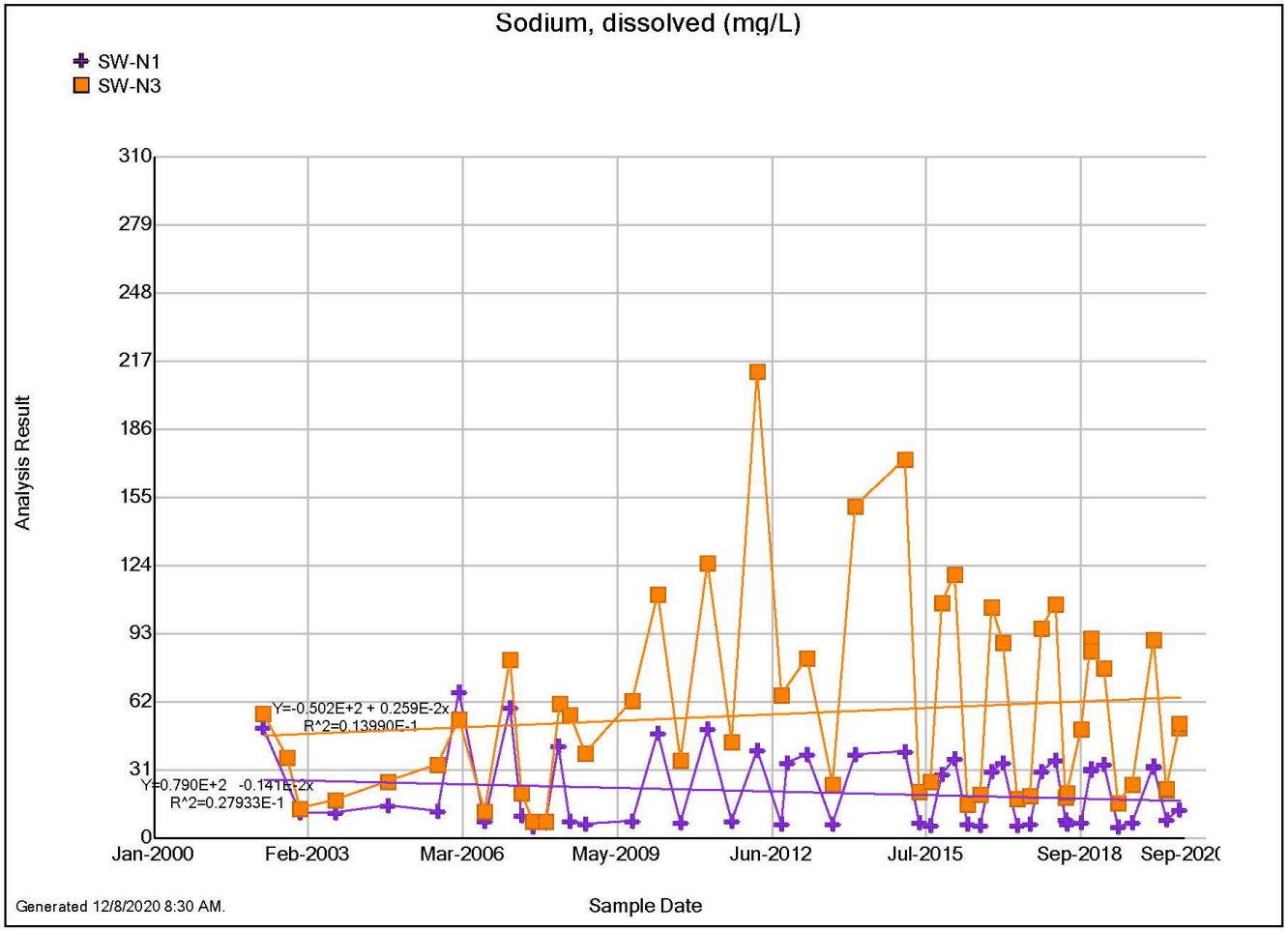

Calcium, dissolved (mg/L)
SW-N1
SW-N3
650
585
520
455
390
325
260
195
130
65
0
Analysis Result
Y=-0.356E+2 + 0.685E-2x
R^2=0.11147E-1
Y=0.168E+3 -0.122E-2x
R^2=0.10567E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

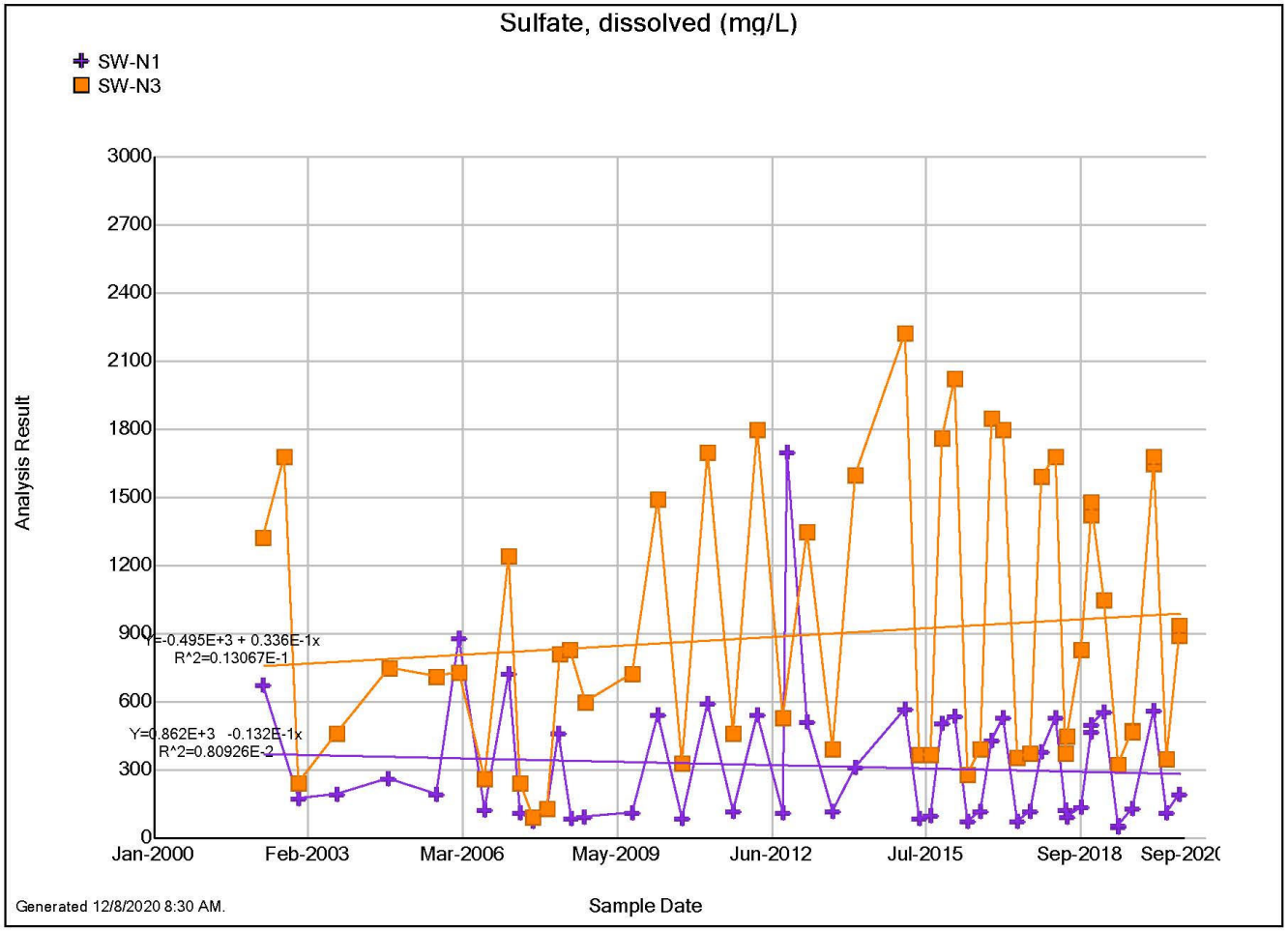

Electrical Conductivity (lab) umhos/cm
SW-N1
SW-N3
Analysis Result
4600
4140
3680
3220
2760
2300
1840
1380
920
460
0
Y=-0.607E+3 + 0.585E-1x
R^2=0.16913E-1
Y=0.146E+4 -0.127E-1x
R^2=0.17995E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

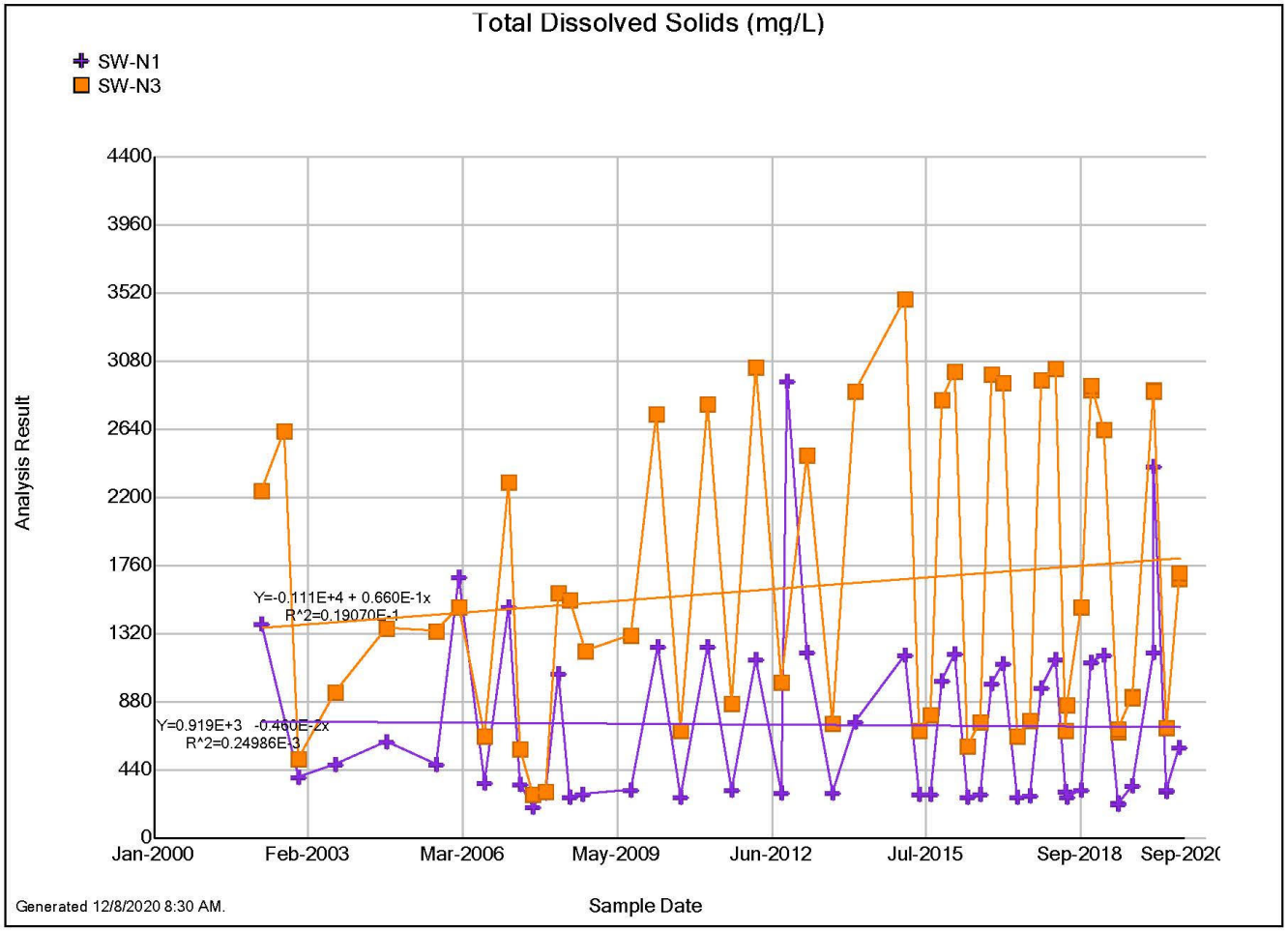

Iron, total recoverable (ug/L)
SW-N1
SW-N3
11000
9900
8800
7700
6600
5500
4400
3300
2200
1100
0
Analysis Result
Y=0.995E+4 -0.210E+0x
R^2=0.51790E-1
Y=0.788E+4 -0.163E+0x
R^2=0.35501E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

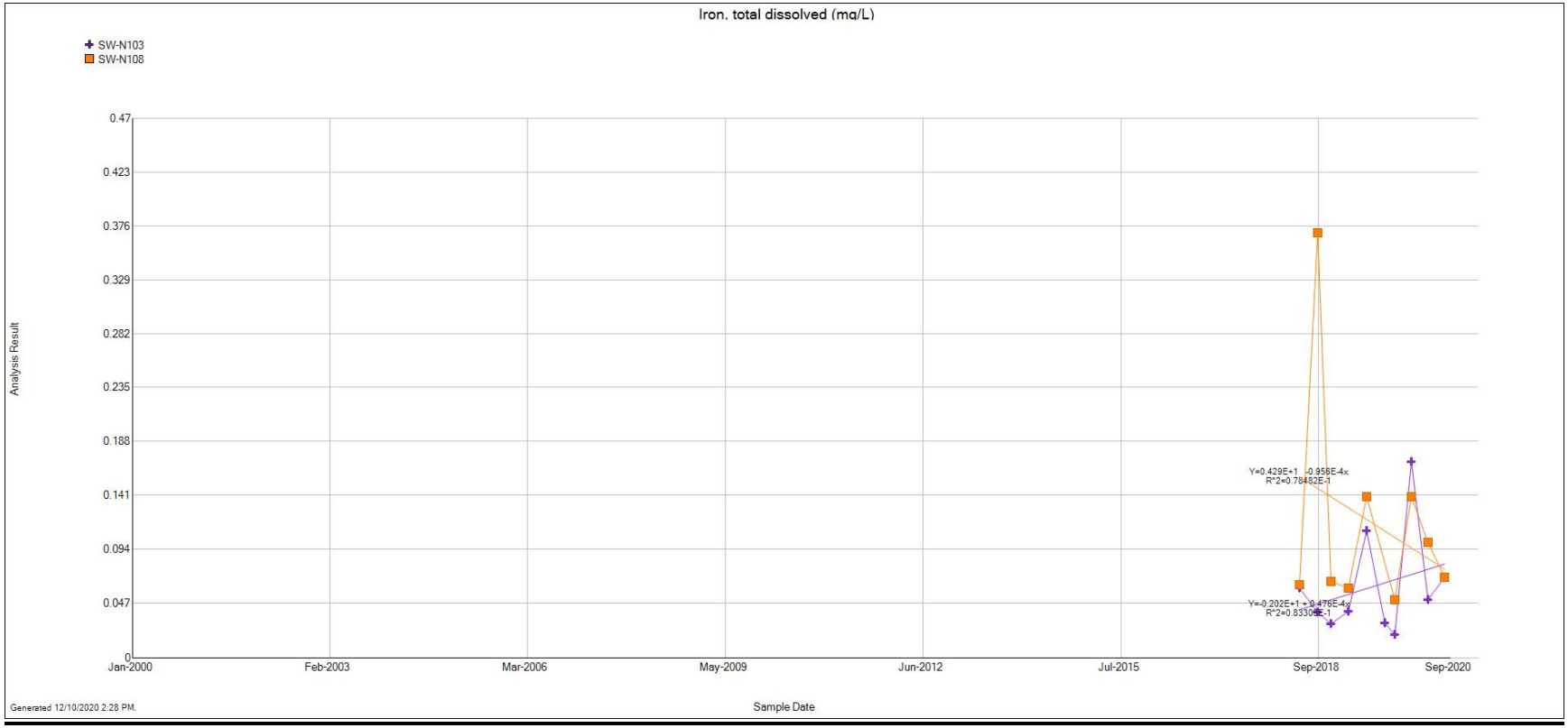

Magnesium, dissolved (mg/L)
SW-N1
SW-N3
Analysis Result
400
360
320
280
240
200
160
120
80
40
0
Y=0.270E+1 + 0.272E-2x
R^2=0.59171E-2
Y=0.151E+3 -0.238E-2x
R^2=0.94523E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

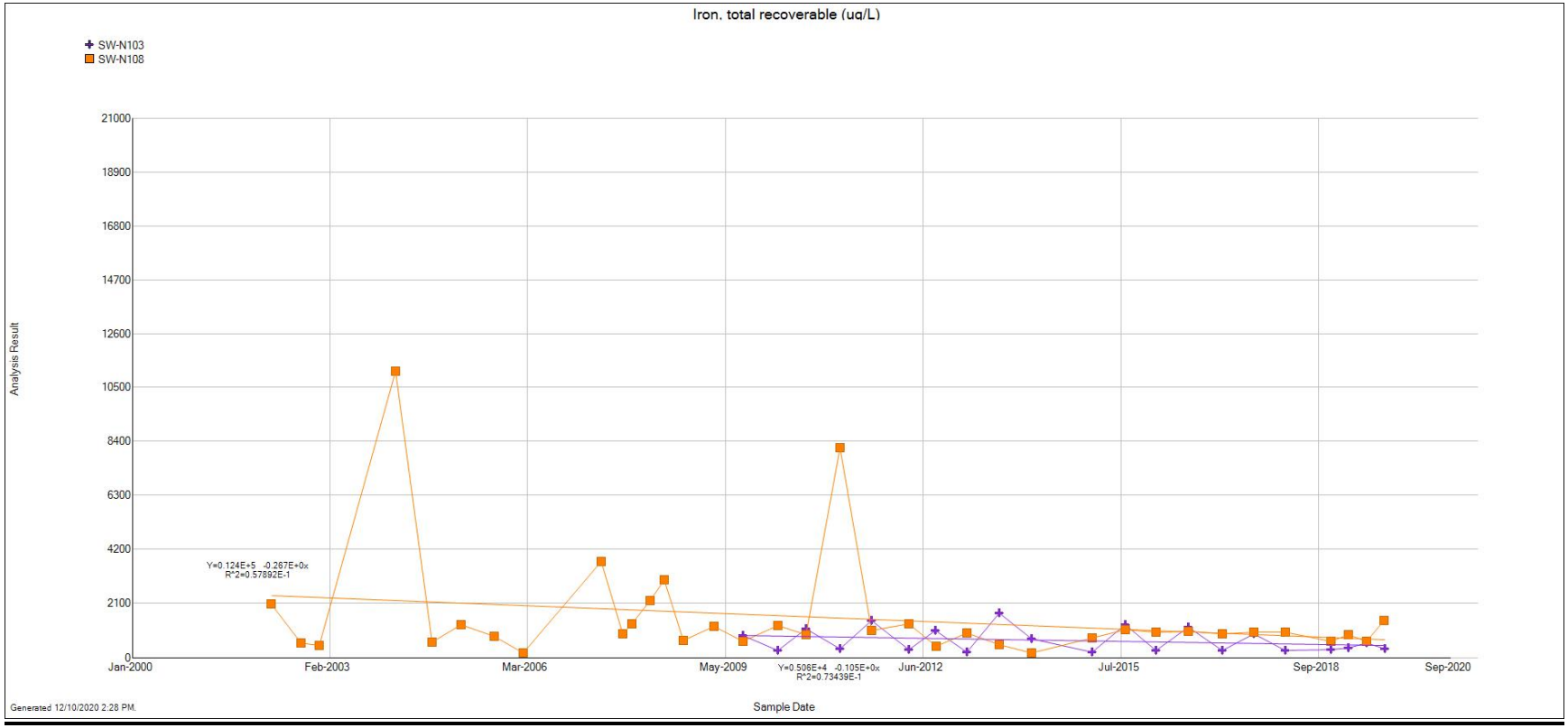

pH (lab)
SW-N1
SW-N3
Y=0.648E+1 + 0.436E-4x
R^2=0.20469E+0
Y=0.656E+1 + 0.381E-4x
R^2=0.79386E-1
Analysis Result
9
8.75
8.5
8.25
8
7.75
7.5
7.25
7
6.75
6.5
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

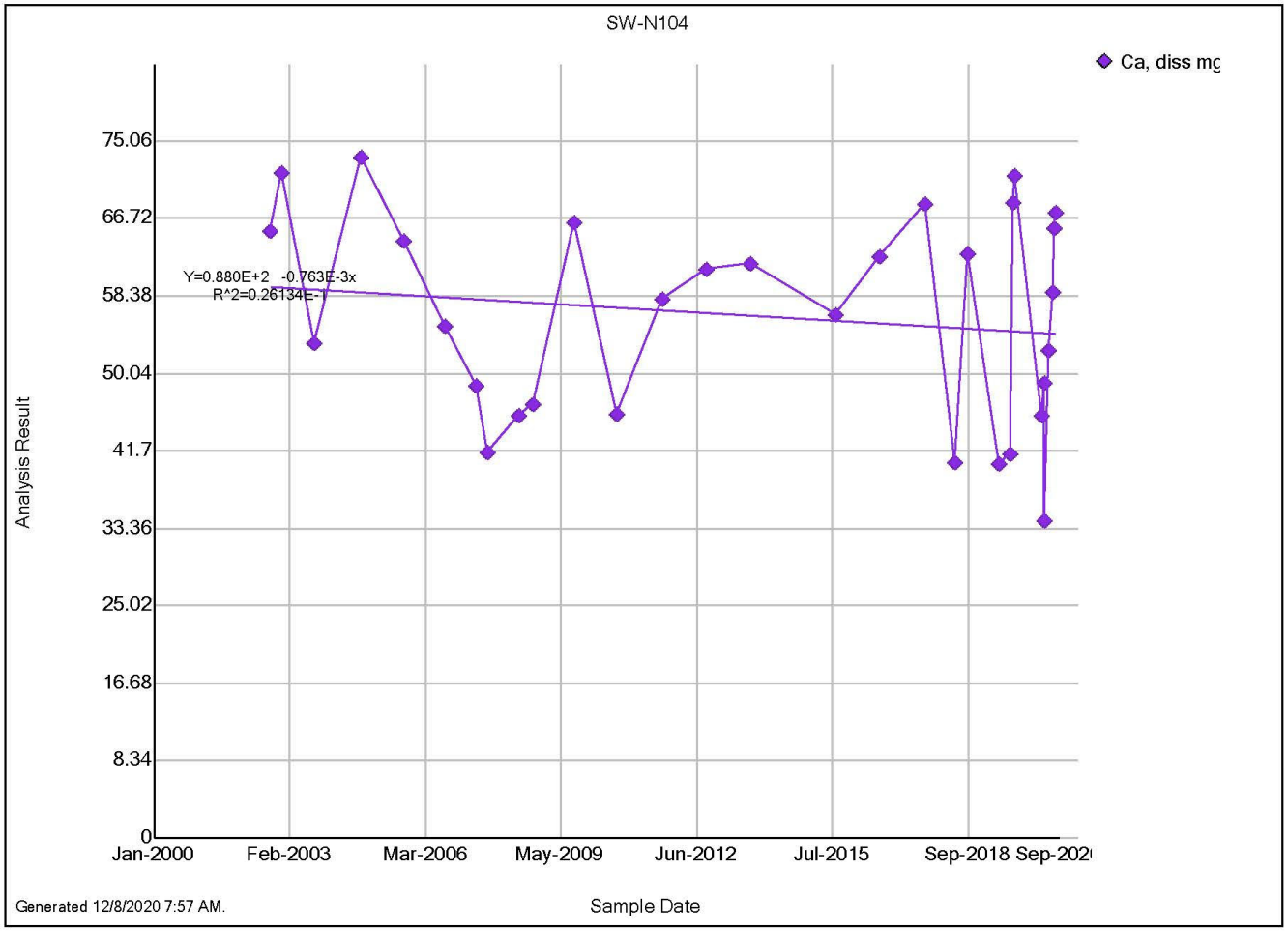

Sodium, dissolved (mg/L)
SW-N1
SW-N3
310
279
248
217
186
155
124
93
62
31
0
Analysis Result
Y=-0.502E+2 + 0.259E-2x
R^2=0.13990E-1
Y=0.790E+2 -0.141E-2x
R^2=0.27933E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

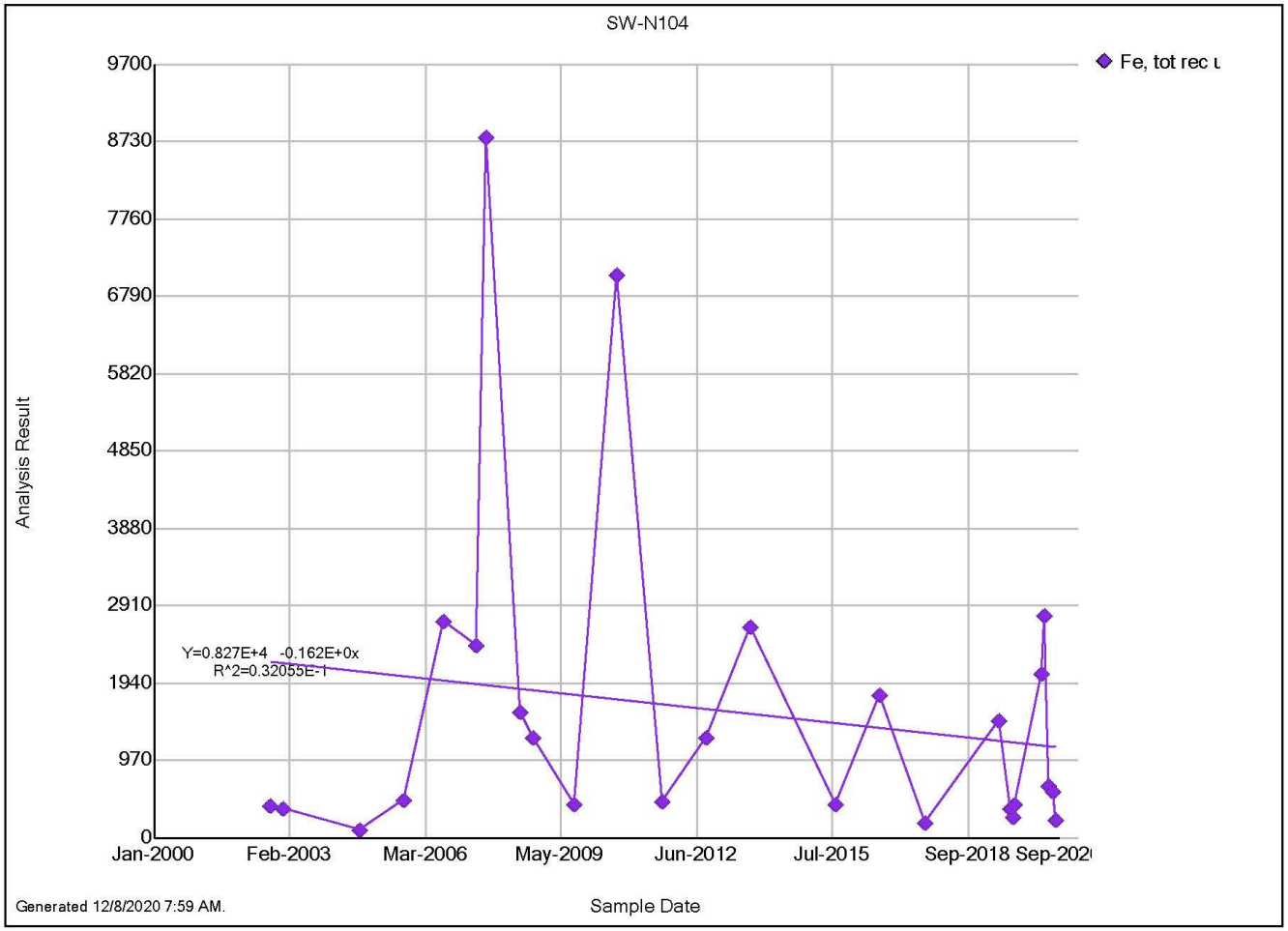

Sulfate, dissolved (mg/L)
SW-N1
SW-N3
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
Analysis Result
Y=-0.495E+3 + 0.336E-1x
R^2=0.13067E-1
Y=0.862E+3 -0.132E-1x
R^2=0.80926E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

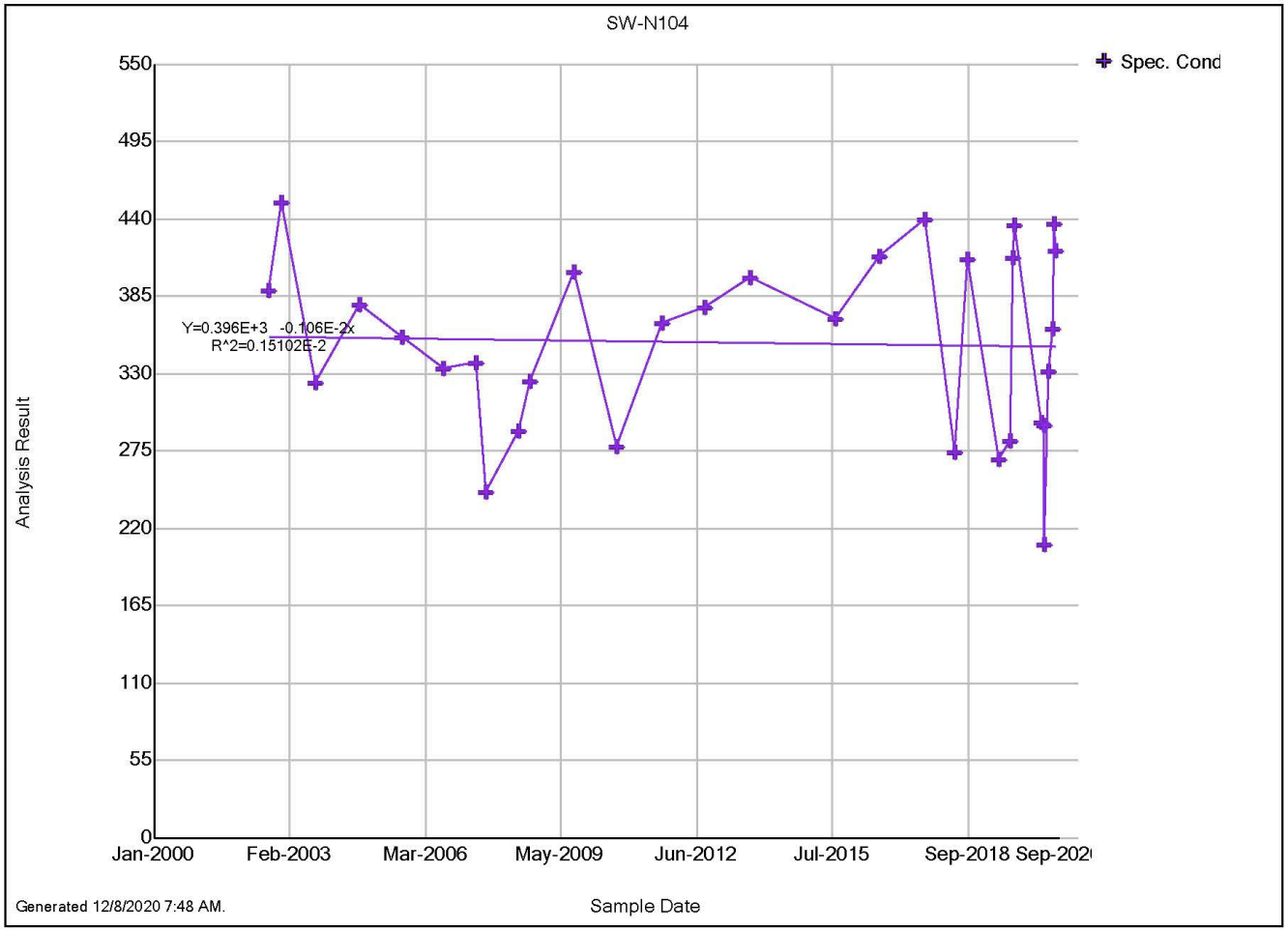

Total Dissolved Solids (mg/L)
SW-N1
SW-N3
4400
3960
3520
3080
2640
2200
1760
1320
880
440
0
Analysis Result
Y=-0.111E+4 + 0.660E-1x
R^2=0.19070E-1
Y=0.919E+3 -0.460E-2x
R^2=0.24986E-3
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:30 AM.
Sample Date

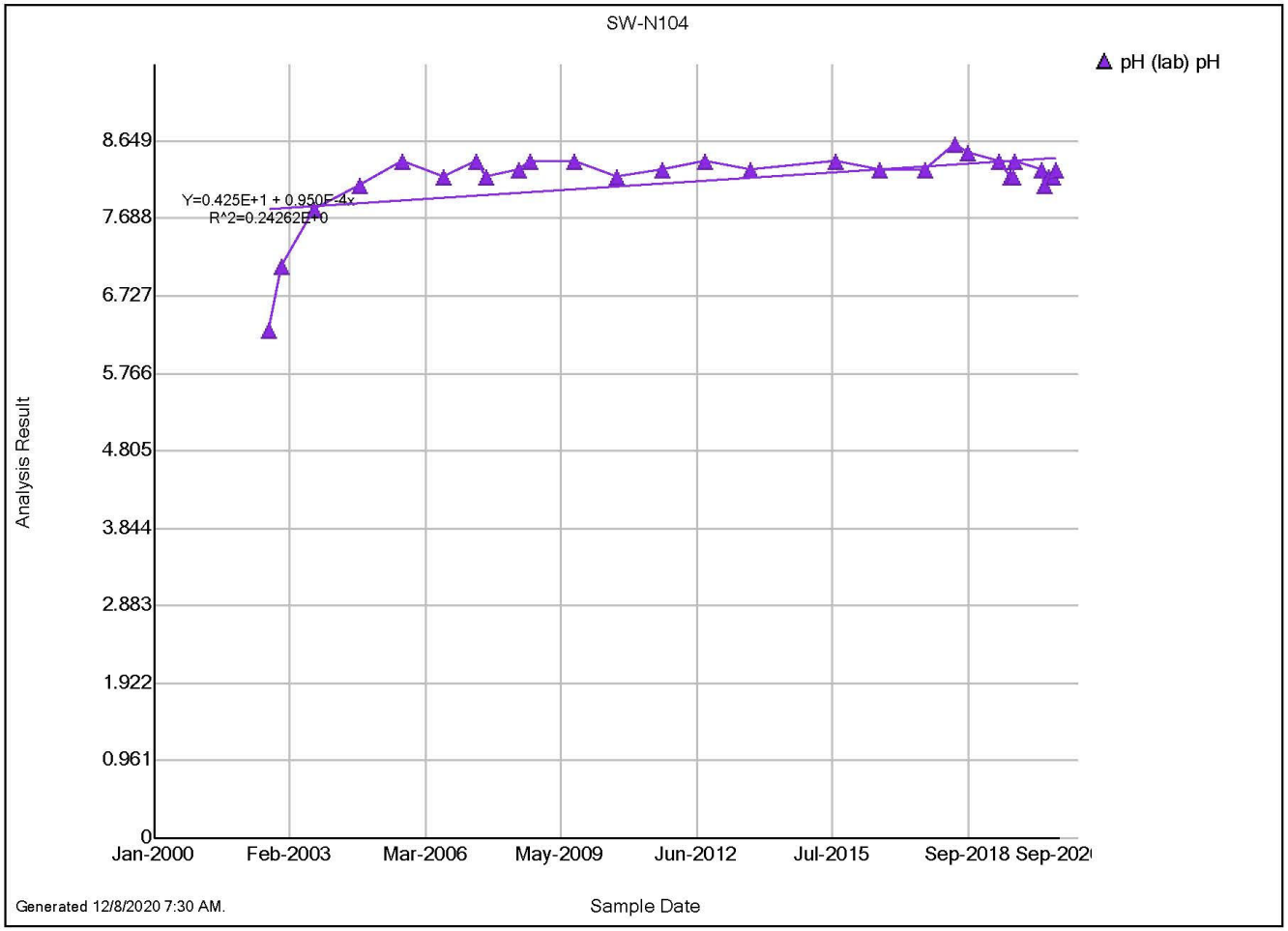

Iron, total dissolved (mg/L)
SW-N103
SW-N108
0.47
0.423
0.376
0.329
0.282
0.235
0.188
0.141
0.094
0.047
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Y=0.429E+1 -0.956E-4x
R^2=0.78452E-1
Y=-0.202E+1 +0.476E-4x
R^2=0.83305E-1
Generated 12/10/2020 2:28 PM.

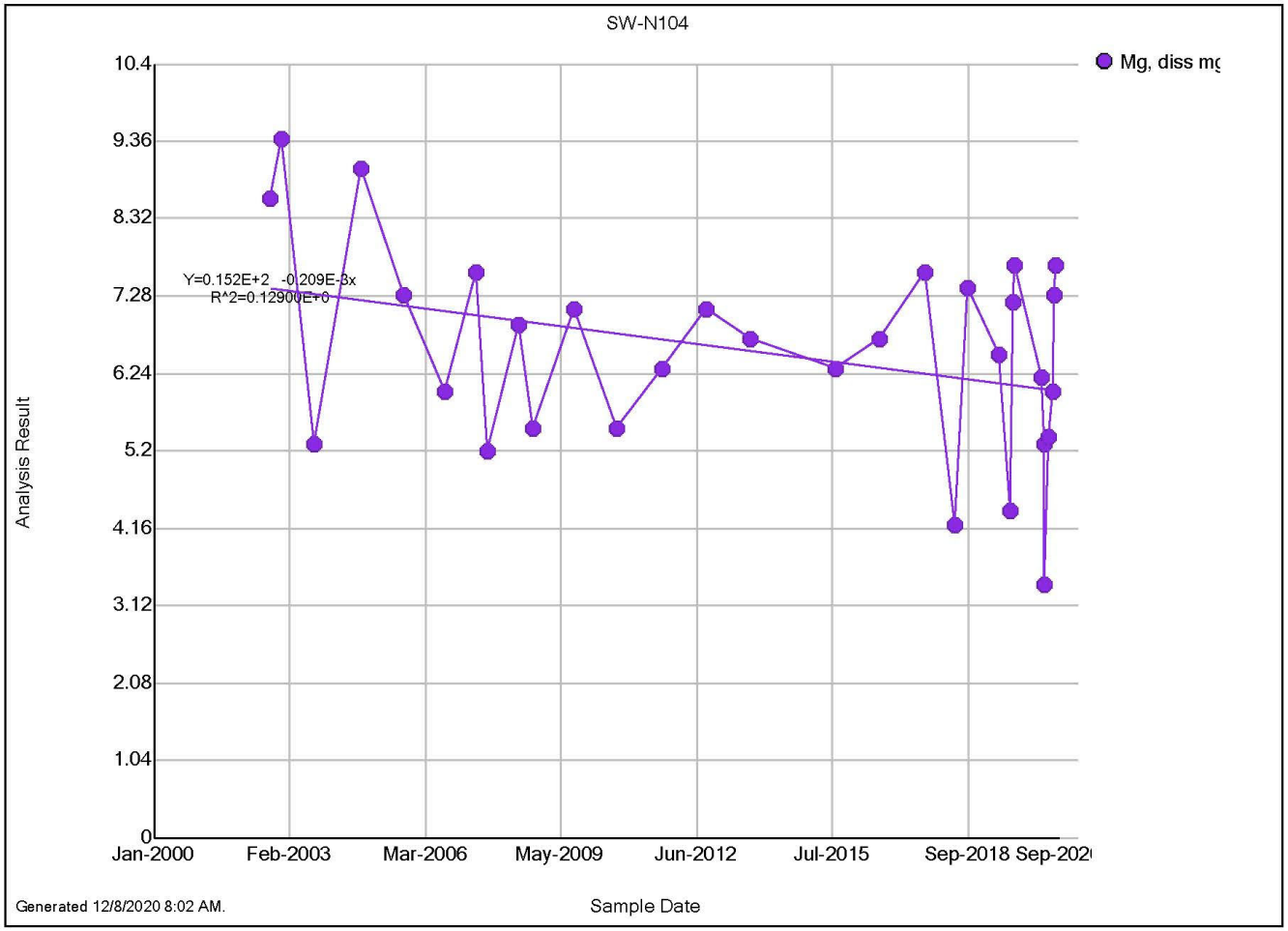

Iron, total recoverable (ug/L)
SW-N103
SW-N108
Analysis Result
21000
18900
16800
14700
12600
10500
8400
6300
4200
2100
0
Y=0.124E+5 -0.267E+0x
R^2=0.57892E-1
Y=0.506E+4 -0.105E+0x
R^2=0.73439E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/10/2020 2:28 PM.
Sample Date

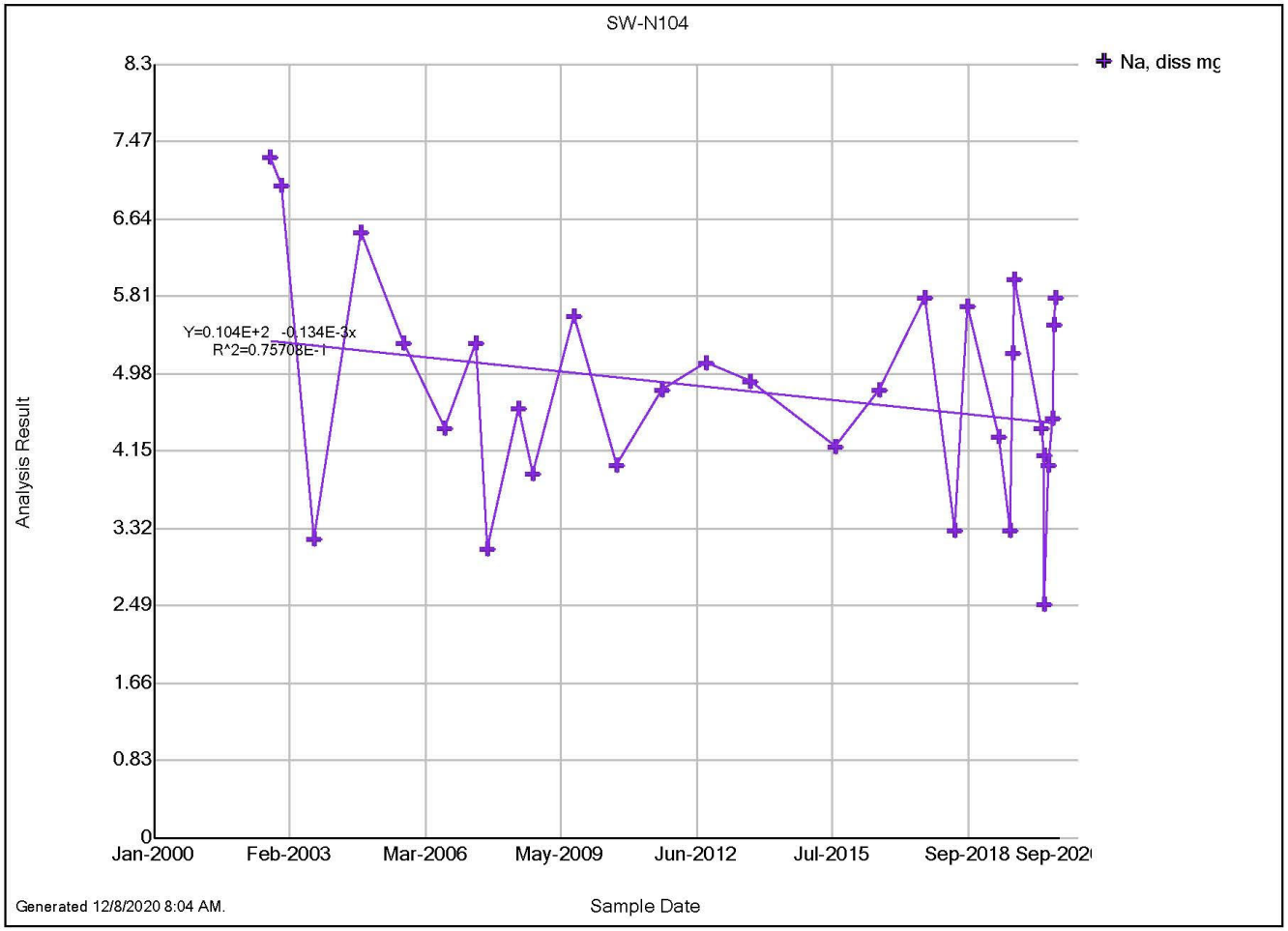

SW-N104
Ca, diss mg
75.06
66.72
58.38
50.04
41.7
33.36
25.02
16.68
8.34
0
Y=0.880E+2 -0.763E-3x
R^2=0.26134E-1
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202
Generated 12/8/2020 7:57 AM.
Sample Date

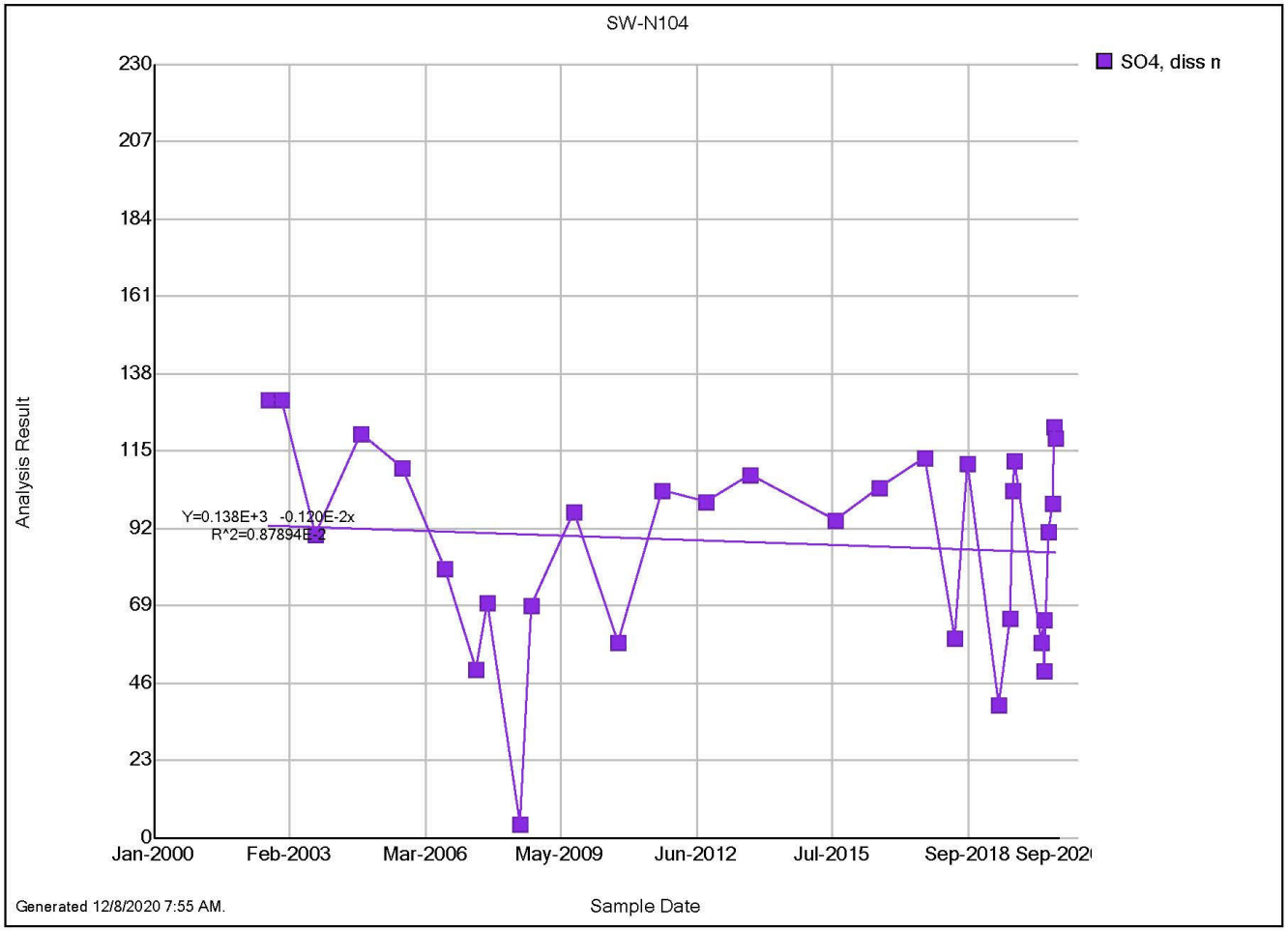

SW-N104
Fe, tot rec
9700
8730
7760
6790
5820
4850
3880
2910
1940
970
0
Analysis Result
Y=0.827E+4 -0.162E+0x
R^2=0.32055E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202
Generated 12/8/2020 7:59 AM.
Sample Date

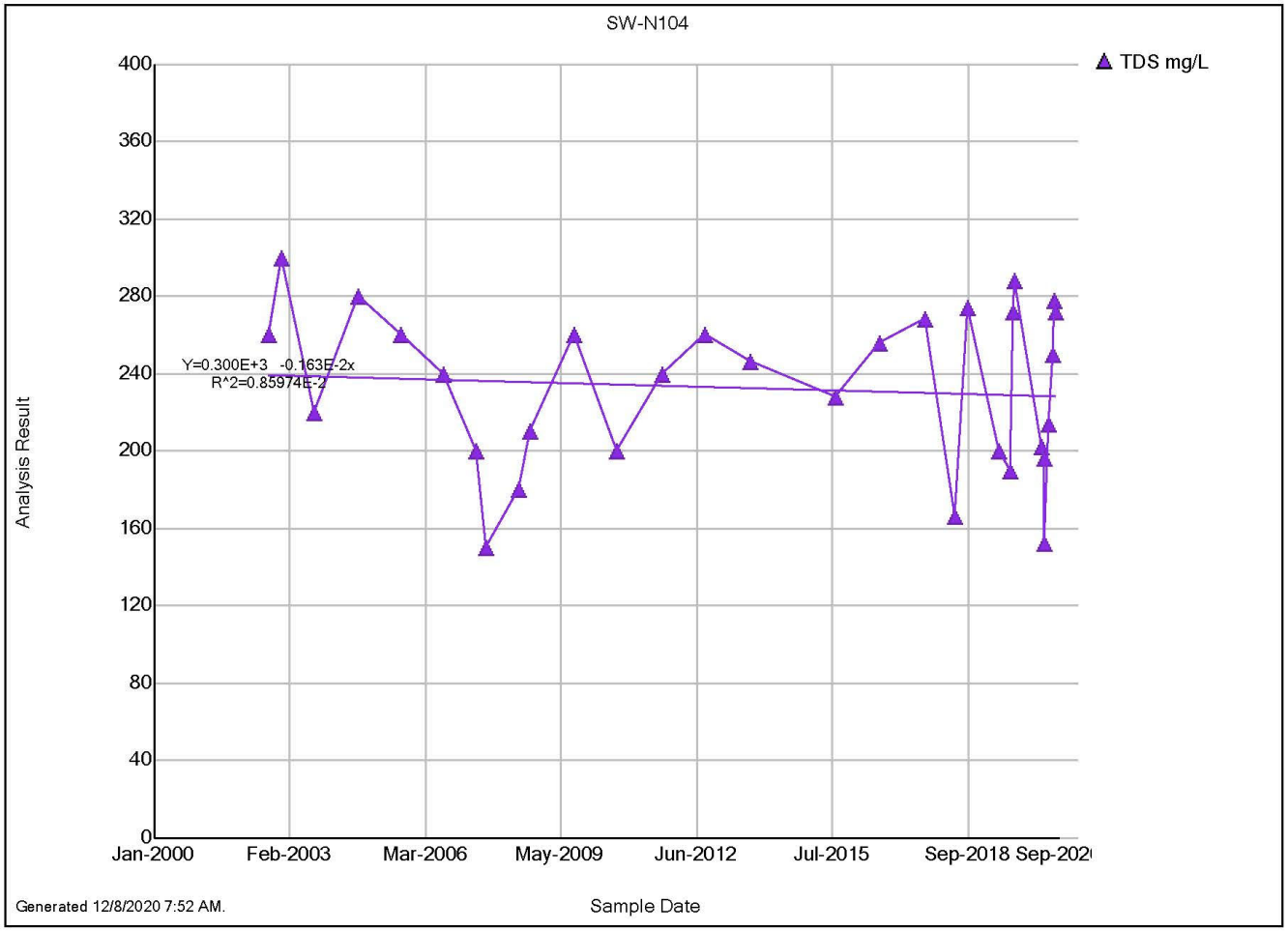

SW-N104
Spec. Cond
550
495
440
385
330
275
220
165
110
55
0
Analysis Result
Y=0.396E+3 -0.106E-2x
R^2=0.15102E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202
Generated 12/8/2020 7:48 AM.
Sample Date


SW-N104
pH (lab) pH
Y=0.425E+1 + 0.950E-4x
R^2=0.24262E+0
8.649
7.688
6.727
5.766
4.805
3.844
2.883
1.922
0.961
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202
Generated 12/8/2020 7:30 AM.
Sample Date


SW-N104
Mg, diss mg
10.4
9.36
8.32
7.28
6.24
5.2
4.16
3.12
2.08
1.04
0
Y=0.152E+2 -0.209E-3x
R^2=0.12900E+0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202
Generated 12/8/2020 8:02 AM.
Sample Date


SW-N104
Na, diss mg
8.3
7.47
6.64
5.81
4.98
4.15
3.32
2.49
1.66
0.83
0
Analysis Result
Y=0.104E+2 -0.134E-3x
R^2=0.75708E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202
Generated 12/8/2020 8:04 AM.
Sample Date


SW-N104
SO4, diss n
230
207
184
161
138
115
92
69
46
23
0
Analysis Result
Y=0.138E+3 -0.120E-2x
R^2=0.87894E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202
Generated 12/8/2020 7:55 AM.
Sample Date


SW-N104
TDS mg/L
Y=0.300E+3 -0.163E-2x
R^2=0.85974E-2
Analysis Result
400
360
320
280
240
200
160
120
80
40
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Generated 12/8/2020 7:52 AM.
Sample Date

# Appendix 3
# Groundwater Monitoring Data

**New Horizon Mine**

**Analysis Results by Date (column) and Parameter (row)**

**Date Range: 10/01/2019 to 09/30/2020**

**Well: GW-N3**

| | 12/10/2019 | 2/20/2020 | 6/9/2020 | 9/1/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.025 | <0.025 | <0.050 | <0.025 |
| Alkalinity, lab, mg/L | 410. | 380. | 380. | 380. |
| As, TD, mg/L | 0.0026 | 0.0011 | 0.0013 | 0.0020 |
| Ca, diss, mg/L | 440. | 440. | 410. | 370. |
| Cation-Anion Bal, % | 4.200 | 0.000 | -2.900 | -3.100 |
| Cl, diss, mg/L | 21. | 21. | 19. | 17. |
| CO3, mg/L | <1.0 | <1.0 | <1.0 | <1.0 |
| Fe, diss, mg/L | 3.8 | 0.55 | 0.68 | 0.80 |
| Fe, tot rec, ug/L | 9100. | 10000. | 9100. | 8000. |
| HCO3, mg/L | 410. | 380. | 380. | 380. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 10. | 9.4 | 8.6 | 8.4 |
| Mg, diss, mg/L | 150. | 140. | 130. | 120. |
| Mn, TD, mg/L | 1.5 | 1.3 | 1.3 | 1.3 |
| Mo, diss, mg/L | <0.010 | <0.010 | <0.020 | <0.010 |
| Na, diss, mg/L | 56. | 51. | 49. | 47. |
| NH3 as N, diss, mg/L | 0.43 | 0.47 | 0.38 | 0.29 |
| NO2 + NO3, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| NO2, diss, mg/L | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| pH (field), pH | 6.540 JC | 6.600 | 6.710 | 6.720 |
| pH (lab), pH | 7.700 | 7.500 | 7.800 | 7.700 |
| Se, TD, mg/L | 0.00030 | <0.00010 | 0.00030 | <0.00025 |
| SO4, diss, mg/L | 1200. | 1300. | 1300. | 1200. |
| Spec. Cond. (field), umhos/cm | 2740 | 2710 | 2590.000 | 2360.000 |
| Spec. Cond. (lab), umhos/cm | 2660.000 | 2700.000 | 2510.000 | 2320.000 |
| TDS, mg/L | 2500. | 2500. | 2300. | 2100. |
| Temp (Celcius), degrees C | 17.1 | 17.1 | 17.300 | 18.800 |

**New Horizon Mine**
**Analysis Results by**
**Date Range: 10/01/2019 to 09/30/2020**
**Well: GW-N17P1**

| | 12/11/2019 | 3/16/2020 | 6/11/2020 | 9/24/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.15 | <0.050 | <0.050 | <0.050 |
| Alkalinity, lab, mg/L | 630. | 690. | 690. | 600. |
| As, TD, mg/L | <0.00050 | <0.00020 | <0.00020 | <0.00020 |
| Ca, diss, mg/L | 370. | 98. | 77. | 62. |
| Cation-Anion Bal, % | 1.400 | 3.200 | -7.200 | -2.200 |
| Cl, diss, mg/L | 25. | 20. | 21. | 20. |
| CO3, mg/L | <1.0 | 45. | 29. | 9.2 |
| Fe, diss, mg/L | 0.040 | 0.050 | 0.050 | <0.0050 |
| Fe, tot rec, ug/L | 1600. | 170. | 200. | 340. |
| HCO3, mg/L | 630. | 640. | 660. | 590. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 20. | 10. | 8.4 | 7.7 |
| Mg, diss, mg/L | 260. | 68. | 53. | 43. |
| Mn, TD, mg/L | 0.28 | 0.050 | 0.046 | 0.037 |
| Mo, diss, mg/L | <0.050 | <0.020 | <0.020 | <0.020 |
| Na, diss, mg/L | 670. | 860. | 830. | 860. |
| NH3 as N, diss, mg/L | 2.4 | 0.51 | 1.4 | 1.3 |
| NO2 + NO3, diss, mg/L | <0.010 | 1.0 | 0.25 | 0.21 |
| NO2, diss, mg/L | <0.0050 | 0.050 | 0.11 | 0.11 |
| NO3, diss, mg/L | <0.010 | 0.97 | 0.14 | 0.10 |
| pH (field), pH | 7.220 JC | 7.5 | 7.400 | 7.700 |
| pH (lab), pH | 7.900 | 8.500 | 8.400 | 8.300 |
| Se, TD, mg/L | <0.00025 | <0.00010 | <0.00010 | <0.00010 |
| SO4, diss, mg/L | 2600. | 1500. | 1800. | 1600. |
| Spec. Cond. (field), umhos/cm | 5210 | 4780 | 3810 | 4140.000 |
| Spec. Cond. (lab), umhos/cm | 5110.000 | 4310.000 | 4200.000 | 4130.000 |
| TDS, mg/L | 4800. | 3200. | 3200. | 3000. |
| Temp (Celcius), degrees C | 12.3 | 13.2 | 14.000 | 13.600 |

**New Horizon Mine**

**Analysis Results by Date (column) and Parameter (row)**

**Date Range: 10/01/2019 to 09/30/2020**

**Well: GW-N18P1**

| | 12/11/2019 | 3/16/2020 | 6/11/2020 | 9/24/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.050 | <0.050 | <0.050 | <0.050 |
| Alkalinity, lab, mg/L | 430. | 490. | 480. | 540. |
| As, TD, mg/L | <0.00020 | <0.00020 | <0.00020 | <0.00020 |
| Ca, diss, mg/L | 350. | 590. | 570. | 390. |
| Cation-Anion Bal, % | 1.100 | 1.100 | -3.300 | -2.800 |
| Cl, diss, mg/L | 15. | 15. | 15. | 15. |
| CO3, mg/L | <1.0 | <1.0 | <1.0 | <1.0 |
| Fe, diss, mg/L | 0.090 | 0.040 | <0.0050 | 0.020 |
| Fe, tot rec, ug/L | 300. | 150. | 40. | 190. |
| HCO3, mg/L | 430. | 490. | 480. | 540. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 7.8 | 5.1 | 4.6 | 7.4 |
| Mg, diss, mg/L | 160. | 150. | 150. | 140. |
| Mn, TD, mg/L | 0.32 | 0.096 | 0.067 | 0.016 |
| Mo, diss, mg/L | <0.020 | <0.020 | <0.020 | <0.020 |
| Na, diss, mg/L | 360. | 65. | 68. | 74. |
| NH3 as N, diss, mg/L | 0.77 | <0.025 | <0.025 | 0.18 |
| NO2 + NO3, diss, mg/L | <0.010 | 0.66 | 0.67 | 0.64 |
| NO2, diss, mg/L | <0.0050 | <0.0050 | 0.020 | <0.0050 |
| NO3, diss, mg/L | <0.010 | 0.66 | 0.65 | 0.64 |
| pH (field), pH | 6.900 | 7.100 | 6.600 | 7.310 |
| pH (lab), pH | 7.800 | 8.000 | 7.900 | 7.600 |
| Se, TD, mg/L | <0.00010 | 0.00090 | 0.00080 | 0.0012 |
| SO4, diss, mg/L | 1700. | 1600. | 1700. | 1200. |
| Spec. Cond. (field), umhos/cm | 3610 | 3290 | 2780 | 2620.000 |
| Spec. Cond. (lab), umhos/cm | 3530.000 | 3220.000 | 3220.000 | 2660.000 |
| TDS, mg/L | 3200. | 3200. | 3200. | 2400. |
| Temp (Celcius), degrees C | 12.3 | 13.7 | 13.900 | 13.800 |

**New Horizon Mine**
**Analysis Results by**
**Date Range: 10/01/2019 to 09/30/2020**
**Well: GW-N36**

| | 12/10/2019 | 3/12/2020 | 6/9/2020 | 9/22/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.025 | <0.025 | 0.61 | <0.025 |
| Alkalinity, lab, mg/L | 590. | 530. | 11. | 370. |
| As, TD, mg/L | <0.00020 | 0.00030 | <0.00020 | <0.00010 |
| Ca, diss, mg/L | 190. | 190. | 40. | 140. |
| Cation-Anion Bal, % | -2.200 | -2.400 | -1.200 | 0.000 |
| Cl, diss, mg/L | 29. | 30. | 19. | 22. |
| CO3, mg/L | <1.0 | <1.0 | <1.0 | <1.0 |
| Fe, diss, mg/L | 0.035 | 0.45 | 0.037 | 0.16 |
| Fe, tot rec, ug/L | 1300. | 830. | 49. | 4500. |
| HCO3, mg/L | 590. | 530. | 11. | 370. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 32. | 25. | 2.3 | 21. |
| Mg, diss, mg/L | 92. | 75. | 16. | 64. |
| Mn, TD, mg/L | 0.12 | 0.17 | 0.026 | 0.16 |
| Mo, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| Na, diss, mg/L | 92. | 80. | 18. | 63. |
| NH3 as N, diss, mg/L | 0.97 | 0.63 | <0.025 | 0.58 |
| NO2 + NO3, diss, mg/L | <0.010 | 0.17 | 0.62 | 0.020 |
| NO2, diss, mg/L | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | <0.010 | 0.17 | 0.62 | 0.020 |
| pH (field), pH | 6.910 JC | 7.000 | 5.300 | 7.000 |
| pH (lab), pH | 7.900 | 7.800 | 6.600 | 7.600 |
| Se, TD, mg/L | <0.00010 | 0.00020 | 0.0014 | 0.00034 |
| SO4, diss, mg/L | 520. | 440. | 170. | 360. |
| Spec. Cond. (field), umhos/cm | 1826 | 1679 | 509.000 | 1393.000 |
| Spec. Cond. (lab), umhos/cm | 1840.000 | 1630.000 | 460.000 | 1380.000 |
| TDS, mg/L | 1400. | 1200. | 360. | 1000. |
| Temp (Celcius), degrees C | 13.9 | 14.5 | 14.400 | 15.100 |

**New Horizon Mine**
**Analysis Results by Date (column) and Parameter (row)**
**Date Range: 10/01/2019 to 09/30/2020**
**Well: GW-N37**

| | 12/10/2019 | 3/12/2020 | 6/11/2020 | 9/22/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | Dry | Dry | 0.79 | Dry |
| Alkalinity, lab, mg/L | | | <1.0 | |
| As, TD, mg/L | | | <0.00010 | |
| Ca, diss, mg/L | | | 37. | |
| Cation-Anion Bal, % | | | -2.500 | |
| Cl, diss, mg/L | | | 19. | |
| CO3, mg/L | | | <1.0 | |
| Fe, diss, mg/L | | | 0.032 | |
| Fe, tot rec, ug/L | | | 81. | |
| HCO3, mg/L | | | <1.0 | |
| Hg, diss, mg/L | | | <0.00010 | |
| K, diss, mg/L | | | 1.4 | |
| Mg, diss, mg/L | | | 14. | |
| Mn, TD, mg/L | | | 0.019 | |
| Mo, diss, mg/L | | | <0.010 | |
| Na, diss, mg/L | | | 16. | |
| NH3 as N, diss, mg/L | | | <0.025 | |
| NO2 + NO3, diss, mg/L | | | 0.63 | |
| NO2, diss, mg/L | | | <0.0050 | |
| NO3, diss, mg/L | | | 0.63 | |
| pH (field), pH | | | 5.600 | |
| pH (lab), pH | | | 5.100 | |
| Se, TD, mg/L | | | 0.0013 | |
| SO4, diss, mg/L | | | 170. | |
| Spec. Cond. (field), umhos/cm | | | 725.000 | |
| Spec. Cond. (lab), umhos/cm | | | 442.000 | |
| TDS, mg/L | | | 350. | |
| Temp (Celcius), degrees C | | | 14.100 | |

**New Horizon Mine**
**Date Range: 10/01/2018 to 09/30/2019**
**Well: GW-N38**

| | 12/10/2019 | 3/12/2020 | 6/11/2020 | 9/22/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | Dry | Dry | Dry | Dry |
| Alkalinity, lab, mg/L | | | | |
| As, TD, mg/L | | | | |
| Ca, diss, mg/L | | | | |
| Cation-Anion Bal, % | | | | |
| Cl, diss, mg/L | | | | |
| CO3, mg/L | | | | |
| Fe, diss, mg/L | | | | |
| Fe, tot rec, ug/L | | | | |
| HCO3, mg/L | | | | |
| Hg, diss, mg/L | | | | |
| K, diss, mg/L | | | | |
| Mg, diss, mg/L | | | | |
| Mn, TD, mg/L | | | | |
| Mo, diss, mg/L | | | | |
| Na, diss, mg/L | | | | |
| NH3 as N, diss, mg/L | | | | |
| NO2 + NO3, diss, mg/L | | | | |
| NO2, diss, mg/L | | | | |
| NO3, diss, mg/L | | | | |
| pH (field), pH | | | | |
| pH (lab), pH | | | | |
| Se, TD, mg/L | | | | |
| SO4, diss, mg/L | | | | |
| Spec. Cond. (field), umhos/cm | | | | |
| Spec. Cond. (lab), umhos/cm | | | | |
| TDS, mg/L | | | | |
| Temp (Celcius), degrees C | | | | |
| Temp (Celcius), degrees C | | | | |
| Zn, TD, mg/L | | | | |

**New Horizon Mine**
**Analysis Results by**
**Date Range: 10/01/2019 to 09/30/2020**
**Well: GW-N39**

| | 12/11/2019 | 3/12/2020 | 6/9/2020 | 9/22/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.050 | <0.050 | <0.050 | <0.025 |
| Alkalinity, lab, mg/L | 430. | 470. | 430. | 430. |
| As, TD, mg/L | 0.0012 | 0.00090 | 0.0010 | 0.0028 |
| Ca, diss, mg/L | 630. | 630. | 590. | 610. |
| Cation-Anion Bal, % | 0.000 | 2.300 | -2.500 | 3.900 |
| Cl, diss, mg/L | 9.3 | 19. | 10. | 9.2 |
| CO3, mg/L | <1.0 | <1.0 | <1.0 | <1.0 |
| Fe, diss, mg/L | 5.5 | 5.1 | 1.0 | 11. |
| Fe, tot rec, ug/L | 34000. | 26000. | 39000. | 18000. |
| HCO3, mg/L | 430. | 470. | 430. | 430. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 2.6 | 3.1 | 2.6 | 2.9 |
| Mg, diss, mg/L | 85. | 130. | 84. | 86. |
| Mn, TD, mg/L | 8.3 | 7.1 | 8.0 | 7.8 |
| Mo, diss, mg/L | <0.020 | <0.020 | <0.020 | <0.010 |
| Na, diss, mg/L | 36. | 47. | 36. | 35. |
| NH3 as N, diss, mg/L | 0.80 | 0.30 | 0.75 | 0.71 |
| NO2 + NO3, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| NO2, diss, mg/L | 0.010 | 0.010 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| pH (field), pH | 6.8 | 7.100 | 6.500 | 7.020 |
| pH (lab), pH | 7.400 | 7.500 | 7.800 | 7.500 |
| Se, TD, mg/L | <0.00010 | <0.00010 | <0.00010 | 0.00022 |
| SO4, diss, mg/L | 1600. | 1600. | 1500. | 1300. |
| Spec. Cond. (field), umhos/cm | 2970 | 2910 | 2870.000 | 2870.000 |
| Spec. Cond. (lab), umhos/cm | 2900.000 | 3000.000 | 2820.000 | 2790.000 |
| TDS, mg/L | 2900. | 3000. | 2700. | 2800. |
| Temp (Celcius), degrees C | 8.3 | 4.3 | 10.000 | 13.100 |

**New Horizon Mine**
**Analysis Results by Date (column) and Parameter (row)**
**Date Range: 10/01/2019 to 09/30/2020**
**Well: GW-N40**

| | 12/11/2019 | 3/12/2020 | 6/9/2020 | 9/22/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.025 | <0.050 | <0.050 | <0.025 |
| Alkalinity, lab, mg/L | 390. | 390. | 370. | 440. |
| As, TD, mg/L | 0.00080 | <0.00020 | 0.00060 | 0.0018 |
| Ca, diss, mg/L | 410. | 410. | 360. | 450. |
| Cation-Anion Bal, % | 2.700 | 1.300 | -2.900 | 4.100 |
| Cl, diss, mg/L | 14. | 18. | 18. | 64. |
| CO3, mg/L | <1.0 | <1.0 | <1.0 | <1.0 |
| Fe, diss, mg/L | 0.010 | 0.13 | 0.080 | 0.18 |
| Fe, tot rec, ug/L | 2300. | 2100. | 1400. | 1600. |
| HCO3, mg/L | 390. | 390. | 370. | 440. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 3.3 | 2.8 | 2.8 | 5.7 |
| Mg, diss, mg/L | 170. | 170. | 150. | 470. |
| Mn, TD, mg/L | 2.9 | 2.4 | 2.4 | 3.2 |
| Mo, diss, mg/L | <0.010 | <0.020 | <0.020 | <0.010 |
| Na, diss, mg/L | 88. | 86. | 80. | 330. |
| NH3 as N, diss, mg/L | 0.17 | 0.13 | 0.21 | 0.25 |
| NO2 + NO3, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| NO2, diss, mg/L | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| pH (field), pH | 7.300 | 7.400 | 7.200 | 7.600 |
| pH (lab), pH | 7.900 | 7.900 | 7.900 | 7.800 |
| Se, TD, mg/L | 0.00030 | <0.00010 | <0.00010 | 0.0026 |
| SO4, diss, mg/L | 1300. | 1400. | 1300. | 2900. |
| Spec. Cond. (field), umhos/cm | 2860 | 2810 | 2550.000 | 4990.000 |
| Spec. Cond. (lab), umhos/cm | 2770.000 | 2750.000 | 2520.000 | 4930.000 |
| TDS, mg/L | 2600. | 2600. | 2300. | 5300. |
| Temp (Celcius), degrees C | 9.3 | 6.2 | 9.600 | 14.000 |

**New Horizon Mine**
**Analysis Results by**
**Date Range: 10/01/2019 to 09/30/2020**
**Well: GW-N41**

| | 12/11/2019 | 3/12/2020 | 6/9/2020 | 9/23/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.025 | Dry | <0.025 | <0.025 |
| Alkalinity, lab, mg/L | 240. | | 300. | 310. |
| As, TD, mg/L | <0.00050 | | <0.00020 | 0.00029 |
| Ca, diss, mg/L | 73. | | 89. | 91. |
| Cation-Anion Bal, % | -0.700 | | -4.300 | -1.100 |
| Cl, diss, mg/L | 3.9 | | 4.1 | 4.8 |
| CO3, mg/L | <1.0 | | <1.0 | <1.0 |
| Fe, diss, mg/L | <0.0025 | | 0.011 | 0.019 |
| Fe, tot rec, ug/L | 3500. | | 2800. | 3500. |
| HCO3, mg/L | 240. | | 300. | 310. |
| Hg, diss, mg/L | <0.00010 | | <0.00010 | <0.00010 |
| K, diss, mg/L | 1.4 | | 1.8 | 1.8 |
| Mg, diss, mg/L | 36. | | 35. | 43. |
| Mn, TD, mg/L | <0.0010 | | 0.011 | 0.0025 |
| Mo, diss, mg/L | <0.010 | | <0.010 | <0.010 |
| Na, diss, mg/L | 11. | | 8.7 | 13. |
| NH3 as N, diss, mg/L | <0.025 | | <0.025 | <0.025 |
| NO2 + NO3, diss, mg/L | 0.25 | | 0.13 | 0.28 |
| NO2, diss, mg/L | 0.010 | | 0.010 | 0.016 |
| NO3, diss, mg/L | 0.24 | | 0.12 | 0.27 |
| pH (field), pH | 7.71 | | 7.400 | 8.430 |
| pH (lab), pH | 8.100 | | 8.200 | 7.900 |
| Se, TD, mg/L | 0.00080 | | 0.00070 | 0.00098 |
| SO4, diss, mg/L | 100. | | 110. | 120. |
| Spec. Cond. (field), umhos/cm | 672 | | 687.000 | 773.000 |
| Spec. Cond. (lab), umhos/cm | 634.000 | | 702.000 | 775.000 |
| TDS, mg/L | 450. | | 480. | 540. |
| Temp (Celcius), degrees C | 12 | | 11.800 | 13.800 |

**New Horizon Mine**
**Date Range: 10/01/2018 to 09/30/2019**
**Well: GW-N42**

| | 12/10/2019 | 3/12/2020 | 6/11/2020 | 9/22/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | Dry | Dry | Dry | Dry |
| Alkalinity, lab, mg/L | | | | |
| As, TD, mg/L | | | | |
| Ca, diss, mg/L | | | | |
| Cation-Anion Bal, % | | | | |
| Cl, diss, mg/L | | | | |
| CO3, mg/L | | | | |
| Fe, diss, mg/L | | | | |
| Fe, tot rec, ug/L | | | | |
| HCO3, mg/L | | | | |
| Hg, diss, mg/L | | | | |
| K, diss, mg/L | | | | |
| Mg, diss, mg/L | | | | |
| Mn, TD, mg/L | | | | |
| Mo, diss, mg/L | | | | |
| Na, diss, mg/L | | | | |
| NH3 as N, diss, mg/L | | | | |
| NO2 + NO3, diss, mg/L | | | | |
| NO2, diss, mg/L | | | | |
| NO3, diss, mg/L | | | | |
| pH (field), pH | | | | |
| pH (lab), pH | | | | |
| Se, TD, mg/L | | | | |
| SO4, diss, mg/L | | | | |
| Spec. Cond. (field), umhos/cm | | | | |
| Spec. Cond. (lab), umhos/cm | | | | |
| TDS, mg/L | | | | |
| Temp (Celcius), degrees C | | | | |
| Temp (Celcius), degrees C | | | | |
| Zn, TD, mg/L | | | | |

**New Horizon Mine**
**Analysis Results by**
**Date Range: 10/01/2019 to 09/30/2020**
**Well: GW-N43**

| | 12/11/2019 | 3/17/2020 | 6/9/2020 | 9/22/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.025 | <0.050 | 5.3 | 7.6 |
| Alkalinity, lab, mg/L | 200. | 230. | <1.0 | <1.0 |
| As, TD, mg/L | 0.0033 | 0.00070 | <0.00020 | <0.00010 |
| Ca, diss, mg/L | 190. | 190. | 71. | 93. |
| Cation-Anion Bal, % | 0.000 | -2.300 | 0.000 | 3.800 |
| Cl, diss, mg/L | 14. | 16. | 9.9 | 13. |
| CO3, mg/L | <1.0 | <1.0 | <1.0 | <1.0 |
| Fe, diss, mg/L | 0.31 | 0.047 | 0.20 | 0.34 |
| Fe, tot rec, ug/L | 7400. | 3700. | 260. | 350. |
| HCO3, mg/L | 200. | 230. | <1.0 | <1.0 |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 6.7 | 8.0 | 1.5 | 1.6 |
| Mg, diss, mg/L | 110. | 110. | 24. | 33. |
| Mn, TD, mg/L | 0.94 | 0.90 | 0.24 | 0.26 |
| Mo, diss, mg/L | <0.010 | <0.020 | <0.010 | <0.010 |
| Na, diss, mg/L | 44. | 49. | 25. | 29. |
| NH3 as N, diss, mg/L | 0.20 | 0.23 | 0.21 | 0.59 |
| NO2 + NO3, diss, mg/L | 0.81 | 0.41 | 3.7 | 2.6 |
| NO2, diss, mg/L | 0.010 | <0.0050 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | 0.80 | 0.41 | 3.7 | 2.6 |
| pH (field), pH | 6.8 | 6.700 | 3.940 | 4.000 |
| pH (lab), pH | 7.200 | 7.500 | 4.300 | 3.900 |
| Se, TD, mg/L | 0.0017 | 0.0010 | 0.0032 | 0.0043 |
| SO4, diss, mg/L | 800. | 810. | 320. | 400. |
| Spec. Cond. (field), umhos/cm | 1596 | 1803 | 781.000 | 982.000 |
| Spec. Cond. (lab), umhos/cm | 1710.000 | 1840.000 | 751.000 | 977.000 |
| TDS, mg/L | 1400. | 1600. | 570. | 720. |
| Temp (Celcius), degrees C | 11.3 | 13.4 | 13.100 | 13.000 |

**New Horizon Mine**

**Analysis Results by Date (column) and Parameter (row)**

**Date Range: 10/01/2019 to 09/30/2020**

**Well: GW-N44**

| | 12/16/2019 | 3/16/2020 | 6/16/2020 | 7/14/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.025 | <0.025 | <0.025 | <0.025 |
| Alkalinity, lab, mg/L | 380. | 390. | 400. | 390. |
| As, TD, mg/L | <0.00010 | 0.00060 | <0.00020 | 0.00050 |
| Ca, diss, mg/L | 280. | 180. | 320. | 270. |
| Cation-Anion Bal, % | 0.000 | 23.100 | -1.600 | -2.100 |
| Cl, diss, mg/L | 9.5 | 19. | 13. | 12. |
| CO3, mg/L | <1.0 | <1.0 | <1.0 | <1.0 |
| Fe, diss, mg/L | 0.019 | 0.086 | 0.018 | 0.054 |
| Fe, tot rec, ug/L | 1000. | 760. | 45. | 74. |
| HCO3, mg/L | 380. | 390. | 400. | 390. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 2.0 | 5.3 | 1.8 | 1.7 |
| Mg, diss, mg/L | 94. | 79. | 140. | 92. |
| Mn, TD, mg/L | 0.0088 | 0.26 | 0.025 | 0.013 |
| Mo, diss, mg/L | <0.010 | <0.010 | <0.010 | <0.010 |
| Na, diss, mg/L | 36. | 540. | 75. | 35. |
| NH3 as N, diss, mg/L | <0.025 | <0.025 | <0.025 | <0.025 |
| NO2 + NO3, diss, mg/L | 0.13 | 0.12 | 0.19 | 0.24 |
| NO2, diss, mg/L | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | 0.13 | 0.12 | 0.19 | 0.24 |
| pH (field), pH | 7.300 | 7.22 | 8.300 | 7.400 |
| pH (lab), pH | 8.100 | 8.200 | 8.000 | 8.000 |
| Se, TD, mg/L | 0.0037 | 0.0016 | 0.0039 | 0.0031 |
| SO4, diss, mg/L | 740. | 790. | 1100. | 740. |
| Spec. Cond. (field), umhos/cm | 1819 | 1882 | 1403 | 1793.000 |
| Spec. Cond. (lab), umhos/cm | 1830.000 | 1860.000 | 2000.000 | 1790.000 |
| TDS, mg/L | 1500. | 1500. | 1700. | 1500. |
| Temp (Celcius), degrees C | 9.2 | 10.4 | 11.000 | 11.100 |

**New Horizon Mine**

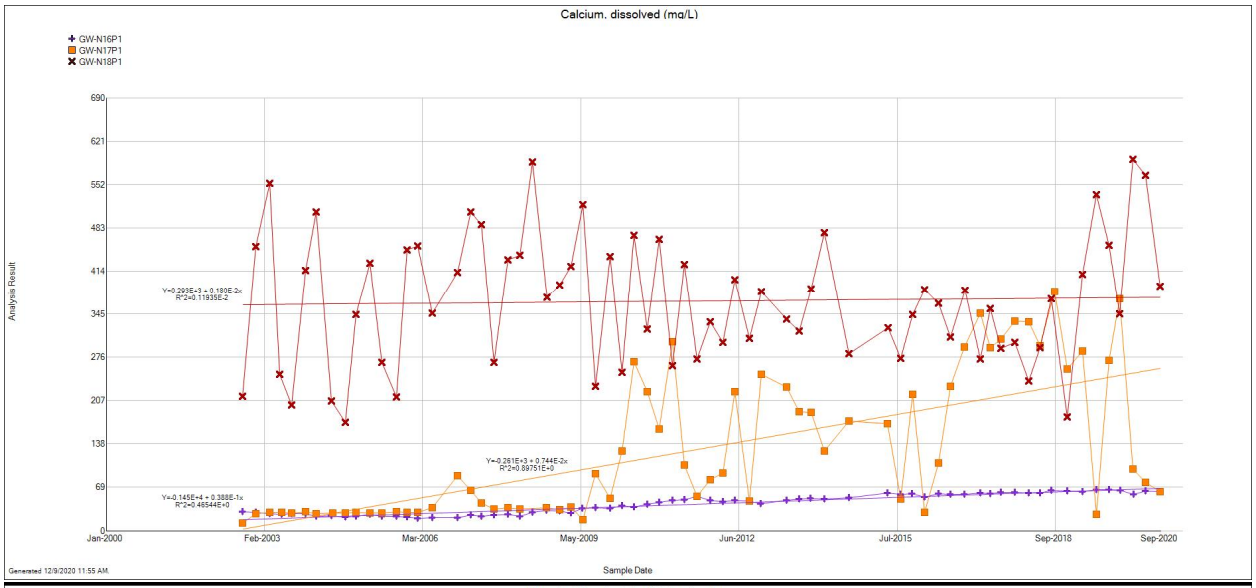
**Analysis Results by Date (column) and Parameter (row)**

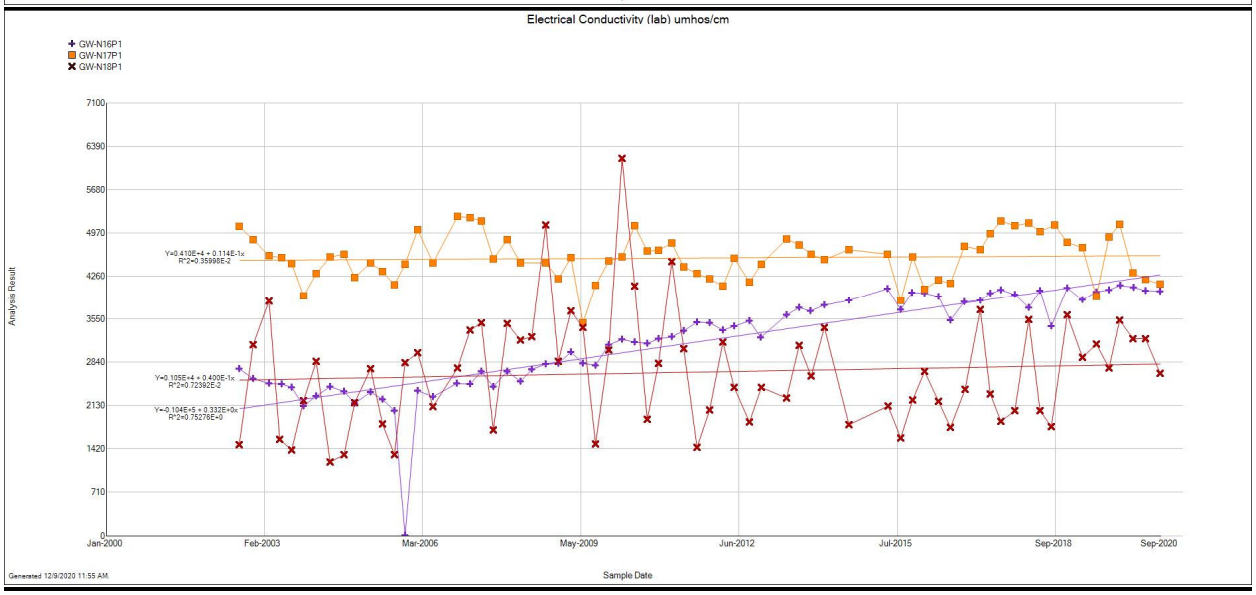
**Date Range: 10/01/2019 to 09/30/2020**

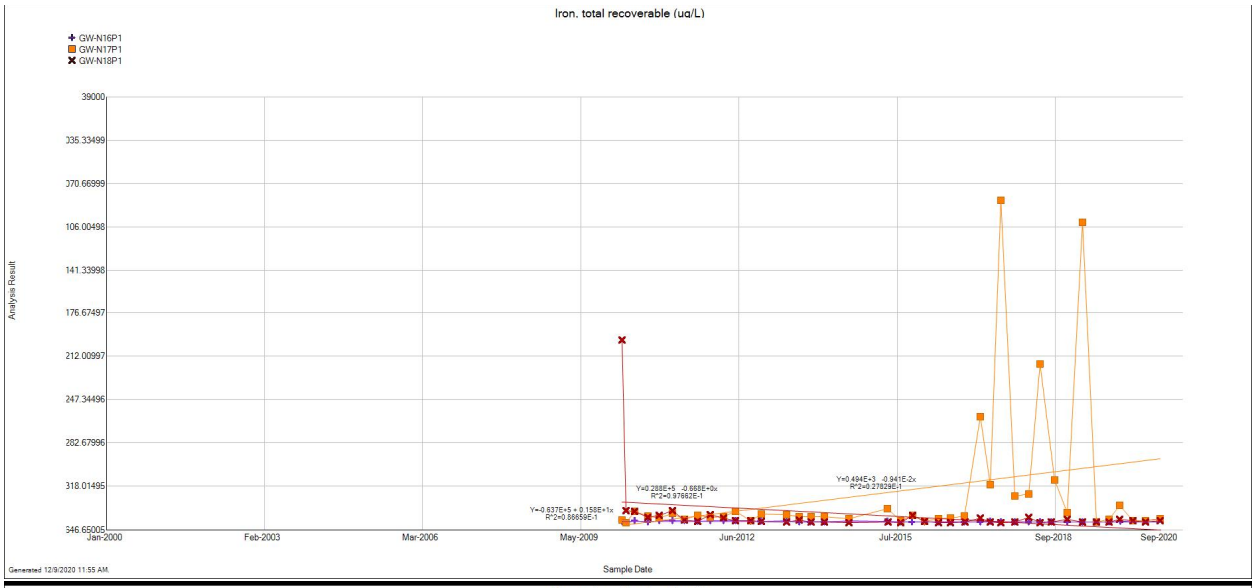
**Well: GW-N45**

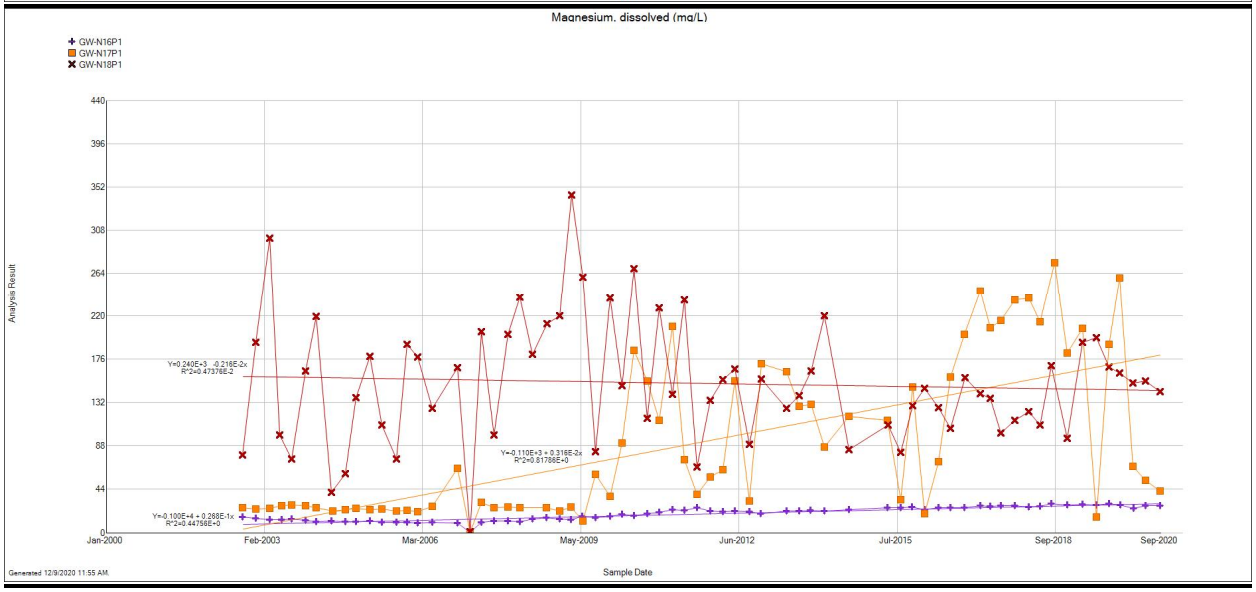
| | 12/16/2019 | 3/16/2020 | 6/16/2020 | 7/14/2020 |
|---|---|---|---|---|
| Al, diss, mg/L | <0.25 | <0.25 | <0.15 | 3.0 |
| Alkalinity, lab, mg/L | 1100. | 1200. | 1300. | 1300. |
| As, TD, mg/L | <0.0010 | <0.0010 | <0.00050 | 0.0040 |
| Ca, diss, mg/L | 160. | 130. | 35. | 110. |
| Cation-Anion Bal, % | 2.900 | -2.500 | -6.800 | 2.500 |
| Cl, diss, mg/L | 73. | 49. | 68. | 59. |
| CO3, mg/L | <1.0 | 21. | 80. | <1.0 |
| Fe, diss, mg/L | 0.050 | 0.13 | 0.20 | 3.7 |
| Fe, tot rec, ug/L | 190. | 280. | 300. | 22000. |
| HCO3, mg/L | 1100. | 1200. | 1200. | 1300. |
| Hg, diss, mg/L | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| K, diss, mg/L | 17. | 17. | 9.0 | 11. |
| Mg, diss, mg/L | 1700. | 1400. | 350. | 630. |
| Mn, TD, mg/L | 1.5 | 1.2 | 0.24 | 5.3 |
| Mo, diss, mg/L | <0.10 | <0.10 | <0.050 | <0.050 |
| Na, diss, mg/L | 1400. | 1300. | 880. | 960. |
| NH3 as N, diss, mg/L | 2.5 | 2.4 | 1.4 | 1.4 |
| NO2 + NO3, diss, mg/L | 0.060 | <0.010 | <0.010 | <0.010 |
| NO2, diss, mg/L | 0.030 | 0.020 | <0.0050 | <0.0050 |
| NO3, diss, mg/L | 0.030 | <0.010 | <0.010 | <0.010 |
| pH (field), pH | 7.43 | 7.7 | 8.700 | 8.000 |
| pH (lab), pH | 8.100 | 8.300 | 8.500 | 8.300 |
| Se, TD, mg/L | <0.00050 | <0.00050 | <0.00025 | 0.0013 |
| SO4, diss, mg/L | 8300. | 7600. | 2400. | 3300. |
| Spec. Cond. (field), umhos/cm | 1217 | 1098.000 | 3550 | 6620.000 |
| Spec. Cond. (lab), umhos/cm | 11400.000 | 10900.000 | 5310.000 | 6780.000 |
| TDS, mg/L | 13000. | 12000. | 4300. | 6400. |
| Temp (Celcius), degrees C | 9.5 | 11.1 | 13.300 | 13.200 |

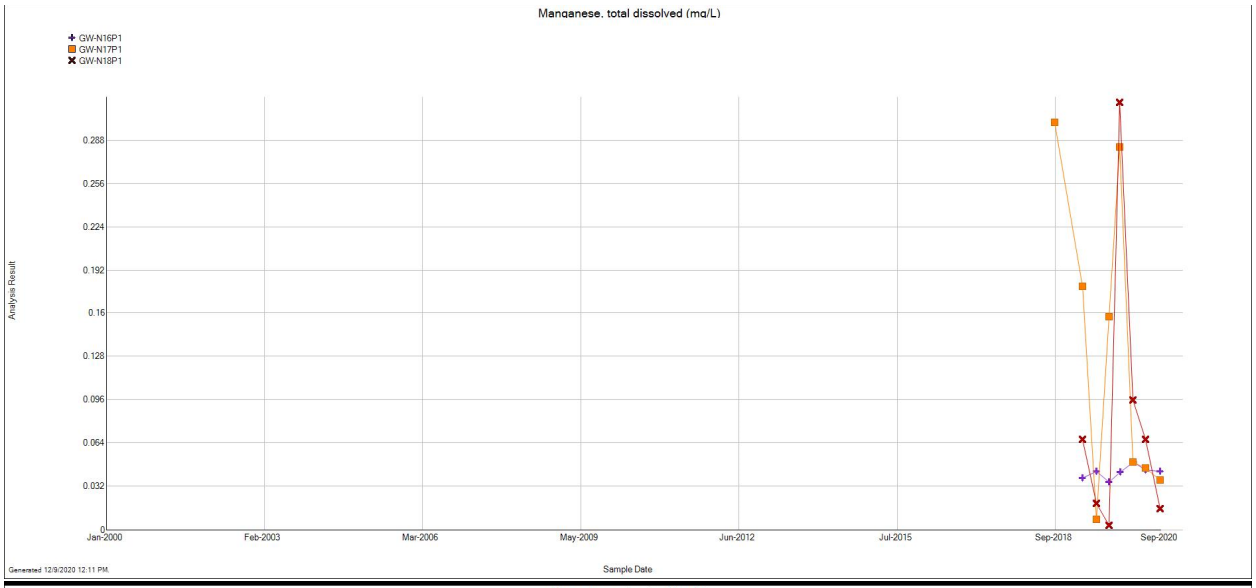
# Appendix 4
# Groundwater Monitoring Graphs

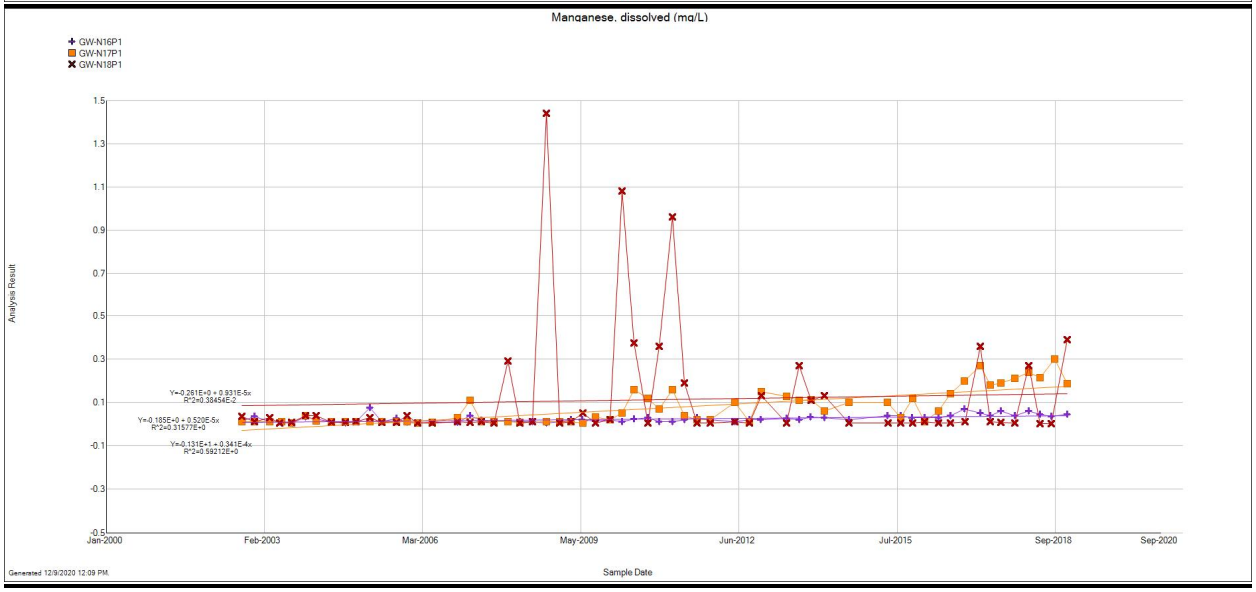

Calcium, dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Y=0.293E+3 + 0.180E-2x
R^2=0.11935E-2
Y=0.261E+3 + 0.744E-2x
R^2=0.89751E+0
Y=0.145E+4 + 0.388E-1x
R^2=0.46544E+0
690
621
552
483
414
345
276
207
138
69
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Analysis Result
Sample Date
Generated 12/9/2020 11:55 AM.

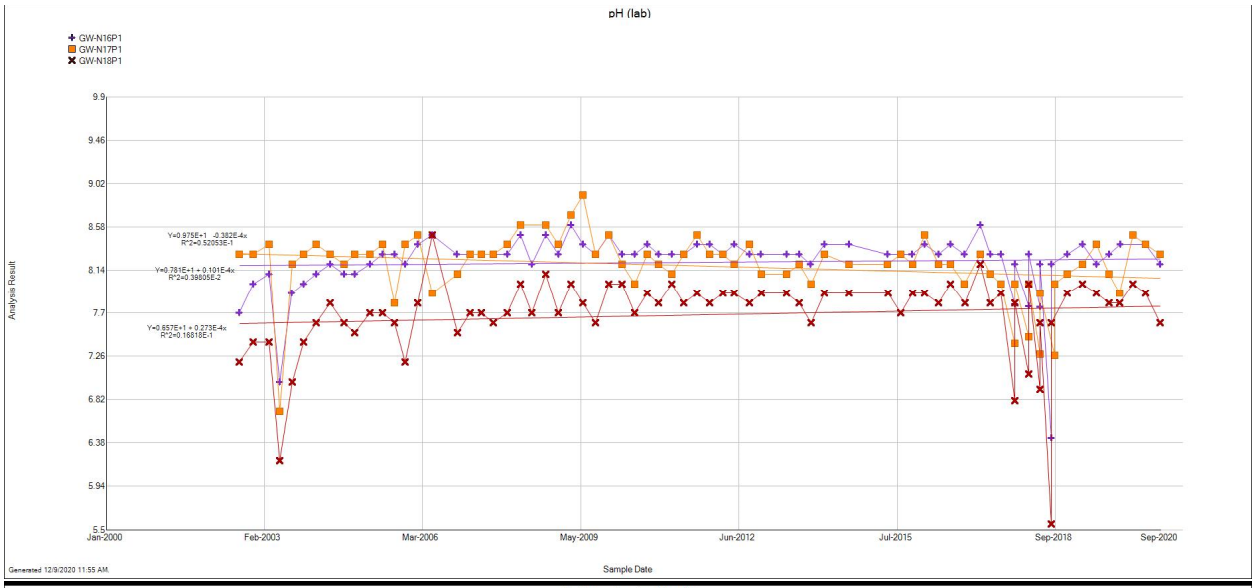

Electrical Conductivity (lab) umhos/cm
GW-N16P1
GW-N17P1
GW-N18P1
Y=0.410E+4 + 0.114E-1x
R^2=0.35998E-2
Y=0.105E+4 + 0.400E-1x
R^2=0.72392E-2
Y=-0.104E+5 + 0.332E+0x
R^2=0.75276E+0
7100
6390
5680
4970
4260
3550
2840
2130
1420
710
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Analysis Result
Sample Date
Generated 12/9/2020 11:55 AM.

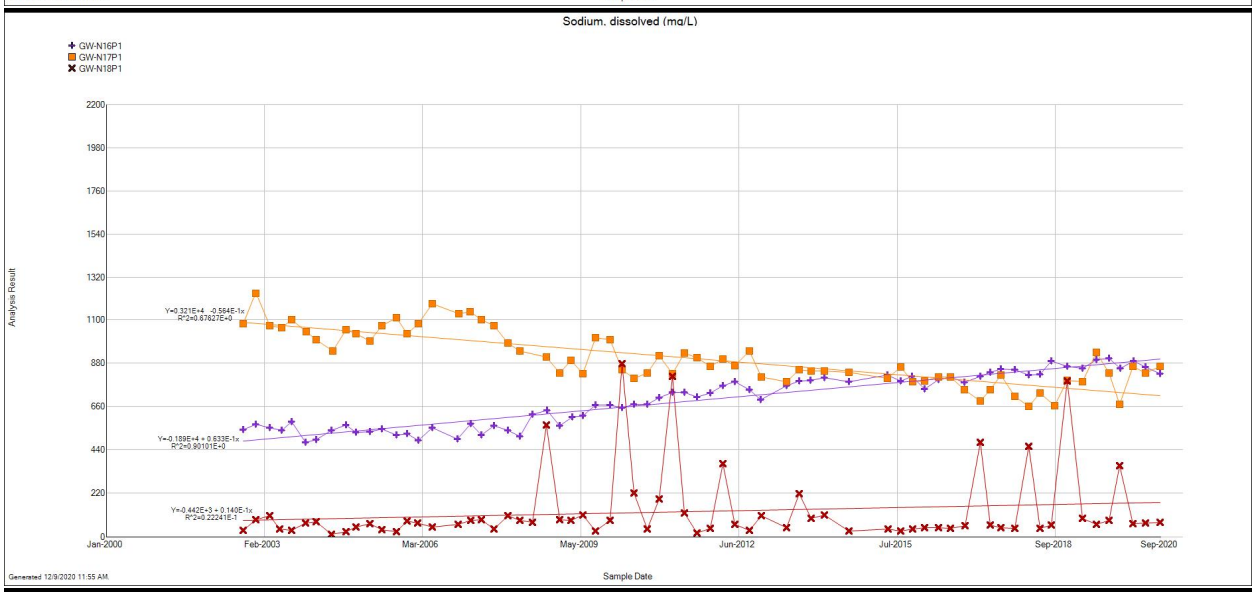

Iron, total recoverable (ug/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
39000
35.33499
70.66999
106.00498
141.33998
176.67497
212.00997
247.34496
282.67996
318.01495
346.65005
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.288E+5 -0.668E+0x
R^2=0.97662E-1
Y=-0.837E+5 + 0.158E+1x
R^2=0.86659E-1
Y=0.494E+3 -0.941E-2x
R^2=0.27629E-1
Generated 12/9/2020 11:55 AM
Sample Date

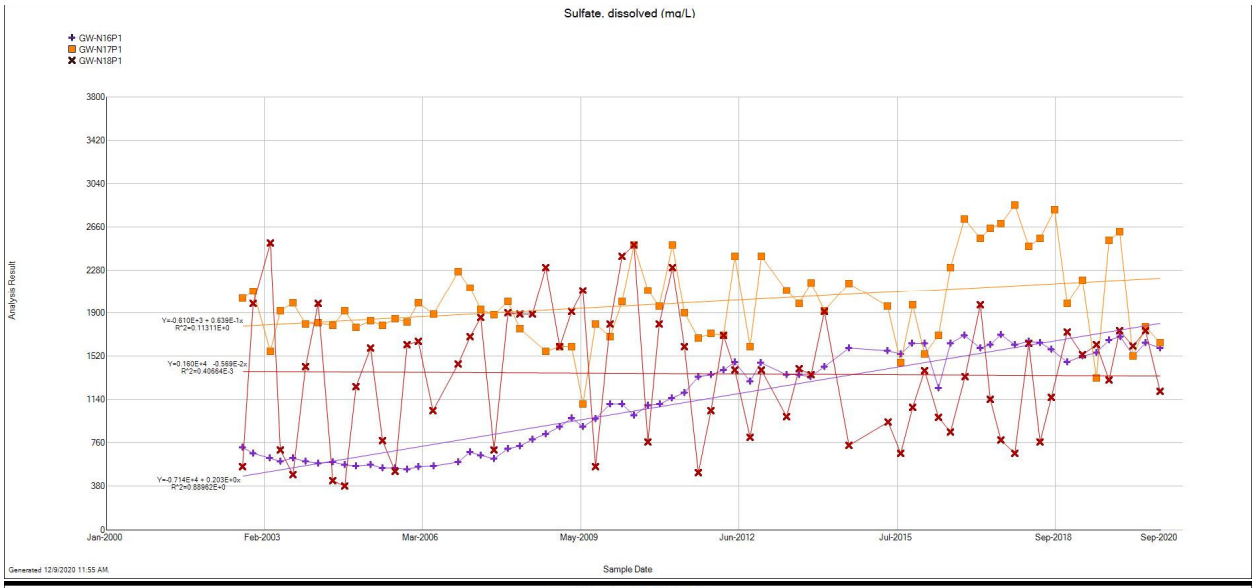

Magnesium, dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
440
396
352
308
264
220
176
132
88
44
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.240E+3 -0.216E-2x
R^2=0.47376E-2
Y=-0.110E+3 + 0.316E-2x
R^2=0.81788E+0
Y=-0.100E+4 + 0.268E-1x
R^2=0.44798E+0
Generated 12/9/2020 11:55 AM
Sample Date

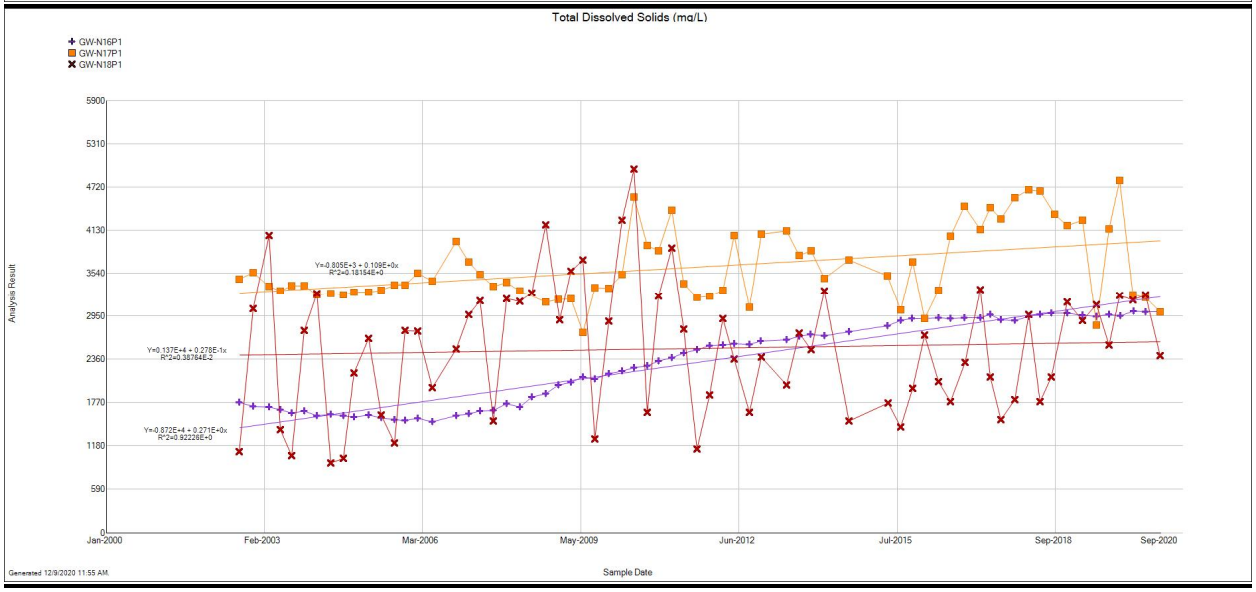

Manganese, total dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
0.288
0.256
0.224
0.192
0.16
0.128
0.096
0.064
0.032
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 12:11 PM.

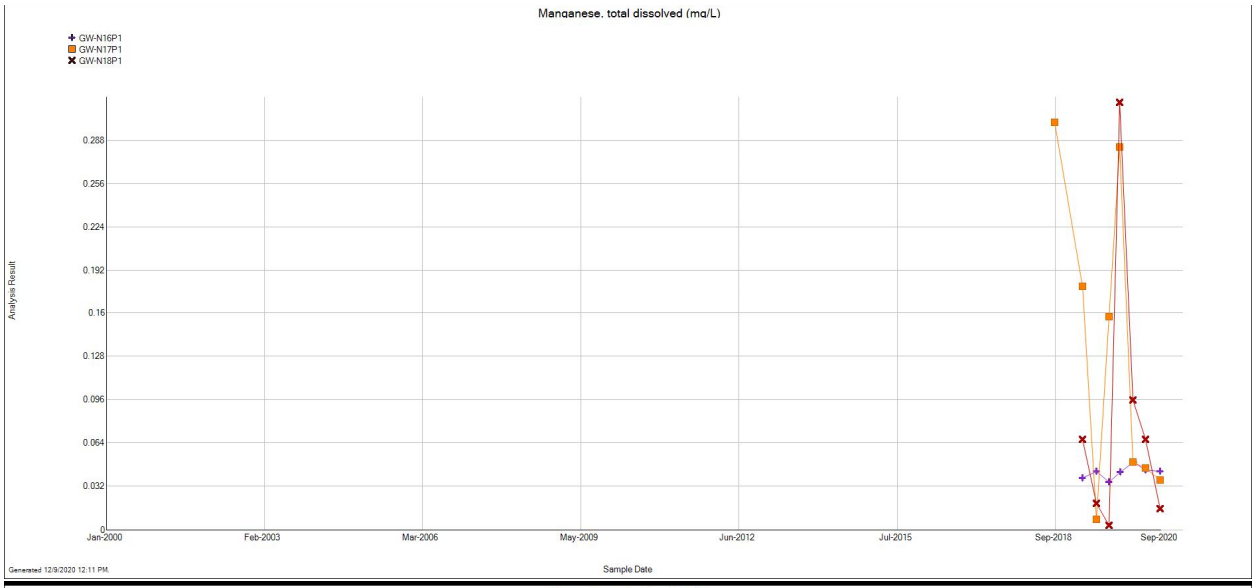

Manganese, dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
1.5
1.3
1.1
0.9
0.7
0.5
0.3
0.1
-0.1
-0.3
-0.5
Y=-0.261E+0 + 0.931E-5x
R^2=0.38454E-2
Y=0.185E+0 + 0.529E-5x
R^2=0.31577E+0
Y=-0.131E+1 + 0.341E-4x
R^2=0.99212E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 12:09 PM.

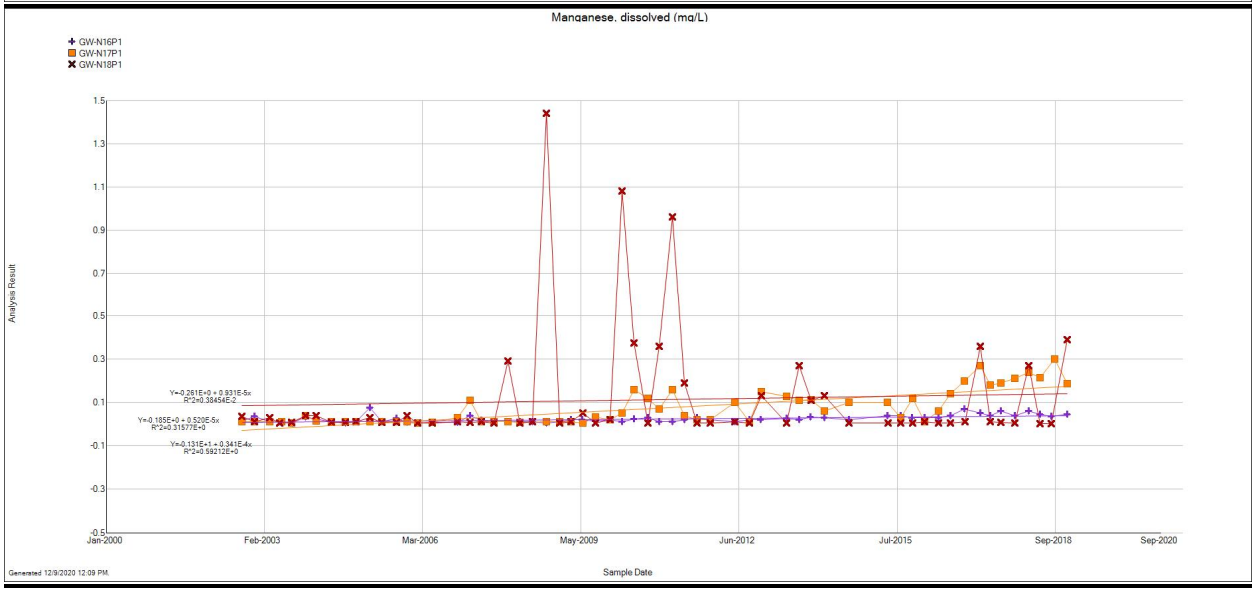

pH (lab)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
9.9
9.46
9.02
8.58
8.14
7.7
7.26
6.82
6.38
5.94
5.5
Y=0.975E+1 -0.382E-4x
R^2=0.52053E-1
Y=0.781E+1 + 0.101E-4x
R^2=0.39805E-2
Y=0.657E+1 + 0.273E-4x
R^2=0.16818E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 11:55 AM.

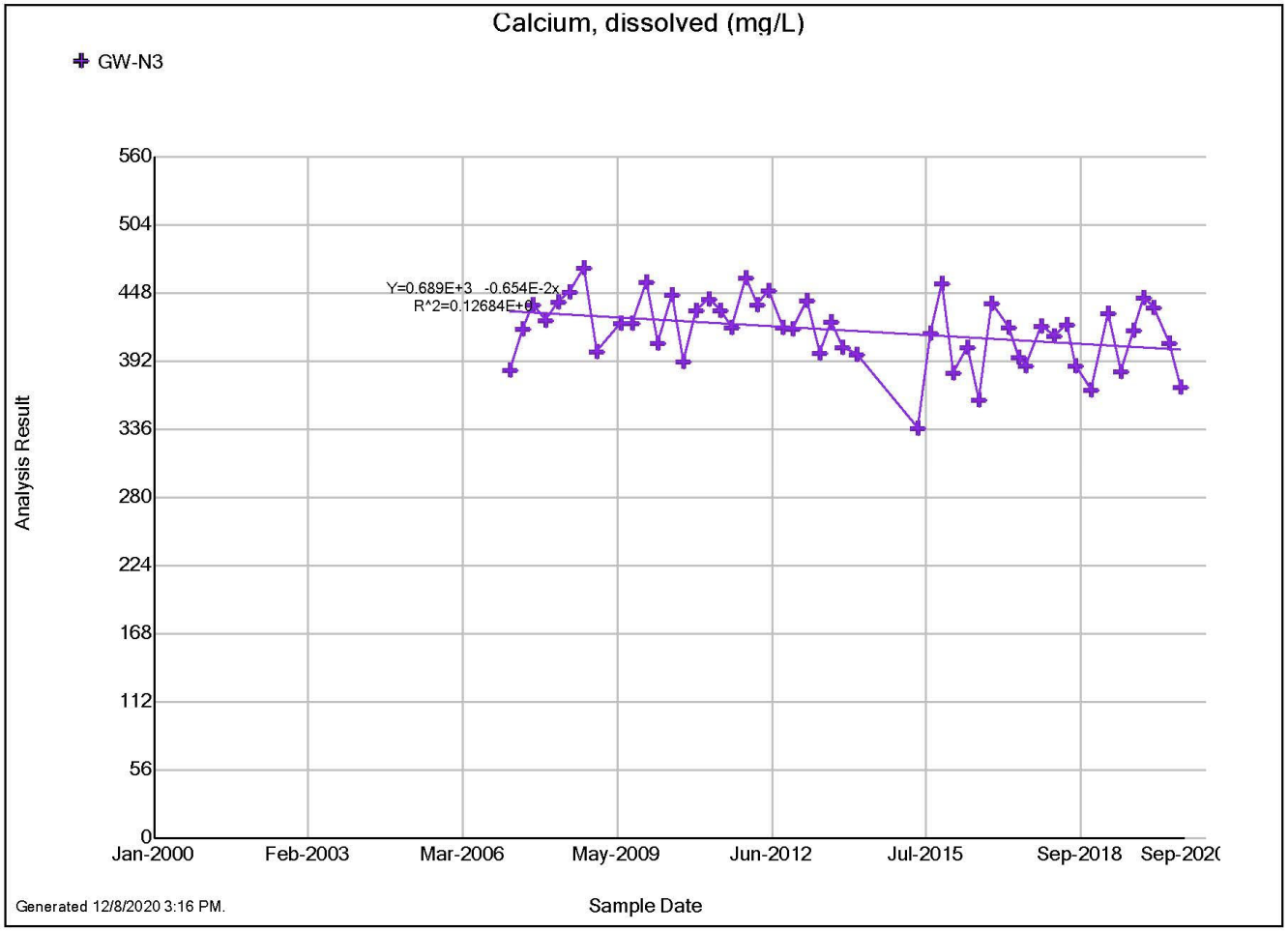

Sodium, dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
2200
1980
1760
1540
1320
1100
880
660
440
220
0
Y=0.321E+4 -0.554E-1x
R^2=0.67627E+0
Y=-0.189E+4 + 0.533E-1x
R^2=0.90101E+0
Y=0.442E+3 + 0.140E-1x
R^2=0.22241E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 11:55 AM.

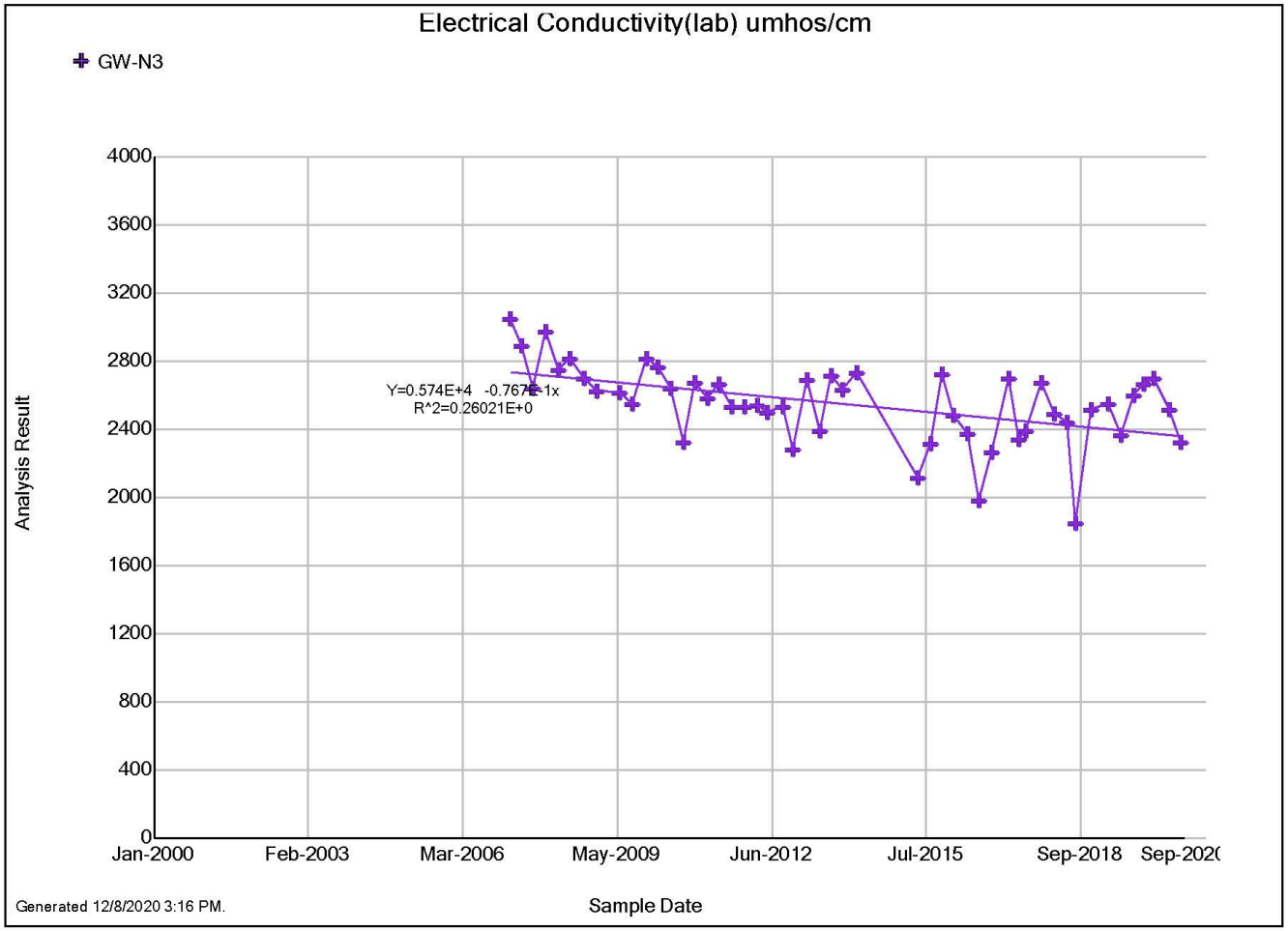

Sulfate, dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
3800
3420
3040
2660
2280
1900
1520
1140
760
380
0
Y=-0.610E+3 + 0.639E-1x
R^2=0.11311E+0
Y=0.180E+4 -0.569E-2x
R^2=0.40684E-3
Y=-0.714E+4 + 0.203E+0x
R^2=0.88962E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 11:55 AM.

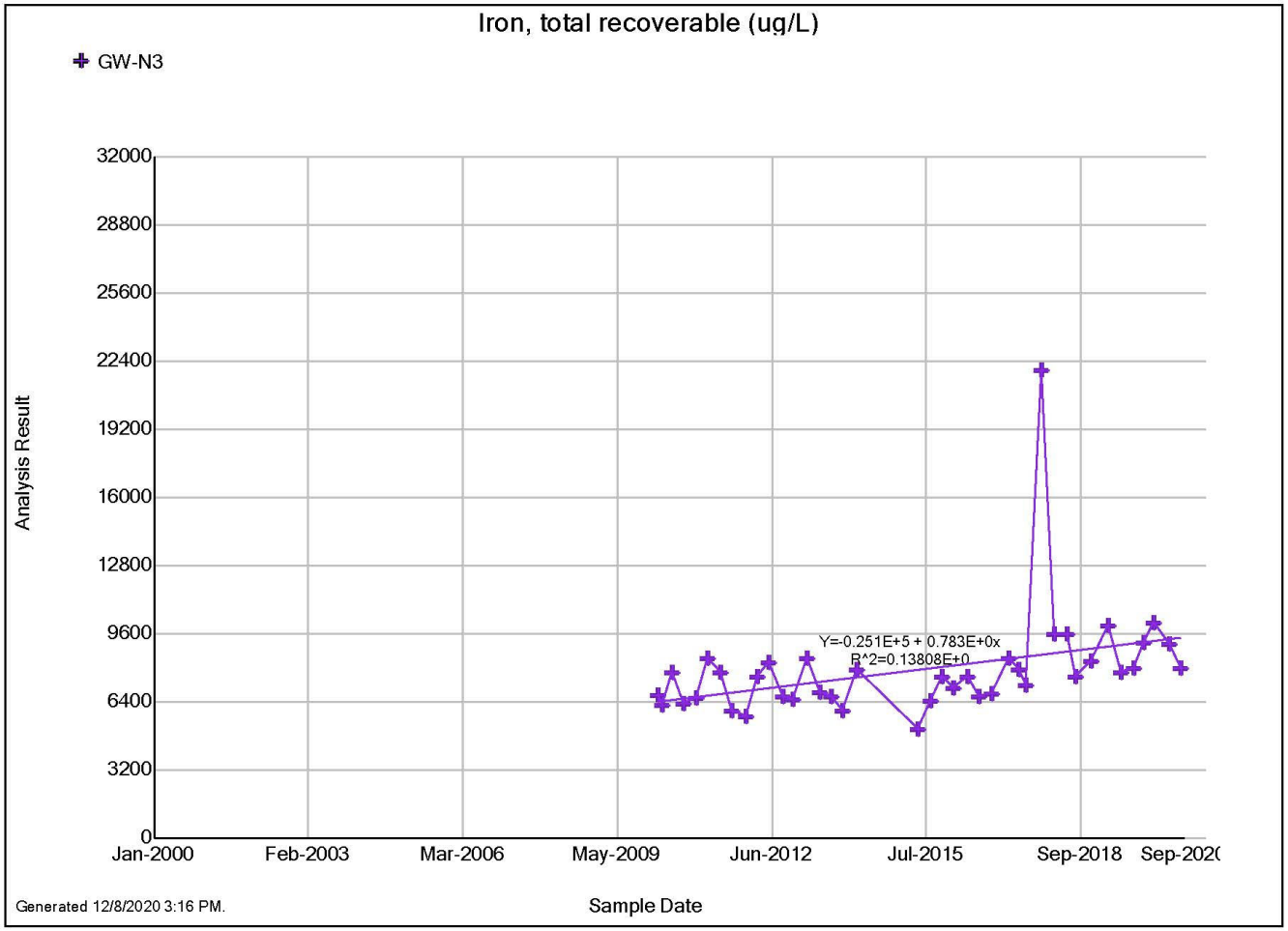

Total Dissolved Solids (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
5900
5310
4720
4130
3540
2950
2360
1770
1180
590
0
Y=-0.805E+3 + 0.109E+0x
R^2=0.18154E+0
Y=0.137E+4 + 0.278E-1x
R^2=0.38764E-2
Y=-0.872E+4 + 0.271E+0x
R^2=0.92226E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 11:55 AM.

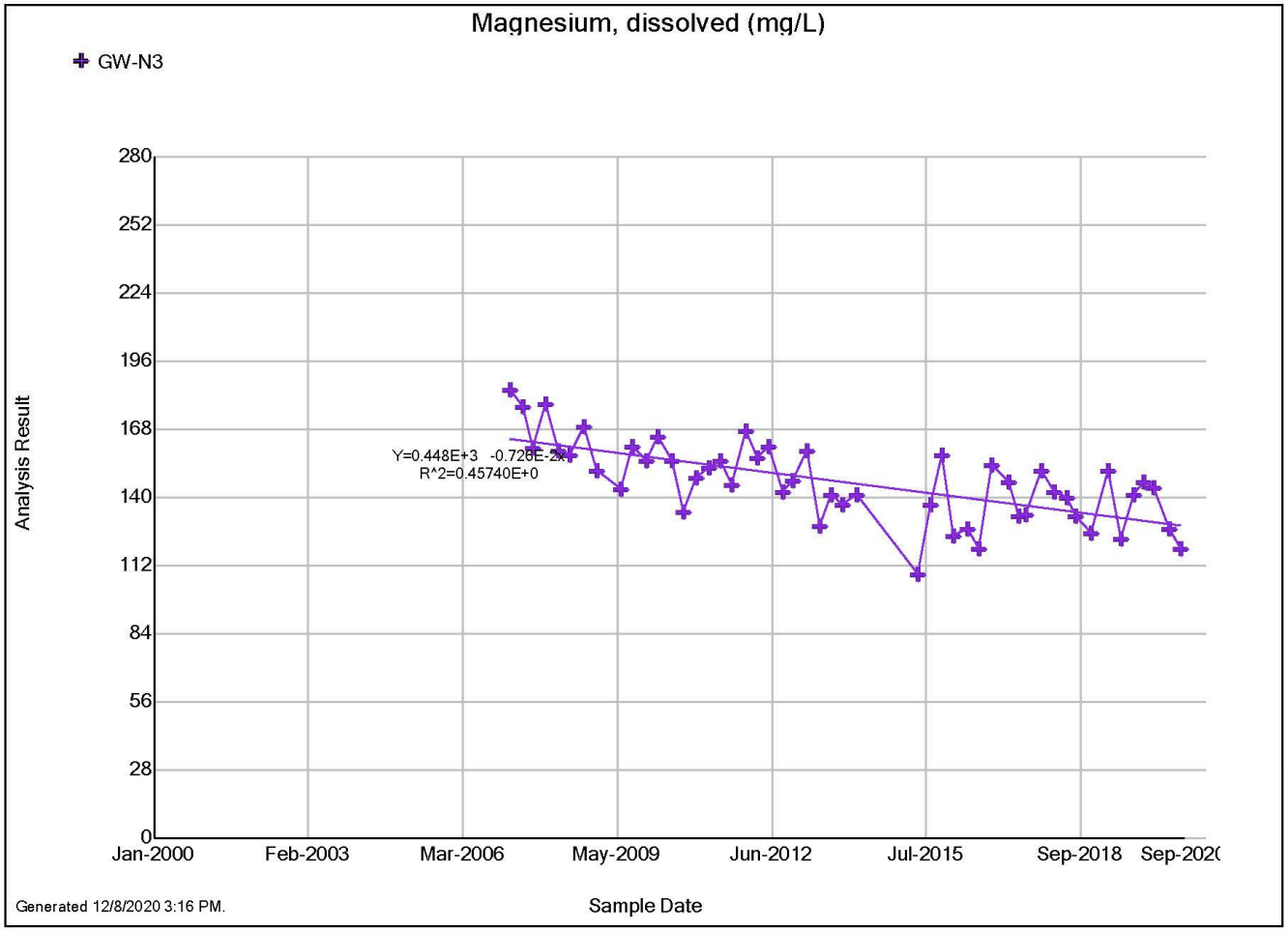

Manganese, total dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
0.288
0.256
0.224
0.192
0.16
0.128
0.096
0.064
0.032
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 12:11 PM.

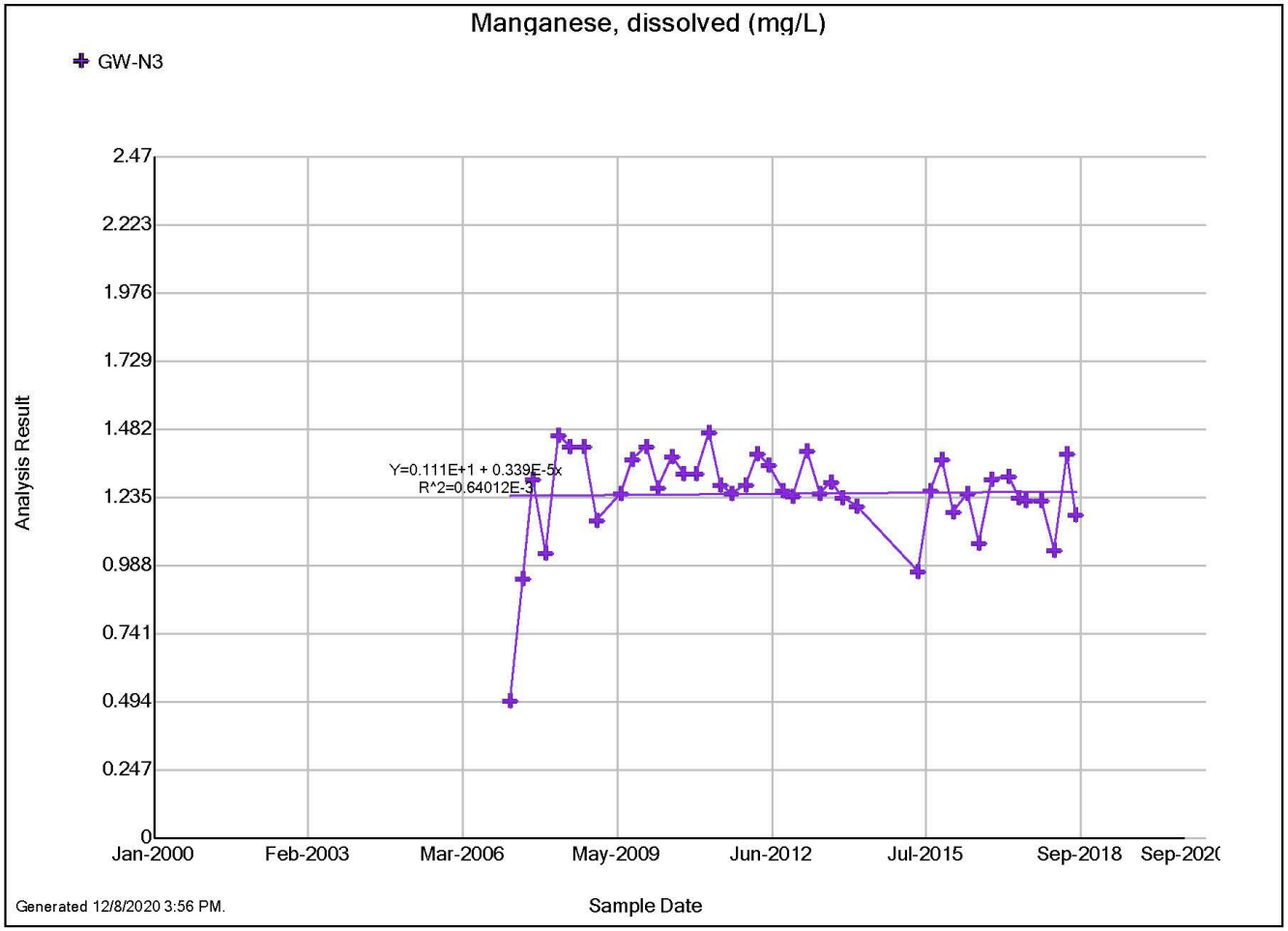

Manganese, dissolved (mg/L)
GW-N16P1
GW-N17P1
GW-N18P1
Analysis Result
1.5
1.3
1.1
0.9
0.7
0.5
0.3
0.1
-0.1
-0.3
-0.5
Y=-0.261E+0 + 0.931E-5x
R^2=0.38454E-2
Y=0.185E+0 + 0.529E-5x
R^2=0.31577E+0
Y=-0.131E+1 + 0.341E-4x
R^2=0.99212E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 12:09 PM.

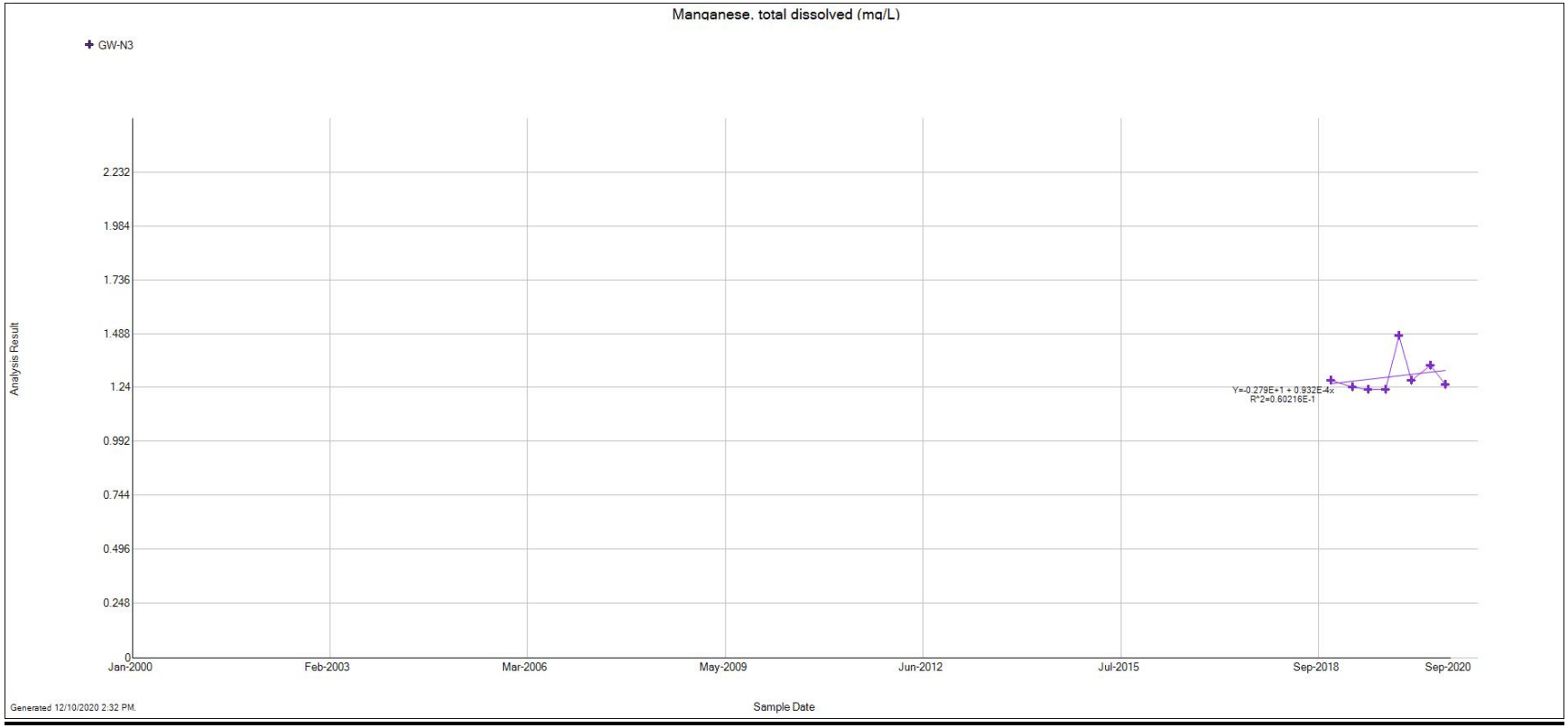

Calcium, dissolved (mg/L)
GW-N3
Y=0.689E+3 -0.654E-2x
R^2=0.12684E+0
560
504
448
392
336
280
224
168
112
56
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/8/2020 3:16 PM.

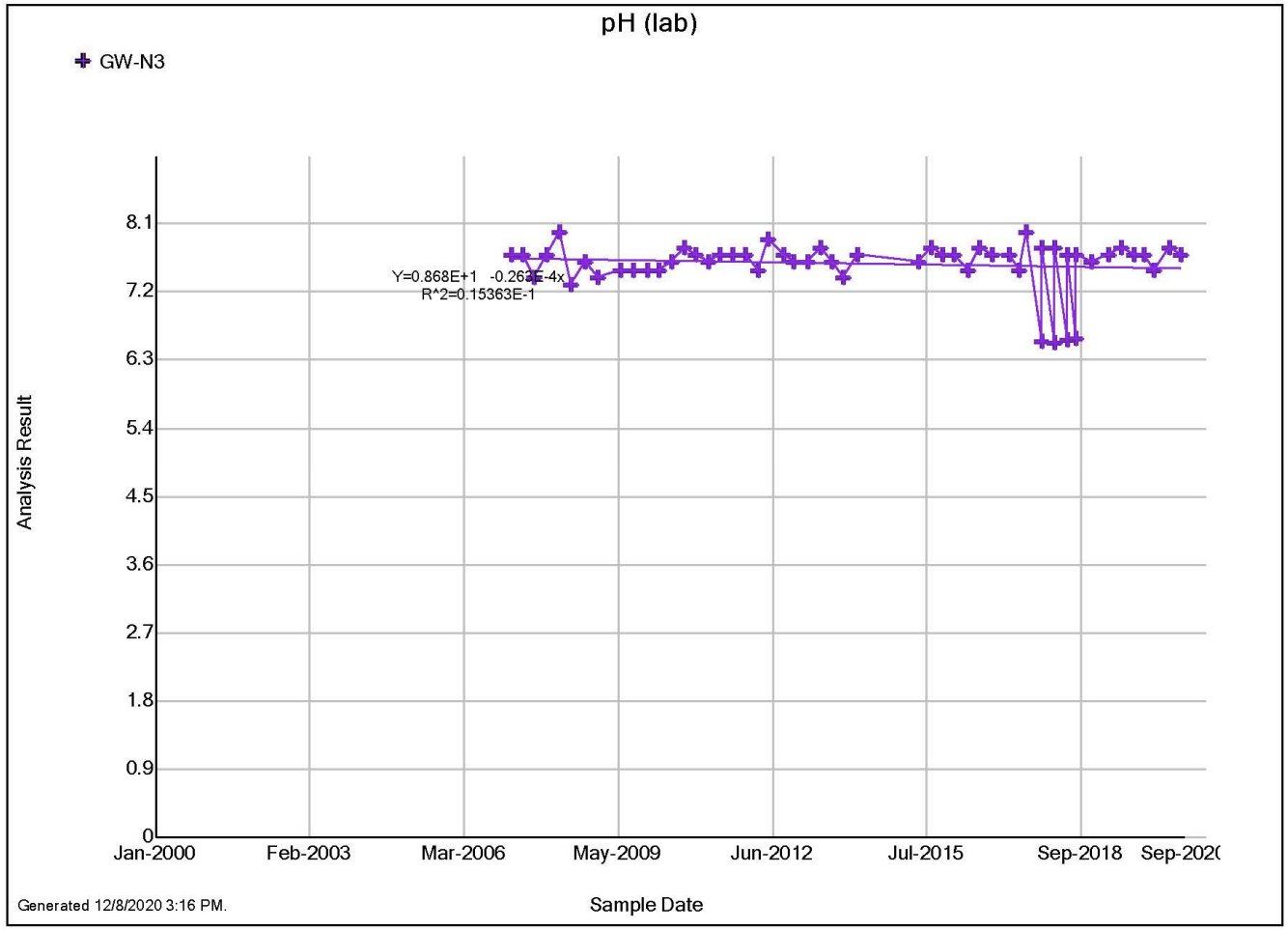

Electrical Conductivity(lab) umhos/cm
GW-N3
Analysis Result
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
Y=0.574E+4 -0.767E-1x
R^2=0.26021E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 3:16 PM.
Sample Date

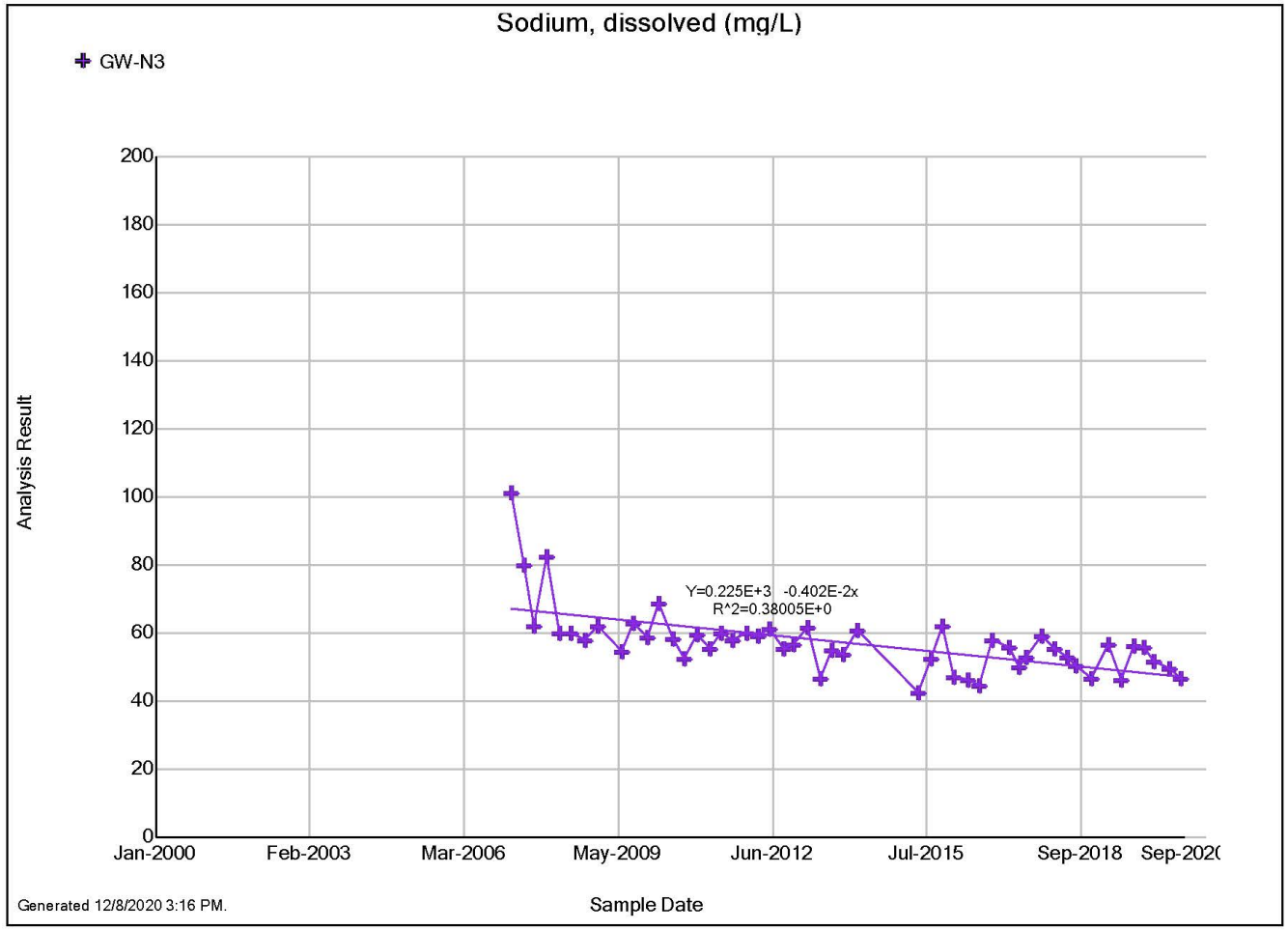

Iron, total recoverable (ug/L)
GW-N3
Analysis Result
32000
28800
25600
22400
19200
16000
12800
9600
6400
3200
0
Y=-0.251E+5 + 0.783E+0x
R^2=0.13808E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 3:16 PM.
Sample Date

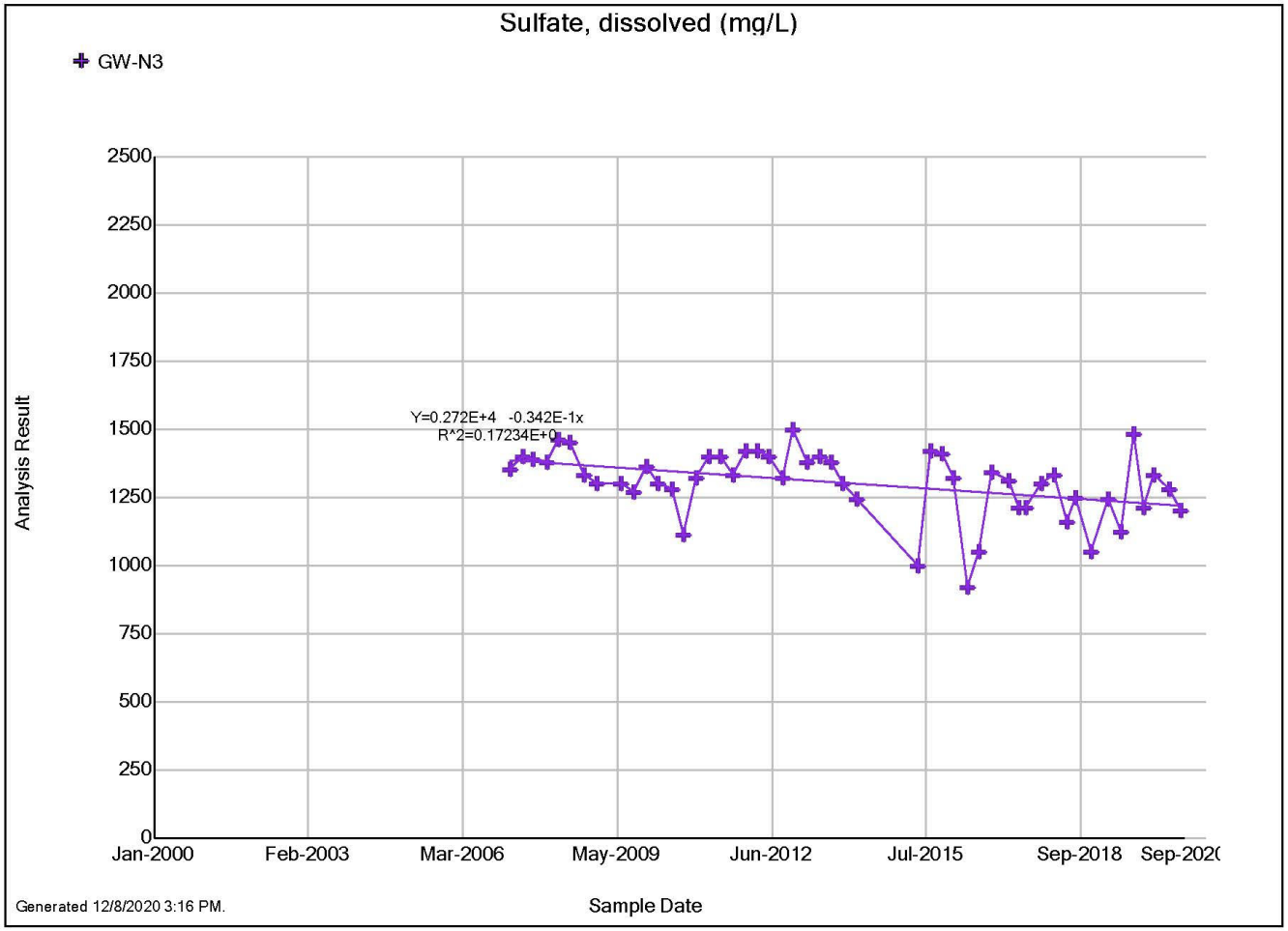

Magnesium, dissolved (mg/L)
GW-N3
Analysis Result
280
252
224
196
168
140
112
84
56
28
0
Y=0.448E+3 -0.726E-2
R^2=0.45740E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 3:16 PM.
Sample Date

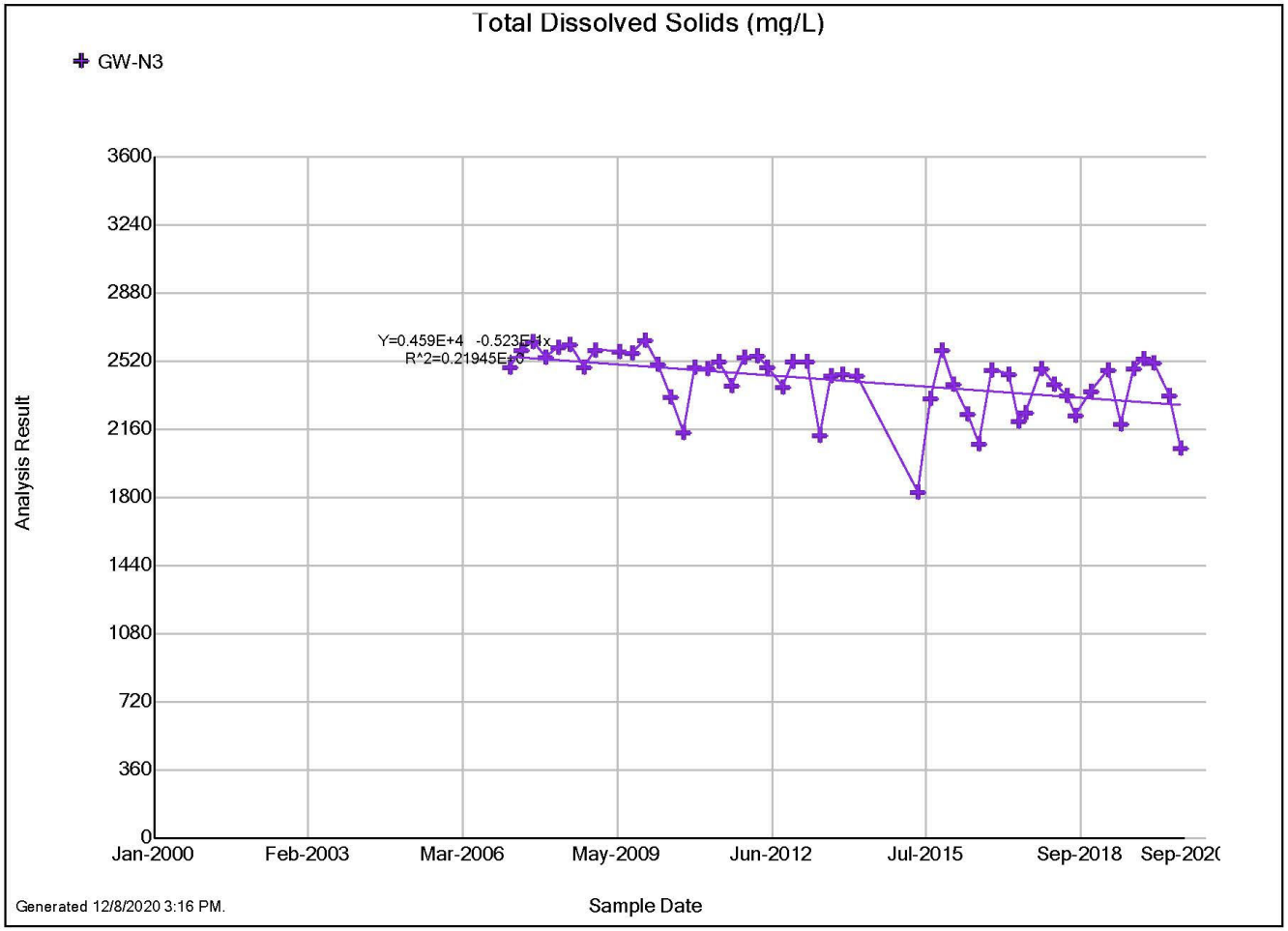

Manganese, dissolved (mg/L)
GW-N3
2.47
2.223
1.976
1.729
1.482
1.235
0.988
0.741
0.494
0.247
0
Analysis Result
Y=0.111E+1 + 0.339E-5x
R^2=0.64012E-3
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 3:56 PM.
Sample Date

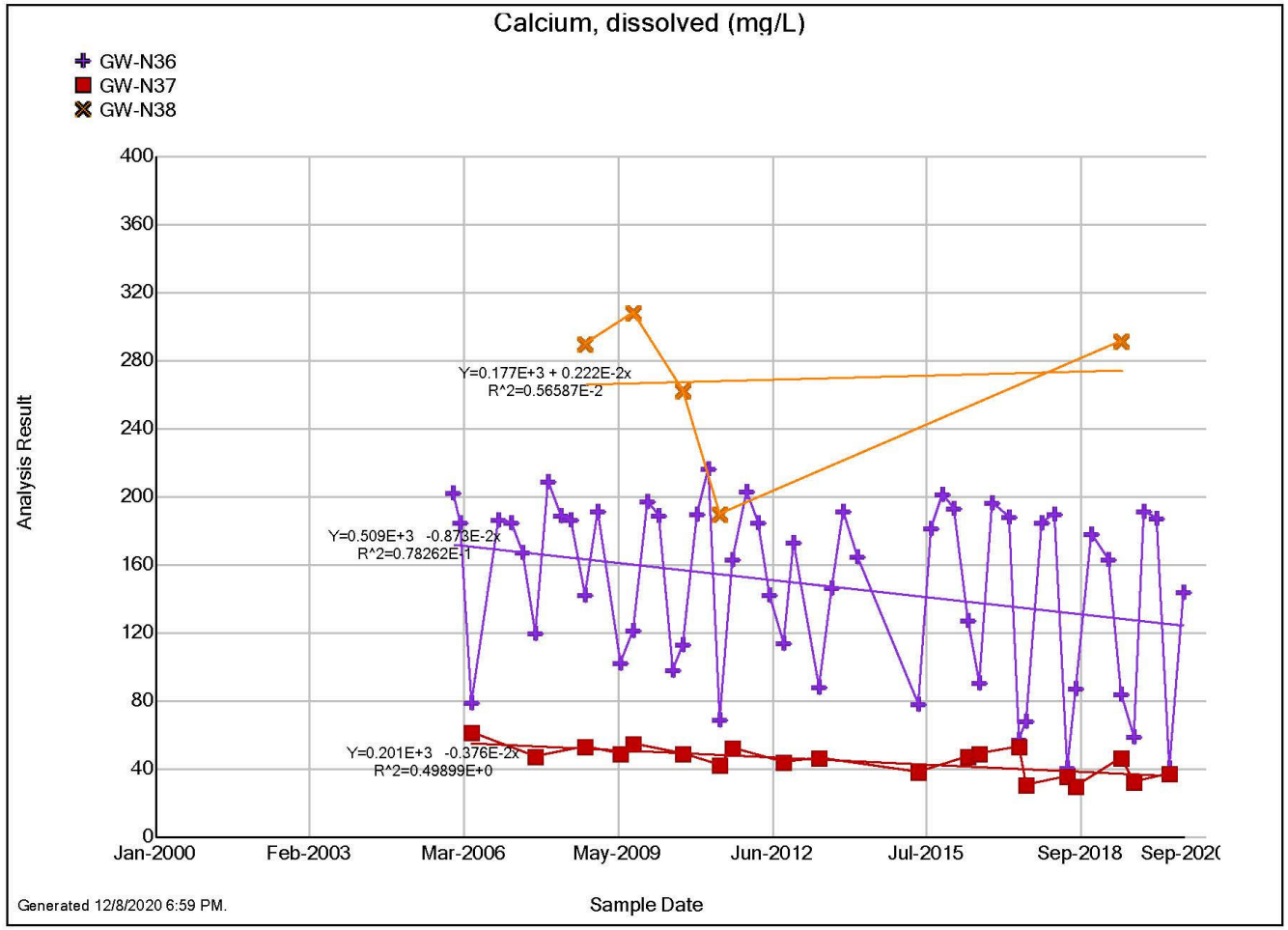

Manganese, total dissolved (mg/L)
GW-N3
Analysis Result
2.232
1.984
1.736
1.488
1.24
0.992
0.744
0.496
0.248
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=-0.279E+1 + 0.932E-4x
R^2=0.60216E-1
Generated 12/10/2020 2:32 PM.
Sample Date

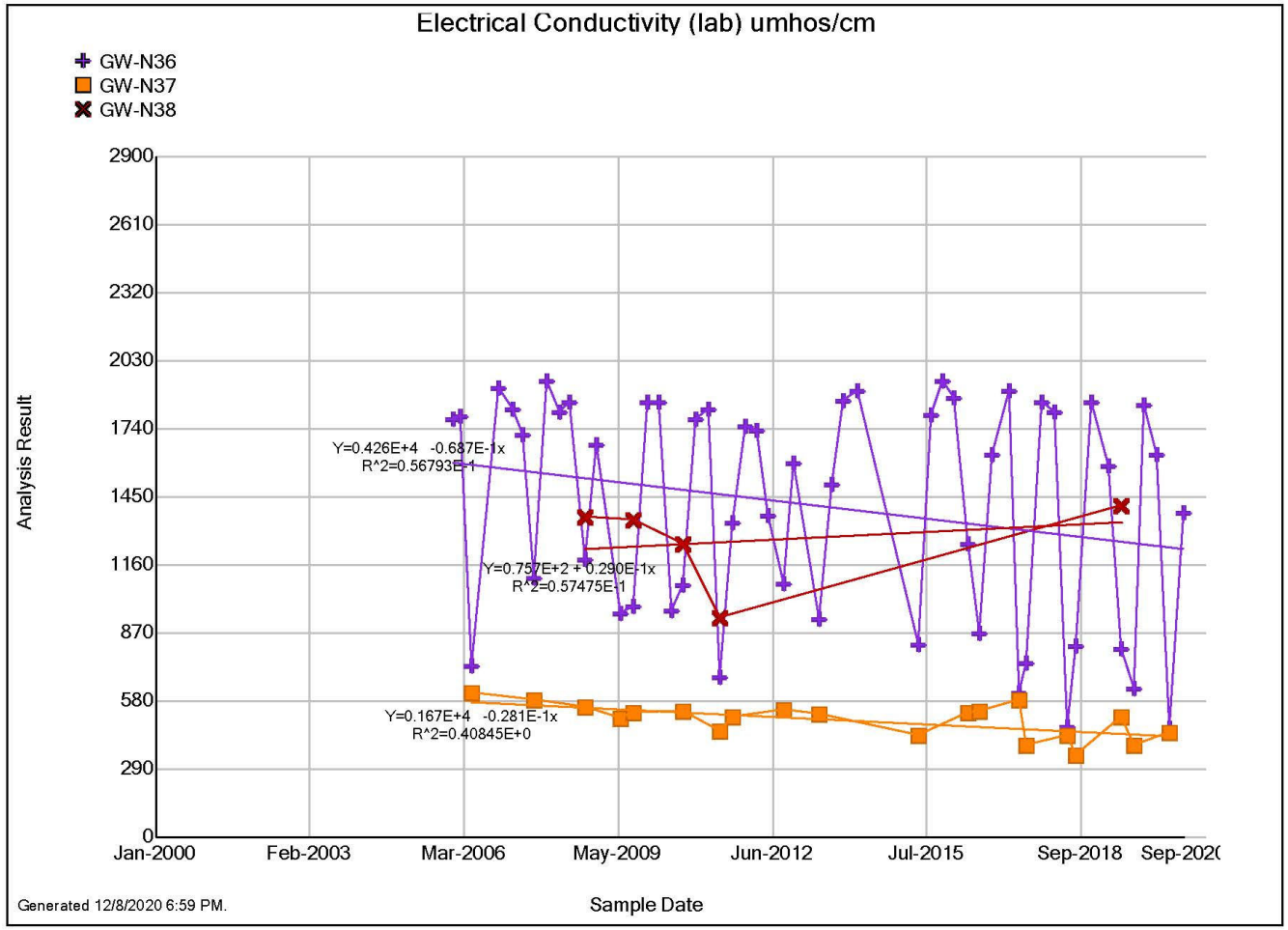

pH (lab)
GW-N3
Y=0.868E+1 -0.264E-4x
R^2=0.15363E-1
8.1
7.2
6.3
5.4
4.5
3.6
2.7
1.8
0.9
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/8/2020 3:16 PM.

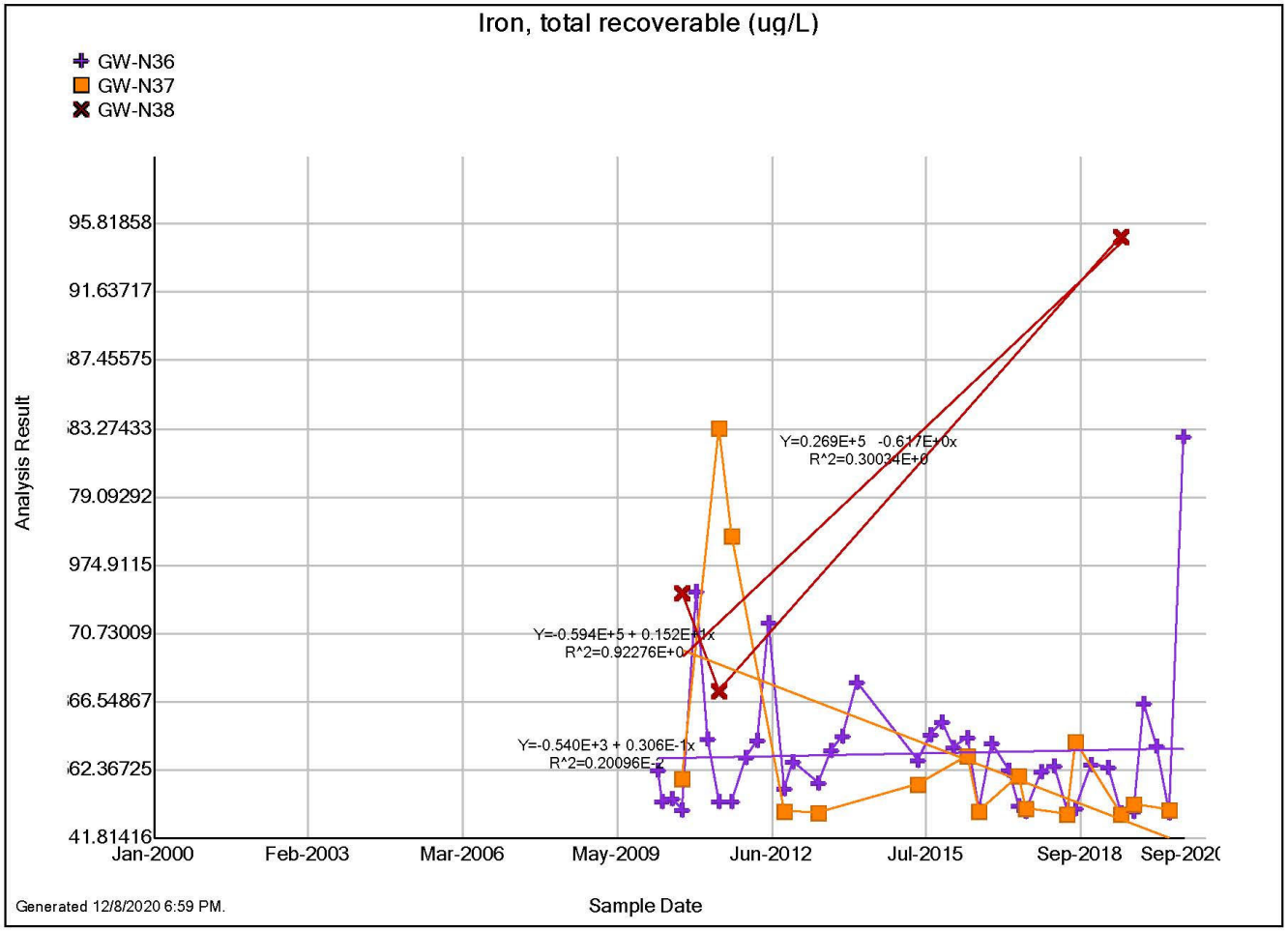

Sodium, dissolved (mg/L)
GW-N3
Analysis Result
200
180
160
140
120
100
80
60
40
20
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.225E+3 -0.402E-2x
R^2=0.38005E+0
Generated 12/8/2020 3:16 PM.
Sample Date

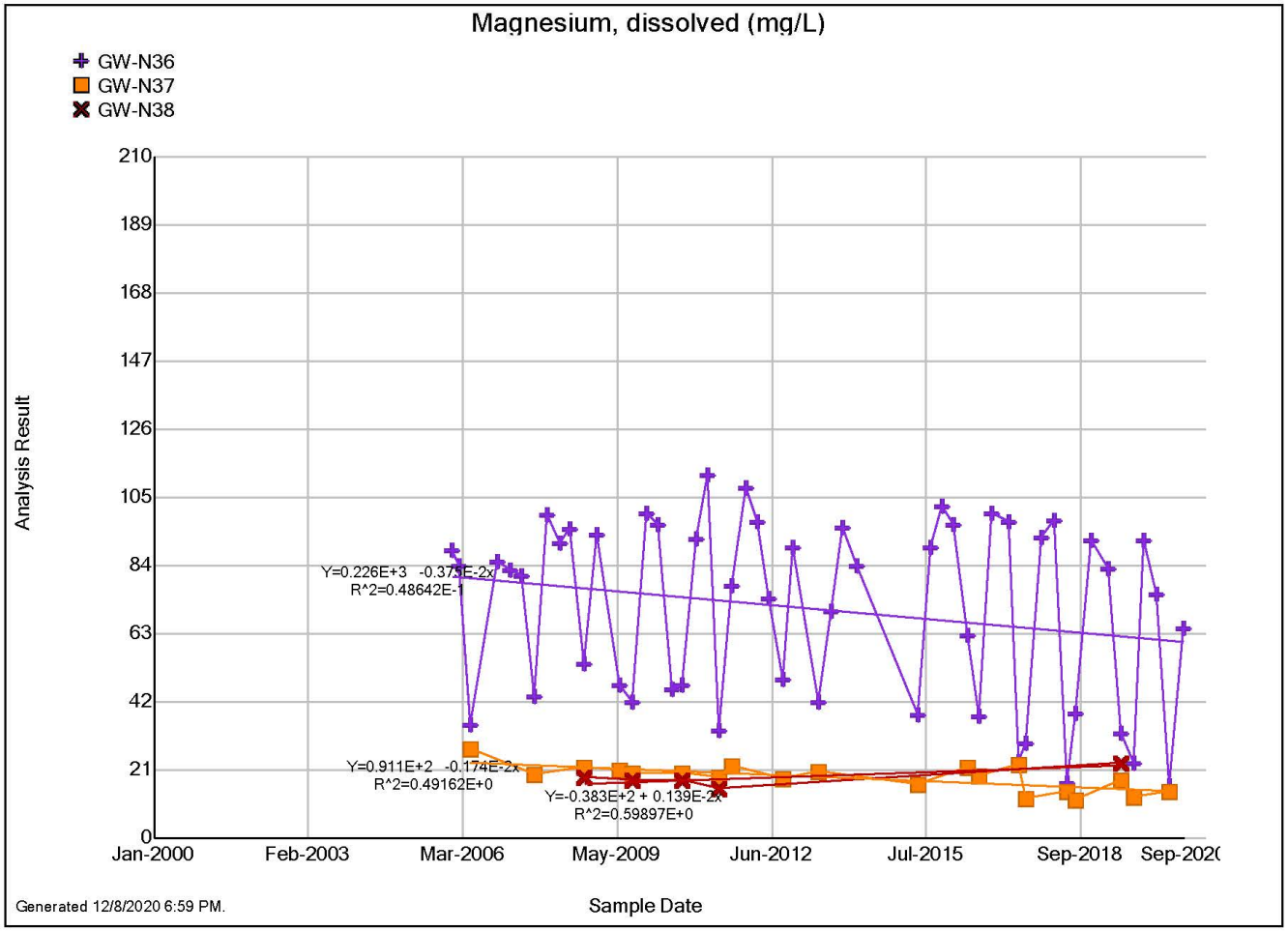

Sulfate, dissolved (mg/L)
GW-N3
Y=0.272E+4 -0.342E-1x
R^2=0.17234E+0
Analysis Result
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 3:16 PM.
Sample Date

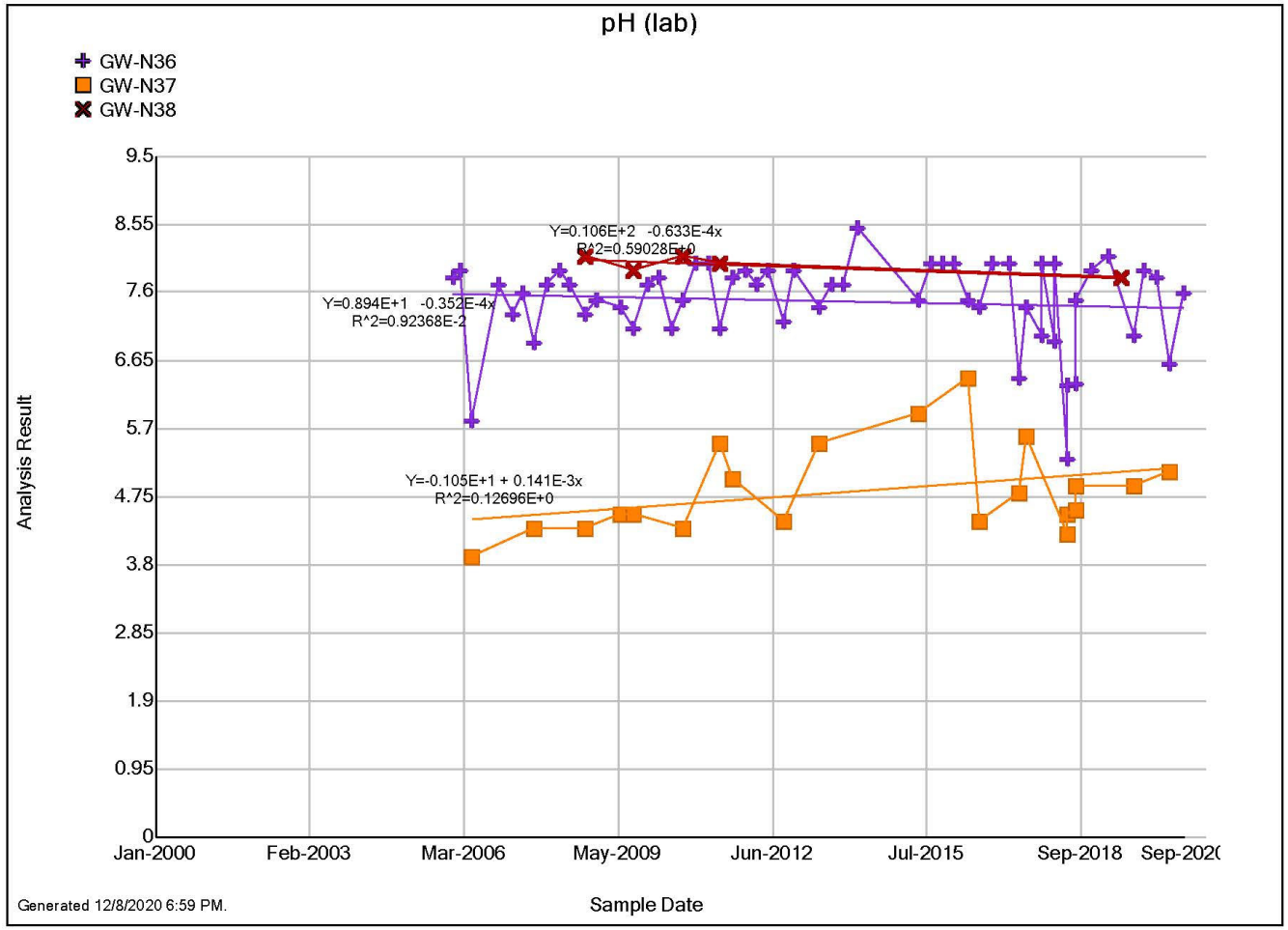

Total Dissolved Solids (mg/L)
GW-N3
Y=0.459E+4 -0.523E+1x
R^2=0.21945E+0
3600
3240
2880
2520
2160
1800
1440
1080
720
360
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 3:16 PM.
Sample Date

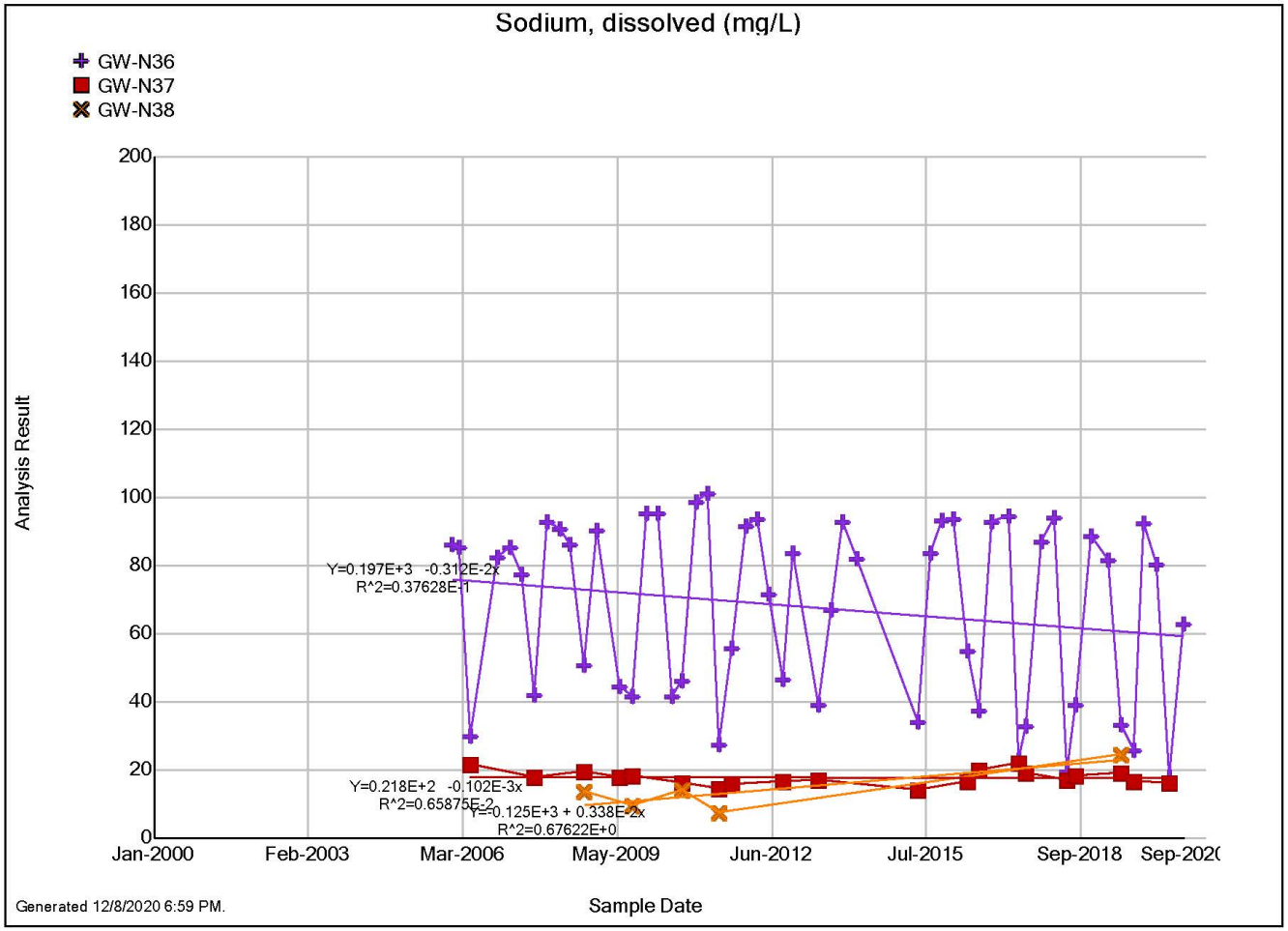

Calcium, dissolved (mg/L)
GW-N36
GW-N37
GW-N38
Analysis Result
400
360
320
280
240
200
160
120
80
40
0
Y=0.177E+3 + 0.222E-2x
R^2=0.56587E-2
Y=0.509E+3 -0.873E-2x
R^2=0.78262E-1
Y=0.201E+3 -0.376E-2x
R^2=0.49899E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 6:59 PM.
Sample Date

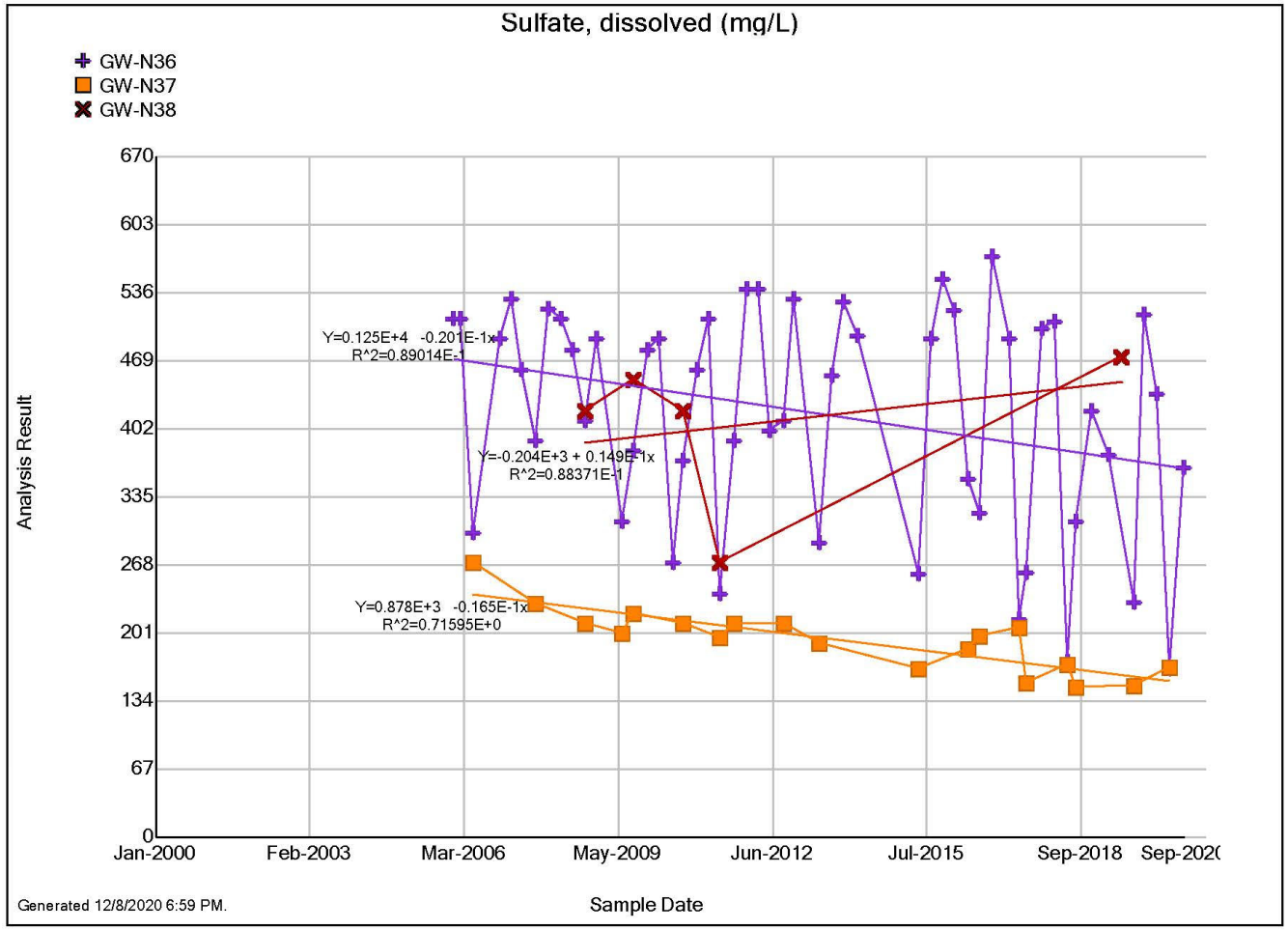

Electrical Conductivity (lab) umhos/cm
GW-N36
GW-N37
GW-N38
Analysis Result
2900
2610
2320
2030
1740
1450
1160
870
580
290
0
Y=0.426E+4 -0.687E-1x
R^2=0.56793E-1
Y=0.757E+2 +0.290E-1x
R^2=0.57475E-1
Y=0.167E+4 -0.281E-1x
R^2=0.40845E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 6:59 PM.
Sample Date

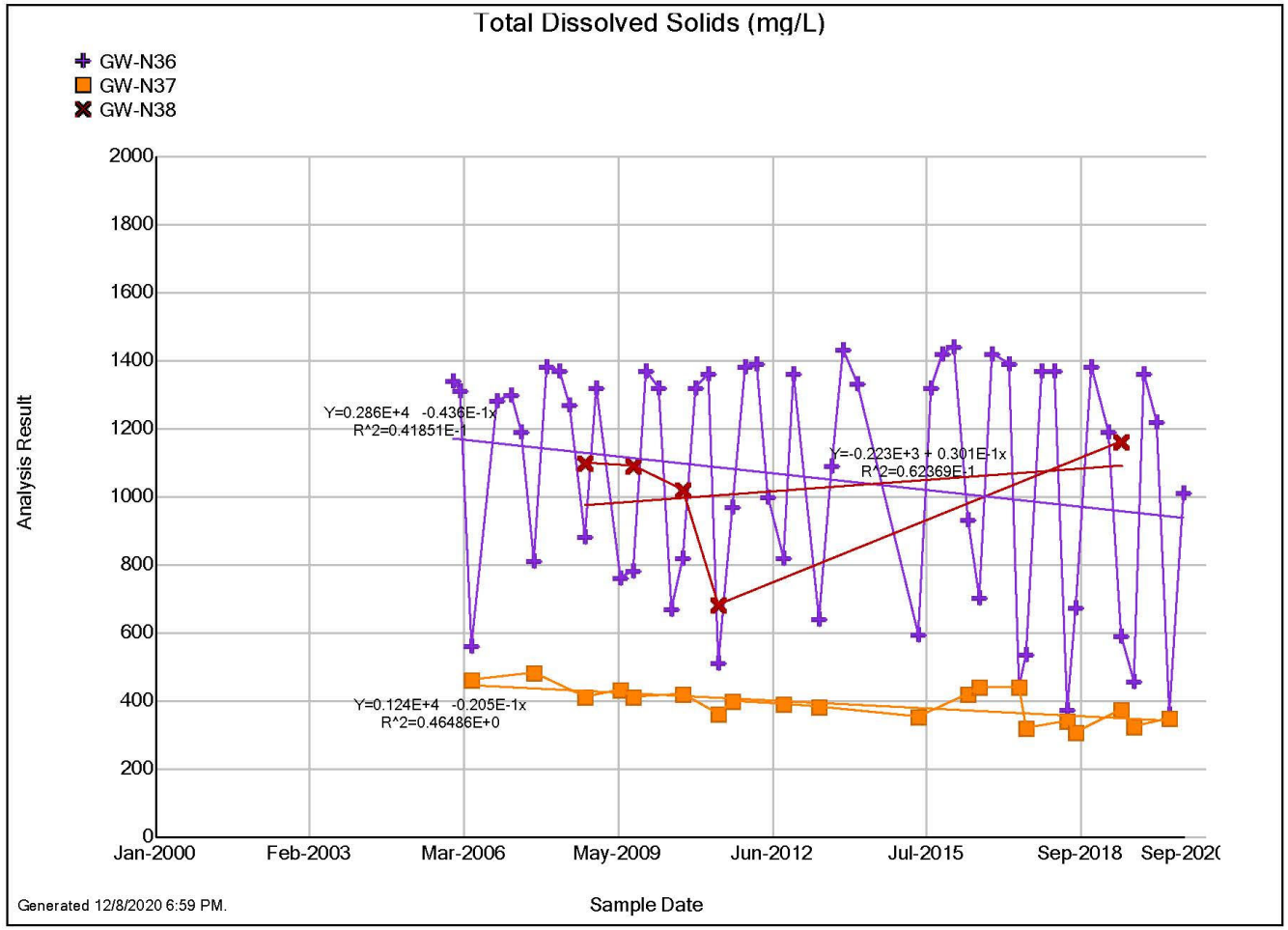

Iron, total recoverable (ug/L)
GW-N36
GW-N37
GW-N38
95.81858
91.63717
87.45575
83.27433
79.09292
974.9115
70.73009
66.54867
62.36725
41.81416
Analysis Result
Y=0.269E+5 -0.617E+0x
R^2=0.30034E+0
Y=-0.594E+5 + 0.152E+1x
R^2=0.92276E+0
Y=-0.540E+3 + 0.306E-1x
R^2=0.20096E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 6:59 PM.
Sample Date

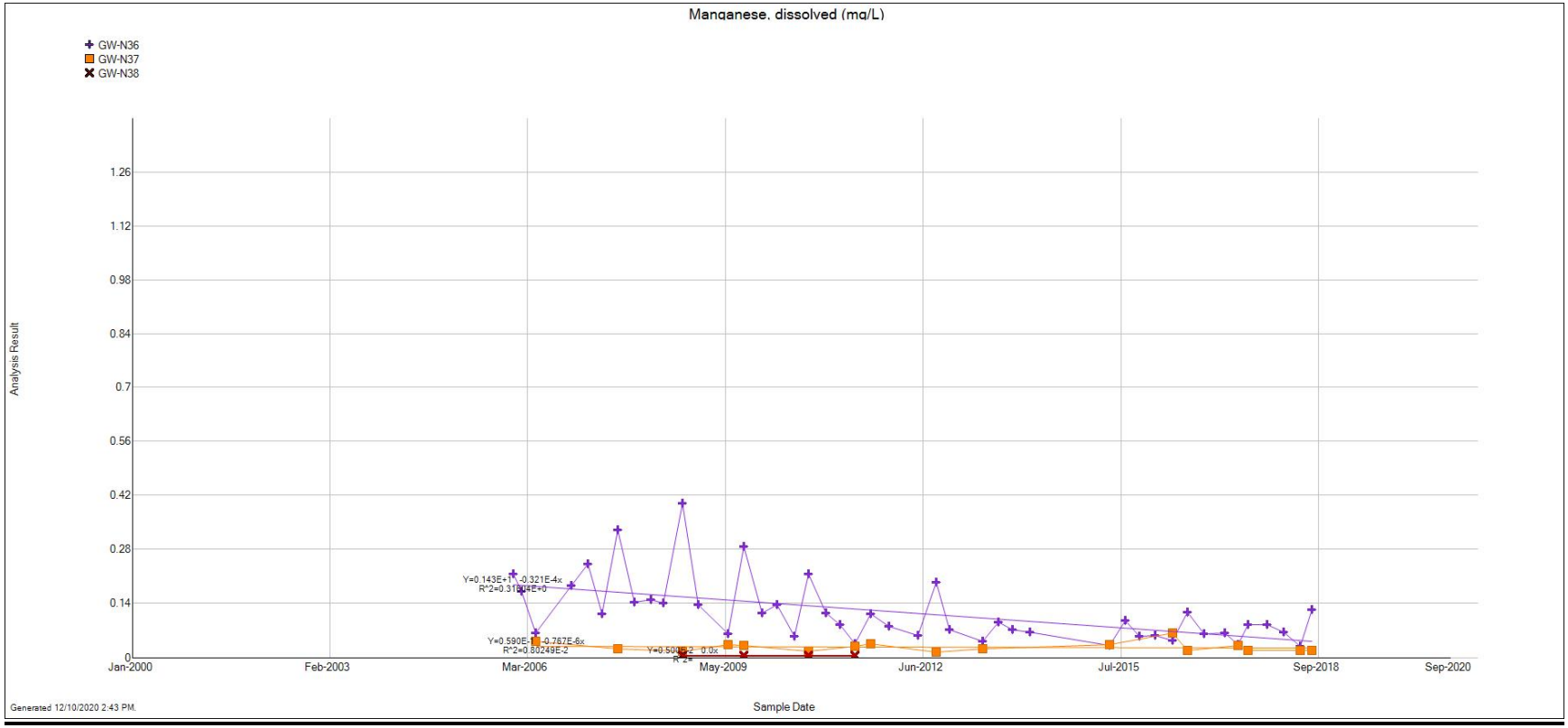

Magnesium, dissolved (mg/L)
GW-N36
GW-N37
GW-N38
Analysis Result
210
189
168
147
126
105
84
63
42
21
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.226E+3 -0.375E-2x
R^2=0.48642E-1
Y=0.911E+2 -0.174E-2x
R^2=0.49162E+0
Y=-0.383E+2 + 0.139E-2x
R^2=0.59897E+0
Generated 12/8/2020 6:59 PM.
Sample Date


pH (lab)
GW-N36
GW-N37
GW-N38
9.5
8.55
7.6
6.65
5.7
4.75
3.8
2.85
1.9
0.95
0
Analysis Result
Y=0.106E+2 -0.633E-4x
R^2=0.59028E+0
Y=0.894E+1 -0.352E-4x
R^2=0.92368E-2
Y=-0.105E+1 + 0.141E-3x
R^2=0.12696E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 6:59 PM.
Sample Date


Sodium, dissolved (mg/L)
GW-N36
GW-N37
GW-N38
Analysis Result
200
180
160
140
120
100
80
60
40
20
0
Y=0.197E+3 -0.312E-2x
R^2=0.37628E-1
Y=0.218E+2 -0.102E-3x
R^2=0.65875E-2
Y=0.125E+3 + 0.338E-2x
R^2=0.67622E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 6:59 PM.
Sample Date


Sulfate, dissolved (mg/L)
GW-N36
GW-N37
GW-N38
670
603
536
469
402
335
268
201
134
67
0
Analysis Result
Y=0.125E+4 -0.201E-1x
R^2=0.89014E-1
Y=-0.204E+3 + 0.149E-1x
R^2=0.88371E-1
Y=0.878E+3 -0.165E-1x
R^2=0.71595E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 6:59 PM.
Sample Date


Total Dissolved Solids (mg/L)
GW-N36
GW-N37
GW-N38
Analysis Result
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Y=0.286E+4 -0.436E-1x
R^2=0.41851E-1
Y=-0.223E+3 + 0.301E-1x
R^2=0.62369E-1
Y=0.124E+4 -0.205E-1x
R^2=0.46486E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 6:59 PM.
Sample Date


Manganese, dissolved (mg/L)
GW-N36
GW-N37
GW-N38
Analysis Result
1.26
1.12
0.98
0.84
0.7
0.56
0.42
0.28
0.14
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.143E+1 -0.321E-4x
R^2=0.31504E+0
Y=0.590E-1 -0.767E-6x
R^2=0.80249E-2
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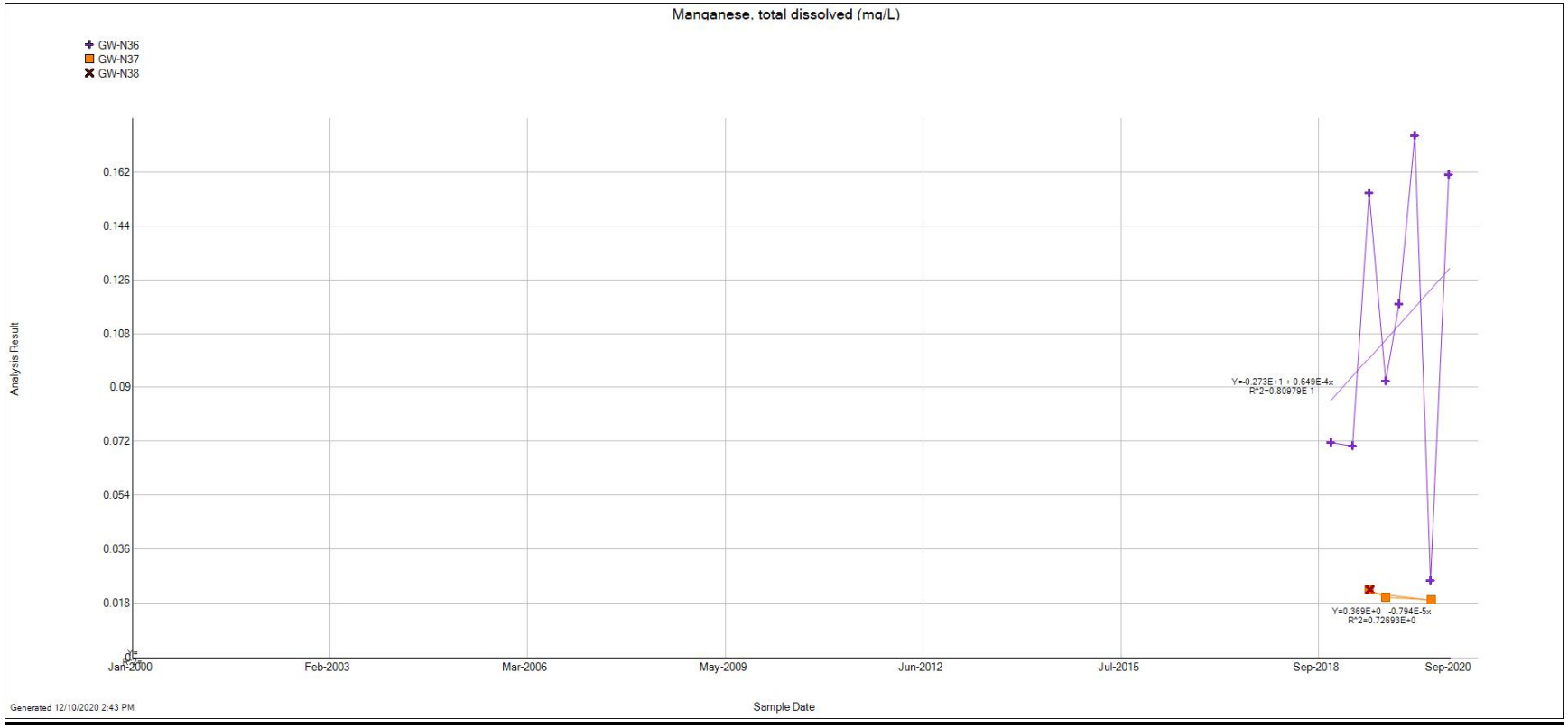
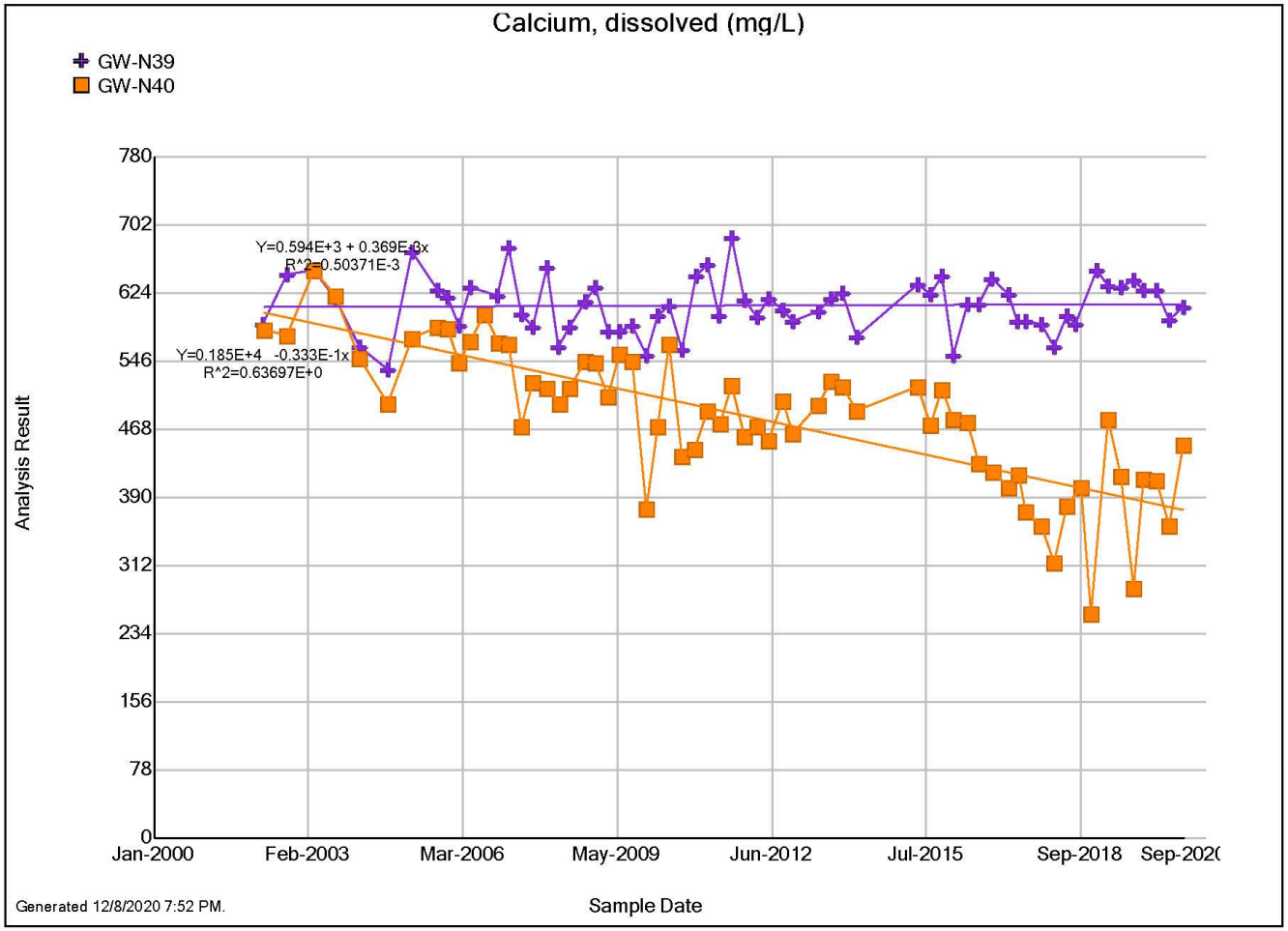
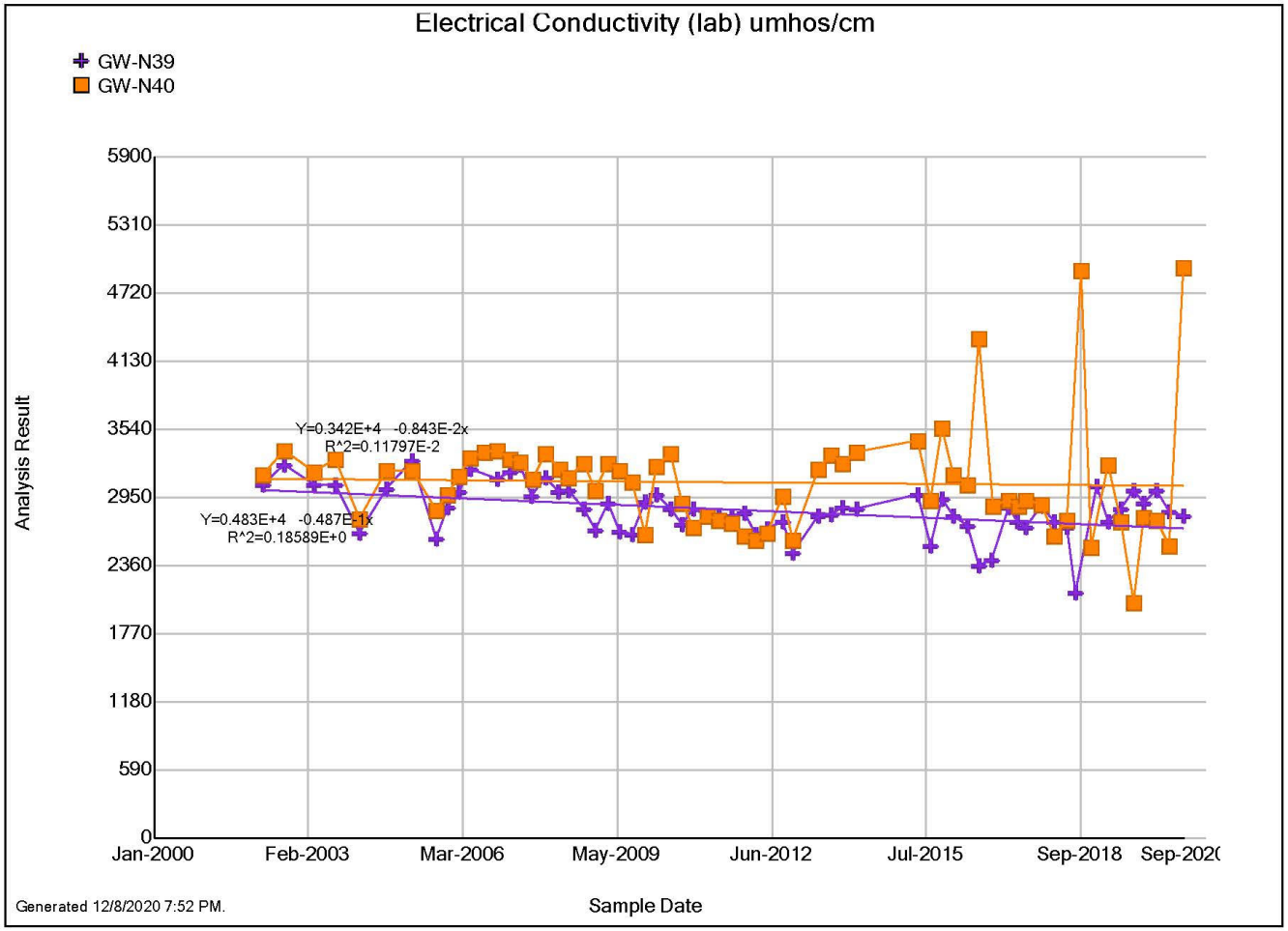
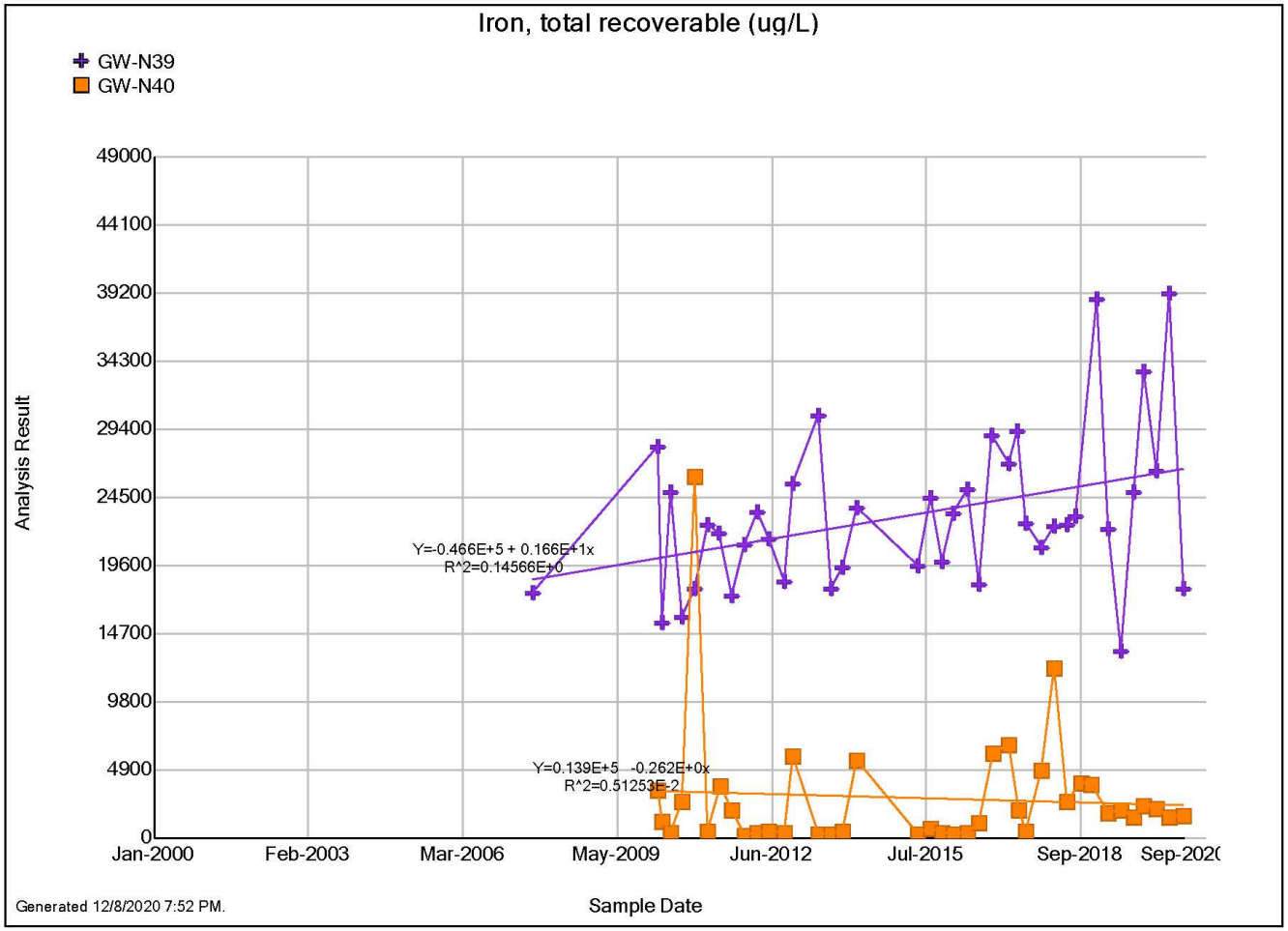
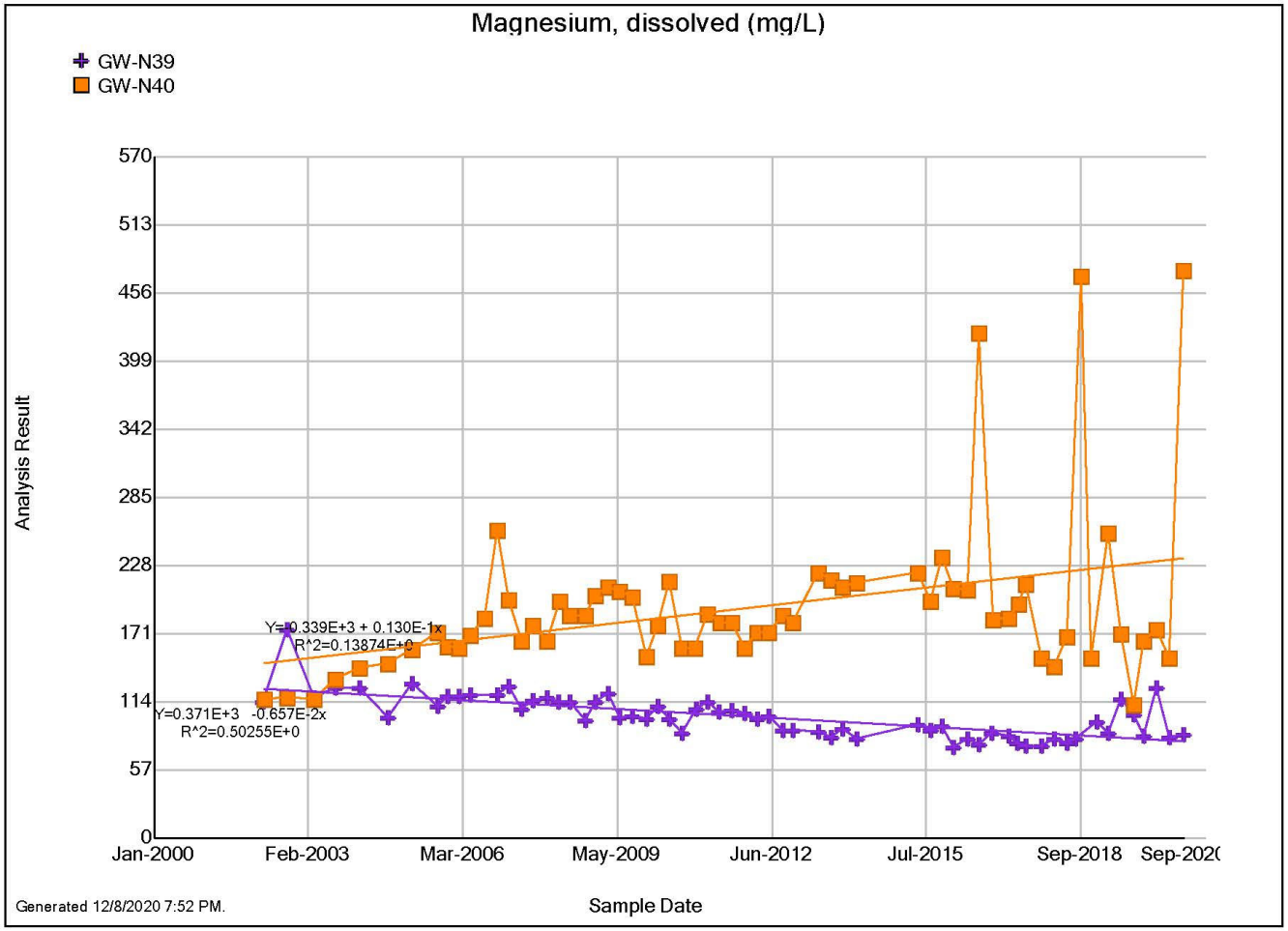
Sample Date

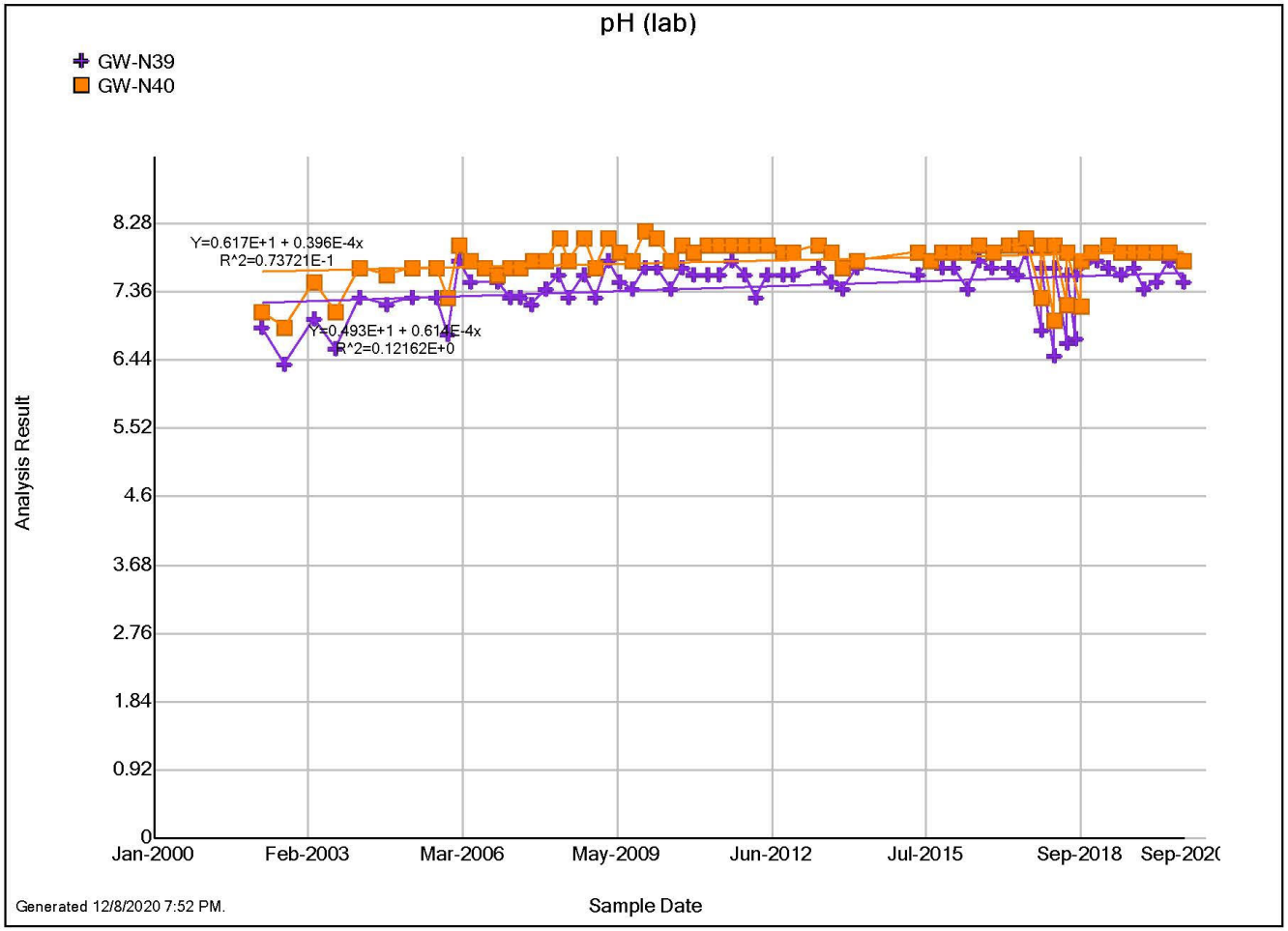

Manganese, total dissolved (mg/L)
GW-N36
GW-N37
GW-N38
Analysis Result
0.162
0.144
0.126
0.108
0.09
0.072
0.054
0.036
0.018
0
Y=-0.273E+1 + 0.649E-4x
R^2=0.80979E-1
Y=0.369E+0 -0.794E-5x
R^2=0.72693E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/10/2020 2:43 PM.
Sample Date

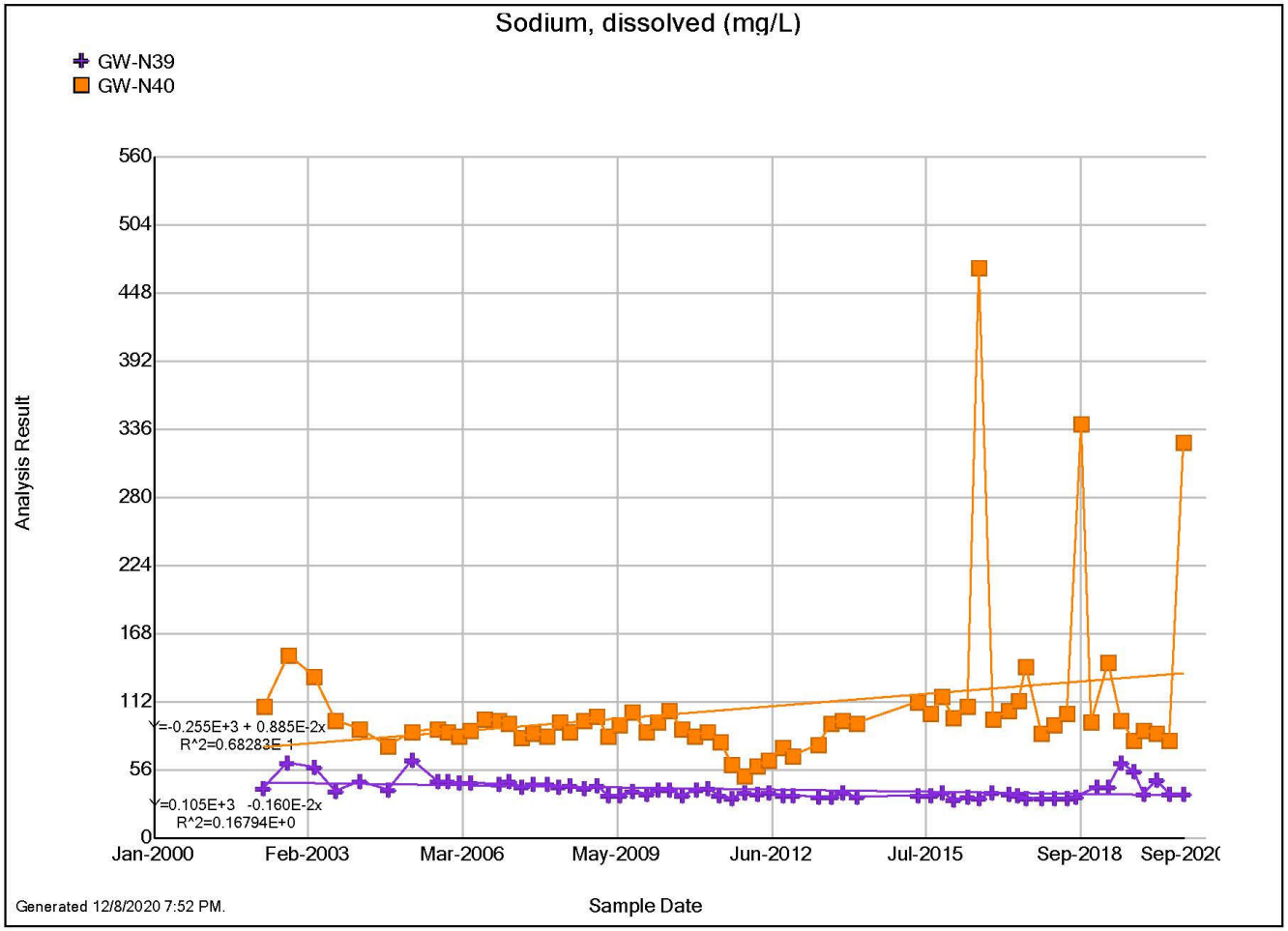

Calcium, dissolved (mg/L)
GW-N39
GW-N40
780
702
624
546
468
390
312
234
156
78
0
Analysis Result
Y=0.594E+3 + 0.369E-3x
R^2=0.50371E-3
Y=0.185E+4 -0.333E-1x
R^2=0.63697E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

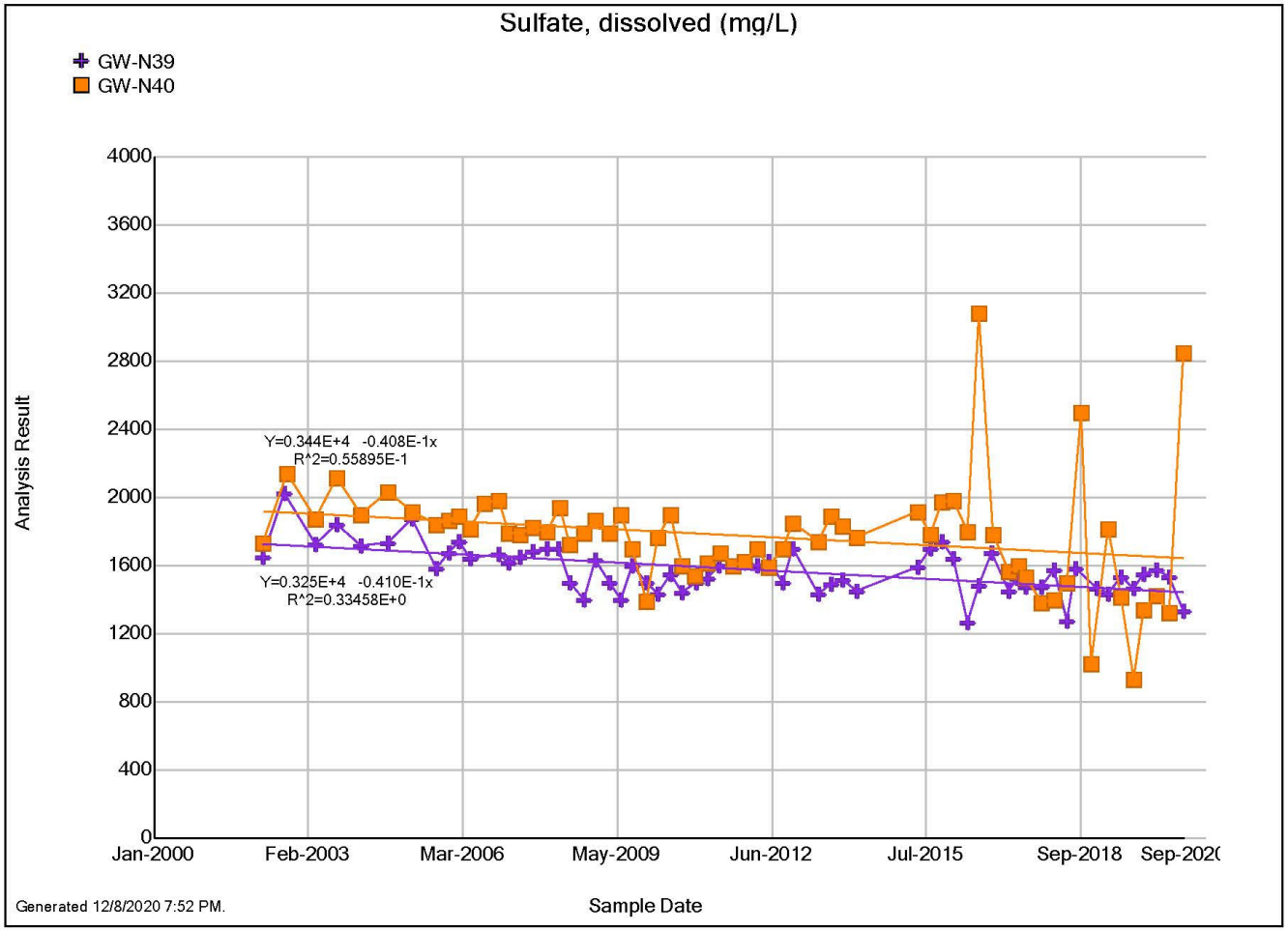

Electrical Conductivity (lab) umhos/cm
GW-N39
GW-N40
5900
5310
4720
4130
3540
2950
2360
1770
1180
590
0
Analysis Result
Y=0.342E+4 -0.843E-2x
R^2=0.11797E-2
Y=0.483E+4 -0.487E-1x
R^2=0.18589E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

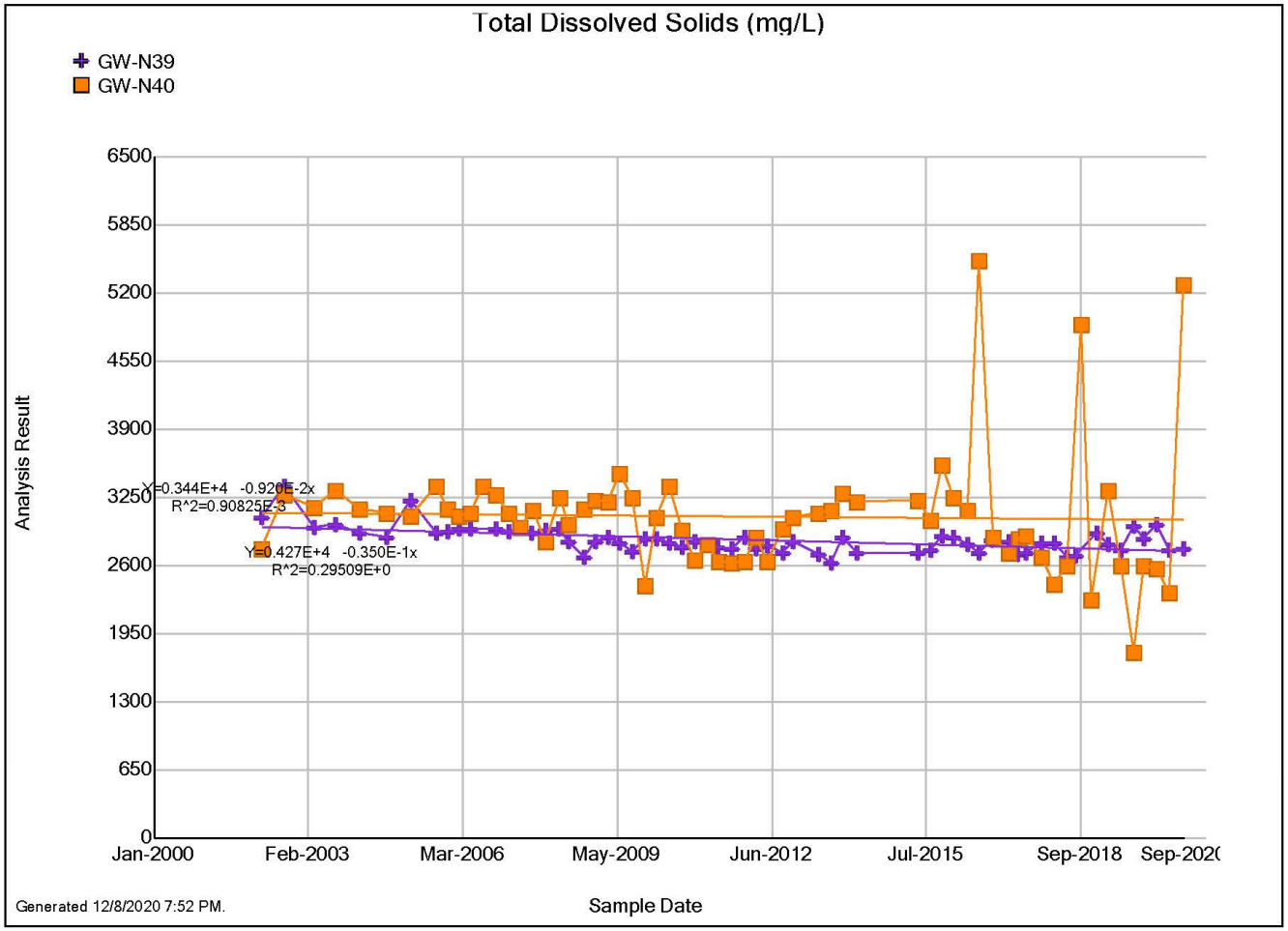

Iron, total recoverable (ug/L)
GW-N39
GW-N40
49000
44100
39200
34300
29400
24500
19600
14700
9800
4900
0
Analysis Result
Y=-0.466E+5 + 0.166E+1x
R^2=0.14566E+0
Y=0.139E+5 -0.262E+0x
R^2=0.51253E-2
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

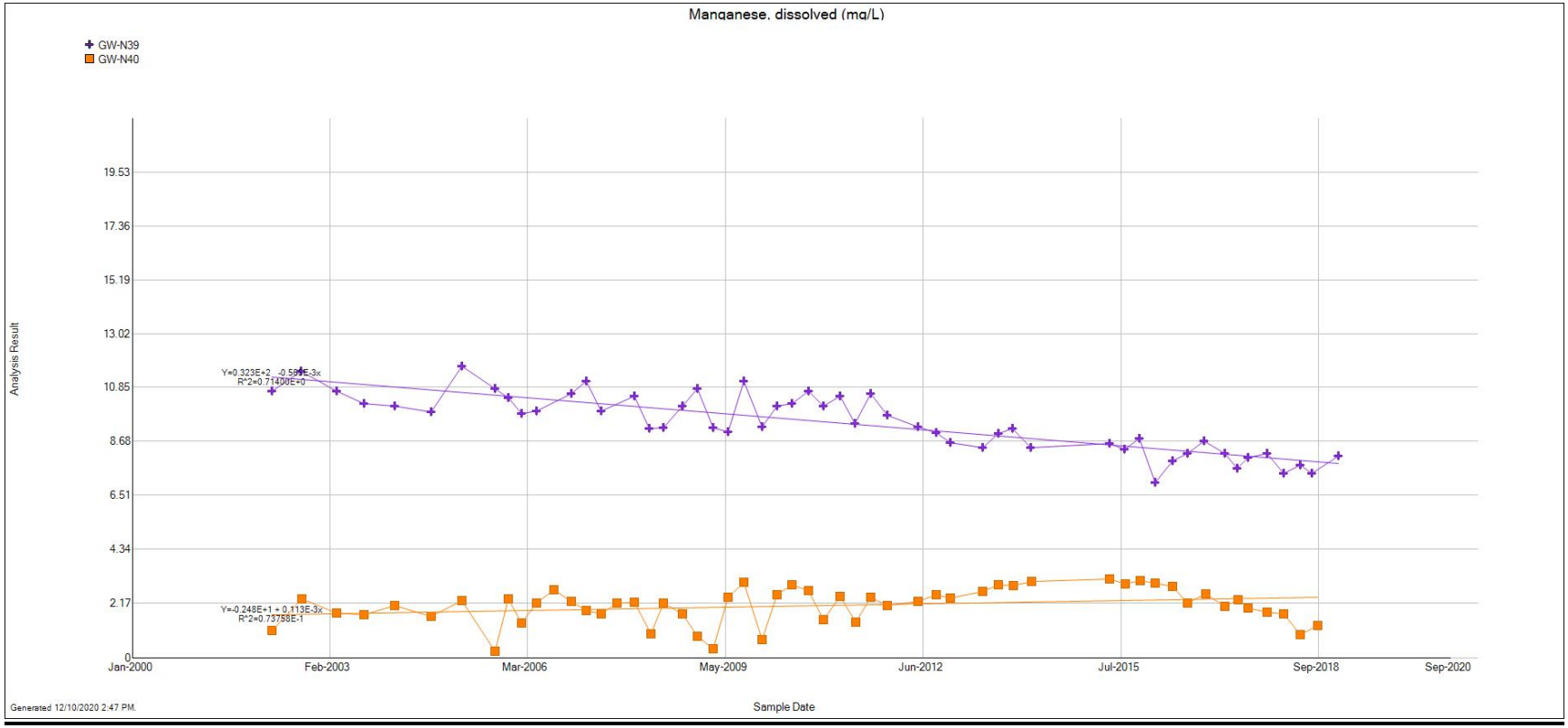

Magnesium, dissolved (mg/L)
GW-N39
GW-N40
570
513
456
399
342
285
228
171
114
57
0
Analysis Result
Y=0.339E+3 + 0.130E-1x
R^2=0.13874E+0
Y=0.371E+3 -0.657E-2x
R^2=0.50255E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

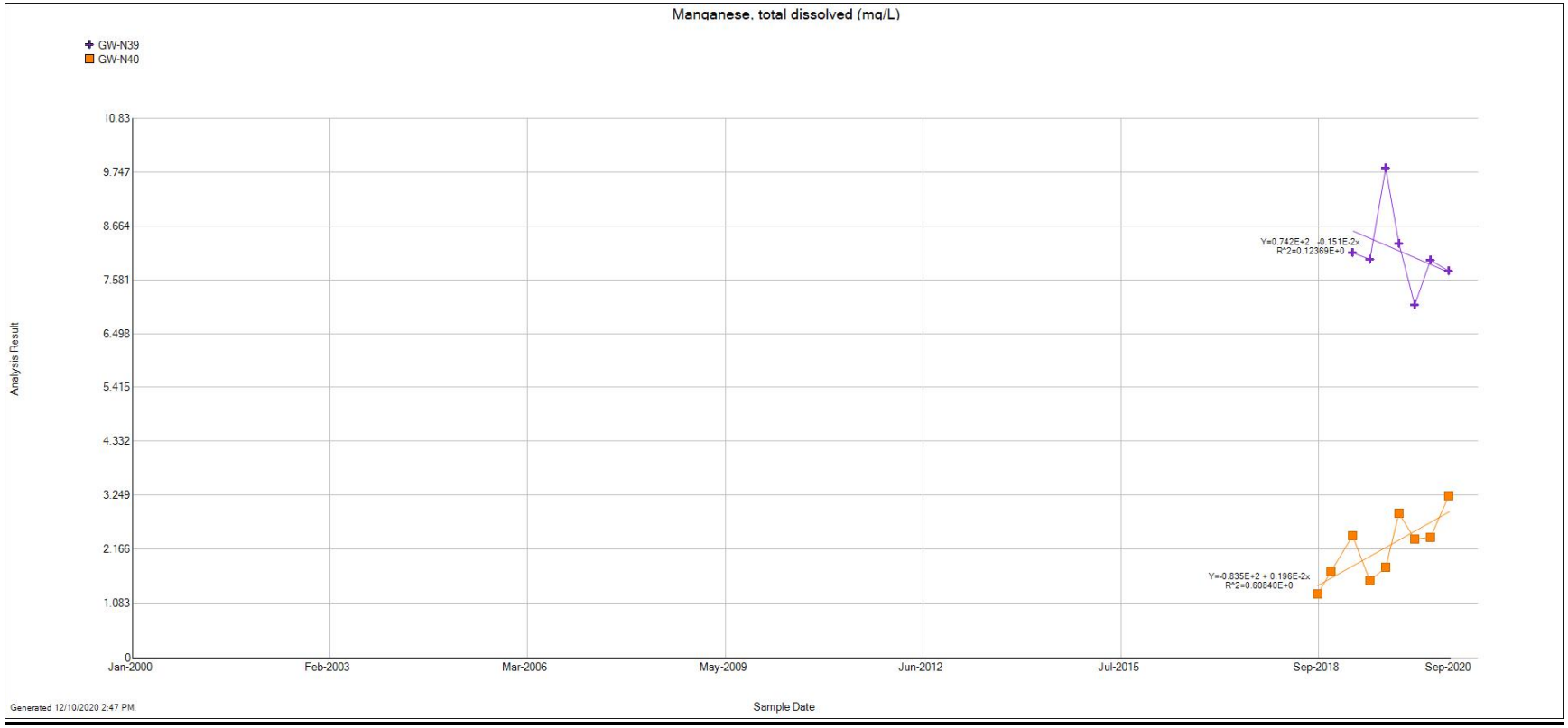

pH (lab)
GW-N39
GW-N40
Y=0.617E+1 + 0.396E-4x
R^2=0.73721E-1
Y=0.493E+1 + 0.614E-4x
R^2=0.12162E+0
8.28
7.36
6.44
5.52
4.6
3.68
2.76
1.84
0.92
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

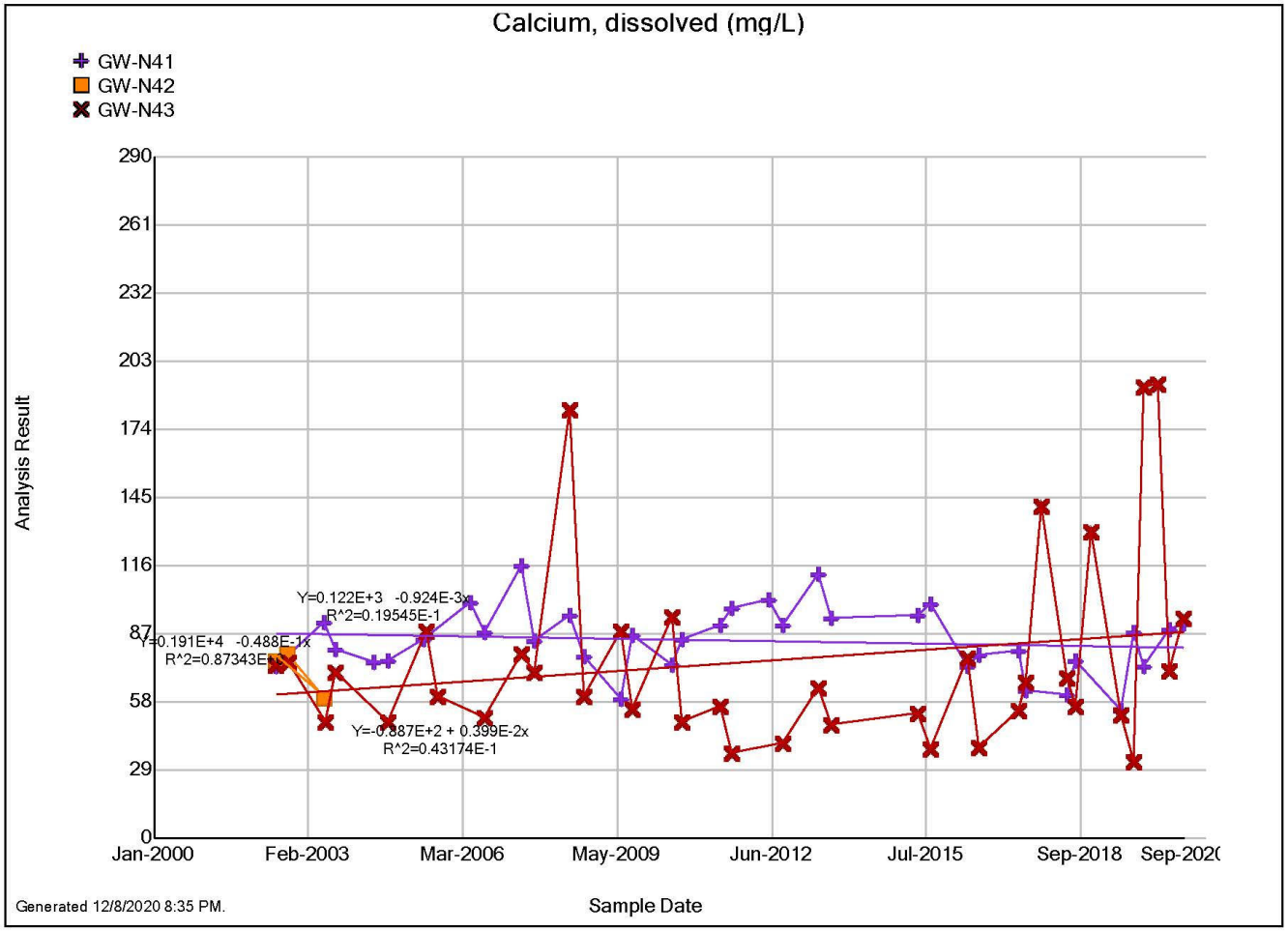

Sodium, dissolved (mg/L)
GW-N39
GW-N40
560
504
448
392
336
280
224
168
112
56
0
Analysis Result
Y=-0.255E+3 + 0.885E-2x
R^2=0.68283E-1
Y=0.105E+3 -0.160E-2x
R^2=0.16794E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

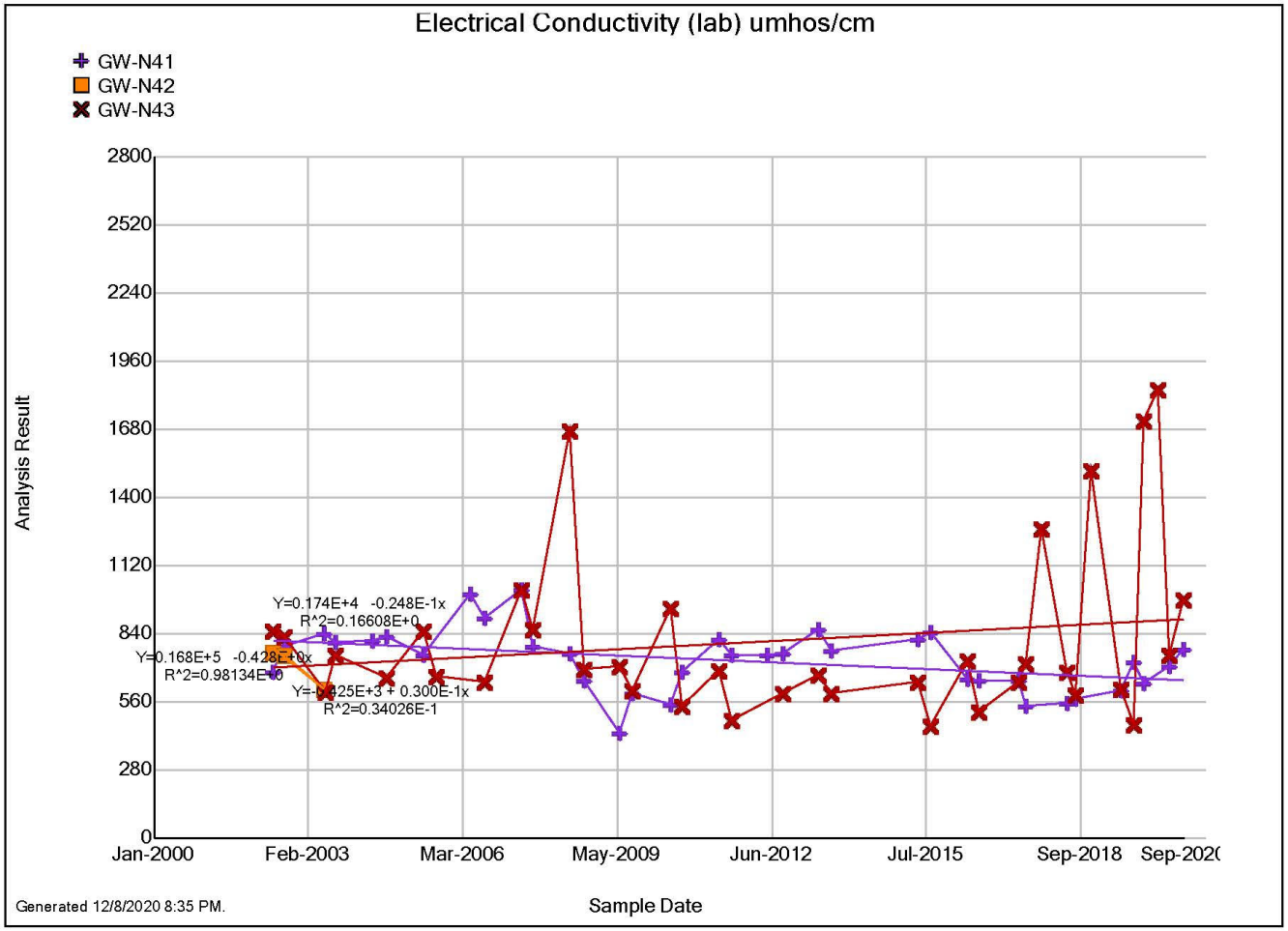

Sulfate, dissolved (mg/L)
GW-N39
GW-N40
Analysis Result
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
Y=0.344E+4 -0.408E-1x
R^2=0.55895E-1
Y=0.325E+4 -0.410E-1x
R^2=0.33458E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

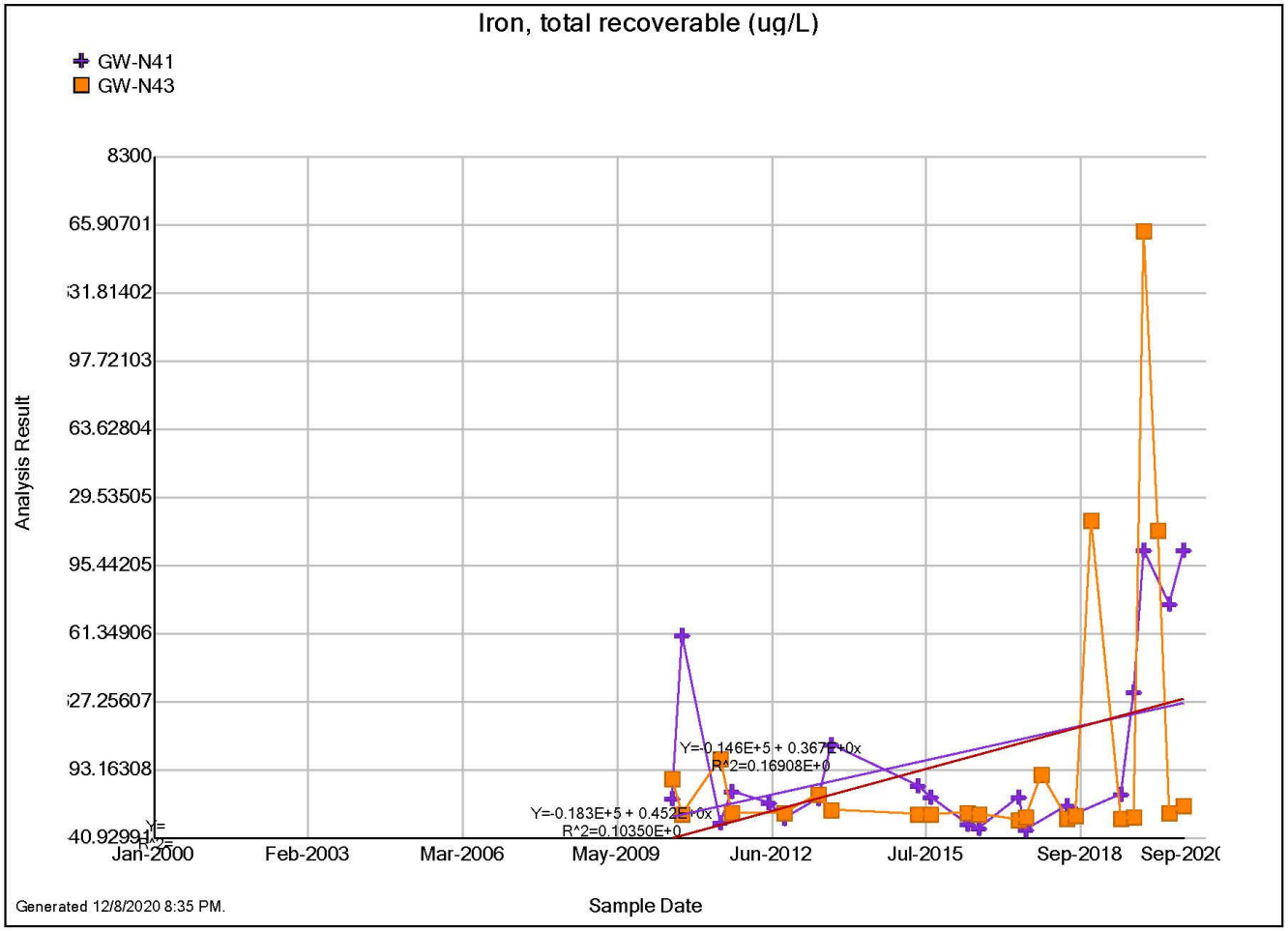

Total Dissolved Solids (mg/L)
GW-N39
GW-N40
6500
5850
5200
4550
3900
3250
2600
1950
1300
650
0
Analysis Result
Y=0.344E+4 -0.920E-2x
R^2=0.90825E-3
Y=0.427E+4 -0.350E-1x
R^2=0.29509E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 7:52 PM.
Sample Date

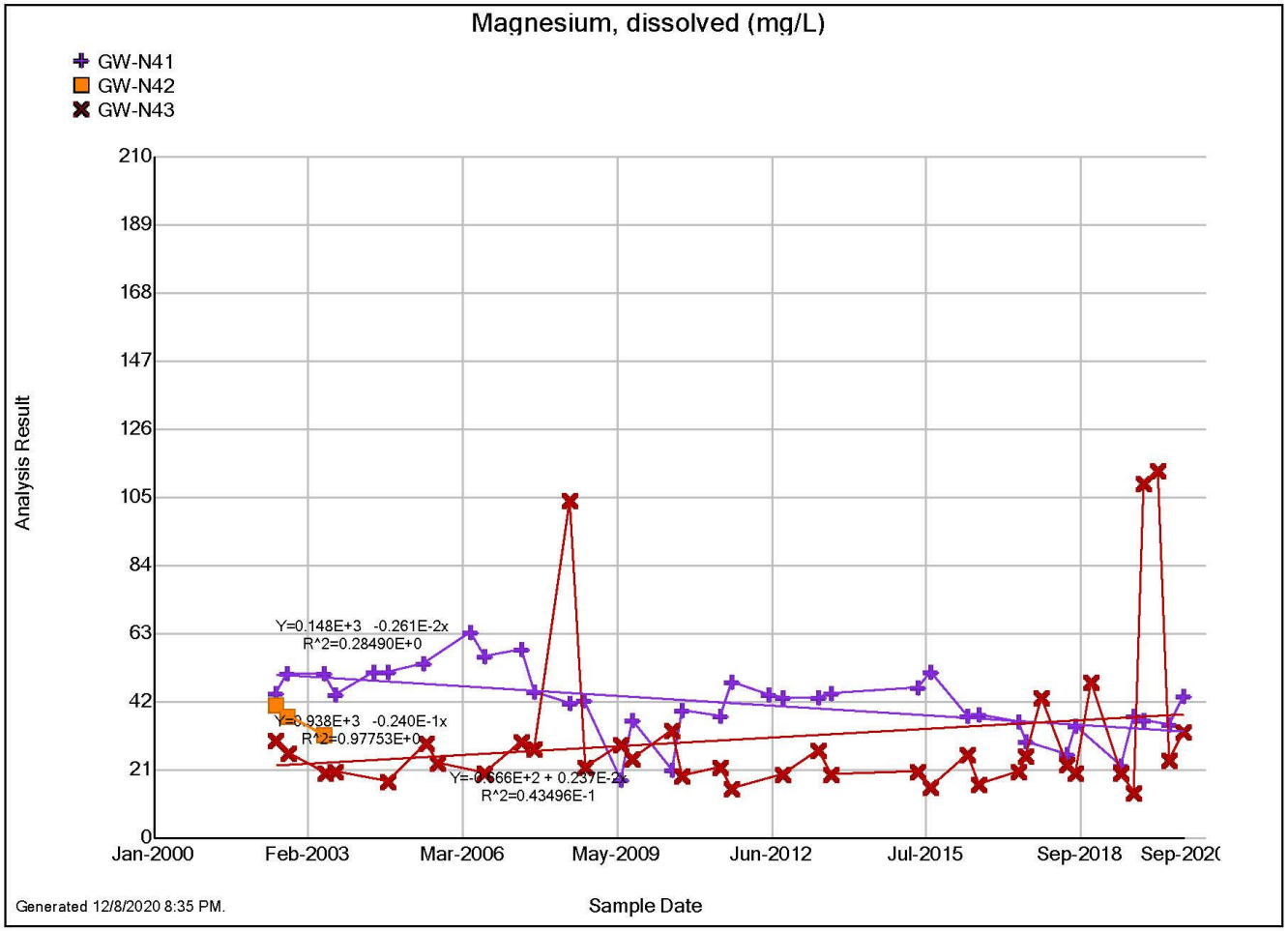

Manganese, dissolved (mg/L)
GW-N39
GW-N40
Analysis Result
19.53
17.36
15.19
13.02
10.85
8.68
6.51
4.34
2.17
0
Y=0.323E+2 -0.595E-3x
R^2=0.71409E+0
Y=-0.248E+1 + 0.113E-3x
R^2=0.73758E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/10/2020 2:47 PM.
Sample Date

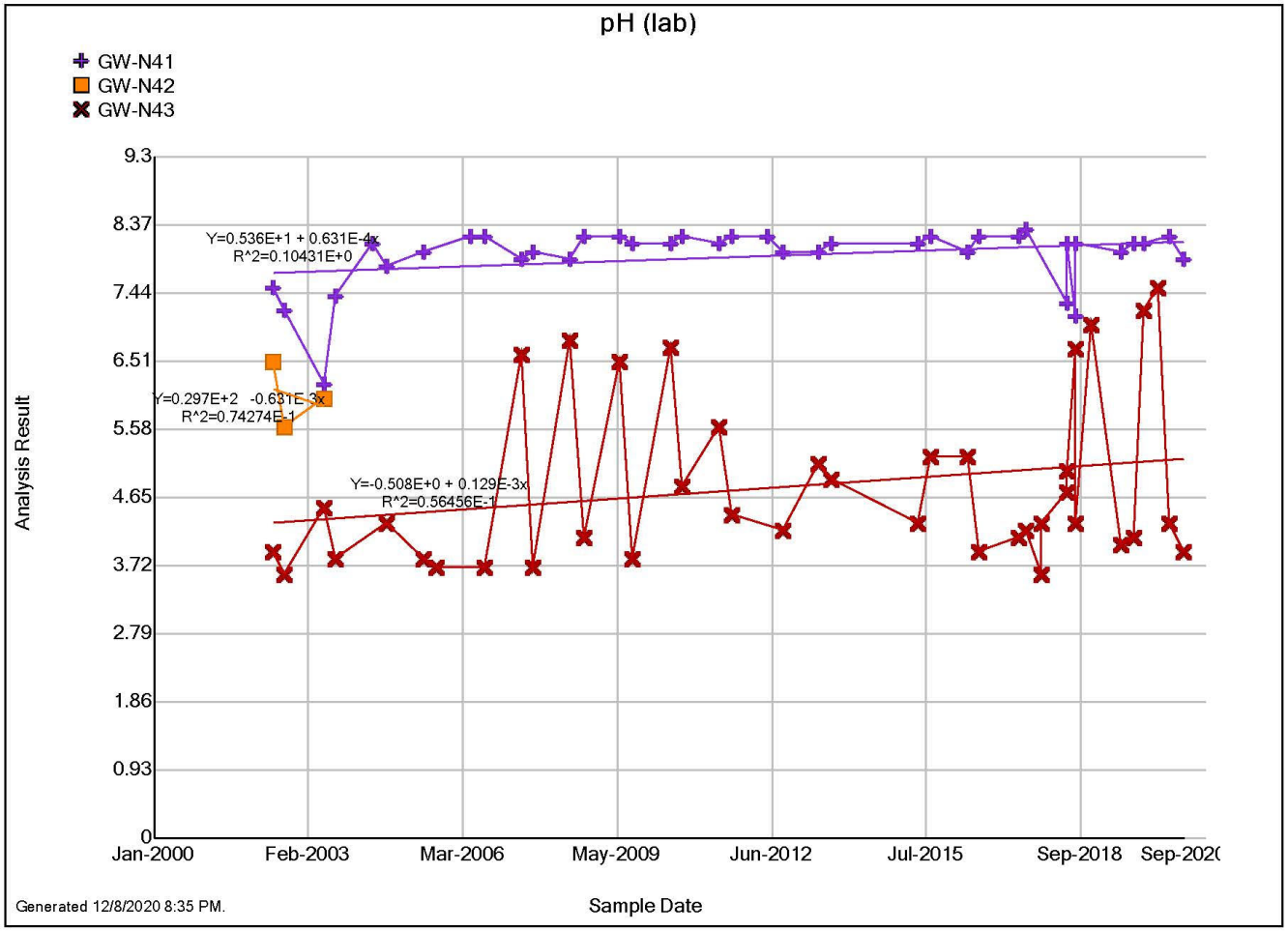

Manganese, total dissolved (mg/L)
GW-N39
GW-N40
10.83
9.747
8.664
7.581
6.498
5.415
4.332
3.249
2.166
1.083
0
Analysis Result
Y=0.742E+2 -0.151E-2x
R^2=0.12369E+0
Y=-0.835E+2 + 0.196E-2x
R^2=0.60840E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/10/2020 2:47 PM.

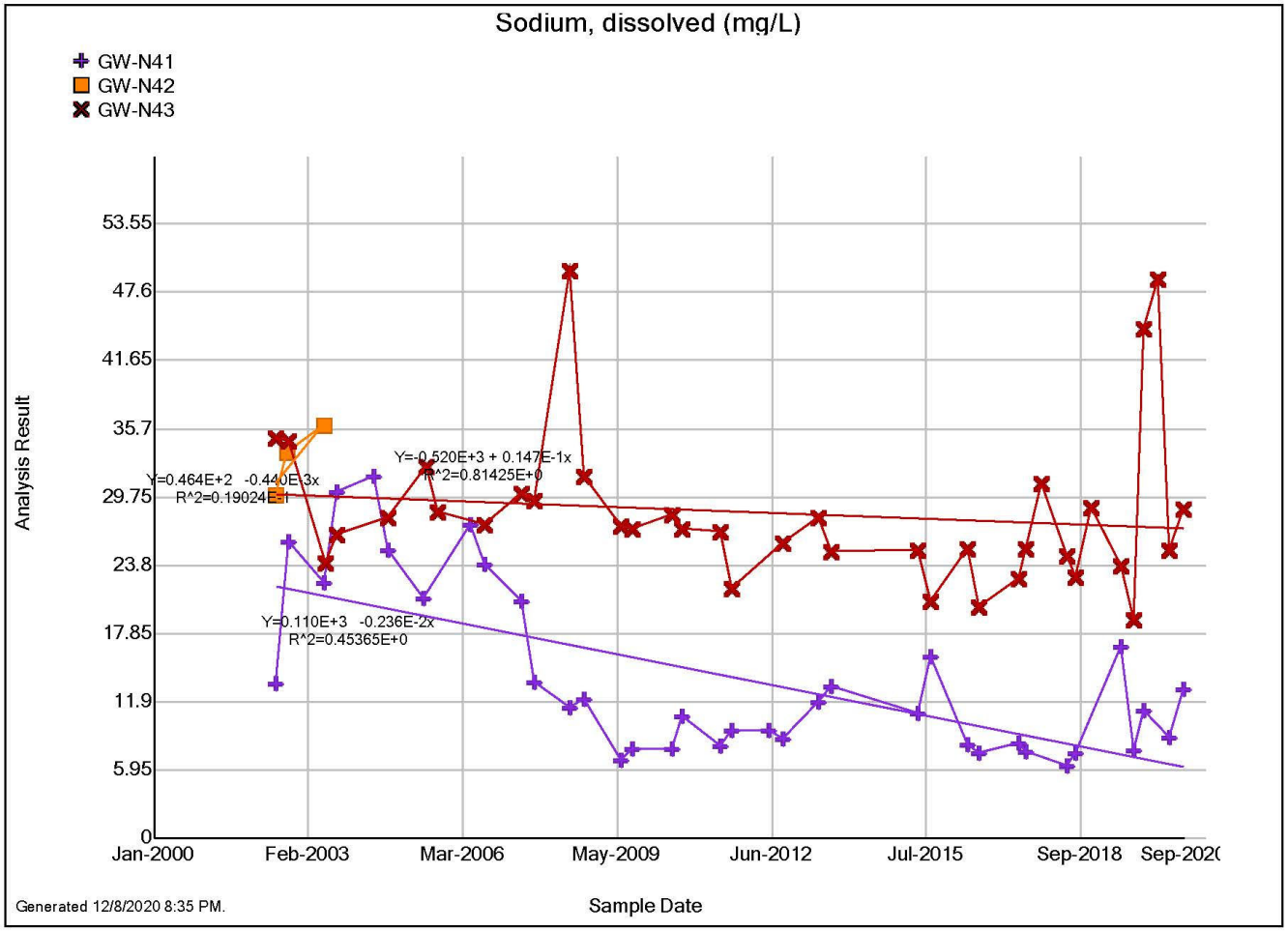

Calcium, dissolved (mg/L)
GW-N41
GW-N42
GW-N43
290
261
232
203
174
145
116
87
58
29
0
Analysis Result
Y=0.122E+3 -0.924E-3x
R^2=0.19545E-1
Y=0.191E+4 -0.488E-1x
R^2=0.87343E-1
Y=-0.887E+2 + 0.399E-2x
R^2=0.43174E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:35 PM.
Sample Date

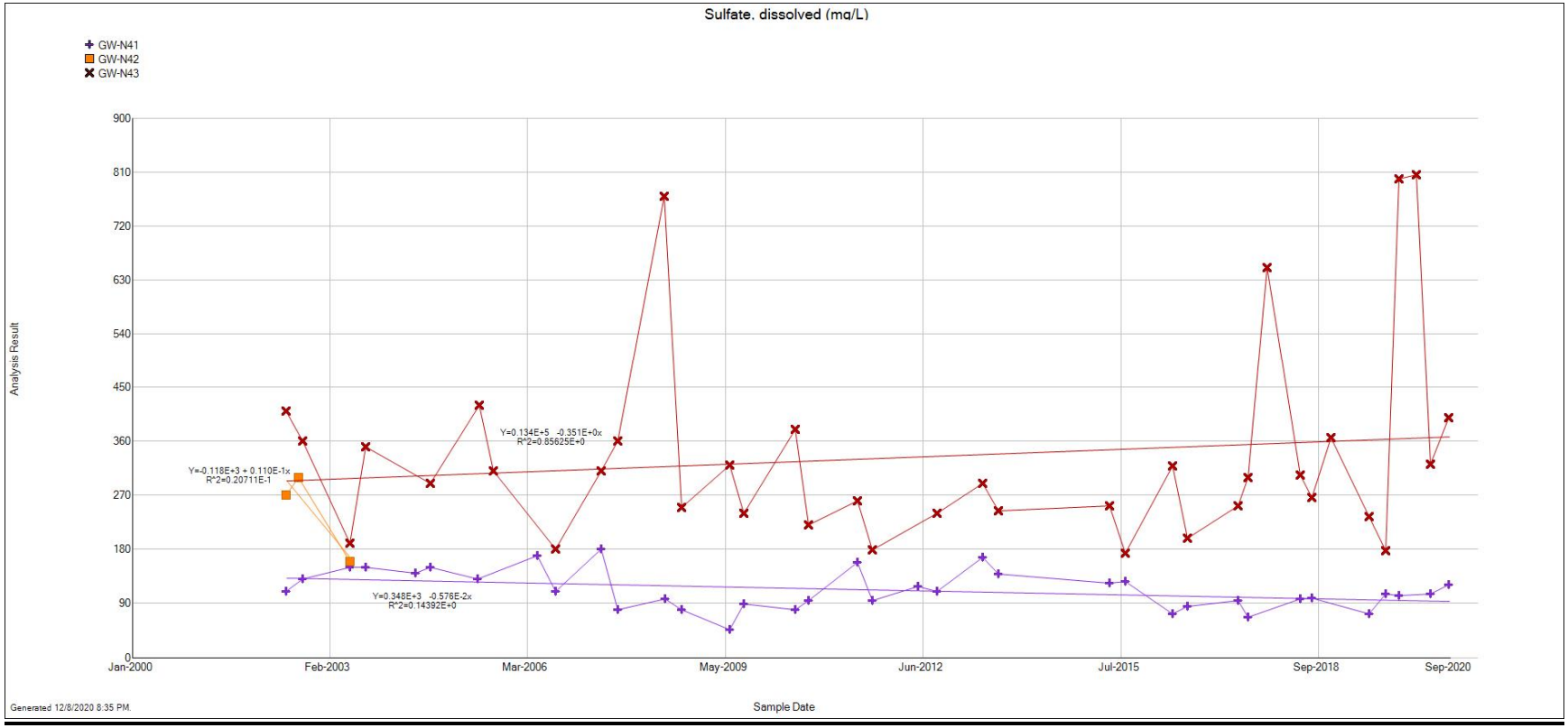

Electrical Conductivity (lab) umhos/cm
GW-N41
GW-N42
GW-N43
Analysis Result
2800
2520
2240
1960
1680
1400
1120
840
560
280
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Y=0.174E+4 -0.248E-1x
R^2=0.16608E+0
Y=0.168E+5 -0.428E+0x
R^2=0.98134E+0
Y=-0.425E+3 + 0.300E-1x
R^2=0.34026E-1
Generated 12/8/2020 8:35 PM.
Sample Date

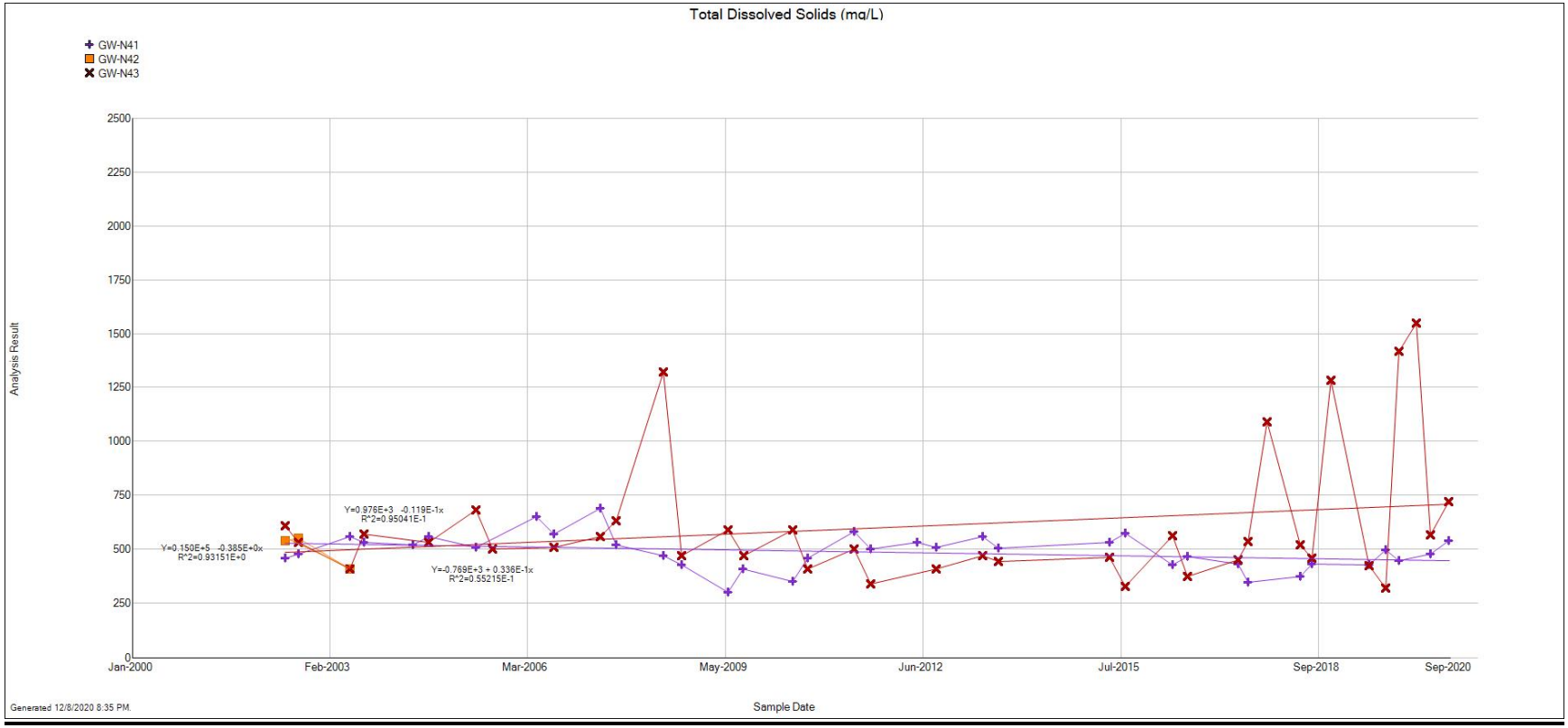

Iron, total recoverable (ug/L)
GW-N41
GW-N43
8300
65.90701
31.81402
97.72103
63.62804
29.53505
95.44205
61.34906
27.25607
93.16308
40.92991
Analysis Result
Y=-0.146E+5 + 0.367E+0x
R^2=0.16908E+0
Y=-0.183E+5 + 0.452E+0x
R^2=0.10350E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/8/2020 8:35 PM.
Sample Date

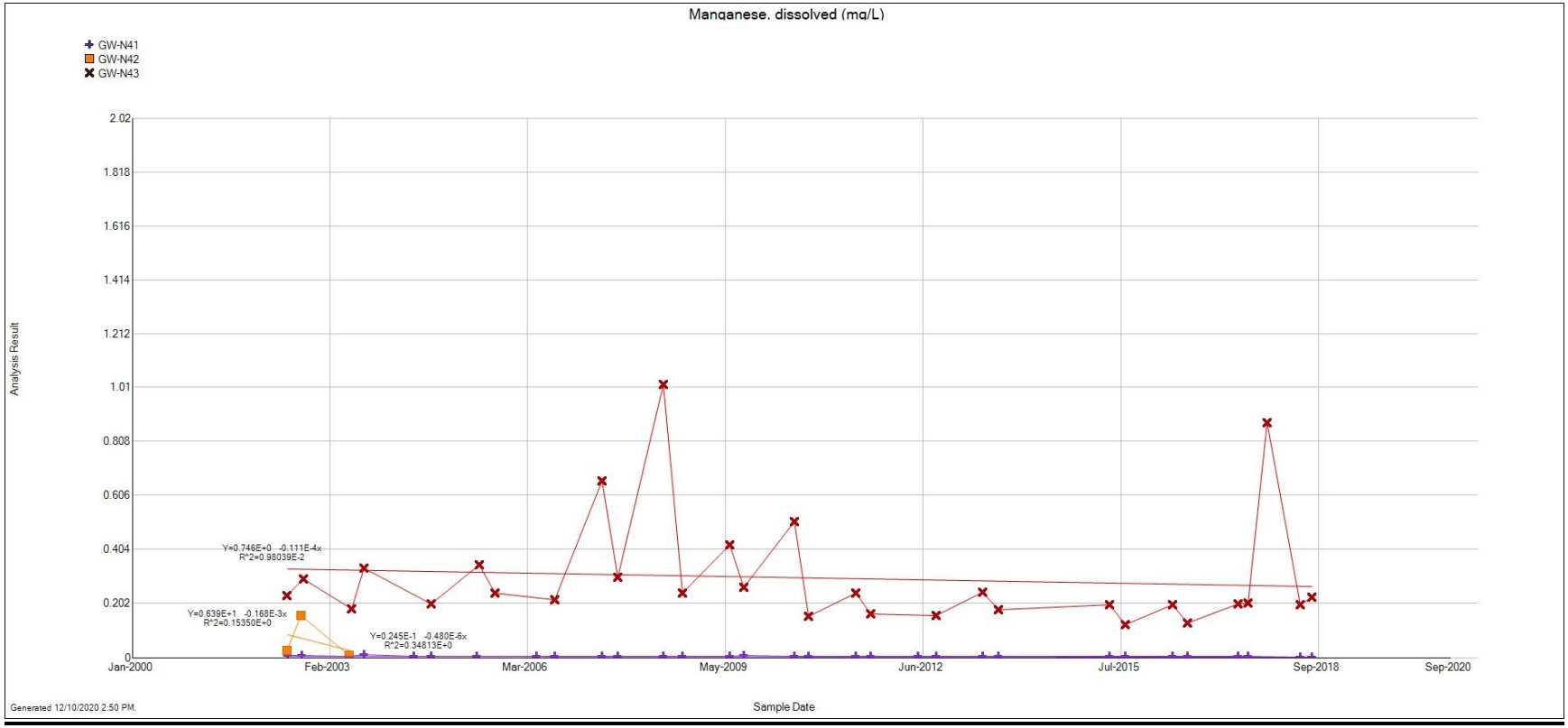

Magnesium, dissolved (mg/L)
GW-N41
GW-N42
GW-N43
210
189
168
147
126
105
84
63
42
21
0
Analysis Result
Y=0.148E+3 -0.261E-2x
R^2=0.28490E+0
Y=0.938E+3 -0.240E-1x
R^2=0.97753E+0
Y=-0.666E+2 + 0.237E-2x
R^2=0.43496E-1
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:35 PM.
Sample Date

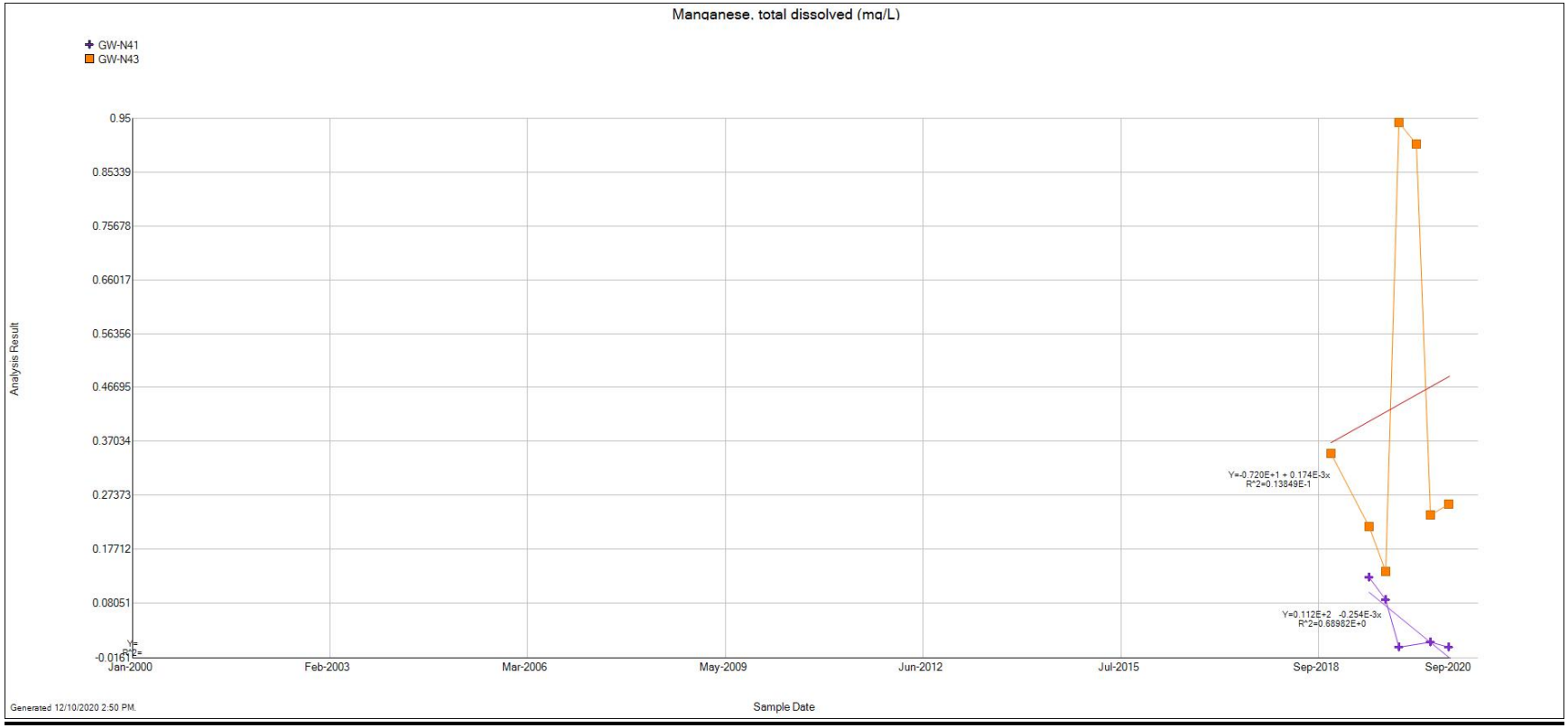

pH (lab)
GW-N41
GW-N42
GW-N43
9.3
8.37
7.44
6.51
5.58
4.65
3.72
2.79
1.86
0.93
0
Y=0.536E+1 + 0.631E-4x
R^2=0.10431E+0
Y=0.297E+2 -0.631E-3x
R^2=0.74274E-1
Y=-0.508E+0 + 0.129E-3x
R^2=0.56456E-1
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:35 PM.
Sample Date


Sodium, dissolved (mg/L)
GW-N41
GW-N42
GW-N43
Y=0.464E+2 -0.440E-3x
R^2=0.19024E+1
Y=-0.520E+3 + 0.147E-1x
R^2=0.81425E+0
Y=0.110E+3 -0.236E-2x
R^2=0.45365E+0
53.55
47.6
41.65
35.7
29.75
23.8
17.85
11.9
5.95
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-202(
Generated 12/8/2020 8:35 PM.
Sample Date


Sulfate, dissolved (mg/L)
GW-N41
GW-N42
GW-N43
Analysis Result
900
810
720
630
540
450
360
270
180
90
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.134E+5 -0.351E+0x
R^2=0.85625E+0
Y=-0.118E+3 + 0.110E-1x
R^2=0.20711E-1
Y=0.348E+3 -0.576E-2x
R^2=0.14392E+0
Generated 12/8/2020 8:35 PM.
Sample Date


Total Dissolved Solids (mg/L)
GW-N41
GW-N42
GW-N43
Analysis Result
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.976E+3 -0.119E-1x
R^2=0.95041E-1
Y=0.150E+5 -0.385E+0x
R^2=0.93151E+0
Y=-0.769E+3 + 0.336E-1x
R^2=0.55215E-1
Generated 12/8/2020 8:35 PM.
Sample Date


Manganese, dissolved (mg/L)
GW-N41
GW-N42
GW-N43
2.02
1.818
1.616
1.414
1.212
1.01
0.808
0.606
0.404
0.202
0
Analysis Result
Y=0.746E+0 -0.111E-4x
R^2=0.98039E-2
Y=0.639E+1 -0.168E-3x
R^2=0.15350E+0
Y=0.245E-1 -0.480E-6x
R^2=0.34813E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/10/2020 2:50 PM.
Sample Date


Manganese, total dissolved (mg/L)
GW-N41
GW-N43
0.95
0.85339
0.75678
0.66017
0.56356
0.46695
0.37034
0.27373
0.17712
0.08051
-0.0161
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Y=-0.720E+1 + 0.174E-3x
R^2=0.13849E-1
Y=0.112E+2 -0.254E-3x
R^2=0.68982E+0
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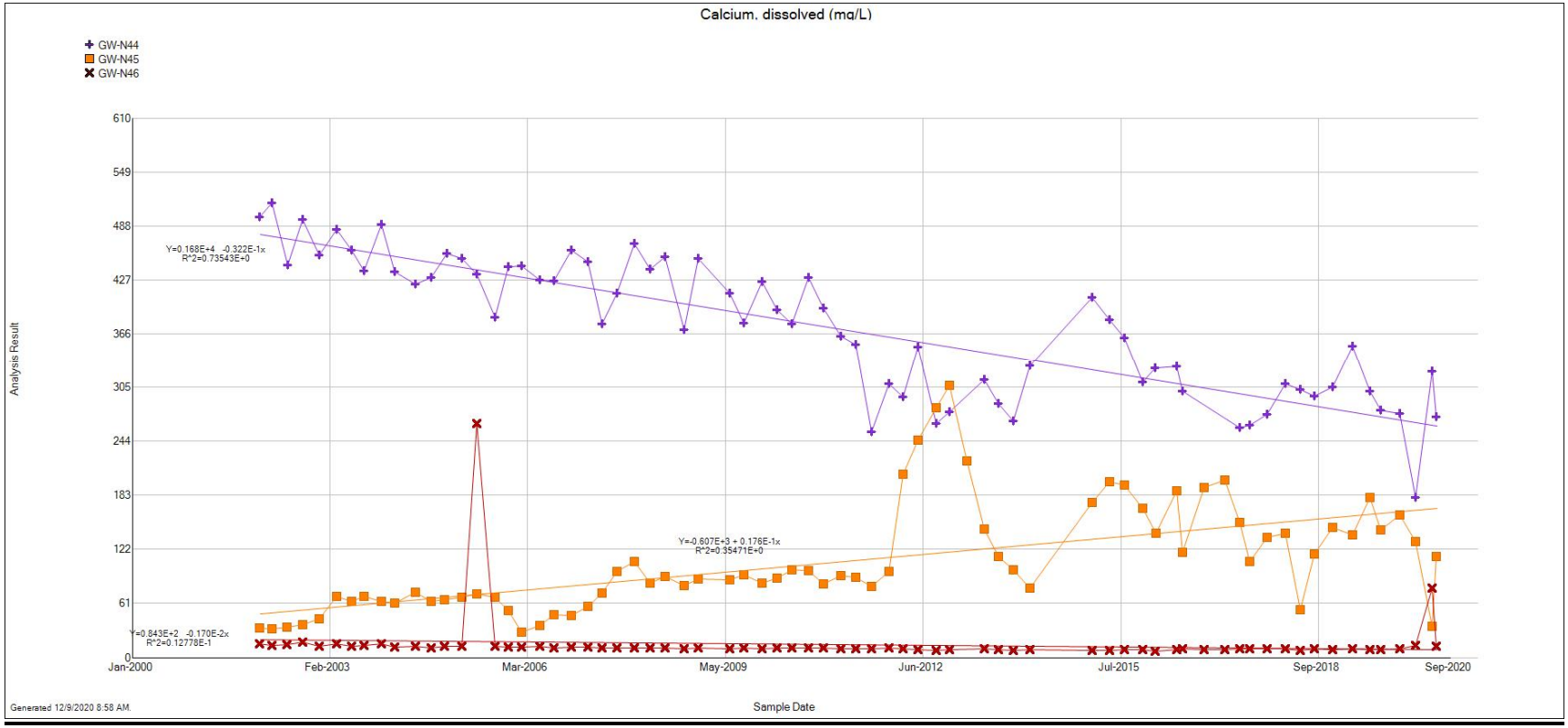
Calcium, dissolved (mg/L)
GW-N44
GW-N45
GW-N46
Y=0.168E+4 -0.322E-1x
R^2=0.73543E+0
Y=-0.607E+3 + 0.176E-1x
R^2=0.35471E+0
Y=0.843E+2 -0.170E-2x
R^2=0.12778E-1
610
549
488
427
366
305
244
183
122
61
0
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
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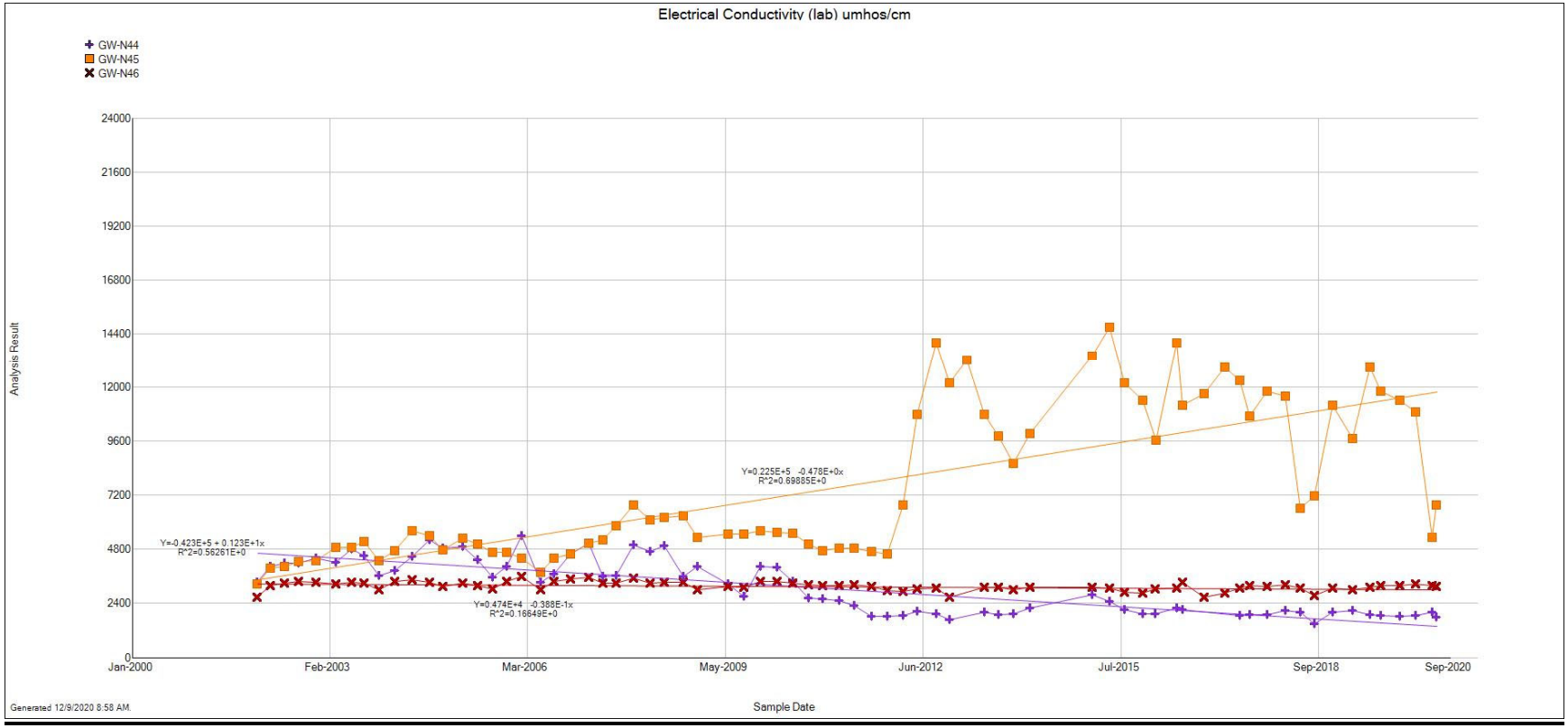
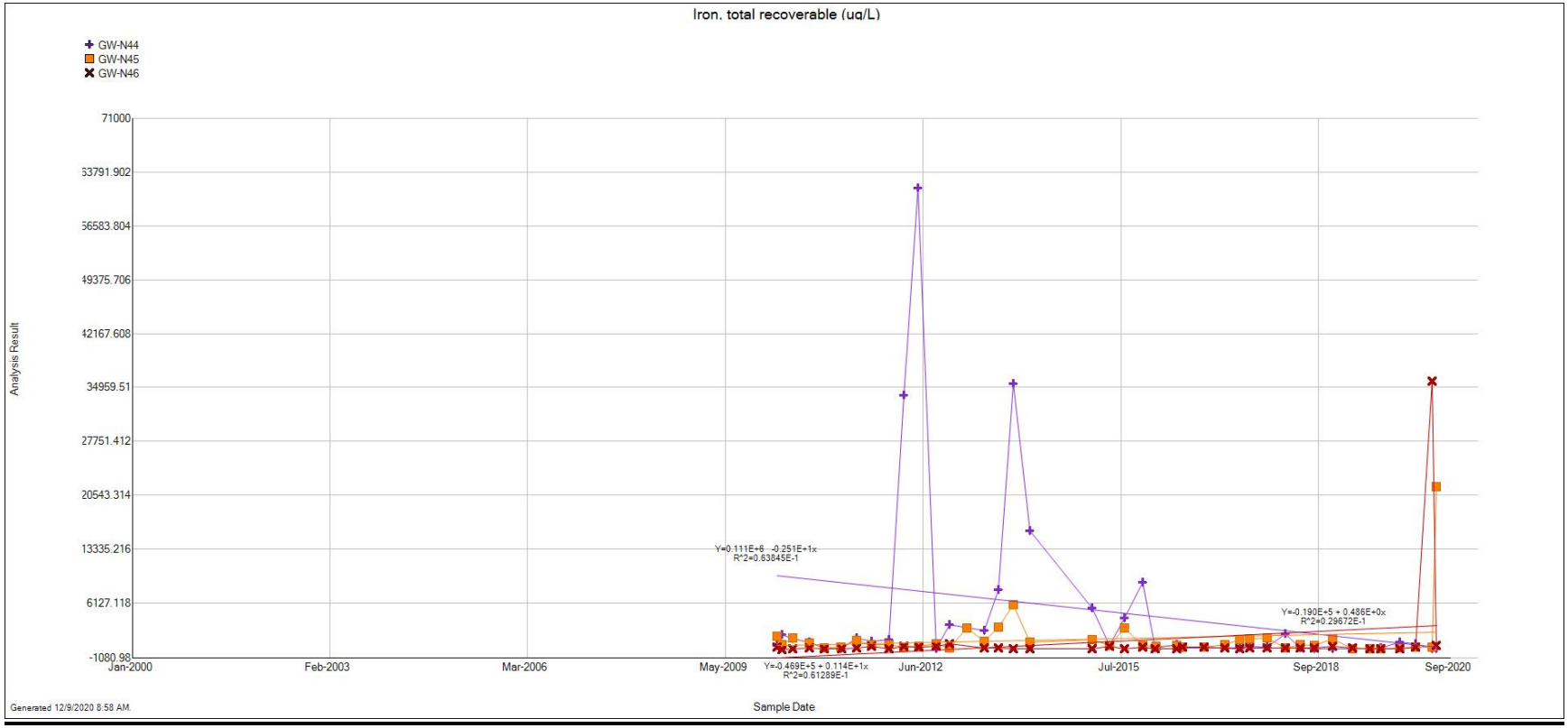
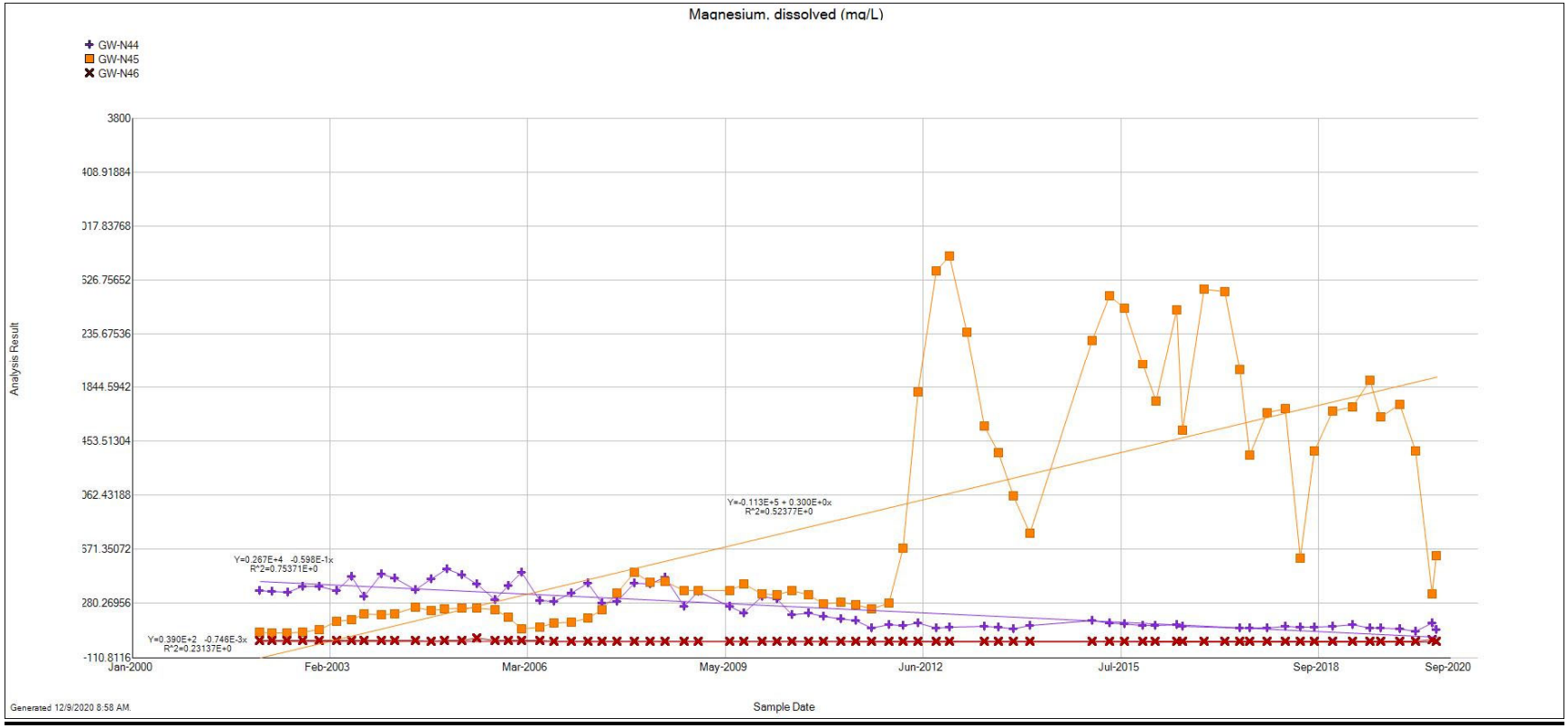
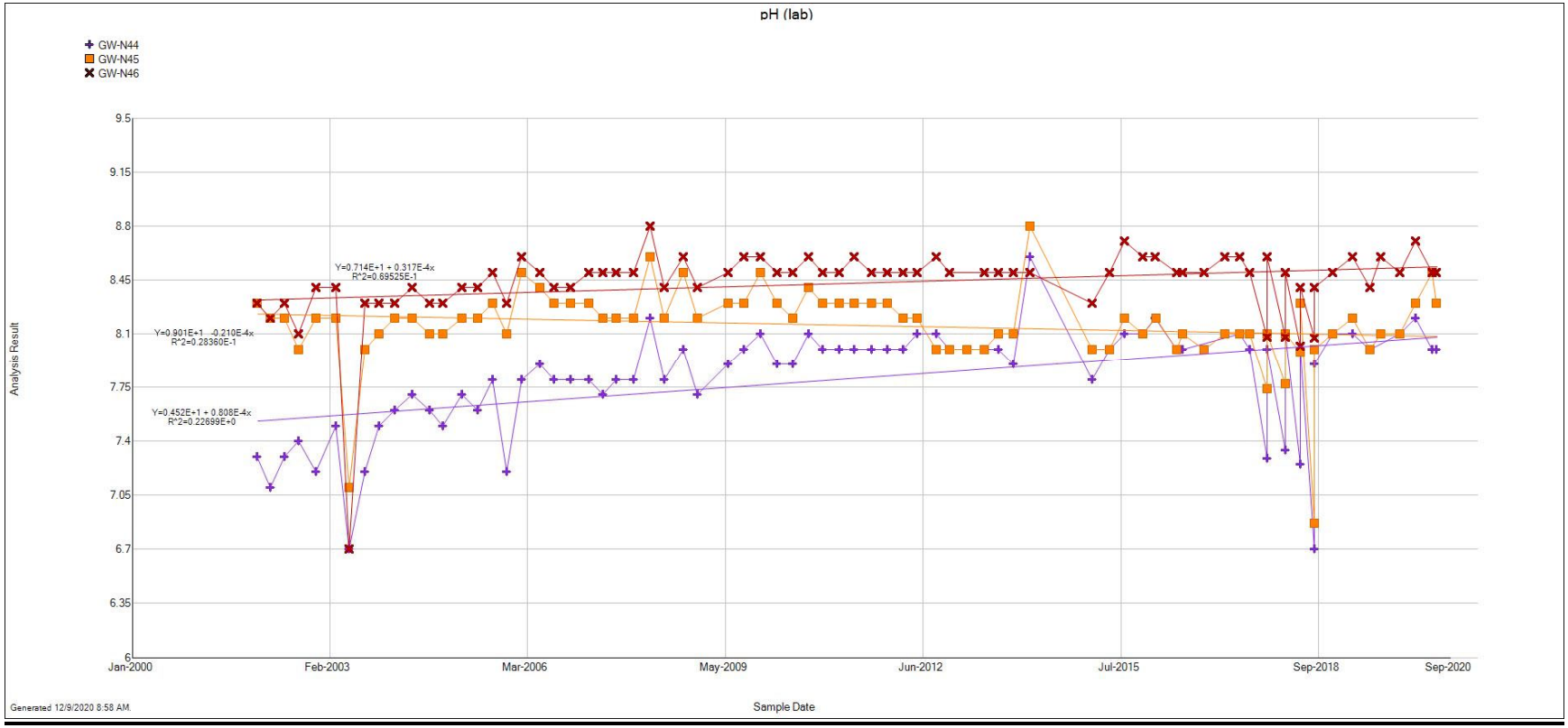
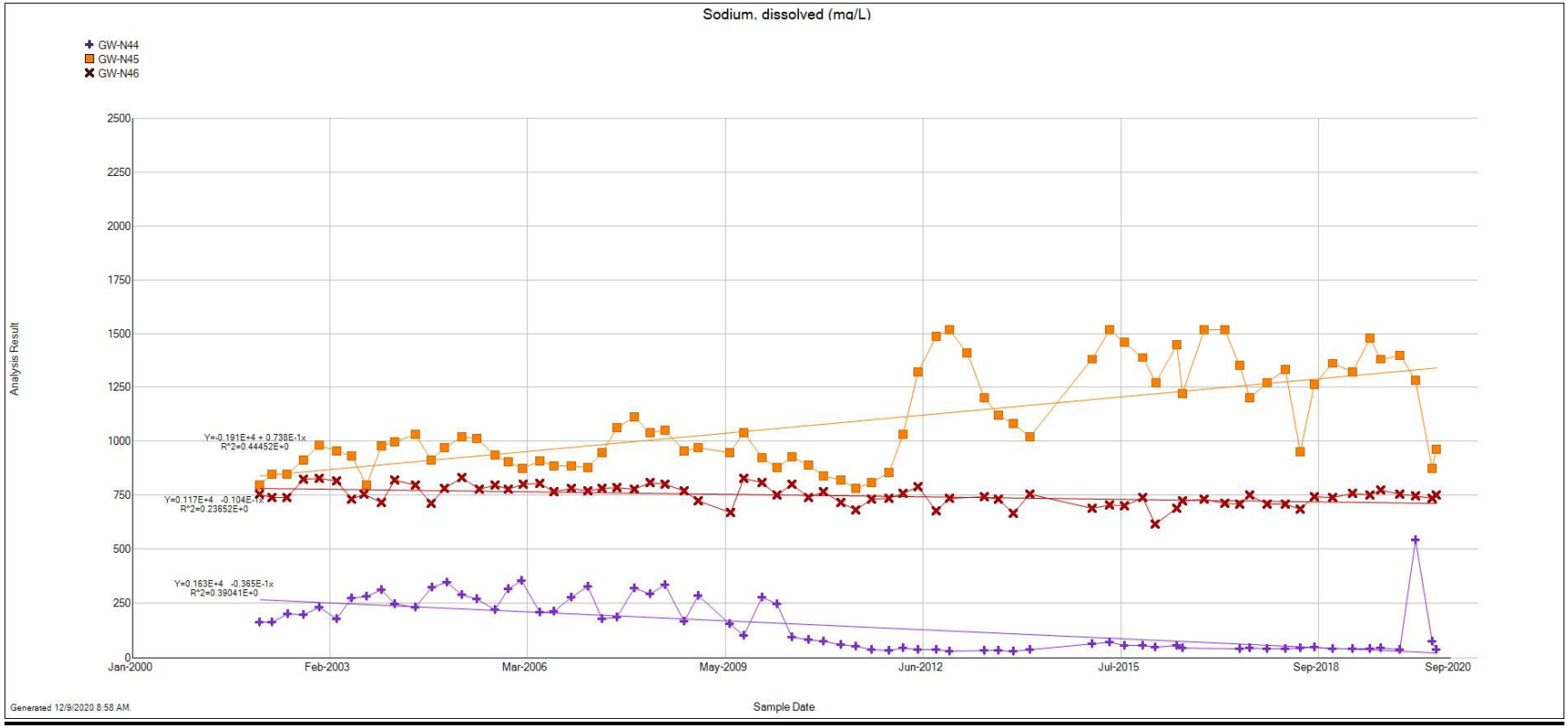
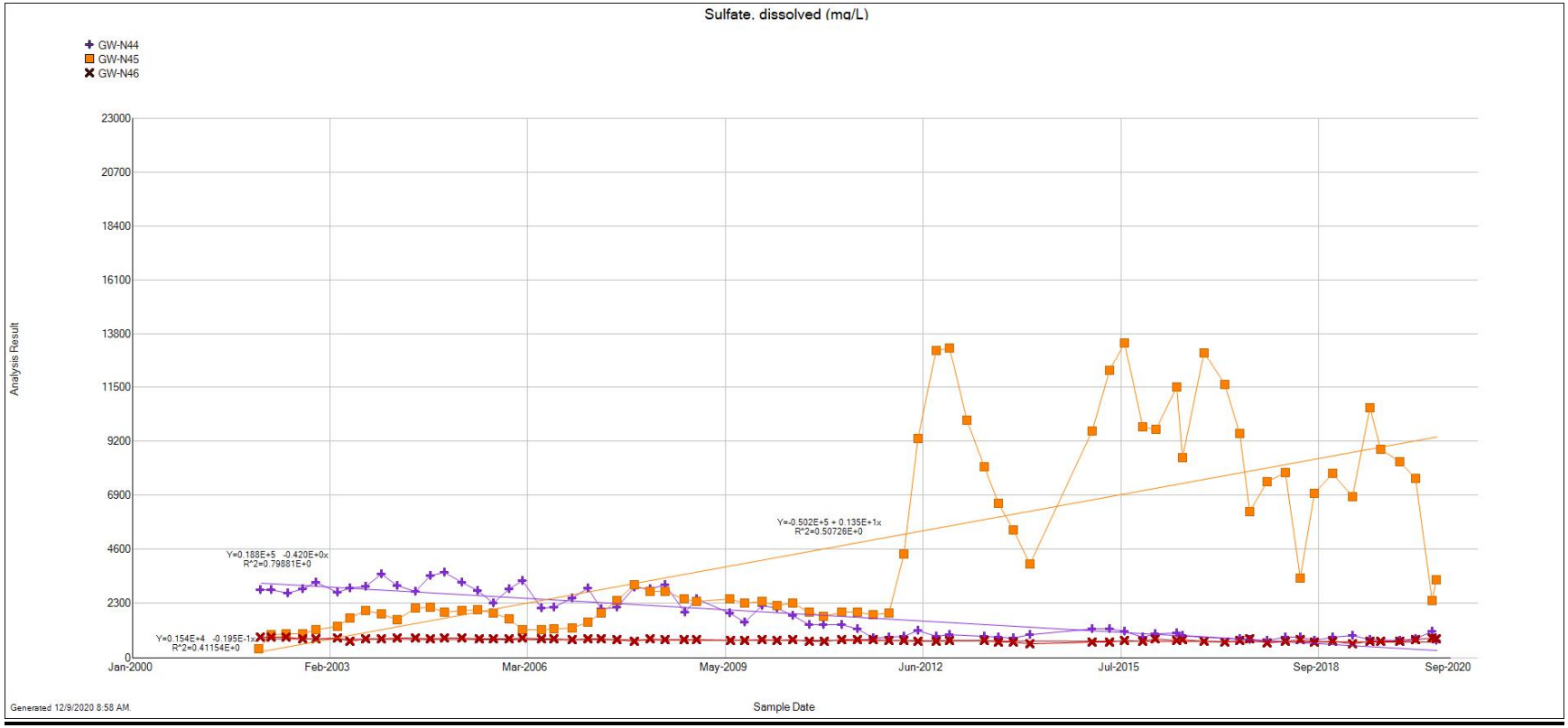

Electrical Conductivity (lab) umhos/cm
GW-N44
GW-N45
GW-N46
Analysis Result
24000
21600
19200
16800
14400
12000
9600
7200
4800
2400
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.225E+5 -0.478E+0x
R^2=0.69885E+0
Y=-0.423E+5 + 0.123E+1x
R^2=0.56261E+0
Y=0.474E+4 -0.388E-1x
R^2=0.16649E+0
Generated 12/9/2020 8:58 AM.
Sample Date

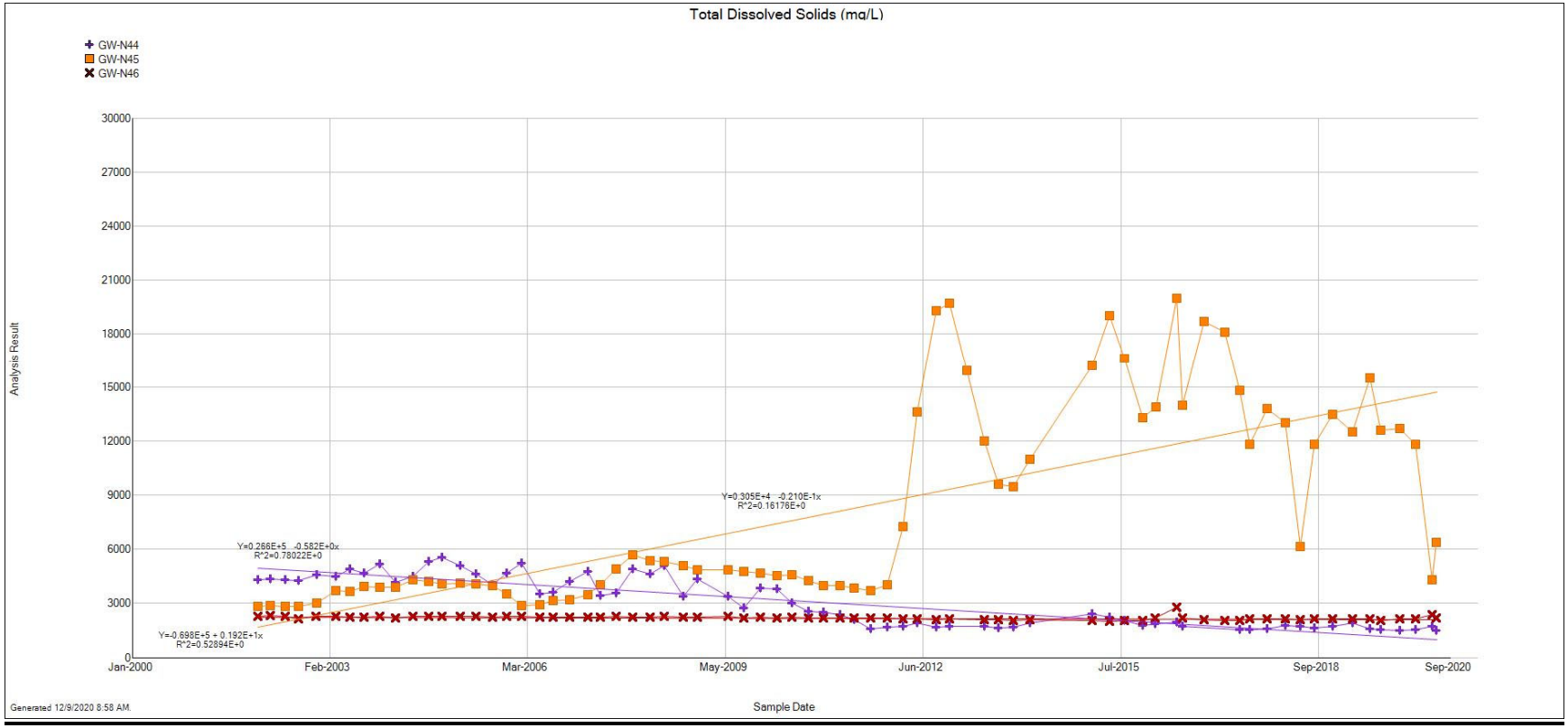

Iron, total recoverable (ug/L)
GW-N44
GW-N45
GW-N46
71000
53791.902
36583.804
19375.706
42167.608
34959.51
27751.412
20543.314
13335.216
6127.118
-1080.98
Analysis Result
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Y=0.111E+6 -0.251E+1x
R^2=0.63845E-1
Y=-0.469E+5 + 0.114E+1x
R^2=0.61289E-1
Y=-0.190E+5 + 0.486E+0x
R^2=0.29672E-1
Generated 12/9/2020 8:58 AM.

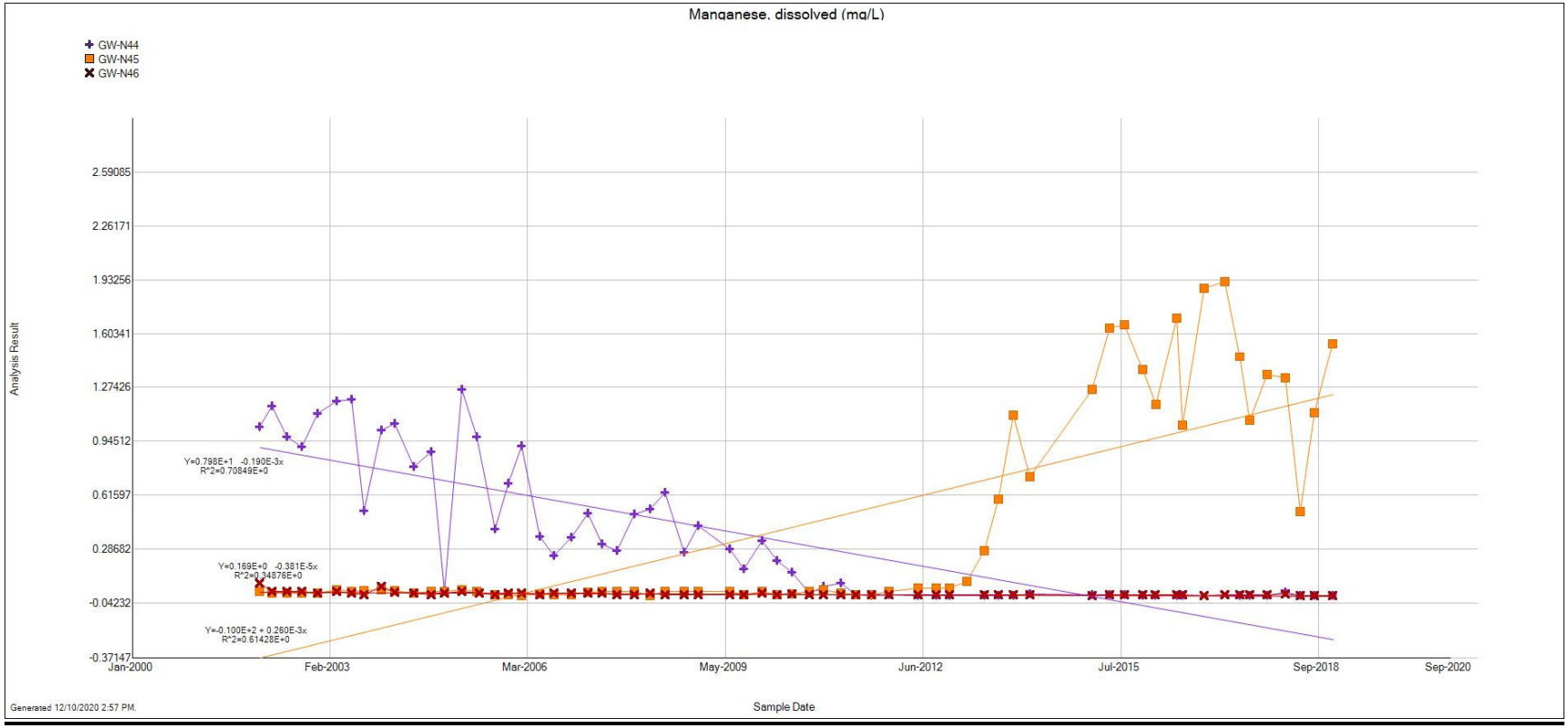

Magnesium, dissolved (mg/L)
GW-N44
GW-N45
GW-N46
3800
408.91884
017.83768
526.75652
235.67536
1844.5942
453.51304
062.43188
571.35072
280.26956
-110.8116
Analysis Result
Y=0.267E+4 -0.598E-1x
R^2=0.75371E+0
Y=0.390E+2 -0.746E-3x
R^2=0.23137E+0
Y=-0.113E+5 + 0.300E+0x
R^2=0.52377E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 8:58 AM.

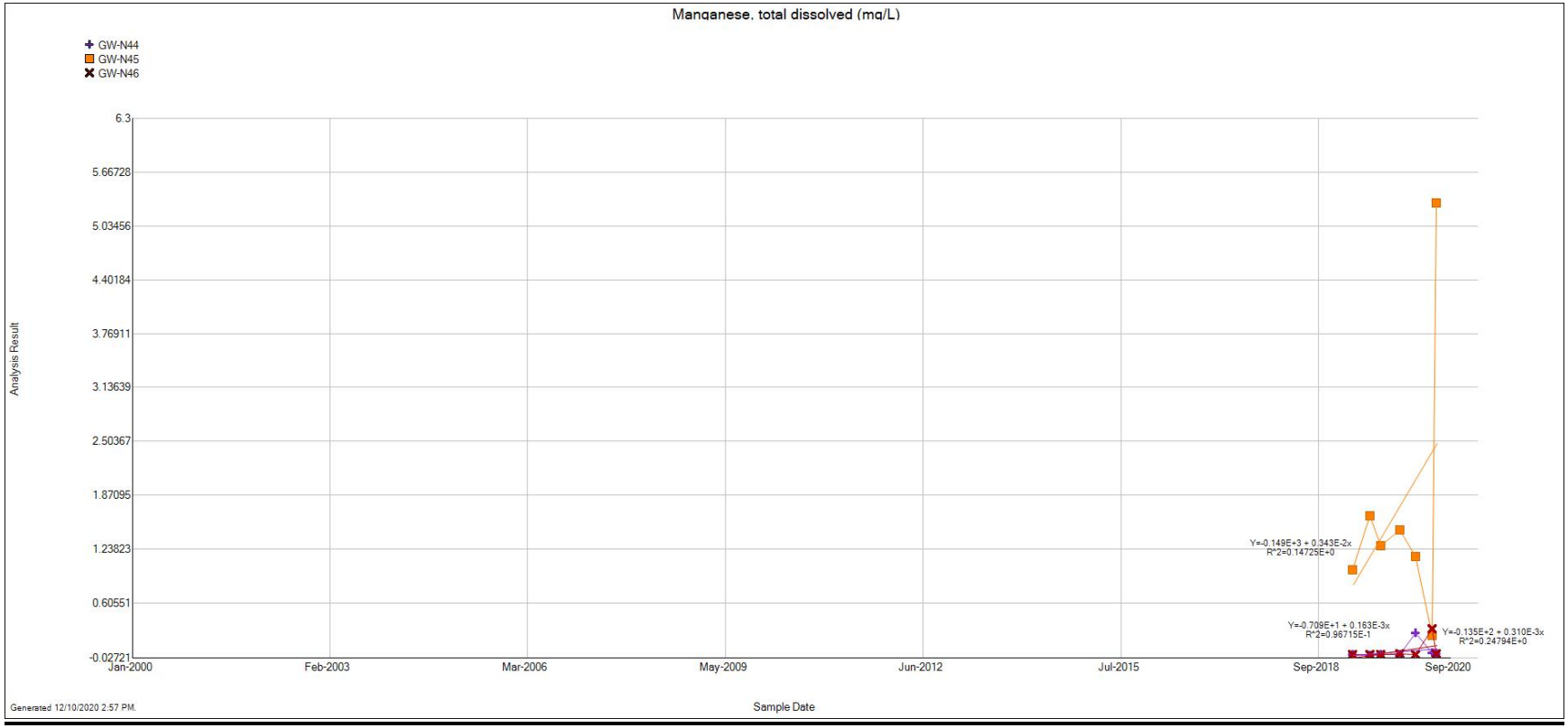

pH (lab)
GW-N44
GW-N45
GW-N46
Y=0.714E+1 + 0.317E-4x
R^2=0.69525E-1
Y=0.901E+1 - 0.210E-4x
R^2=0.28360E-1
Y=0.452E+1 + 0.808E-4x
R^2=0.22699E+0
Analysis Result
9.5
9.15
8.8
8.45
8.1
7.75
7.4
7.05
6.7
6.35
6
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/9/2020 8:58 AM.
Sample Date


Sodium, dissolved (mg/L)
GW-N44
GW-N45
GW-N46
Analysis Result
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
Y=-0.191E+4 + 0.738E-1x
R^2=0.44452E+0
Y=0.117E+4 -0.104E-1x
R^2=0.23652E+0
Y=0.163E+4 -0.365E-1x
R^2=0.39041E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/9/2020 8:58 AM.
Sample Date

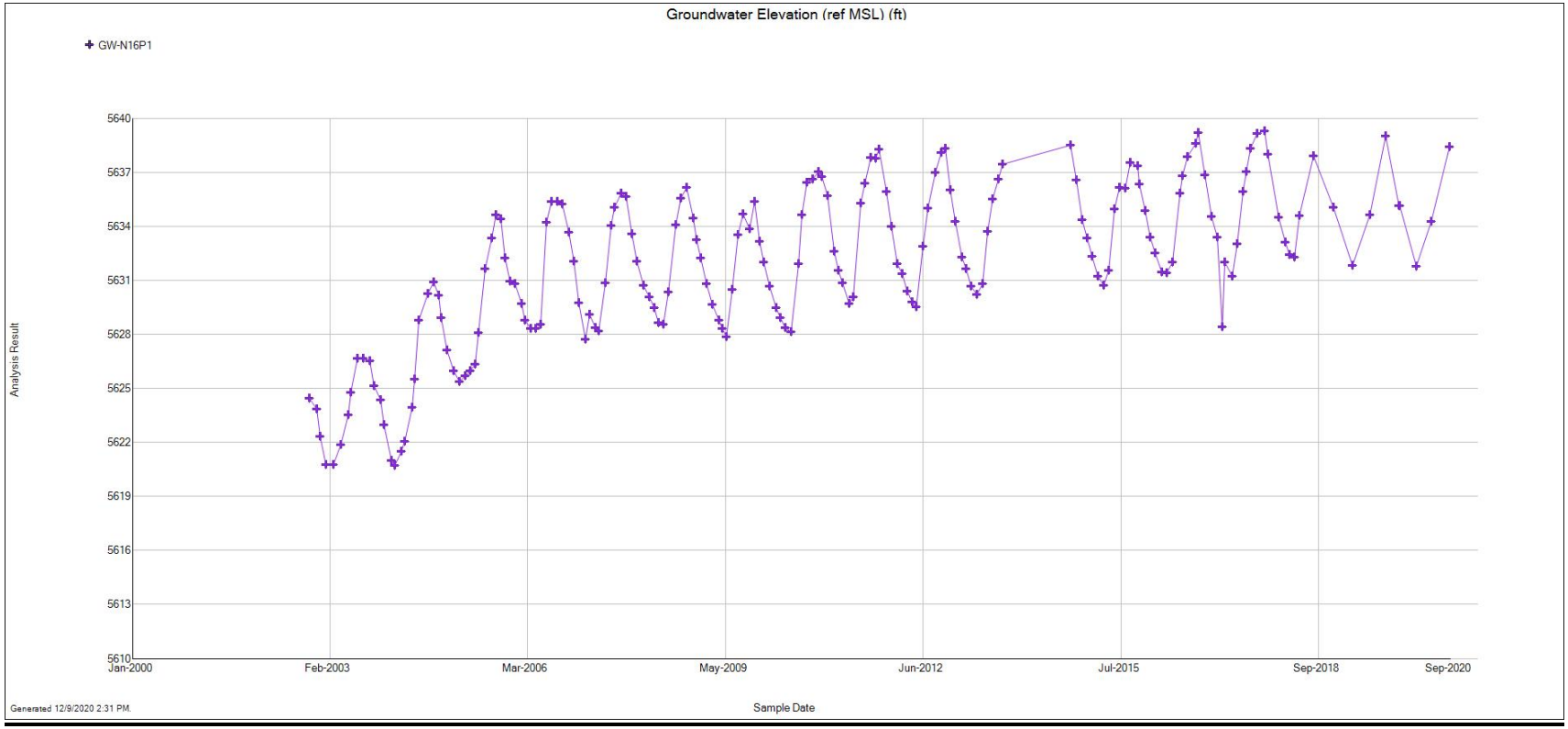

Sulfate, dissolved (mg/L)
GW-N44
GW-N45
GW-N46
Analysis Result
23000
20700
18400
16100
13800
11500
9200
6900
4600
2300
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.188E+5 -0.420E+0x
R^2=0.79881E+0
Y=-0.502E+5 + 0.135E+1x
R^2=0.50726E+0
Y=0.154E+4 -0.195E-1x
R^2=0.41154E+0
Generated 12/9/2020 8:58 AM.
Sample Date

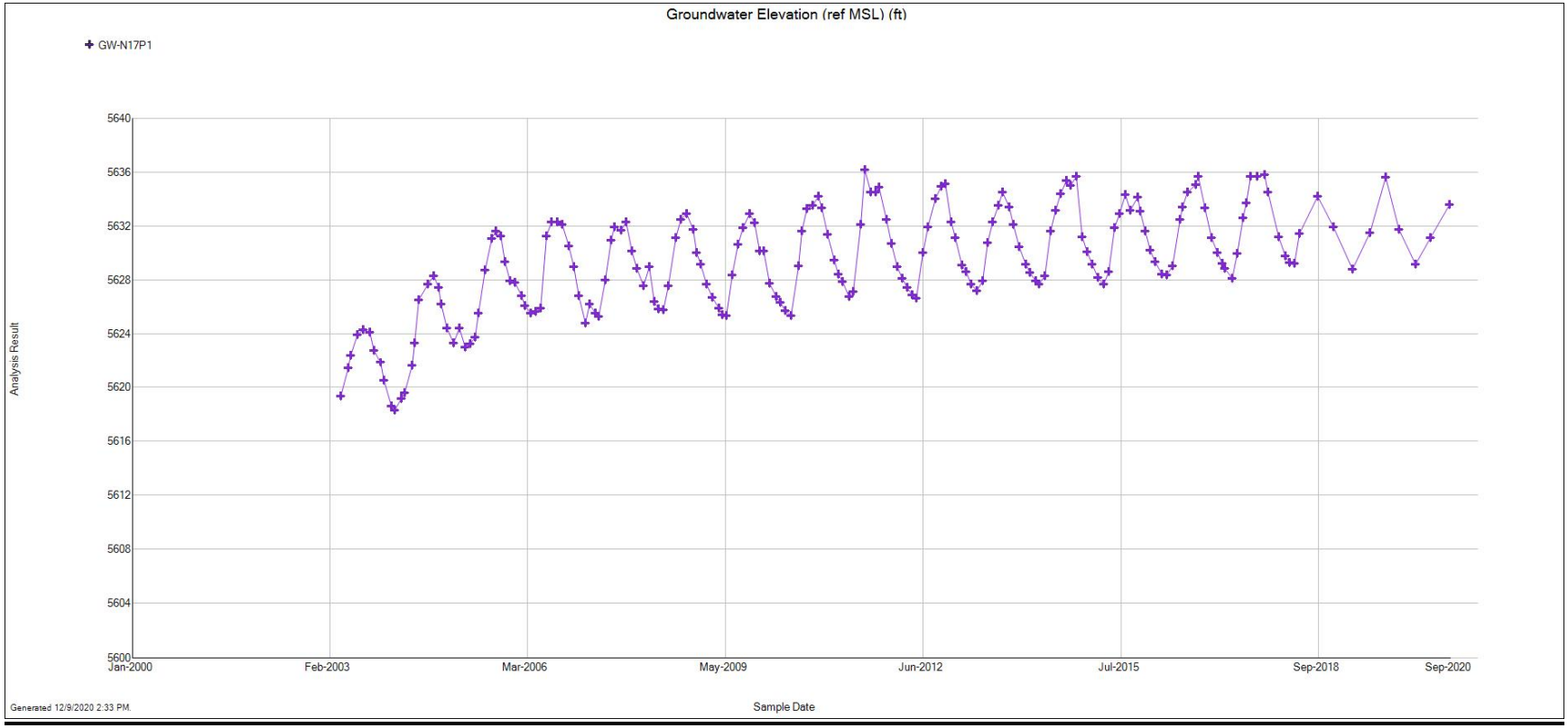

Total Dissolved Solids (mg/L)
GW-N44
GW-N45
GW-N46
Analysis Result
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=0.305E+4 -0.210E-1x
R^2=0.16176E+0
Y=0.266E+5 -0.582E+0x
R^2=0.78022E+0
Y=-0.698E+5 + 0.192E+1x
R^2=0.52894E+0
Generated 12/9/2020 8:58 AM.
Sample Date

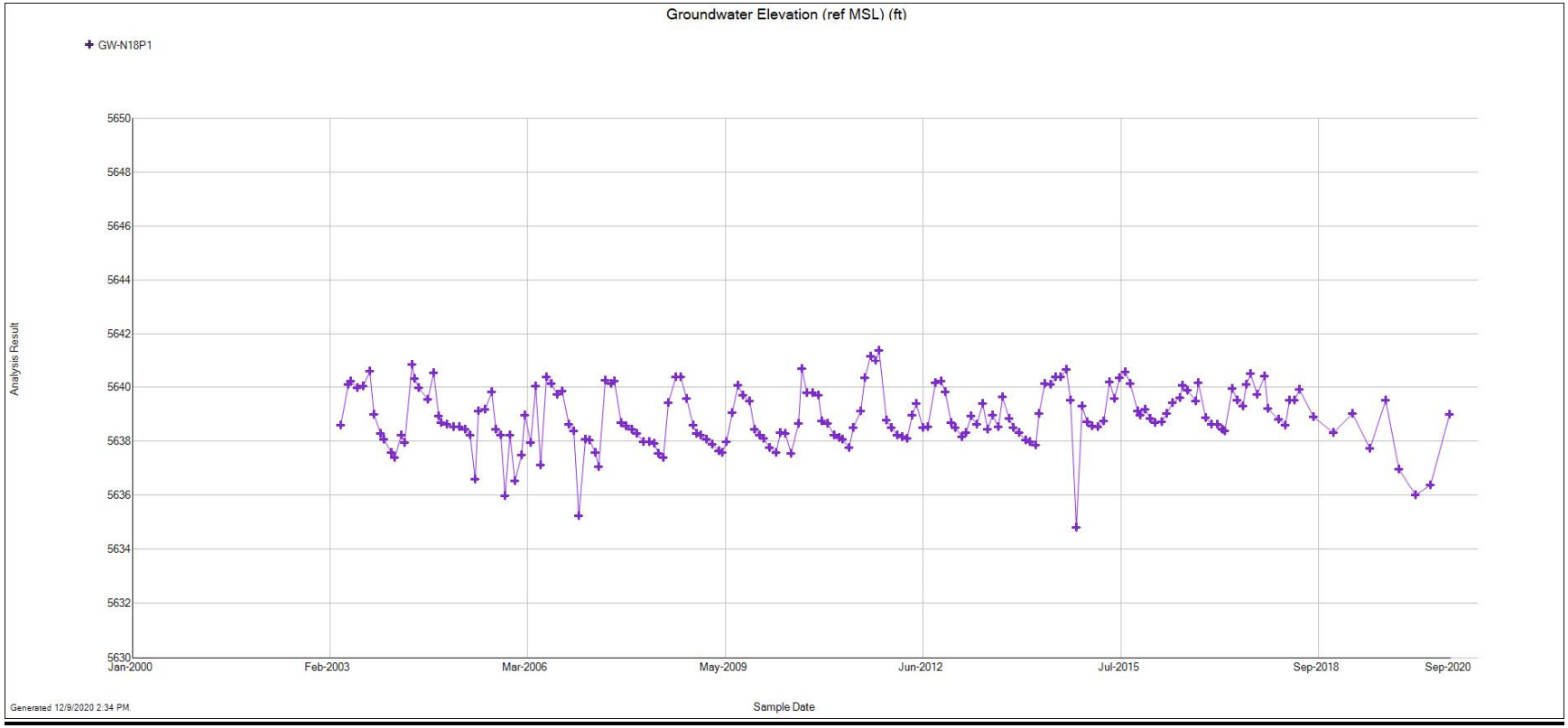

Manganese, dissolved (mg/L)
GW-N44
GW-N45
GW-N46
Analysis Result
2.59085
2.26171
1.93256
1.60341
1.27426
0.94512
0.61597
0.28682
-0.04232
-0.37147
Y=0.798E+1 -0.190E-3x
R^2=0.70849E+0
Y=0.169E+0 -0.381E-5x
R^2=0.34876E+0
Y=-0.100E+2 + 0.260E-3x
R^2=0.61428E+0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/10/2020 2:57 PM.
Sample Date

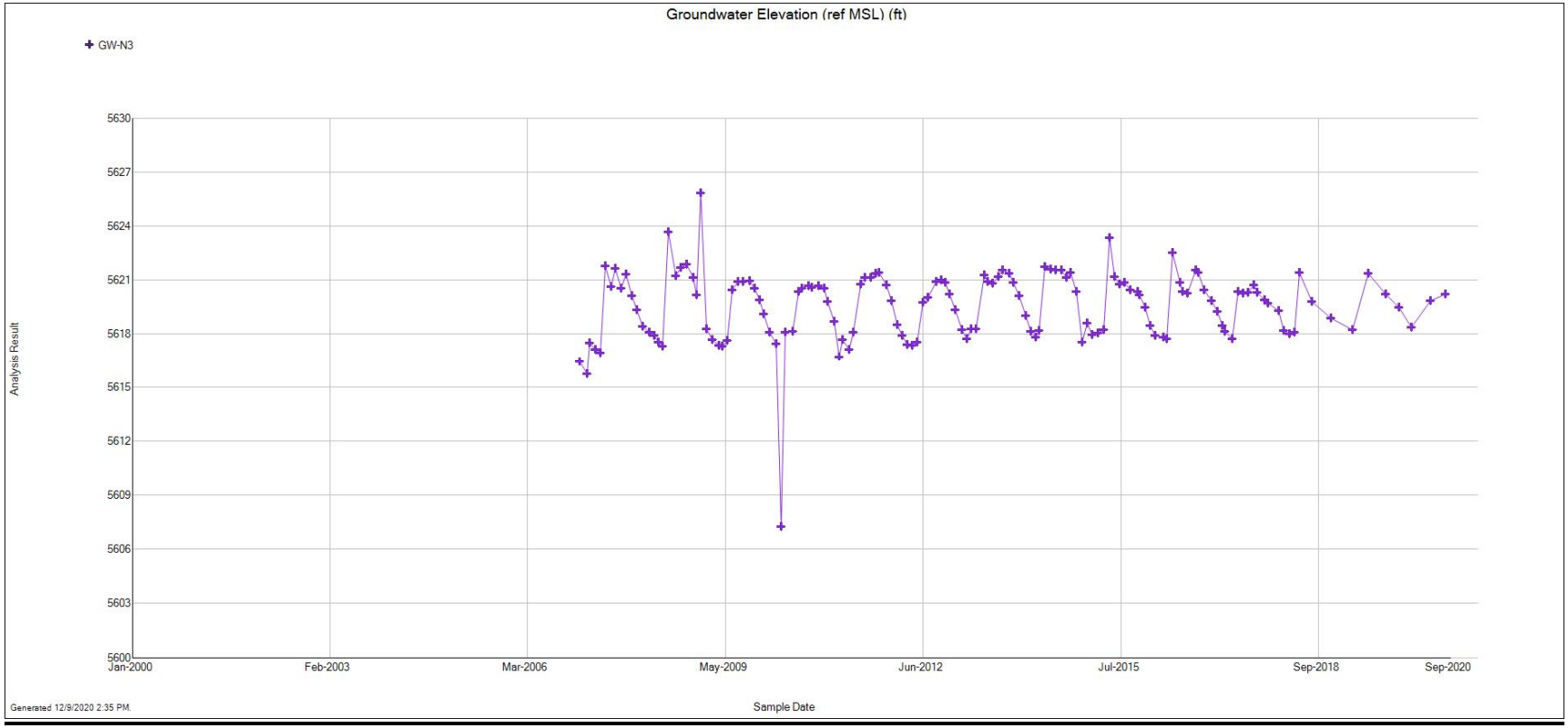

Manganese, total dissolved (mg/L)
GW-N44
GW-N45
GW-N46
Analysis Result
6.3
5.66728
5.03456
4.40184
3.76911
3.13639
2.50367
1.87095
1.23823
0.60551
-0.02721
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Y=-0.149E+3 + 0.343E-2x
R^2=0.14725E+0
Y=-0.709E+1 + 0.163E-3x
R^2=0.96715E-1
Y=-0.135E+2 + 0.310E-3x
R^2=0.24794E+0
Generated 12/10/2020 2:57 PM.
Sample Date

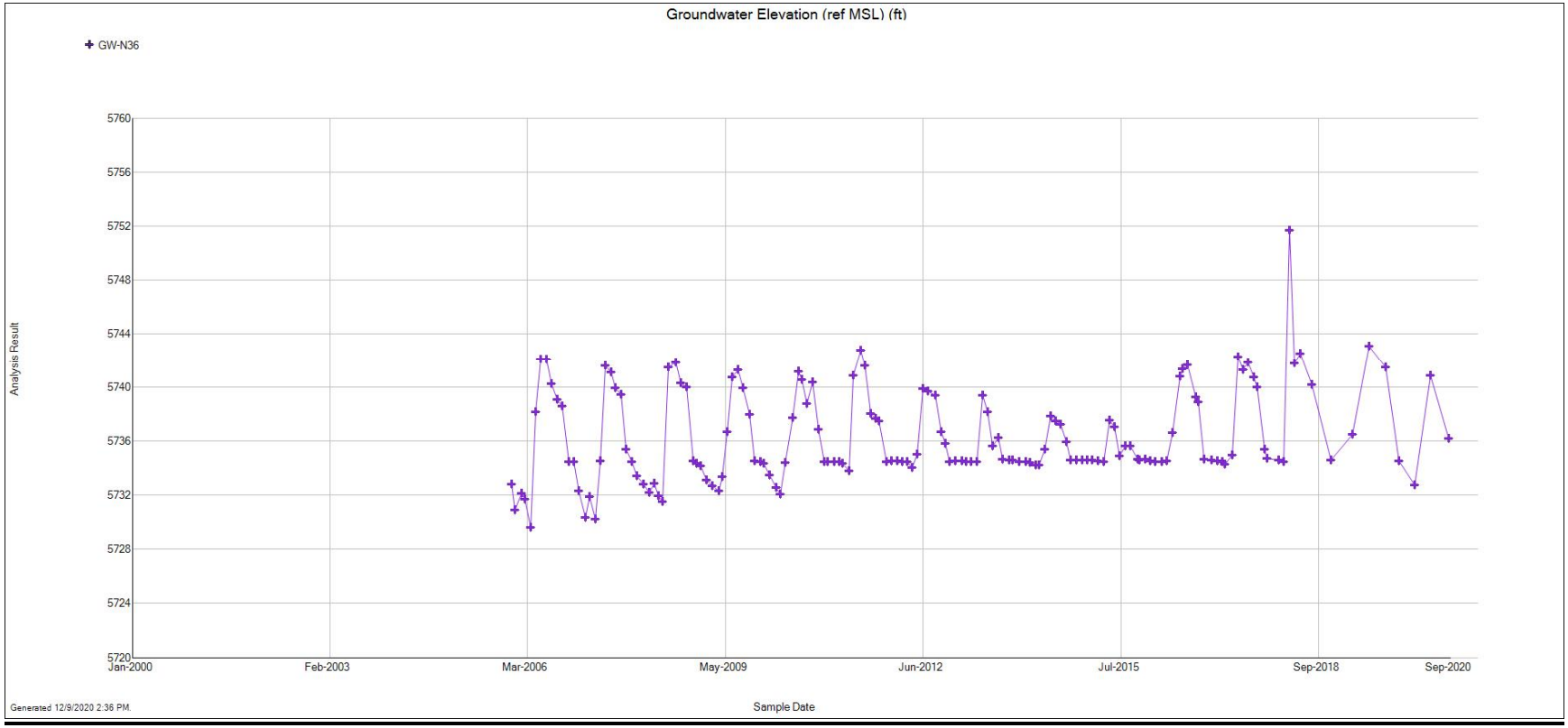
# Appendix 5
# Groundwater Elevations

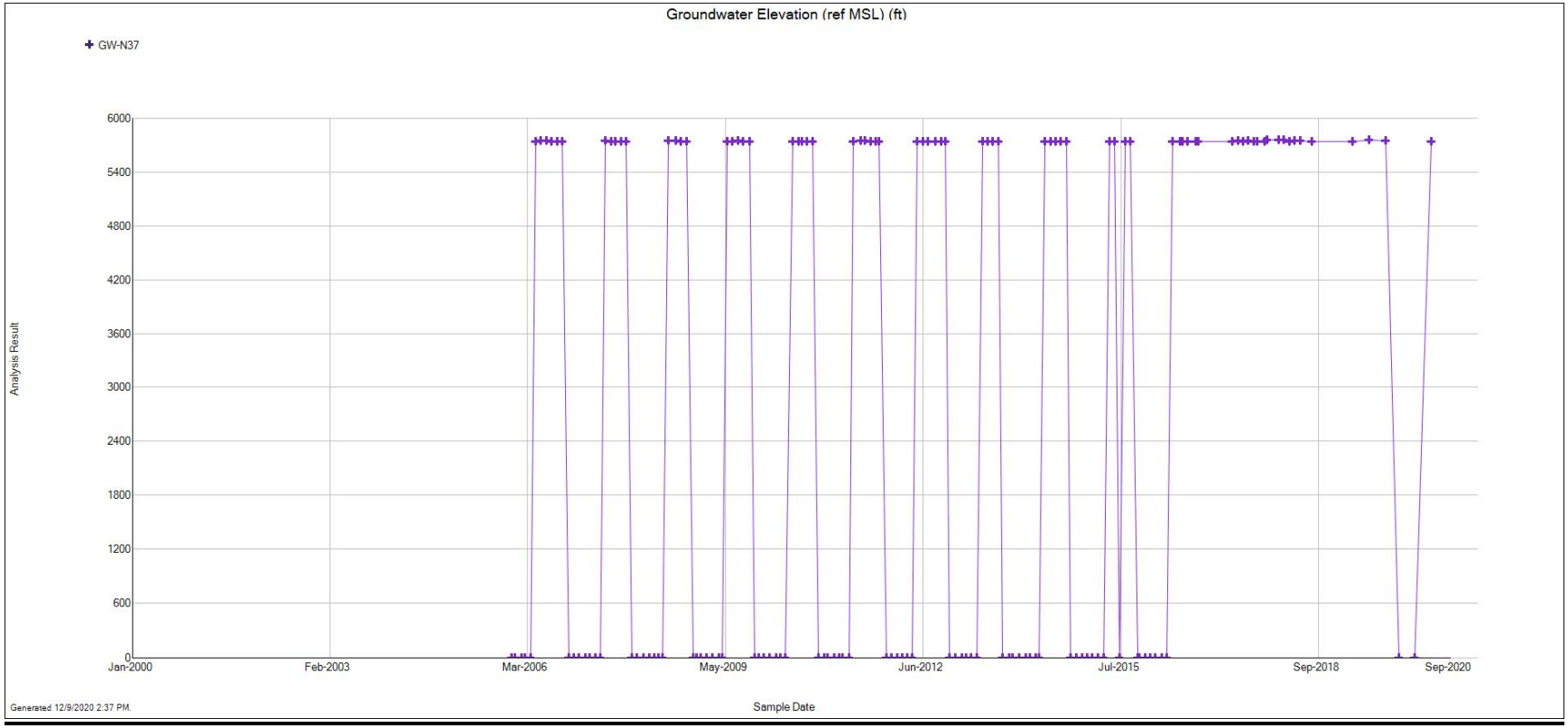

Groundwater Elevation (ref MSL) (ft)
GW-N16P1
Analysis Result
5640
5637
5634
5631
5628
5625
5622
5619
5616
5613
5610
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:31 PM.

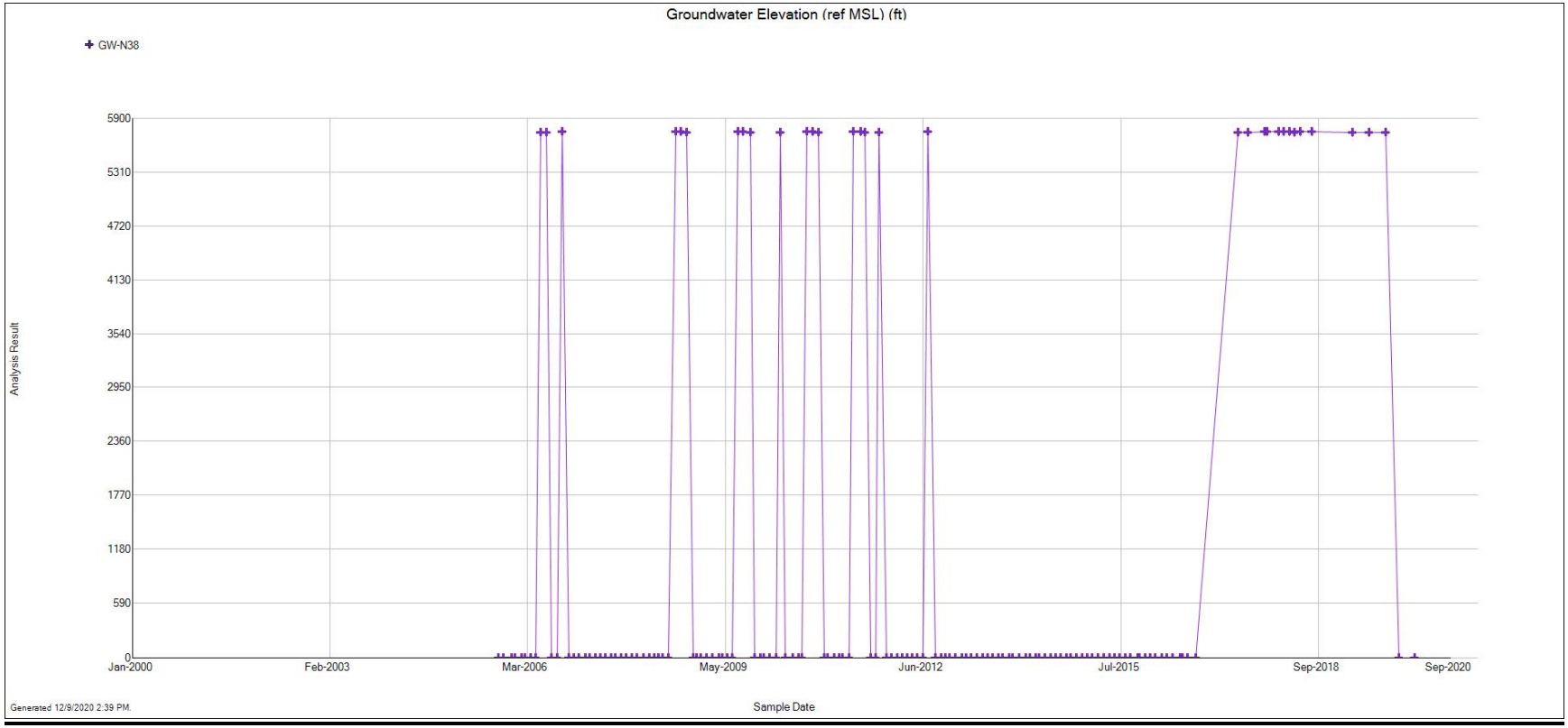

Groundwater Elevation (ref MSL) (ft)
GW-N17P1
Analysis Result
5640
5636
5632
5628
5624
5620
5616
5612
5608
5604
5600
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:33 PM.

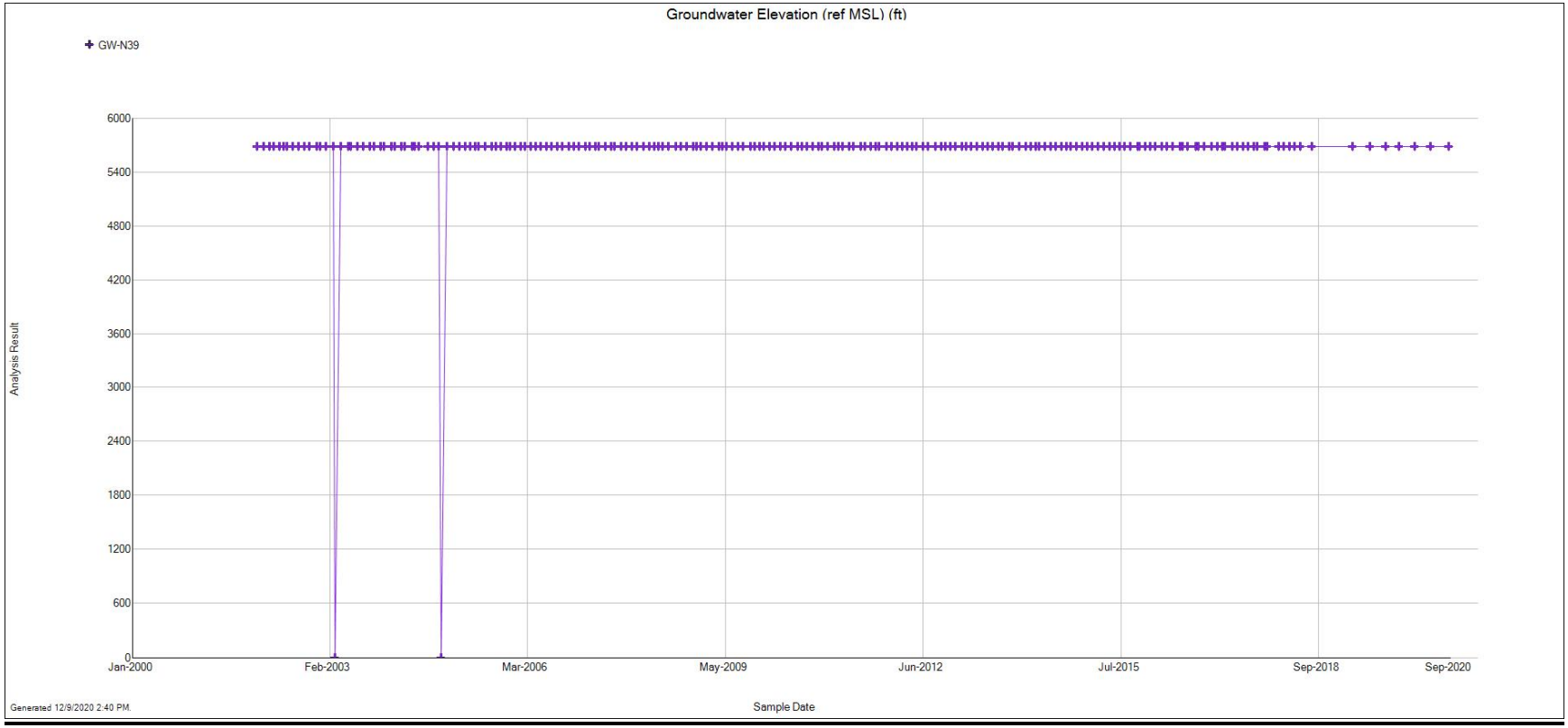

Groundwater Elevation (ref MSL) (ft)
GW-N18P1
Analysis Result
5650
5648
5646
5644
5642
5640
5638
5636
5634
5632
5630
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:34 PM.

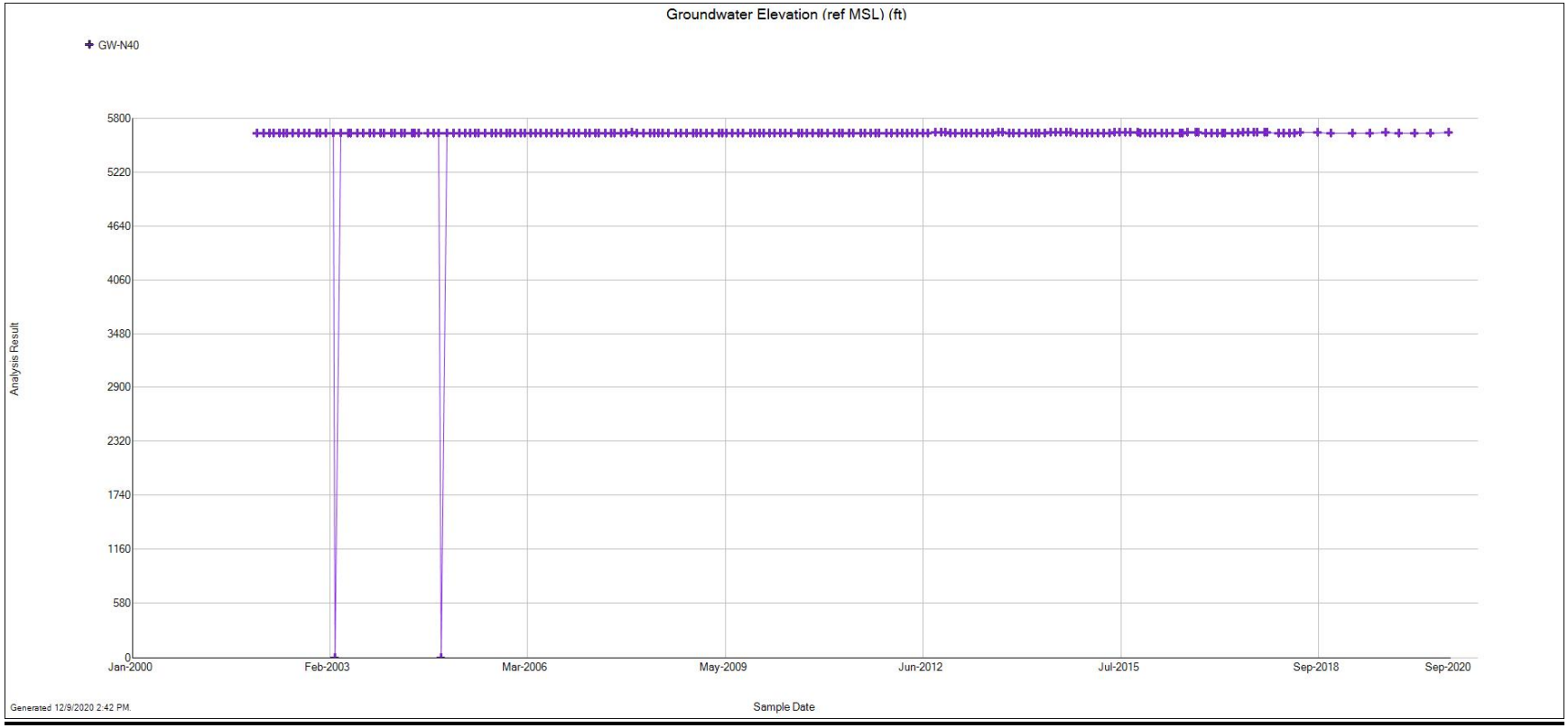

Groundwater Elevation (ref MSL) (ft)
GW-N3
Analysis Result
5630
5627
5624
5621
5618
5615
5612
5609
5606
5603
5600
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:35 PM.

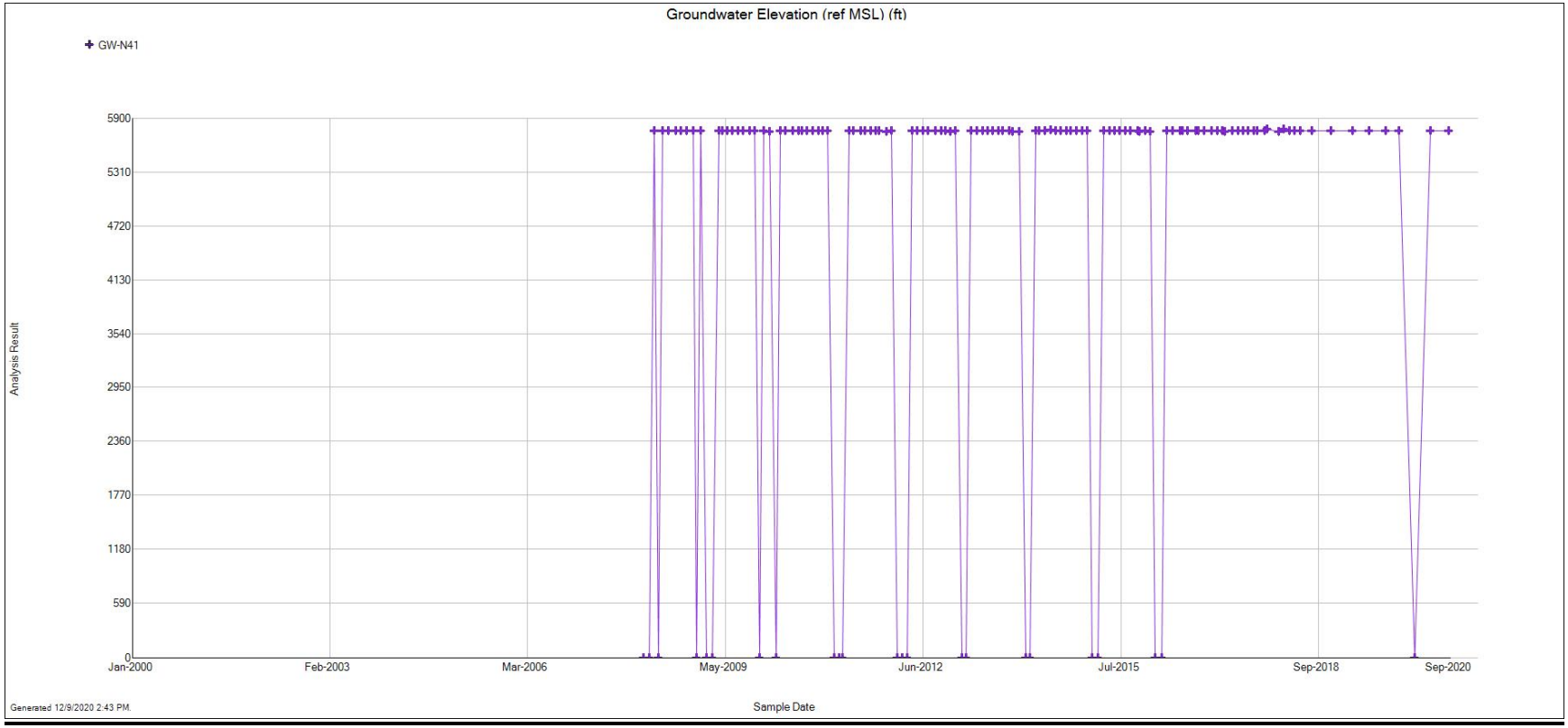

Groundwater Elevation (ref MSL) (ft)
GW-N36
Analysis Result
5760
5756
5752
5748
5744
5740
5736
5732
5728
5724
5720
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/9/2020 2:36 PM.
Sample Date

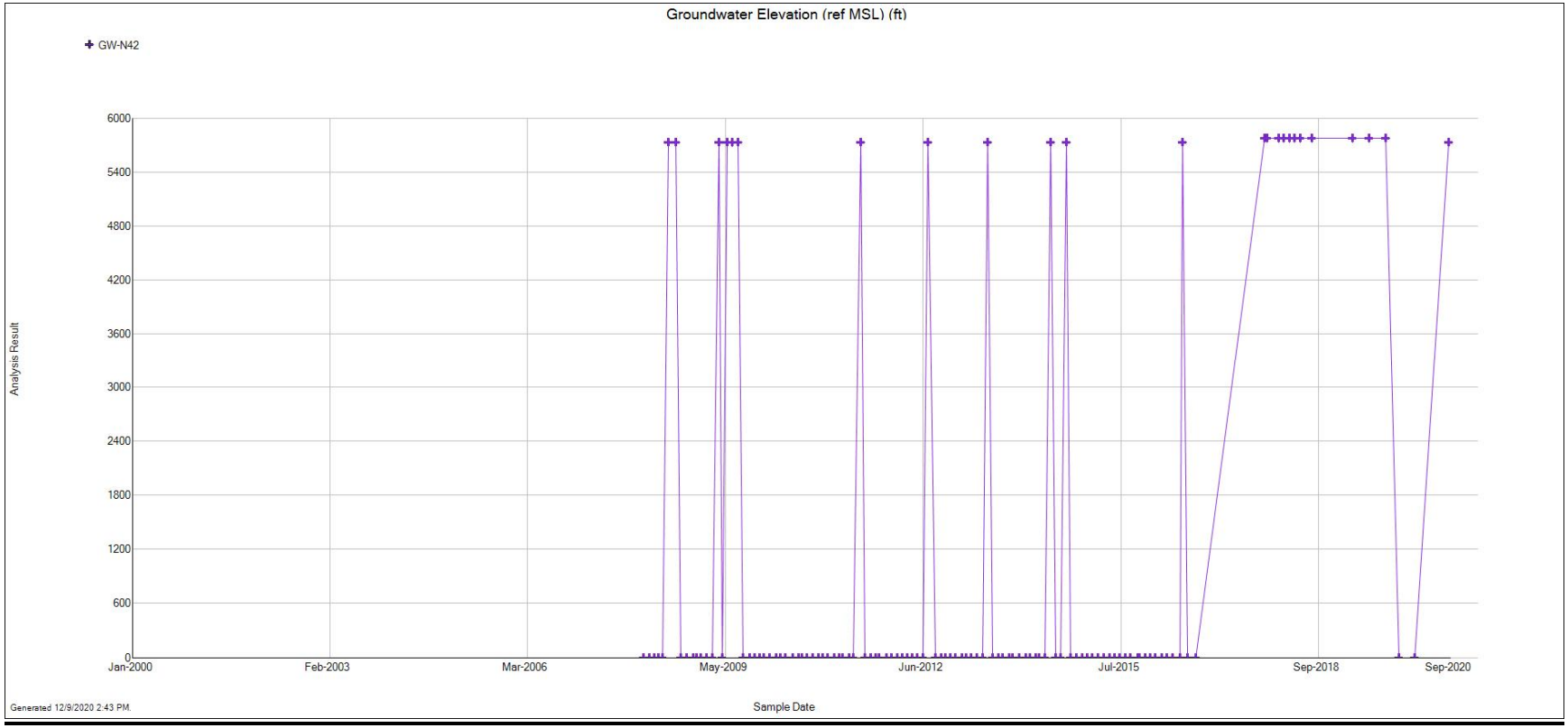

Groundwater Elevation (ref MSL) (ft)
GW-N37
Analysis Result
6000
5400
4800
4200
3600
3000
2400
1800
1200
600
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:37 PM.

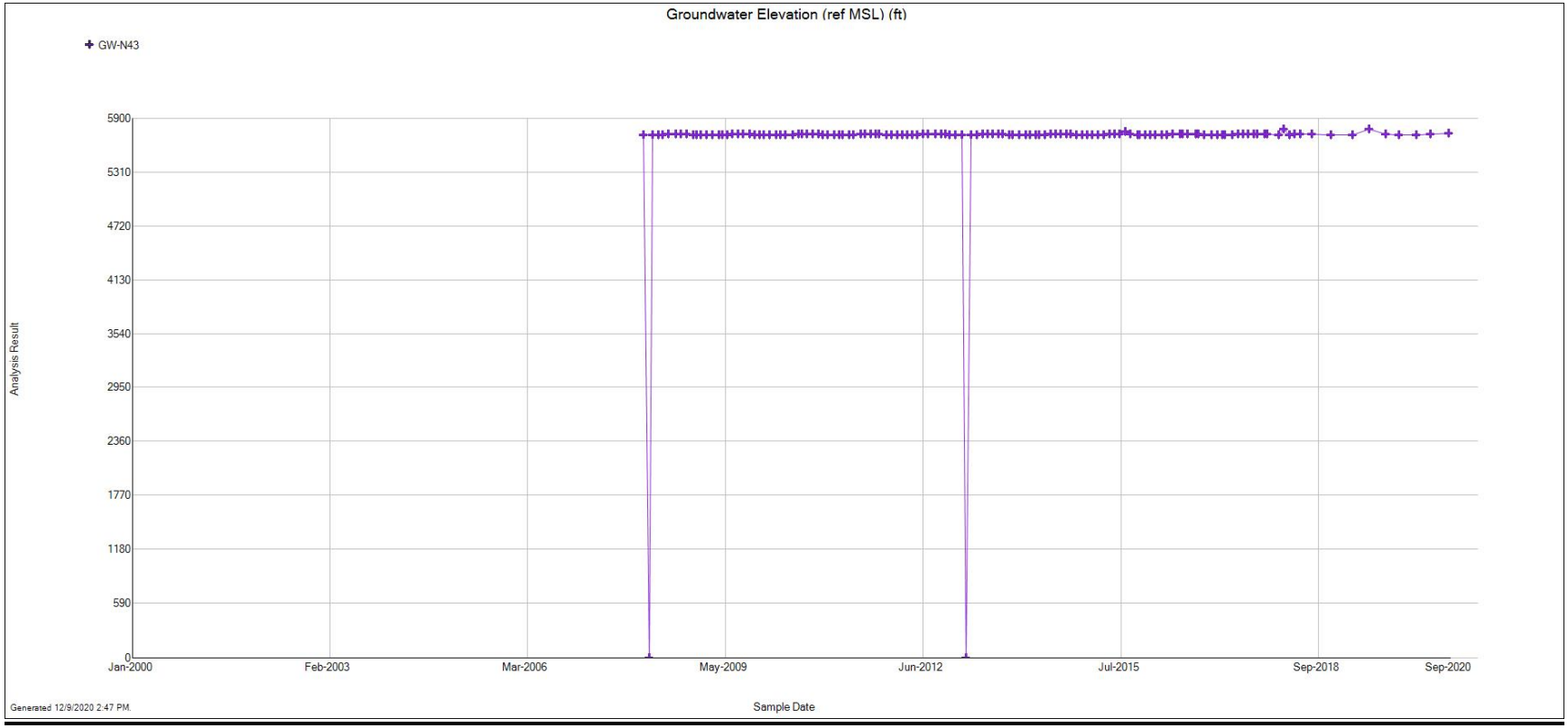

Groundwater Elevation (ref MSL) (ft)
GW-N38
Analysis Result
5900
5310
4720
4130
3540
2950
2360
1770
1180
590
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:39 PM.

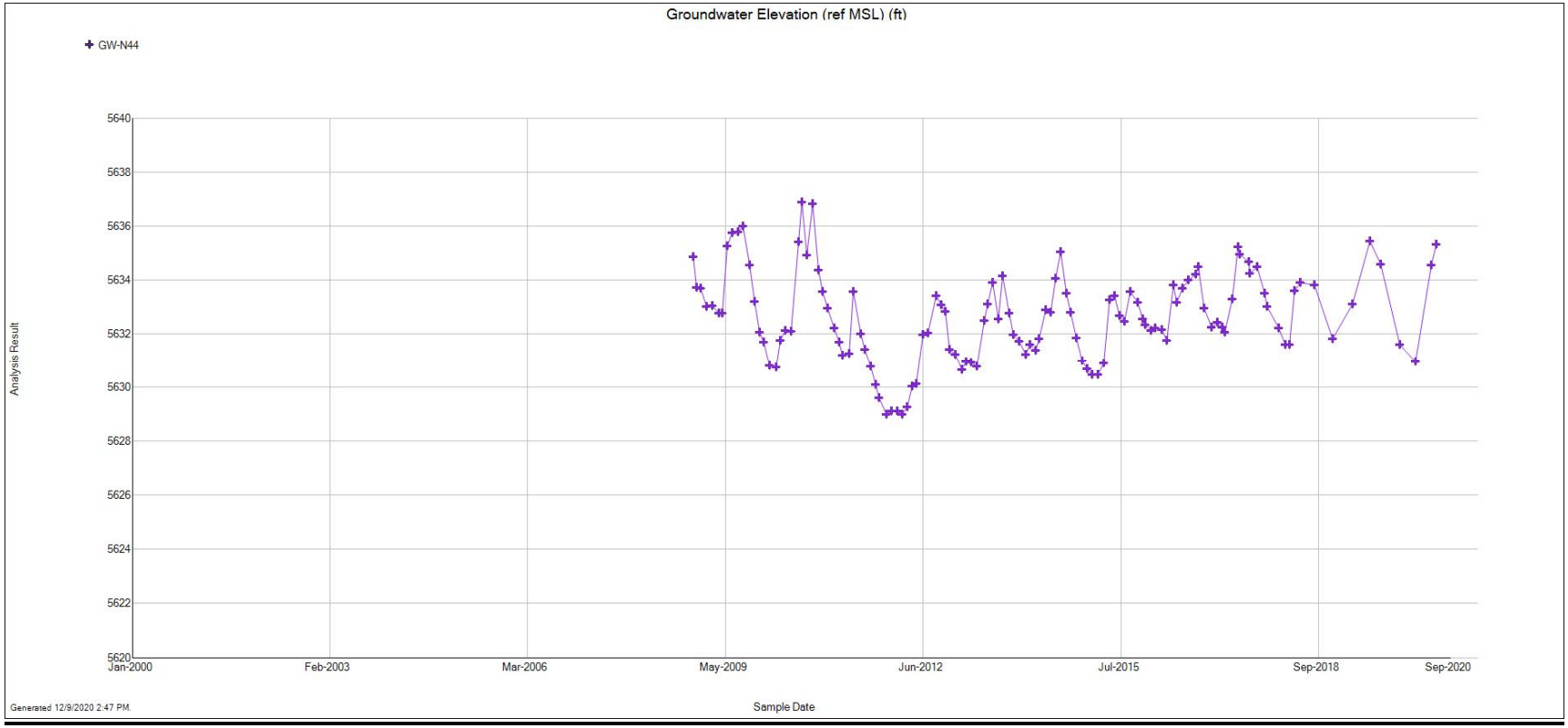

Groundwater Elevation (ref MSL) (ft)
GW-N39
Analysis Result
6000
5400
4800
4200
3600
3000
2400
1800
1200
600
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:40 PM.

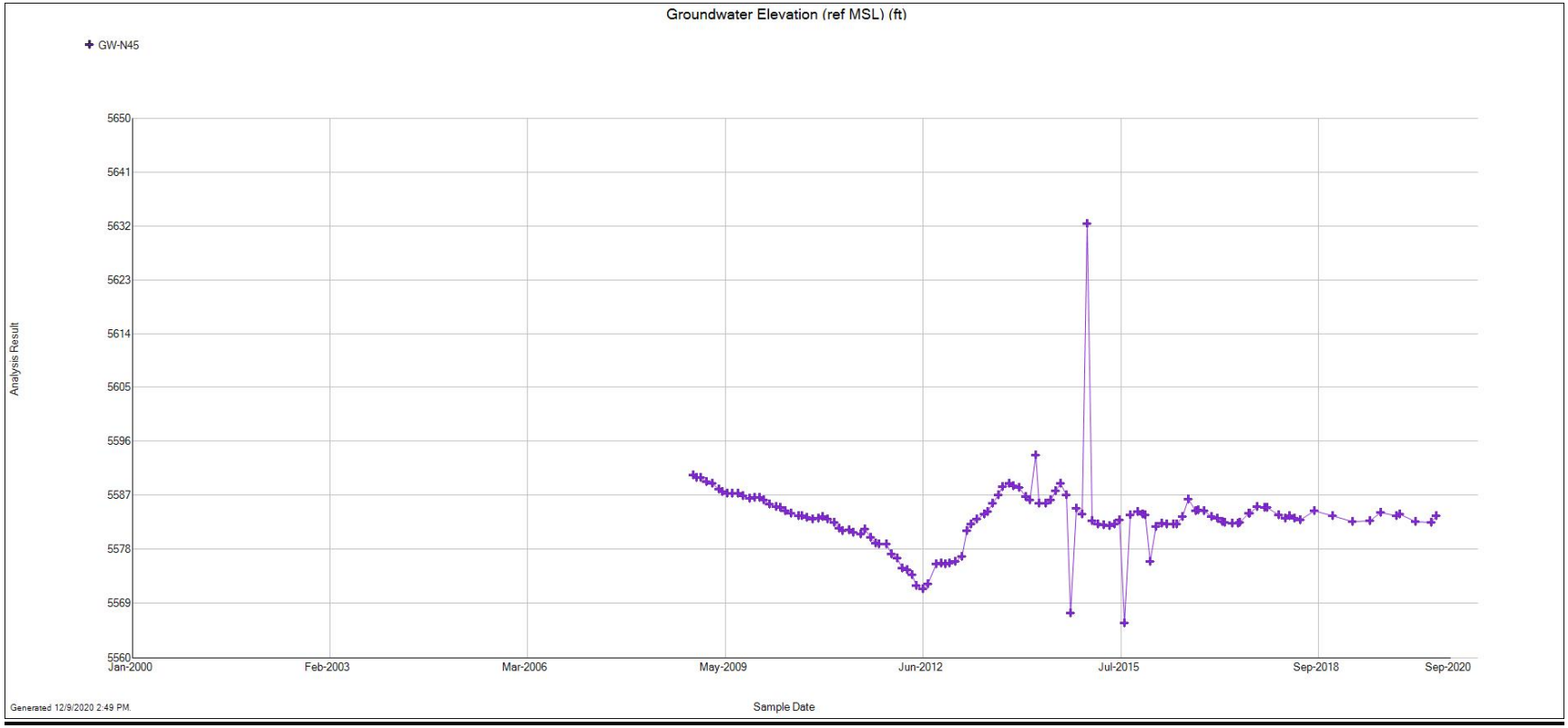

Groundwater Elevation (ref MSL) (ft)
GW-N40
Analysis Result
5800
5220
4640
4060
3480
2900
2320
1740
1160
580
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:42 PM.


Groundwater Elevation (ref MSL) (ft)
GW-N41
Analysis Result
5900
5310
4720
4130
3540
2950
2360
1770
1180
590
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:43 PM.


Groundwater Elevation (ref MSL) (ft)
GW-N42
Analysis Result
6000
5400
4800
4200
3600
3000
2400
1800
1200
600
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:43 PM.


Groundwater Elevation (ref MSL) (ft)
GW-N43
Analysis Result
5900
5310
4720
4130
3540
2950
2360
1770
1180
590
0
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
Generated 12/9/2020 2:47 PM.


Groundwater Elevation (ref MSL) (ft)
GW-N44
Analysis Result
5640
5638
5636
5634
5632
5630
5628
5626
5624
5622
5620
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Generated 12/9/2020 2:47 PM.
Sample Date


Groundwater Elevation (ref MSL) (ft)
GW-N45
Analysis Result
5650
5641
5632
5623
5614
5605
5596
5587
5578
5569
5560
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
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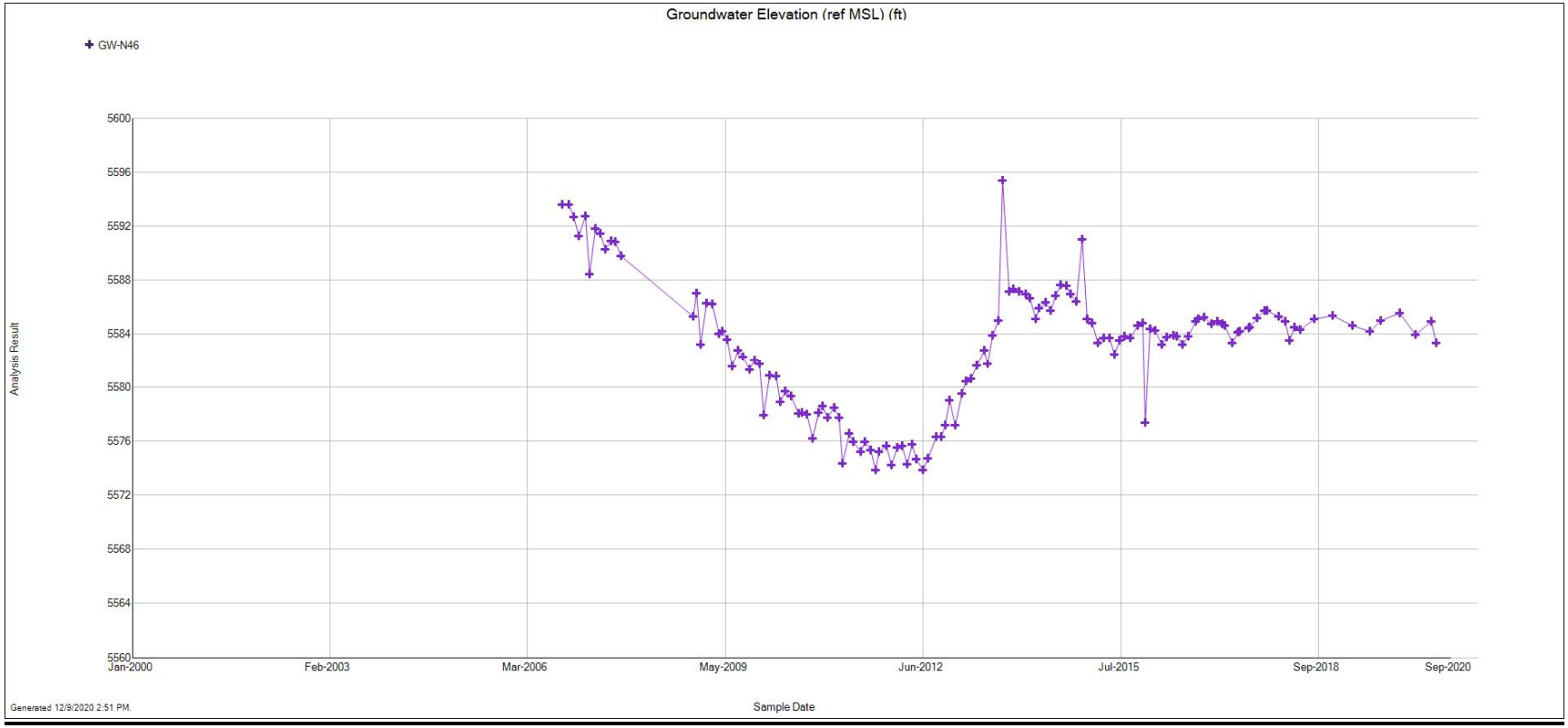
Groundwater Elevation (ref MSL) (ft)
GW-N46
Analysis Result
5600
5596
5592
5588
5584
5580
5576
5572
5568
5564
5560
Jan-2000
Feb-2003
Mar-2006
May-2009
Jun-2012
Jul-2015
Sep-2018
Sep-2020
Sample Date
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