

State of Wisconsin
DEPARTMENT OF NATURAL
RESOURCES
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FITCHBURG WI 53711

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October 26, 2023

Hailey Roessler
Village Clerk
208 Jarvis Street
Ridgeway, WI 53582

FILE REF:
PWS ID#: 12500873
Ridgeway Waterworks-MC
Iowa County

Subject: Sanitary Survey Report and Notice of Noncompliance

Dear Hailey Roessler:

The purpose of a sanitary survey is to evaluate the system's source, facilities, equipment, operation, maintenance, and management as they relate to providing safe drinking water. The sanitary survey is also an opportunity to update the Department of Natural Resources' (department) records, provide technical assistance, and identify potential risks that may adversely affect drinking water quality. This Sanitary Survey Report also serves as a Notice of Noncompliance.

On October 6, 2023, Sophia Stevenson and Nathan Wells conducted a sanitary survey of your water system, Ridgeway Waterworks. During the sanitary survey Dale Peterson and Braden Losby provided information and represented the utility. This report outlines the findings, discusses problems believed needing to be addressed, as well as a proposed timeline for corrective action where appropriate.

Please provide a notice of deficiencies corrected and a schedule for corrective actions to address other deficiencies by December 9, 2023. Contact Nathan Wells at 608.843.4895 or email nathan.wells@wisconsin.gov to discuss the proposed schedule on the following pages or request an extension for completion. Depending on the type of corrective action you employ, you may need to obtain prior approval and submit additional plans to the department.

I also want to specifically thank Dale and Braden for their time performing this survey and for continuing to provide quality water and service to your customers.

System Summary

Ridgeway Waterworks is in east-central Iowa County, about 40 miles west of the City of Madison. The water system provides water to about 650 people (DOA 2023) and is owned by the Village of Ridgeway. System components include two wells with sodium hypochlorite added for disinfection, a 50,000-gallon ground reservoir with a high lift pump, 150,000-gallon elevated storage tank that was rehabilitated and repainted in 2021, and a water distribution system. Per department records, the original water system was installed in 1948. Because of alignment problems at well 1, a submersible pump was installed to replace the vertical turbine driven pump and the 4,000-gallon pneumatic tank was removed from the pump house in 1994. Well 2 which added to the system in 1984 and the 150,000-gallon elevated storage tank installed in 1993. Two portable emergency generators exist (one currently in need of maintenance) for use at both well houses. An emergency connection and upgraded operating controls were recently installed at well 1. Water from well 1 typically enters the 50k reservoir prior to being pumped into the system, but reservoir bypass valving and associated piping is available to the operator. Water from well 2 is pumped into the system directly. While well 1 is currently active, its use has been limited. Due to radium MCL exceedance in March of 2020 and continued levels at or just below the MCL, its use is recommended to continue to be limited.

Significant Deficiencies

Significant deficiencies indicate noncompliance with one or more Wisconsin Administrative Codes and/or represent an immediate health risk to consumers. **Two significant deficiencies** were identified during the survey.

Significant Deficiency	Compliance Due Date	Code Citation
1. Past inspection deficiencies have not been corrected as required.	1/31/2024	810.13(1)(d)
2. Approvals for improvements which may affect water quality or quantity have not been submitted to plan review.	1/31/2024	811.08

Discussion and Schedule for Correction of Significant Deficiencies:

- 1) During the review of the Waterworks both before, during, and after the inspection, one non-significant deficiency was noted in the 2014, 2017 and 2020 sanitary surveys and continued through this October 2023 inspection.

The deficiency is that auxiliary power isn't being exercised at well 2 regularly and no log book is kept. Auxiliary power is required to be exercised at minimum once per month and quarterly under full load. A log book shall be kept of all such exercises, as well as any maintenance done on the unit. Begin to implement a scheduled exercising program and keep a log book by **January 31, 2024**.

- 2) The chlorine pumps in both well houses are not the same pump capacity or type as what was previously approved by the DNR. Plans and specifications submitted to the DNR in 2009 show that both wells are approved to have 22 gallon per day diaphragm pumps. Instead, the chlorine addition at both wellhouses had 17 gallon per day peristaltic pumps. DNR approval is required when chemical pumps are changed, especially when the pump change will be a different type or capacity.

Please go to <http://dnr.wisconsin.gov/topic/DrinkingWater/PlanReview/html> and follow the online submittal instructions to properly submit for after-the-fact approval for both chlorine pumps. The deadline for this corrective action is **January 31, 2024**.

Deficiencies

Deficiencies are problems in the drinking water system that have the potential to cause serious health risks or represent long-term health risks to consumers. Deficiencies may also reduce the technical, managerial, or financial capacity of a utility to continuously provide safe water to their customers. These deficiencies may indicate noncompliance with one or more Wisconsin Administrative Codes. Corrective action should be completed for these deficiencies as soon as possible.

Deficiency	Compliance Due Date	Code Citation
1. Adequate security measures are not in place to prevent unauthorized access to the ground storage reservoir.	11/30/2023	810.23(1); 811.64(2)(d)
2. The distribution bacteriological sampling plan is not implemented appropriately to meet monitoring rule requirements.	1/31/2024	809.31(1)
3. The Waterworks is not maintaining and practicing a comprehensive Emergency Operations Plan.	1/31/2024	810.23(2); 810.26(8)
4. The air-vacuum relief valve at well 2 may not be adequate.	1/31/2024	811.37(5)(a); 810.03
5. Chemical handling procedures for chlorine is not appropriate.	1/31/2024	811.40(1)(d)
6. The meter at well 1 is not tested and calibrated at the required frequency.	4/30/2024	810.13(2)(e)
7. The latest fire flow study does not reflect existing conditions.	10/31/2024	810.11; 810.12
8. Annual inspection of all storage structure screens and seals is not conducted and/or documented.	11/30/2024	810.14
9. The ground storage reservoir is not inspected at least once every 5 years.	12/31/2024	810.14(1)
10. The Waterworks is not implementing a comprehensive Cross-Connection Control Program.	10/6/2026	810.15(1)
11. Well 2 pump vent screen is inadequate	11/30/2023	810.36(1)a

Discussion and Schedule for Correction of Deficiencies:

- 1) Repair the broken access door for the ground storage reservoir roof and add locks to the access hatches of the reservoir by **November 30, 2023**.
- 2) Submit an updated monitoring site plan with bacti locations geographically distributed throughout the water system by **January 31, 2024**. Additional bacti sites in your distribution system is recommended. Once a site is found, investigation samples may be taken, and if suitable, a request to add the site may be sent to Nathan Wells. Please be sure to rotate sampling evenly throughout the year.
- 3) It was noted during the inspection that the system does not have an Emergency Operations Plan. Section NR 810.23(2), Wis. Admin. Code, states that an Emergency Operations Plan needs to contain, at minimum, up-to-date list of local and state emergency contacts, an emergency chlorination plan, auxiliary power start-up instructions, any mutual aid agreements, a system for establishing emergency communications, standard procedures for emergency water production, and a means for sharing information with customers. The means for sharing information with customers shall be how your system distributes a Tier 1 public notice in case of a nitrate MCL exceedance, an E. coli positive or a pressure loss. The EOP is important to allow the Water Utility to respond quickly in the event of an emergency including terrorism, sabotage, natural disasters, loss of system-wide pressure, and overfeed of chemicals. The system shall put together an Emergency Operations Plan as soon as possible, but no later than **January 31, 2024**.
- 4) By **January 31, 2024** determine if air-vacuum relief valve is necessary for the submersible pump at well 2. Install new 24 mesh screen between flanges and ensure proper air gap is provided to funnel system. If the valve is determined to not be necessary, remove the valve and seal discharge piping.

The installation of an air-vacuum relief valve is not required for submersible pump installations where check valves are installed at the pump, above grade, and there are no weep holes in the pump drop pipe. If entrained air in the well water or pressure surges are a concern the installation of an air relief valve is necessary.

- 5) Adjust the chlorine chemical order from chemical supplier so that chlorine is delivered at most once every 45 days by **January 31, 2024**.
- 6) It is unknown when the meter at well 1 was last tested and calibrated. The meter at well 1 shall be tested and recalibrated. If accuracy cannot be verified, a new meter shall be installed. Verify with your department representative if a plan and specification submittal process is needed for a new meter. The meter shall be tested and verified by **April 30, 2024**. If replacement is required, please submit an expected timeline for its installation.
- 7) There was no current fire flow study on record with the system. The system shall conduct pressure and flow testing to document static and residual pressures of hydrants throughout the system. The deadline for this corrective action is **October 31, 2024**.
- 8) By **November 30, 2024** please perform annual inspections of the ground and elevated reservoir. As stated in NR 810.14, exterior inspections of vent, overflow screens, and hatches shall be conducted and documented once per year by the water supplier. The inspections make sure the seal and entry prevention systems in place for the storage tower are still working as intended. They are the barrier keeping contamination out of the water supply. If a utility operator

is not able to complete this inspection, a trusted contractor could complete the inspection, take images of relevant components, and provide them to the water utility.

- 9) Complete a full drain down the ground storage reservoir. The last documented inspection was completed in 2017. As stated in NR 810.14 Wisconsin Administrative Code, all storage facilities shall be maintained and inspected a minimum of every 5 years. Reservoir inspections are important to protect the water supply as well as ensure the storage reservoir is still structurally sound. Due to exposed rebar and spalling noted on the interior during the last inspection, soak the roof to check for infiltration per s. NR 810.14(2)(a)2. Complete an inspection of the storage reservoir and provide supporting documents to the department by **December 31, 2024**.
- 10) By **October 6, 2026** please create an inventory of all customers and complete all cross connection inspections for residential and non-residential customers. A comprehensive cross connection control program to eliminate and prevent unprotected cross-connections to a tap or other end-use device is important to protect your customers. The program may include providing public education materials in lieu of inspections of low hazard **portions** of residential or commercial facilities.
- 11) Install a 24 mesh corrosion resistant screen on the "U" bend well 2 pump vent or install a new mushroom cap with screen by **November 30, 2023**. If the vent is kept in its current configuration, sandwiching the screen between flanges rather than securing with a worm gear clamp is recommended.

Recommendations

During the sanitary survey, some recommendations were identified. Recommendations are potential problems in the water system that may hinder your public water system, pose a hazard for your operators, or keep the utility from consistently providing safe drinking water to consumers.

Recommendations
1. A comprehensive materials inventory is not maintained.
2. Well 2 hasn't been pulled for maintenance in the last 10 years.
3. The overflow of the elevated storage tank has a 24 mesh screen rather than the required 4 mesh non corrodible screen.
4. The Waterworks has not retained all records as required under 809.82.
5. Determine if 24 mesh screen under well 1 vent is adequate.
6. Ensure financial viability of waterworks working budget/financial plan.
7. The pump discharge piping at both wellhouses is not adequately protected from corrosion.
8. The unaccounted for water is not < 10%.
9. There is an isolated service area in the distribution system which is of concern. Additional valves should also be added to distribution system with future infrastructure projects.

10. Increase operator safety

Discussion of Recommendations:

- 1) Working on completing the department prepared spreadsheet included with this survey report is recommended. Ensure the source of information, and premise plumbing materials are noted. While unknowns are acceptable, this document is requested to be submitted in October of 2024 and regularly updated until unknowns no longer exist.
- 2) The system stated that well 2 hasn't been pulled since 2012. Well pumps are recommended to be removed and inspected on a regular basis (every 10 years) with maintenance provided as needed.
- 3) The overflow screen on the tower is 24-mesh. Elevated storage tanks are required to have 4-mesh screens. The Department recommends the screen be changed to 4-mesh to minimize the risk of ice building up and blocking the screen during the winter.
- 4) Document record retention requirements for municipal supply systems may be found in s. NR 809.82 Wis. Adm. Code. However, I recommend material inventory records regarding lead and copper be kept longer than the required 12 years.
- 5) Mushroom cap vent cover for well 1 should be checked to determine condition of screening and replaced with 24 mesh screen if currently inadequate.
- 6) It is recommended that Ridgeway apply for a Conventional Rate Case (CSC) increase. A simplified rate case was performed in the last few years. However, based on information from the annual Public Service Commission (PSC) reports and projects recently performed, a CSC rate case may be necessary to retain financial viability of the waterworks utility.
- 7) The paint on the discharge piping at both wells is peeling off and corrosion is visible on joints and rivets. The department recommends the corrosion is treated and the piping be repainted to better protect the piping from further corrosion.
- 8) Based on data provided in the annual PSC report prepared by the system, the Village has been experiencing water losses greater than 10% for a few years. For the last 3 years, water loss as been about 15%. The department recommends that the system investigate and identify possible sources of unaccounted water. Some ways to investigate water loss sources are leak detection studies, increasing the testing of well meters to once every year, or regularly auditing customer billing to catch data entry errors.
- 9) Well 2 is isolated from the rest of the water system. There is only one water main that crosses Main Street and the Military Ridge State trail. The department recommends the system loop their distribution system in that area by adding another crossing under the bike path and road to eliminate the risk of isolation for the well.

According to the operator, the distribution system also suffers from minimal valve installations throughout the community. During a recent main break several homes were without water due to only one valve being upstream of their services. Increasing redundancy and adding valves to the system with future infrastructure projects is recommended to limit the number of homes affected during main breaks, hydrant flushing, and other maintenance activities.

- 10) Additional measures to increase operator safety is recommended. These include replacing portable eye wash stations and plumb dual eye wash and dowsing hoses/showers and install exit doors with crash bars to allow for quick operator exit in both well houses. Other measures to ensure operator safety and reducing associated hazards as they arise or are discovered is also recommended.

Non-conforming Features

During the course of the sanitary survey, a feature that likely met code requirements at the time of construction, but would not be allowed in the current code is noted. These are referred to as “non-conforming features.” Though you are not required to correct these non-conforming features at this time, they will need to be corrected when any major work is done in the future.

Non-conforming Deficiency
1. Both pump houses do not meet current code requirements for dehumidification.
2. The pump base or the termination of the well casing does not meet current code.
3. There is not at least one adequately sized well vent installed through the well pump casing, well seal, or concrete pump base.
4. The overflow of ground level storage reservoir is not brought down to within 12 to 24 inches of the ground surface.
5. The ground storage reservoir does not meet other NR 811 requirements.
6. All water mains are not at least 6 inches in diameter.
7. Well houses have non-conforming entry point sample taps.

Discussion of Non-conforming Deficiency

- 1) Excessive moisture may be contributing to corrosion and chipping paint noted in both wellhouses. Improve heating, ventilation, or providing air conditioning to meet s. NR 811.25(6).
- 2) The pump bases at well 1 and 2 are less than 12 inches above the floor. Per s. NR 811.32(1)(a), the protective casing shall terminate above grade a minimum of 12 inches above a concrete floor. Submersible pump discharge pipes shall be extended to terminate through the top of the well casing.
- 3) The vent pipe diameters for well 1 and 2 are not 2 inches. Per NR 811.36(1), the vent shall be a minimum of 2 inches for well casings 10 inches in diameter and larger. In addition, the vent installed through the well pump casing, well seal, or concrete pump base must terminate at least 24" above the floor in reverse bend (or mushroom style cap) with a 24-mesh screen.
- 4) The ground storage reservoir overflow is too close to the ground. Per s. NR 811.64(4)(a)1, to protect the reservoir from contamination vectors, the overflow pipe of a water storage structure shall be brought down between 12 to 24 inches of the ground surface, discharge with a downward opening and a free air break over a drainage structure, splash pad or riprap.

- 5) The ground reservoir does not meet the following code requirement:
- a. Per s. NR 811.64(7)b access hatches shall be elevated no less than 24 inches above the top or covering sod. Current hatches are only a few inches above the original roof.

It is uncertain if the ground reservoir meets these requirements:

- a. Watertight roof or cover. The top of the reservoir has an additional roof constructed over the original. It is uncertain if this roof was added due to the original cover having infiltration issues. However, per s. NR 811.(2)a, due to damage to this additional structure, several potential areas have potential for animals and birds to access the original roof. Repairs to soffit and other intrusion vectors should be performed.
 - b. Piping from storage structure pressure requirements from s. NR 811.64(5)(a). While the department may approve inlet piping that is not under positive pressure at all times, inlet and outlet piping from a storage structure shall be under positive pressure at all times wherever practical and in conformance with s. NR 811.37 (1). Evaluate and correct reservoir inlet and outlet piping to determine pressures and potential issues.
- 6) While the PSC report states no undersized mains exist; however, there are two sections of water mains on the latest map provided to the department that show 1" and 2" lines. As stated in ch. NR 811.70(5), Wisconsin Administrative Code, the minimum diameter of water mains to provide water for fire protection and to serve fire hydrants is 6 inches. Verify the size of the mapped 2 inch Weaver Street and 1 inch and Cretney Street water main. If they are in fact undersized, upgrade to the minimum 6-inch diameter water mains with future infrastructure projects. This construction upgrade will require department plan approval. If the map is incorrect, update the map.
- 7) Entry point taps in well houses are non-conforming. As stated in s. NR 811.37(5), Wisconsin Administrative Code, if chemical addition, water treatment, or water storage is installed, a second entry point sampling faucet shall be installed as far downstream of the chemical injection, water treatment, or water storage as practical. If necessary, to obtain a water sample representing finished water quality, a water service lateral shall be brought back into the building and fitted with a sampling faucet after being connected to the finished water main outside the building. Depending on chemical injection points and valve configurations it may be possible to create a conforming entry point tap within well 1 without discharge piping modifications. Installing a frost free sampling hydrant at the water main nearest well the joint of the well discharge piping may also be installed.

Water Quality Monitoring and Reporting

Since the last sanitary survey, your system has been compliant with monitoring and recording requirements. We appreciate your continued efforts in complying with the Safe Drinking Water Act. Free chlorine is detected throughout the system and typically around 0.5 mg/L.

Combined radium samples from well 1 collected in March 2020 (5.8 pCi/l) and December 2020 (5.7pCi/l) exceeded the maximum contaminant level (MCL) of 5 pCi/L and samples in 2021 and 2023 were at or just below 5pCi/l. Quarterly sampling will continue to be required in 2024 to further evaluate the radium levels at this well. Due to PFOS+PFOA detection (4.66ppt vs well 2 non-detect), higher nitrate (averages ~4.5mg/L vs <1mg/L in well 2), and radium continuing to be at or near the MCL, the utility should continue to limit use of well 1 and consider changing the status of the well to an active emergency well and potentially develop another well within village limits.

The department required sampling of per- and polyfluoroalkyl substances (PFAS). The current PFOS+PFOA drinking water standard is 70 parts per trillion (ppt). Both wells were sampled for 18 compounds in the 3rd quarter with non detect (ND) results in well 2 and a combined PFOS+PFOA of 4.66 ppt in well 2. Sampling for PFAS in the fourth quarter of 2023 was waived due to the ND in well 1 and low combined result in well 2.

Nitrate, inorganics, volatile organics, synthetic organic, disinfection byproducts, and lead and copper sampling expected in 2023 have also been completed.

Lead and Copper Monitoring

Lead 90th percentiles with the current sampling method were 3.48 ug/L in 2023 and 2.81 ug/L in 2020 while copper 90th percentiles were 224 and 134 ug/L in the same sampling years. The action level for lead is 15 ug/L, and for copper the action level is 1300 ug/L. We have reviewed your water system's lead and copper monitoring history and it appears that the sites used have been appropriate and the consumer notice of lead and copper results and certification of notification forms for 2023 have been received.

The district currently has 15 approved tier 3 sites. Add tier 1 or 2 sites to your monitoring site plan if they are discovered.

As noted in recommendation #1, the Federal Lead and Copper Rule Revisions (LCRR) that are now in effect require all public water systems develop and submit a comprehensive service line material inventory to the DNR by October 16, 2024. Operators should continue to collect plumbing material information and note the source of information from all services when meters are changed, when cross connection inspections are made, during construction projects, or any other time they enter customers' premises. The recommended spreadsheet to be used to record this information was provided to the in the same email as this report.

Required Reports, Records, and Utility Programs

Our records show that the district has completed and distributed the required Consumer Confidence Reports (CCRs) since the last survey. The completed certification forms were also sent to the proper office. The CCRs must continue to be distributed before July 1st of every year. Please continue to send Nathan Wells copies of the final reports and the completed certification forms.

As noted in deficiency #3, no emergency operation plan (EOP) was available to review during the sanitary survey. Ensure this document is created, audited, and updated on at least an annual basis. The department also recommends adding standards of procedures (SOP) in the event of a chemical overfeed, well house auxiliary power use, procedures to recover from main breaks and pressure loss events.

Hydrant flushing and valve exercising seems adequate for the system. System hydrants are required to be flushed at least once every two years and all valves need to be exercised once every two to five years. As reported by operator, valves are exercised annually and hydrants flushed 1-2x a year.

Cross connections inspections are occurring with service meter replacements and Dale anticipates completing those meter replacements throughout the community in the next 2-3 years. Cross connections are any connection to a potable water system which could allow contaminants to enter household premise plumbing or the municipal distribution system through backpressure or back-siphonage. Any connections between the public water system and potential contamination sources like a private well, toilets, water softeners, etc., must be eliminated. **While being performed, no record of the 2022 Water Supply Cross Connection Survey Summary Report has been found for**

Ridgeway. A copy of the report will be sent to Dale. Please submit this summary to the department as soon as possible. Typically, the summary report is submitted to the department March 1st the following year.

Electronic monthly operation reports (eMOR) are required to be filled out and submitted to the department on or before the tenth day of the following month. No eMOR has been late since November 2019.

The district has the required private well ordinance and no unpermitted wells are known to exist in the community. If new wells are discovered or properties are annexed, the owners must also be made aware of the requirements in the private well abandonment ordinance.

Certified Operator

Chapter NR 114, Wis. Admin. Code, specifies the requirements for a certified waterworks operator. To be fully certified the utility must employ at least one person that is a Grade 1 operator in Groundwater (G) and Distribution (D). One operator currently meet this requirement and Dale Peterson is listed as the operator in charge in the department database.

Water System Security

We recommend that you conduct a daily security check of your entire drinking water system to ensure doors are locked, windows secured, and nothing has been tampered with. Additional methods of enhanced security often used on water system facilities are chain link fencing, intrusion alarms, security cameras, and increased patrols of remote facilities. Continue to enhance physical security whenever possible and ensure updates to software and potential vectors for cybersecurity threats are reduced or eliminated.

Cyber-attacks have been striking critical infrastructure across the United States with increased frequency in recent years. The department recommends Ridgeway evaluate existing cybersecurity practices and make improvements to reduce vulnerability to cyber-attacks. Consider using the following resources to determine if improvements can be made to the Village's existing system.

- The U.S. EPA [Water Cybersecurity Assessment Tool and Risk Mitigation Plan](#) can be used to assess your existing cybersecurity practices and provides a risk mitigation plan.
- The U.S. EPA offers [cybersecurity technical assistance for water utilities](#) to help water systems improve their cybersecurity practices.
- Additional information and resources on water system cybersecurity can be found at the U.S. EPA [Cybersecurity Webpage](#).

System Summary Information

A water system summary is attached below. Please review for accuracy and notify your department representative if any changes need to be made.

Capacity Development Evaluation

This sanitary survey serves as an evaluation of the capabilities of your water system. This system has been determined to have adequate technical, managerial, and financial capacity to provide safe drinking water. As noted in recommendation #6, due to costs associated with the elevated tank rehab and painting in addition to ensure funds are available for future projects it is recommended the utility applies for a Conventional Rate Case (CSC) increase.

The ability to plan for, achieve, and maintain compliance with applicable drinking water standards has been demonstrated and the additional well that is developed will help ensure volume capacity and fire flows are met. The next sanitary survey of your system is scheduled to take place in 2026. The operator in charge will be contacted prior to the survey to schedule a date that is convenient for them.

Required Action

Please respond by **December 9, 2023** with notification that deficiencies have been corrected or that you agree to correct the deficiencies identified in this letter by the suggested due dates. Sending the cross connection survey summary report for 2022 as well. Please provide a reason and an alternative date for correcting these deficiencies if you believe more time is required. If you disagree with a listed deficiency, provide reasoning with your response. If past documents were submitted to another department representative or me, please direct me to the date the document was emailed or kindly provide an additional copy by email or mail service. Please also consider correcting non-conforming features and recommendations discussed in this letter.

Thank you for your staff's assistance during the sanitary survey. If you have any questions about this letter, you can reach me by phone at 608.843.4895, or email nathan.wells@wisconsin.gov.

Sincerely,



Nathan Wells

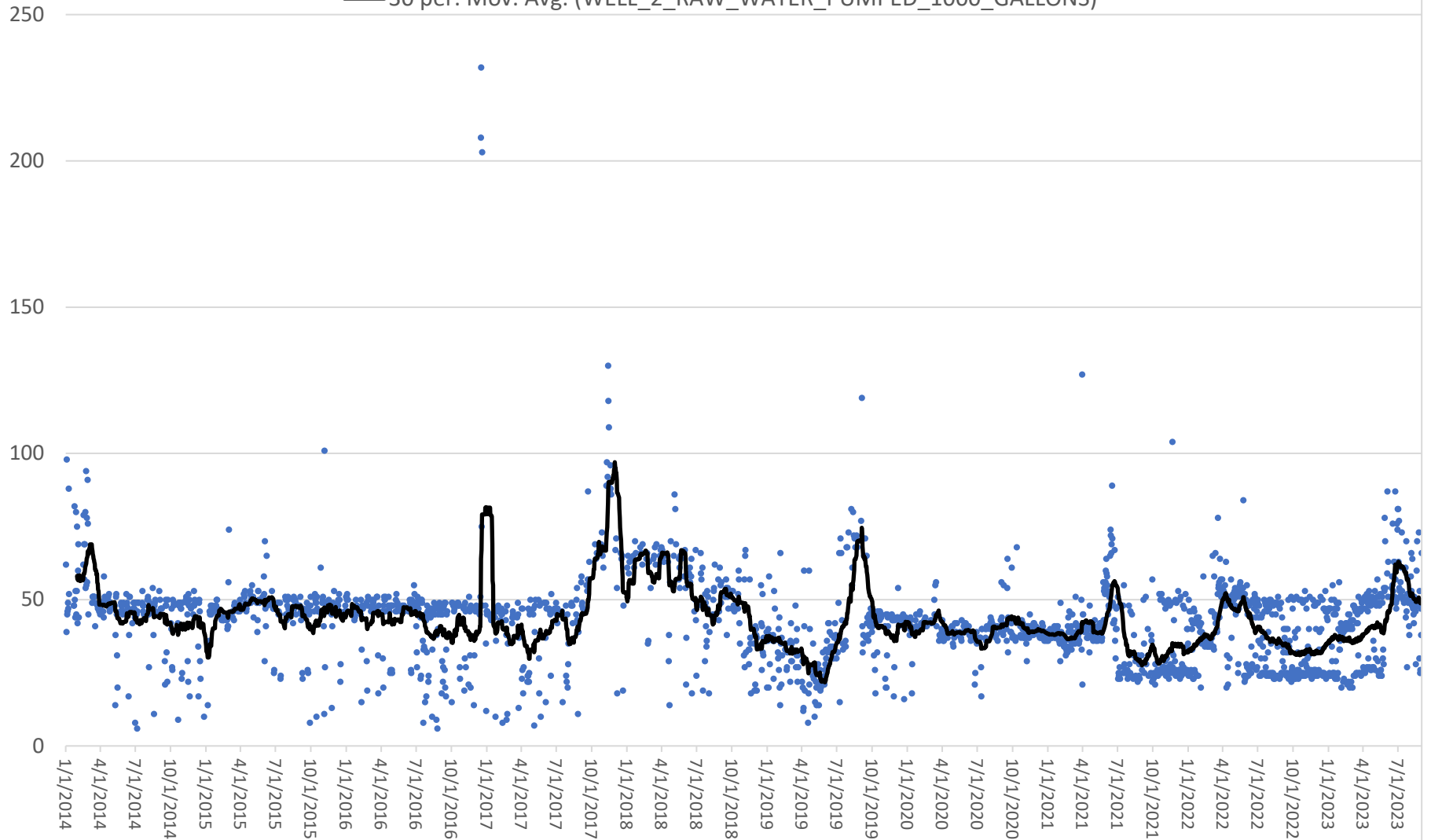
Encl.

cc: Bureau of Drinking Water/Groundwater - DG/5
Dale Peterson, Operator in Charge, Ridgeway Waterworks
Sophia Stevenson, Wisconsin DNR

WELL_2_RAW_WATER_PUMPED_1000_GALLONS

• WELL_2_RAW_WATER_PUMPED_1000_GALLONS

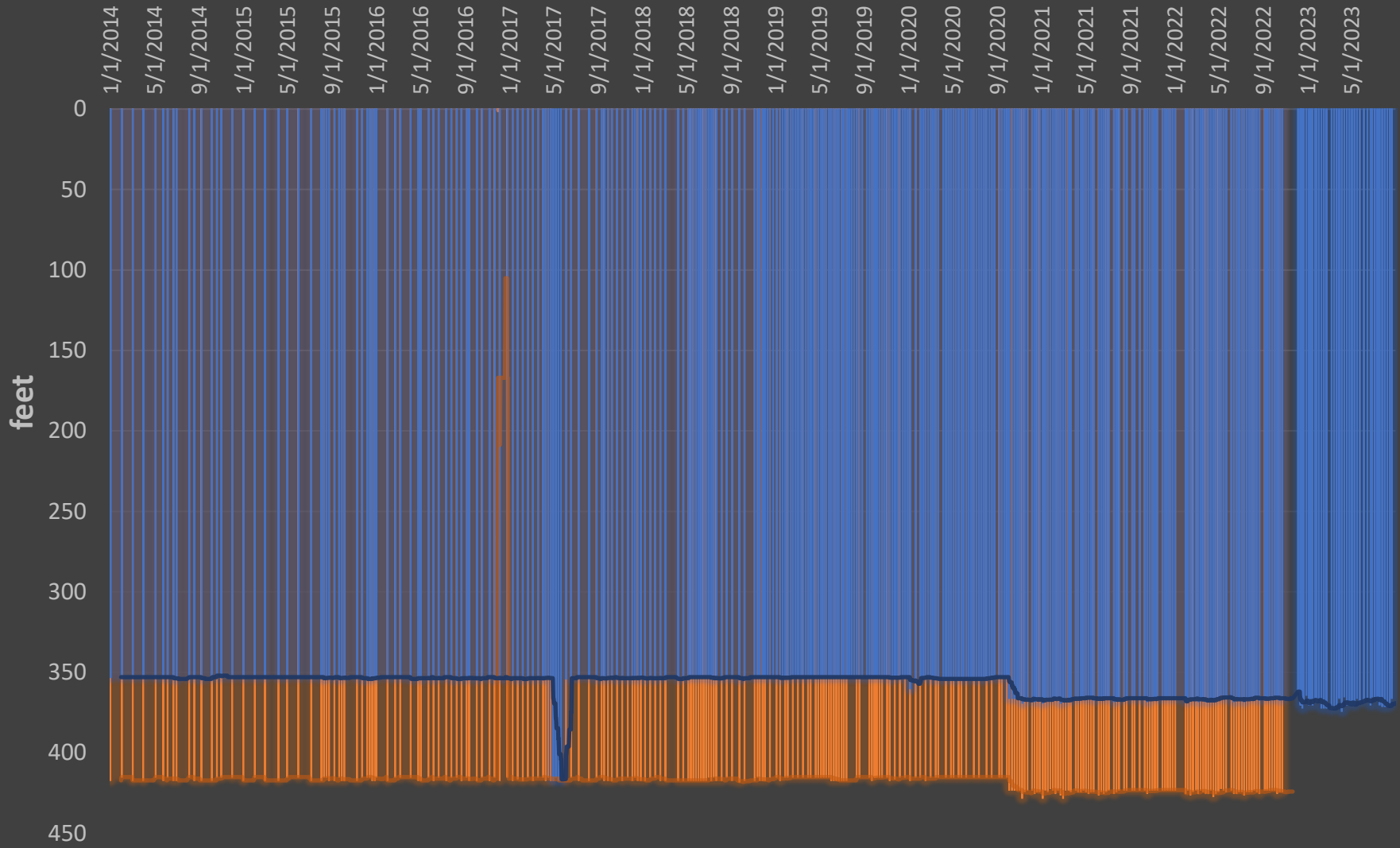
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Well 2 Pumping and Static Levels

□ WELL_2_WELL_WATER_LEVELS_PUMPING_WATER_LEVEL_FEET

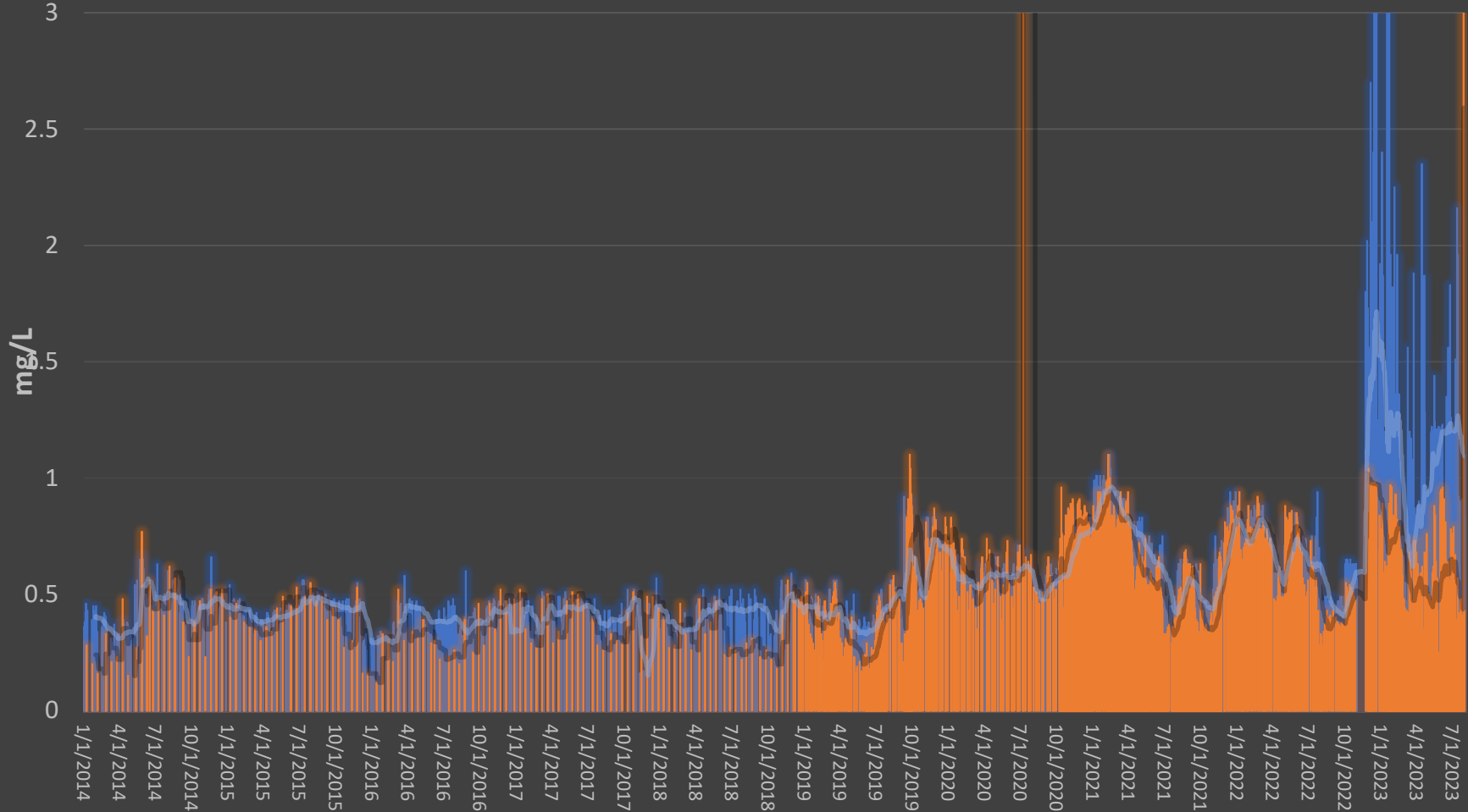
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Well 2 Calculated vs. Residual Chlorine dose

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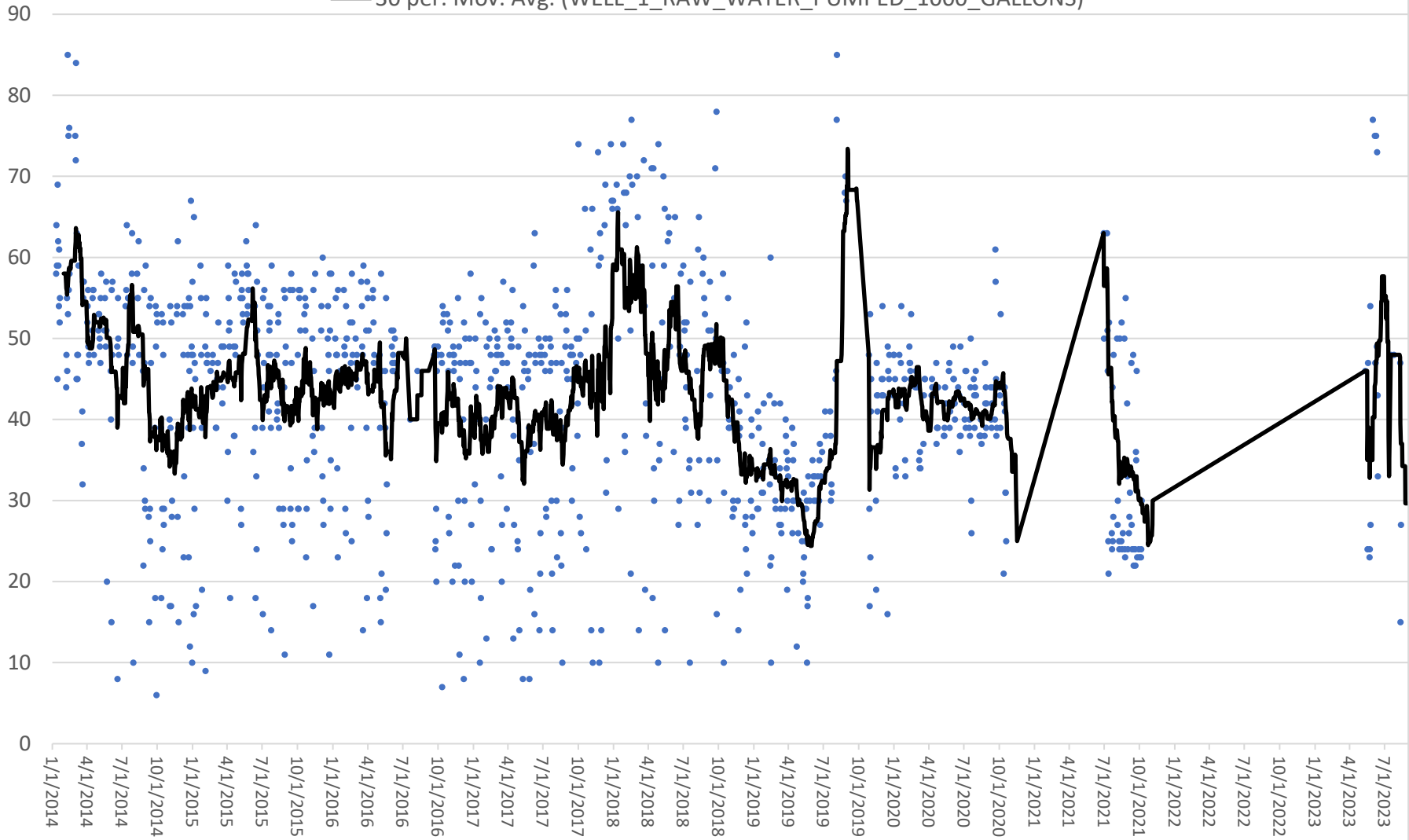
Trendlines are 30 day moving averages



WELL_1_RAW_WATER_PUMPED_1000_GALLONS

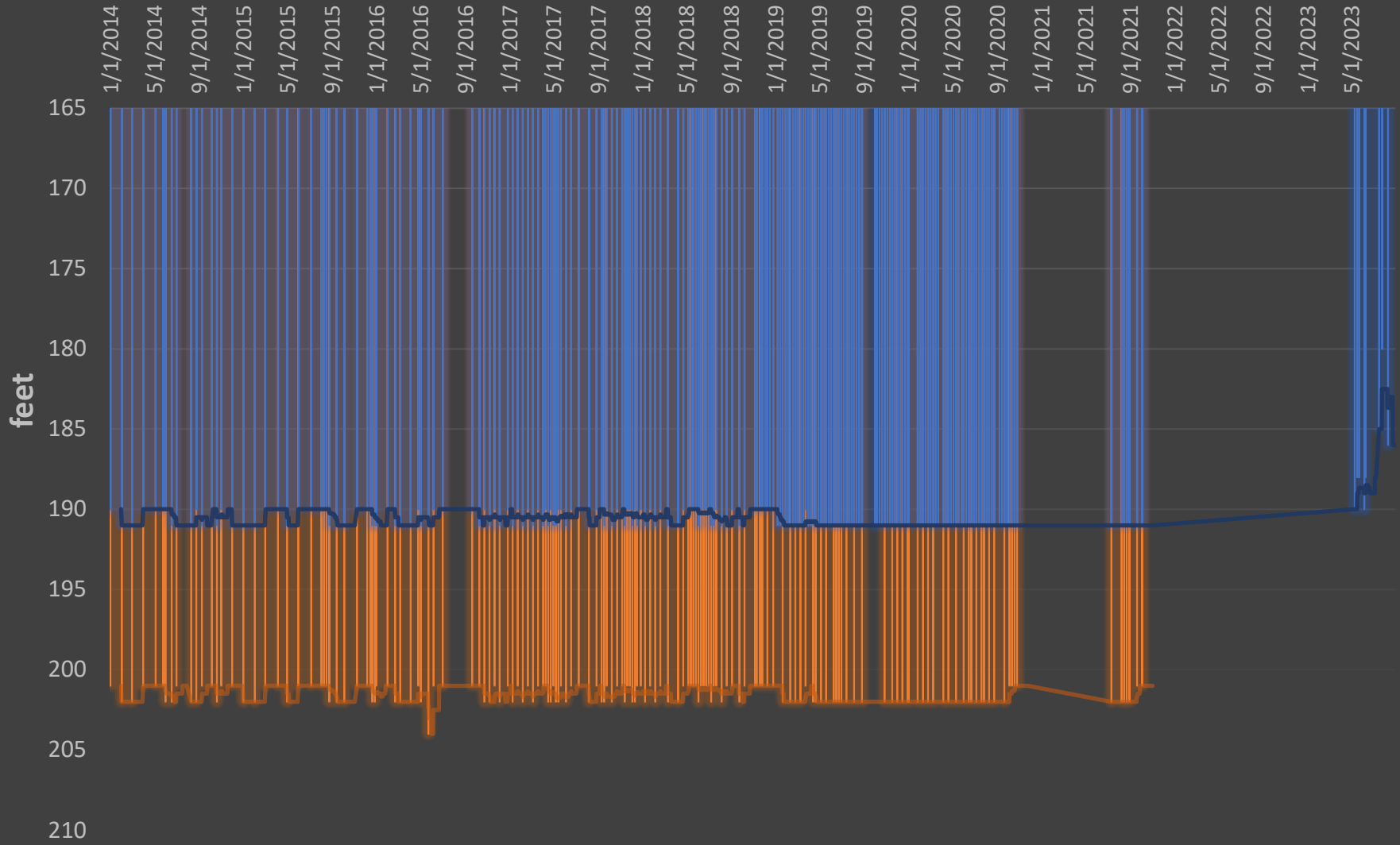
• WELL_1_RAW_WATER_PUMPED_1000_GALLONS

— 30 per. Mov. Avg. (WELL_1_RAW_WATER_PUMPED_1000_GALLONS)



Well 1 Pumping and Static Levels

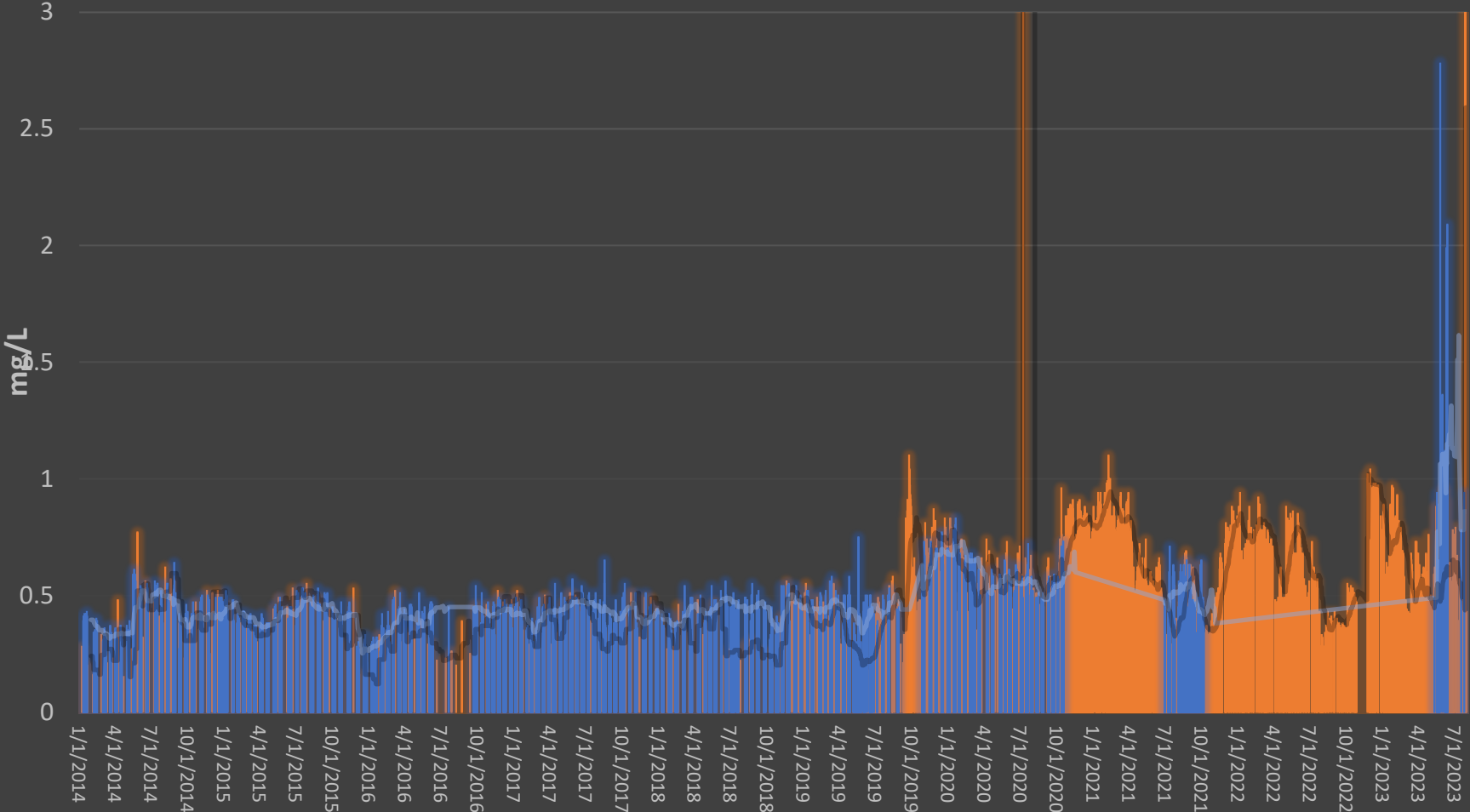
- WELL_1_WELL_WATER_LEVELS_PUMPING_WATER_LEVEL_FEET
- WELL_1_WELL_WATER_LEVELS_STATIC_WATER_LEVEL_FEET



Well 1 Calculated vs. Residual Chlorine dose

- System Operational Area, Free Chlorine Residual
- WELL_1_CHLORINE_CALCULATED_DOSE_MGL

Trendlines are 30 day moving averages



System Operational Area, Chlorine Residual - free

- System Operational Area, Free Chlorine Residual
- 30 per. Mov. Avg. (System Operational Area, Free Chlorine Residual)

