Commonwealth of Massachusetts | Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

Central Regional Office

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Governor	Lieutenant Governor	Secretary	Commissioner

May 29, 2026

Lunenburg Water District
Attn: Water Commissioners
P.O. Box 375
Lunenburg, MA 01462
MWoodward@lunenburgwater.gov

Re: PWS City/Town: **Lunenburg**
PWS Name: **Lunenburg Water District**
PWS ID#: **2162000**
Program: **Sanitary Surveys – Community**
NON-CE-26-5D00022835

Dear Public Water Supplier:

Attached is a report (including a Notice of Noncompliance) summarizing the sanitary survey performed in person at Lunenburg Water District in Lunenburg on April 9 and April 14, 2026. This report identifies items that the Massachusetts Department of Environmental Protection (MassDEP) has determined need to be corrected and the timeframe for completing the required corrective actions.

Please be advised that within 30 days of receipt of this inspection report, if your system has Table A – Violations and/or Table B – Deficiencies, you must sign and return the enclosed Water Supplier Response and Certification Form with a copy of the Summary of Findings listing the date that each corrective action was or will be taken and any specified documentation. Note that items with future dates require you to submit documentation at the time of completion.

If you have any questions regarding this report, please contact Alexandra Wahlstrom at Alexandra.Wahlstrom@mass.gov.

Sincerely,

Sean Nugent
Acting Section Chief
Drinking Water Program

cc: File Copy - DWP Sanitary Survey
ecc: DWP Boston
Fran McNamara, Superintendent - FMcNamara@Lunenburgwater.gov
Andrea Schnepf, Lunenburg Board of Health - aschnepf@lunenburgma.gov
Cara Olejarz, Nashoba Associated Boards of Health - colejarz@nashoba.org

File Name: Lunenburg-2162000-SS-ENF(NON-CE-26-5D00022835)-2026-05-29

PUBLIC WATER SYSTEM
SANITARY SURVEY

Lunenburg Water District	**2162000**
PWS Name	*PWS ID#*
496 Massachusetts Ave	**Lunenburg**
PWS Site Address	*PWS City/Town*

Survey Date:	April 14, 2026	Report Date:	May 29, 2026
Surveyor:	Alexandra Wahlstrom	Affiliation:	CERO/DWP
Person(s) Interviewed:	Francis McNamara	Title:	Superintendent
	Terry Truax	Title:	Operator

PUBLIC WATER SUPPLIERS:

This report includes a: a "Summary of Findings" with:

- ☒ Table A – Violations referenced as **NON-CE-26-5D00022835**
- ☒ Table B – Deficiencies
- ☒ Table C – Recommendations
- ☒ Water Supplier Response and Certification Form **(To be completed and returned within 30 days of receipt, if Table A and/or Table B items included in Summary of Findings)**

During the course of the sanitary survey, MassDEP observed conditions in the source, facilities, equipment, operation, or maintenance of the PWS that are violation(s) of a regulation or statute and that jeopardize the delivery of pure and safe water to all consumers (hereafter collectively referred to as "violations"). All violations found at the PWS are listed in the attached Summary of Findings Table A, which is also a Notice of Noncompliance (NON) pursuant to M.G.L. c.21A, §16 and 310 C.M.R. 5.00.

Notwithstanding this NON, MassDEP reserves the right to exercise the full extent of its legal authority in order to obtain full compliance with all applicable requirements. Noncompliance with the terms of the NON may result in further enforcement, including the assessment of administrative penalties of up to $25,000 for each day after the effective date of the NON during which each violation continues or is repeated, and/or the issuance of a unilateral administrative order requiring the necessary corrective action(s) within a reasonable time period. Noncompliance with the terms of such an order may also result in further enforcement, including the imposition of penalties of up to $25,000 for each day after the effective date of the Order during which each violation continues or is repeated.

Note: Systems are not relieved of their responsibility for meeting regulatory requirements that may not be covered in the "Summary of Findings".

SYSTEM CLASS

Community - COM

APPLICABLE REGULATIONS

In addition to regulations that apply to all Public Water Systems, the PWS is subject to the following requirements under the Safe Drinking Water Act:

☒ Lead and Copper Rule (COM and NTNC Systems Only)

☒ Groundwater Rule

☐ Surface Water Treatment Rule (Surface Water and Groundwater Under the Direct Influence of Surface Water)

☒ Disinfectant and Disinfection By-Product Rule (chemical disinfecting systems only)

SYSTEM DESCRIPTION

Lunenburg Water District (LWD) is a community public water system (PWS) located in the Town of Lunenburg, Massachusetts that serves a population of approximately 7,219 via 2,528 service connections, 100% of which are metered. The current LWD boundaries cover approximately 70% of the town. According to the 2025 ASR, the water system supplied a total of 174.9 million gallons (MG) in 2025, with a max day of 1.1 MG and an average day of 0.48 MG. The water system is classified as a I-T treatment system and a II-D distribution system. LWD is an independent government entity separate from the Town of Lunenburg.

Water is supplied by five active groundwater sources, five active water treatment plants (two of which are co-located in one building), and two atmospheric storage tanks across a single pressure zone. Treatment consists of chemical addition including sodium hydroxide (NaOH) for corrosion control and sodium hypochlorite (NaOCl) for disinfection. Ultraviolet (UV) disinfection is provided at one water treatment plant (WTP) (Keating Well WTP 2162000-03T) and one storage tank (Sunny Hill Road Storage Tank 2162000-04T). When in automatic mode, the wells are called to run between the hours of approximately 10 PM and 10 AM based on level controls in the Chase Road Tank (wells on at 78 feet, off at 82 feet); the level in the Sunny Hill Storage Tank could also be used to control the well pumps if needed. Emergency power is available at the Keating Well WTP, which can supply the entire LWD in an emergency. System-wide SCADA equipment with radio telemetry provides local and remote control of system operations.

Sources

Currently, LWD has five active wells: four on Lancaster Ave and one located south of Shirley Lake near the Lancaster/Shirley line known as the Keating Well. While any number of the Lancaster Ave wells can be online at the same time, typically two of the well pumps are put into automatic mode each day; LWD routinely operates Wells 01G/04G and Wells 02G/07G as pairs and generally alternates use of the pairs daily. The Lancaster Ave wells

are not controlled by speed or pressure; rather, when the well pumps are "on", they pump at their maximum flow rate. The Lancaster Ave wells manifold into a common line at **Station 1**.

GPW 1 Lancaster Ave (01G), located in a concrete block pump station, is a gravel-packed well equipped with a 50 Hp (250 gpm) vertical turbine pump which operates at a constant rate of 200 gpm. The Zone I for Well 01G extends into an adjacent residential parcel; LWD reports they maintain an easement for this area. This pump station, also known as **Station 1**, contains the following: a hydraulic surge control valve (no VFD), venturi flow meter, raw water sample tap and NaOCl feed system for Well 01G (identified as **2162000-07T**); an NaOH feed system which treats all four Lancaster Ave wells (identified as **2162000-01T**); a finished water sample tap representing treated water leaving the pump station (Lancaster Ave wells combined); and a combined reagentless pH and chlorine residual inline analyzer. This pump station is not equipped with emergency power.

GPW 2 Lancaster Ave (02G), located in a concrete block pump station, is a gravel-packed well equipped with a 40 Hp (190 gpm) vertical turbine pump which operates at a constant rate of 100 gpm. The pump is equipped with a VFD that is used as a soft start/stop only. Well 02G is operated at approximately 50% capacity due to water quality (color) issues. This pump station, also known as **Station 2**, contains the following: a venturi flow meter, raw water sample tap, and NaOCl feed system for Well 02G (identified as **2162000-06T**). This pump station is not equipped with emergency power.

GPW 3 Lancaster Ave (03G) is a gravel-packed well that has been **inactive** for many years**.** LWD reports that the well pump has been removed from this station (**Station 3**).

GPW 4 Lancaster Ave (04G), located in a concrete block pump station, is a gravel-packed well equipped with a 40 Hp (225 gpm) vertical turbine pump which operates at a constant rate of 225 gpm. The pump is equipped with a VFD that is used as a soft start/stop only. This pump station, also known as **Station 4**, contains the following: a venturi flow meter, raw water sample tap, and emergency chemical injection port. This pump station is equipped with a propane-fueled engine (right-angle gear drive) which can power the well pump only; if emergency power were in use, the NaOH feed system for Well 04G located at the Lancaster Ave WTP (Station 1) building would not be operational.

TWF 5 Lancaster Ave (05G), which was replaced by Wellfield 07G in 2010, is an **inactive** tubular wellfield comprised of seven 2.5-inch gravel-packed well points. LWD has elected to maintain this source and its vacuum system in operational condition in case it is needed in the future. The tubular well points have not been abandoned (cut) or decommissioned (grouted in); rather, they are simply valved off.

WF# 5A Lancaster Ave (07G) is a tubular wellfield (WF) comprised of four 12-inch by 18-inch gravel-packed wells located 50 feet apart on center. Each well is equipped with a 5

Hp (150 gpm) submersible pump and a VFD that is used as a soft start/stop only. The submersible pumps deliver water into a 12-inch diameter 16-foot deep "can" which has a solid casing with a sealed bottom. The "can" is below the pump station building for the Wellfield 05G vacuum pump system (**Station 5**) and is equipped with a high lift 50 Hp (280 gpm) vertical turbine pump and a VFD that serves as a soft start/stop only. The pump station contains the following: a venturi flow meter, raw water sample tap, NaOCl feed system for Wellfield 07G (identified as **2162000-05T**) and a partially treated (chlorinated) water 100-foot sample tap.

This pump station is equipped with a propane-fueled engine (right-angle gear drive) which can power the high lift pump only; if emergency power were in use, the high lift pump would create a vacuum and draw some water from the individual wells, but neither the NaOCl feed system at this station nor the NaOH feed system for this source located at the Lancaster Ave WTP (Station 1) building would be operational.

GPW 6 Hickory Hills (06G), located off Wintergreen Court near Hickory Hills Lake, is a gravel-packed well equipped with a 75 Hp (500 gpm) submersible pump that has been in **inactive** status since 2012. A small beach for the nearby residents, including kayak racks and benches, is in the Zone I. LWD maintains the required Zone I control for the 400-foot radius through a land use restriction and easement (per MassDEP communication dated January 14, 2026). Historical monitoring results demonstrate that Well 06G had manganese levels in excess of the Office of Research and Standards Guidelines (ORSG) of 0.3 mg/L. Prior written approval from MassDEP is required to reactivate this well.

Keating Well 1 (08G), located at 500 Leominster-Shirley Road, is a naturally developed well that was previously used for sand and gravel operations by P.J. Keating Inc. Well 08G is equipped with a 20 Hp (1,000 gpm) vertical turbine pump and is housed in a prefabricated concrete building installed in 2011. The Zone I is not entirely owned by LWD; rather, a small portion extends into the Town of Shirley and is a wetland resource area protected under the Massachusetts Wetlands Protection Act. Emergency power for Well 08G is provided by a natural gas-powered generator at the Keating Well WTP, which is approximately 450 feet from the well.

Treatment Facilities

At the **Lancaster Ave WTP (Station 1) (2162000-01T)** water from all four active Lancaster Ave Wells (01G, 02G, 04G, and 07G) manifolds and is treated for corrosion control using 25% sodium hydroxide (NaOH) to raise the pH from approximately 5.8 to a target pH of 7.5. As the raw water pH values differ and each well pump operates at a unique flow rate, each well is equipped with its own NaOH chemical feed pump with a set injection rate that corresponds to the constant flow rate of the well pump; however, all four wells share a single NaOH injection point. The NaOCl feed system for Well 01G (identified as **2162000-07T**) is also housed at this station. Both chemical injection quills are in a pit beneath the access road on the transmission main leaving the site. An addition to the pump station

with a separate entrance houses a 25% NaOH bulk tank and a 15% NaOCl day tank in separate containment areas, as well as two NaOCl chemical feed pumps (primary and spare) with a calibration column for Well 01G.

As previously mentioned, two of the four Lancaster Ave wells are typically put in service for the day, with Wells 01G/04G and Wells 02G/07G being the usual pairings. LWD voluntarily provides disinfection for three of the four Lancaster Ave wells (01G, 02G and 07G) to a target free chlorine residual of 0.2 – 0.3 mg/L. The NaOCl feed systems are identified as **2162000-06T** for Well 02G (**Station 2**) and **2162000-05T** for Wellfield 07G (**Station 5**). Because Well 04G is not treated with NaOCl, the chlorine residual is diminished when it operates with any of the other Lancaster Ave wells (and would be non-existent if the well were to be operated on its own).

The **Hickory Hills Treatment Plant (2162000-02T)**, located off Wintergreen Circle, is **inactive** due to the associated source (Well 06G) being inactive. Previously, water from Well 06G was treated for corrosion control using NaOH, disinfection using NaOCl, and iron and manganese sequestration using a blended phosphate. This station is equipped with a natural gas-powered generator that can power both the Well 06G submersible pump and the chemical feed systems.

At the **Keating Well WTP (2162000-03T),** located at 500 Leominster-Shirley Road, water from Well 08G first flows through an Atlantium ultraviolet (UV) unit for voluntary disinfection. Water then flows past an emergency NaOCl injection quill and three inline centrifugal high head pumps before being treated for corrosion control with 50% NaOH to raise the pH from approximately 6.2 to a target pH of 7.1; because the raw water has high hardness, a lower pH is targeted to limit formation of calcium carbonate scale in the pump discharge pipe. The three 100 Hp (500 gpm) high head pumps (lead, lag, and backup) provide for a maximum flow rate of 1,000 gpm to the distribution system. Typically, only one of these pumps runs at a time, except for during peak demand periods, and their use is rotated at least monthly; the pump is run in auto mode and the flow rate set manually. The station is equipped with a finished water sample tap, an approved emergency NaOCl system, chlorine and pH inline analyzers, and a natural gas-powered generator which provides emergency power for both Well 08G and the WTP.

Storage Tanks

LWD operates and maintains two atmospheric storage tanks. The **Chase Road Storage Tank** is a 2.8 MG steel standpipe located on Pope Road (off Chase Road) that was constructed in 1980. Level transducers in the tank control the operation of the well pumps when they are in "auto" mode; the well pumps turn on when the tank level drops to 78 feet and shut off when the level rises to 82 feet. The tank is equipped with a low water level alarm (68 feet), high water level alarm (87.1 feet) and a power failure alarm. The overflow is at 87.5 feet and discharges to the ground surface adjacent to the tank.

The **Sunny Hill Storage Tank** is a 0.5 MG fluted pillar tank located off Sunny Hill Road that was constructed in 2003. LWD can use the level transducers in this tank to control operation of the wells should the Chase Road tank be taken out of service for any reason. Water level in the Sunny Hill tank is controlled by an altitude valve, which closes at approximately 78.5 feet. The tank is equipped with a low water level alarm (61 feet), high water level alarm (79.7 feet), high outflow alarm (800 gpm), intrusion alarm, and power failure alarm. The tank overflow is at 80 feet and discharges to the ground surface adjacent to the tank.

LWD opted to install a Trojan UV Swift ultraviolet (UV) high intensity medium pressure reaction chamber and magnetic flow meter on the 12-inch inlet/outlet line for the Sunny Hill tank. The UV unit, which is in the storage area below the tank, provides disinfection of the water as it enters and exits the tank. The flow meter monitors inlet/outlet flow rates and controls the operation of the UV reactor. An emergency disinfection (NaOCl) chemical feed system was also installed should it be needed in the future. Water samples are collected from a tap on the inlet/outlet line on the street-side of the UV unit.

Distribution System

LWD's distribution system is comprised of approximately 67 miles of 2-inch to 16-inch diameter water mains made primarily of ductile iron or asbestos cement (AC); less than ~3000 linear feet (LF) of the mains are made of plastic or cast iron. There is a single pressure zone, with pressures ranging from 32-200 PSI. LWD owns leak detection equipment which is used to conduct its own leak detection program.

Leominster Water Division (PWS# 2153000) supplies customers in the Whalom Lake section of Lunenburg. While no hard-piped connection exists between LWD and Leominster in this zone, there are several areas where a metered hydrant-to-hydrant connection could be made. Hydrants supplied by Leominster Water Division within LWD's boundaries are painted yellow, while hydrants supplied by LWD are painted red.

CAPACITY DETERMINATION

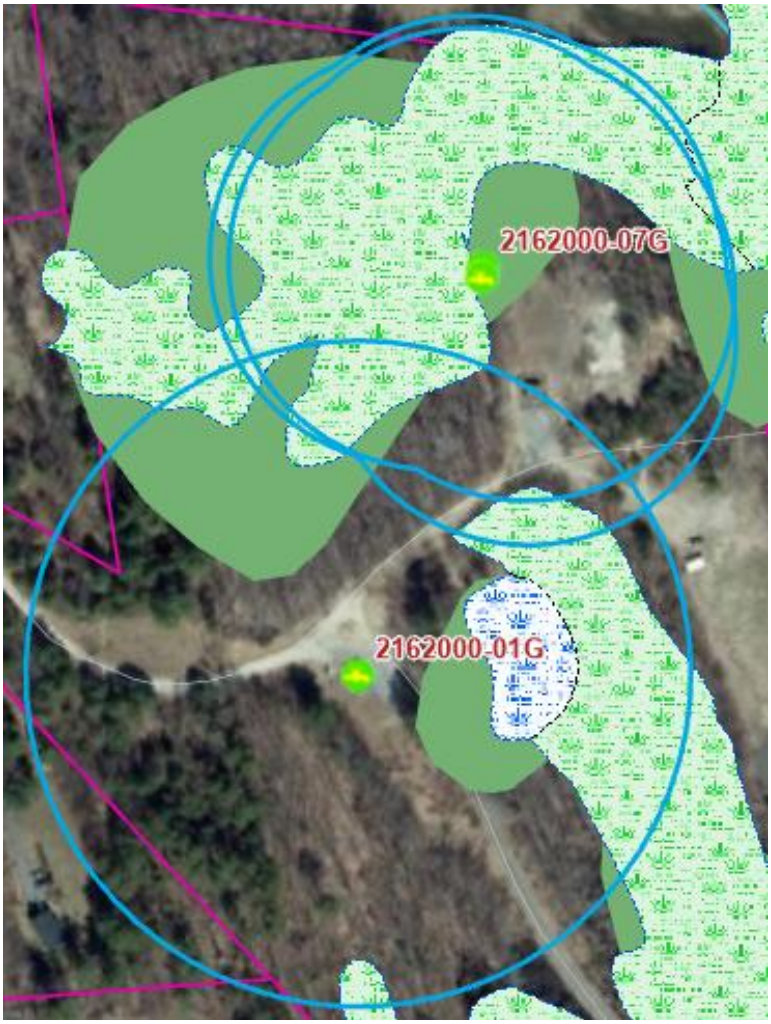
Capacity is the ability of a public water system to plan for, achieve, and maintain financial, managerial and technical compliance with applicable federal and state drinking water standards for the foreseeable future. Capacity also requires the demonstration of effective controls in all three areas.

CONDITIONAL CAPACITY - Systems with conditional capacity currently comply with a majority of MassDEP drinking water regulations but have issues that need to be improved.

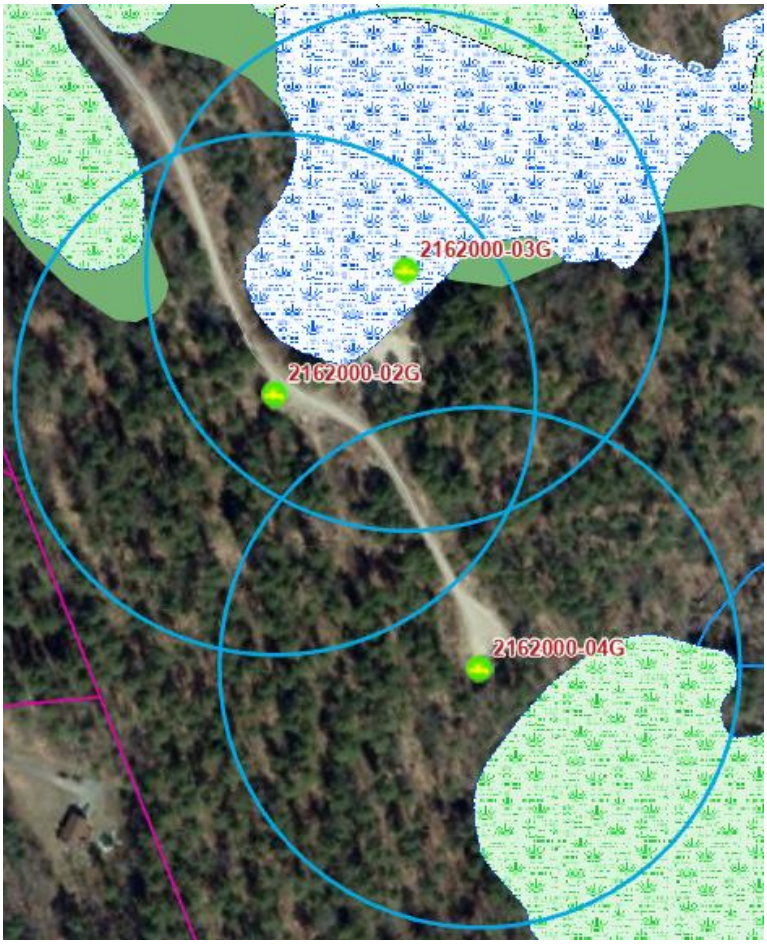
STATEMENT OF ZONE I COMPLIANCE

Refer to DEP BRP Policy #94-03 Implementation of Zone I Requirements
https://www.mass.gov/files/documents/2016/08/qs/9403a.pdf

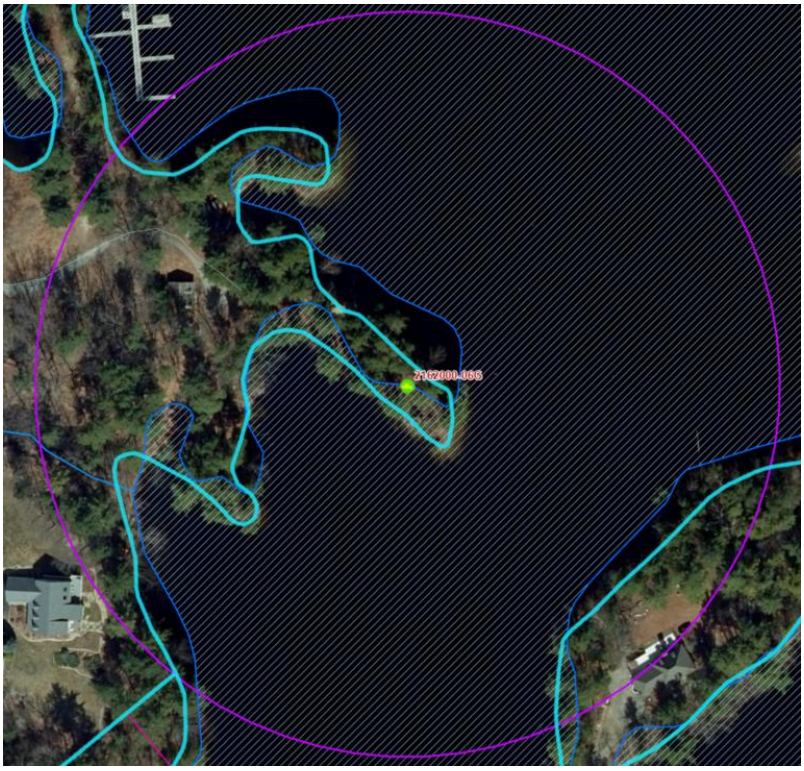
☒	The PWS is currently in compliance with Zone I requirements for the following Wells: **2162000-01G, -02G, -03G, -04G, -05G** and **-07G**. Please be advised that any modifications to the Zone I or activities within are subject to MassDEP approval.
☒	Please note that the PWS lacks ownership or control of the required 400-foot Zone I protective radius around Well **2162000-08G**. Pursuant to 310 CMR 22.21(3)(b), 310 CMR 22.21(1)(a) and 310 CMR 22.04(1), the owners or designated representative of the PWS must notify MassDEP prior to a change in facility ownership, or a change in land use within the Zone I, or any change that can impact the quality or quantity of the drinking water supply. The owners or designated representative of the PWS must obtain MassDEP approval prior to modifying or expanding the facility or replacing any well or source. MassDEP will not approve any proposed modifications or expansions resulting in water withdrawals that exceed the designated MassDEP approved pumping rate.
☒	The owners or designated representative of the PWS are hereby notified that Well **2162000-06G** is in non-compliance with MassDEP's requirement, 310 CMR 22.21(3)(b), that Zone I activities be limited to those directly related to the provision of public water or will have no significant adverse impact on drinking water quality. The identified source(s) will remain in non-compliance status until the non-conforming activities are removed from the Zone I. Pursuant to 310 CMR 22.04(1) and 310 CMR 22.21(1)(a), the owners or designated representatives of the PWS must notify MassDEP prior to a change in facility ownership or a change in land use within the Zone I, or any change that can impact the quality or quantity of the drinking water supply. The owners or designated representative of the PWS must obtain MassDEP approval prior to modifying or expanding the facility or replacing any well or source. MassDEP will not approve any proposed modifications or expansions resulting in water withdrawals that exceed the designated MassDEP approved pumping rate.
Non-conforming activities documented within the Zone I(s):	**Well 2162000-06G: Kayak racks**



Zone I for Wells 2162000-01G, -05G (inactive) and -07G. Note that -07G is a replacement for -05G.



Zone I for Wells 2162000-02G, -03G (inactive) and -04G



Zone I for Well 2162000-06G (inactive)

Zone I for Well 2162000-08G

SUMMARY OF FINDINGS
NOTICE OF NONCOMPLIANCE NON-CE-YY-5D00022835

Fill in the completion date or the anticipated completion date for all corrective actions in Tables A and B and return to MassDEP with the Water Supplier Response and Certification Form and all required documentation. If the time required to complete the action is greater than 3 months, submit quarterly progress reports. Documentation must be submitted to MassDEP upon completion of all corrective actions. If some or all corrective actions will not be completed by the due date, submit a request for a due date extension, along with a proposed, new due date and an explanation of why an extension is necessary.

TABLE A – VIOLATIONS*

This document also serves as a Notice of Noncompliance (NON) pursuant to M.G.L. c.21A, §16 and 310 CMR 5.00 for the following violations of the Massachusetts Drinking Water Regulations.

1	**Citation:**	**Violation:**	**GWR SD/GWR TT†**
	310 CMR 22.21(3)(b) & 310 CMR 22.21(4)	Kayak racks, a non-water supply related structure, were identified within the 400-foot Zone I source protection area for Well 06G.	N
	Evaluation Checklist Section: Groundwater Source Protection		**Checklist #:** SP-8
	Corrective Action:		**Due:**
	Remove all kayak racks from the Zone I for Well 06G. Submit documentation to MassDEP upon completion.		8/30/2026
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
2	**Citation:**	**Violation:**	**GWR SD/GWR TT†**
	310 CMR 22.04(14)(b)6	Written alarm testing protocols have not been established for critical chemicals, or they are not current.	N
	Evaluation Checklist Section: Treatment Plant General/Safety (03T, 05T, 06T, & 07T)		**Checklist #:** TP-16
	Corrective Action:		**Due:**
	Develop a written testing plan to ensure that all flow and electrical interlocks and alarm-related shutdowns are functional. Testing and verification should be done quarterly at a minimum. Submit an SOP to MassDEP detailing testing procedures for all alarms and interlocks on critical chemical feed systems, including testing frequency.		8/30/2026
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
3	**Citation:**	**Violation:**	**GWR SD/GWR TT†**
	310 CMR 22.04(14)(b)4.c	Alarms, instrumentation, and controls (interlocks) for critical chemicals at the	N

		Lancaster Ave Wells are not being tested quarterly at a minimum.	
	Evaluation Checklist Section: Treatment Plant General/Safety (05T, 06T & 07T)		**Checklist #:** TP-13
	Corrective Action:		**Due:**
	Begin testing ALL alarms and interlocks on the critical chemicals according to their written testing protocol at a minimum of once per quarter. Refer to Guidelines and Policies Chapter 6.1.3.6 (https://www.mass.gov/files/documents/2016/08/ra/glchpt6.pdf) for specific procedures for testing of alarms and interlocks. Complete the enclosed *Water Treatment Chemical Feed System Control and Alarm Testing Log* and submit it to MassDEP within ten days of the end of the quarter for one calendar year.		10/10/2026, 1/10/2026, 4/10/2027 & 7/10/2027
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
4	**Citation:**	**Violation:**	**GWR SD/GWR TT†**
	310 CMR 22.22(13)(e)	Failed cross connection devices have not been replaced or repaired and retested within 14 calendar days.	N
	Evaluation Checklist Section: Cross-Connection/Backflow Prevention		**Checklist #:** XC-8
	Corrective Action:		**Due:**
	Submit to MassDEP and implement a plan detailing how the water system will modify procedures to ensure that all failed backflow prevention devices are repaired and retested within the 14-day regulatory requirement.		9/30/2026
	Submit to MassDEP a list of devices that failed tests in 2026. Also, submit documentation demonstrating that all failed devices were repaired or replaced and retested within 14 calendar days. If failed devices were not repaired or replaced and retested within 14 calendar days, revise the original plan and submit it to MassDEP.		1/31/2027
	Submit to MassDEP a list of devices that failed tests in 2027. Also, submit documentation demonstrating that all failed devices were repaired or replaced and retested within 14 calendar days.		1/31/2028
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	

TABLE B – DEFICIENCIES*

The following items do not reflect good water system practice and, if left unresolved, could compromise your ability to provide safe drinking water. Uncorrected deficiencies may be elevated to violations if not corrected by the action due date.

1	Citation:	Deficiency:	GWR SD/TT†
	310 CMR 22.04(13)(a), 310 CMR 22.04(7) & Guidelines Chapter 12	The Emergency Response Plan (ERP) is missing required elements, specifically a procedure for the potential or imminent threat of chemical overfeed and a 24-hour Tier 1 Public Notice (PN) template and distribution plan to use in the event that the PWS has a lead action level exceedance.	N
	Evaluation Checklist Section: Records Management		**Checklist #:** R-2
	Corrective Action:		**Due:**
	Update the Emergency Response Plan in accordance with 310 CMR 22.04(13) and the Massachusetts Guidelines for Public Water Systems Chapter 12. Include a 24-hour Tier 1 PN template and distribution plan to use in the event that the PWS has a lead action level exceedance. Submit an updated Emergency Response Plan Compliance Checklist to MassDEP. https://www.mass.gov/doc/emergency-response-plan-erp-compliance-checklist-0/download Do not submit the ERP to MassDEP.		12/31/2026
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	

2	Citation:	Deficiency:	GWR SD/TT†
	310 CMR 22.04(7) & Guidelines Chapter 4.20	The gaskets on the four individual wells that comprise Wellfield 07G showed minor signs of deterioration in areas.	N
	Evaluation Checklist Section: Well Inspection		**Checklist #:** W-13
	Corrective Action:		**Due:**
	Replace the gaskets on the four individual wells that comprise Wellfield 07G. Submit documentation to MassDEP upon completion.		9/30/2026
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	

3	Citation:	Deficiency:	GWR SD/TT†
	310 CMR 22.15(5)	The annual total volume of water sold to Primo Water @ Hannaford #8388 (PWS #2162001) has not been reported in the Annual Statistical Report.	N
	Evaluation Checklist Section: Water Quantity		**Checklist #:** Q-3
	Corrective Action:		**Due:**
	Resubmit the Water Production & Consumption Information section of the 2025 Annual Statistical Report with the Total Volume Sold (GAL) to PWS # 2162001. Indicate in the "Comments or additional information regarding this section" that this value represents total		8/30/2026

	volume supplied via the service connection to the Hannaford building.		
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
4	**Citation:**	**Deficiency:**	**GWR SD/TT†**
	310 CMR 22.04(7) & Guidelines 6.1.12 *feed lines* & Guidelines 6.1.11.1.4 *chemical tanks*	Chemical feed lines and day tanks are not properly labeled to identify contents.	N
	Evaluation Checklist Section: Treatment Plant General/Safety (01T, 05T, 06T & 07T)		**Checklist #:** TP-3
	Corrective Action:		**Due:**
	Label chemical feed lines and day tanks with chemical name and direction of flow. Chemical names and color coding should be compliant with Guidelines Chapter 2.12 Piping Color Code. Submit documentation to MassDEP upon completion.		8/30/2026
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
5	**Citation:**	**Deficiency:**	**GWR SD/TT†**
	310 CMR 22.04(14)(b)5	Alarm testing activities are not being properly recorded.	N
	Evaluation Checklist Section: Treatment Plant General/Safety (01T, 03T, 05T, 06T & 07T)		**Checklist #:** TP-15
	Corrective Action:		**Due:**
	Begin keeping logs of all test results of alarms and interlocks. Complete the enclosed *Water Treatment Chemical Feed System Control and Alarm Testing Log* and submit it to MassDEP within ten days of the end of the quarter for one calendar year. Logs must be maintained for a period of five years from the date of each set of tests and be made available for review by MassDEP upon request.		10/10/2026, 1/10/2026, 4/10/2027 & 7/10/2027
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
6	**Citation:**	**Deficiency:**	**GWR SD/TT†**
	310 CMR 22.04(7) & Guidelines Ch. 6.1.7.1	Chemical feed pumps do not have anti-siphon protection.	N
	Evaluation Checklist Section: Critical Chemical Feed Inspection Checklist (01T & 03T)		**Checklist #:** CC-20

	Corrective Action:		**Due:**
	Install anti-siphon protection on the sodium hydroxide (NaOH) chemical feeds. Acceptable protection includes: discharge at a point of positive pressure or vacuum relief; a suitable air gap or anti-siphon device; peristaltic pumps require installation of an anti-siphon or back-pressure valve; or other suitable means or combinations as approved by MassDEP. Submit documentation to MassDEP when complete.		8/30/2026
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
7	**Citation:**	**Deficiency:**	**GWR SD/TT†**
	310 CMR 22.04(7) & Guidelines Chapter 8.1.22.3	The PWS has not been maintaining a written log of annual rooftop inspections of atmospheric storage tanks.	N
	Evaluation Checklist Section: Atmospheric Storage Tanks		**Checklist #:** AT-11
	Corrective Action:		**Due:**
	Begin performing an annual inspection that includes the roof or top manhole hatches, vent caps, screens, watertight seals, signs of vandalism, locks, and other sanitary defects. Maintain a written and dated log of each inspection available for MassDEP inspection at any time. Submit a copy of a completed annual rooftop tank inspection report for the Chase Road and Sunny Hill storage tanks.		12/31/2026
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
8	**Citation:**	**Deficiency:**	**GWR SD/TT†**
	310 CMR 22.04(7) & Guidelines Chapter 8	Deficiencies were identified in the Chase Road storage tank during the 2022 professional inspection that have not been addressed.	N
	Evaluation Checklist Section: Atmospheric Storage Tanks		**Checklist #:** AT-13
	Corrective Action:		**Due:**
	Submit a corrective action plan (CAP) and schedule to correct any deficiencies noted in the 2022 tank inspection report, including but not limited to the following: rooftop hatches are not equipped with gaskets; greater than 20% of exposed steel in each rooftop quadrant; moderate biofilm/staining, blistering, and decline/thinning of protective coating observed on interior walls; and small areas of exposed steel on the lower north and lower west exterior walls.		9/30/2026
	Submit documentation demonstrating that all work has been completed in accordance with the approved CAP.		12/31/2027
	Corrective Action Completed? Yes ☐ No ☐		

	Date Completed:	**Anticipated Completion Date:**	
9	**Citation:**	**Deficiency:**	**GWR SD/TT†**
	310 CMR 22.04(7) & Guidelines Chapter 8	Deficiencies were identified in the Sunny Hill storage tank during the 2021 professional inspection that have not been addressed.	N
	Evaluation Checklist Section: Atmospheric Storage Tanks		**Checklist #:** AT-13
	Corrective Action:		**Due:**
	Submit a corrective action plan (CAP) and schedule to correct any deficiencies noted in the 2021 tank inspection report, including but not limited to the following: rooftop hatches are not equipped with gaskets and small areas of exposed steel on the roof and south exterior wall.		9/30/2026
	Submit documentation demonstrating that all work has been completed in accordance with the approved CAP.		12/31/2027
	Corrective Action Completed? Yes ☐ No ☐		
	Date Completed:	**Anticipated Completion Date:**	
10	**Citation:**	**Deficiency:**	**GWR SD/TT†**
	310 CMR 22.03(8), 310 CMR 22.03(14)(a),(b) & 310 CMR 22.07 (D)	Levels of manganese in the finished water from Wells 01G/04G (MULT1A) and Wells 02G/07G (MULT1B) exceeded the secondary maximum contaminant level (SMCL) of 0.05 mg/L and MassDEP's health-based guideline (ORSG) of 0.3 mg/L during the Q1-2026 monitoring period. Manganese concentrations at MULT1B also exceeded MassDEP's health advisory level of 1.0 mg/L during the Q1-2026 monitoring period.	N
	Evaluation Checklist Section: Water Quality		**Checklist #:** WQ-3
	Corrective Action:		**Due:**
	Notify local public health official(s) of the manganese results no later than thirty (30) days from the date of this letter.		6/28/2026
	Provide Tier 2 public notification in accordance with 310 CMR 22.16 and post the MassDEP manganese fact sheet to PWS's website. Submit a copy of the public notice and public notice certification form to MassDEP. Continue to notify new billing units and new customers quarterly.		6/28/2026
	Submit a Corrective Action Plan (CAP) detailing short- and long-term steps LWD will take to reduce levels of manganese in the finished water from the Lancaster Ave wells (01G, 02G, 04G and 07G) reliably and consistently below the ORSG (preferably below the SMCL), along with a schedule. The CAP and schedule will be subject to MassDEP		9/30/2026

review and approval. Please note that MassDEP permit approval is required prior to installation of treatment.	
Submit documentation demonstrating that all steps described in the approved CAP have been completed.	12/31/2027
Corrective Action Completed? Yes ☐ No ☐	
Date Completed:	**Anticipated Completion Date:**

TABLE C - RECOMMENDATIONS*

The following items are recommended actions/improvements in order to improve your ability to provide safe drinking water. These items may be elevated to deficiencies in subsequent surveys.

1	**Citation:**	**Recommendation**	
	310 CMR 22.04(1)(c), 310 CMR 22.04(7) & Guidelines Chapter 11.4	Perfluorooctanoic acid (PFOA) has been detected in the finished water at concentrations exceeding the U.S. EPA Maximum Contaminant Level (MCL) of 4.0 ppt at Well 08G, MULT1A and MULT1B. MassDEP recommends the PWS update its capital improvement plan in accordance with Chapter 11 of the Guidelines and Policies for Public Water Systems to demonstrate how compliance with the applicable PFAS MCLs will be achieved by the effective date of the regulations (e.g., April 2029 and applicable extensions).	
	Evaluation Checklist Section: System Management/Operation & Water Quality		**Checklist #:** OM-7, WQ-2 & WQ-3
2	**Citation:**	**Recommendation**	
	NA	MassDEP recommends that the PWS provide emergency power consisting of a dedicated portable or in-place auxiliary power of adequate supply and connectivity to operate the Lancaster Ave wells and their associated treatment facilities.	
	Evaluation Checklist Section: System Management/Operation		**Checklist #:** OM-4
3	**Citation:**	**Recommendation**	
	NA	Contact MassDEP/DWP to schedule a MassDEP/DWP cyber security assessment review via email at program.director-dwp@mass.gov, Subject: "Cybersecurity Assessment Review Request". **MassDEP/DWP will arrange a 1 hour and 30-minute meeting with your PWS via a secure online method to perform the cybersecurity assessment review**.	
	Evaluation Checklist Section: System Management/Operation		**Checklist #:** OM-12
4	**Citation:**	**Recommendation**	
	NA	MassDEP recommends testing eyewashes and showers quarterly and maintaining a log of this testing on site.	
	Evaluation Checklist Section: Treatment Plant General/Safety (01T & 03T)		**Checklist #:** TP-5

5	**Citation:**	**Recommendation**	
	Guidelines Chapter 6.1.11.3	Be advised that any substantial modification to the Lancaster Ave WTP (Station 1) (01T) in the future will require the PWS to install a compliant sodium hydroxide (NaOH) day tank.	
	Evaluation Checklist Section: Critical Chemical Feed Inspection Checklist (01T)		**Checklist #:** CC-13
6	**Citation:**	**Recommendation**	
	NA	MassDEP recommends that the low chlorine residual alarm setpoint be increased to 0.2 mg/L; at a minimum, the setpoint must be greater than 0 to be within the range of the instrument and thus capable of triggering an alarm condition.	
	Evaluation Checklist Section: Critical Chemical Feed Inspection Checklist (05T, 06T & 07T)		**Checklist #:** CC-7
7	**Citation:**	**Recommendation**	
	NA	In the event that a sample collected from an in-service well is determined to be positive for E.coli, MassDEP relies on information provided by the public water supplier on Groundwater Rule (GWR) Forms A and B to make a determination as to what action(s) the public water supplier must take in response to the test result. In most cases, MassDEP must determine whether a Boil Water Advisory is required. It is recommended that the PWS complete GWR Form A for Well 08G from the point of the emergency chlorine injection port. Forms can be found at https://www.mass.gov/lists/ground-water-rule-forms	
	Evaluation Checklist Section: Treatment Technique GWR		**Checklist #:** TT-6
8	**Citation:**	**Recommendation**	
	Guidelines Chapter 8.1.22.1	Be advised that the Chase Road Storage Tank shall next be professionally inspected by the end of 2027.	
	Evaluation Checklist Section: Atmospheric Storage Tanks		**Checklist #:** AT-12
9	**Citation:**	**Recommendation**	
	NA	MassDEP recommends that all interconnections between public water supplies be metered.	
	Evaluation Checklist Section: Interconnections		**Checklist #:** I-2
10	**Citation:**	**Recommendation**	
	NA	MassDEP recommends that the PWS regularly exercise and establish a written program for maintaining all interconnection valves.	
	Evaluation Checklist Section: Interconnections		**Checklist #:** I-3
11	**Citation:**	**Recommendation**	
	310 CMR 22.03(1)	Be advised that should the PWS seek to reactivate Well 06G at any point, MassDEP approval and treatment that addresses the elevated levels of iron, manganese and PFAS6 is required prior to doing so.	

	Evaluation Checklist Section: Water Quality	**Checklist #:** WQ-3
12	**Citation:**	**Recommendation**
	NA	MassDEP recommends the PWS conduct a review of source protection area (Zone I & Zone II) land uses and activities for Well 08G to identify potential sources of the picloram detection (1/17/25) and implement appropriate mitigation as needed.
	Evaluation Checklist Section: Water Quality	**Checklist #:** WQ-3

*MassDEP reserves the right to exercise its Order authority under M.G.L. Chapter 111, Section 160, or to take other appropriate action as permitted by law, in order to prevent the pollution and to secure the sanitary protection of the water supply and to ensure the delivery of a fit and pure water supply to all consumers, including without limitation if sufficient progress to meeting a recommended deadline is not achieved.

WATER SUPPLIER RESPONSE AND CERTIFICATION FORM

Within 30 days of receipt of this inspection report, you must complete and submit this form if your system has Table A – Violations and/or Table B – Deficiencies. Attach a copy of the completed table(s) listing the date that the corrective action was taken or the date you anticipate it will be taken, and include all required documentation as specified in the table(s). **For corrective actions that will be completed in the future, you must submit documentation of work at the time of completion.**

The following corrective actions listed in the Summary of Findings Table A and/or Table B have been taken by the Public Water System. (Please check all that apply).

☐ My system has taken **ALL** of the corrective actions specified in the Summary of Findings.

- I have listed the completion date for each item within the table(s).
- I have attached copies of supporting documentation as required.

☐ My system has taken **SOME BUT NOT ALL** of the corrective actions specified in the Summary of Findings.

- I have listed the actual or anticipated compliance date for each item within the table(s).
- I have attached copies of supporting documentation as required.
- For corrective actions that will require more than 3 months to complete, I will submit a written progress report each quarter (every 3 months) until all items have been addressed.

☐ My system is **UNABLE** to comply with some or all of the corrective actions within the timeframes specified in the Summary of Findings. I understand that my system may be subject to further enforcement if items are not completed by the due date.

- A request for a due date extension is attached, along with a proposed, new due date and an explanation of why an extension is necessary.

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate, and complete to the best extent of my knowledge.
Water Commissioner, Owner, Owner Representative, or Other Responsible Party:

Signature: _____ Date: _____

Print Name: _____ Title: _____

Return this form, a copy the Summary of Findings, and all attachments to:

MassDEP
BWR Drinking Water Program
8 New Bond Street
Worcester, MA 01606
Attention: Alexandra Wahlstrom
Or email at Alexandra.Wahlstrom@mass.gov

EVALUATION CHECKLIST

SYSTEM MANAGEMENT / OPERATION

OM-1	Is a PWS affidavit recorded with the Registry of Deeds?	NA - Municipal
OM-2	Does the PWS have sufficient financial capacity? (Can the PWS pay for necessary operational and maintenance expenses and have financial reserves for emergency expenses?)	Yes
OM-3	Is all critical infrastructure locked or sufficiently secured (e.g. pump house, well vault, chemical treatment building)? GWR-20	Yes
OM-4	Does the PWS have emergency back-up power available to operate critical system components or ability to provide the maximum daily demand for up to 24 hours by other means?	**Yes**
OM-5	If contracted/plug-in generator, is there a prepared electrical connection for the generator?	NA
OM-6	Does the PWS have a Strategic, Capital Improvement, or Asset Management Plan?	Yes
OM-7	Does the Strategic, Capital Improvement, or Asset Management Plan require an update?	**Yes - Ch 11.4**
OM-8	Does the PWS meet the redundancy requirements in 310 CMR 22.21(3)(a)?	Yes - Storage
OM-9	Is a current emergency contact list posted in the pump house or treatment building?	Yes
OM-10	Has a cybersecurity assessment of the PWS been conducted?	Yes
OM-11	If yes, what is the date of the cybersecurity assessment report?	May 2024
OM-12	If yes, has the cybersecurity assessment report been reviewed/inspected by the MassDEP/DWP cyber team?	**No** Review Date: NA
OM-13	Who is the primary cybersecurity contact for the PWS (staff responsible for cybersecurity activities within the PWS)? Name: Fran McNamara Title: Superintendent Email: FMcNamara@Lunenburgwater.gov Phone: 978-582-4532	

Comments:

OM-4: LWD maintains the auxiliary engines for Wells 04G and 07G and the generator at the Keating Well WTP (03T), all of which are operated under load quarterly. Wells 01G and 02G are not equipped with emergency power. While LWD can operate several wells using emergency power, only the Keating Well WTP (03T) can provide treated water to the distribution system during a power outage. (Table C)

Source	Emergency Power?	Fuel Type	Powers treatment?
Lancaster Ave Well 01G (Station 1)	No	NA	NA; the NaOH feed for the four Lancaster Ave wells and the NaOCl feed for Well 01G housed at this station will not be operable
Lancaster Ave Well 02G (Station 2)	No	NA	NA
Lancaster Ave Well 04G (Station 4)	Yes – engine with right angle gear drive	Propane gas (buried tank)	NA; no treatment
Lancaster Ave Wellfield 07G (Station 5)	Yes – engine with right angle gear drive	Propane gas (buried tank)	No
Hickory Hills Well 06G (*inactive)*	Yes – generator at Hickory Hills WTP (02T)	Natural gas	Yes
Keating Well 08G	Yes – generator @ Keating Well WTP (03T)	Natural gas	Yes

OM-6: LWD has a 20-year Water Main Improvement Program/CIP 2011-2032. LWD reports reprioritizing projects as they go based on system conditions (e.g., water main breaks).
OM-7: LWD's existing CIP does not include measures to ensure compliance with EPA's forthcoming Per- and Polyfluoroalkyl substances (PFAS) regulations. See Water Quality Checklist, WQ-2 & WQ-3, for additional information. (Table C)
OM-8: LWD maintains and operates two atmospheric storage tanks with a combined storage capacity of 3.3 MG, which is more than two average days of demand (0.96 MG). However, LWD does not have additional wells/wellfields which can provide the equivalent volume of the highest producing source, Keating Well (08G). Per LWD's Water Management Act (WMA) Permit (Permit# 9P2-2-11-162.01), the Maximum Authorized Daily Withdrawal Rates for LWD's active sources are as follows: 1.44 MGD for Well 08G and 0.98 MGD for the four Lancaster Ave wells combined (01G, 02G, 04G and 07G). The approved rate for inactive Hickory Hills Well (06G) is 0.72 MGD.

RECORDS MANAGEMENT

R-1	Does the PWS have a readily available Emergency Response Plan? GWR-19	Yes
R-2	Is the ERP current and does it contain all of the required elements identified in the ERP checklist?	**No - 22.04(13)**
R-3	Are the operational records kept on site or at a convenient location near the premises? (Operator Inspection, Maintenance & Complaints, etc.)	Yes
R-4	Does the PWS maintain a system to track consumer complaints?	Yes - Comment
Comments:		

R-2: A few required elements are not included in LWD's ERP, including a procedure for the potential or imminent threat of chemical overfeed as well as a Tier 1 Public Notice (PN) template and distribution plan in the event of a lead action level exceedance. (Table B)
R-4: LWD logs consumer complaints in a book kept at the main office. To better understand what concerns consumers have about their water, LWD launched a community engagement survey in January 2026. At the time of the inspection, nearly 275 survey responses had been received; close to 200 of those were from LWD customers. Nearly all respondents (90%) expressed some level of concern about PFAS, with more than 25% indicating they are extremely concerned. More than half of respondents indicated they experience moderate to heavy hardness in their water, and about three-quarters of respondents expressed concern about LWD's redundancy (e.g., sources, auxiliary power).

OPERATOR COMPLIANCE

O-1	Does the system have a primary certified operator (distribution and treatment if applicable)? GWR-21	Yes
O-2	Does the system have a secondary certified operator (distribution and treatment if applicable)?	Yes
O-3	Are the certified operator grades appropriate for system size and/or treatment type? GWR-22	Yes
O-4	Are the listed operators' licenses current?	Yes
O-5	Are licensed operator services contracted out?	No
O-6	If yes, is a current "Certified Operator Compliance Notice" on file?	NA
O-7	If yes, what is the frequency of operator visits?	NA
O-8	If yes, is there an on-site log of all activities and operator inspections?	NA
O-9	Has the PWS submitted a Staffing and Comprehensive Operations Plan?	Yes
O-10	Does the Staffing and Comprehensive Operations Plan on file need to be updated?	No

Comments:
O-10: LWD submitted current staffing plan forms to MassDEP on April 23, 2026; the forms were subsequently reviewed and approved on April 24, 2026.

SOURCES

WELL INSPECTION

None Present ☐

Source ID	Casing height (ft)	Well house?	In pit?	Raw water tap?	Chem inject port?	Vent present?	Vent screened?	Gasket present/Intact?	Unprotected opening?	Evidence of flooding?	Watertight well cap?

2162000-01G	VT	Yes	No	Yes	Yes	Yes	Yes	VT	No	No	VT
2162000-02G	VT	Yes	No	Yes	Yes	Yes	Yes	VT	No	No	VT
2162000-03G *	0	*	*	*	*	*	*	*	*	*	*
2162000-04G	VT	Yes	No	Yes	Yes	Yes	Yes	VT	No	No	VT
2162000-05G *	0	*	*	*	*	*	*	*	*	*	*
2162000-06G **	2	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes
2162000-07G	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes
2162000-08G	VT	Yes	No	Yes	Yes	Yes	Yes	VT	No	No	VT

W-1	Are raw water sample taps available for the collection of source samples for all wells? GWR-5	Yes
W-2	Are all raw water sample taps located before any alteration or treatment of the source water?	Yes
W-3	Are all TC sample taps (raw, finished, etc.) smooth-nosed (non-threaded), non-mixing, and without aerators or screens?	Yes
W-4	Are emergency chemical injection ports available for disinfection of all groundwater sources, individually or manifolded? GWR-6	Yes
W-5	Are all emergency chemical injection ports installed in appropriate locations?	Yes
W-6	Do all wells have vents (external, mushroom or integrated in cap)?	Yes
W-7	Are there any unprotected openings in the sanitary well casing or cap of any wells that might result in contamination (e.g., vent not screened or turned downward, unsealed conduit opening)? GWR-2	No
W-8	Is any wellhead, cap, and/or vent subject to flooding? GWR-3	No
W-9	Is there evidence of flooding or standing water in any pit or pump house that could result in the entrance of fecal contaminants? GWR-16	No
W-10	Do any wellheads (casing, cap, vent, seal) appear damaged in a manner that would make the source susceptible to contamination? GWR-1	No
W-11	Are any air/water relief valve discharges hard piped to a floor drain without an air gap? GWR-17	No
W-12	Are any deficiencies identified in the condition of the well house or structure containing the well components?	No
W-13	Are any other wellhead improvements needed or recommended (e.g., replace gasket/bolts, tighten well cap, paint the casing/cap)?	**Yes - Comment**
W-14	Are there any unapproved groundwater sources being used? GWR-4	No

Comments:
*Wells 03G and 05G are inactive and were not visited during the inspection.
**Well 06G is inactive and was visited during the inspection.
W-6: Wells 01G, 02G, 04G and 08G are equipped with vertical turbine pumps, and therefore do not have well caps with vents. Each pump is equipped with a properly screened air relief valve. The four individual wells that comprise Wellfield 07G have well caps with properly screened vents.
W-13: The gaskets on the four individual wells that comprise Wellfield 07G showed minor signs of deterioration in areas (e.g., cracking, mossy growth), none of which were significant enough to pose a sanitary threat to the well. (Table B)

GROUNDWATER SOURCE PROTECTION

SP-1	Is the PWS conducting any non-conforming activities in the Zone I? (fertilizers, pesticides, herbicides or other non-mechanical means of vegetation control, de-icing agents applied, chemical/equipment storage)	No
SP-2	Has the PWS added any prohibited land uses or unapproved structures to the Zone I since the last sanitary survey (if yes, comment)?	No
SP-3	Are there any wastewater components within the Zone I(s) or IWPA(s)?	No
SP-4	If floor drains are present in the pump house, is the PWS following BMPs for chemical storage? (comment on chemicals present and control measures)	Yes
SP-5	Does the PWS generate any process or instrumentation waste (i.e. from continuous analyzers or cooling water)?	Yes - Discharges to Ground (NO chemical reagents in use)
SP-6	Does the PWS generate any backwash waste from a treatment system?	No
SP-7	Are ALL discharges to drywells registered with UIC?	Yes
SP-8	Were any other source water protection issues identified?	**Yes - Comment**

Comments:
SP-4: NaOCl is used in several pump stations, while NaOH is used at Station 1 and the Keating Well WTP; both chemicals are stored in proper containment at all locations.
SP-5 & SP-7: A reagentless inline chlorine/pH analyzer discharges to daylight at Station 1 (01T/07T). Keating Well WTP (03T) is equipped with a CL17 inline chlorine analyzer (not reagentless) for the emergency NaOCl system that is not in use; UIC Registration ID MAS21A162204-5A23 was issued for Well 08G (Keating Well) in 2012. Also in 2012, UIC Registration ID MAS21A162205-5A23 was issued for Well 06G (Hickory Hills Well).

SP-8: There is a small beach for Woodland Village residents and their guests in the Zone I of Well 06G (Hickory Hills Well, inactive status). MassDEP issued a letter dated January 14, 2026, notifying LWD that kayak racks, a non-water supply related structure, were identified in the Zone I and must be removed within 90 days to maintain compliance with 310 CMR 22.21. At the time of the inspection, approximately ten kayak racks holding about five kayaks each were identified in the Zone I of Well 06G. (Table A)

SWTR COMPLIANCE FOR GROUNDWATER SOURCES (GWUDI)

GW-1	Have all groundwater sources been evaluated for GWUDI?	Yes
GW-2	If yes, were all groundwater sources determined to be exempt?	Yes
GW-3	Have conditions changed that would affect the current exemption status of any source? (i.e. setback distance, surface water encroachment, well head condition, coliform detections in last 3 years, etc.)	No

Comments:
GW-2: Well 01G met the greater than150-foot setback to surface water criteria, while all other active wells (02G, 04G, 07G, and 08G) met the exemption criteria based upon two rounds of MPA testing with low-risk results. Inactive Well 03G met the greater than150-foot setback to surface water criteria, while inactive Wells 05G and 06G met the exemption criteria based upon two rounds of MPA testing with low-risk results.

MASTER METERS

M-1	Are all sources individually metered?	Yes
M-2	Are master meters installed at locations sufficient to account for all water supplied/purchased/withdrawn?	Yes
M-3	How frequently are the master meters read?	Daily

Comments:
The meters were most recently calibrated by New England Instrument Service Associates on April 13, 2026.

WATER QUANTITY

Q-1	As reported in the last 3 years ASR, did the PWS exceed its MassDEP-approved withdrawal limit for any source? (If yes, comment)	Yes (NSA) - 22.03(1)(c)
Q-2	If yes, has the water withdrawal resulted in the PWS exceeding Zone I limits? (Comment)	No
Q-3	Is the system properly reporting their water quantity data in their annual statistical reports? (annual, max. month, and max. day)	**No - 22.15(5)**
Q-4	Is the quantity of water supplied adequate?	Yes
Q-5	Are any sources failing to meet their expected output, or does the output from any sources decrease during the year?	No

Comments:
Q-1: Wells 01G, 02G and 04G exceeded their approved daily pumping volume on their maximum day pumped in 2024. The exceedances were as follows: Well 01G pumped 0.244 MG on 6/18/24 (approved volume is 0.176 MGD); Well 02G pumped 0.124 MG on 5/30/24 (approved volume is 0.108 MGD); and Well 04G pumped 0.304 MGD on 6/18/24 (approved rate is 0.288 MGD). LWD reported these temporary exceedances occurred while pilot testing for Well 08G was underway. No exceedances occurred in 2025.
Q-3: LWD supplies finished water to Primo Water @ Hannaford #8388 (PWS #2162001). LWD has a meter at the service connection for Hannaford but does not sub-meter to the vending unit itself; for this reason, LWD has not been reporting a total volume of water sold to PWS #2162001 in the ASR. (Table B)

MassDEP approved a WS19 pumping test report on March 10, 2025, (Record ID: 23-WS19-0003-APP), for a proposed new source known as Wellfield 9. LWD reported during the inspection that this new source, which has an approved pumping rate of 0.42 MGD (291 gpm), was pursued to improve the quality of Well 02G. LWD reported that they do not anticipate moving ahead with construction of this source, which would require MassDEP review and approval of a WS20 application, until or unless a proposed centralized WTP moves forward.

FINISHED WATER PUMPS

None Present ☒

TREATMENT

No Treatment Present ☐

GENERAL TREATMENT QUESTIONS

T-1	Does the PWS have any unapproved treatment processes?	No
T-2	If the PWS uses a bag/cartridge filter, how often is it replaced?	NA
T-3	Are all treatment units being operated and maintained in accordance with MassDEP approvals and performing in accordance with MassDEP approvals?	Yes
T-4	Is the PWS maintaining a log of maintenance for all treatment systems? (e.g., backwashing, sediment, calibration of analyzers)	Yes
T-5	Does a licensed treatment operator perform all treatment-related tasks?	Yes
T-6	Is safety equipment adequate for the treatment system/chemicals present?	Yes
T-7	Are there any unprotected by-passes at any point in the treatment process that could result in fecal contamination (i.e. filter backwash, membrane cleaning processes, etc)? GWR-7	No
T-8	Are all required chemical treatment (C-ADD) forms being submitted?	Yes

T-9	If yes, are the C-ADD forms being completed properly and accurately?	Yes
T-10	For all treatment plants II-T or greater – are they operated full-time (minimum of 4 hours a day)?	NA - I-T or less system
T-11	Is there an operations and maintenance manual for the treatment system(s)?	Yes

Comments:
T-9: Several errors were identified on the C-ADD forms, including but not limited to the following: populating the Measured Chemical Used Weight column instead of Calculated Chemical Used; incorrectly calculating Chemical Dosages; inaccurate Manufacturer reported for NaOCl; and inaccurate alarm setpoints reported. MassDEP provided guidance to LWD on how to correct these issues via email on April 21, 2026. LWD subsequently submitted forms with all requested corrections signed on May 7, 2026.

Lancaster Ave WTP (Station 1): 2162000-01T

Note: Water from Wells 01G, 02G, 04G, and 07G is treated with NaOH at this site. After the wells manifold, the NaOH is injected in a pit on the access road via an individual chemical feed pump for each well that is fed by a shared bulk tank. The NaOH system is separate from the NaOCl system for Well 01G that is also located at this site (2162000-07T).

Treatment Plant General/Safety

TP-1	Is the chemical feed equipment in a separate room?	No - Ch. 6.1.9.1.
TP-2	Is the room properly ventilated?	Yes
TP-3	Are the feed lines, bulk tanks, and day tanks color-coded or labeled?	**No - Ch. 6.1.12 & 6.1.11.1**
TP-4	Is there adequate containment for each chemical?	Yes
TP-5	Safety Equipment: ☒ Eyewash ☒ Shower	
	☒ Hard-piped ☐ Alarm present	
TP-6	Is eyewash bottle solution past expiration date?	NA
TP-7	Is there appropriate safety and personnel protective equipment provided?	Yes
TP-8	Is emergency backup power in place at this treatment plant?	No
TP-9	Does the plant automatically switch to emergency power in the event of power loss?	No
TP-10	Alarms Present? ☐ None *Check all* ☒ Audible ☐ **Alarm Company** ☐ **Cellular Alarm Dialer** ☐ Light ☒ **Tone/Telemetry** ☐ **Cellular-Base System** ☒ **SCADA** ☐ **Autodialer** ☐ Other _____	

TP-11	What is the alarm call-out sequence?	On call operator 2x, then works down the call list until an operator is reached
TP-12	Does automatic (triggered by alarm) shut-down require an "on-site" manual reset?	Yes
TP-13	Are ALL critical chemical alarms and interlocks being tested at least quarterly?	Yes
TP-14	Frequency of alarm and interlock testing for non-critical chemicals (if present):	NA - No Non-Critical Chemicals
TP-15	Is a log being maintained of ALL alarm and interlock test results? (each one must be listed individually)	**No - 22.04(14)(b)5.**
TP-16	Have written protocols been established for testing critical chemical alarms and interlocks?	Yes
TP-17	Have written protocols been established for testing non-critical chemical alarms and interlocks?	NA
TP-18	Has PWS demonstrated compliance with 310 CMR 22.04(14) and *Guidelines* Chapter 6.1.3 requirements for Critical Chemical Feed Systems?	**No - Chp 6.1.3**
TP-19	Has PWS demonstrated compliance with *Guidelines* Chapter 6.1.4 requirements for Non-Critical Chemical Feed Systems?	NA
TP-20	Has this plant had any incidences of critical chemical overfeeds or underfeeds?	No

Comments:
TP-3: The NaOH line in the Station 1 building addition is not clearly labeled. (Table B)
TP-5: MassDEP recommends testing eyewashes and showers quarterly and maintaining a log on site. (Table C)
TP-15: LWD conducts monthly alarm testing and records this information on their Lancaster Ave Well monthly checklist. The checklist does not provide space to clearly identify the date of the alarm testing, which operator conducted the testing, or that alarms sounded and the operator received a callout for each individual alarm. (Table B)

The NaOH injection quill is in a pit in front of Station 1. As the pit is regularly filled with water, LWD pumps the pit out and conducts visual checks of the chemical injection point monthly.

LWD is considering centralizing NaOCl treatment for the Lancaster Ave wells, which would be applied via a single injection quill in the pit in front of Station 1 on the manifolded line, like the NaOH addition. LWD is advised that MassDEP permit approval would be required for such a change in treatment.

Critical Chemical Alarm Testing

Alarm Tested	Alarm Sound?	Call-Out Verified?	Plant Shut Down?	Flow Interlock Verified?	Electrical Interlock Verified?	Comments:
Low-low pH	Yes	Yes	Yes	Yes	Yes	Alarm setpoint changed to 7.8 (from 7.1) for test

Comments:
There is a single inline pH/chlorine residual analyzer in Station 1 for the combined Lancaster Ave wells (Wells 01G, 02G, 04G and 07G). Alarm conditions are triggered based on the combined treated water pH, not that from each individual source. Station 1 alarm testing was conducted while all four Lancaster Ave wells were in operation. Each well has its own flow setpoint that must be reached to activate the associated NaOH feed pump.

Critical Chemical Feed Inspection Checklist

List Chemical Additive:	Sodium hydroxide (NaOH)					Critical Chem - Yes
Injection Point(s):	Manifolded raw water line for wells 01G, 02G, 04G, and 07G (in pit)					
What are the operating parameters?						Target:
☒ pH ☐ Residual ☐ Other _____						Target: 7.6 – 7.7
CC-1	Chemical Feed Automation:	☒ Manual Control ☐ SCADA ☐ Flow paced				
CC-2	Is there a continuous analyzer in place to measure chemical concentration or surrogate in the finished water?					Yes
CC-3	If the PWS has been issued a chemical analyzer waiver are they meeting the conditions of the waiver?					NA - No Waiver
CC-4	What is the operating range of the analyzer?					0 – 14 S.U.
CC-5	How is chemical or surrogate concentration recorded? ☐ **Chart recorder** ☐ **Electronic data logger** ☒ **SCADA** ☒ Log book ☐ Not recorded					
CC-6	Are alarms present on this chemical?					Y/N
CC-7	Alarm Set Points:	High:	8.4	High-High:	8.5	☒ Shut Down
		Low:	7.2	Low-Low:	7.1	☒ Shut Down
CC-8	Are the controller of the pump that paces the chemical injection, chemical metering pump, and chemical analyzer interlocked so that no chemical is injected if the pump is not running.					Yes
CC-9	Is there a flow meter or thermal type flow switch installed and interlocked such that when no flow is detected, the chemical feed pumps will not operate?					Yes

CC-10	Are metering pumps powered so that they cannot be left to operate in manual mode for greater than one hour?	Yes
	If yes, how are they configured? ☐ Hard wiring with electrical interlocks including ☐ HOA switch with timer ☐ Spring loaded HOA switch ☐ Other Connection to a duplex electrical receptacle with twist lock plugs with one plug interlocked with the safety shut down systems and the other having a separate power supply and is controlled with a timer. ☒ Other: Jumper with 15-minute timer	
CC-11	At what frequency are grab samples being taken as a calibration check?	Daily
CC-12	At what frequency is the in-line monitoring device calibrated?	Monthly
CC-13	Is a day tank in use for this chemical?	**No - Ch. 6.1.11.2.3.d**
CC-14	If yes, is the day tank sized to contain a 30 - 60 hour chemical supply at the facility's average treated water demand rate?	NA
CC-15	If yes, is the day tank provided with a means to measure the volume or weight of chemical fed that is precise enough to accurately register daily usage? ☐ Scale mounting ☐ Ultrasonic level sensing ☐ Gauge rods with floats ☐ Visual calibration where the ratio of tank height to diameter are meaningful	NA
CC-16	Is chemical use measured at the same time each day and at the same time as the total water pumped so that accurate dosage calculations are reported?	Yes
CC-17	Are the chemical feed additives ANSI/AWWA and NSF 60 approved?	Yes
CC-18	Are chemicals being used prior to expiration date?	Yes
CC-19	Are spare chemical feeders and/or pumps available that have equivalent capacity to the primary?	No - Chapter 6.1.1
CC-20	Does the chemical feed pump have appropriate anti-siphon protection?	**No - Chapter 6.1.7**
CC-21	Is there sufficient chemical available on-site?	Yes

Comments:
CC-1: Each individual NaOH chemical feed pump has a set injection rate that corresponds to the constant flow rate of the associated well pump; the injection rate is manually adjusted as needed.
CC-13: NaOH is injected directly from the bulk tank. No day tank is used. (Table C)

CC-14: LWD reports the bulk tank is refilled approximately every 3 – 6 weeks depending on the season. CC-15: Daily NaOH use from the bulk tank is measured via an ultrasonic level sensor. CC-19: An LMI pump is used for Well 02G; LWD reports having a spare available at the shop. Neptune pumps are used for Wells 01G, 04G and 07G; while LWD does not have a spare Neptune pump on the shelf, there are spare/replacement parts available on site. As only two wells are routinely operated at a time, if one of these pumps were to fail, LWD could operate one of the other Lancaster Ave wells until a replacement pump was to arrive. CC-20: The LMI pump is equipped with a four-function valve, which provides appropriate anti-siphon protection. However, the Neptune pumps are not equipped with any anti-siphon protection. (Table B)

pH Adjustment - Hydroxide

	Are the pH buffer solutions being used prior to their expiration date?	Yes
	Is the system reporting the average of all pH measurements collected during the day if more than one sample is collected or if continuous monitoring is in place?	Yes
	Is the system maintaining a minimum average pH of 7.0 leaving the treatment plant?	Yes
Comments:		

Keating Well WTP: 2162000-03T

Treatment Plant General/Safety

TP-1	Is the chemical feed equipment in a separate room?	No - Ch. 6.1.9.1.
TP-2	Is the room properly ventilated?	Yes
TP-3	Are the feed lines, bulk tanks, and day tanks color-coded or labeled?	Yes
TP-4	Is there adequate containment for each chemical?	Yes
TP-5	Safety Equipment: ☒ Eyewash ☒ Shower	
	☒ Hard-piped ☒ Alarm present	
TP-6	Is eyewash bottle solution past expiration date?	NA
TP-7	Is there appropriate safety and personnel protective equipment provided?	Yes
TP-8	Is emergency backup power in place at this treatment plant?	Yes
TP-9	Does the plant automatically switch to emergency power in the event of power loss?	Yes

TP-10	Alarms Present? ☐ None *Check all* ☒ Audible ☐ **Alarm Company** ☐ **Cellular Alarm Dialer** ☐ Light ☒ **Tone/Telemetry** ☐ **Cellular-Base System** ☒ **SCADA** ☐ **Autodialer** ☐ Other _____	
TP-11	What is the alarm call-out sequence?	On call operator 2x, then works down the call list until an operator is reached
TP-12	Does automatic (triggered by alarm) shut-down require an "on-site" manual reset?	Yes
TP-13	Are ALL critical chemical alarms and interlocks being tested at least quarterly?	Yes
TP-14	Frequency of alarm and interlock testing for non-critical chemicals (if present):	NA - No Non-Critical Chemicals
TP-15	Is a log being maintained of ALL alarm and interlock test results? (each one must be listed individually)	**No - 22.04(14)(b)5.**
TP-16	Have written protocols been established for testing critical chemical alarms and interlocks?	**Yes - Need Updated**
TP-17	Have written protocols been established for testing non-critical chemical alarms and interlocks?	NA
TP-18	Has PWS demonstrated compliance with 310 CMR 22.04(14) and *Guidelines* Chapter 6.1.3 requirements for Critical Chemical Feed Systems?	**No - Chp 6.1.3**
TP-19	Has PWS demonstrated compliance with *Guidelines* Chapter 6.1.4 requirements for Non-Critical Chemical Feed Systems?	NA
TP-20	Has this plant had any incidences of critical chemical overfeeds or underfeeds?	No

Comments:

TP-5: MassDEP recommends testing eyewashes and showers quarterly and maintaining a log on site. (Table C)

TP-13 & TP-15: LWD conducts monthly alarm testing and records this information on their Keating Well monthly checklist. The checklist simply includes a column for "Alarm interlock" which is being populated with the word "called"; space is not provided to clearly identify which alarm setpoint was tested, the date of the testing, which operator conducted the testing, whether alarms sounded, if the WTP shut down or whether a callout was received. (Table B)

TP-16: The existing NaOH alarm testing SOP references a high pH alarm setpoint of 9.2, which is not the setpoint in use, and does not include testing of the low pH alarm. (Table A)

Critical Chemical Alarm Testing

Alarm Tested	Alarm Sound?	Call-Out Verified?	Plant Shut Down?	Flow Interlock Verified?	Electrical Interlock Verified?	Comments:
High pH	Yes	Yes	Yes	Yes	Yes	Alarm setpoint changed to 7.1 (from 8.5) for test
Comments:						

Critical Chemical Feed Inspection Checklist

List Chemical Additive:	Sodium hydroxide (NaOH)				Critical Chem - Yes	
Injection Point(s):	Post-inline high head pumps					
What are the operating parameters?					Target:	
☒ pH ☐ Residual ☐ Other _____					Target: 7.0 – 7.2	
CC-1	Chemical Feed Automation:	☐ Manual Control ☐ SCADA ☒ Flow paced				
CC-2	Is there a continuous analyzer in place to measure chemical concentration or surrogate in the finished water?				Yes	
CC-3	If the PWS has been issued a chemical analyzer waiver are they meeting the conditions of the waiver?				NA - No Waiver	
CC-4	What is the operating range of the analyzer?	0 – 14 S.U.				
CC-5	How is chemical or surrogate concentration recorded? ☐ **Chart recorder** ☐ **Electronic data logger** ☒ **SCADA** ☒ Log book ☐ Not recorded					
CC-6	Are alarms present on this chemical?				Yes	
CC-7	Alarm Set Points:	High:	8.2	High-High:	8.5	☒ Shut Down
		Low:	7.0	Low-Low:	6.9	☒ Shut Down
CC-8	Are the controller of the pump that paces the chemical injection, chemical metering pump, and chemical analyzer interlocked so that no chemical is injected if the pump is not running.				Yes	
CC-9	Is there a flow meter or thermal type flow switch installed and interlocked such that when no flow is detected, the chemical feed pumps will not operate?				Yes	
CC-10	Are metering pumps powered so that they cannot be left to operate in manual mode for greater than one hour?				Yes	

	If yes, how are they configured? ☒ Hard wiring with electrical interlocks including ☒ HOA switch with timer ☐ Spring loaded HOA switch ☐ Other Connection to a duplex electrical receptacle with twist lock plugs with one plug interlocked with the safety shut down systems and the other having a separate power supply and is controlled with a timer. ☐ Other _____	
CC-11	At what frequency are grab samples being taken as a calibration check?	Daily
CC-12	At what frequency is the in-line monitoring device calibrated?	Monthly
CC-13	Is a day tank in use for this chemical?	Yes
CC-14	If yes, is the day tank sized to contain a 30 - 60 hour chemical supply at the facility's average treated water demand rate?	Yes
CC-15	If yes, is the day tank provided with a means to measure the volume or weight of chemical fed that is precise enough to accurately register daily usage? ☐ Scale mounting ☐ Ultrasonic level sensing ☐ Gauge rods with floats ☐ Visual calibration where the ratio of tank height to diameter are meaningful	No - Ch. 6.1.11.3.3
CC-16	Is chemical use measured at the same time each day and at the same time as the total water pumped so that accurate dosage calculations are reported?	Yes
CC-17	Are the chemical feed additives ANSI/AWWA and NSF 60 approved?	Yes
CC-18	Are chemicals being used prior to expiration date?	Yes
CC-19	Are spare chemical feeders and/or pumps available that have equivalent capacity to the primary?	Yes
CC-20	Does the chemical feed pump have appropriate anti-siphon protection?	**No - Chapter 6.1.7**
CC-21	Is there sufficient chemical available on-site?	Yes

Comments:
Well 08G has very hard water (average of 233 mg/L as CaCO3) and has been observed to deposit calcium post-pH adjustment; for this reason, the target pH has an upper limit of 7.2.
CC-15: A calibration column, rather than the day tank, is used to measure daily NaOH usage.

pH Adjustment - Hydroxide

	Are the pH buffer solutions being used prior to their expiration date?	Yes
	Is the system reporting the average of all pH measurements collected during the day if more than one sample is collected or if continuous monitoring is in place?	Yes
	Is the system maintaining a minimum average pH of 7.0 leaving the treatment plant?	Yes
Comments:		

Ultraviolet (UV) Disinfection

List UV application type: *(ex. disinfection for coliform, aeration).*	Voluntary disinfection

UV reactor operating parameters:	UVT% Target: 95% Max flow (gpm): 1500 Dosage Target: ☐ 40 mJ/cm2 ☒ Other 42 mJ/cm2)	
UV-1	Does the UV reactor have a numerical intensity meter display?	Yes
UV-2	If yes, is the Water Supplier submitting the monthly UV-A form detailing the daily volume of water treated and a daily intensity reading?	Yes
UV-3	If there is extended no-flow periods and fixtures are located a short distance downstream of the unit, does the UV unit shutdown between operating cycles to prevent heat build-up in the water due to the UV lamp? [Recommended]	Yes
UV-4	Are alarms present on the UV unit?	Yes
UV-5	If yes, If the UV reactor is installed in an area that is normally unattended (i.e., basement, utility room, etc.) is an audible or visual alarm located in an area that is occupied by personnel familiar with the alarm and the procedures to report the alarm?	NA
UV-6	Does the unit shut down when the following occurs? (1) The UV intensity monitor indicates that insufficient UV light is reaching the sensor. (2) Lamp or ballast failure (3) Mechanical wiper failure (if applicable) (4) The hour meter indicates that the useful life of the bulb as recommended by the manufacturer has expired. (5) High reactor temperature	Yes
UV-7	Does the UV have an electrical interlock such that it will automatically stop water flow in the event of a power failure and/or voltage interruption?	Yes
UV-8	Is the UV reactor equipped with an early warning alarm for both the intensity meter and hour meter, to notify the operator when either the minimum	Yes

	design dosage or the useful life of the bulb is within 10% of the shut down set points?	
UV-9	If the UV water treatment device is operated on a seasonal basis, is it inspected and cleaned prior to use at the start of each operating season?	NA - Not Seasonal
UV-10	Are records regarding routine equipment calibration and maintenance available and maintained at the treatment facility?	Yes
UV-11	Are they performing the minimum maintenance procedures? (1) The duty sensor shall be checked against the reference sensor at least every six months (if applicable). (2) The quartz sleeve shall be checked every month and cleaned/replaced as necessary. (3) The lamps shall be replaced at least every year. (4) Quartz sleeves shall be replaced every 5 years.	Yes
UV-12	Is an O&M manual available that addresses the following maintenance activities? (1) Procedures for routine cleaning of the quartz sleeve and sensor window (manual or automatic sleeve cleaning, with or without chemicals) (2) Procedures and recommended frequency for calibrating the intensity meter for proper Intensity. (3) Procedures and recommended frequency of UV transmittance monitor calibration (4) Procedures for changing lamps, sleeves, and sensors (5) Procedures and recommended frequency of sensor calibration (6) Procedures and recommended frequency of dedicated flow meter calibration (7) Guidance on the proper care and handling of lamps to prevent injury and lamp breakage (8) Method of lamp disposal (9) Procedures for storage and disposal of quartz sleeve cleaning chemicals. (if using chemical cleaning method) (10) Emergency procedures should a lamp break while in service	Yes
UV-13	Does the O&M (or ERP) describe the actions required to insure the delivery of treated water in the event of a failure of the UV reactor?	No - Ch 5.4.6.9.d
Comments: UV-13: As this treatment is voluntary, no action is required for a failed UV reactor.		

Ultraviolet (UV) Disinfection - Sunny Hill Tank UV Unit (2162000-04T)

List UV application type: *(ex. disinfection for coliform, aeration).*	Voluntary disinfection

UV reactor operating parameters:	UVT% Target: NA; set to 95% Max flow (gpm): 2000 Dosage Target: ☒ 40 mJ/cm2 ☐ Other: ____ mJ/cm2)	
UV-1	Does the UV reactor have a numerical intensity meter display?	Yes
UV-2	If yes, is the Water Supplier submitting the monthly UV-A form detailing the daily volume of water treated and a daily intensity reading?	Yes
UV-3	If there is extended no-flow periods and fixtures are located a short distance downstream of the unit, does the UV unit shutdown between operating cycles to prevent heat build-up in the water due to the UV lamp? [Recommended]	Yes
UV-4	Are alarms present on the UV unit?	Yes
UV-5	If yes, If the UV reactor is installed in an area that is normally unattended (i.e., basement, utility room, etc.) is an audible or visual alarm located in an area that is occupied by personnel familiar with the alarm and the procedures to report the alarm?	NA
UV-6	Does the unit shut down when the following occurs? (1) The UV intensity monitor indicates that insufficient UV light is reaching the sensor. (2) Lamp or ballast failure (3) Mechanical wiper failure (if applicable) (4) The hour meter indicates that the useful life of the bulb as recommended by the manufacturer has expired. (5) High reactor temperature	Yes
UV-7	Does the UV have an electrical interlock such that it will automatically stop water flow in the event of a power failure and/or voltage interruption?	Yes
UV-8	Is the UV reactor equipped with an early warning alarm for both the intensity meter and hour meter, to notify the operator when either the minimum design dosage or the useful life of the bulb is within 10% of the shut down set points?	Yes
UV-9	If the UV water treatment device is operated on a seasonal basis, is it inspected and cleaned prior to use at the start of each operating season?	NA - Not Seasonal
UV-10	Are records regarding routine equipment calibration and maintenance available and maintained at the treatment facility?	Yes
UV-11	Are they performing the minimum maintenance procedures? (1) The duty sensor shall be checked against the reference sensor at least every six months (if applicable). (2) The quartz sleeve shall be checked every month and cleaned/replaced as necessary. (3) The lamps shall be replaced at least every year. (4) Quartz sleeves shall be replaced every 5 years.	Yes
UV-12	Is an O&M manual available that addresses the following maintenance activities?	Yes

	(1) Procedures for routine cleaning of the quartz sleeve and sensor window (manual or automatic sleeve cleaning, with or without chemicals) (2) Procedures and recommended frequency for calibrating the intensity meter for proper Intensity. (3) Procedures and recommended frequency of UV transmittance monitor calibration (4) Procedures for changing lamps, sleeves, and sensors (5) Procedures and recommended frequency of sensor calibration (6) Procedures and recommended frequency of dedicated flow meter calibration (7) Guidance on the proper care and handling of lamps to prevent injury and lamp breakage (8) Method of lamp disposal (9) Procedures for storage and disposal of quartz sleeve cleaning chemicals. (if using chemical cleaning method) (10) Emergency procedures should a lamp break while in service	
UV-13	Does the O&M (or ERP) describe the actions required to insure the delivery of treated water in the event of a failure of the UV reactor?	No - Ch 5.4.6.9.d

Comments:
The UV unit only operates when there is a flow rate of 20 gpm or greater into or out of the Sunny Hill storage tank.
UV-2: LWD reports the average daily dosage in mj/cm^2 from SCADA on the UV-A form, rather than the daily minimum.
UV-13: As this treatment is voluntary, no action is required for a failed UV reactor.

Lancaster Ave Well 07G (Station 5): 2162000-05T

Treatment Plant General/Safety

TP-1	Is the chemical feed equipment in a separate room?	No - Ch. 6.1.9.1.
TP-2	Is the room properly ventilated?	Yes
TP-3	Are the feed lines, bulk tanks, and day tanks color-coded or labeled?	**No - Ch. 6.1.12 & 6.1.11.1**
TP-4	Is there adequate containment for each chemical?	Yes
TP-5	Safety Equipment: ☒ Eyewash ☐ Shower	
	☐ Hard-piped ☐ Alarm present	
TP-6	Is eyewash bottle solution past expiration date?	No
TP-7	Is there appropriate safety and personnel protective equipment provided?	Yes

TP-8	Is emergency backup power in place at this treatment plant?	Yes
TP-9	Does the plant automatically switch to emergency power in the event of power loss?	No
TP-10	Alarms Present? ☐ None *Check all* ☒ Audible ☐ **Alarm Company** ☐ **Cellular Alarm Dialer** ☐ Light ☒ **Tone/Telemetry** ☐ **Cellular-Base System** ☒ **SCADA** ☐ **Autodialer** ☐ Other _____	
TP-11	What is the alarm call-out sequence?	On call operator 2x, then works down the call list until an operator is reached
TP-12	Does automatic (triggered by alarm) shut-down require an "on-site" manual reset?	Yes
TP-13	Are ALL critical chemical alarms and interlocks being tested at least quarterly?	**No - 22.04(14)(b)4.c.**
TP-14	Frequency of alarm and interlock testing for non-critical chemicals (if present):	NA - No Non-Critical Chemicals
TP-15	Is a log being maintained of ALL alarm and interlock test results? (each one must be listed individually)	**No - 22.04(14)(b)5.**
TP-16	Have written protocols been established for testing critical chemical alarms and interlocks?	**No - 22.04(14)(b)6.**
TP-17	Have written protocols been established for testing non-critical chemical alarms and interlocks?	NA
TP-18	Has PWS demonstrated compliance with 310 CMR 22.04(14) and *Guidelines* Chapter 6.1.3 requirements for Critical Chemical Feed Systems?	**No - Chp 6.1.3**
TP-19	Has PWS demonstrated compliance with *Guidelines* Chapter 6.1.4 requirements for Non-Critical Chemical Feed Systems?	NA
TP-20	Has this plant had any incidences of critical chemical overfeeds or underfeeds?	No

Comments:
TP-3: The sodium hypochlorite label on the day tank is very faded and the chemical injection line is not labeled. (Table B)
TP-12: For an NaOCl-related alarm shutdown condition, the manual reset button at Station 1 must be used.
TP-13 & TP-15: LWD is not conducting any quarterly alarm/interlock testing of the NaOCl feed systems for the Lancaster Ave Wells. While the sources share a common inline chlorine analyzer with common alarm setpoints, the interlocks for each well must be tested quarterly while the well is in operation. (Table A)

Critical Chemical Alarm Testing

Alarm Tested	Alarm Sound?	Call-Out Verified?	Plant Shut Down?	Flow Interlock Verified?	Electrical Interlock Verified?	Comments:
See 07T checklist *	*	*	*	*	*	

Comments:
There is a single inline pH/chlorine residual analyzer in Station 1 for the combined Lancaster Ave wells (Wells 01G, 02G, 04G and 07G). Alarm conditions are triggered based on the combined treated water chlorine residual, not that from each individual source. Station 1 alarm testing was conducted while all four Lancaster Ave wells were in operation.

Critical Chemical Feed Inspection Checklist

List Chemical Additive:	Sodium hypochlorite (NaOCl)				Critical Chem - Yes	
Injection Point(s):	07G raw water line in Station 5 (prior to manifold with 01G, 02G & 04G)					
What are the operating parameters?					Target: Cl residual	
☐ pH ☒ Residual ☐ Other _____					Target: 0.2 – 0.3 mg/L	
CC-1	Chemical Feed Automation:	☒ Manual Control ☐ SCADA ☐ Flow paced				
CC-2	Is there a continuous analyzer in place to measure chemical concentration or surrogate in the finished water?				Yes	
CC-3	If the PWS has been issued a chemical analyzer waiver are they meeting the conditions of the waiver?				NA - No Waiver	
CC-4	What is the operating range of the analyzer?	0 – 20 mg/L				
CC-5	How is chemical or surrogate concentration recorded? ☐ **Chart recorder** ☐ **Electronic data logger** ☒ **SCADA** ☒ Log book ☐ Not recorded					
CC-6	Are alarms present on this chemical?				Yes	
CC-7	Alarm Set Points:	High:	2.5	High-High:		☒ Shut Down
		Low:	**-0.01**	Low-Low:		☐ Shut Down
CC-8	Are the controller of the pump that paces the chemical injection, chemical metering pump, and chemical analyzer interlocked so that no chemical is injected if the pump is not running.				Yes	
CC-9	Is there a flow meter or thermal type flow switch installed and interlocked such that when no flow is detected, the chemical feed pumps will not operate?				Yes	

CC-10	Are metering pumps powered so that they cannot be left to operate in manual mode for greater than one hour?	Yes
	If yes, how are they configured? ☐ Hard wiring with electrical interlocks including ☐ HOA switch with timer ☐ Spring loaded HOA switch ☐ Other Connection to a duplex electrical receptacle with twist lock plugs with one plug interlocked with the safety shut down systems and the other having a separate power supply and is controlled with a timer. ☒ Other: Jumper with 15-minute timer	
CC-11	At what frequency are grab samples being taken as a calibration check?	Daily
CC-12	At what frequency is the in-line monitoring device calibrated?	Monthly
CC-13	Is a day tank in use for this chemical?	Yes
CC-14	If yes, is the day tank sized to contain a 30 - 60 hour chemical supply at the facility's average treated water demand rate?	Yes
CC-15	If yes, is the day tank provided with a means to measure the volume or weight of chemical fed that is precise enough to accurately register daily usage? ☐ Scale mounting ☐ Ultrasonic level sensing ☐ Gauge rods with floats ☐ Visual calibration where the ratio of tank height to diameter are meaningful	No - Ch. 6.1.11.3.3
CC-16	Is chemical use measured at the same time each day and at the same time as the total water pumped so that accurate dosage calculations are reported?	Yes
CC-17	Are the chemical feed additives ANSI/AWWA and NSF 60 approved?	Yes
CC-18	Are chemicals being used prior to expiration date?	Yes
CC-19	Are spare chemical feeders and/or pumps available that have equivalent capacity to the primary?	Yes
CC-20	Does the chemical feed pump have appropriate anti-siphon protection?	Yes
CC-21	Is there sufficient chemical available on-site?	Yes

Comments:
CC-1: The chemical feed pump has a set injection rate that corresponds to the constant flow rate of Wellfield 07G; the injection rate is manually adjusted as needed.

CC-7: At the time of the inspection, the low chlorine alarm setpoint was -0.01 mg/l. As this value is outside the operating range of the instrument, it would never trigger an alarm condition. (Table C)
CC-11: Station 5 is equipped with a 100-foot sample tap for Wellfield 07G chlorinated water. When 07G is in operation, a daily chlorine residual grab sample is collected from this 100-foot tap as well as from the Lancaster Ave wells combined tap at Station 1.
CC-14: LWD reports the day tank is topped off weekly. As the station is operated on a timer and only runs as needed based on the level in the Chase Road Storage Tank, it may only operate 30-60 hours over the course of a week.
CC-15: A calibration column, rather than the day tank, is used to measure daily NaOCl usage.
CC-20: The chemical feed pump is equipped with a multi-function valve.

Hypochlorination

	Is the feed rate adjusted as needed to compensate for chlorine degradation in the bulk chemical?	NA
	Is the hypochlorite used within a few weeks of manufacture to minimize the potential for perchlorate formation?	Yes
	Does the system use a digital chlorine analyzer utilizing the DPD colorimetric method with a self-contained light source to analyze grab samples?	Yes
	Does the chlorinator have sufficient capacity that a free chlorine residual of at least 2 mg/L can be achieved at maximum flow rate?	Yes
Comments: LWD reports no issues with chlorine degradation.		

Lancaster Ave Well 02G (Station 2): 2162000-06T

Treatment Plant General/Safety

TP-1	Is the chemical feed equipment in a separate room?	No - Ch. 6.1.9.1.
TP-2	Is the room properly ventilated?	Yes
TP-3	Are the feed lines, bulk tanks, and day tanks color-coded or labeled?	**No - Ch. 6.1.12 & 6.1.11.1**
TP-4	Is there adequate containment for each chemical?	Yes
TP-5	Safety Equipment: ☒ Eyewash ☐ Shower	
	☐ Hard-piped ☐ Alarm present	
TP-6	Is eyewash bottle solution past expiration date?	No
TP-7	Is there appropriate safety and personnel protective equipment provided?	Yes

TP-8	Is emergency backup power in place at this treatment plant?	No
TP-9	Does the plant automatically switch to emergency power in the event of power loss?	No
TP-10	Alarms Present? ☐ None *Check all* ☒ Audible ☐ **Alarm Company** ☐ **Cellular Alarm Dialer** ☐ Light ☒ **Tone/Telemetry** ☐ **Cellular-Base System** ☒ **SCADA** ☐ **Autodialer** ☐ Other _____	
TP-11	What is the alarm call-out sequence?	On call operator 2x, then works down the call list until an operator is reached
TP-12	Does automatic (triggered by alarm) shut-down require an "on-site" manual reset?	Yes
TP-13	Are ALL critical chemical alarms and interlocks being tested at least quarterly?	**No - 22.04(14)(b)4.c.**
TP-14	Frequency of alarm and interlock testing for non-critical chemicals (if present):	NA - No Non-Critical Chemicals
TP-15	Is a log being maintained of ALL alarm and interlock test results? (each one must be listed individually)	**No - 22.04(14)(b)5.**
TP-16	Have written protocols been established for testing critical chemical alarms and interlocks?	**No - 22.04(14)(b)6.**
TP-17	Have written protocols been established for testing non-critical chemical alarms and interlocks?	NA
TP-18	Has PWS demonstrated compliance with 310 CMR 22.04(14) and *Guidelines* Chapter 6.1.3 requirements for Critical Chemical Feed Systems?	**No - Chp 6.1.3**
TP-19	Has PWS demonstrated compliance with *Guidelines* Chapter 6.1.4 requirements for Non-Critical Chemical Feed Systems?	NA
TP-20	Has this plant had any incidences of critical chemical overfeeds or underfeeds?	No

Comments:
TP-3: The sodium hypochlorite label on the day tank is faded and the chemical injection line is not labeled. (Table B)
TP-12: For an NaOCl-related alarm shutdown condition, the manual reset button at Station 1 must be used.
TP-13 & TP-15: LWD is not conducting any quarterly alarm/interlock testing of the NaOCl feed systems for the Lancaster Ave Wells. While the sources share a common inline chlorine analyzer with common alarm setpoints, the interlocks for each well must be tested quarterly while the well is in operation. (Table A)

Critical Chemical Alarm Testing

Alarm Tested	Alarm Sound?	Call-Out Verified?	Plant Shut Down?	Flow Interlock Verified?	Electrical Interlock Verified?	Comments:
See 07T checklist *	*	*	*	*	*	

Comments:
There is a single inline pH/chlorine residual analyzer in Station 1 for the combined Lancaster Ave wells (Wells 01G, 02G, 04G and 07G). Alarm conditions are triggered based on the combined treated water chlorine residual, not that from each individual source. Station 1 alarm testing was conducted while all four Lancaster Ave wells were in operation.

Critical Chemical Feed Inspection Checklist

List Chemical Additive:	Sodium hypochlorite (NaOCl)				Critical Chem - Yes	
Injection Point(s):	02G raw water line in Station 2 (prior to manifold with 01G, 04G & 07G)					
What are the operating parameters?					Target: Cl residual	
☐ pH ☒ Residual ☐ Other _____					Target: 0.2 – 0.3 mg/L	
CC-1	Chemical Feed Automation:	☒ Manual Control ☐ SCADA ☐ Flow paced				
CC-2	Is there a continuous analyzer in place to measure chemical concentration or surrogate in the finished water?				Yes	
CC-3	If the PWS has been issued a chemical analyzer waiver are they meeting the conditions of the waiver?				NA - No Waiver	
CC-4	What is the operating range of the analyzer?		0 – 20 mg/L			
CC-5	How is chemical or surrogate concentration recorded? ☐ **Chart recorder** ☐ **Electronic data logger** ☒ **SCADA** ☒ Log book ☐ Not recorded					
CC-6	Are alarms present on this chemical?				Yes	
CC-7	Alarm Set Points:	High:	2.5	High-High:		☒ Shut Down
		Low:	**-0.01**	Low-Low:		☐ Shut Down
CC-8	Are the controller of the pump that paces the chemical injection, chemical metering pump, and chemical analyzer interlocked so that no chemical is injected if the pump is not running.				Yes	
CC-9	Is there a flow meter or thermal type flow switch installed and interlocked such that when no flow is detected, the chemical feed pumps will not operate?				Yes	

CC-10	Are metering pumps powered so that they cannot be left to operate in manual mode for greater than one hour?	Yes
	If yes, how are they configured? ☐ Hard wiring with electrical interlocks including ☐ HOA switch with timer ☐ Spring loaded HOA switch ☐ Other Connection to a duplex electrical receptacle with twist lock plugs with one plug interlocked with the safety shut down systems and the other having a separate power supply and is controlled with a timer. ☒ Other Jumper with 15-minute timer	
CC-11	At what frequency are grab samples being taken as a calibration check?	Daily
CC-12	At what frequency is the in-line monitoring device calibrated?	Monthly
CC-13	Is a day tank in use for this chemical?	Yes
CC-14	If yes, is the day tank sized to contain a 30 - 60 hour chemical supply at the facility's average treated water demand rate?	Yes
CC-15	If yes, is the day tank provided with a means to measure the volume or weight of chemical fed that is precise enough to accurately register daily usage? ☐ Scale mounting ☐ Ultrasonic level sensing ☐ Gauge rods with floats ☐ Visual calibration where the ratio of tank height to diameter are meaningful	No - Ch. 6.1.11.3.3
CC-16	Is chemical use measured at the same time each day and at the same time as the total water pumped so that accurate dosage calculations are reported?	Yes
CC-17	Are the chemical feed additives ANSI/AWWA and NSF 60 approved?	Yes
CC-18	Are chemicals being used prior to expiration date?	Yes
CC-19	Are spare chemical feeders and/or pumps available that have equivalent capacity to the primary?	Yes
CC-20	Does the chemical feed pump have appropriate anti-siphon protection?	Yes
CC-21	Is there sufficient chemical available on-site?	Yes

Comments:
CC-1: The chemical feed pump has a set injection rate that corresponds to the constant flow rate of Well 02G; the injection rate is manually adjusted as needed.

CC-7: At the time of the inspection, the low chlorine alarm setpoint was -0.01 mg/l. As this value is outside the operating range of the instrument, it would never trigger an alarm condition. (Table C) CC-11: Daily chlorine residual grab samples are collected from the Lancaster Ave wells combined tap at Station 1. CC-14: LWD reports the day tank is topped off every two weeks. CC-15: A calibration column, rather than the day tank, is used to measure daily NaOCl usage. CC-20: The chemical feed pump is equipped with a multi-function valve.

Hypochlorination

	Is the feed rate adjusted as needed to compensate for chlorine degradation in the bulk chemical?	NA
	Is the hypochlorite used within a few weeks of manufacture to minimize the potential for perchlorate formation?	Yes
	Does the system use a digital chlorine analyzer utilizing the DPD colorimetric method with a self-contained light source to analyze grab samples?	Yes
	Does the chlorinator have sufficient capacity that a free chlorine residual of at least 2 mg/L can be achieved at maximum flow rate?	Yes
Comments: LWD reports no issues with chlorine degradation.		

Lancaster Ave Well 01G (Station 1): 2162000-07T

Note: The NaOCl system for Well 01G is separate from the NaOH system which treats water from Wells 01G, 02G, 04G, and 07G that is also located at this site (2162000-01T). The NaOCl bulk tank and feed pump are in the building addition while chemical is injected in a pit on the access road prior to where the four wells manifold.

Treatment Plant General/Safety

TP-1	Is the chemical feed equipment in a separate room?	No - Ch. 6.1.9.1.
TP-2	Is the room properly ventilated?	Yes
TP-3	Are the feed lines, bulk tanks, and day tanks color-coded or labeled?	**No - Ch. 6.1.12 & 6.1.11.1**
TP-4	Is there adequate containment for each chemical?	Yes
TP-5	Safety Equipment: ☒ Eyewash ☐ Shower	
	☐ Hard-piped ☐ Alarm present	
TP-6	Is eyewash bottle solution past expiration date?	No

TP-7	Is there appropriate safety and personnel protective equipment provided?	Yes
TP-8	Is emergency backup power in place at this treatment plant?	No
TP-9	Does the plant automatically switch to emergency power in the event of power loss?	No
TP-10	Alarms Present? ☐ None *Check all* ☒ Audible ☐ **Alarm Company** ☐ **Cellular Alarm Dialer** ☐ Light ☒ **Tone/Telemetry** ☐ **Cellular-Base System** ☒ **SCADA** ☐ **Autodialer** ☐ Other _____	
TP-11	What is the alarm call-out sequence?	On call operator 2x, then works down the call list until an operator is reached
TP-12	Does automatic (triggered by alarm) shut-down require an "on-site" manual reset?	Yes
TP-13	Are ALL critical chemical alarms and interlocks being tested at least quarterly?	**No - 22.04(14)(b)4.c.**
TP-14	Frequency of alarm and interlock testing for non-critical chemicals (if present):	NA - No Non-Critical Chemicals
TP-15	Is a log being maintained of ALL alarm and interlock test results? (each one must be listed individually)	**No - 22.04(14)(b)5.**
TP-16	Have written protocols been established for testing critical chemical alarms and interlocks?	**No - 22.04(14)(b)6.**
TP-17	Have written protocols been established for testing non-critical chemical alarms and interlocks?	NA
TP-18	Has PWS demonstrated compliance with 310 CMR 22.04(14) and *Guidelines* Chapter 6.1.3 requirements for Critical Chemical Feed Systems?	**No - Chp 6.1.3**
TP-19	Has PWS demonstrated compliance with *Guidelines* Chapter 6.1.4 requirements for Non-Critical Chemical Feed Systems?	NA
TP-20	Has this plant had any incidences of critical chemical overfeeds or underfeeds?	No

Comments:

TP-3: The NaOCl line in the Station 1 building addition is not clearly labeled and the NaOCl injection line/quill in the pit is not labeled. (Table B)

TP-13 & TP-15: LWD is not conducting any quarterly alarm/interlock testing of the NaOCl feed systems for the Lancaster Ave Wells. While the sources share a common inline chlorine analyzer with common alarm setpoints, the interlocks for each well must be tested quarterly while the well is in operation. (Table A)

Critical Chemical Alarm Testing

Alarm Tested	Alarm Sound?	Call-Out Verified?	Plant Shut Down?	Flow Interlock Verified?	Electrical Interlock Verified?	Comments:
High chlorine	Yes	Yes	Yes	Yes	Yes	Alarm setpoint changed to 0.1 (from 2.5) for test

Comments:
There is a single inline pH/chlorine residual analyzer in Station 1 for the combined Lancaster Ave wells (Wells 01G, 02G, 04G and 07G). Alarm conditions are triggered based on the combined treated water chlorine residual, not that from each individual source. Station 1 alarm testing was conducted while all four Lancaster Ave wells were in operation.

Critical Chemical Feed Inspection Checklist

List Chemical Additive:	Sodium hypochlorite (NaOCl)					Critical Chem - Yes
Injection Point(s):	01G raw water line prior to manifold with 02G, 04G & 07G					
What are the operating parameters?						Target: Cl residual
☐ pH ☒ Residual ☐ Other _____						Target: 0.2 – 0.3 mg/L
CC-1	Chemical Feed Automation:	☒ Manual Control ☐ SCADA ☐ Flow paced				
CC-2	Is there a continuous analyzer in place to measure chemical concentration or surrogate in the finished water?					Yes
CC-3	If the PWS has been issued a chemical analyzer waiver are they meeting the conditions of the waiver?					NA - No Waiver
CC-4	What is the operating range of the analyzer?		0 – 20 mg/L			
CC-5	How is chemical or surrogate concentration recorded? ☐ **Chart recorder** ☐ **Electronic data logger** ☒ **SCADA** ☒ Log book ☐ Not recorded					
CC-6	Are alarms present on this chemical?					Yes
CC-7	Alarm Set Points:	High:	2.5	High-High:		☒ Shut Down
		Low:	**-0.01**	Low-Low:		☐ Shut Down
CC-8	Are the controller of the pump that paces the chemical injection, chemical metering pump, and chemical analyzer interlocked so that no chemical is injected if the pump is not running.					Yes
CC-9	Is there a flow meter or thermal type flow switch installed and interlocked such that when no flow is detected, the chemical feed pumps will not operate?					Yes

CC-10	Are metering pumps powered so that they cannot be left to operate in manual mode for greater than one hour?	Yes
	If yes, how are they configured? ☐ Hard wiring with electrical interlocks including ☐ HOA switch with timer ☐ Spring loaded HOA switch ☐ Other Connection to a duplex electrical receptacle with twist lock plugs with one plug interlocked with the safety shut down systems and the other having a separate power supply and is controlled with a timer. ☒ Other: Jumper with 15-minute timer	
CC-11	At what frequency are grab samples being taken as a calibration check?	Daily
CC-12	At what frequency is the in-line monitoring device calibrated?	Monthly
CC-13	Is a day tank in use for this chemical?	Yes
CC-14	If yes, is the day tank sized to contain a 30 - 60 hour chemical supply at the facility's average treated water demand rate?	Yes
CC-15	If yes, is the day tank provided with a means to measure the volume or weight of chemical fed that is precise enough to accurately register daily usage? ☐ Scale mounting ☐ Ultrasonic level sensing ☐ Gauge rods with floats ☐ Visual calibration where the ratio of tank height to diameter are meaningful	No - Ch. 6.1.11.3.3
CC-16	Is chemical use measured at the same time each day and at the same time as the total water pumped so that accurate dosage calculations are reported?	Yes
CC-17	Are the chemical feed additives ANSI/AWWA and NSF 60 approved?	Yes
CC-18	Are chemicals being used prior to expiration date?	Yes
CC-19	Are spare chemical feeders and/or pumps available that have equivalent capacity to the primary?	Yes
CC-20	Does the chemical feed pump have appropriate anti-siphon protection?	Yes
CC-21	Is there sufficient chemical available on-site?	Yes

Comments:
CC-1: The chemical feed pump has a set injection rate that corresponds to the constant flow rate of Well 01G; the injection rate is manually adjusted as needed.

CC-7: At the time of the inspection, the low chlorine alarm setpoint was -0.01 mg/l. As this value is outside the operating range of the instrument, it would never trigger an alarm condition. (Table C)
CC-11: Daily chlorine residual grab samples are collected from the Lancaster Ave wells combined tap at Station 1.
CC-14: LWD reports the day tank is topped off weekly. As the station is operated on a timer and only runs as needed based on the level in the Chase Road Storage Tank, it may only operate 30-60 hours over the course of a week.
CC-15: A calibration column, rather than the day tank, is used to measure daily NaOCl usage.
CC-20: The chemical feed pump is equipped with a multi-function valve.

Hypochlorination

	Is the feed rate adjusted as needed to compensate for chlorine degradation in the bulk chemical?	NA
	Is the hypochlorite used within a few weeks of manufacture to minimize the potential for perchlorate formation?	Yes
	Does the system use a digital chlorine analyzer utilizing the DPD colorimetric method with a self-contained light source to analyze grab samples?	Yes
	Does the chlorinator have sufficient capacity that a free chlorine residual of at least 2 mg/L can be achieved at maximum flow rate?	Yes
Comments: LWD reports no issues with chlorine degradation.		

TREATMENT TECHNIQUE GWR

TT-1	Are any sources 4-log certified?	No
TT-2	If any sources are 4-log certified under the GWR, is the PWS operating, maintaining, and monitoring its disinfection process to ensure the required 4-log treatment is achieved? (If using a continuous chlorine analyzer, this includes collecting grab samples to calibrate the analyzer a minimum of once every 5 days.) GWR-8	NA
TT-3	If any sources are 4-log certified under the GWR, is the PWS operating, maintaining, and monitoring its membrane process to ensure the required 4-log treatment is achieved? (Includes monitoring membrane integrity and ensuring no loss of membrane integrity.) GWR-9	NA
TT-4	If any sources are 4-log certified under the GWR, are the GWR compliance monitoring forms submitted correctly?	NA
TT-5	Are there any unaddressed GWR significant deficiencies from previous surveys? (If yes, refer to “Outstanding Actions” section)	No
TT-6	Has a GWR-A Form been submitted for all groundwater sources?	**No - Table C**

Comments:
TT-6: MassDEP has GWR-A forms on file for the Lancaster Ave Wells and Well 06G dated August 2009; however, a GWR-A form has not been received for Well 08G.

FINISHED WATER STORAGE

The following storage types are present at this PWS and were evaluated as part of the survey:

- ☐ Hydropneumatic Storage Tanks
- ☒ Atmospheric Storage Tanks
- ☐ Clearwells

ATMOSPHERIC STORAGE TANKS

STORAGE TANK NAME	Does tank have mixer?	Subject to flooding?	Failures or holes in roof?	Is hatch covered-locked?	Proper overflow structure?	High-low level control alarms?	Is tank vented?	Is sample tap at tank?	Are vents and overflows screened?	Fenced or otherwise secured?	Does tank need to be painted?	Date of Last Inspection
Sunny Hill Storage Tank	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	9/20/2021
Chase Road Storage Tank	No	No	No	**No**	Yes	Yes	Yes	Yes	Yes	Yes	No	8/12/2022

AT-1	Are any in-ground or ground-level storage tanks, tank overflows, drains, or hatches subject to flooding or run-off (minimum of 50 ft)? GWR-12	NA - Elevated Only
AT-2	Are there holes or other failures of the roof or structure of any storage tanks? GWR-13	No
AT-3	Do all storage tanks have entry hatch or access ladders secured to prevent unauthorized access? GWR-14	Yes
AT-4	Do all storage tanks have proper screening or protection of overflow pipes, drains, and vents? GWR-15	Yes
AT-5	Do all storage tanks have a separate vent and overflow, each with a proper structure?	Yes
AT-6	Do all storage tanks have adequate level controls?	Yes
AT-7	Do all storage tanks have a representative sample tap?	Yes
AT-8	Underground and ground level tanks – are all manholes equipped with a water-tight cover which overlaps a framed opening and extends down around the frame at least two inches, and do all manholes extend at least 24 inches above the ground surface or the top of the tank (whichever is higher)?	NA

AT-9	Does the PWS have records detailing monthly ground-level inspections of all storage tanks and surrounding grounds?	Yes
AT-10	If yes, are they using the MassDEP forms or another form that includes the same elements?	Yes
AT-11	Does the PWS have records detailing annual inspections of the tank roof including manhole hatches, vent caps, screens, screen condition, watertight seals, signs of vandalism, locks and other sanitary defects?	**No - Chp 8.1.22**
AT-12	Have all finished water atmospheric storage tanks been professionally inspected within the past 5 years?	**Yes**
AT-13	Are there unaddressed issues that were identified during previous tank inspections? (If yes, specify below)	**Yes - Ch 8**
AT-14	Are any other improvements to any storage tanks needed or recommended?	No

Comments:

AT-3: Per the 2022 Underwater Solutions Inc. inspection report, rooftop hatch #2 (northeast side) at the Chase Road tank was not secured with a lock. This could not be confirmed during the inspection, as the roof cannot be seen from ground level. LWD provided photos of three locked rooftop hatches to MassDEP on May 21, 2026.

AT-7: LWD collects tank samples when all wells are off to ensure the tanks are draining during sample collection.

AT-11: LWD staff conduct annual rooftop inspections of the storage tanks; this activity is noted on the relevant monthly tank inspection log. As the monthly tank inspection log is designed for ground-level inspections, information is not being recorded about the vent caps, vent screen condition, watertight seals, locks and other sanitary defects that may be present on the rooftop. (Table B)

AT-12: LWD reports that a professional tank inspection of the Sunny Hill Storage Tank is scheduled for June 2, 2026. The Chase Road Storage Tank is due for a professional inspection by the end of 2027. (Table C)

AT-13: Several issues were identified in the most recent professional tank inspection reports for both the Chase Road and Sunny Hill storage tanks.

The 2022 Underwater Solutions Inc. inspection report for Chase Road Storage Tank noted the following: the three rooftop hatches are not equipped with gaskets; greater than 20% of exposed steel in each rooftop quadrant; moderate biofilm/staining, blistering, and decline/thinning of protective coating observed on interior walls; small areas of exposed steel on the lower north and lower west exterior walls; and exterior mildew. It was observed during the sanitary survey that the elastomeric caulking along the baseplate of the tank is deteriorated in several areas. LWD reported that the coating system for the tank is nearing the end of its life. (Table B) Please be advised that the 2018 Suez inspection report indicates a sample of exterior paint was tested and found to contain 70,000 mg/kg of lead.

The 2021 Underwater Solutions Inc. inspection report for Sunny Hill Storage Tank noted the two rooftop hatches are not equipped with gaskets and there are some small areas of exposed steel on the roof and south exterior wall. (Table B)

DISTRIBUTION SYSTEM / MAINTENANCE

D-1	What is the date of the most recent distribution map on file?	January 2024
D-2	Are locations of wells, surface water intakes, treatment facilities, pumping stations, storage tanks, valves, hydrants, pipe sizes/materials, direction of flow, PRVs, pressure zones, sample collection points, and seasonal lines identified (as applicable)?	Yes
D-3	Does the distribution map need to be updated based on changes to the system?	No
D-4	Are there low (under 20 psi) pressures that occur under normal operating conditions in any part of the distribution system that could result in the entrance of fecal contaminants? GWR-11	No
D-5	Are there any distribution system weaknesses or problems?	No
D-6	How often does the PWS flush the distribution system?	2x/year
D-7	Are distribution system valves exercised annually?	Yes
D-8	Are there individual service meters?	Yes
D-9	If yes, at what frequency are the service meters read?	Quarterly
D-10	If yes, is there a service meter replacement program?	Yes
D-11	Is there a written PM (Preventative Maintenance) program?	Yes

Comments:
D-5: LWD has identified a few areas for improvement of the distribution system, including adding loops when possible to areas currently served by dead end mains and prioritizing replacement of a section of undersized 8" water main on Lancaster Ave that has experienced multiple breaks.
D-6 & D-7: LWD conducts distribution system flushing activities twice a year, exercising valves as part of the program.
D-10: LWD plans to implement a more structed meter replacement program in the next few years. Currently, meters are replaced as needed, with those associated with unexplained zero reads and radio failures taking priority.

CROSS-CONNECTION/BACKFLOW PREVENTION

XC-1	Has the PWS completed an initial cross-connection survey of its full service area?	Yes
XC-2	If the previous cross-connection survey identified unprotected cross-connections, have the cross-connections been eliminated or has a	Yes

	backflow prevention device been installed on all cross-connections identified?	
XC-3	Have all high hazard facilities been identified, surveyed, and properly protected? GWR-10	Yes
XC-4	Is a new cross-connection survey required at this time?	No
XC-5	Does the PWS have testable devices?	Yes
XC-6	If yes, does the system keep on-site an inventory list of the devices, including type of device, location, and device test inspection dates?	Yes
XC-7	If yes, is routine testing performed as required?	Yes
XC-8	If yes, were all devices that failed in the last 3 years repaired/replaced and retested within 14 calendar days?	**No - 22.22(13)(e)**
XC-9	If yes, does the information reported in the ASR reconcile with the on-site records?	Yes

Comments:
XC-8: 2025 testing records indicate that two failed devices at Arrive Condos were not repaired/replaced and retested within 14 days; the devices have since had a passing test result. (Table A)

INTERCONNECTIONS

I-1	Does the system maintain a hard piped interconnection with another approved PWS?	Yes
I-2	If yes, are the interconnections metered?	**No - Table C**
I-3	If yes, are the interconnection valves regularly exercised and maintained?	**No - Table C**

Comments:
I-1: LWD has a hard-piped interconnection with Leominster Water Division (PWS# 2153000) at the town line on Lincoln Street that has never been used; instead, a metered hydrant-to-hydrant connection is made when needed. Additionally, LWD can feed water to Fitchburg DPW Division of Water Supply (PWS# 2097000) by establishing a hydrant-to-hydrant connection at one of two locations.

BOOSTER PUMPING STATIONS (DISTRIBUTION)

☒ None Present

WATER QUALITY

WQ-1	Have there been any MCL violations or action level exceedances in the past 12 months?	No
WQ-2	Have there been elevated levels of any contaminant?	**Yes - Comment**

WQ-3	Are there any water quality issues that need to be addressed?	**Yes - Comment**
WQ-4	Are all samples being collected at the locations identified on their WQSS or approved sampling plans?	Yes
WQ-5	Have consumer complaints been made regarding water quality?	No

Comments:
WQ-2 & WQ-3: In January 2025, LWD began quarterly finished water monitoring of the Lancaster Ave Wells for iron and manganese using the typical operational pairings of Wells 01G/04G (MULT1A) and Wells 02G/07G (MULT1B).

Manganese

- MULT1A reported manganese at 0.379 mg/L on 1/29/26, exceeding the MassDEP Office of Research and Standards Guideline (ORSG) of 0.3 mg/L. A confirmation sample collected on 3/17/26 reported manganese at 0.23 mg/L; the average of the two results was approximately 0.3 mg/L, which is at the ORSG.
- MULT1B has consistently exceeded the manganese SMCL of 0.05 mg/L since January 2025. The highest result, 2.57 mg/L on 3/16/26, exceeded both the 0.3 mg/L ORSG and the 1.0 mg/L health advisory level. The quarterly average concentration of 1.4 mg/L exceeded applicable health-based benchmarks. (Table B)
- Well 02G raw water has elevated manganese above the SMCL and ORSG (0.447 mg/L on 1/15/25 and 0.372 mg/L on 1/30/26)
- Monitoring results from 2025–2026 indicate persistent manganese exceedances above the 0.05 mg/L SMCL at both Lancaster Ave wells operational sampling locations, with Q1-2026 exceedances of ORSG health-based levels at MULT1B.
- Wellfield 07G raw water has elevated manganese at over five times the SMCL, approaching the ORSG (0.259 mg/L on 1/30/26). Levels at the individual wells that comprise the wellfield may vary.
- **Inactive** Well 06G has been offline since June 2012 due to manganese above the ORSG. Historical data shows concentrations in the range of 0.004 to 1.1 mg/L.

Iron
Iron concentrations above the SMCL of 0.3 mg/L have been reported in the raw water from Wells 02G and 06G and in the finished water from MULT1B.

- MassDEP's database shows historic iron concentrations for Well 06G raw water in the range of 0.015 to 0.85 mg/L; there were two outlier results of 1.32 and 3.9 mg/L.
- Well 02G raw water has reported iron levels above the SMCL (0.686 mg/L on 1/30/26, 0.58 mg/L on 10/9/25 and 0.493 mg/L on 1/15/25)
- MULT1B finished water has reported iron slightly above the SMCL (0.311 mg/L on 2/10/26).

MassDEP PFAS6 and EPA PFOA/PFOS
Finished water levels:

- Well 08G: PFAS6 results range from 2.6 to 9.35 parts per trillion (ppt); PFOS has not been detected above the Minimum Reporting Level (MRL); and **PFOA results range from 2.6 to 5.95 ppt**
- MULT1A: PFAS6 results range from 2.38 to 7.56 ppt; PFOS detections range from 2.05 to 2.7 ppt**;** and **PFOA results range from 2.38 to 4.86 ppt**
- MULT1B: PFAS6 results range from 6.62 to 17.3 ppt; PFOS results range from 2.26 to 3.02 ppt; and **PFOA results range from 3.95 to 9.69 ppt.** The EPA Running Annual Average (RAA) MCL of 4.0 ppt for PFOA is consistently exceeded at this location. (Table C)

Raw water levels of PFAS6:

- Wellfield 07G: **result of 23.7 ppt (10/9/25) exceeded the Massachusetts MCL (MMCL) of 20 ppt for PFAS6**
- Well 06G: **result of 37.8 ppt (10/8/21)** from a sample collected while the well was running to waste exceeded **PFAS6 MMCL**

All active sources, except for Wells 02G and 04G, have had a raw water PFOA result above the EPA MCL of 4.0 ppt. Wellfield 07G has also had a raw water PFOS result above the EPA MCL of 4.0 ppt.

Inactive Well 06G raw water has elevated iron and manganese above the SMCLs, elevated manganese above the ORSG, PFAS6 above the MassDEP MCL and PFOA above the EPA MCL. Be advised that MassDEP approval and treatment for iron, manganese and PFAS are required prior to Well 06G reactivation**.** (Table C)

SOC (Picloram)
Picloram (herbicide) was detected at an estimated concentration of 0.14 ug/L in the finished water from Well 08G on 1/17/25, requiring increased monitoring. (Table C)

WQ-5: LWD reports consumer complaints about water quality are rarely received.

LEAD & COPPER RULE COMPLIANCE

LC-1	If the PWS provides corrosion control treatment, is the PWS monitoring pH and other applicable parameters (e.g. alkalinity, orthophosphate residual) at each entry point **and** at locations in the distribution system (e.g., coliform sampling sites)?	Yes
LC-2	Have there been any changes to the system that would require submittal of a revised Lead & Copper Sampling Plan?	No
Comments:		

REVISED TOTAL COLIFORM RULE COMPLIANCE

TC-1	Does the system have an approved Coliform Sampling Plan?	Yes
TC-2	If yes, does the plan need to be updated?	No

TC-3	Have there been changes to the distribution system or population served such that the PWS is not collecting the minimum number of distribution coliform samples in compliance with the Revised Total Coliform Rule? GWR-18	No
TC-4	What is the date of the most recent Total Coliform sampling map on file?	January 2024
TC-5	Does this map need to be updated?	No
Comments:		

OTHER ISSUES OBSERVED

LWD completed full-scale pilot testing of iron, manganese, and PFAS removal strategies for the Lancaster Ave Wells and the **inactive** Hickory Hills Well (06G) in 2025; the intent of this pilot study was to test technologies which could treat both the Lancaster Ave wells and Hickory Hills Well at a future centralized treatment facility to be located at the Lancaster Ave wells site. Onsite pilot testing was conducted at both locations and rapid small scale column testing (RSSCT) was done offsite. MassDEP issued a WS22 pilot study approval report on April 13, 2025 (Record ID: 25-WS22-0007-APP). If LWD intends to move forward with this project, the next step would be to submit an administratively and technically complete WS24 or WS25 application for MassDEP review and approval.

LWD also completed full-scale pilot testing of water softening treatment and PFAS removal strategies for the Keating Well in 2025. MassDEP issued a WS22 pilot study approval report on December 23, 2025 (Record ID: 25-WS22-0026-APP). If LWD intends to move forward with this project, the next step would be to submit an administratively and technically complete WS24 or WS25 application for MassDEP review and approval.

OUTSTANDING ACTIONS

ENFORCEMENT ACTIONS

PWSID#	ENF Issued Date	ENF Type	ENF#	Comments	Milestone Action	Action Deadline	Action Complete Date
2162000	12/10/2025	NONCSA	00021929	M&R Q3 PFAS: MULT1B(AUG,SEP,NOV)	CONDUCT TIER 3 PN & SUBMIT CERT	12/10/2026	

INSPECTION ACTIONS

None.

PHOTOS

Lancaster Ave Station 1: NaOH bulk tank

Lancaster Ave chemical injection pit (NaOH & NaOCl) - full of water

Wellfield 07G: Deteriorating gasket at Well #4

Calcium carbonate removed during recent cleaning at Keating Well WTP

Keating Well (08G) inside pump station

Sunny Hill Storage Tank

Kayak racks in the Zone I of Well 06G

Inactive Well 06G

ADDITIONAL INFORMATION

Information regarding Per- and Polyfluoroalkyl Substances (PFAS)
For more information on PFAS, and opportunities for technical and financial assistance, refer to the following:

- MassDEP Per- and Polyfluoroalkyl Substances (PFAS) Drinking Water Regulations Quick Reference Guide https://www.mass.gov/doc/per-and-polyfluoroalkyl-substances-pfas-drinking-water-regulations-quick-reference-guide/download
- MassDEP Per- and Polyfluoroalkyl Substances (PFAS) website: https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas

- Final MassDEP PFAS drinking water regulations
https://www.mass.gov/lists/development-of-a-pfas-drinking-water-standard-mcl#final-pfas-mcl-regulations-

The following resources may be helpful in understanding the findings in this inspection report:

- Massachusetts Drinking Water Regulations
https://www.mass.gov/regulations/310-CMR-22-the-massachusetts-drinking-water-regulations
- Guidelines for Public Water Systems
https://www.mass.gov/service-details/guidelines-for-public-water-systems
- Drinking Water Policies
http://www.mass.gov/eea/agencies/massdep/water/regulations/water-resources-policies-and-guidance-documents.html#3
- Standards & Guidelines for Contaminants in Massachusetts Drinking Water
http://www.mass.gov/eea/agencies/massdep/water/drinking/standards/standards-and-guidelines-for-drinking-water-contaminants.html
- Immediate Action Levels for Water Treatment Plant Chemicals
https://www.mass.gov/doc/immediate-action-levels-for-water-treatment-plant-chemicals-0/download
- MassDEP Drinking Water System Management Handbook
https://www.mass.gov/doc/massdep-drinking-water-system-management-handbook-0/download

WATER MANAGEMENT ACT (WMA) TECHNICAL ASSISTANCE

The following information is to provide compliance technical assistance with the WMA (MGL 21G) Program elements indicated below. Data summarized below is based on data reported in the noted Annual Statistical Report required by 310 CMR 22.15. Please note: This summary is not a complete compliance review of WMA Permits or Registrations.

PWS Name: Lunenburg Water District

PWS ID# 2162000

River Basin	Nashua Basin
WMA Registration #	21116201
WMA Permit #	9P21116201

1. System-Wide Authorized Annual Average Daily Withdrawals as million gallons per day (MGD)

Summary by basin of the PWS system-wide authorized withdrawal volume under the WMA and their actual reported withdrawal volumes in their Annual Statistical Report.

Nashua River Basin

Registration Volume*	0.29
Permit Volume	0.35
Total Authorized Volume**	0.64
Reported Withdrawal- 2024	0.51

* Withdrawals exceeding 0.10 MGD above Registration Volume require a permit.
** Permit holders with permitted volumes are limited to the Total Authorized Volume.

WMA Compliance Assistance Notes: 2024 reported withdrawal is in compliance with their Total Authorized Volume.

2. Performance Standards Included in Most Permits but Not in Registrations

Water Management Permits issued in recent years have included conditions requiring PWS meet Performance Standards (PSs) on residential gallons per capita day (RGPCD) of 65 gallons or less, and an unaccounted-for water (UAW) loss of 10% or less.

Performance Standard Status	RGPCD	UAW %
2024 Value Approved by MassDEP	47	9
2023 Value Approved by MassDEP	49	12
2022 Value Approved by MassDEP	55	8
Permit includes a condition requiring a Compliance Plan/M36 Audit when failing to meet PSs	yes	yes
Compliance Plan/M36 Audit triggered and filed	Met RGPCD Standard	Met UAW Standard

WMA Compliance Assistance Notes: In compliance with the RGPCD and UAW Performance Standards. Permit requires <10% UAW for 2 out of every 3 years.

3. WMA Program Resources

For any questions or comments, or to discuss next steps regarding the information identified above, please contact Duane LeVangie, Program Chief of the WMA Program at (617) 780-1962 or duane.levangie@mass.gov. For information on the WMA Program see https://www.mass.gov/water-management-act-program