



DEPARTMENT OF HEALTH

DANIEL KUHLES, M.D., M.P.H. COMMISSIONER

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SARATOGACOUNTYNY.GOV

6012 COUNTY FARM RD, BALLSTON SPA, NY 12020

Small Public Water System Submittal Package

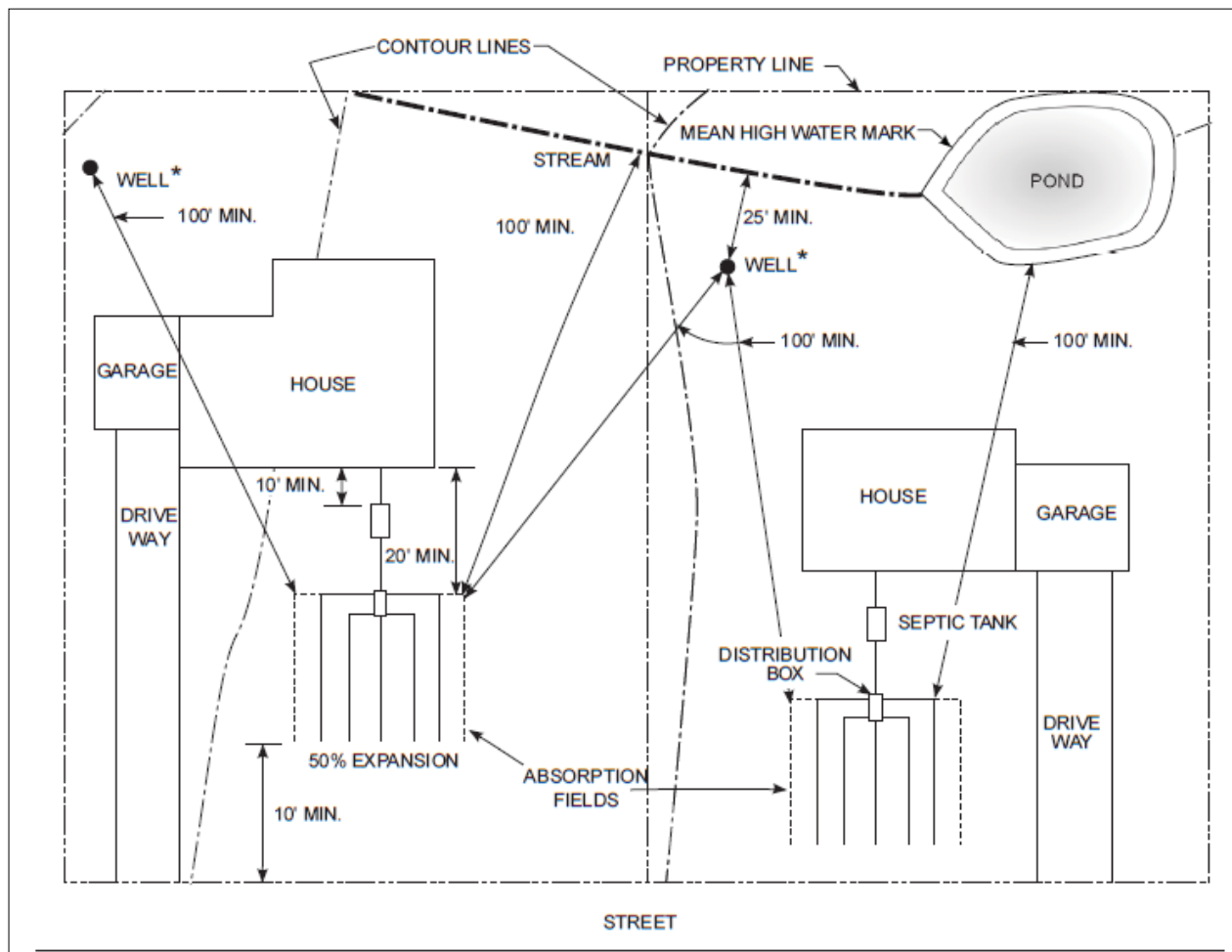
- Public Water System Modifications Checklist
- Request for Acceptance of Public Water System Modifications
- Requirements for a new groundwater source for small public water systems
 - Part 5 sample requirements list
- Application for Acceptance of Chlorination Disinfection
- Application for Ultraviolet Light Disinfection
- List of Local Approved Laboratories
- Water Well Consumer Protection Guide



Small Public Water System Submittal Checklist

Before submitting your application, make sure that you have included all the information on the public water system.

- Request for Acceptance of Public Water System Modifications form
- A well siting map drawn to scale (see example below)
- Well construction and testing information
 - NYSDEC registered well driller credentials
 - Well log and construction details
 - Pump and yield test data
 - Part 5 water quality analysis sampling results
- Treatment and disinfection system plans and specifications including:
 - Plans for the installation of continuous disinfection (i.e. chlorination, ultraviolet (UV) light)
 - Manufacturer's specifications for all proposed equipment and chemicals
 - Vacuum breaker fitting specifications for all new and existing hose bib connections
- Chlorination system application or UV system application.
 - Please note that the required UV sample parameters for a new public water system well differ from the required part 5 parameters.





REQUIREMENTS FOR A NEW GROUND WATER SOURCE FOR SMALL PUBLIC WATER SYSTEMS

The following describes the steps required by SCDOH to develop a new groundwater source for a small Public Water System. SCDOH may require that plans for development and treatment of a Public Water Supply be prepared by a Licensed Professional Engineer. Please contact our office before proceeding with your project. If you have an existing well that you are proposing to use to serve a permitted or otherwise jurisdictional facility, provide all available documentation listed in this guidance (well logs, sample results, etc.)

I. WELL SITING

In order to site the well, a map locating the well site should be constructed and submitted to our office for review and approval. The map should be drawn to scale and include the following:

1. Distances from potential contamination sources, including those within 200 feet on neighboring properties (septic system components, buildings, parking areas, underground and above ground petroleum storage tanks, maintenance areas, chemical storage, road salt storage and roads, etc.);
 - *Note: Wells with 50 feet or less of casing may be subject to greater separation distances from potential sources of contamination;*
2. Type of septic system component used at each location (septic tank, leach field, seepage pit, etc.);
3. Distances from property lines and indication of property ownership;
4. Distances from surface water features (streams, lakes, wetlands, etc.);
 - *Note: Wells placed within 200 feet of a surface water source or placed greater than 200 feet from a surface water but with 50 feet or less of casing, may be subject to further testing to assess if the groundwater is under the direct influence (GWUDI) of a surface supply. A positive GWUDI determination will require that the well source be filtered in addition to being disinfected;*
5. Indication of direction of surface water flow.
 - *Note: The ground surface immediately surrounding the well casing should be graded to divert surface water away from the well. Concrete shall not be used for grading purposes.*

II. WELL CONSTRUCTION AND TESTING

The well must be constructed by a NYS Department of Environmental Conservation registered well driller. Once the well has been installed, plans and specifications that include the following information must be submitted to this office for review and approval.

1. A well log and well construction details. Refer to Sections 3.2.3 - 3.2.7 of “Recommended Standards for Water Works” and Appendix 5-D of Subpart 5-1 of 10NYCRR New York State Sanitary Code (SSC).
2. Pump test data for the well. The well must be pumped at the design pumping rate for at least 24 hours and include a minimum of six hours of stabilized drawdown at the end of the test. Rock wells must be pumped for 72 hours (SSC Subpart 5-1, Appendix 5-D, Table 2). Calculations establishing the design pump rate must be provided. Transient noncommunity systems may be allowed to perform an abbreviated yield test with a minimum four-hour period of stabilized drawdown while pumping at a constant flow rate (SSC Subpart 5-1, Appendix 5-B.4(b)).
3. Water quality tests. The well water must be tested for the parameters listed in the table below. All samples for these analyses must be collected from the well source at the end of the pump test. A Saratoga County Department of Health approved laboratory must perform the testing. Future monitoring requirements will be based on the results of the sampling and a sanitary survey.

Required Part 5 Parameters	CWS	NTNC	NC
Coliform Bacteria	√	√	√
Nitrate	√	√	√
Nitrite	√	√	√
Inorganic Chemicals, primary and secondary (IOCs)	√	√	√
Principal or Volatile Organic Chemicals (VOCs/POCs) including Vinyl Chloride and MTBE	√	√	√
Synthetic Organic Chemicals (SOCs) excluding Dioxin, Diquat, Endothall, and Glyphosate	√	√	√ ¹
Lead and Copper ²	√	√	√
Turbidity	√	√	√
Radiological	√		

Ultraviolet (UV) Parameters³	Recommended Parameters
Iron	PH
Manganese	Alkalinity
Hardness, calcium	Total Dissolved Solids
Hydrogen sulfide	Hardness
Turbidity	Corrosivity
Color	
Suspended solids	
UV absorbance or UV transmittance	

¹Requirement for NC to test for SOC’s may be waived under some conditions.

²Initial Lead & Copper samples shall be grab samples from source water.

³Required if UV disinfection is proposed. Some UV parameters may be included in other parameter groups.



III. TREATMENT AND DISINFECTION SYSTEM DESIGN

Plans and specifications for your Public Water System must be submitted to this office for review and approval. Plans must include the following information:

1. A schematic of the water system, including disinfection, storage, distribution, and any other system components. Disinfection may be provided by either chlorination or ultraviolet light (UV). The guidance documents for disinfection by chlorination and UV light are attached. In systems that have underground piping, chlorination must be used;
2. Manufacturer's specifications for all equipment and materials to be used (system components must be NSF or UL certified);
3. Provisions for securing the water treatment room from unauthorized access;
4. Verification that the system is not cross-connected with an unapproved water source;
5. Vacuum breaker fittings on all new and existing hose bib connections at the facility.
6. In addition, the design cannot include bypasses around required treatment.

IV. SYSTEM START-UP

Once plans have been approved by our department, construction of the water system may begin. After the system is installed, the following are required:

1. All new equipment must be flushed and then disinfected in accordance with AWWA Standard C650. For example, the following method is acceptable:
 - Fill the system with water with a free chlorine residual of no less than 25 milligrams per liter (mg/l).
 - Allow the chlorinated water to remain in contact with all components of the new water system for at least 24 hours.
 - Test the free chlorine residual of the water after it has been in the system for at least 24 hours. If the free chlorine residual of the water in the system is less than 10 mg/l after 24 hours, repeat the disinfection procedure until the free chlorine residual after 24 hours contact is at least 10 mg/l.
 - Flush the system until it is free of chlorine for systems using UV disinfection, or until a standard free chlorine residual is achieved, about 0.2 – 0.5 mg/l, for systems using chlorination.
2. Once the system has been disinfected, the water must be tested for Total Coliform. Two consecutive days of negative Total Coliform results must be submitted to and acknowledged by this office before the system can be placed into operation.

Please contact us at (518) 584-7460 once the system is installed to arrange a completed works inspection.



Chlorination System Information

1. **Source of ground water:** Drilled well ____ Dug well ____ Spring ____ Point well ____
Other _____

2. **Water pump.** May be submersible pump in the well.

Manufacturer _____ Model _____ Type _____

Pump rating _____ gpm at _____ psi pressure

Pressure switch setting: ON at _____ psi OFF at _____ psi

A minimum pressure of 20 psi is needed at user taps and fixtures.

3. **Totalizing water meter.** Daily records should be maintained when the water system is in use.

4. **Chlorine solution tank.** Capacity in gallons _____. A 10-20 gallon plastic tank with cover manufactured for water treatment use is generally used. Ventilation shall be provided for chlorine storage and feed rooms.

5. **Chlorine Pump.** A positive displacement chemical metering pump equipped with an anti-siphon valve or a peristaltic pump is acceptable. Manufacturer _____
Model _____ Rating (gallons per day) _____ at _____ psi. The chlorinator must be electrically interconnected with the well pump so both start and stop simultaneously. Each well pump needs its own chlorinator unless the chlorinator is meter-driven (i.e. flow paced). A spare pump is recommended.

6. **Anti-siphon valve.** A 4 or 5 function valve will include anti-siphon as one of the functions. This valve will prevent chlorine overfeed in the event of loss of pressure in the system. Not required for peristaltic pumps.

7. **Chlorine contact tank.** Number of tanks _____ at capacity in gallons each _____. **All contact tanks must be plumbed so the entire capacity is utilized (i.e. water must enter at the bottom and exit at the top for contact tanks that are under pressure).** A minimum CT of 6 is required (CT=free chlorine residual in ppm x detention time in minutes). Appropriate baffle factors must be applied. All tanks shall be NSF, FDA, or UL approved for potable water.

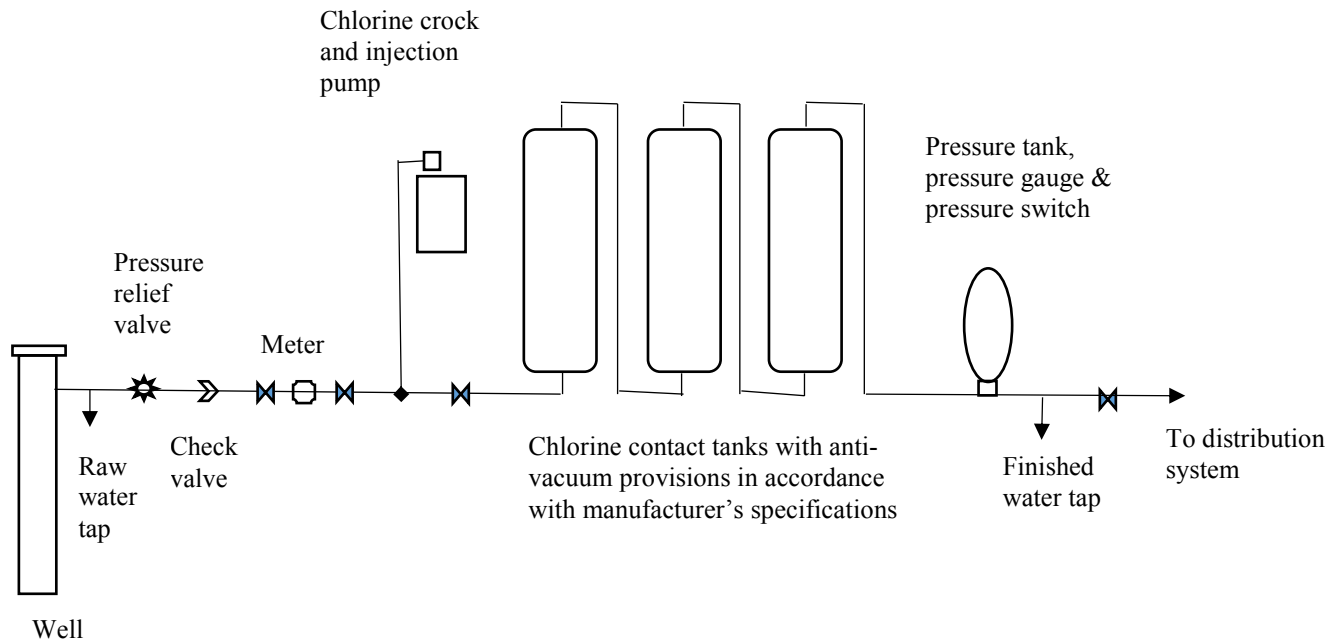
8. **Pressure tank.** Capacity in gallons _____. Must be equipped with a pressure gauge and be located after the contact tank.

9. **Treated or finished water sampling tap.** Free chlorine residual readings in the water entering the distribution system must be a minimum of 0.2 mg/l. A reading of 0.5 mg/l is recommended to ensure that the chlorine residual is detectable throughout the distribution system.

Example Schematic for Chlorine Installation

The schematic below shows the primary components that may be included in a proposal. Submit a schematic showing the proposed installation that includes the make and model of proposed equipment. Attach the manufacturer's specification sheets for all equipment and pump curves for the well pump if available.

Example Only





Chlorination Instructions for Water Supply Operation

- A. Free chlorine residuals must be checked and recorded at least daily. Record the free chlorine residual, measured at the treated water sampling tap, on the monthly operation report form. The treated water sampling tap is representative of the “entry point” to the distribution system. Submit the completed forms to the Saratoga County Department of Health by the 10th day of the month following the reporting month.
- B. In addition to the entry point readings, the free chlorine residual should occasionally be checked at various cold water taps throughout the distribution system.
- C. For a small distribution system, maintain a 0.2-0.5 mg/l free chlorine residual at the entry point to achieve the required detectable free chlorine residual throughout the distribution system. A residual of 0.5-1.0 mg/l may be required at the entry point to larger distribution systems to ensure a detectable residual throughout.
- D. A DPD type test kit with a minimum reading of 0.2 mg/l, a range of 0.2-3.0 mg/l, with increments of 0.1-0.2 mg/l must be used.
- E. Any interruption in treatment of a drinking water supply shall be reported immediately to this office. No change in the source or method of treatment of a drinking water supply shall be made without first notifying and securing approval from this office.
- F. Note any unusual circumstances (i.e., equipment failure, drinking water complaints, etc.) on the monthly operation report form in the comments section.
- G. The chlorine pump should generally be set to operate in the middle range of the pump’s capacity to allow for adjustment up or down.
- H. The solution tank should be clearly labeled to insure that when it is refilled, the same volume and concentration of chlorine is added every time. This will help to avoid adjusting the chlorine pump settings every time the solution tank is filled. For example, a 20 gallon tank requiring one pint of liquid chlorine to maintain a given concentration should have ½ pint of liquid chlorine added when 10 gallons of water are needed to refill the tank. The amount of liquid chlorine needed should be determined by measurement (i.e. markings on the outside of the tank or a measuring rod). Estimating the amount of disinfectant needed to refill the tank often results in extremely low or high readings. Do not let the crock run completely dry before refilling.
- I. Chlorine that is NSF or UL approved for potable water must be used. Also, please note that chlorine has a shelf life. Chlorine that has been sitting all winter should not be used when starting up a facility in the spring.
- J. Send completed monthly operation reports and sample results to: Saratoga County Department of Health, 6012 County Farm Road, Ballston Spa, NY 12020.
Email: water@saratogacountyny.gov. Phone (518) 584-7460. Fax (518)682-5617.



Ultraviolet System Information

1. **UV Parameter Test Results.** Attach the results of water quality parameter tests for iron, manganese, hardness (calcium), hydrogen sulfide, turbidity, color, suspended solids, UV absorbance or transmittance, plus any manufacturer specified parameter not listed, that demonstrate that the raw (untreated) or pre-treated (typically softened) water meets the manufacturer's standards for the proposed UV unit.

2. **Source of ground water:** Drilled well ____ Dug well ____ Spring ____ Point well ____
Other _____

3. **Water pump.** May be submersible pump in the well.
Manufacturer _____ Model _____ Type _____
Pump rating _____ gpm at _____ psi pressure
Pressure switch setting: ON at _____ psi OFF at _____ psi
A minimum pressure of 20 psi is needed at user taps and fixtures.

4. **Totalizing water meter.** Daily records should be maintained when the water system is in use.

5. **Pressure tank & pressure switch.** Capacity in gallons _____. Must be equipped with a pressure gauge and be located upstream of the UV unit, along with the pressure switch.

6. **Softener (if needed).** Manufacturer _____ Model _____
A softener or other pretreatment may be needed if the hardness, or other parameter, of the raw water exceeds the manufacturer's standards for the unit.

7. **Cartridge filter.** Filter is installed to protect the UV unit from particulates in the water.
Housing manufacturer _____ Model _____
Cartridge manufacturer _____ Model _____ micron rating _____

8. **UV disinfection unit.** Manufacturer _____ Model _____
Capacity _____ gpm. Proposed units must meet NSF Class A certification standards. The list of acceptable units is available on the NSF website under Standard 55.

9. **Solenoid valve.** A solenoid valve is connected to the UV sensor and alarm system. The solenoid valve closes if the UV unit goes into alarm to prevent undisinfecting water from entering the distribution system.

10. **Flow restrictor.** Capacity _____ gpm. A flow restrictor is needed if the pump rate of the well exceeds the design capacity of the UV unit. It may be built into the UV unit.

Example Schematic for Ultraviolet (UV) Installation

Diagram 1 shows the primary components that may be included in a proposal. Submit a schematic showing the proposed installation that includes the make and model of proposed equipment. Attach the manufacturer's specification sheets for all equipment and pump curves for the well pump if available.

Diagram 2 shows the typical wiring for a class A UV unit.

Example Only

Diagram 1

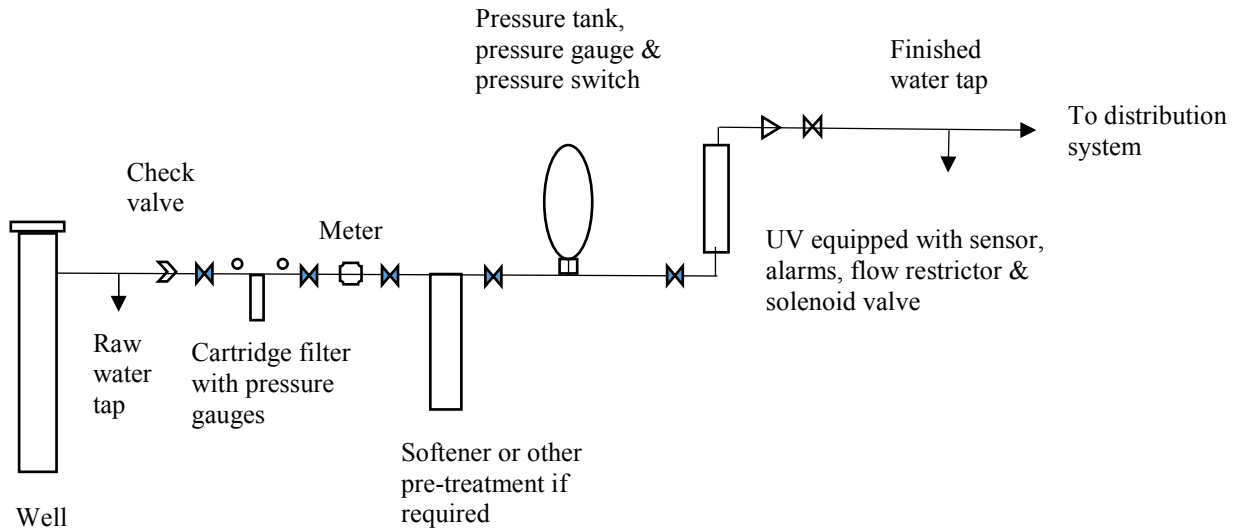
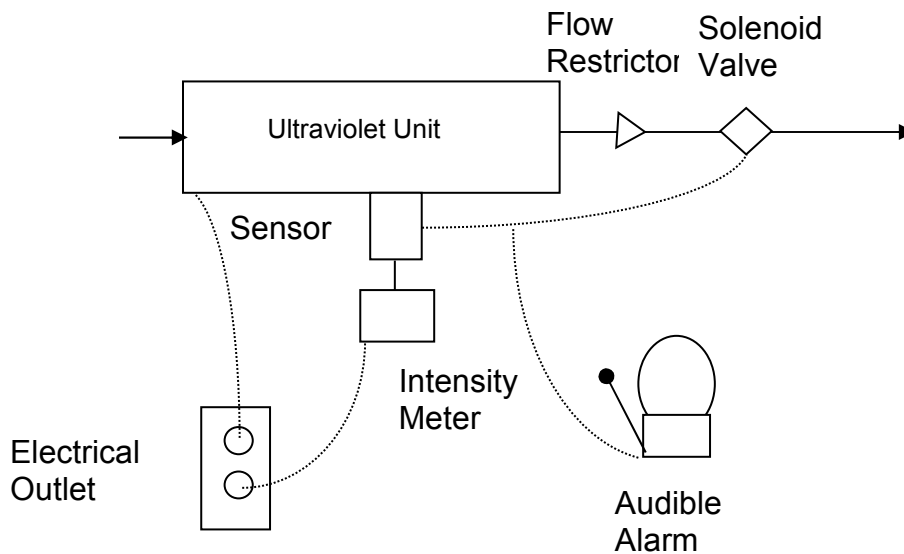


Diagram 2





Responsibilities for Ongoing Operation and Maintenance of Ultraviolet (UV) Disinfection

- The UV system status must be recorded daily on the monthly operation report form. In addition, any maintenance to the unit must be recorded and a copy sent to the Saratoga County Department of Health by the 10th day of the month following the monitoring period.
- A copy of the monthly operation report must be available on site for review during inspections.
- The quartz sleeve in your UV unit must be cleaned at least annually. Decreasing UV light transmission, as evidenced by decreasing readings on your intensity meter, may indicate that the sleeve needs cleaning.
- The UV bulb must be replaced after a maximum of 9,000 hours of use.
- A spare UV bulb must be maintained on site. We also recommend that a spare quartz sleeve, O-rings and filter(s) be maintained on site.
- Send completed monthly operation reports and sample results to: Saratoga County Department of Health, 6012 County Farm Road, Ballston Spa, NY 12020.
Email: water@saratogacountyny.gov. Phone (518) 584-7460. Fax (518)682-5617.



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NYSDOH ELAP Certified Laboratories for Drinking Water Analysis

The New York State Department of Health (NYSDOH) has the Environmental Laboratory Approval Program (ELAP) of the Wadsworth Center that was established in 1984, under Section 502 of the Public Health Law and is responsible for the certification of laboratories performing environmental analyses on samples originating from New York State, thus ensuring the accuracy and reliability of these analyses. ELAP grants certification for the analysis of drinking water, air and emissions, non-potable water and solid and chemical materials. Albany County Department of Health does not have a preference of which laboratory to use, other than they must be ELAP certified.

Certified laboratories in NYS can be found at: <https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/>.

ELAP certified laboratories that analyze potable water and located nearest to Saratoga County include but are not limited to:

PACE ANALYTICAL (formerly CNA) Website: https://www.pacelabs.com/company/lab-results/ny-ballston-spa-laboratory/ 27 Kent Street Ballston Spa, NY 12020 (518) 884-0800	
CAPITAL REGION ENVIRONMENTAL LAB (formerly Bender Website: https://crenvlab.com/ Satellite Laboratory 7 Hemphill Place, Suite 231 Malta, NY 12020 (518) 400-8014	St. Peters Lab) Main Laboratory 137 Columbia Turnpike Rensselaer, NY 12144 (518) 949-2020
PACE ANALYTIAL (formerly CNA) Website: https://www.pacelabs.com/ 172 Ridge Street Glens Falls, NY 12801 (518) 792-1170	
QUEENSBURY LABORATORY (Town of Queensbury Water Treatment Plant) <i>Total Coliform Samples ONLY</i> Website: https://www.queensbury.net/departments/water/ 823 Corinth Road Queensbury, NY 12804 (518) 793-8866	
ADIRONDACK ENVIRONMENTAL SERVICES, INC. Website: https://www.adirondackenvironmental.com/ 314 North Pearl Street Albany, NY 12207 (518) 434-4546	
JH CONSULTING GROUP, INC. 15 Lynwood Drive Loudonville, NY 12211 (518) 785-9839	

Consumer Protection Checklist

- Contact local health and building code officials for local requirements.
- Obtain more than one estimate.
- Ask contractors for references and contact them.
- Use DEC's online search at www.dec.ny.gov to see if your contractor is registered and to get information about nearby wells.
- Make sure the contractors you consider adhere to Department of Health well construction standards.
- Verify that your contractor is properly insured.
- Get a written contract. If you have special concerns, include them in the contract.
- Get your well water tested.
- Talk to neighbors about their wells (location, depth, contractor).

NYS General Business Law 36A requires a written contract for home improvement services and materials that exceed \$500. For more information on home improvement contracts, contact the New York State Attorney General's office at www.ag.ny.gov

Try Our Online Database

- To find local well information, such as depth and yield of neighboring wells, go to www.dec.ny.gov and search for "water well search".
- To find a registered well driller or pump contractor, go to www.dec.ny.gov and search for "water well search".

For More Information

- NYS Department of Health, Standards for Water Wells: www.health.ny.gov/environmental/water/drinking
- U.S. Environmental Protection Agency: water.epa.gov (search for "private wells")
- U.S. Geological Survey: water.usgs.gov (search for "water wells")
- National Ground Water Association: www.ngwa.org and www.wellowner.org
- Water Systems Council: www.watersystemscouncil.org

CONTACT US

Water Well Program

Division of Water

New York State Department of Environmental Conservation

P: (Toll Free) 877-472-2619

F: (518) 402-8290

nyswaterwells@dec.ny.gov

www.dec.ny.gov



Department of
Environmental
Conservation

Need a Water Well Drilled or Repaired?

Water Well Consumer Protection Guide



www.dec.ny.gov

Protecting the Consumer

Many New Yorkers rely on wells for drinking water. If you need to have a new water well drilled or an existing well repaired, you should know how consumers are protected under New York State Environmental Conservation Law ECL §15-1525.

The law requires that ...

- All water well contractors register with the New York State Department of Environmental Conservation (DEC) every year.
- Water wells be constructed and drilled in accordance with NYS Department of Health rules and regulations (see “For More Information”).
- The person supervising the work has to be certified. Certification is through the National Groundwater Association (NGWA). Be sure to ask about certification before you sign the contract.
- Water well contractors are required to submit a well completion report to you, the consumer, and to DEC for each new well they drill.



What the Law Covers

- Water well construction and reconstruction
- Repairs that require opening or creating an opening into a water well
- Installation or repair of pitless adapters or pumps installed within water wells

What the Law Does Not Cover

- Pipes, pumps, or treatment equipment outside the well (within a dwelling or leading to a well)



Frequently Asked Questions

How can I find out if my contractor is registered?

A: Go to www.dec.ny.gov and search for “water well search.”

How deep should my well be drilled?

A: There is not standard well depth. Well depth depends on many factors, such as local geology, natural water quality, health standards, yield and storage needs, drilling equipment capabilities, and cost. Discuss these with prospective contractors.

Does DEC charge a fee to the contractor or consumer to submit a well completion report for each well?

A: No, DEC does not charge a fee to report a well.

Should I receive a copy of the DEC Well Completion Report?

A: Yes, the law requires the water well driller to provide a copy to the well owner.

Are pump contractors required to be registered and certified?

A: Yes, if the contractor is involved with opening the well.

Can I drill my own well?

A: New York State Building Code requires all wells to be drilled by a registered contractor.

Do I need a permit to drill my water well?

A: A DEC permit is not required except for Long Island water wells that produce more than 45 gallons per minute, and geothermal wells more than 500 feet deep. However, a local permit is needed in some counties.

Who is exempt from this law?

A: Public corporations, political sub-divisions and government agencies are exempt.