

- Revised Total Coliform Rule - Level 2 Assessor Training

**Sanitary Defects and Significant Deficiencies: Submission
of Level 2 Assessment Form, CT DPH Review, Corrective
Action Plan, Wrap up and Questions**



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Agenda

- Groundwater Rule Key Points
- RTCR Key Points
- Overlap between Significant Deficiencies and Sanitary Defects (note underlined items on RTCR Level 2 Form)
- Submission of Level 2 forms & Review
- Corrective Action Plans & Wrap up

RTCR – Sanitary Defects

- **Sanitary defect**: “means a defect that is providing, or has the potential for providing, a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place”
– sanitary defects are identified by L1 and L2 assessments.
- Sanitary Defects must be corrected within 30 days or per State approved correction plan

NOTE: A sanitary defect is different than a significant deficiency per GWR, however, in some instances there may be overlapping

GWR- Significant Deficiencies

- Significant Deficiencies are: “anything that is causing, or has the potential for causing, the introduction of contamination into the water system”
- Significant Deficiencies are typically identified during sanitary surveys
- Significant Deficiencies typically have 120 day correction period



Sanitary Defect vs. Significant Deficiency

- Unless your last sanitary survey was less than 120 days ago (or you have a corrective action schedule, you should not have any outstanding Significant Deficiencies (we have been hounding you!))
- If you have a Sanitary Defect, then it means you have something to correct and it's associated with a bacteriological issue (total coliform and or E.Coli)
- **CORRECT WITHIN 30 DAYS** (or have approved Corrective Action Plan for Defect/Deficiency if it's an item that requires more time)

Are there any holes or unprotected openings in the well casing?



Is the well located in a depressed area where water may collect or is subject to flooding, and has any flooding or ponding occurred?



Is the vent (well) shielded and screened?



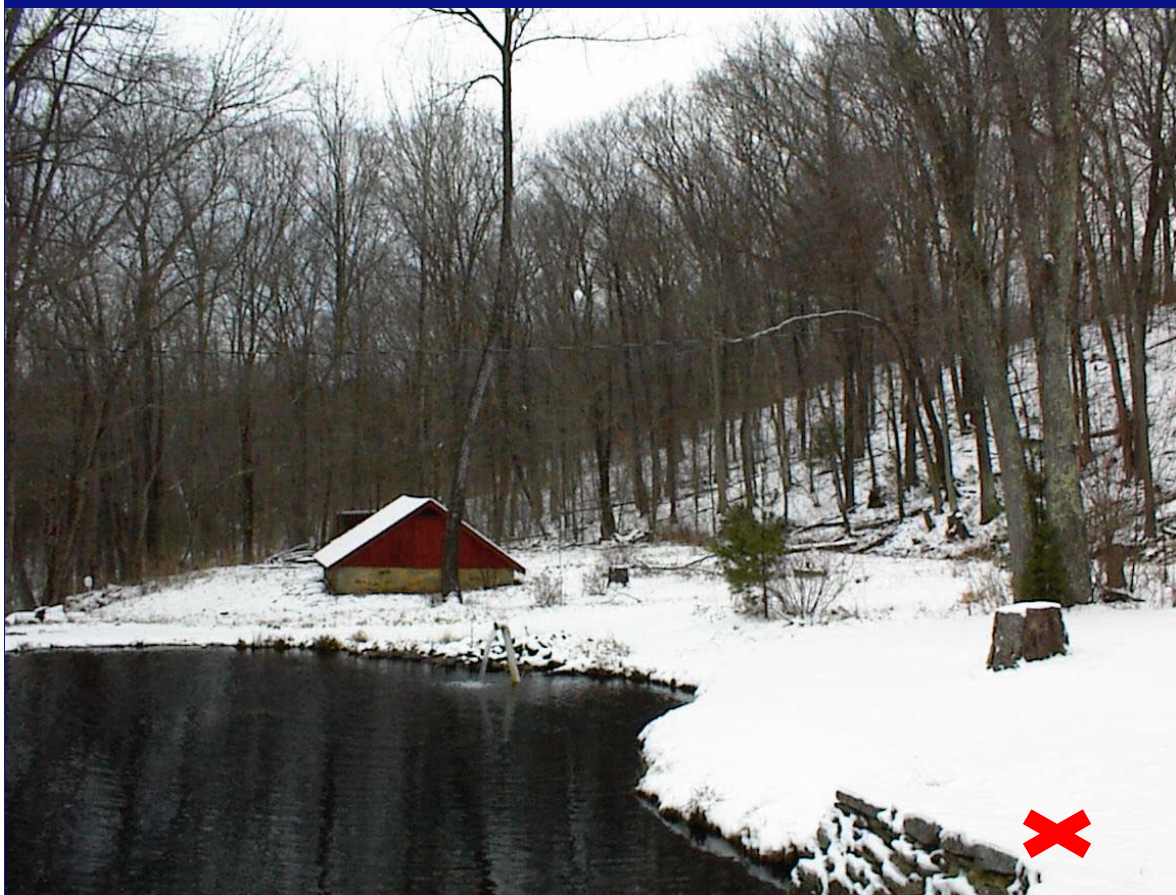
Is the sanitary seal or well cap improperly installed to the casing and electric conduit, or are they in an unsatisfactory condition?



Is the well pit currently flooded or is there any indication that water collects in the pit?



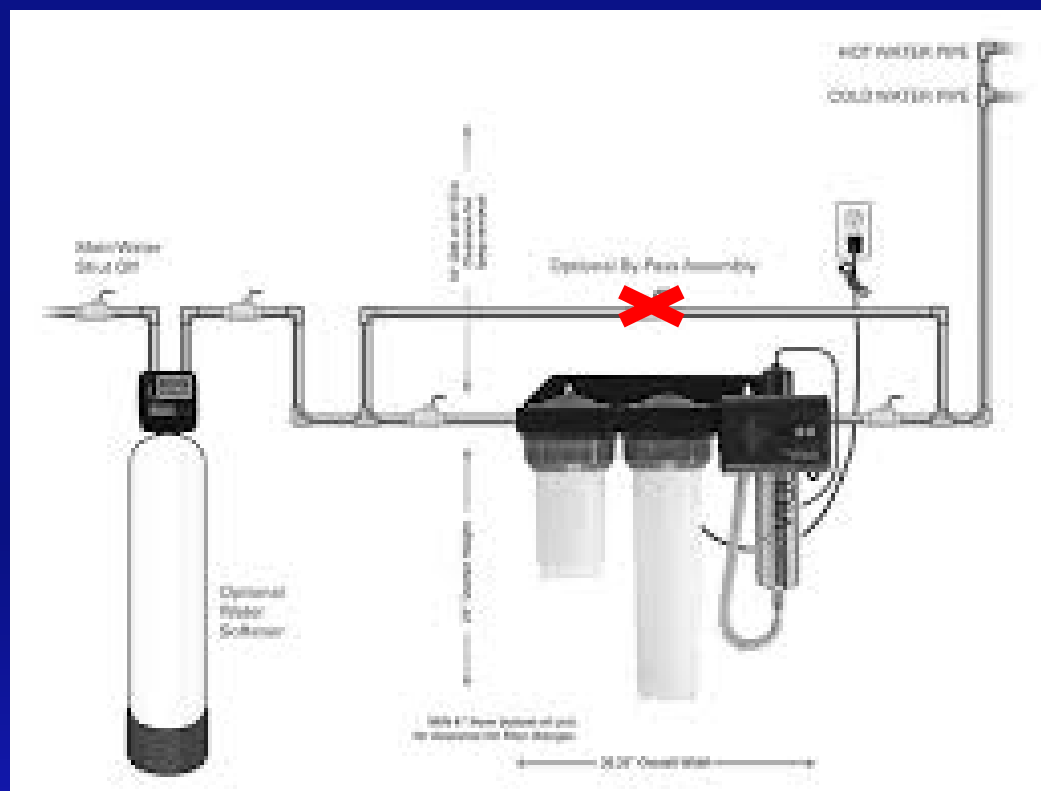
Does the spring box have any breaches or holes or unprotected openings?



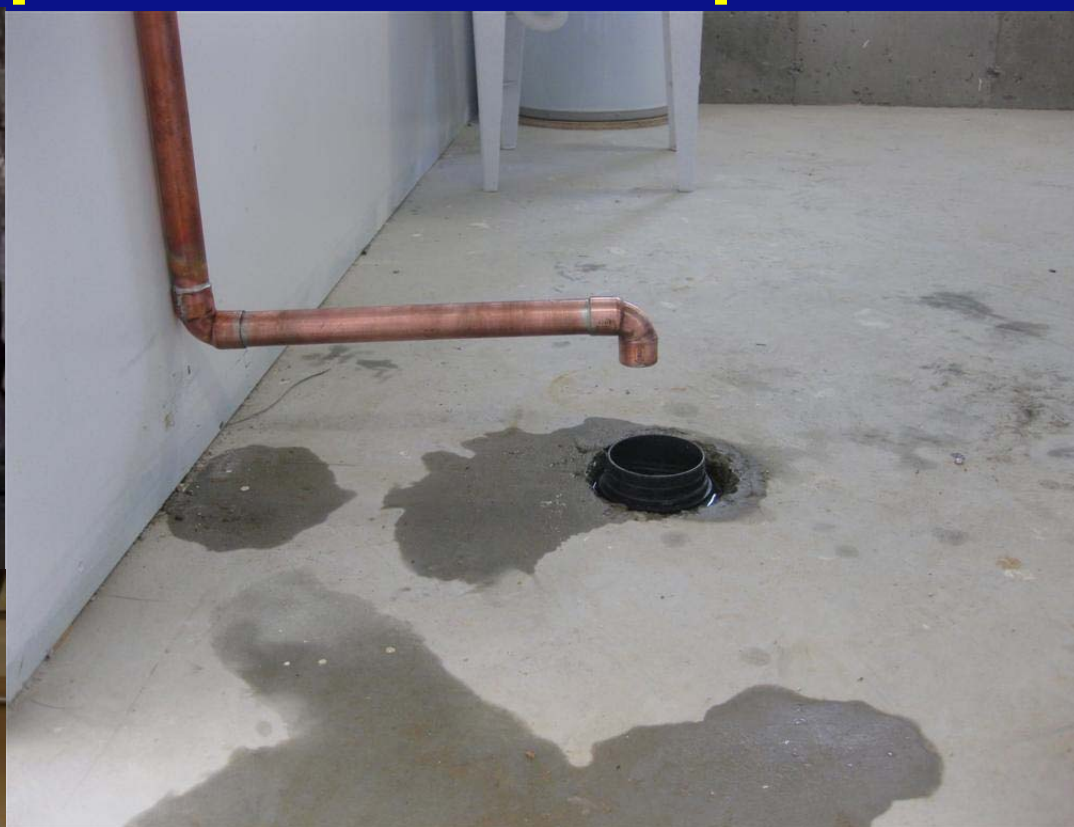
Are all spring box hatches appropriately sealed and overflow vents appropriately shielded and screened?



Has there been any by-pass in the disinfection treatment process (UV or other disinfectant)?



Is the filter backwash discharge line appropriately “air-gapped” above the drainage pipe or sewer or septic line?



Are there any holes or unprotected openings
in the atmospheric tank(s)?



Is the hatch on the atmospheric tank not sealed properly?



Is the overflow on the atmospheric tank suitably protected and screened?



Is the hatch on the atmospheric tank not sealed properly?



Are vents on the atmospheric tank suitably protected and screened?



Is the overflow on the atmospheric tank not suitably protected and/or screened?





Submission of Level 2 Forms & CT DPH Review

- Submit Forms to DWS mailing address or [dwdcompliance @ct.gov](mailto:dwdcompliance@ct.gov) within 30 days
- Time clock starts day after repeat samples that caused MCL violation
- Safe Drinking Water Rule Implementation Group supervised by Chris Roy will review

Corrective Action Plans

- Normally expect to have Sanitary Defects within 30 days
- If it is an item that requires a CAP, then you would suggest a reasonable time frame on Level I /II form
- SDWR Implementation Group approves CAP – may consult with Technical Review and Assessment unit



Forms for Seasonal Systems

Revised Total Coliform Rule Certification of Seasonal System Start-up Procedure

Connecticut Department of Public Health
Drinking Water Section
 410 Capitol Avenue, MS #51WAT
 P.O. Box 340308
 Hartford, CT 06134-0308

Section 1: Public Water System Information

Public Water System ID _____ Public Water System Name _____ Date Co. _____
 Primary Town/City _____ PWS Classification NTNC TNC Anticipated Start-Up Date _____ Annual Operating Period _____

Section 2: Start-up Procedures

- Minimum Required Elements (Check to verify completion of each element):
- Physical inspection of all sources of supply, pump houses, storage tanks, and completion of necessary repairs;
 - Cleaning and disinfection of all storage facilities, including all chlorine contact chambers and storage tanks;
 - Shock disinfection of all ground water sources and the distribution system;
 - Flushing of the distribution system;
 - Sampling and testing of the water prior to serving the public. Sample results must be recorded in S&T reported to the Department electronically to be accepted for routine compliance monitoring required.

Section 3: Performance of Sampling and Testing

Distribution System				
Sample Date	Sampling Point ID	Total Coliform (Present/Absent)	Color (cu)	Physical Parameters (Optional) Odor (ton) Turbidity (NTU)

Nitrate and Nitrite Entry Point Monitoring				
Sample Date	WSF Name	WSF ID	Nitrate (mg/L)	Nitrite (mg/L)

Section 4: Contact Information

Salutation _____ First Name _____ Last Name _____
 Organization _____ Job Title _____
 Mailing Address Line One _____ Mailing Address Line Two _____
 City _____ State _____ ZIP Code _____
 Business Phone (Ext.) _____ Fax _____ Mobile Phone _____ Emergency Phone _____ E-mail Address _____

Section 5: Certification

I certify that the information contained herein which is being submitted to the Connecticut Department of Public Health for a drinking water regulatory compliance purpose is complete and accurate and understand that any false information contained herein is punishable as a criminal offense under section 53a-157b of the Connecticut General Statutes.

Printed Name of Property Owner/Legal Contact: _____ Date: _____
 Signature of Property Owner/Legal Contact: _____

RCTR-SSSPC

STATE OF CONNECTICUT
 DEPARTMENT OF PUBLIC HEALTH

CERTIFICATION OF A SEASONAL SYSTEM START-UP PROCEDURE FORM Instructions

Background

The Revised Total Coliform Rule (RTRC) requires seasonal public water systems to complete a start-up procedure prior to serving water to the public at the beginning of each operating season. A seasonal system is defined as a non-community water system that is not operated as a public water system on a year-round basis and starts up at the beginning and shuts down by depressurizing and dewatering all or a portion of its distribution system at the end of each operating season.

The start-up procedure shall include, but not be limited to the following elements:

- Physical inspection of all sources of supply, pump houses, storage tanks, and completion of necessary repairs;
- Cleaning and disinfection of all storage facilities, including all chlorine contact chambers and storage tanks;
- Shock disinfection of all ground water sources and the distribution system;
- Flushing of the distribution system;
- Sampling and testing of the water for total coliform bacteria and nitrate and nitrite prior to serving the public.

The Department of Public Health Drinking Water Section (DWS) has developed guidelines to assist seasonal systems with the development of a start-up procedure that meets these requirements. The guidelines provide detailed information on the minimum elements that are required in a seasonal system's start-up procedure and on how to conduct an inspection of a seasonal water system. The guidelines are available on the DWS website at: <http://www.ct.gov/dph/publicdrinkingwater>.

Reporting Requirements

After completing the start-up procedure at the beginning of each operating season, each seasonal system must submit a completed and signed Certification of a Seasonal System Start-up Procedure form to the DWS. The certification form is also available at the DWS website listed above. **The system shall not serve water to the public until the start-up procedure has been completed and the certification has been filed with the Department.**

Instructions to Complete the Certification Form

Section 1: Public Water System Information

Public Water System ID: Provide the Public Water System (PWS) ID assigned to the system.

Public Water System Name: Provide the name of the PWS.

Date: Provide the date that the start-up procedure was completed.

Primary Town/City: Provide the town/city where the PWS is located.

PWS Classification: Provide the classification of the PWS.

NTNC = Non-Transient Non-Community;

TNC = Transient Non-Community

Anticipated Start-Up Date: Provide the date the system intends to open for the season.

Annual Operating Period: Provide the typical annual seasonal opening and closing dates.

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Rev. 10/23/2015

DPH Approved Start-Up Procedures for Seasonal Public Water Systems



Seasonal systems are public water systems that start-up and shut-down at the end of the operating season by depressurizing and dewatering all or part of the distribution system. These systems will be required to conduct the DPH's approved water system start-up procedures provided below when the new federal Revised Total Coliform Rule (RTRC) takes effect on April 11, 2016. The system owner must provide verification to the DPH that these start-up procedures were completed prior to serving water to the public. Thus, please consider the time required to conduct and complete the system inspection, necessary repairs, disinfection, flushing, and water quality testing when scheduling start-up procedures to assure that your anticipated opening date is met.

1) Water System Inspection:

Drilled Wells: Inspect the ground surface to ensure that it slopes away from the well to prevent standing water or the ponding of water. Inspect the well casing to ensure that it extends at least six inches above finished grade, is structurally intact, and is free of major pitting or corrosion. The procedures here http://www.ct.gov/dph/lib/dph/drinking_water/pdf/well_casing_extension.pdf must be used to raise a casing. Watertight caps that meet <https://www.watersystemscouncil.org/resources/well-standards-pas-97> are required. Inspect the cap and conduit lines to ensure that a tight seal is formed to the casing. Inspect the vent to ensure that the screen is intact, adequately shielded, and in good condition to prevent foreign matter from entering the well. Inspect the sanitary seal of a well with a split plate to ensure that the seal is watertight, the electrical wiring is encased in approved conduit, and that the vent is screened, shielded, and terminated in an inverted "U" or "J" to prevent foreign matter from entering the well.

Dug Wells: When practical, dug wells should be replaced to reduce susceptibility to bacteriological contamination. Inspect the well to ensure that the tiles project at least six inches above grade; the cover is constructed of reinforced concrete at least four inches thick and overlaps the tiles by at least two inches to form a watertight seal, and no holes, cracks, or chips exist. Inspect mortared joints and sidewall penetrations for watertight construction and signs of leaks or deterioration during disinfection. If needed, remove foreign matter and seal deteriorated joints or sidewall penetrations with hydraulic cement or cement mortar.

Storage Tanks: Inspect to assure that the tanks appear to be structurally sound and are free of cracks, holes, denting, excessive pitting or corrosion, and signs of leakage (i.e. staining). If there is any question or concern in regards to the tank's integrity, a professional should be hired to evaluate the tank. Inspect the tank's interior lining after draining stagnant water and removing sediment and foreign matter from the base of the tank. The approval of the DPH and a National Sanitation Foundation (NSF) Standard 61 listed coating is required for tank relining. Do not under any circumstances attempt to enter or reline storage tanks unless the Office of Safety and Health Administration's (OSHA) confined space entry requirements are met. Inspect atmospheric tanks to verify there is no nesting vermin; the tank caps and covers are intact; the hatch is properly fitted and secured; and the air vent and overflow screens are intact, free of debris, and securely fastened and shielded to prevent foreign matter from entering. Inspect pressure tanks to ensure that they function properly and are not waterlogged. Inspect the pressure gauges to ensure that they are operational and functioning properly and then document the operating pressure range for each distribution system zone.

Treatment: Inspect treatment units for signs of leakage/seepage and sanitary conditions. The units must be operated according to manufacturer's instructions and treatment components <http://info.usf.org/Certified/PhysComponents/> and treatment chemicals <http://info.usf.org/Certified/PhysChemicals/Listing.asp?Company=Name&TradeName=&ChemicalName=&ProductFunction=&ItemState=&ItemCountry=&PlantRegion> must be NSF certified. Inspect the treatment chemical containers to assure that the containers are properly stored, have the manufacturer's original label, and are maintained in sanitary conditions. Inspect the chemical treatment feed units to ensure that "no flow" sensors are installed to prevent chemical overfeeds if the water supply is interrupted or the water flow is reduced. Inspect the backwash lines to assure that the lines are equipped with adequate air gaps.

Well Houses/Pump Houses and Pits and Vaults: Inspect the facilities to ensure that yard equipment, gasoline, fuel oils, paints, etc. is not stored within. Inspect the electrical panels and controls to ensure rodents have not nested before activating. Inspect the pits and vaults to ensure that such facilities are watertight; adequately lit, vented, and suitably drained or equipped with a sump pump. Keep all facilities locked to prevent access of unauthorized individuals and ensure that water system valves are exercised.

Distribution System: Reconnect the distribution system, the service lines, any associated plumbing, and identify and eliminate dead end piping where possible. Then exercise the water system valves, inspect for leaks, and ensure that the distribution system is watertight. Exercise the water system valves and inspect to ensure that any required backflow prevention devices are in-place.

2) Water System Disinfection and Flushing:

Disinfection: Thoroughly disinfect the entire system including sources of supply, water storage tanks (see example C), and the distribution system using the guidelines found here: http://www.ct.gov/dph/lib/dph/drinking_water/pdf/Well_Disinfection.pdf.

Flushing: Thoroughly flush the distribution lines for at least 30 minutes and the service lines for at least 5 minutes. Following a thorough flushing of the entire distribution, the absence of chlorine residual must be verified using an approved testing method.

3) Water Quality Monitoring and Reporting:


Monitoring/Reporting: The initial compliance sampling requirements are that each distribution system must be sampled and tested for coliform bacteria and each source of supply must be sampled and tested for nitrate. A total coliform absent result is satisfactory. If the results are not satisfactory the system must conduct additional flushing and/or system disinfection and upon the verification of the absence of any chlorine residual resample until satisfactory results are achieved. Water cannot be served to the public prior to providing the verification to the DPH that states the required system start up procedures were completed and satisfactory water quality test results were achieved. For routine compliance monitoring a seasonal system that monitors quarterly must designate the time period or periods for monitoring based on site-specific considerations, such as monitoring during the periods of highest demand or the highest vulnerability to contamination as documented in the sample siting plan.

Seasonal Start-Up Procedure Guidance

Revised 1/24/2016



Level I Form & Instructions


STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
 Revised Total Coliform Rule Level 1 Assessment Form


PWS ID#: CT _____ PWS Name: _____ Town: _____
 System Type: CWS NTNC TNC Date Assessment Form Completed: _____
 Assessment Trigger Date: _____ This form must be completed and returned no later than 30 days after the Assessment Trigger Date.

Assessment Trigger: For a system collecting at least 40 samples per month, more than 5.0% of samples collected are TC+
 For a system collecting fewer than 40 samples per month, two or more samples are TC+
 The PWS fails to take every required repeat sample after any single routine TC+.

NOTE: If this is the second Level 1 treatment technique trigger within the past 12-month rolling period, the system is required to perform a Level 2 Assessment.

Instructions: Review and evaluate all of the elements for possible sanitary defects. Indicate Yes or No if any sanitary defects are identified or N/A if the element is not applicable to the water system. All sections of this form must be completed. If a sanitary defect is identified, provide a description of the defect along with the actions taken or proposed to correct the defect. Indicate the date that the corrective action was completed or the proposed corrective action date if not yet corrected. If additional space is needed, please attach additional pages and include any supporting documentation.

1	General Questions	Potential Defect	Description of Defect and Corrective Action Taken/Proposed	Date Corrected/Proposed
1.1	Have there been any visible or physical indicators of unsanitary conditions?	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A		
1.2	Have there been any signs of vandalism or forced entry?	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A		
1.3	Have there been any other water quality issues within the distribution or plumbing systems (i.e. color, turbidity, taste, and odor)?	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A		
2	Operational Changes	Potential Defect	Description of Defect and Corrective Action Taken/Proposed	Date Corrected/Proposed
2.1	Has there been any other source of supply used or placed into operation that is not normally used?	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A		
2.2	Have there been any general repairs, operational changes or maintenance activities on the water system?	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A		
2.3	Was there a failure to follow adequate disinfection practices following any repairs or maintenance activities on the system?	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A		


STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
 Revised Total Coliform Rule Level 1 Assessment Form Instructions

General Requirement:
 A Level 1 assessment is a basic examination of the distribution system, water source, treatment facilities, storage facilities and relevant operational practices at a public water system (PWS). A Level 1 assessment helps to identify possible sanitary defects that may have triggered assessment. The Revised Total Coliform Rule Level 1 Assessment Form identifies the minimum elements that must be reviewed and identifies typical events that could impact water quality or indicate that water quality may have been impaired. It is intended as a self-assessment and may be performed by the PWS owner or operator.

In accordance with the EPA Revised Total Coliform Rule (RTCR) (40 CFR 141), a PWS must conduct a Level 1 Assessment after exceeding any of the following treatment technique triggers:

- For a PWS taking 40 or more samples per month, more than 5.0 percent of the samples taken are total coliform-positive.
- For a PWS taking fewer than 40 samples per month, two or more samples are total coliform-positive in the same month.
- The PWS fails to take every required repeat sample after any single routine total coliform-positive sample.

NOTE: If this is the second Level 1 treatment technique trigger within the past 12-month rolling period, the PWS is required to perform a Level 2 Assessment. Level 2 Assessment must be conducted by a third-party person certified by the Department to conduct Level 2 Assessment or by the Department. Please refer to the Level 2 Assessment form and instructions for more information.

Reporting Requirement:
 The completed Revised Total Coliform Rule Level 1 Assessment Form must be submitted to the Department no later than 30 days after the date that the PWS learns that a treatment technique trigger has been exceeded (Assessment Trigger Date). All potential Sanitary Defects that were identified during the Level 1 Assessment must be corrected at the time the form is submitted. The form must include a description of the potential Sanitary Defect identified and the actions taken to correct the Sanitary Defect. If the Sanitary Defect cannot be corrected by the time the form is submitted, the PWS must provide a proposed corrective action with a date for completion.

The completed form must be returned to the Drinking Water Section at:

Mail: State of Connecticut
 Department of Public Health
 Drinking Water Section
 410 Capitol Avenue, MS# 51WAT
 P.O. Box 340308
 Hartford, CT 06134-0308

Email: andcompliance@ct.gov
Fax: 860-509-7359

Form Instructions:

Public Water System Information	
PWS ID:	Public Water System (PWS) Identification Number (CTXXXXXXX)
PWS Name:	Name of the PWS
Town:	Primary town served by the PWS
Date Assessment Form Completed:	Date that the Assessment Form was completed
Assessment Trigger Date:	Date that the PWS learned that a Level 1 treatment technique trigger was exceeded
Assessment Trigger:	Indicate which Level 1 treatment technique trigger was exceeded

NOTE: If this is the second Level 1 treatment technique trigger within the past 12-month rolling period, the system is required to perform a Level 2 Assessment.

Revised 3/2016 Page 1 of 6 RTCR Level 1 Assessment Form Instructions

Technical Questions?



Questions /Comments:

vicky.carrier@ct.gov

Desk: 860-509-7333 ext 7315

Cell: 860-463-6004



Sampling Plan Water Quality Monitoring or Implementation Questions?

Call Carissa Madonna
Or Christopher Roy

Main Phone Number is 860-509-7333

- 💧 Carissa Madonna, carissa.madonna@ct.gov
- 💧 Christopher Roy, christopher.roy@ct.gov

Tell your Co-Workers about Upcoming Training Events

- Potential RTCR November 22, 2016 here at DOT
- DWS Lead & Copper Rule Compliance Operator Training Course at Goodwin College on November 21, 2016
- ATCAVE 2017 is on February 28, 2017





Thank you
again for
being part of
public health
workforce