



North Carolina Department of Environmental Quality

Division of Water Resources, Public Water Supply Section

Level 1 Assessment Form for the Revised Total Coliform Rule

(Complete entire form and submit to the Public Water Supply Section's Rule Manager within **30 days** of the Level 1 Assessment Trigger Date)

| | | |
|---|--|----------------|
| Water System Name: | Water System Number: | County: |
| Trigger Event [Check the box(es) below that apply] | Level 1 Assessment Trigger Date | |
| <input type="checkbox"/> For systems taking fewer than 40 samples per month: System has two or more total coliform-positive samples in the same month | Sample Analysis end date: | |
| <input type="checkbox"/> For systems taking 40 or more samples per month: Greater than 5% of samples are total coliform-positive | Sample Analysis end date: | |
| <input type="checkbox"/> Failure to take every required repeat sample after any single total coliform-positive sample | Routine sample analysis end date + 24 hours (unless extension approved by the Rule Manager): | |

Section A - Review and evaluate each of the listed elements below that typically relate to a water system. Check (v) "Yes" if any potential causes of contamination were identified, or check (v) "No" if none were identified, or check (v) "N/A" if the element is not applicable to this water system. [Note: Deficiencies and RTRC Sanitary Defects are denoted below with applicable codes, for example, (D112).]

| 1. ATYPICAL EVENTS | YES | NO | NA | | YES | NO | NA |
|---|--------------------------|--------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|
| a. Weather - Recent heavy precipitation/flooding/snowmelt/drought (MA10) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. Signs of vandalism/tampering/forced entry at water system assets (MA13) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Power loss (MA11) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. Changes in plant operation (TA2) / flow rates (TA3) / maintenance / construction (TA4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Fire-fighting event (MA12) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. Other (MA1): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. DISTRIBUTION SYSTEM MAINTENANCE & OPERATION | YES | NO | NA | | YES | NO | NA |
| a. Temporary pressure loss / low or negative pressure (DA2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. Unprotected / unapproved cross-connection (D004) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Pressure loss / inadequate pressure (D105 or D107) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. Hydrants - Sheared, damaged or improperly used hydrants (DA5) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Main or service lines – new installation (DA3) / leaks / breaks / repairs (DD2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. Pumps - Improper operation or failure of pumps / repairs (PA2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Mains improperly sized to provide adequate pressure (D102 or D103) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. Valves - Improper operation of valves / valve breakage (DA6) / leaking air-relief / air-vacuum valves (DA7) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Water main / line placed in service without satisfactory bacteriological tests (D120) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | m. Improper surge control (DA8) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Dead end mains do not have hydrant or flushing valve with aboveground discharge, protected from contamination (D112) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | n. Low residual disinfectant concentration (<0.2 mg/L free chlorine residual or <1.0 mg/L total chlorine residual) at total coliform sampling sites (DD4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Flushing activity / fire hydrants and/or blow-offs (DA4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | o. Known bio-film accumulation (DA9) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Improper disinfection of distribution system after flushing and/or leak testing (D119) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | p. Other (DA1): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Water System Name: _____

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| 3. STORAGE | YES | NO | NA | | YES | NO | NA |
|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| a. Tank – Not disinfected properly (F004) / elevation not adequate to provide required pressure in distribution system (F115) / hydropneumatic tank capacity not adequate to provide required pressure in distribution system (F116) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. Inadequate cleaning and maintenance practices (FA7) - Visibly unsanitary conditions - presence of debris / animals / insects / birds / bats etc. in tank or near openings (FD2) / Deterioration, rust, holes, etc. in vent, overflow pipe, access hatch, screens, ladders, etc. (FD3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. High water age / low disinfectant residual (FA6) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. Hatch not sealed properly (FD4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Recent maintenance / observed leaks / repair on tank (FA2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. Improper operation of level control valves, altitude valves, and related appurtenances (FA9) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Vandalism / tampering observed (FA4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. Other (FA1): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. SOURCES - GROUNDWATER | YES | NO | NA | | YES | NO | NA |
| a. Source – Unapproved/ changed / new source added (SA2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. Threaded hose bibs are not equipped with anti-siphon devices (S110) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Heavy rainfall or flooding (SA3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. Potential cross-connections exist at well site (S501) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Well pit with standing water or evidence of flooding/run-off inundation (SD2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. Inadequate concrete slab or well house concrete floor (S108) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Operational changes/ changes in static/pumping levels (SA4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. Unprotected opening in pump / pump assembly (SA5) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Inadequate or damaged well components – well cap / well seal / well casing / grout seal / pitless adaptor (SD3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | m. New, repaired or reconditioned well was not properly cleaned and disinfected and/or representative bacteriological samples were not found to be free of contamination (S120) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Upper terminal of well casing not sealed watertight, with exception of vent pipe (S106) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| g. Vent – damaged / unscreened vent (SD4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| h. Vent pipe or vent tube not downward-directed and screened (S107) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | n. Other (SA1): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. SOURCES - SURFACE WATER SOURCES | YES | NO | NA | | YES | NO | NA |
| a. Source – Change in source / intake / new source added (SA8) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. Recent maintenance activity (SA11) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Heavy rainfall or flooding/high raw turbidity measurements (SA9) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. Other (SA1): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Changes in source water quality (lake turnover, algal blooms, etc.) (SA10) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| 6. TREATMENT | YES | NO | NA | | YES | NO | NA |
| a. Treatment malfunction or interruption (TD2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. Detectable residual disinfection concentration at water system MRT site not maintained as required (T139) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Disinfection equipment not provided as specified in approved plans and specifications. Stand-by disinfection equipment is not provided (T110) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. Clogging of filters / media (TA5) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Minimum residual disinfection concentration at Entry Point not maintained as required (T138) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. Other (TA1): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. SAMPLING | YES | NO | NA | | YES | NO | NA |
| a. Visibly unsanitary sampling site/tap (MA2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. Sample tap not disinfected (MA7) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Infrequently used sample tap (MA3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. Aerator was not removed (MA8) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Threads on inside of tap (MA4) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. Inadequate tap flushing (MA9) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Treatment device in use after service connection [Point of Entry (POE) or Point of Use (POU)] (MA5) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. Other (MA1): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Recent maintenance activity (MA6) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |

Section B - Description of Occurrence - Provide an explanation of any issues that were identified and provide additional information that supports your findings (i.e. water quality and pressure monitoring data). Include corresponding dates with your findings. If no issues were identified above, provide an explanation of any other factors that may have caused total coliform-positive sample results.

Section C - Corrective Action - Describe corrective actions taken or proposed corrective actions for each issue identified in Section B and provide corresponding completion dates for each action item. Note: Drinking water sample(s) with results “absent” of total coliform bacteria are required to demonstrate completion of corrective actions.

☐ Check box if ALL corrective actions have been completed

☐ Check box if drinking water samples were collected upon completion of corrective actions and the results were “absent” of total coliform bacteria (required to demonstrate completion of corrective actions)

EXAMPLES: (TD2) -Treatment malfunction - Corrective Action taken: Replaced chlorinator; Date Completed: 04/30/2016

(S110) –Threaded hose bibs are not equipped with anti-siphon devices - Corrective Action proposed: Install anti-siphon devices; Date to be Completed: 05/15/2016

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| Level 1 Assessment | |
| Water System Name: | Water System Number: |

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| Level 1 Assessment | |
| Water System Name: | Water System Number: |

**Depending on the Person Responsible for Conducting and Documenting the Assessment,
Select Option A, B or C below**

| | | |
|--|--|---|
| <input type="checkbox"/> Option A: Assessment Conducted and Documented by Water System Representative (must be Owner, Operator or PE) [Complete Section 1 Only] | <input type="checkbox"/> Option B: Assessment Conducted by Water System Representative (must be Owner, or PE) and Documented by Public Water Supply Section Representative [Complete Both Sections 1 and 2] | <input type="checkbox"/> Option C: Assessment Conducted and Documented by Public Water Supply Section Representative [Complete Section 2 Only] |
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|--|--|---|
| <input type="checkbox"/> Option A: Assessment Conducted and Documented by Water System Representative (must be Owner, Operator or PE) [Complete Section 1 Only] | <input type="checkbox"/> Option B: Assessment Conducted by Water System Representative (must be Owner, or PE) and Documented by Public Water Supply Section Representative [Complete Both Sections 1 and 2] | <input type="checkbox"/> Option C: Assessment Conducted and Documented by Public Water Supply Section Representative [Complete Section 2 Only] |
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|--|--|---|
| <input type="checkbox"/> Option A: Assessment Conducted and Documented by Water System Representative (must be Owner, Operator or PE) [Complete Section 1 Only] | <input type="checkbox"/> Option B: Assessment Conducted by Water System Representative (must be Owner, or PE) and Documented by Public Water Supply Section Representative [Complete Both Sections 1 and 2] | <input type="checkbox"/> Option C: Assessment Conducted and Documented by Public Water Supply Section Representative [Complete Section 2 Only] |
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Section 1: Water System Representative Information (must be Owner, Operator or PE) Operator

Name: _____

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| Title: |
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| Date of On-site Assessment: | Assessment Completion Date: |
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|-----------------------------|-----------------------------|
| Date of On-site Assessment: | Assessment Completion Date: |
|-----------------------------|-----------------------------|

Signature (Not Required for Option B): _____

Phone Number: _____

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| Email: |
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| Section 2: Public Water Supply Section Representative Information | |
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| Name: | |
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| Regional Office: |
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| Date of On-site Assessment: | Assessment Completion Date: |
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| Date of On-site Assessment: | Assessment Completion Date: |
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| Signature: |
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| Phone Number: | |
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| Email: | |
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| Date copy of assessment was sent to owner via <input type="checkbox"/> Email or <input type="checkbox"/> Mail: |
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Comments:

Please return this form to the **Public Water Supply Section** at the address below within **30 days** of the Level 1 Assessment Trigger Date

1634 Mail Service Center, Raleigh, North Carolina 27699-1634
Attention: Total Coliform Rule Manager

OR
Email form to pwss_rtrcr@deg.nc.gov

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