



Revised Total Coliform Rule



RTCR Training Overview

- 1.Introduction and background
- 2.Sample siting plans
- 3.Seasonal Systems
- 4.Compliance sampling
 - Routine
 - Repeat
 - Dual Rule: GWR and RTCR samples
 - Increased/reduced monitoring



RTCR Training Overview continued...

5. Violations and Assessment Triggers

6. Assessments and corrective actions

8. Reporting and recordkeeping

9. Public notice and consumer confidence report

10. Other rule aspects

11. Summary



RTCR Resources

Download the following RTCR guidance documents directly from the RTCR webpage -

https://www.env.nm.gov/drinking_water/rtcr/, or find the RTCR webpage from Latest News / New Regulations from the Drinking Water Bureau homepage -

<https://www.env.nm.gov/dwb/index.htm>

- RTCR Sample Sites Spreadsheet
- Requirements for Small Systems Fact Sheet
- Repeat Monitoring Requirements for Small Systems Fact Sheet
- Requirements for Seasonal Systems Fact Sheet
- Seasonal System Start-Up Procedure Guidance
- and Checklist

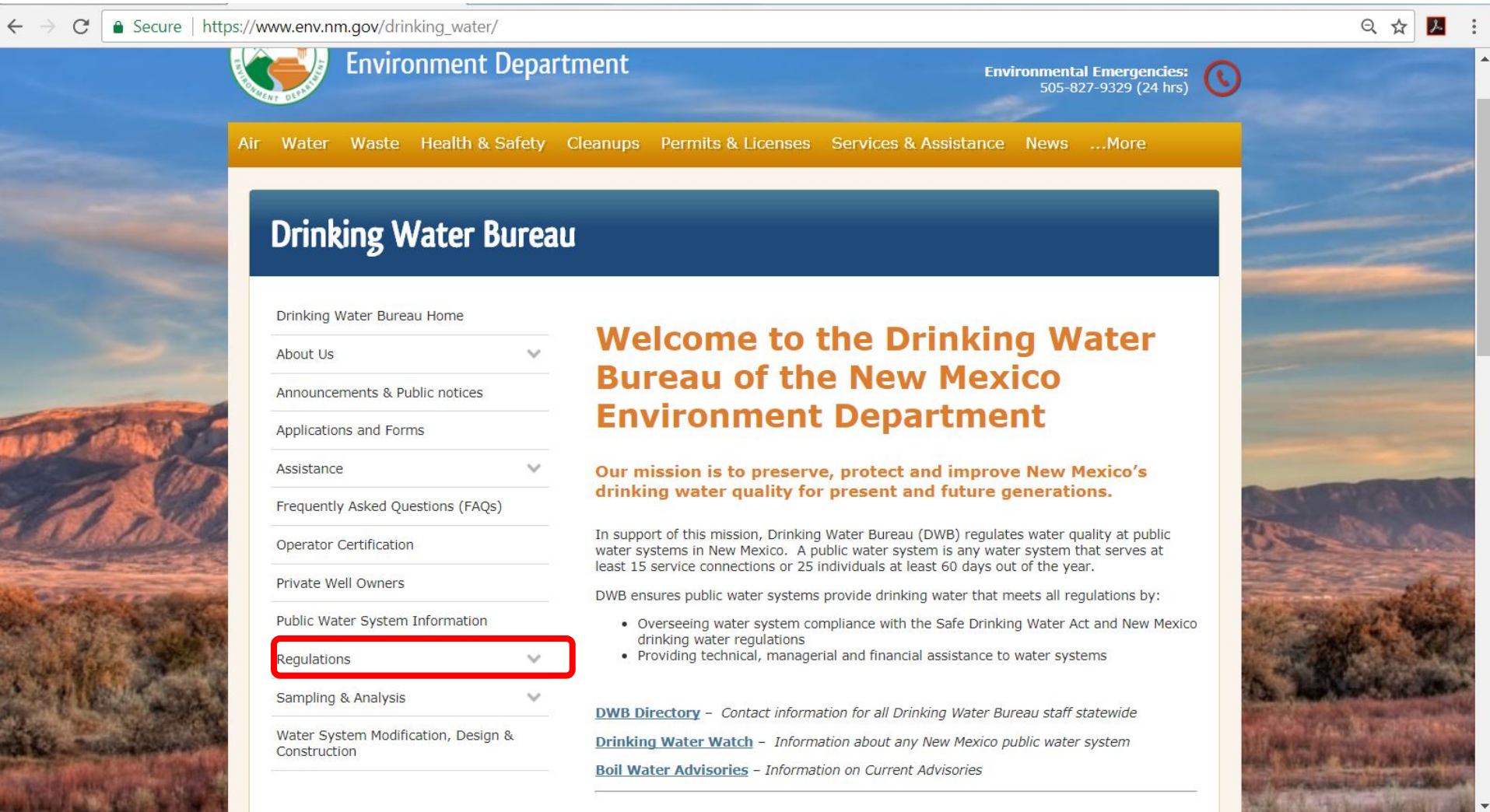


RTCR Resources continued...

- Level 1 and Level 2 Assessments and Corrective Actions Fact Sheet
- Level 1 Assessment and Corrective Action Form
- Level 2 Assessment and Corrective Action Form
- List of Sanitary Defects
- Large System Guidance
- DSSP Template and Instructions from the Applications and Forms webpage:
(https://www.env.nm.gov/drinking_water/applications-and-forms/)



NMED DWB web page

A screenshot of the New Mexico Environment Department's Drinking Water Bureau website. The browser address bar shows the URL https://www.env.nm.gov/drinking_water/. The page features a blue header with the NMED logo and contact information for environmental emergencies. A yellow navigation bar lists various services. The main content area has a blue banner for the Drinking Water Bureau, followed by a sidebar with a list of links where 'Regulations' is highlighted with a red box. The main text area contains a welcome message, the bureau's mission statement, and a list of services provided. Links to a directory, water watch, and advisories are also present.

Secure | https://www.env.nm.gov/drinking_water/

Environment Department

Environmental Emergencies: 505-827-9329 (24 hrs)

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Water System Modification, Design & Construction

Welcome to the Drinking Water Bureau of the New Mexico Environment Department

Our mission is to preserve, protect and improve New Mexico's drinking water quality for present and future generations.

In support of this mission, Drinking Water Bureau (DWB) regulates water quality at public water systems in New Mexico. A public water system is any water system that serves at least 15 service connections or 25 individuals at least 60 days out of the year.

DWB ensures public water systems provide drinking water that meets all regulations by:

- Overseeing water system compliance with the Safe Drinking Water Act and New Mexico drinking water regulations
- Providing technical, managerial and financial assistance to water systems

[DWB Directory](#) – Contact information for all Drinking Water Bureau staff statewide

[Drinking Water Watch](#) – Information about any New Mexico public water system

[Boil Water Advisories](#) – Information on Current Advisories



RTCR Page

Secure | https://www.env.nm.gov/drinking_water/laws-and-regs/

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Drinking Water Laws & Regulations

The oversight of public water systems by the New Mexico Environment Department (NMED) Drinking Water Bureau (DWB) is guided by laws and regulations. The primary law governing public water systems is the federal Safe Drinking Water Act (SDWA). The U.S. Environmental Protection Agency (EPA) delegated SDWA [primacy](#) to the New Mexico Environment Department, authorizing it to enforce the law in New Mexico.

Federal Statutes

Safe Drinking Water Act

The [Federal Safe Drinking Water Act](#) (42 U.S.C. §300f et seq. (1974); Pub. L. 93-523, Title XIV) is the federal law that protects public drinking water supplies throughout the nation. Under the SDWA, the EPA sets standards for drinking water quality and implements various technical and financial programs with its partners to ensure drinking water safety. The [National Primary Drinking Water Regulations](#) are the regulations set by the EPA.

- [EPA's Safe Drinking Water Website](#)
- [Arsenic Rule](#)
- [Consumer Confidence Report Rule](#)
- [Disinfection Byproducts Rules](#)
- [Ground Water Rule](#)
- [Interim Enhances Surface Water Treatment Rules](#) (1998) IESWTR
- [Long Term 1 Enhanced Surface Water Treatment Rule](#) (2000) LT1SWTR
- [Long Term 2 Enhanced Surface Water Treatment Rule](#) (2006) LT2SWTR
- [Lead and Copper Rule](#)
- [Public Notification Rule](#)
- [Radionuclide Rule](#)
- [Regulated Contaminants](#)
- [Revised Total Coliform Rule](#)

New Mexico Statutes



RTCR Page

https://www.env.nm.gov/dwb/RTCR.htm



New Mexico Environment Department

Contact Information:
(505) 827-2855 MAIN // 1-800-219-6157 (toll free)

Environmental Emergencies:
505-827-9329 (24 hrs)

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NOTICE: The Drinking Water Bureau has received some reports of problems when downloading templates from this page. We are troubleshooting the problems and believe they may be related to: (1) a mis-match between the version of EXCEL or WORD used by NMED and the water system users, or (2) a browser incompatibility (please try using the Internet Explorer "IE" browser). We apologize for any inconvenience and thank you for your patience.

Revised Total Coliform Rule (RTCR)

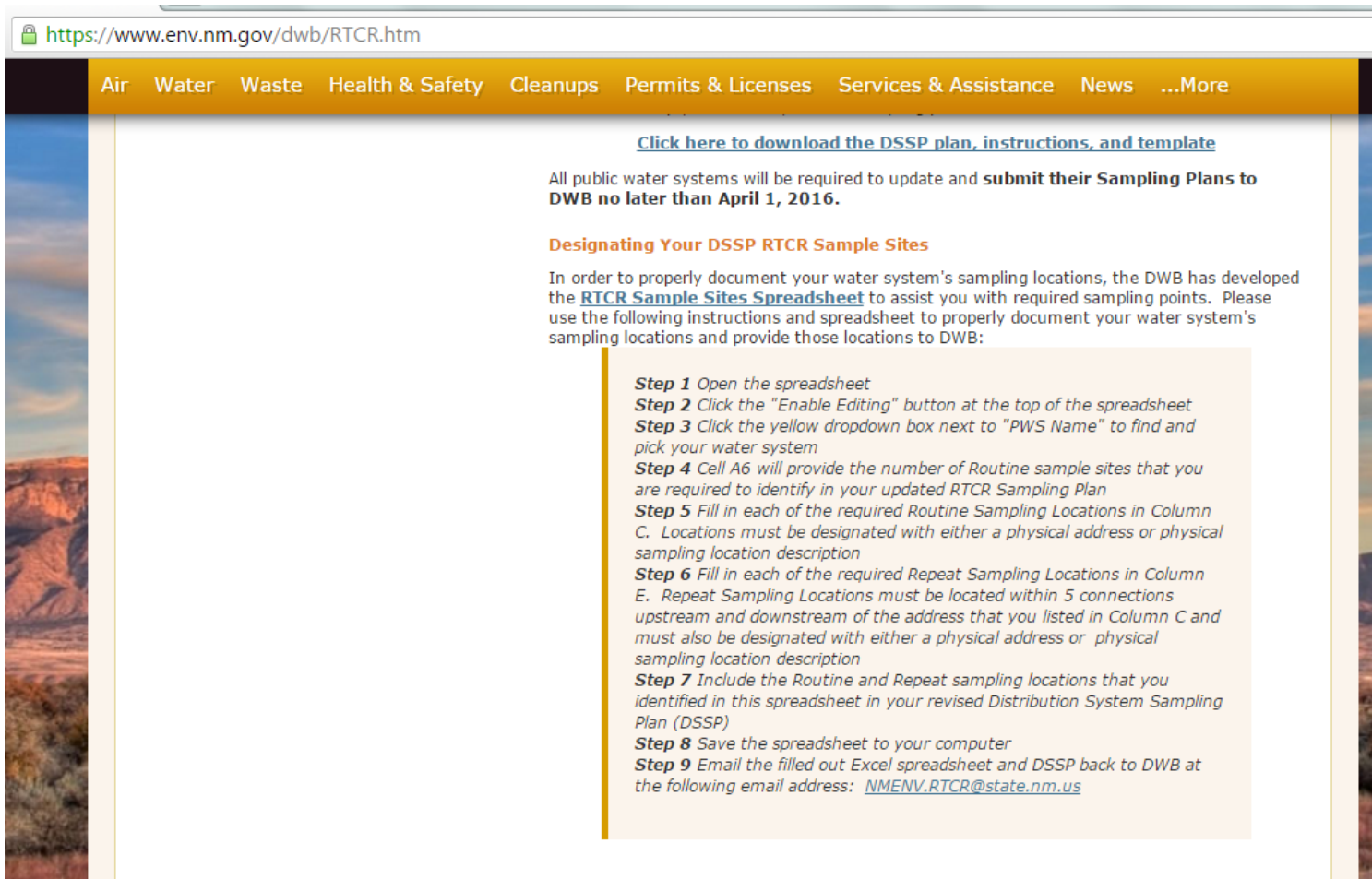
The RTCR is a major revision to the original Total Coliform Rule (TCR). The RTCR goes into full effect on April 1, 2016. To read the full text of the RTCR, click [here](#).

Additional information is available on the Association of State Drinking Water Administrators (ASDWA) website, including slides and recorded webinars conducted by the US EPA on the RTCR. Click [here](#) to access that training material.

[General Overview](#)



Sample Plan and Sample Siting Spreadsheet



The screenshot shows a web browser window with the URL <https://www.env.nm.gov/dwb/RTCR.htm>. The page has a yellow navigation bar with links: Air, Water, Waste, Health & Safety, Cleanups, Permits & Licenses, Services & Assistance, News, and ...More. The main content area has a blue header with the text "Click here to download the DSSP plan, instructions, and template". Below this, a paragraph states: "All public water systems will be required to update and **submit their Sampling Plans to DWB no later than April 1, 2016.**" A section titled "Designating Your DSSP RTCR Sample Sites" follows, with a paragraph explaining the purpose of the spreadsheet. A list of nine steps is provided in a light orange box, detailing the process from opening the spreadsheet to emailing the completed plan back to DWB.

<https://www.env.nm.gov/dwb/RTCR.htm>

Air Water Waste Health & Safety Cleanups Permits & Licenses Services & Assistance News ...More

[Click here to download the DSSP plan, instructions, and template](#)

All public water systems will be required to update and **submit their Sampling Plans to DWB no later than April 1, 2016.**

Designating Your DSSP RTCR Sample Sites

In order to properly document your water system's sampling locations, the DWB has developed the [RTCR Sample Sites Spreadsheet](#) to assist you with required sampling points. Please use the following instructions and spreadsheet to properly document your water system's sampling locations and provide those locations to DWB:

- Step 1** Open the spreadsheet
- Step 2** Click the "Enable Editing" button at the top of the spreadsheet
- Step 3** Click the yellow dropdown box next to "PWS Name" to find and pick your water system
- Step 4** Cell A6 will provide the number of Routine sample sites that you are required to identify in your updated RTCR Sampling Plan
- Step 5** Fill in each of the required Routine Sampling Locations in Column C. Locations must be designated with either a physical address or physical sampling location description
- Step 6** Fill in each of the required Repeat Sampling Locations in Column E. Repeat Sampling Locations must be located within 5 connections upstream and downstream of the address that you listed in Column C and must also be designated with either a physical address or physical sampling location description
- Step 7** Include the Routine and Repeat sampling locations that you identified in this spreadsheet in your revised Distribution System Sampling Plan (DSSP)
- Step 8** Save the spreadsheet to your computer
- Step 9** Email the filled out Excel spreadsheet and DSSP back to DWB at the following email address: NMENV.RTCR@state.nm.us



Course Applicability

- Level 1 and 2 assessments -
 - WS3/WS4 operators already qualified
- Level 1 assessments -
 - SWA operators already qualified
 - (RTCR training to conduct Level 2 assessments)
 - SW and WS1/WS2 operators required to attend this RTCR training to conduct Level 1 and 2 assessments
 - Statewide database of operators certified to conduct Level 1 and 2 assessments through this training



Revised Total Coliform Rule (RTCR)

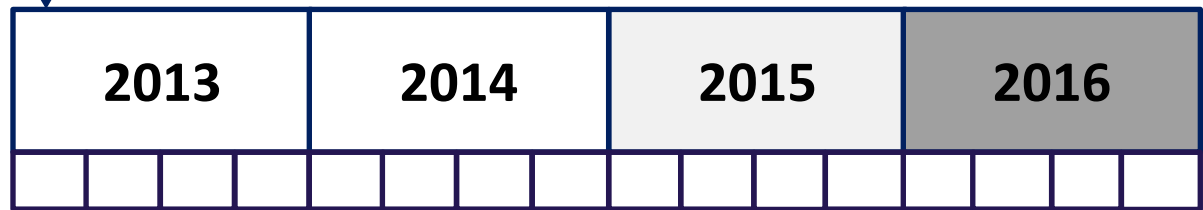
RTCR Purpose

- Improve public health protection by reducing pathways through which fecal contamination and pathogens can enter distribution system
- TCR and RTCR objectives
 - Evaluate effectiveness of treatment
 - Determine integrity of distribution system
 - Signal possible presence of microbial contamination



RTCR Timeline and Applicability

**RTCR
Final Rule**



Applies to all PWSs

- CWS & NCWS
(transients & Non-transients)
 - GW & SW systems
 - Any size population served
- 40 CFR 141.851(b)

**PWSs must
comply
April 1, 2016**



RTCR Applicability

Who does the RTCR apply to?

- All PWSs providing water to the public
- *No grandfathering or waivers*
- ~155,000 PWSs serving ~310 million individuals
- ~1,100 in New Mexico



Public Water Systems

● “Public water system means a system for the provision to the public of water for human consumption through pipes or after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year.”

40 CFR 141.2 (4-16-07 edition)



A public water system is either a...

●**Community**—“a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.”

●**Non-Transient Non-Community**—“a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year.” (Examples: schools, senior centers, detention centers etc.)

●**Transient Non-Community**—“a non-community water system that does not regularly serve at least 25 of the same persons over six months per year.” (Examples: rest stops, convenience centers, restaurants etc.)



RTCR Requirements PWS' Need to Comply With

New

3. Find And Fix (Level 1 & Level 2 Assessments and corrective actions)

New

4. Seasonal System start-up procedures

2. Monitoring

1. Contaminant Levels (MCLG and MCL)

5. Reporting and Recordkeeping

6. Violations, Public Notification, and Consumer Confidence Reports

RTCR

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graph TD; 1[1. Contaminant Levels (MCLG and MCL)] --> RTCR((RTCR)); 2[2. Monitoring] --> RTCR; 3[3. Find And Fix (Level 1 & Level 2 Assessments and corrective actions)] --> RTCR; 4[4. Seasonal System start-up procedures] --> RTCR; 5[5. Reporting and Recordkeeping] --> RTCR; 6[6. Violations, Public Notification, and Consumer Confidence Reports] --> RTCR;
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RTCR Applicability

Provisions in effect April 1, 2016 included:

- Monitoring for Total Coliform and E.coli (no change for New Mexico)
- All PWSs continue to monitor according to a written sample siting plan.
- Sampling Plans require specific elements
 - Identify routine AND repeat sampling locations.



RTCR Applicability continued...

- Assessments and corrective action if the PWS identifies a vulnerability to coliform contamination
- E. coli MCL violations
 - (i.e., replaces TCR's acute MCL)
- Total coliform TT requirements (i.e., replaces TCR's total coliform MCL violations)
- PN requirements for E. coli MCL violations



Indicator Organisms

Coliforms



Coccus

Plural = Cocci



Spirillum

Plural = Spirilli



Bacillus

Plural = Bacilli

Total Coliforms

One of the many groups of rod-shaped bacteria

Fecal Coliforms

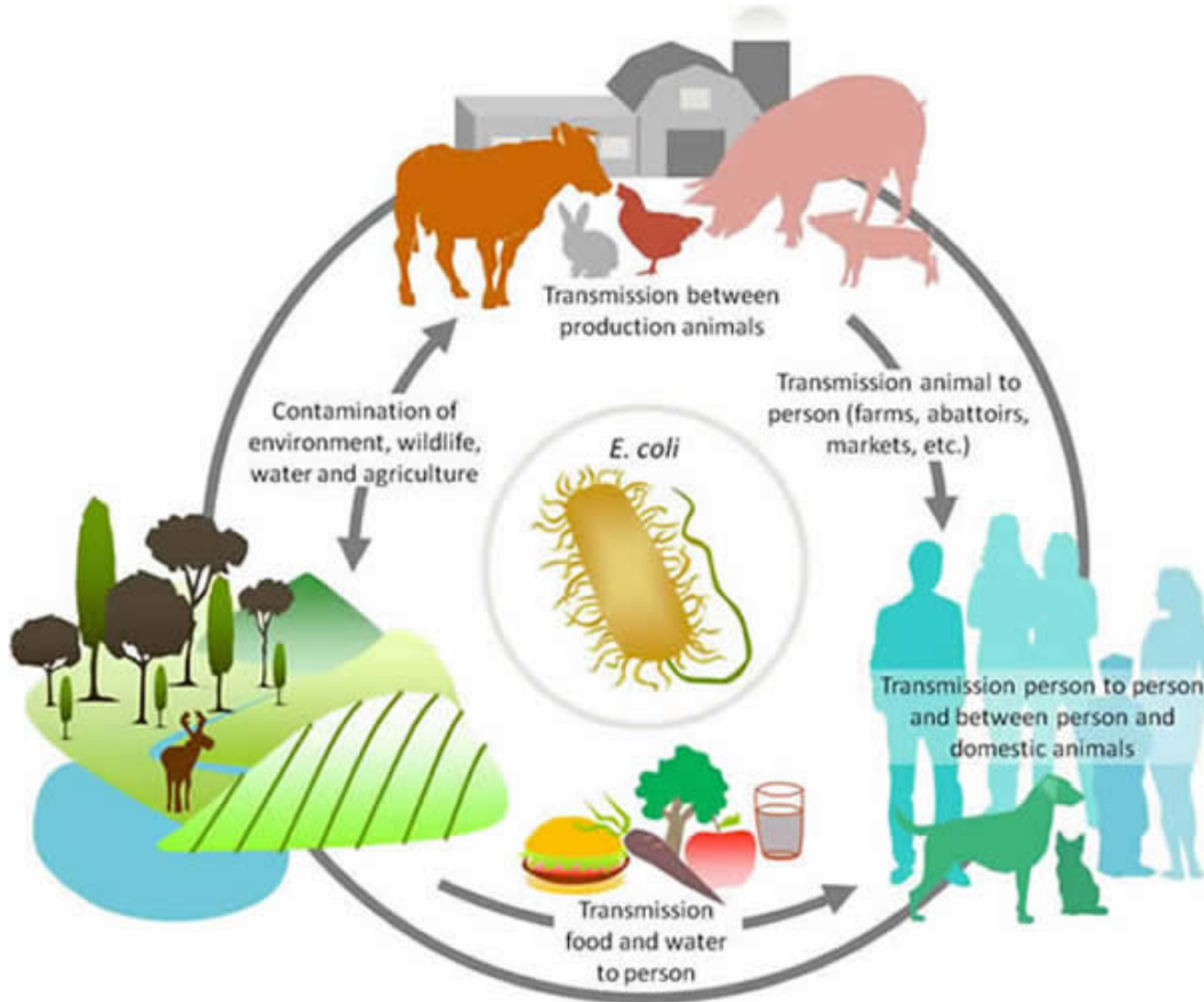
A group of coliform bacteria that reside in the intestines of warm-blooded animals

E. coli

A single species of fecal coliform bacteria



Coliforms



Coliforms

- Most E. coli reside in the intestine and are not harmful to the host animal
- E. coli possess genes that create pathogenic mutations during cell replication
- All E. coli may carry genes for resistance to antimicrobial agents.

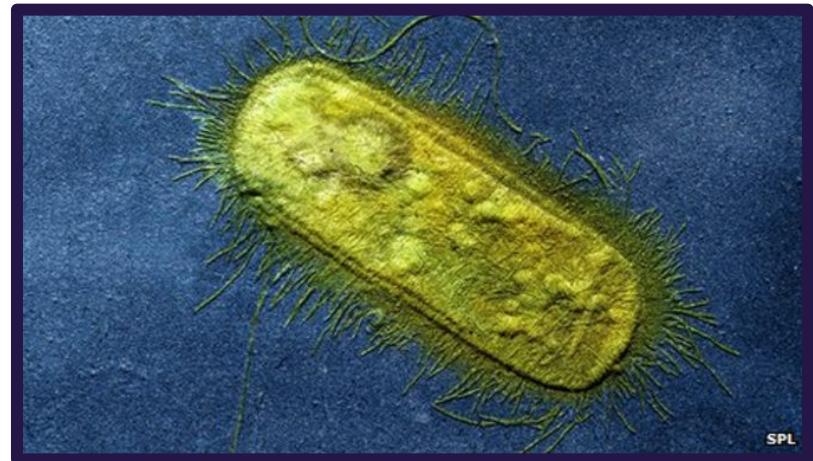


Photo: <http://www.bbc.com/news/health-23125962>
Text: <http://www.ecl-lab.com/en/ecoli/index.asp>



Daniel B. Stephens & Associates, Inc.



Why Total Coliform and E.coli?

RTCR uses TC & E. coli as indicators of potential risk

- Long lived bacteria group
(30 Days outside of host)
- Cheaper and easier to test for than individual pathogens
- Occur in higher populations than other pathogens



Why Total Coliform and E.coli continued...

- E. coli is an indicator that other pathogens such as viruses may be present, or that pathogenic strains of E. Coli are present.
- Waterborne pathogens could include:
 - Bacteria
 - Viruses
 - Parasitic protozoa



RTCR versus TCR

TCR

Sections 141.52 (MCLGs), 141.63 (MCLs)

- TC MCLG of zero
- TC monthly MCL based on the number of TC+ samples in a month
- 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, no more than one sample is TC(+)

RTCR

Sections 141.52 (MCLGs), 141.63 (MCLs), 141.859 (TT)

- No MCLG for TC
- TC triggers Assessment and Corrective Action (A/CA). [**No TC MCL**]
- 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, no more than one sample is TC(+)



TCR

Sections 141.52 (MCLGs), 141.63 (MCLs)

- Fecal coliform/*E. coli* MCLG of zero
- Fecal coliform/*E. coli* acute MCL based on FC/EC + samples

RTCR

Sections 141.52 (MCLGs), 141.63 (MCLs), 141.859 (TT)

- E. coli* MCLG of zero
- Acute MCL based on TC/*E. coli* monitoring results (**Fecal coliform is no longer used**)



Sampling Schedules

TCR	RTCR
•Based on Population •Allows for Reduced Monitoring of some systems	<i>Sections 141.854(c), 141.854(d), 141.855(c)</i> •Most systems continue on their current TCR monitoring schedule •Systems currently on quarterly sampling will now be required to collect monthly samples •Monitoring schedules will be evaluated by the State during each sanitary survey to determine if the monitoring frequency is appropriate.



Sampling Schedules

TCR	RTCR
• Sample sites that are representative of the Distribution System are required to be identified • Detailed instructions on sampling procedures	• <u>UPDATED Sampling Plans</u> • Routine and Repeat sampling locations must be identified as well as addresses or locations • Routine sampling must be rotated through ALL sampling locations throughout the year • Detailed instructions on routine and repeat sampling procedures • Detailed map indicating routine and repeat sampling locations as well as drinking water sources and other facilities



Repeat Monitoring

TCR	RTCR
<i>Section 141.21(b)(1)-(4)</i> •PWS serving $\leq 1,000$ must take 4 <u>Repeat</u> samples for every TC(+) routine sample	<i>Section 141.858, 141.402(a)(2)(iv)</i> •All systems must collect a minimum of 3 repeat samples per positive routine result •Systems that collect >40 routine samples per month must continue to collect repeat samples until a completely clean set has been achieved OR a Treatment Technique Violation has occurred (> 5% positive)

Repeat Monitoring Ground Water Rule

TCR	RTCR
•No Change! •GW PWS must still take <u>additional</u> source sample(s) to comply with the GWR	•No Change! •GW PWS must still take <u>additional</u> source sample(s) to comply with the GWR



Additional Routine Monitoring

TCR	RTCR
<i>Section 141.21(b)(5)</i> •PWS taking < 5 <u>Routine</u> samples per month must take at least 5 Additional <u>Routine</u> samples in the month after a TC(+) sample.	<i>Section 141.854(j), 141.855(f)</i> •For the PWSs taking at least 1 sample per month, the Additional Routine sample requirement is eliminated •Take normal number of routine samples the month following a TC or EC positive result



TCR

Sections 141.52 (MCLGs), 141.63 (MCLs)

- Public Notification (PN)
required for MCL violations

RTCR

Sections 141.52 (MCLGs), 141.63 (MCLs), 141.859 (TT)

- PN
- Not required for TC (+) results
- Required for a Treatment Technique violation (failure to conduct Assessment or take Corrective Action)
- Required for *E. coli* Acute MCL violations



Tier 1 Public Notification

TCR	RTCR
<i>Section 141.63, Subpart O, Subpart Q</i> • Violation of EC/FC MCL – acute violation, Tier 1 PN	• Violations - <i>Section 141.860(a)</i> • PN – <i>Sections 141.202, 203, 204, and Appendices A and B</i> • CCR – <i>Section 141.153 and Appendix A</i> • Violation of EC MCL – Tier 1 PN 1. The system has an <i>E. coli</i> (+) Repeat sample following a TC (+) Routine sample. 2. The system has a TC (+) Repeat sample following an <i>E. coli</i> (+) Routine sample. 3. The system fails to take all required Repeat samples following an <i>E. coli</i> (+) Routine sample.



Tier 2 Public Notifications

TCR	RTCR
Section 141.63, Subpart O, Subpart Q •Violation of monthly TC MCL – Tier 2 PN	•Violations - Section 141.860(b) •PN – Sections 141.202, 203, 204, and Appendices A and B •CCR – Section 141.153 and Appendix A •Monthly TC MCL violation is dropped – triggers Assessment and Corrective Action (A/CA) instead •A TT violation occurs when - OA PWS fails to conduct required Assessment or Corrective Action within 30 days of trigger notification – Tier 2 PN - OA seasonal system fails to complete a State-approved start-up procedure prior to serving water to the public – Tier 2 PN



Tier 3 Public Notification

Current TCR	RTCR
<i>Section 141.63, Subpart O, Subpart Q</i> •M&R violation – Tier 3 PN •PWS must notify State re: single EC/FC (+) result.	•Violations - Section 141.860(c) & (d) •PN – Sections 141.202, 203, 204, and Appendices A and B •CCR – Section 141.153 and Appendix A Monitoring violation •Failure to take every required (ALL) Routine samples •Failure to report all sample results within required timeframes •Tier 3 PN M&R violations will be tracked separately – •Monitoring is a separate violation and •Reporting is a separate violation •PN/CCR Language - TC health effects language changed to reflect failure to conduct Assessment or Corrective Action PWS must notify State re: single EC (+) result



Monitoring/Reporting Separated

TCR	RTCR
M&R violation – Tier 3 PN	• M&R violations will be tracked separately – Both require Tier 3 PN • Newly specified M&R violations: • Failure to take every required routine or additional routine sample in a compliance period • Failure to submit a monitoring report or completed assessment form after monitoring or conducting assessment correctly/timely • Failure to notify the State following an <i>E. coli</i> (+) sample • Failure to submit certification of completion of State-approved start-up procedure by a seasonal system



Consumer Confidence Report

TCR	RTCR
Mandatory health effects language for TC and <i>E. coli</i> •CCR must contain information related to highest monthly TC results (number or percentage) and the total number of fecal positive (<i>E. coli</i>) samples	•TC health effects language changed to reflect nature of TC as an indicator and, if appropriate, the failure to conduct assessments or corrective action •CCR must contain information about the number of assessments required and corrective actions taken, and, if appropriate, the number of assessments and corrective actions not completed



Sampling Plans

Sampling Plan

The plan needs to be specific enough that any certified sampler or operator could take the plan without any prior knowledge of your system and accurately implement it.



Include:

- Written description of the system and system schematic
- High quality accurate maps of the distribution system showing all sample sites
- Separate maps for each sample group (Bacteriological, Pb & Cu, Cl residual, etc.)
- Written description of all sample sites
- Names of laboratory for each analysis
- Approval by DWB

Template and instructions @ <https://www.env.nm.gov/dwb/RTCR.htm>



Sampling Plan

TCR	RTCR
Systems must collect samples that are representative of water throughout the distribution system & the monitoring period according to a written sample siting plan.	Systems must develop a written sample siting plan that identifies sampling sites & a sample collection schedule that are representative of water throughout the distribution system, <u>no later than March 31, 2016.</u>
	Sites may include a <u>customer's premise, dedicated sampling station or other designated compliance sampling station.</u>
	<u>Routine, repeat & GWR</u> (if the system is subject to the rule) sampling sites must be reflected in the plan.
Plans are subject to state review & revision.	



Sampling Plan

TCR	RTCR
• Sample sites that are representative of the Distribution System are required to be identified • Detailed instructions on sampling procedures	• Routine and Repeat sampling locations must be identified as well as addresses or locations • Routine sampling must be rotated through ALL sampling locations throughout the year • Detailed instructions on routine and repeat sampling procedures • Detailed map indicating routine and repeat sampling locations as well as drinking water sources and other facilities



Routine Monitoring Frequency (Baseline)

TCR	RTCR
NCWS (GW) $\leq 1,000$: 1 sample/qtr	Performed Monthly - Seasonal systems $\leq 1,000$: 1 sample <u>per month</u>. - Seasonal systems $> 1,000$: 2 or more <u>monthly</u> based on population.
CWS $\leq 1,000$: 1 sample/month	
PWS $> 1,000$: monthly based on population	
Seasonal systems monitor based on size and type of system as identified above	



RTCR Sampling Requirements

Public Water System ROUTINE Monitoring Frequencies

Population	Minimum Samples/ Month	Population	Minimum Samples/ Month	Population	Minimum Samples/ Month
25-1,000*	1	21,501-25,000	25	450,001-600,000	210
1,001-2,500	2	25,001-33,000	30	600,001-780,000	240
2,501-3,300	3	33,001-41,000	40	780,001-970,000	270
3,301-4,100	4	41,001-50,000	50	970,001-1,230,000	300
4,101-4,900	5	50,001-59,000	60	1,230,001-1,520,000	330
4,901-5,800	6	59,001-70,000	70	1,520,001-1,850,000	360
5,801-6,700	7	70,001-83,000	80	1,850,001-2,270,000	390
6,701-7,600	8	83,001-96,000	90	2,270,001-3,020,000	420
7,601-8,500	9	96,001-130,000	100	3,020,001-3,960,000	450
8,501-12,900	10	130,001-220,000	120	≥ 3,960,001	480
12,901-17,200	15	220,001-320,000	150		
17,201-21,500	20	320,001-450,000	180		

*Includes PWSs which have at least 15 service connections, but serve <25 people.

RTCR Sampling Requirements

Minimum number of monthly routine sites increases by the following Table 2 factors:

Population Range	Minimum Number of Samples per Month Required by RTCR	Multiplier to Obtain Minimum Number of Routine Sample Sites Required on the DSSP
25 to 2500	1 - 2	4
2501 to 12,900	3 - 10	3
12,901 to 33,000	15 - 30	2
33,001 or more	40 - 480	1.5



RTCR Sampling Requirements

Population	Minimum Number of Samples per Month Required by RTCR	Minimum Number of Routine Sample Sites Required on Sampling Plan
25 to 1000	1	4
1001 to 2500	2	8
2501 to 3300	3	9
3301 to 4100	4	12
4101 to 4900	5	15
4901 to 5800	6	18
5801 to 6700	7	21
6701 to 7600	8	24
7601 to 8500	9	27



RTCR Sampling Requirements

- **The DWB will verify that the PWS is sampling from each routine and repeat sample location designated on their DSSP.**
- **Your Compliance Officer will verify that samples are collected at regular intervals from month to month and is rotating through each major and minor portion of the distribution system every fourth month.**



Repeat Monitoring Locations

TCR	RTCR
Repeat samples must be collected from the original TC+ site, at least one at a tap within 5 service connections upstream, and at least one at a tap within 5 service connections downstream	PWS can collect repeat samples using the <u>same procedure as in the TCR</u> or PWS can specify in their sample siting plan either <u>fixed alternative locations</u> or <u>criteria for selecting sites</u> on a situational basis via a standard operating procedure



Sampling Plan: Sample Sites Spreadsheet

RTCR SAMPLE SITES				
Select PWS Name from Drop Down List First----> PWS Name: FREEPORT MCMORAN CHINO MINES				
PWS Number: NM3522409				
Population: 1001				
Number of Required Sample Sites	Routine Sample Site Name	Input Routine Sample Location (Physical Address or Physical Location)	Repeat Sample Site Name	Input Repeat Sample Location (Physical Address or Physical Location)
8	RT001	Chino Tailings Office Kitchen Sink	RP001O	Chino Tailings Office Kitchen Sink
			RP001U	Chino Tailings Office Mens Restroom Sink
			RP001D	Chino Tailings Office Shop Sink
			RP001UA	SOP required for use of this site - refer to DSSP template instructions
			RP001DA	SOP required for use of this site - refer to DSSP template instructions
	RT002	Chino Concentrator Met Lab Office Kitchen Sink	RP002O	Chino Concentrator Met Lab Office Kitchen Sink
			RP002U	Chino Concentrator Met Lab Office Lab Sink
			RP002D	Chino Concentrator Met Lab Office Mens Restroom Sink
			RP002UA	SOP required for use of this site - refer to DSSP template instructions
			RP002DA	SOP required for use of this site - refer to DSSP template instructions
	RT003	Chino General Office Kitchen Sink	RP003O	Chino General Office Kitchen Sink
			RP003U	Chino Environmental Services Office Kitchen Sink
			RP003D	Chino Human Resource Office Kitchen Sink
			RP003UA	SOP required for use of this site - refer to DSSP template instructions
			RP003DA	SOP required for use of this site - refer to DSSP template instructions
	RT004	Chino SX/EW Tank House Lab Sink	RP004O	Chino SX/EW Tank House Lab Sink
			RP004U	Chino SX/EW Maintenance Office Kitchen Sink
			RP004D	Chino SX/EW Administration Office Kitchen Sink
			RP004UA	SOP required for use of this site - refer to DSSP template instructions
			RP004DA	SOP required for use of this site - refer to DSSP template instructions
	RT005	Chino Smelter Electric Shop Kitchen Sink	RP005O	Chino Smelter Electric Shop Kitchen Sink
			RP005U	Chino Smelter Electric Shop Mens Restroom Sink
			RP005D	Chino Smelter Electric Shop - Shop Sink
			RP005UA	SOP required for use of this site - refer to DSSP template instructions
			RP005DA	SOP required for use of this site - refer to DSSP template instructions
	RT006	Santa Rita Park Kitchen Sink	RP006O	Santa Rita Park Kitchen Sink
			RP006U	Turnerville Booster Station Sample Tap
			RP006D	Kennecott Tap Sample Tap
			RP006UA	SOP required for use of this site - refer to DSSP template instructions
			RP006DA	SOP required for use of this site - refer to DSSP template instructions
	RT007	Chino Environmental Services Kitchen Sink	RP007O	Chino Environmental Services Kitchen Sink
			RP007U	Chino Environmental Services Womens Restroom Sink
			RP007D	Chino Environmental Services Lab Sink

Appendix B - Routine and Repeat Sample Sites



Sampling Plan: Sample schedule

Section 4, Revised Total Coliform Rule (RTCR) & Ground Water Rule (GWR) Bacteriological (Total Coliform & E-Coli) Sample Site Collection Schedule

Based on the population the system is required to designate a minimum of 1 routine sample site location per month when the population is below 1,000 and designate a minimum of 2 routine sample site locations per month when the population exceeds 1,001 and collect a minimum of number routine bacteriological samples per month based off of the current population. See the table below to see how many routine bacteriological samples are required to be collected per month based off of population.

Required RTCR Routine Bacteriological Sample Collection Totals

Population	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
25 to 1,000	1	1	1	1	1	1	1	1	1	1	1	1
1,001 to 2,500	2	2	2	2	2	2	2	2	2	2	2	2
2,501 to 3,330	3	3	3	3	3	3	3	3	3	3	3	3

Annual Bacteriological "Routine" Sample Site Collection Schedule

Water System Name: Philmont Scout Ranch - Headquarters						Water System ID: NM3530504						
Facility ID: 30504000						Sampling Point ID: SP305040001						
DIST	Jan (RT-)	Feb (RT-)	March (RT-)	April (RT-)	May (RT-)	June (RT-)	July (RT-)	Aug (RT-)	Sept (RT-)	Oct (RT-)	Nov (RT-)	Dec (RT-)
Routine Sample Site Location	CHQ Office	PTC Office	Shop	Trading Post	CHQ Office	PTC Office RT002	Shop RT003	Trading Post RT004	CHQ Office	PTC Office	Shop	Trading Post
Routine Sample Site Name	RT001	RT002	RT003	RT004	RT001	Security Office RT008	Infirmary RT007	PTC Kitchen RT006	RT001	RT002	RT003	RT004
Alt. Routine Sampling Site Location	Hardesty	PTC Kitchen	Security Office	Infirmary	Hardesty	PTC Kitchen	Security Office	Infirmary	Hardesty	PTC Kitchen	Security Office	Trading Post
Alt. Routine Sample Site Name	RT005	RT006	RT008	RT007	RT005	RT006	RT008	RT007	RT005	RT006	RT008	RT007

Appendix B - Routine and Repeat Sample Sites



Sampling Plan: Sample schedule

New Mexico Environment Department		UOCP Operator Lookup		Drinking Water Pr	
County Map of NM		Water System Search		Help	
Water System Detail Information					
Water System No.:	NM3530504			Federal Type:	C
Water System Name:	PHILMONT BOY SCOUT RANCH - HEADQUARTERS			Federal Source:	S
Principal County Served:	COLFAX			System Status:	A
Principal City Served:				Activity Date:	1

Water System Sampling Points					
Facility ID	Facility Name	Fac Type Code	Smpl Pt ID Type Code Status	Location	Design
					Type
30504000	DIST	DS	CSAF - DS - A	COMPLIANCE SAFE	
30504000	DIST	DS	CUNS - DS - A	COMPLIANCE UNSAFE	
3050	DS	RT000 - DS - A		Commissionary	
3050	DS	RT001 - DS - A		CHQ Office	
3050	DS	RT002 - DS - A		PTC Office	
3050	DS	RT003 - DS - A		Shop	
3050	DS	RT004 - DS - A		Trading Post	
3050	DS	RT005 - DS - A		Hardesty	
3050	DS	RT006 - DS - A		PTC Kitchen	
3050	DS	RT007 - DS - A		Infirmery	
3050	DS	RT008 - DS - A		Security Office	
3050	DS	RUPS - DS - A		REPEAT UPSTREAM	

Appendix B - Routine and Repeat Sample Sites



Sampling Plan: Repeat sampling (Small Systems)

- **1 Sample Tap** - Use same tap every month for routine sampling. All three (3) repeats will also be sampled from that one tap, in 15-minute intervals.
- **2 Sample Taps** - Alternate between each tap for routine sampling. One of those taps will more than likely be either in an up- or downstream location and will be sampled accordingly. The 2nd tap is sampled twice in 15-minute intervals as the original and up/downstream repeat

Appendix B - Routine and Repeat Sample Sites



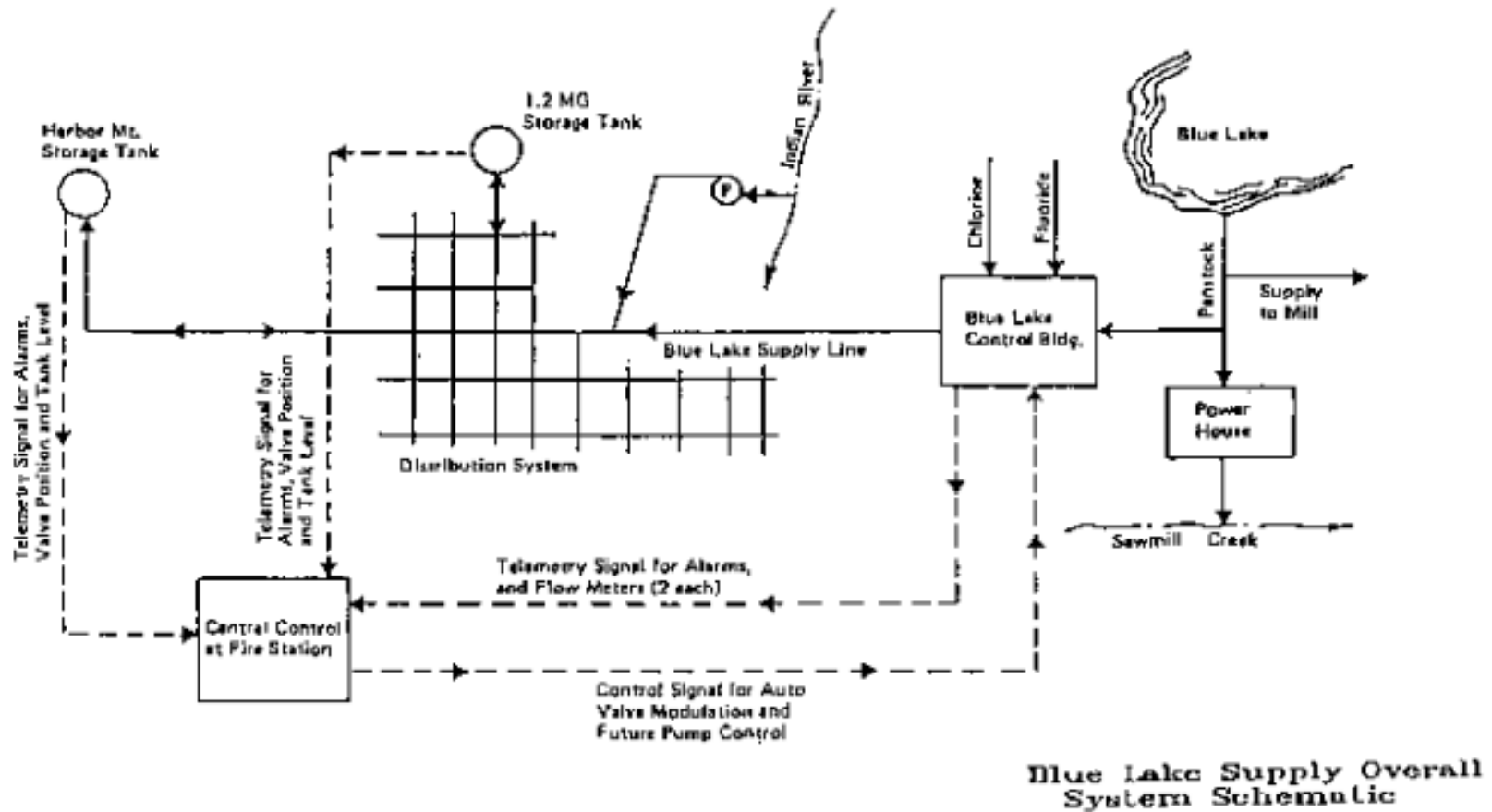
Sampling Plan: System Map

- **Accurate maps**

- **Contract services are available for mapping**
- **Base maps can be from aerial photography, google maps/earth, road atlas, county E-911, DOT, FEMA, USACOE, water system boundary tool**



Example Water System Schematic



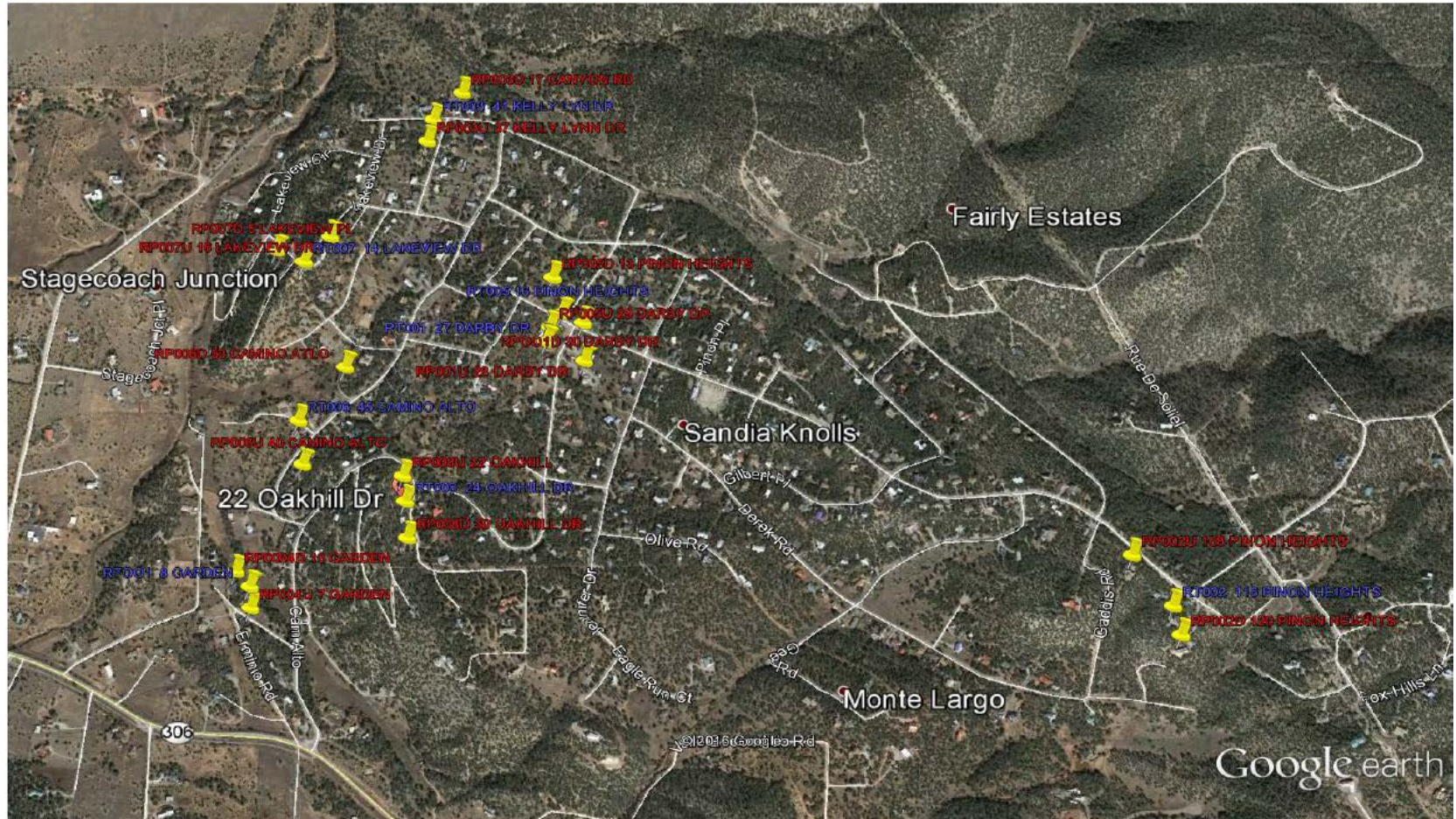
Sampling Plan: System Map

Camp Shaver YMCA Water System Map



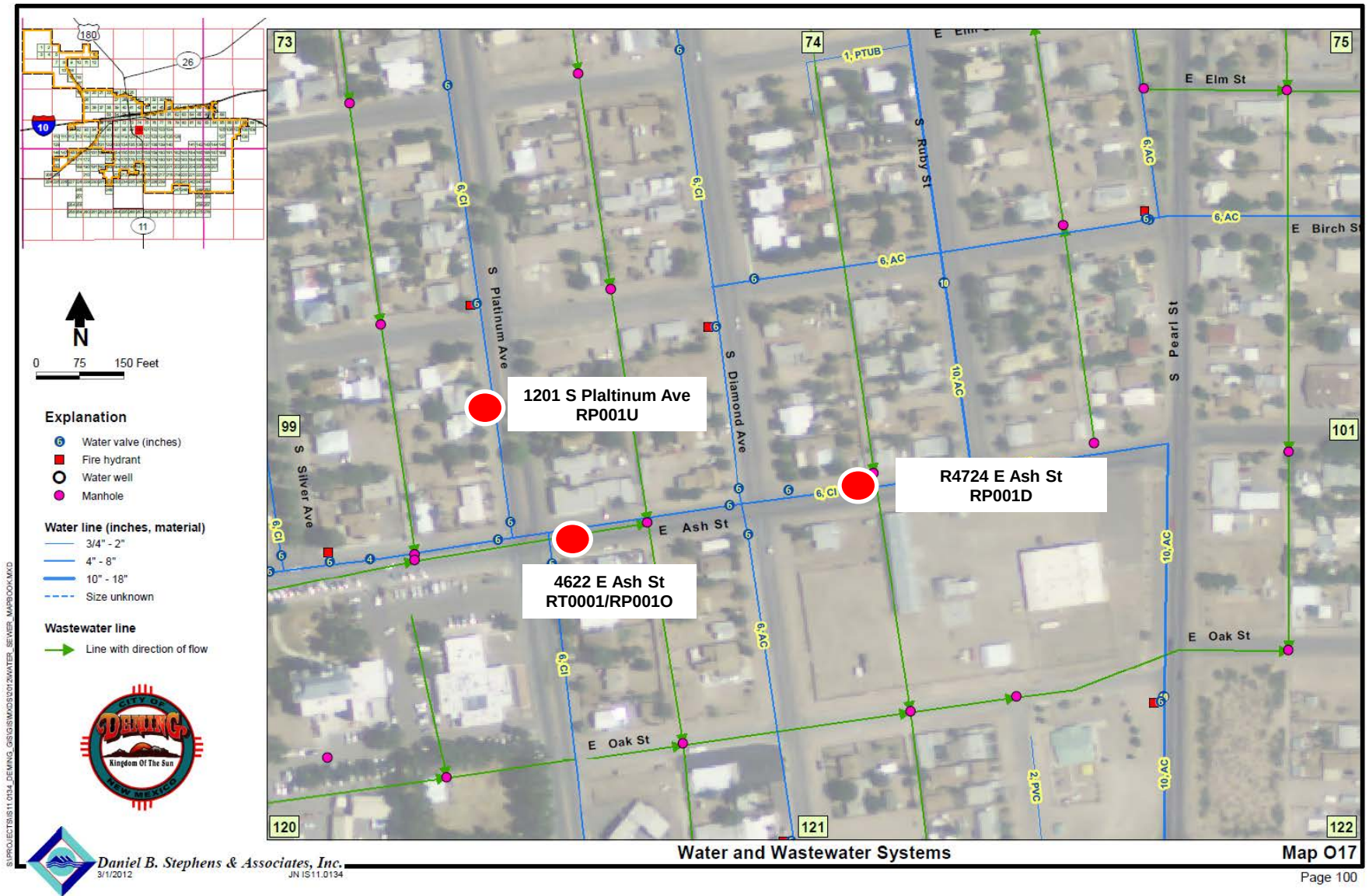
Location	Sampling Month
1. Infirmary	January & June
2. Dining Hall	February & December
3. Yurt	March & August
4. Bath House	April & September
5. Office	May & October
6. Well #1	
7. Well #1 Treatment Unit	
8. Storage Tank #2	

Sampling Plan: System Map



Appendix C - Routine and Repeat Sample Sites





Appendix C - Routine and Repeat Sample Sites

Bacteriological Sample Collection Sites; PTC Office = February – 1 Routine Sample, June – 2 Routine Samples, and October – 1 Routine Sample



Appendix C - Routine and Repeat Sample Sites

RTCR Sampling Plans

Why is reduced monitoring (quarterly) not being allowed in New Mexico?

Requirements for reduced monitoring within the RTCR made it very difficult to obtain, track, and maintain reduced schedules.

- Minimum of 12 months clean compliance history
- Sanitary survey with no deficiencies
- Annual site visits from NMED (Or annual Level 2 Assessment)
- Cross-connection control program approved by the State
- Continuous disinfection
- 4-log removal or inactivation of viruses



SEASONAL SYSTEMS

Seasonal Systems

Seasonal Public Water Systems

- Must complete a state approved startup procedure prior to opening for the season
- Must sample on a monthly basis v. quarterly basis



Seasonal Systems

TCR	RTCR
Seasonal PWS has same requirements as other systems of same size and type.	All seasonal PWSs must demonstrate (certify) <u>completion of a state-approved start-up procedure.</u>
	<u>Routine (baseline) monitoring is monthly.</u>
	Sample site plan must <u>designate the time period for monitoring based on high demand or vulnerability.</u>



Seasonal Systems

Seasonal Public Drinking Water Systems

Start-Up Procedures Guidance under the Revised Total Coliform Rule



Developed by the New Mexico Environment Department's Drinking Water Bureau

1-877-654-8720

www.env.nm.gov/dwb/RTCR.htm

Example Factsheet: New Mexico Drinking Water Program

<https://www.env.nm.gov/dwb/RTCR.htm>



<http://www.campgroundviews.com/listing/beaver-creek-campground-1/beaver-creek-campground-water-spigot/>



RTCR SAMPLING

Repeat Monitoring; # of Samples

TCR	RTCR
PWS serving $\leq 1,000$: 4 repeat samples for every TC+ routine sample	• All systems must collect a minimum of 3 repeat samples per positive routine result • Systems that collect >40 routine samples per month must continue to collect repeat samples until a completely clean set has been achieved OR a Treatment Technique Violation has occurred (> 5% positive)
PWS serving >1,000: 3 repeat samples for every TC+ routine sample	
Must <u>take additional repeats</u> for TC+ repeat samples <u>until trigger an MCL violation</u> and the system notifies the State	

RTCR Sampling

When a routine sample is either Total Coliform or E.Coli Positive:

- All systems are required to collect repeat samples
- Repeat sampling is limited to 3 repeat samples per routine positive result (plus triggered source sampling to comply with the Ground Water Rule)
- Repeat samples do not have to be collected within 5 connections upstream or downstream
- RTCR allows for alternative repeat sampling locations if a PWS believes that those alternative locations are representative of pathways for contamination of the distribution system
- Sampling from alternative locations must be approved by NMED DWB prior to repeat sampling event



RTCR Sampling

What happens when a routine sample is either Total Coliform or E.Coli Positive?

- If one or more repeat samples are TC+, PWS must collect additional set of repeat samples within 24 hours of being notified of the repeat sample's TC+ result
- PWS must take additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples, or the PWS determines that a coliform TT trigger has been exceeded as result of TC+ repeat sample and the PWS has notified the state
- **No additional sampling required the month after a TC+ or EC+ Result**



RTCR Sampling

What Violations are triggered by RTCR sampling events?

- A PWS is in violation of the E.Coli MCL if:
 - PWS has EC+ repeat sample following TC+ routine sample
 - PWS has TC+ repeat sample following EC+ routine sample
 - PWS fails to take all required repeat samples following EC+ routine sample

E.Coli MCLs require the PWS to issue a Tier 1 public notice including a Boil Water Advisory



If Routine Sample Is:	And	Any Repeat Sample Is:	Action: What do your sample results mean?	Violation
TC+ EC-	&	TC+ EC-	The presence of total coliform bacteria in both your original routine sample and in your follow-up repeat sample suggests there could be a problem and your water may not be safe to use. 1. CONDUCT A LEVEL 1 OR LEVEL 2 ASSESSMENT. Contact the state for help determining which type of assessment is required.	No MCL violation
TC+ EC-	&	TC+ EC+	The presence of <i>E. coli</i> bacteria in your water is an indicator of fecal contamination and your water may not be safe to use. 1. NOTIFY THE STATE within 24 hours of receiving sample results 2. CONDUCT A LEVEL 2 ASSESSMENT. 3. ISSUE A PUBLIC NOTICE (PN).	<i>E. coli</i> MCL violation*
TC+ EC-	&	Any or all repeat samples missing	The presence of total coliform bacteria in your original routine sample suggests there could be a problem and because repeat samples were not tested, it is unknown whether or not the water is safe to use. 1. CONDUCT A LEVEL 1 OR LEVEL 2 ASSESSMENT. Contact the state for help determining which type of assessment is required 2. ISSUE A PUBLIC NOTICE (PN)	No MCL violation
TC+ EC+	&	TC+	The presence of <i>E. coli</i> bacteria in your water is an indicator of fecal contamination and your water may not be safe to use. 1. NOTIFY THE STATE within 24 hours of receiving sample results 2. CONDUCT A LEVEL 2 ASSESSMENT. 3. ISSUE A PUBLIC NOTICE (PN).	<i>E. coli</i> MCL violation*
TC+ EC+	&	Any or all repeat samples missing	The presence of <i>E. coli</i> bacteria in your water is an indicator of fecal contamination and your water may not be safe to use. 1. NOTIFY THE STATE within 24 hours of receiving sample results 2. CONDUCT A LEVEL 2 ASSESSMENT. 3. ISSUE A PUBLIC NOTICE (PN).	<i>E. coli</i> MCL violation*

Additional Routine Monitoring

•PWS taking < 5 <u>Routine</u> samples per month must take at least 5 Additional <u>Routine</u> samples in the month after a TC(+) sample.	•For the PWSs taking at least 1 sample per month, the Additional Routine sample requirement is eliminated •Take normal number of routine samples the month following a TC or EC positive result



TRIGGERING AN ASSESSMENT

Assessment Elements – Levels 1 and 2

What is an assessment?

- When sampling results show that your PWS may be vulnerable to contamination, PWSs perform an assessment (Level 1 or Level 2)

Objective

- Find and Fix “Sanitary Defects” which can provide a pathway of entry for microbial contamination into the distribution system or indicate imminent failure in an existing barrier (e.g. cracked tank, low system pressure, or broken seals).



Assessment Forms

https://www.env.nm.gov/dwb/Documents/RTCR_Level1AssessmentForm_revised3.7.16.pdf

https://www.env.nm.gov/dwb/Documents/RTCR_Level2AssessmentForm_03212016.pdf

Secure | https://www.env.nm.gov/drinking_water/rtcr/

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Repeat Sampling

If your water system has a total Coliform Positive (TC+) or E.Coli positive (EC+) monthly routine sample, you are required to collect repeat samples. This [guidance](#) will assist you with the repeat monitoring requirements.

Triggered Assessments

When sampling results show that your public water system may be vulnerable to contamination, the public water system must perform an assessment (Level 1 or Level 2) and FIND AND FIX ANY "SANITARY DEFECTS." This [guidance](#) will assist you with the requirements of triggered assessments.

[Level 1 Assessments](#) may only be conducted by SWA, WS3, or WS4 certified operators or any Level of operator that attends an NMED-approved 8 Hour RTCR Training Session.

[Level 2 Assessments](#) may only be conducted by a WS3 or WS4 certified operator or any Level of operator that attends an NMED-approved Hour RTCR Training Session.

 Daniel B. Stephens & Associates, Inc. 

Assessments

RTCR requires systems to investigate and correct any “sanitary defects” found whenever monitoring results show a system may be vulnerable to contamination

- Two levels of assessments depending on the severity and frequency of contamination
- Sanitary defect: “a defect that could provide 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”



Assessments

Three components of Sanitary Defects

- **Source**
- **Pathway**
- **Mechanism**



Assessments

Three components of Sanitary Defects

▪Pathway



Assessments

Three components of Sanitary Defects

- Mechanism



Assessments

Elements of an assessment - What to look for

- Atypical events that may affect distributed water quality or indicate that distributed water quality was impaired
- Changes in distribution system maintenance and operation that may affect distributed water quality, including water storage
- Source and treatment considerations that bear on distributed water quality
- Existing water quality monitoring data
- Inadequacies in sample sites, sampling protocol, and sample processing



Assessments

- **Level 1 trigger is:**

- >5% total coliform positive if taking 40 or more samples/month (TT);
- 2 or more total coliform positive samples if taking <40 samples/month (TT); or
- A failure to take all required repeat samples

- **Level 2 trigger is:**

- E. coli* Maximum Contaminant Level (MCL) violation;
- E. coli* monitoring violation; or
- Two Level 1 triggers within a rolling 12 month period



Level 1 & 2 Assessments

Who can conduct an assessment?

- A Level 1 assessment SWA, WS3, or WS4
- A Level 2 assessment WS3 or WS4

Level 1 or 2 may be conducted by an level of operator that attends this 8 hour training!





Level 1 & 2 Assessments

You have 30 days!

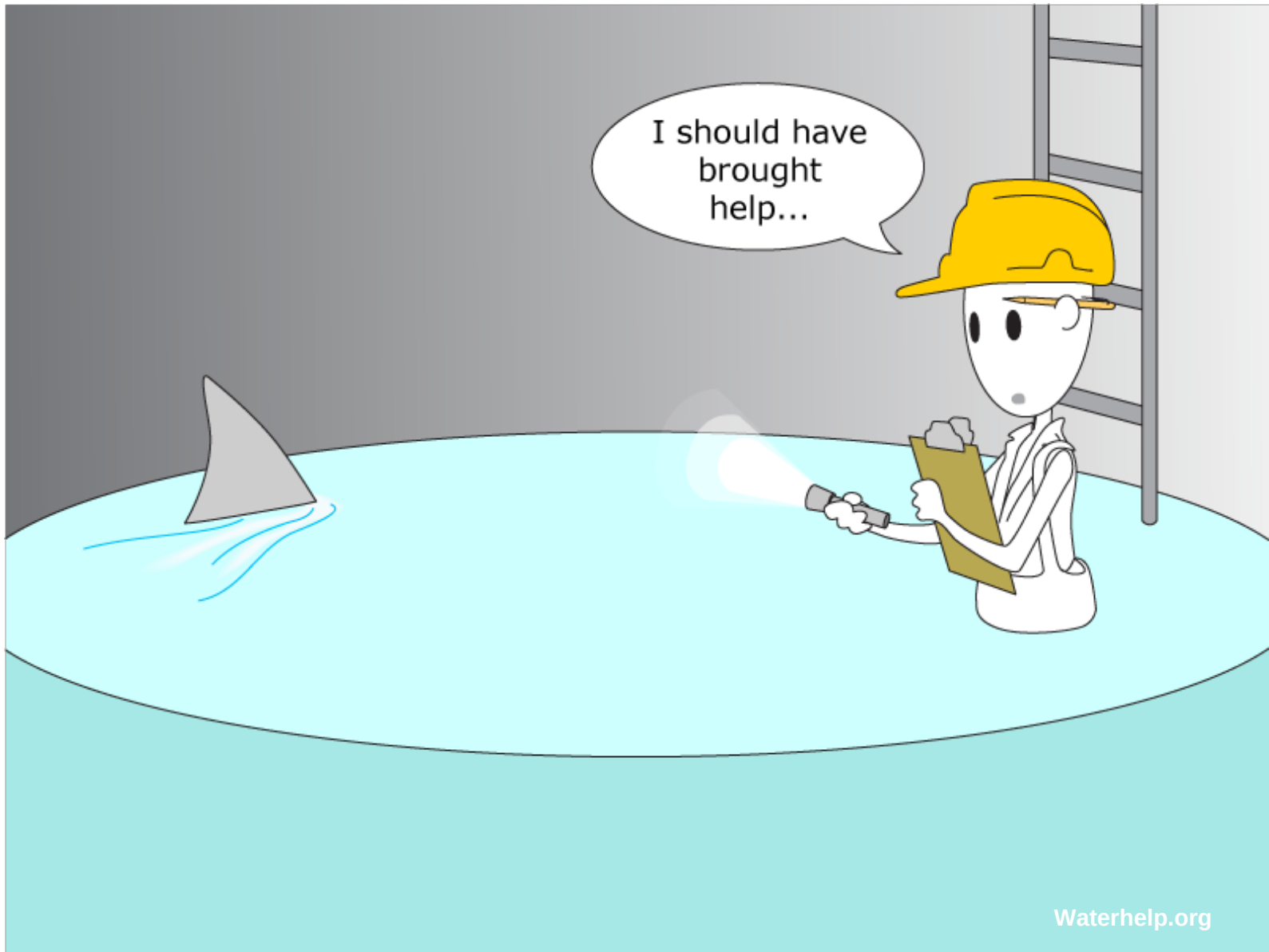
- to **Complete**
- Correct** sanitary defects
- and **Submit** the State-form



Or obtain a state-approved schedule for all incomplete corrective actions.



Conducting Assessments



Assessments

Who is approved to conduct assessments?

Level 1 Assessments

• In New Mexico, the following levels of operators will automatically be approved to conduct RTCR Level 1 Assessments:

- Small Water Advanced
- Water Level 3
- Water Level 4



Assessments

Who is approved to conduct assessments?

Level 2 Assessments

- In New Mexico, the following levels of operators will automatically be approved to conduct RTCR Level 2 Assessments:

- Water Level 3

- Water Level 4

For operators not automatically approved, attending an 8 hour RTCR training course developed by NMED will provide you approval for Level 1 and Level 2 Assessments



Assessments

No approved assessor?

If a PWS does not have an operator on staff approved to conduct Level 1 or 2 Assessments, the PWS will be required to contract an approved assessor to conduct the assessment and report the findings to NMED



Assessments

No approved assessor?



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- Sampling & Analysis
- Water System Modification, Design & Construction

Contract Services

Lists of Utility Operators/Certified Samplers/Approved RTCR Assessors Available for Contract Services

New Mexico public water systems (PWSs) must engage certified operators and samplers to meet the requirements of state and federal regulations for drinking water. To assist PWSs that need to obtain the services of certified operators and/or samplers, the New Mexico Environment Department Drinking Water Bureau (DWB) manages the following lists of certified samplers and operators. These lists also include those certified operators who are approved to conduct Level 1 or 2 assessments required by the Revised Total Coliform Rule (RTCR).

- [Operator List](#)
- [Sampler List](#)
- [RTCR Assessor List](#)

Please use this [link](#) to access a downloadable version of the Permission to List form. Instructions for completing and submitting the form are provided directly on the form.

Please submit your request to be removed for any or all lists to:

NMENV-DWBAvailableUCOSList@state.nm.us



Assessments

Level 1

- Conducted by an approved assessor
- Yes/No questionnaire reviewing your system for operational changes that may have caused the Coliform positive results
- Reviews protocols and monitoring results

Must be completed and reported to NMED
within 30 days of trigger



Assessments

Level 2

- Conducted by approved assessor
- Much more intensive than Level 1 Assessment
- Field inspections / measurements
- May require additional staff

Must be completed and reported to NMED
within 30 days of trigger



Benefits of conducting a thorough assessment

- Become more familiar with their system
- Review and correct procedures (i.e., staff training, flushing schedules, valve exercising)
- Often identify and correct other maintenance issues not associated with the Coliform Positive Result

Are less likely to repeat the MCL violation the next month which could trigger a Level 2 assessment!



Level 1 Assessment

Level 1 Assessment

Minimum elements include:

- Review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired
- Changes in distribution system maintenance and operation that could affect distributed water quality (including water storage)
- Source and treatment considerations that could have affected distributed water quality, where appropriate (e.g., whether a ground water system is disinfected)
- Existing water quality monitoring data and inadequacies in sample sites, sampling protocol, and sample processing



Level 1 Assessment

Section A -

1. **General** - Changes in operation, maintenance and events
2. **Operational Changes** - New sources, seasonal isolation
3. **Sampling sites** - Site adequacy, change in conditions
4. **Sampling Protocol** - Methods, sample handling
5. **Sources - Well, Surface water, Spring**
6. **Treatment Process** - Treatment adequacy, flow rates and O&M
7. **Storage Tanks** - Access, breaches, operation
8. **Distribution System** - Leaks, valves, surge, construction



Level 1 Assessment

Section B -

Description of occurrence - Provide additional information that supports your findings. (include dates)

- Scans of system pressure logs
- Chlorine monitoring data
- Photographs of appurtenances
- Description and dates of fire fighting events
- Evidence and dates of unauthorized access

Date	Time	Outside Temp	Water Meter Reading	Action Taken	Signature
1	8:30	54	776447	Flushed	JS
2	8:30	59	7774892	Flushed	JS
3	8:24	81	7781420	Flushed	JS
4	8:22	73	7782882	Flushed	JS
5	8:23	73	7793278	Flushed	JS
6	8:38	69	7799380	Flushed	JS
7	8:34	69	7802825	Cleaned	JS
8	8:43	72	7804732	Flushed	JS
9	8:43	76	7815852	Flushed	JS
10	8:40	76	7821690	Flushed	JS
11	8:40	75	7826571	Flushed	JS
12	8:09	75	7833580	Flushed	JS
13	8:31	72	7839400	Flushed	JS
14	8:52	71	7843844	Flushed	JS
15	8:27	74	7843482	Cleaned	JS
16	8:24	73	7854081	Flushed	JS
17	8:25	72	7854716	Flushed	JS
18	8:21	76	7860281	Flushed	JS
19	8:33	76	7866620	Flushed	JS
20	8:07	80	7870950	Flushed	JS
21	8:24	73	7875941	Cleaned	JS
22	8:26	78	7881311	Flushed	JS
23	8:30	74	7895060	Flushed	JS
24	8:30	70	7890440	Flushed	JS
25	8:32	70	7896512	Flushed	JS
26	8:35	69	7901690	Flushed	JS
27	8:32	70	7906320	Flushed	JS
28	8:37	70	7909701	Cleaned	JS
29					
30					

Level 1 Assessment

Section C -

Corrective Action - Use this space to describe the proposed corrective action with corresponding dates.

- Description of work performed
 - Before and after photographs of appurtenances
- Contractor Invoices
- Description of flushing/boosted chlorine residual



Level 1 Assessment

1. General - Changes in operation, maintenance and events

Section A		
1. GENERAL	☐ No issues	☐ Issue(s) identified ☐ NA**
Have any of the following occurred at sample sites prior to collecting bacteria samples?		
☐ (SD075) low/inadequate disinfectant residual	☐ (SD005) loss of pressure (<20 psi)	
☐ (SD009) operation/maintenance activities	☐ (SD013) visible indicators of unsanitary conditions	
☐ (SD015) firefighting event/flushing/sheared hydrant	☐ (SD076) analyzers/equipment not calibrated	
☐ (SD012) signs of vandalism/forced entry	☐ (SD007) other:	

2. Operational Changes - New sources, seasonal isolation

2. OPERATIONAL CHANGES	☐ No issues	☐ Issue(s) identified ☐ NA**
☐ (SD019) potential source of contamination	☐ (SD018) new source added	
☐ (SD016) other:		



Level 1 Assessment

3. **Sampling sites** - Site adequacy, change in conditions

4. **Sampling Protocol** - Methods, sample handling

3. SAMPLING SITES	☐ No issues	☐ Issue(s) identified	☐ NA**
☐ (SD001) unclean or unsuitable sample tap	☐ (SD002) change in conditions at sample site		
☐ (SD077) hot water intrusion	☐ (SD007) other:		
4. SAMPLING PROTOCOL	☐ No issues	☐ Issue(s) identified	☐ NA**
☐ (SD078) improper sample container	☐ (SD081) inadequate tap flushing		
☐ (SD079) aerator was not removed	☐ (SD082) improper hold time/storage temperature		
☐ (SD080) sampler error	☐ (SD083) auto sensing faucet/swivel-type faucet		
☐ (SD084) other			



Level 1 Assessment

5. Sources - Well, Surface water, Spring

5. SOURCES - Well	☐ No issues	☐ Issue(s) identified	☐ NA**
☐ (SD020) defective/damaged well cap/well seal	☐ (SD087) damaged well casing		
☐ (SD025) floodwater/run-off inundation	☐ (SD021) damaged/unscreened vent		
☐ (SD085) missing/damaged grout seal	☐ (SD088) unprotected opening in pump/pump assembly		
☐ (SD086) damaged pitless adaptor	☐ (SD089) raw water sample result TC+ or EC+		
	☐ (SD029) other:		

Surface Water Supply	☐ No issues	☐ Issue(s) identified	☐ NA**
☐ (SD090) potential source of contamination	☐ (SD071) rapid snowmelt	☐ (SD070) heavy rainfall	
☐ (SD018) change in sources	☐ (SD071) flooding		
☐ (SD091) other:			
☐ (SD036) Turbidimeters are operated outside of the following range?			
Turbidimeter Setting or Activity	Recommendation		



Level 1 Assessment

6. Treatment Process - Treatment adequacy, flow rates

6. TREATMENT PROCESS	☐ No issues	☐ Issue(s) identified	☐ NA**
☐ (SD043) change in flow rates	☐ (SD038) recent installation/repair		
☐ (SD093) inadequate disinfection	☐ (SD009) O & M procedures not followed		
☐ (SD036) turbidity measurements out of range			
☐ (SD039) treatment added or changed			
☐ (SD045) other	☐ (SD040) interruption in treatment/power loss		

7. Storage Tanks - Access, breaches, operation

7. STORAGE TANKS	☐ No issues	☐ Issue(s) identified	☐ NA**
☐ (SD058) improper maintenance practices	☐ (SD075) low disinfectant residual		
☐ (SD094) presence of dead animals/insects	☐ (SD048) hatch not sealed		
☐ (SD095) incorrect operation of level control valves, altitude valves, and related appurtenances			
☐ (SD054) deterioration, rust, holes, or other breaches in vent, overflow pipe, access hatch, screens, ladders, etc.			
☐ (SD045) other:			



Level 1 Assessment

8. Distribution System - Leaks, valves, surge, construction

8. DISTRIBUTION SYSTEM	☐ No issues	☐ Issue(s) identified	☐ NA**
☐ (SD073) power loss	☐ (SD066) operation of isolation valves resulting in breakage		
☐ (SD096) standing water/debris in valve vault	☐ (SD067) flushing of fire hydrants or blow-offs		
☐ (SD075) low disinfection residuals	☐ (SD098) improper operation of air-relief/air-vacuum valves		
☐ (SD063) pump or valve failure	☐ (SD065) installation of new mains or construction activity		
☐ (SD061) pressure loss/inadequate pressure (<20 psi)	☐ (SD063) improper operation of pumps/valves		
☐ (SD097) improper surge control	☐ (SD099) illegal use of hydrants		
☐ (SD066) main breaks	☐ (SD100) leaks		
☐ (SD062) unprotected cross connection	☐ (SD063) improper operation of valves		
☐ (SD069) other:			



Level 2 Assessment

Level 2 Assessment - Definition

An evaluation to identify the possible presence of sanitary defects, defects in distribution system, coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment



Level 2 Assessment - Definition

- More detailed examination of the system (including the system's monitoring and operational practices)
- Comprehensive investigation and review of available information
- Additional internal and external resources, and other relevant practices
- Conducted by individual approved by the State, which may include the system operator



Level 2 Assessment

Minimum elements include:

- Identification of atypical events affecting distributed water quality
- Changes in distribution system maintenance and operation (including water storage)
- Detailed review of source and treatment considerations affecting distributed water quality, where appropriate
- (e.g., whether a ground water system is disinfected)
- Existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing

System must comply with any expedited actions or additional actions required by State in the case of an E. coli MCL violation



Sanitary Defects

“Sanitary defect is a defect that could provide 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.”

Examples of sanitary defects could include:

- Cross connection
- Breakdown in treatment
- Source problems (e.g., defective well seal or casing)
- Improper disinfection of main repairs or other appurtenances being returned to service



Sanitary Defects

Sample Site Evaluation

Section A -

1. Sample site evaluation

Was the sample tap in acceptable condition?

Plumbing changes at sampling location?

Cross connections?

Treatment at sampling location? (Softeners, RO)



Sample Site Evaluation

Section A -

2. Sampling protocol

Was the correct sampling protocol followed?

- Correct sample bottle
- Sampler Hygiene
- Removed Aerator
- Adequate Flushing
- Sample Hold Time
- Adequate disinfectant residual



Were there any operational changes and maintenance activities that could have introduced total coliforms?



Operational issues -

Section A -

4. Treatment or Operational Changes

Have any inactive sources recently been introduced into the system?



Source-

Section A -

5. Source - Well

Is the sanitary seal intact?



If your water system has multiple wells, please specify which well you are assessing. If assessments are required at multiple wells, please fill out Section 5 checklist for each well that is being assessed.

Is there evidence of standing water near the wellhead?

Is the well head secured to prevent unauthorized access?



Source

Section A -

7. Source - Surface source

Have there been any sewer spills, source water spills or disturbances?

Have there been any Algal blooms?



Has source water turnover occurred?

Turbidimeter functioning properly?



Treatment

Section A -

8. Treatment (if applicable)

Treatment devices operational and maintained?

Is there any recent installation or repair of treatment or equipment?

Recent changes to the treatment process?

Interruptions in treatment (When & how long?)



Storage Facilities

Section A -

9. Storage facilities

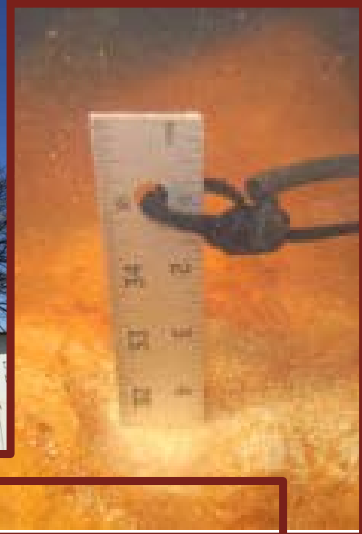
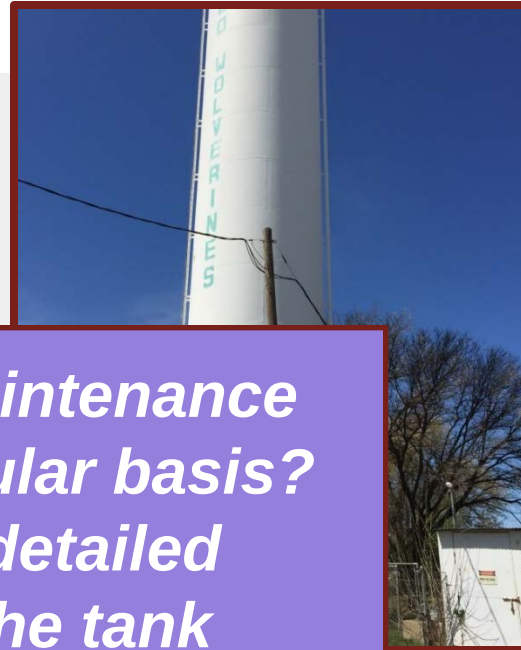
Are the overflow and vents properly sized?

Is the facility properly secured and access restricted?

Does the facility have proper gas detection equipment?

Could the physical condition of the tank be a source of contamination?

SD058 - Is tank maintenance occurring on a regular basis? Please provide detailed information of the tank maintenance that is occurring regularly.



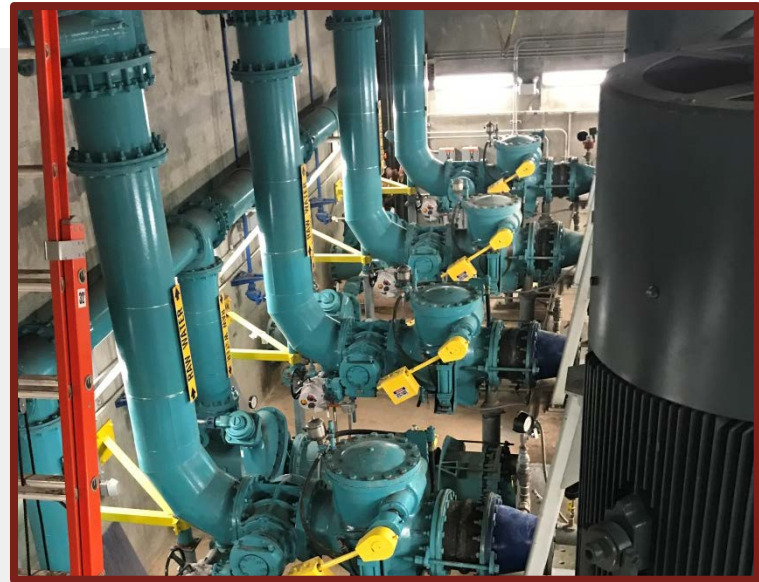
Distribution

Section A -

10. Distribution System *System pressure?*

Any identified cross connections?

Sanitary defects at pump station?



Backflow prevention at high risk sites?

Water main breaks / repairs / additions?

Was there scheduled flushing?



Environment

Section A -

11. Environmental effects

Has there been heavy rainfall?

Has there been rapid snow melt or flooding?

*Have there been changes in available source water?
(Drop in water table)*

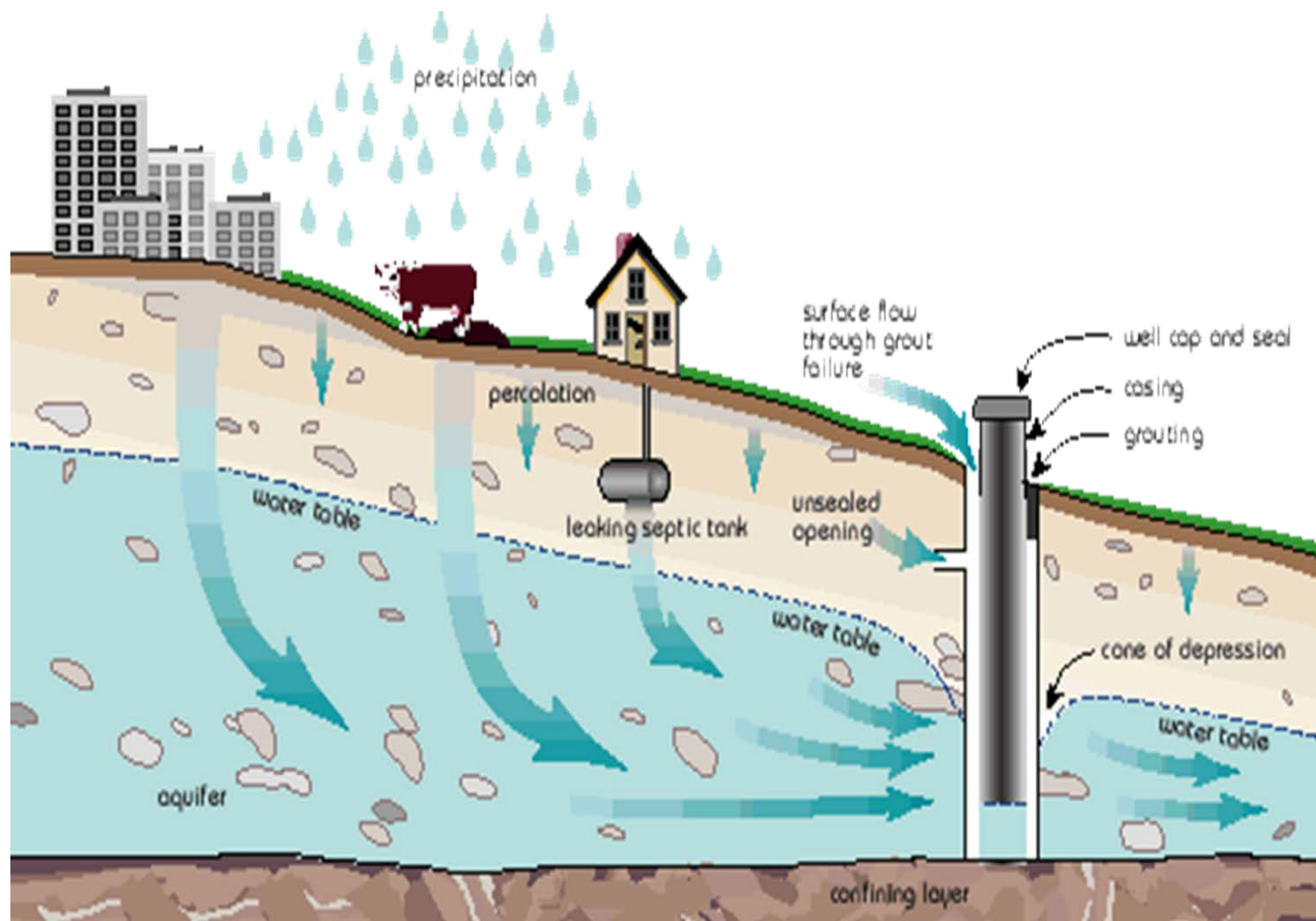
Have there been interruptions to electrical power?



Typical Causes for Coliform Positive Results

Cause
Contaminated sample tap
On-premise plumbing, piping, or water treatment devices at sample site location
Cross-connection
Water main installation or repair
Interruption of treatment
Contamination of water supply (e.g., well or spring)
Challenging water treatment conditions
Loss of distribution system pressure
Inadequate maintenance of storage tank
Sampling protocol error





Corrective Action

EPA Says:

A corrective action is required when a PWS has triggered a Level 1 or Level 2 assessment because of total coliform and/or E. Coli positive samples AND that assessment has identified a sanitary defect that could have caused the contamination (40 CFR 141.859(c)).



How much time do you have to apply corrective action?

30 days - contact your compliance officer to create a plan if action cannot reasonably be completed in 30 days.



Immediate actions

- Apply temporary disinfection, shock chlorination and/or booster disinfection.
- Flush area near the sample site - implement routine flushing
- Check valves and fittings
- Maintain adequate system pressure
-



Water Age Considerations

As water travels through the distribution system, chlorine continues to react with natural organic matter to form DBPs and increase microbial activity.

- Establish water age goals

Average retention times 1.3 - 3.0 days (medium utilities)

- Chemical considerations -

Chlorination vs. Chloramines know your source water chemistry to apply optimum disinfectant

Solutions - Tank mixing, flushing, chlorine residual management, looping dead ends, appropriate water main size



PUBLIC NOTICE AND THE CCR

Public Notice is Required for

- MCL Violation
- Treatment Technique Violation
- Monitoring Violation
- Reporting Violation

Note: Triggering an assessment
(level 1 or level 2) is not a violation



Public Notification

Divided into 3 tiers

- Takes into account the seriousness of the violation or situation and any potential adverse health effects
- Systems must notify the public and NMED-DWB
 - Certification to NMED-DWB within 10 days after public notification



Standards & Frequency

Tier 1—Significant potential health risks with short term exposure—**24 hours**

○Radio

○TV

○Hand Delivery

○Posting

○Other methods specified by State



Tier 2 Potential health risks—30 days

- Mail or direct delivery for CWSs
- Mail, direct delivery or posting for NCWs

Tier 3 No potential health risks—1 year

- Same as Tier 2
- OCCR



Violations

E. Coli MCL Violation	TT Violation	Monitoring Violation	Reporting Violation
A routine sample is TC+ and repeat is EC+ A routine sample is EC+ and repeat is TC+	Failure to conduct required assessment with 30 days of notification	System fails to take required routine samples in compliance period	System fails to submit a monitoring report or correctly completed assessment form
Failure to take repeat samples after EC+ routine sample	Failure to complete state approved start up procedure prior to serving water to the public (Seasonal)	System fails to test for EC after TC+ result	System fails to notify the State following an EC+ result
Failure to test for EC after TC+ sample			Seasonal System fails to submit certification of State approved start up

3 Tiers of Public Notification

Tier	Required Distribution Time	Notification Delivery Method
Tier 1 (Immediate notice)	When there is the potential for human health to be immediately impacted, water suppliers have 24 hours to notify people who may drink the water.	Water suppliers must use media outlets such as television, radio, and newspapers, post their notice in public places, personally deliver a notice to their customers, or an approved alternative method.
Tier 2 (Notice as soon as possible)	Water system provides water with levels of a contaminant that exceed EPA or state standards or that hasn't been treated properly, but that doesn't pose an immediate risk to human health, system must notify its customers as soon as possible, but within 30 days of the violation.	Notice may be provided via the media, posting, or through the mail.
Tier 3 (Annual notice)	Violation of a drinking water standard that does not have a direct impact on human health (e.g. failing to take a required sample on time) the supplier	Tier 3 PN must be delivered the same way as Tier 2 PN. Gives water suppliers the opportunity to consolidate these notices and send them with Annual Water

Public Notifications Triggered

TCR	RTCR	
TC MCL violation/acute MCL: FC+ or <i>E.coli</i> +	<i>E. coli</i> MCL violations	Tier 1
Monthly TC MCL violation	Treatment technique (TT) violations	Tier 2
M&R (tracked as 1 violation type)	Monitoring	Tier 3
M&R (tracked as 1 violation type)	Reporting	Tier 3



SUMMARY

What You Should Be Doing

- Update and submit your DSSP
- Familiarize yourself with assessments and the assessment process
- Determine who will conduct your assessments
- Get approved to do your own assessments
- Seasonal Systems: familiarize yourself with startup procedures



RTCR Resources

The following RTCR guidance documents can be downloaded from <https://www.env.nm.gov/dwb/index.htm>

- RTC Sample Sites Spreadsheet
- Requirements for Small Systems Fact Sheet
- Repeat Monitoring Requirements for Small Systems Fact Sheet
- Requirements for Seasonal Systems Fact Sheet
- Seasonal System Start-Up Procedure Guidance and Checklist
- Level 1 and Level 2 Assessments and Corrective Actions Fact Sheet
- Level 1 Assessment and Corrective Action Form
- Level 2 Assessment and Corrective Action Form
- List of Sanitary Defects
- Large System Guidance
- DSSP Template and Instructions

(<https://www.env.nm.gov/dwb/tools/Index.htm>)



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Solutions for water, natural resources, and the environment



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