

Effective April 1, 2016

Change

- Coliform Detection Response
- Repeat Monitoring Requirements
- Month-after requirements
- Quarterly Systems
- New
 - Sample Plan Review
 - Treatment Techniques and Triggers
 - Seasonal Start-Up Certification



Violations – 5 Types

- MCL Exceedance Tier 1
 - E. coli
 - No MCL for Total Coliform
- Treatment Technique Tier 2
 - seasonal start-up checklist
 - Assessment and corrections
- Failure to Monitor Tier 3
 - Not taking Routine Samples
 - Not taking Repeat Samples
 - Not analyzing for E. coli



But Wait – There's More Tier 3

- Failure to Report
 - E. coli
 - TC+

Treatment Technique Trigger

- Failure to Plan
 - No TCR Plan
 - No Seasonal Start-up SOP
 - Sample Plan Review
 - Maintain required records



Public Notice Requirements - Review

• Tier 1 Public Notice

- Required within 24 hours
- 2 methods of delivery
- MCL Exceedance -- E. coli
- Tier 2 Public Notice
 - Required within 30 days
 - 2 methods of delivery
 - Not certifying seasonal start-up checklist
 - No completing Assessment and Corrections timely



Public Notice Requirements Review

• Tier 3 Public Notice

- Completed within 1 year
- 2 methods of delivery
- Monitoring violations
- Reporting and Recordkeeping violations



Quarterly Monitoring

- Non-Community
- Groundwater Only
- Serving 1,000 or less



RTCR Monitoring

- Systems Sample Quarterly
- If
 - Two Level 1 or 1 Level 2 assessment within 12 months
 - Exceed E. coli MCL
 - Coliform treatment technique violation



Return to Quarterly Monitoring

- 12 months of clean compliance history
- Within 12 months had:
 - 1. Sanitary Survey

or

• 2. Site Visit

or

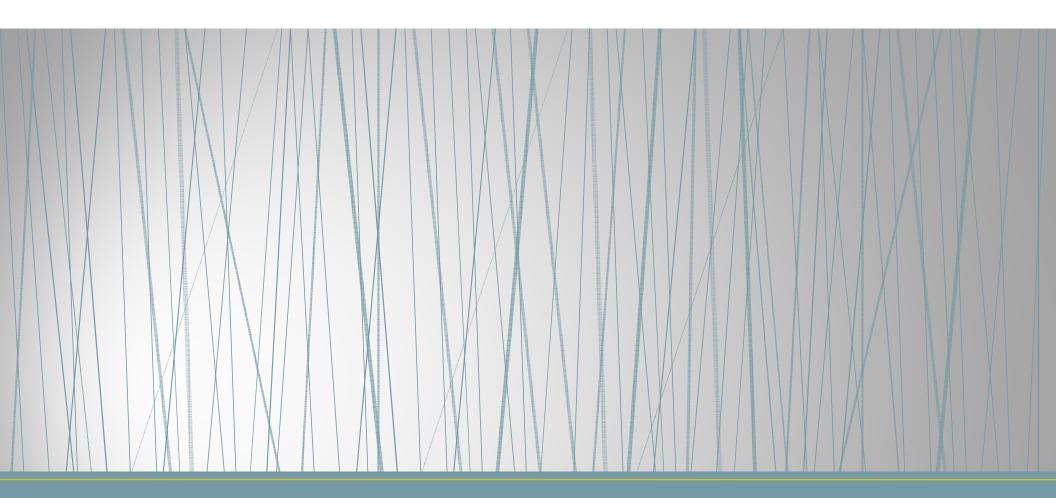
- 3. Voluntary Level 2 Assessment
- Free of sanitary defects



Bottom Line

On Monthly Monitoring for at least a year





Sampling Plans

Compliance Monitoring

- With Approved Plan
 - You submit samples
 - Use sites specified and label accordingly
 - We accept samples
 - Verify sampling locations
- Compliance Confirmed

- Without Approved Plan
 - You submit samples
 - Taken at correct times
 - Sites, samples labeled
 - We receive samples
 - No approved plan on file
 - Samples cannot be accepted
- Violation Confirmed



Monthly Plan Template

- Routine Sites
- Repeat Sites
 - Origin
 - Upstream
 - Downstream

OR

- Origin
- Two other locations

that represent distribution system



II. Monitoring Locations Attach additional copies of this sheet if more room is needed.						
Routine Sites	Repeat Sites					
Routine 1	Repeat 1A					
	Repeat 1B					
	Repeat 1C					
Routine 2	Repeat 2A					
	Repeat 2B					
	Repeat 2C					
Routine 3	Repeat 3A					
	Repeat 3B					
	Repeat 3C					

Additional Sampling Requirements

- Systems sampling quarterly
 - Sample same 3 repeat sites the month following a positive
- Systems sampling monthly
 - No additional sampling requirement for month following
- No 5-sample set required the following month



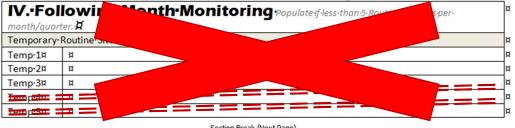
Current Plan Approved

Routine Sites¤		Repeat-Sites¤		3
Routine 1¤ ¤	Repeat 1A¤	¤	3	
	Repeat 1B¤	¤	3	
		Repeat 1C¤	¤	3
		-Repeat-1 Dit	*======================================	=,
Routine 2¤ ¤	Repeat-2A¤	¤		
		Repeat-2B¤	¤	
		Repeat-2C¤	¤	
Routine 3¤ ¤	ŧ	Repeat-3A¤	a	
		Repeat-3B¤	¤	
		Repeat-3C [×]	¤	
Routine 4¤ ¤	£	Repeat-4A¤	¤	
		Repeat-4B¤	¤	
		Repeat 4C¤	¤	

III. Ground Water Samples Required (In the event of a coliform detect) x

Sources-Required¤	Д	¤
Source 1¤	¤	¤
Source-2¤	¤	¤
Source-3¤	X	¤
-		e

location.of.the.initial.positive.sample.Those.sample.locations.are.outlined.below.





Sanitary Survey Plan Review

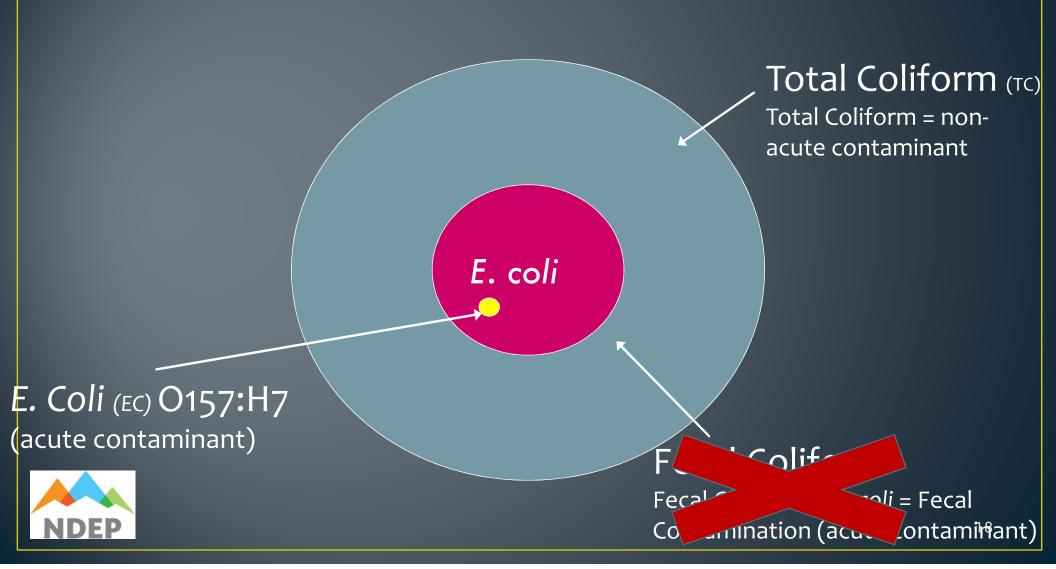
- Resources
- System Classification
 - Changes in population or type
 - TNC
 - Community
 - NTNC
- Number of Samples
 - Frequency for non-community systems
 - Based on monthly population
 - Quantity
 - Based on average daily population





Treatment Techniques Under RTCR

Relativity



Terminology for Small Systems

- A Confirmed Coliform
 - TC+ and at least 1 TC+ repeat
- Triggers a Level 1 Assessment (Treatment Technique)
- An E. coli confirmed
 - TC+ and an EC+ repeat
 - EC+ and at least TC+ repeat
 - EC+ and failure to take repeats
- Triggers a Level 2 Assessment (Treatment Technique)
- Triggers a Tier 1 Public Notice (Boil Water Order)



Triggered

- Facility Manager and Rule Manager
 - Concerns and Considerations
 - Conference Call Consult
- Pre-Assessment Requirements
 - Disinfection?
 - Investigative samples?
 - Flushing?
 - Other Procedures???



Assessments

- Level 1 Assessment
 - Done by system
 - Following confirmed coliform
 - Phone assistance available
 - NvRWA assistance possible





BUREAU OF SAFE DRINKING WATER

Level 1 Assessment

PWS ID#:	PWS Name:	City/Town:	
Compliance Period	(mm/yy)		
INSTRUCTIONS:			
review	ed. Check (√) "NA" if the section	ts typically found in a PWS. Check (√) yes or no on all elem is not applicable to the PWS. an explanation on any issues identified. Elaborate as neede	
Section C: Corre	ctive Action: Provide corrective	action(s) and completion dates for all sanitary defects iden	
	ithin 30 days of triggering a Le	evel 1 Assessment Treatment Technique.	
Section A			
1. GENERAL [CHECK	YES OR NO ON EACH ITEM]		□ NA**
	ing occurred at sample sites prior to	collecting bacteria samples?	
YES/NO		YES/NO	
Image: Comparison of the second se		loss of pressure (<20 psi) Discrete pressure of unsanitary conditions	
	ushing/sheared hydrant	Dwater quality parameters out of range	
□□signs of vandalism		Other:	
	CHANGES [CHECK YES OR NO ON EAC		
YES/NO	contamination	VES/NO	
	S [CHECK YES OR NO ON EACH ITEM]		□ NA**
YES/NO		YES/NO	<u> </u>
Dunclean or unsuital	ble sample tap	Change in conditions at sample site	
Dhot water intrusion		Inote other sample tap uses:	
4. SAMPLING PROT	FOCOL [CHECK YES OR NO ON EACH IT	TEM]	□ NA**
YES/NO		YES/NO	
Dimproper sample o		□□inadequate tap flushing	
□□aerator was not rer		improper hold time/storage temperature	
□□auto sensing fauce	**	Sampler error Other:	
	OCESS [CHECK YES OR NO ON EACH IT		□ NA**
YES/NO		ves/No	
Dinadequate disinfect		DO & M procedures not followed	
□□turbidity measurem		Denew source added	
Detreatment added or		on in treatment/power loss Other:	
	YSTEM [CHECK YES OR NO ON EACH I		□ NA**
YES/NO		YES/NO	
Dpower loss		Deperation of isolation valves resulting in breakage	
□□standing water/deb	oris in valve vault	□□flushing of fire hydrants or blow-offs	
Dow disinfection res	iduals	Dimproper operation of air-relief/air-vacuum valves	
Dump or valve failu	re	Installation of new mains or construction activity	
Dpressure loss/inade	equate pressure (<20 psi)	improper operation of pumps/valves	
Dimproper surge cor	ntrol	Dillegal use of hydrants	
□□main breaks			
Dunprotected cross	connection Dimproper or	peration of valves Other:	
	S [CHECK YES OR NO ON EACH ITEM]		□ NA**
YES/NO	e [encon reo on no on chon riem]	YES/NO	- 10A
Dimproper maintena	nce practices	Dow disinfectant residual	
Dpresence of dead a	animals/insects	not sealed Other:	
Dincorrect operation	of level control valves, altitude valve	es, and related appurtenances	
deterioration, rust,	holes, or other breaches in vent, over	orflow pipe, access hatch, screens, ladders, etc.	
** NA (not applicable) sho	uld be checked if PWS does not have that	at component (i.e. no springs)	



8. SOURCES - Well [CHECK YES OR NO ON	EACH ITEM]				
YES/NO		YES/NO	na		
□□floodwater/run-off inundation		□□damaged/unscreer	0		
□□missing/damaged grout seal		Dunprotected openir	ng in pump/pump ass	embly	
□□damaged pitless adapter		Other:			
Surface Water Supply [CHECK YES OR NO	ON EACH ITEM]				NA**
YES/NO		ves/NO Carapid snowmelt Other:	YES/NO □□heavy rainfall		
Spring [CHECK YES OR NO ON EACH ITEM]		•			□ NA**
vts/No Dpotential source of contamination Dinfiltration of surface run-off	□□rapid snowmelt	Other:	spring box	YES/NO □□heavy rai	nfall
** NA (not applicable) should be checked if PWS	does not have that compo	nent (i.e. no springs)			
Section B - Description of Occurrent water guality and pressure monitoring of				ts your findin	gs (i.e.

Check if PWS did not find any causes for the contamination.

Section C - Corrective Action Use this space to describe corrective action taken or proposed corrective action with

corresponding dates.

L	PWS Representative (print name):	Signature of PWS Representative:		
L	Sample Collector(s) (same as above):			
L	Sample Collector(s):	Sample Collector(s):		

Certification: I certify under penalty of law that I am authorized to fill out and complete this assessment and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

Print Name:	Title:	
Signature:	Date:	

Return this form to the **Bureau of Safe Drinking Water Program** within 30 days of notification of a Level 1 Assessment Trigger.

AGENCY USE ONLY: Date received:

Agency Reviewer:

Initial Trigger Date:	Initial Laboratory Notification E		ate:	: Initial BSDW Consultation Date:		_
Total# routine and repeat samples:		Tota# coliform positive	e samples: Total# E-coli positive sample		Total# E-coli positive samples:	
# of coliform detections in past 1	iform detections in past 12 months:		# of Technique	Trig	gers in past 12 months: L1/L2	



Assessment Methodology

- 1. Sample Site
 - a. Changes in use
 - b. Clean
 - c. New sampling personnel
- 2. Distribution and Storage
 - a. System tight
 - b. Tank turnover
 - c. Biofilms

- **3.** Treatment Process
 - a. Flow rate changes
 - b. Calibration needed
 - c. New product used
- 4. Sources
- **5.**Operations





Timeline

- Completed and returned to Agency within 30 days of trigger
 - Include Defects found, corrective actions planned/completed
 - If no defect found, ask questions
- Sanitary Defects corrected within 30 days of trigger
 Corrective Action Plan in place if repairs can't be corrected in timeframe
 - Failure to follow these steps and complete timely is a violation requiring public notice.



Level 2 Assessment

• Triggered by:

- 2 or more coliform events within 12 month period
- A confirmed E. coli (acute condition)
- Searching for Sanitary Defects
 - Atypical events
 - Recent repairs, losses of pressure
 - Sample Site issues
 - Treatment
 - Distribution
 - SOPs, O&M



Search for Sanitary Defects

- Much Greater Detail
 - Consideration
 - Investigation
 - Hydraulic flow
 - Changes to pressure regime across zones?
- Water quality parameters changing?
 - pH, Nitrate, turbidity?

- Question Everything
 - Disinfectant residual maintenance
 - Pressure Management
 - Main breaks/repairs
 - Water age and flushing
 - Storage facilities
 - Cross-connections
- Verification Samples





NEVADA DIVISION OF **ENVIRONMENTAL** PROTECTION

Bureau of Safe Drinking Water 901 S. Stewart Street, Suite 4001 * Carson City, NV 89701 * Phone 775.687.9521 * Fax 775-687-5699

	LEVE	L 2 ASSESSMENT TREA CORRECTIVE AC			ORT	
System Name:					NV000	
Mailing Address (Street) (City) (Zip)					NTNC -	(Circle) Community Non Transient Transient
(If Seasonal)	Operational Period				Population Served	
Operator in Resp	onsible				Date of Assessme	ent Trigger:
Charge (ORC) or Address		Phone:			Date Assessment	Completed:
Parties Present /Affiliation: -				Date		
Item#	Defect and Corrective	Action Required	Date Due	Date Corrected		e Action Description
Example 1a, 3i,	Pressure gauge on well discha Repair/replace pressure gauge consistent pressure across the not be less than 20 psi or great	rge not functioning. e in order to ensure system. Pressure must	7/15/16	7/10/16	Pressure gauge readings are wit	e replaced, and pressure thin the appropriate range. noto and log of pressure
	compliance, the above named pont nply will result in a violation.	ıblic water system is requ	ired to corre	ect the sanitary	defects outlined in	this document. 1

ltem #	Defect and Co	prrective Action Required	Date Due	Date Corrected	Corrective Action Description (attach additional documentationas necessary)	
(Attach additional sheet	s if necessary)					
	alty of law that the in er/Representative: (P)		ue, accurat	e and complete	e to the best of my knowledge and belief.	
PWS Owner/Repre		and Fillin)			Date:	
AGENCY USE ONLY:	Date received:	Age	ncy Reviewer:			
State Agency Desig	gnee Lead Assessor:	Approved)				
To return to con Failure to comp	npliance, the above r ly will result in a viol	amed public water system is requ ation.	ired to corre	ct the sanitary	defects outlined in this document. 2	3

What if nothing is found?

 It is possible that even after conducting an assessment, the cause of the positive sample cannot be conclusively linked to a given sanitary defect due to the complexity of the distribution system configuration and transport of contaminants throughout the system. In this case, water systems must document this conclusion in their assessment form. The primacy agency may require that the system provide them with supporting documents to back up its conclusion.



Best Available Technologies (BATs)

- Actions to ensure public health protection
 - generally do not involve major construction or capital improvement
- Long-term sustainability
- Public Health Protection



Best Available Technologies

• To Name a Few

- Source protection
 - Fencing around collection area
- Distribution protection
 - Flushing programs
 - Disinfection (increase residual?)
 - Repair and replace schedules
- Sampling
 - Evaluate sample sites
 - Remedial staff training on proper sampling procedures
 - Collecting additional investigative samples (non-compliance)



Wrapping it Up

- Completed by Agency Designee
 - Qualified NDEP or County Contracted Personnel
- Additional Staff
 - Nevada Rural Water Association
 - Independent 3rd Party Professional
- Assignment criteria developed for Primacy Package
- Cost of Level 2 Assessment
 - NDEP or County Staff do not charge
 - Cost to water system
 - Additional samples
 - Independent professionals may charge
 - Contract operator time on-site





Seasonal Systems

Under RTCR

Seasonal System Definition

- Non-Community System
- Not operated as a PWS year-round
- Example: JJ's Mini golf
 - Owners/managers live on-site
 - Open to public from May to November
 - Other months are NOT a public water system



Example

• JJ's Mini golf

- Owners/managers live on site year-round
- Open to public from May to November
- Other months December through April, closed to the public
- Camp Fleur de Lis
 - June to September 24-7 operation full service
 - October to April "casual operation"
 - Facility available to public
 - No water provided.



Seasonal Systems?

How About

• Partial shutdown

- All but 1 campground loops closed
- Satellite restrooms closed
- Camping on Loop A still open. Distribution system supplying water to one restroom and some hydrants but closed loops and depressurized satellite restrooms to protect from freezing.



Seasonal Systems

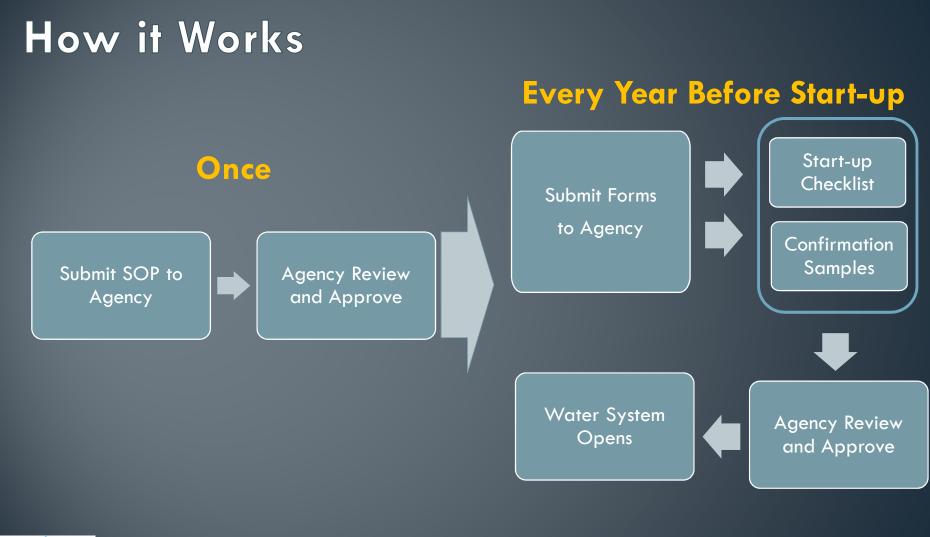
Federal Regulation 141.854(i)

- Procedure for startup of operation
- Certification
- Regulatory Approval

Primacy Requires:

- Start-up SOP to address
 - Significant Deficiencies or CAP
 - Current on monitoring
 - Confirmation sample(s)







Seasonal Start-up Procedure

- May Use Template
- Must Address
 - Outstanding Deficiencies
 - Monitoring Compliance
 - Flushing
 - Inspection
 - Source
 - Storage
 - Treatment
 - Distribution



Seasonal Start-up Procedure

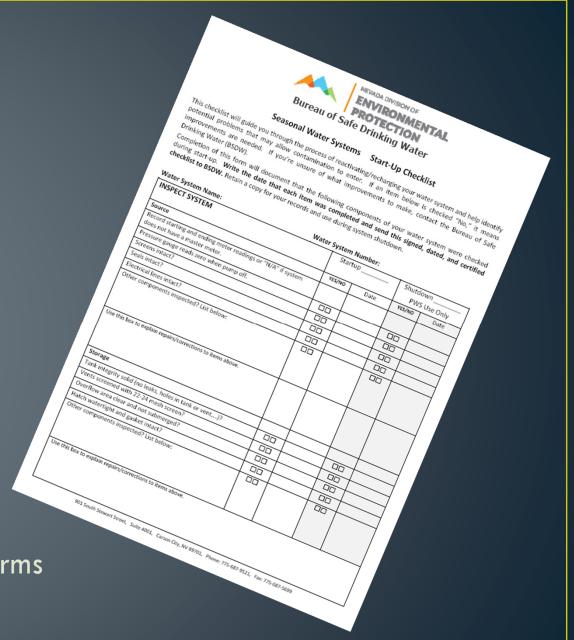
Must Address

- Disinfection
 - How will disinfection be accomplished if needed
- Compliance Sampling
 - Systems maintaining pressure year-round 1 coliform sample
 - Systems depressurizing 2 coliform samples (minimum)
 - Taken on consecutive days
- Annual Checklist Submission
 - Include coliform results
- May Include Season-End Shutdown
 - Recommended



Start-up Checklist

- Follow SOP
- Comments
 - Meter Readings
 - Repairs/Corrections
 - System Modifications
 - Disinfection (if needed)
- Signature certifies that approved SOP was followed
- Submit to Agency with Coliforms





Pressurized Systems

- Must Address
 - Significant Deficiencies
 - Current Monitoring
 - 1 clean sample prior to opening, taken at Routine location.
- Specific to PWS

 - Obtain Agency concurrence.
- Yearly Submit Checklist and Coliform Results
 - Open with agency approval.
 - Sample monthly throughout the operating season.



De-Pressurized Systems

- Must Address
 - Significant Deficiencies
 - Current Monitoring
 - Clean samples on 2 consecutive days, taken at designated location(s).
- Specific to PWS
 - Flush ——> Disinfect ——> Inspect ——> Repair ——> Sample ——> Submit
 - Obtain Agency concurrence.
- Yearly Submit Checklist and Coliform Results.
 - Open with agency approval.
 - Sample monthly throughout the operating season.



Year-Round -- Limited Operations

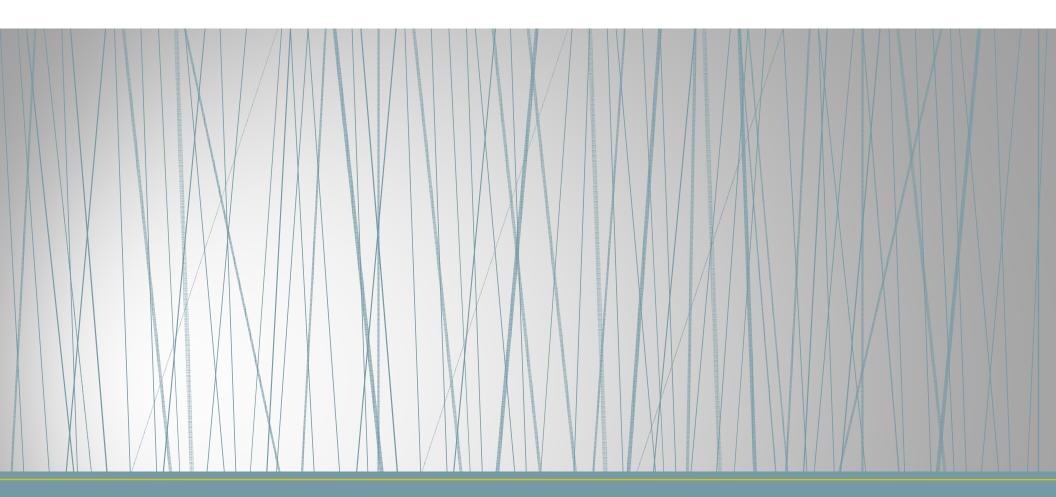
- Loss of Pressure Regulation
 - Not Seasonal due to12-month Operating Period
 - Flush ——— Disinfect ——— Inspect ——— Repair ——— Sample
 - 2 consecutive days of clean samples.
 - FM decides locations of clean samples.
 - No Tracking Process
 - Compliance determined by Facility Manager



Wait for Agency Approval

- Do not assume!
- May open facility if water unavailable
- Water distribution prior to receiving approval is a violation.
- Seasonal Systems All Sample Monthly
 - No exceptions.
 - Every month serving water





Compliance Recap Are We Good?

Sample Compliance

- Two total coliform hits or 5% of total monthly samples
 - Treatment Technique
 - Assessment
 - Corrective Action
 - NTNC and CWS Report in Consumer Confidence Report
- One total coliform + one E. Coli (received in any order)
 - Acute MCL Violation
 - Boil Water Order
 - Level 2 Assessment
 - Violation on Record
 - NTNC and CWS Report in Consumer Confidence Report



Treatment Technique Compliance

- Assessment Find and Fix Approach
 - Corrective Actions
 - Communicate
 - Submit to Regulator
- Start-up
 - Follow Procedure
 - Collect Samples
 - Checklist to Regulator
 - Await Approval







Contact

- <u>http://ndep.nv.gov/bsdw/index.htm</u>
- Bureau of Safe Drinking Water
 775-687-9521
- Margie Evans, RTCR Rule Manager
 - mevans@ndep.nv.gov
- Your Facility Manager

