




# Maintaining Sample Integrity and Ensuring Seamless Reporting to EPA

U.S. EPA Region 8

2023 Wyoming DEQ Training

November 17, 2023

# Presentation Outline

1. Sample hold times
  2. EPA's facility codes and sample point codes, and ensuring sample point accuracy
  3. Completing your chain-of-custody (COC)/intake form/requisition form
  4. Review your results
  5. Laboratory automation and Drinking Water Watch
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# Sample Collection and Hold Times


Be aware of hold times and implications for the management of drinking water samples.

\*Hold times = the total time from sample collection to laboratory preparation or analysis

- Total coliform = **30 hours**
- Nitrate = **48 hours** (unpreserved)
- Nitrite = **48 hours** (unpreserved)
- Total Nitrate + Nitrite = 28 days (preserved)
- Asbestos = **48 hours**
- Gross alpha, radium-226, radium-228, uranium = 6 months
- Chemicals (other than nitrate/nitrite) = 7, 14, 28, or 180 days (contaminant & method dependent)
- Lead and copper = 14 days (unpreserved), 6 months (preserved)
- TTHM = 14 days
- HAA5 = 9, 14, or 28 days (based on vial type and volume collected)
- TOC, alkalinity, SUVA = 28, 14, and 2 days, respectively



# Importance of Sample Point Location

- Total coliform, disinfection by-products, and lead & copper samples are collected within the distribution system, according to EPA approved Sample Site Plans
  - Asbestos is collected within the distribution system, or between a source and treatment or other facility, when asbestos cement (AC) pipe is present
  - Chemicals (inorganics, volatile organics, synthetic organics, asbestos), nitrate, nitrite, and radionuclides are collected at the entry point to the distribution system (EPDS) (EPDS = after treatment but prior the first customer)
  - Triggered Ground Water Rule source sample is collected at the well, before any treatment.
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# Importance of Sample Point Accuracy

- An accurate sample point is critical for the lab to document in reports and for EPA to track compliance with the National Primary Drinking Water Regulations
- Implications for reporting the wrong sample location include:
  - PWS incurs a failure to monitor violation
  - Need to resample (extra time and cost)
  - Need to contact the lab and ask for report modification
  - Wasted time, effort, and resources by operators, laboratories, and EPA

# EPA's Facility and Sample Point Codes

## Facility Codes

Facility Code	Definition	Notes
CC	Consecutive Connection	
CW	Clear Well	Surface Water system only
DIST	Distribution System/Zone	
IG	Infiltration Gallery	Surface Water system only
IN	Intake	Surface Water system only
PC	Pressure Control/Pressure Tank	
PF	Pump Facility	
RS	Reservoir	Surface Water system only
SP	Spring	Represents triggered source water sample location
SS	Sampling Station	
ST	Storage Tank	
TP	Treatment Plant	
WL	Well	Represents triggered source water sample location

## Sample Point Codes

Sample Point Code	Definition	Notes
SP	Sample Point	Specific place or point where an EPTDS sample can be collected

Sample Point Code	Sample Name
S2-XXXXXX	Represents Stage 2 DBP location
RAWTOC	Raw Water Intake TOC
FINTOC	Finished Water TOC

Sample Point Code	Sample Name
DIST	Represents total coliform, lead and copper, or asbestos location

**PWS Name**

PWS ID #WY5600000

GW/C



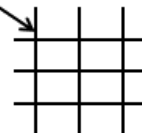
Sophie Well #2  
(WL06)

Treatment Plant &  
Sampling Point  
(TP01)/(SP02)

Hydropneumatic  
Tank (3)  
(PC01)



Treatment Building



Sunset Park RV  
(DIST)

SCHEMATIC NOT TO SCALE

05/18/2011-C. Lamb

03/24/2014-D. Roberts

03/02/2017-D. Kraidy (2016SS)

Treatment Plant &  
Sampling Point  
(TP01)/(SP02)

Hydropneumatic  
Tanks (3)  
(PC01)



Treatment Building

★ Sample Points (SP) shown on the schematic are **ONLY** for Nitrates, RADs, IOCs, SOCs, and VOCs. If you sample for other contaminants, please refer to your individual Site Sampling or Monitoring Plans.

Agreed to by: \_\_\_\_\_

Date: \_\_\_\_\_



### Nitrate (NO3)

You are required to monitor quarterly for nitrates, during each calendar quarter you serve water to the public. Collect a sample at the entry point(s) to the distribution system shown on the system schematic noted by a star and as listed below.

If any sample result exceeds 10.4 mg/L, you MUST collect a confirmation sample within 24 hours of receiving the results and consult with the EPA as soon as possible. Failure to complete follow-up actions may result in monitoring violations and endangerment of public health.

FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION
TP01	CHLORINATOR	SP02	CHLORINATOR

### Synthetic Organic Chemicals (SOC)

You are required to monitor for SOC's once during a three year period. Collect a sample between January 1, 2020 and December 31, 2022 at every entry point to the distribution system shown on the system schematic and as listed below.

Please note: You are now required to sample for Total Polychlorinated Biphenyls (PCBs) along with the other SOC's. Please see the complete list of regulated SOC's on our website at <https://www.epa.gov/region8-waterops>, and use a laboratory that is certified for PCB analysis.

FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION
TP01	CHLORINATOR	SP02	CHLORINATOR

### Volatile Organic Chemicals (VOC)

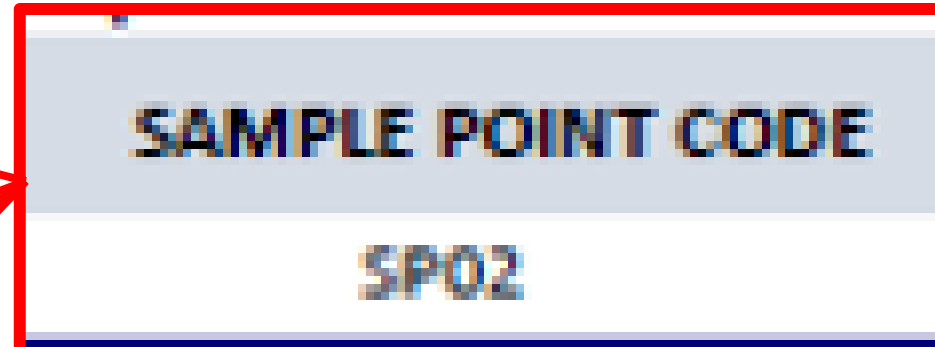
You are required to monitor for VOC's once during a three year period. Collect a sample between January 1, 2020 and December 31, 2022 at every entry point to the distribution system shown on the system schematic and as listed below.

FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION
TP01	CHLORINATOR	SP02	CHLORINATOR

### Inorganic Chemicals (IOC)

You are required to monitor for IOC's once during a three year period. Collect a sample between January 1, 2020 and December 31, 2022 at every entry point to the distribution system shown on the system schematic and as listed below.

FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION
TP01	CHLORINATOR	SP02	CHLORINATOR



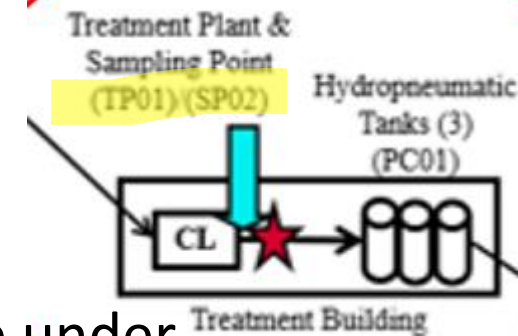


# How to Change Sample Points

- To change a sample point in the distribution system for total coliform, lead & copper, or disinfection by-products, you must revise and resubmit your sample plan to the EPA.
  - For lead and copper, you also need to justify why the site is being removed if the new location is a different tier (e.g., if you remove a Tier 1 location and replace it with a Tier 3 location, you need to explain why).
- For changes to EPTDS (chemicals, nitrate, etc) sample locations, conduct one of the following actions:
  - Go to Region 8 website, under heading “Reporting Results” and click on the “Reporting Forms” link. The Change Form is the first form on the list.
  - Email EPA ([R8DWU@epa.gov](mailto:R8DWU@epa.gov)) with the information that has changed and include a marked up, signed, and dated water flow schematic.

# Chain of Custody (COC), Intake, or Requisition Form

- **Chemicals/Radionuclides/Nitrate** - write the sample location clearly with the facility code **and** sample point code
- **Chemicals** – please do not specify the methods for labs to analyze these samples
  - EPA’s list of regulated analytes is accessible on the Region 8 homepage under the heading “Regulations and Compliance”
- **Total coliform** – if your system adds chemical disinfection, measure and report free or total chlorine residuals when collecting routine and repeat total coliform samples.
- **Total coliform, disinfection by-products, lead & copper** – document sample collection addresses at EPA approved locations, not just the names of the homeowner or person who collected the samples.



# Chain of Custody (COC), Intake, or Requisition Form

## WY and Tribal Revised Total Coliform Rule (RTCR) LABORATORY SAMPLE FORM

### Sampler(s) Section (For field sampler use only):

Reminder: Collect RTCR samples every month. If you have a total coliform positive or an E. Coli-positive, you must collect three (3) REPEAT samples according to your Sample Siting Plan. For each positive ROUTINE sample, you must collect REPEAT samples from: 1) the same site as the positive ROUTINE sample, 2) a REPEAT sample from a site within 5 taps upstream from the positive sample, and 3) a REPEAT sample from a site within 5 taps downstream of the positive sample. You must also collect a ground water source sample from any wells or springs in use at the time the positive ROUTINE sample was collected. This is the triggered GWR sample. Write the correct Sample Point Code on the form below (e.g., DIST), which may be found in the yearly Monitoring and Reporting Requirements and the address where the sample was taken. Chlorine Residuals are required on routine and repeat samples. You cannot use RTCR samples as a GWR source sample, or vice versa.

Public Water System (PWS) Name:		Sampler's Name:				
PWS Identification Number (PWSID):		Cell Phone Number:				
PWS Street Address:		City:	State:	Zip Code:		
Comments:						
Sample Collection	Date	Time	Sample Point Address: (Found on your Sample Siting Plan.)	Chlorine Residual (circle one) Total or Free mg/L	RTCR Sample Type - Check One	
					ROUTINE - First set of required samples collected during a month. REPEATS - samples required AFTER any routine sample is positive. SPECIAL - Is a non-compliance sample that may be collected, for example, to determine if disinfection is adequate after pipe replacement or repair or to find a source of contamination. It is also used for the Seasonal Startup Checklist required sampling and daily sampling required by an Emergency Administrative Order. It cannot be used to determine compliance with the maximum contaminant level.	
				<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special
				<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special
				<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special
				<input type="checkbox"/> Routine	<input type="checkbox"/> Repeat	<input type="checkbox"/> Special
Sampler(s) name (Print):			Sampler(s) signature:		Date signed:	

- Failure to provide a chlorine residual with every total coliform compliance sample (e.g., routine or repeat) will result in a violation. Systems should indicate free or total chlorine residual.
- Writing the chlorine residual on the COC demonstrates that it was measured at same time and location as total coliform samples.

# COC and Lab Reports – Sample Point Location

## Chain of Custody & Analytical Request Record

Page  of

Include **public water system (PWS) name and identification number, sample collection date, sample location(s)** (e.g., specify the facility point/sample point or sample station/sample point, and the chemical groups or chemicals you want analyzed.

Account Information <i>(Billing Information)</i>			Report Information <i>(if different than Account Information)</i>			Comments
Company/Name			Company/Name			
Contact			Contact			
Phone			Phone			
Mailing Address			Mailing Address			
City, State, Zip			City, State, Zip			
Email			Email			
Receive Invoice <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email	Receive Report <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email		Receive Report <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email			
Purchase Order	Quote	Bottle Order				

Project Information		Matrix Codes	Analysis Requested							See Attached	All turnaround times are standard unless marked as RUSH.  Laboratory MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page
Project Name, PWSID, Permit, etc.		A - Air									
Sampler Name	Sampler Phone	W - Water									
Sample Origin State	EPA/State Compliance <input type="checkbox"/> Yes <input type="checkbox"/> No	S - Solids/Solids									
		V - Vegetation									
		B - Bioassay									
		O - Other									
		DW - Drinking Water									

	Sample Identification <i>(Name, Location, Interval, etc.)</i>	Collection		Number of Containers	Matrix <i>(See Codes Above)</i>	Analysis Requested							See Attached	RUSH TAT	LAB ID <i>Laboratory Use Only</i>
		Date	Time												
1															
2															

# Review Your Results

- Be proactive – NEVER assume the lab will report your sample results. Owners/operators of drinking water systems are ultimately responsible for submitting results to EPA.
- Positive bacteria results, MCL exceedances, and chemical detections require immediate action:
  - Total coliform or *E. coli* positive (acute contaminants): collect repeat samples and a groundwater source sample within 24 hours.
  - Nitrate (acute contaminant): collect a confirmation sample within 24 hours if result is above 10.4 mg/L; if unable to sample within 24 hours, post public notice and collect a sample within 2 weeks.
  - Chemicals (chronic contaminants): MCL exceedances and VOC/SOC trigger levels (i.e., detection limits) require quarterly sampling to begin the next full quarter.
  - SOC detections: Region 8 recommends collecting a confirmation sample within 2 weeks.
- If there is an MCL exceedance, notify the EPA rule manager right away.



# Laboratory Automation

- Some labs have an arrangement with EPA to electronically upload sample results to EPA's Safe Drinking Water Information System Database (SDWIS)
- Check Drinking Water Watch Online before the end of any compliance period to make sure your sample results are in the EPA database.

EPA Region 8 homepage:  
<https://www.epa.gov/region8-waterops>

## Need Help?

[Contact List for EPA Region 8's Drinking Water Branch](#)

## Contact Information:

Kendra Morrison  
Chemical Phase II/V Rule Manager  
U.S. EPA Region 8  
(303) 312-6145  
[morrison.kendra@epa.gov](mailto:morrison.kendra@epa.gov)

Jamie Harris (she/her)  
Revised Total Coliform Rule Manager  
U.S. EPA Region 8  
(303) 312-6072  
[harris.jamie@epa.gov](mailto:harris.jamie@epa.gov)

# Resources

- EPA Region 8 drinking water homepage: <https://www.epa.gov/region8-waterops>
- Forms to document changes to a public water system: <https://www.epa.gov/region8-waterops/reporting-forms-drinking-water-systems-wyoming-and-tribal-lands-epa-region-8#chg>
- Drinking Water Watch: <https://sdwisdww.epa.gov/DWWR8WY/>  
internet search for "Drinking Water Watch Online Region 8"