



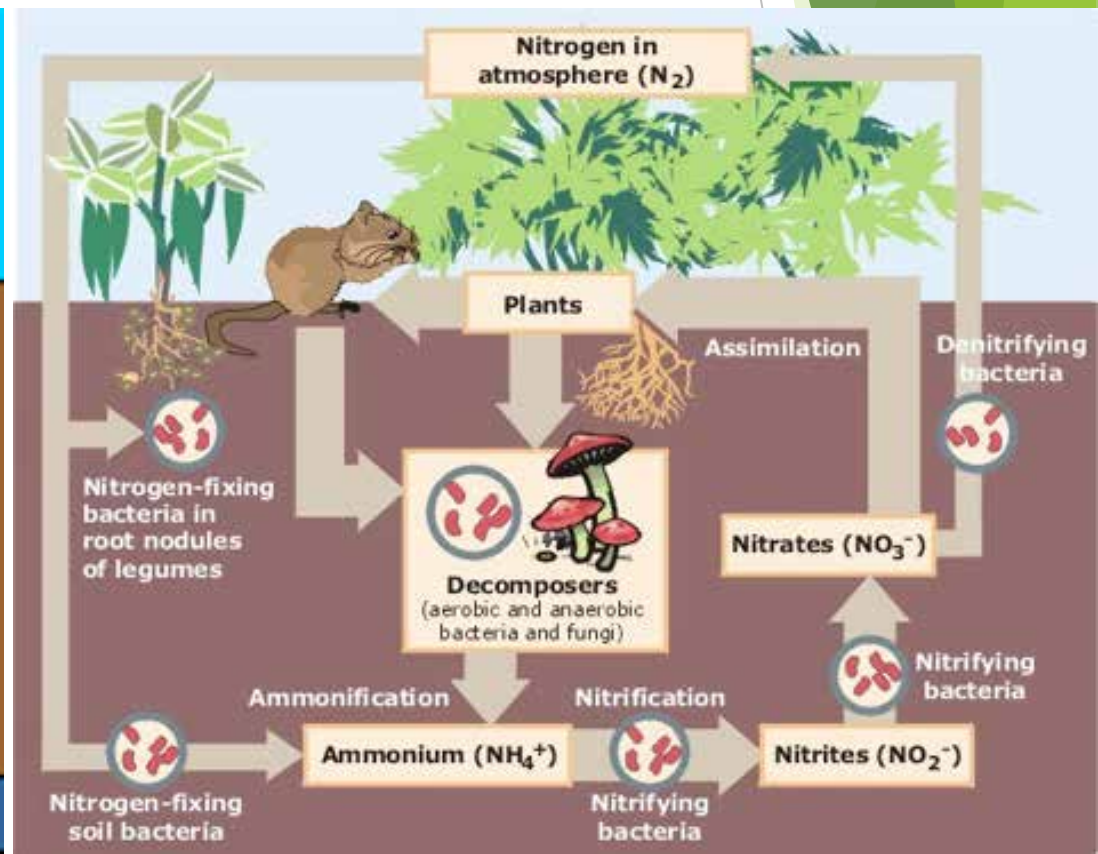
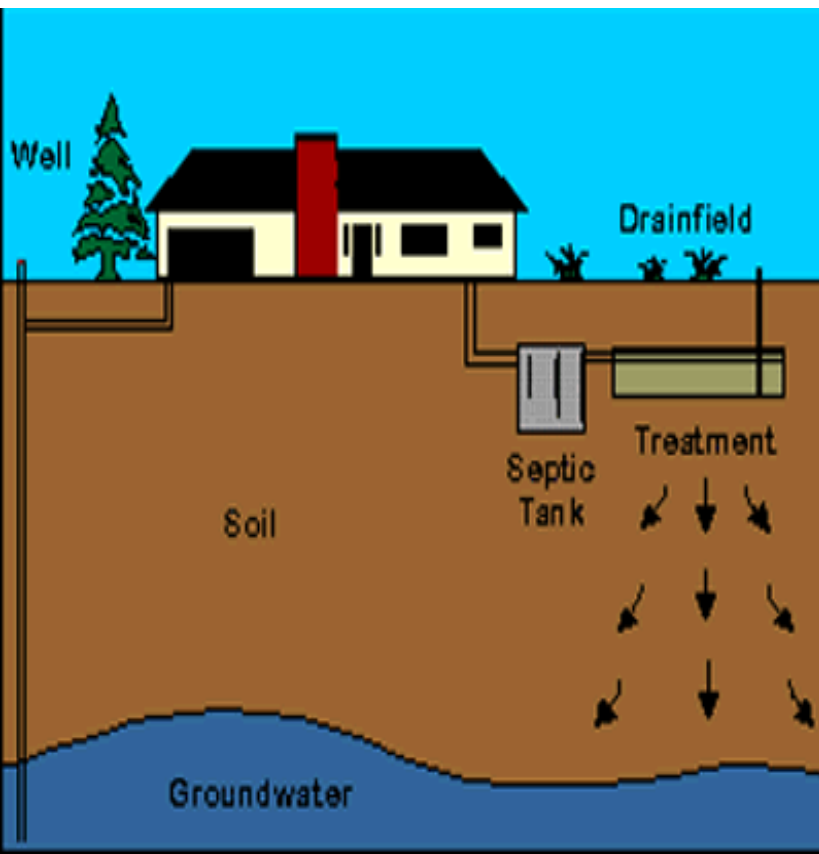
Nitrate & Nitrite Rule for Transient Non-Community Water Systems

- u Bailey Smith
- u Nitrate Rule Manager
- u Smith.Bailey@epa.gov
- u 303-312-6940

What are nitrates and nitrites?

Nitrate (NO_3) and Nitrite (NO_2)

Originate from human/animal wastes (septic systems), fertilizers & crop residues





Why Do We Care About Nitrates & Nitrites?

High Levels Can Lead to the Death of Infants

- u High nitrate/nitrite levels may cause a potentially fatal blood disorder in infants under six months of age called methemoglobinemia or "blue-baby" syndrome.
- u With this disorder there is a reduction in the oxygen carrying capacity of blood, which can cause shortness of breath and a blueness of the skin of infants or even lead to the infant's death.

Maximum Contaminant Level (MCL)

The Environmental Protection Agency (EPA) has set the Maximum Contaminant Level (MCL)* for nitrate and nitrite to the following for the safety of drinking water:

Nitrates MCL = 10 mg/L

Nitrites MCL = 1 mg/L

*An **MCL** is the legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act (SDWA)*

What You Need To Do #1:

Review Your Monitoring and Reporting Requirements for Any Required Nitrate and Nitrite Sampling:

This document will tell you:

The contaminant you need to sample for on the left-hand side (e.g., nitrates)

The monitoring period the sample must be collected (e.g., April 1- June 30, 2023)

Where to sample (e.g., sample point code- SP01)

Monitoring and Reporting Requirements
for the Calendar Year 2023

February 11, 2023

PWS Name

PWS ID#: WY560 (NC/GW)

Ground Water Rule

Within 24 hours of being notified of a routine Revised Total Coliform Rule (RTCR) positive (TC+) sample, you must sample for the presence of E. coli at ALL groundwater sources in use at the time of the original TC+ sample. Collect one source sample for every routine RTCR positive sample at each well. All source samples must be collected at a location prior to any chemical treatment. Utilize the Triggered Groundwater Source Sampling Form found at the following website: <https://www.epa.gov/region8-waterops/wyoming-and-tribal-triggered-groundwater-source-sampling-form>. On the form you must write the correct Sample Point Code (ex: GWR WL01), which can be found below, and mark the sample as 'Triggered'.

This sampling is in addition to your RTCR repeat samples.

FACILITY CODE	FACILITY DESCRIPTION	SAMPLE POINT CODE	SAMPLE POINT DESCRIPTION
WL01	SIGNAL BUTTE #1	GWR WL01	TRIGGERED GWR

Nitrate (NO3)

You are required to monitor during one quarter for nitrates. Collect a sample between April 1, and June 30, 2023 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	FILTRATION	SP01	TREATMENT BUILDING TAP SAMPLE POINT

Nitrite (NO2)

You are required to monitor for nitrites during one quarter. Collect a sample between April 1, and June 30, 2023 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 1.4 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	FILTRATION	SP01	TREATMENT BUILDING TAP SAMPLE POINT

Monitoring and Reporting Requirements for the Calendar Year 2023

February 11, 2023

PWS NAME

PWS ID# WY5600000 NC/GW

Water System Inventory

Water Source: GW
Water System Type: NC

Contact:
Address:

Phone:

You must write the facility codes and sample point codes on the chain of custody or lab slip submitted to a lab with each water sample. The codes are listed with the sampling directions.

Where to monitor and Whom to call

The "rule managers" responsible for administering the various drinking water rules are listed here. Any questions or discussion should be directed to the appropriate rule manager at the number given below, or you can call toll-free at 1-800-227-8917 and ask for the appropriate contact.

Monitoring for these contaminants must be at the Entry Point to the Distribution System:

Nitrate/Nitrite	Nitrate	Bailey Smith	303-312-6940
-----------------	---------	--------------	--------------

Monitoring for these contaminants must be within the Distribution System:

Revised Total Coliform Rule	RTCR	Jamie Harris	303-312-6072
-----------------------------	------	--------------	--------------

The following rules may apply:

Surface Water Treatment Rules	SWTR	Jake Crosby	303-312-6389
Ground Water Rule	GWR	Jamie Harris	303-312-6072

❖❖❖❖❖ IMPORTANT ❖❖❖❖❖

You must use a laboratory certified to test for each specific contaminant in drinking water.

See a list of certified labs at Drinking Water Online at:

<https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-laboratories>

Please send sample results to our office using one of the methods listed below.

Include your PWS name and PWS ID# on all correspondence.

Email: R8DWU@epa.gov	Mail: US-EPA Region 8	For after-hours emergency situations
Fax: 1-(877) 876-9101	1595 Wynkoop St.	please contact EPA at 303-312-6327
	Denver, CO 80202-1129	
	Mail Code 8WD-SD	

Additional information
on the first page of this
document:

Public Water System
(PWS) information

Rule Managers Contact
Information

How to submit lab results
to Region 8 EPA Drinking
Water Program

An abstract graphic featuring several overlapping, slanted rectangular shapes in various shades of green, ranging from a light lime green to a dark forest green. A thick, vibrant red diagonal line cuts across the composition from the bottom left towards the upper right. A thin, light gray line also runs diagonally, parallel to the red one but further to the left. The background is a solid, bright yellow.

<https://www.epa.gov/region8-waterops/certified-drinking-water-laboratories-systems-wyoming-and-tribal-lands-epa-region-8>

Version: Updated July, 2015				Inorganics					Disinfection Byproducts		Micro					Radionuclides								
LABORATORY	CONTACT	Certification End Date	Asbestos	Copper, Lead	Cyanide, Fluoride	METALS	Nitrate & Nitrite	DIB HAA5	DIB TTHM	DIB Chlorite	DIB Bromate	E Coli	Fecal Coliform	Total Coliform	Heterotrophic PC	Cryptosporidium	Natural Gross Alpha	Natural Gross Beta	Natural Radium 226	Natural Radium 228	Uranium	Man made Cesium	Man made Iodine	
Accutest Mountain States 4036 Youngfield Street Wheat Ridge, CO 80033	Ms. Kaprie S. Surprenant Ph 303-425-6021 x3114 kapries@accutest.com	5/31/2015		X	X	X	X	X	X	X											X			
ACZ Laboratories Inc 2773 Downhill Dr Steamboat Springs CO 80487	Matt Sowards Ph 800-334-5493 x531 Fax 970-879-2216 matts@acz.com	8/31/2015		X	X	X	X										X	X	X	X	X			
ALS Environmental - Kelso Formerly Columbia Analytical Services 1317 S 13th Ave PO Box 479 Kelso WA 98626	Mr. Lee Wolf Ph 360-577-7222 Direct: 360-501-3371 FAX 360-425-9096 lee.wolf@alsglobal.com	7/8/2015		X	X	X	X	X	X	X	X													

What You Need To Do #2:

Contact a Certified Laboratory for Nitrates/Nitrites and ask them to send you sample bottles:

Sample Choices:

Nitrate

Nitrite

Total Nitrate



You may take a Total Nitrate, which combines both samples together, BUT the results must be <0.5 mg/L to qualify as BOTH a nitrate and nitrite sample.

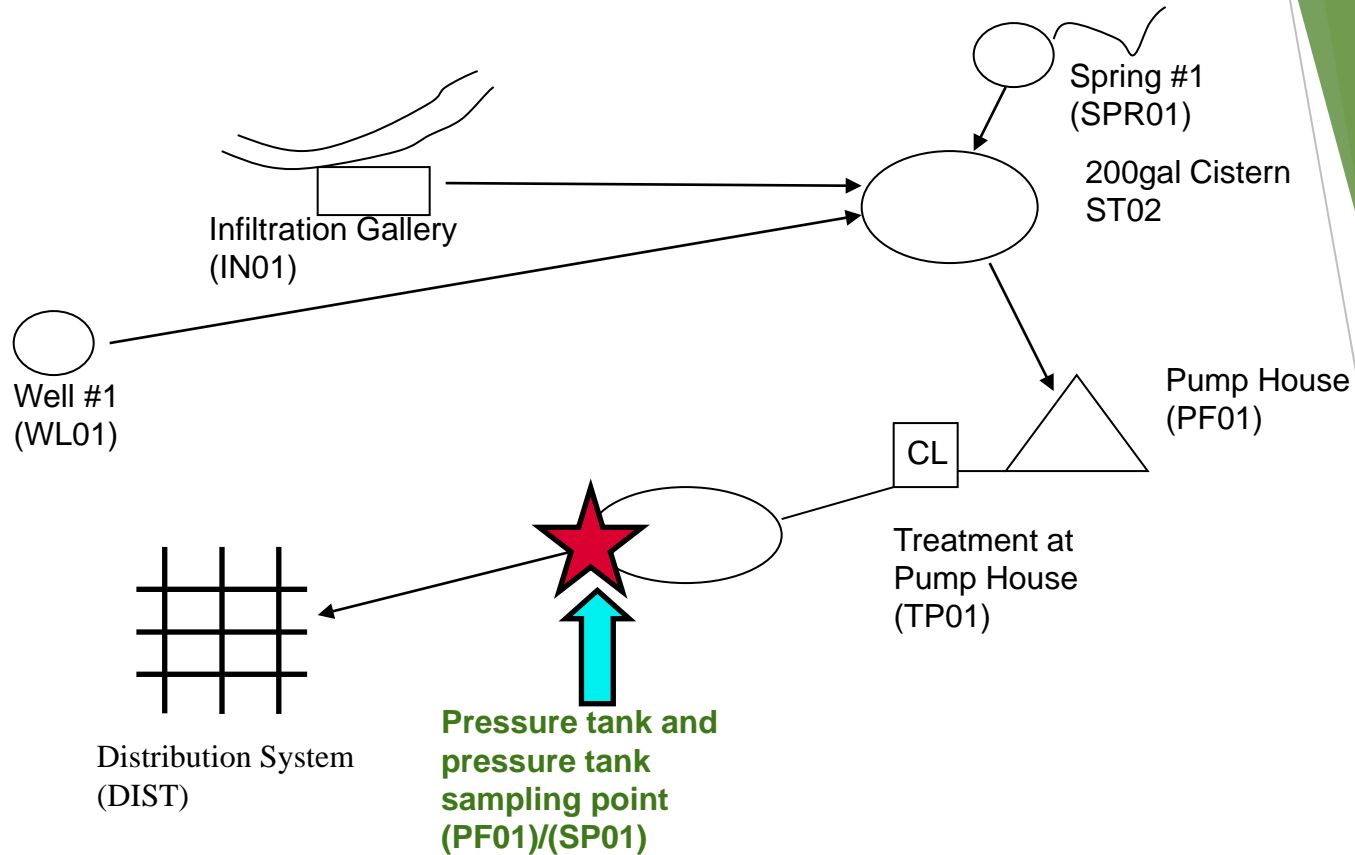
What You Need To Do #3:

Sample at each designated sampling point on your schematic, which is indicated by a ★ OR as noted on your Monitoring and Reporting Requirements (might have multiple locations).

- At the entry point to the distribution system AFTER all treatment
- More than one source & the sources combine?
 - * Sample at the entry point to the distribution system
 - * After all treatment
 - * Sample during periods of normal operating conditions
- Make sure to sample at ALL sampling points & include your Public Water System ID # on the lab form (Chain of Custody).

Public Water System

PWS ID # WY560XXXX



Entry Point - Sample Points (SP) shown on the schematic are ONLY for Nitrates, RADs, IOC, SOC, and VOC. If you sample for other contaminants, please refer to your individual Site Sampling or Monitoring Plans.

Agreed to by: _____
Date: _____

Schematic not to scale

Chain of Custody & Analytical Request Record

Page 1 of 1

Account Information (Billing Information)

Company Name	Best Water System in Wyoming
Contact	John and Jill Doe
Phone	307 - 123 - 4567
Mailing Address	1 Main Street
City, State, Zip	Jackson, WY 83001
Email	Wyomingwatersystem@gmail.com
Receive Invoice	<input checked="" type="checkbox"/> Hard Copy <input type="checkbox"/> Email
Receive Report	<input checked="" type="checkbox"/> Hard Copy <input type="checkbox"/> Email
Purchase Order	Quote
	Bottle Order

Report Information (if different than Account Information)

Company Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report	<input type="checkbox"/> Hard Copy <input type="checkbox"/> Email

Comments

Please send results to myself and US EPA at R8DWU@EPA.GOV

This is a EPA compliance sample for nitrate annual monitoring taken at SP01 - Pressure Tank Sampling Point

Project Information

Project Name, PWSID, Permit, etc. WY5600000	
Sampler Name Jill Doe	Sampler Phone 307 - 123 - 4567
Sample Origin State	EPA/State Compliance <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Matrix Codes

- A - Air
- W - Water
- S - Solids
- V - Vegetation
- B - Biosolids
- O - Other
- DW - Drinking Water

Analysis Requested

Nitrate										
✓										

All turnaround times are standard unless marked as RUSH.

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling - See Instructions Page

Sample Identification (Name, Location, Interval, etc.)		Collection		Number of Containers	Matrix (See Codes Above)	Nitrate									See Attached	RUSH TAT	LAB ID Laboratory Use Only
		Date	Time														
1	SP01 - Pressure Tank Sampling Point	4/2/19	11:30 am	1	DW	✓											
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature			
LABORATORY USE ONLY									
Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check	Amount \$	Receipt Number (cash/check only)

What You Need To Do #5:

Send water samples to the certified laboratory



NOT EPA! (EPA wants the results)

Holding time & Preservation Requirements

Nitrate + Nitrite (i.e. Total Nitrate)

28 days from sample collection

lab must provide H_2SO_4 preservative with sample container

Nitrate alone & unpreserved

48 hrs from sample collection

If the sample is chlorinated and at 4C, 14 days

What You Need To Do #6:

Once you receive your results send them to EPA right away!

Labs DO NOT always send the nitrate/nitrite sample results to EPA. **YOU need to send them to us!!!**

R8DWU@epa.gov

Send results to EPA Region 8 within 10 days of the end of the compliance period or 10 days from the receipt of results from lab, whichever is shortest.

Drinking Water Watch

<https://sdwisdww.epa.gov/DWWR8WY/>

Check to see if EPA has received your lab results.

Drinking Water Branch

Water System Details

Water System No. :

Federal Type : NC

Water System Name :

State Type : NC

Principal County Served : GOSHEN

Primary Source : GW

Status : A

Activity Date : 08-16-2004

Points of Contact

Name	Job Title	Type	Phone	Address
	PRESIDENT/CEO	LC		
	OP	DO		
	MANAGER	AC		

Annual Operating Periods & Population Served

Start Month	Start Day	End Month	End Day	Population Type	Population Served
-------------	-----------	-----------	---------	-----------------	-------------------

Service Connections

Type	Count	Meter Type	Meter Size
------	-------	------------	------------

What You Need To Do #7:

Review the results right away!

- The MCL for nitrites = 1.0 mg/L
- The MCL for nitrates = 10 mg/L
- If you exceed the MCL, call EPA IMMEDIATELY!
 - Bailey Smith - 303-312-6940
- The following slides will help walk you through what happens with the respective results for nitrites and nitrates.

Nitrate & Nitrite Sample Results

Exceeding the MCLs

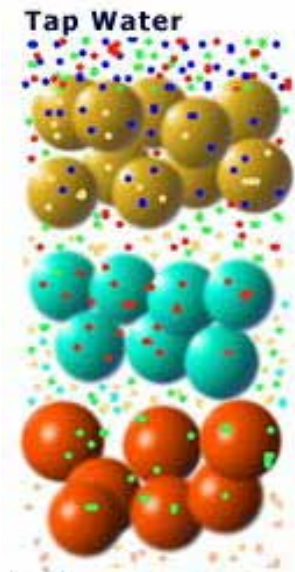
- 1) Call EPA IMMEDIATELY!!!
- 2) Take a confirmation sample w/in 24 hrs of notification. Compliance determination is based on the average of the results of the initial and confirmation samples
- 3) If you are unable to take a confirmation sample w/in 24 hours, you must post Tier 1 Public Notice and take confirmation sample within 2 weeks
- 4) Bottled water will need to be provided as boiling water actually increases the concentration!!!
- 5) Then you will be put on quarterly sampling



Best Available Technology (BAT)

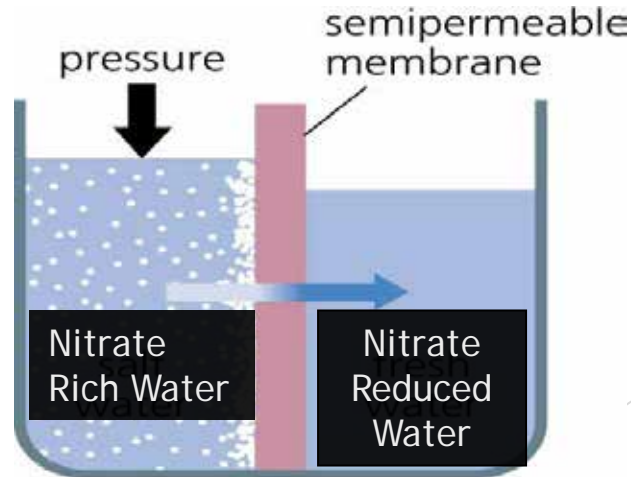
Ion Exchange Reverse Osmosis Electrodialysis

- Ion Exchange uses a resin, where other ions on the resin are exchanged for the nitrate ions, which get trapped in the resin.

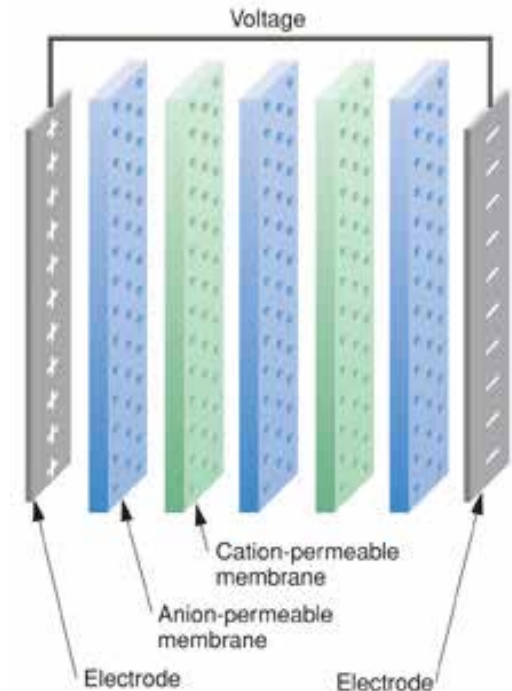


- Reverse osmosis (RO) is a method of producing pure water by forcing nitrate contaminated water through a semi-permeable membrane across which nitrates cannot pass.

- Make sure you change out the filters according to the manufacturers recommendations!!!



- Electrodialysis uses a direct electric current to cause ions to migrate through membranes, trapping the nitrates, etc.



Non-Treatment Option:

Blending

- u Blending water with another source to reduce nitrates before point of entry (POE)
- u You must let EPA know right away that you have a new or blended water source. This may require new monitoring requirements



Let's Recap

Make sure to mark samples with PWS ID # and ALL sample point(s)

Send results to EPA Region 8 within 10 days of the end of the compliance period or 10 days from the receipt of results from lab, whichever is shortest.

Send all result to R8DWU@EPA.GOV. Include in subject of email, the water system ID and the contaminant analyzed.

Many labs DO NOT automatically send EPA your nitrate results. It is YOUR responsibility to make sure EPA gets results.

Let's Recap

Maintain contaminant level below MCL

If the MCL is exceeded-

- Call Bailey Smith, Nitrate Rule Manager, IMMEDIATELY, at 303-312-6940
- You will have to take a confirmation sample
- You may be required to provide public notice
- EPA's enforcement program may require you to submit a plan and schedule to address the MCL - by installing treatment or obtaining a new water source.



Thank you!

Bailey Smith - she/her
Nitrate & Nitrite Rule
Manager

Smith.bailey@epa.gov

303-312-6940