



1



2

Operator Certification

- 1) You can't operate most wastewater treatment facilities without a license
- 2) Licensing requirements are typically based on:
 - facility technology and
 - size of population served
- 3) Additional licensing requirements:
 - experience
 - education requirements
 - passing the certification exam

3

Use available resources ...

4

Example:
Oklahoma's
study
guide...

5

Regulations Section

6



7



8



9



10

The legal framework is continually evolving:

Timeline of Federal Water Pollution Control Acts and Programs	
1972	Federal Water Pollution Control Act Amendments of 1972
1972	Secondary Treatment Regulations
1974	Clear Water Act Amendments of 1977
1977	National Pretreatment Program Rule
1978	Clear Water Act Amendments of 1981, PL 96-517
1981	Clear Water Act Amendments of 1981, PL 96-517
1984	National Municipal Policy
1985	Secondary Treatment Regulations
1987	Clear Water Act Amendments of 1987
1990	Phase I Storm Water Rule
1990	Part 403 Standards for Design and Placement of Storage Dredge
1993	ESB Control Policy
1994	ESB Control Policy
1996	Federal Clean Water Action Plan
1998	Phase II Storm Water Rule
1999	Continued National Sewerage System Operation Rule
2002	
2002	

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And it is working:

(Data from U.S. Public Health Service multi-wastewater inventories; 2000 USEPA Clean Watershed Needs Survey)

Population Receiving Different Levels of Wastewater Treatment

The chart shows a significant increase in the population served by higher levels of wastewater treatment (Secondary, Tertiary, and No Discharge) after the Clean Water Act (CWA) was implemented, while the population served by raw discharges and less-than-secondary treatment decreased. The total population served increased from approximately 140 million before the CWA to over 200 million after the CWA.

Legend:

- No Discharge²
- Greater than Secondary
- Secondary
- Less than Secondary
- Raw Discharge¹

Footnote: ¹Raw discharges were eliminated by 1996. ²Data for the "no-discharge" category were unavailable for 1968.

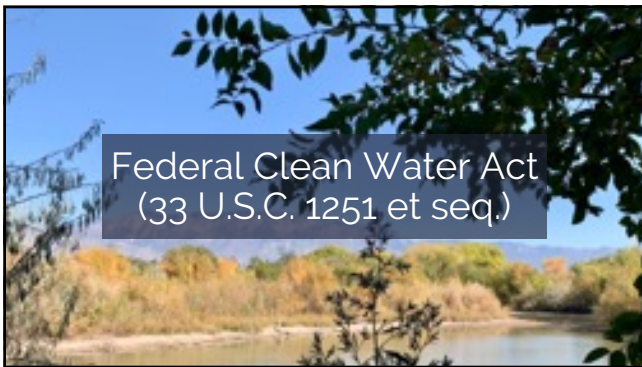
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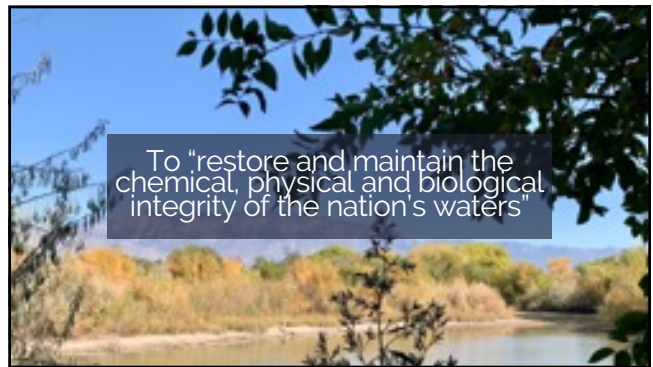
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Primary CWA Elements:

- A system of minimum national effluent standards based upon available treatment technology
- A water quality standards system
- The National Pollutant Discharge Elimination System (NPDES), a permit program which provides enforceable limitations on dischargers;
- Provisions for special problems like toxic chemicals and oil discharges
- A construction grant/loan program for Publicly Owned Treatment Works (POTWs).

17

The regulations are there to (among other things) avoid this:

18



NPDES Permit Regulations

Surface Water Discharge

19



20



Can't discharge **"pollutants"** from a **"point source"** into a **"Water of the United States"** without an **NPDES Permit**.

21

Pollutant:

Defined very broadly in the **Clean Water Act**. It includes any type of industrial, **municipal**, and agricultural waste discharged into water.

22

Point Source:

Any discernible, confined and discrete conveyance, such as a pipe, ditch, channel, tunnel, conduit, discrete fissure, or container.

23

Common Point Sources:

24

Water of the United States:

Defined very broadly in the **Clean Water Act** and after 25 years of litigation. It means **navigable waters, tributaries to navigable waters, interstate waters, the oceans out to 200 miles, and intrastate waters...**

25

NPDES Discharge Permitting

- 1) NPDES Permits have minimum levels of treatment based on secondary treatment processes
- 2) They may have other limitations to protect water quality
- 3) They allow for self-testing
- 4) NPDES Permits last 5 years – it is on the utility to renew
- 5) Test results are reported quarterly on a discharge monitoring report (DMR)

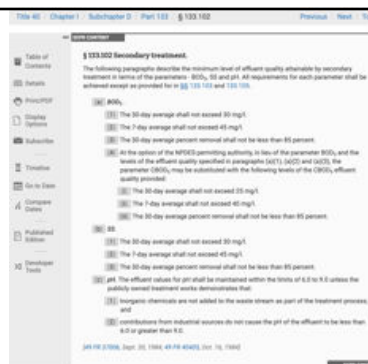
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NPDES Discharge Permitting

- 7) NPDES Permits provide for inspection of treatment works and collection of compliance verification samples
- 8) Permit violations can result in fines and criminal prosecution
- 9) Surface water discharge permits may come from the EPA or from a state agency that has been granted authority to administer the program. (Some states have this authority, others do not.)
- 10) You may be inspected may be by EPA, or your state agency

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Minimum discharge limits are defined in federal regulations (40 CFR 133.102)



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NPDES Discharge Limitations

Parameter	30-Day Average	7-Day Average	Maximum	Minimum
Flow	Report	N/A	Report	N/A
BOD ₅ , mg/L	<30	<45	N/A	N/A
TSS, mg/L	<30	<45	N/A	N/A
Fecal Coliform, organisms/100 ml	<500	N/A	N/A	N/A
pH	N/A	N/A	9.0	6.0
Total Residual Chlorine, mg/L	N/A	N/A	<0.099 or "non-detectable"	N/A

Table 16.1 – Standard NPDES Limitations

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Example permit testing periods and limits:

The image shows a screenshot of a permit table with columns for Parameter, 30-Day Avg. (30-day average), 7-Day Avg. (7-day average), 30-day Avg. (30-day average), and 7-Day Avg. (7-day average). The table lists parameters such as BOD5, TSS, Fecal Coliform, pH, and Total Residual Chlorine, along with their respective testing periods and limits.

30

Sampling & Reporting
 How we verify everything is working as it should...

31

Sample collection and analytical results required by your permit are reported on **Discharge Monitoring Reports (DMRs)**

32

Discharge Monitoring Reports

33

Frequency of Analysis Codes

FREQUENCY	DESCRIPTION	FREQUENCY	DESCRIPTION
N/A	NOT APPLICABLE	02/12	TWICE/12 DAYS
N/R	NOT REPORTED	02/30	TWICE/MONTH
N/V	NOT VALID	02/90	TWICE/90TRLY
01/07	WEEKLY	03/DS	THREE/DISCHARGE
01/14	ONCE/2 WEEKS	03/DW	3 DAYS/WEEK
01/21	ONCE/3 WEEKS	03/7	THREE/WEEK
01/28	ONCE/4 WEEKS	03/30	THREE/MONTH
01/30	ONCE/MONTH	04/07	FOUR/WEEK
01/90	QUARTERLY	04/30	FOUR/MONTH
02/DS	TWICE/DISCHARGE	05/07	WEEK-DAYS
02/DW	TWICE/DSCHWK	05/WK	5 TIMES/WEEK
02/YR	SEM-ANNUAL	05/99	SEE PERMIT
02/01	TWICE/WEEK	CONT	CONTINUOUS

34

Discharge permits **specify reporting dates.**

35

Reported results are **compared to current permit limits** or **enforcement orders.**

36

DMRs are required
**even if the facility
didn't have a
discharge in the
reporting period.**

37

It's important that DMRs be:

- Accurate
- Timely
- Legible
- Complete

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Reporting Information Source

There's a whole book for Region 6:

Link on the cover is wrong.

This is where it is now:

<https://nepis.epa.gov/Exe/ZVPUURL.cgi?Dockey=P1013JNL.txt>



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Bypass/Overflow/Upset Reports

- Bypasses, Overflows and Upsets are subject to a 24-hour Reporting requirement
- Oral report has to be made within 24 hours from when permittee becomes aware
- **Written submission** must be submitted within **5 days**

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Other Schedules/Reports

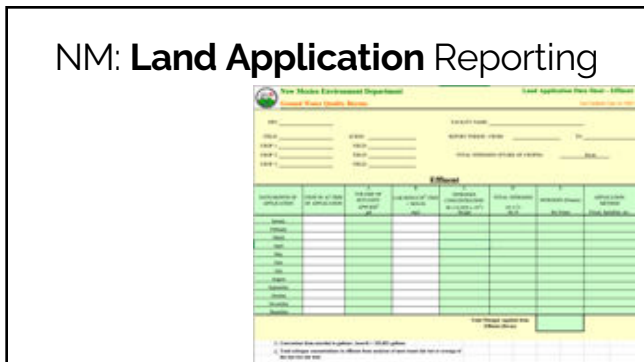
- System may have other report requirements with compliance schedules:
 - Progress reports
 - Pre-treatment requirements
 - Toxicity
 - Sludge
 - Stormwater
 - Etc.
- The permit or enforcement action will spell out details

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Your state may require
other specific reports.

For example: Oklahoma
has **Monthly Operational
Reports (MORs)**

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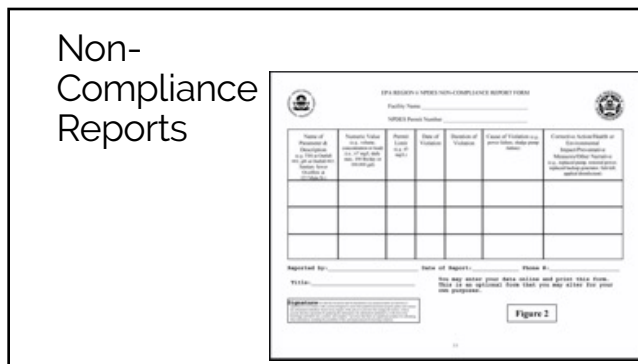
Requirements vary.
Read your permits and study guides for specifics.

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Non-Compliance Reports

- If you don't comply with your permit – **you have to report it.**
- Individual permits will have specific requirements for **reporting anticipated non-compliance**
- **Some conditions which may endanger health or the environment have 24 hour reporting requirements**

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NCRs have to include:

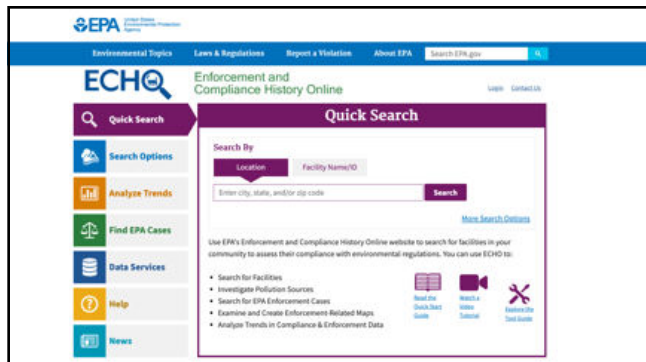
- Type of violation – parameter & outfall
- Date of violation – date or date range
- Duration of violation
- Cause of violation
- Corrective action/Health or Environmental Impact/Preventive Measures/Other Narrative

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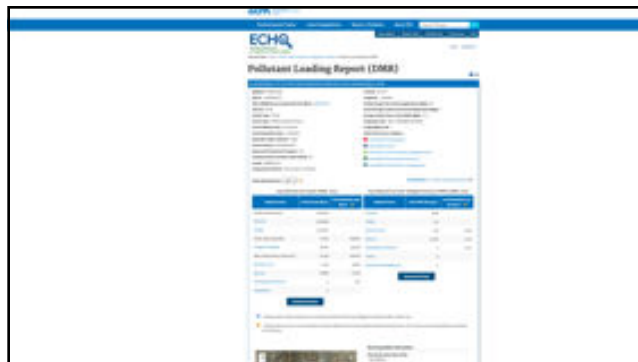
Your reported results go into a searchable EPA database.

It's public information.

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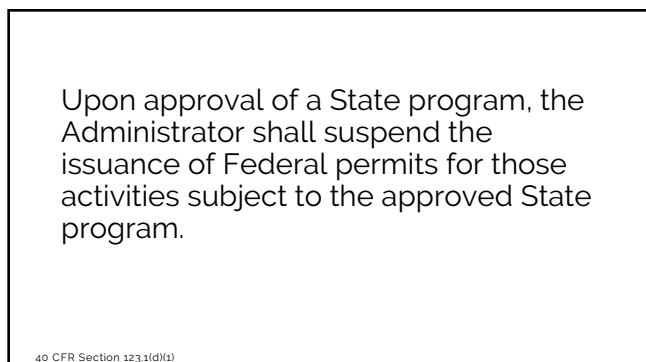
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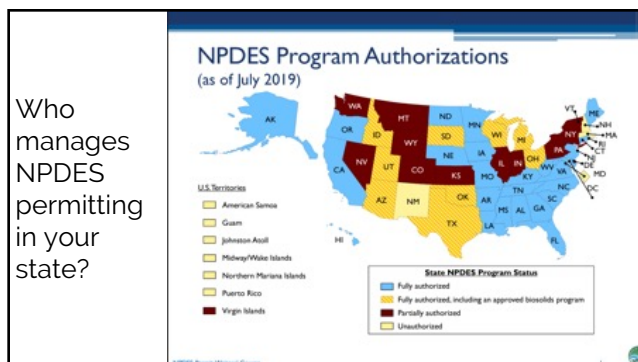
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Who manages NPDES permitting in your state?

State or Territory	Authorized State NPDES Permit Program	Authorized by Regulate Federal Facilities	Authorized State Pretreatment Program	Authorized General Permits Program	Authorized Groundwater (Sludge) Program
Alabama (2)	10/16/1979	10/16/1979	10/16/1979	06/26/1991	
Alaska (2)	10/16/1988	10/16/1988	10/16/1988	10/16/1988	
Arizona (2)	11/05/1992	11/05/1992	11/05/1992	11/05/1992	04/01/2004
Arkansas (2)	11/01/1986	11/01/1986	11/01/1986	11/01/1986	
California (2)	05/14/1973	05/06/1978	09/11/1989	06/22/1989	
Colorado (2)	03/15/1975			03/04/1992	
Connecticut (2)	09/26/1973	11/06/1989	06/02/1981	01/25/1992	
Delaware (2)	04/10/1974			03/23/1992	
District of Columbia (2)					

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(i) **Nothing** in this part **precludes a State from:**

- (1) Adopting or enforcing **requirements which are more stringent or more extensive** than those required under this part;
- (2) **Operating a program with a greater scope of coverage** than that required under this part. If an approved State program has greater scope of coverage than required by Federal law the additional coverage is not part of the Federally approved program.

40 CFR Section 123.1(i)

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Colorado:

Colorado permits for TWO Water Quality Laws

- 1. Federal Clean Water Act**
 - In 1975, EPA delegated the authority to administer the Clean Water Act discharge permitting program to the State of Colorado. 40 Fed. Reg. 16713 (April 14, 1975).
 - EPA still issues permits for federal facilities, like Army bases
 - 1975 delegation memo is at page 4 of [this link](#)
 - applies to Waters of the United States
- 2. Colorado Water Quality Control Act**
 - applies not just to federal waters but ALL state waters - even groundwater

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Colorado:

What is a Point Source?

- Any discernible, confined, and discrete conveyance, such as discharge from:
 - a pipe that leads to an onland pond or lagoon
 - a well
 - a tank or truck
 - spray irrigation
 - a pipe to surface water
 - an HRA system
 - a bulldozer
 - a ship
 - a mine adit

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Surface Water
Discharge Permitting

Ground Water
Discharge Permitting

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What if your state
doesn't have primacy?
Then who manages NPDES in
your state?

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Surface Water
Discharge Permitting

Ground Water
Discharge Permitting

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Surface Water Discharge **Ground Water** Discharge

65

Ground Water
Discharge Permitting
A state example

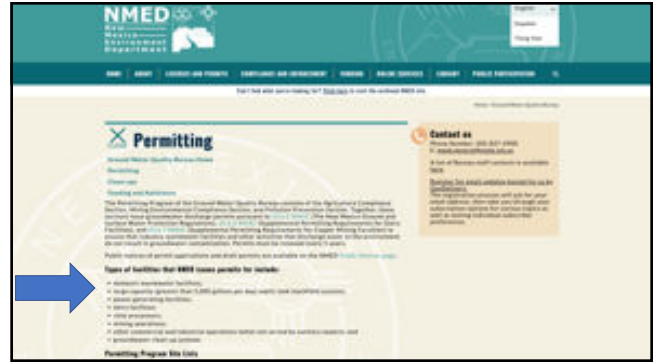
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NM Ground Water Regulations

20.6.2 NMAC

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NMED
New Mexico
Environment
Department

HOME ABOUT CONTACT US FEDERAL COMPLAINTS AND RESOLUTIONS TRAINING PUBLIC SERVICES CONTACT PUBLIC PARTICIPATION

Permitting

Ground Water Quality Bureau

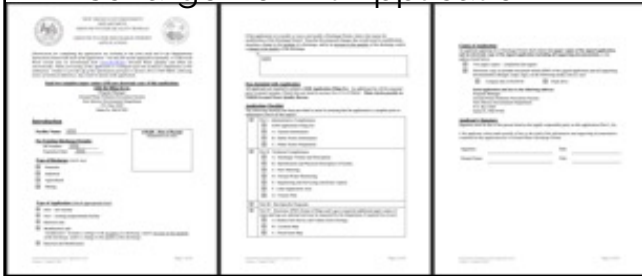
Permitting

Types of facilities that NMED issues permits for include:

- Air conditioning
- Air conditioning systems with 2000 gallons per day water flow
- Air conditioning
- Air conditioning
- Air conditioning
- Air conditioning
- Air conditioning
- Air conditioning
- Air conditioning

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New Mexico Ground Water Discharge Permit Application



69

NM Discharge Plan Example

- 1) **Ground water Discharge Plans** are administered by **NMED** Ground Water Quality Bureau
- 2) **Discharge Plans** apply to systems discharging **> 2000 gpd**
- 3) Most (but not all) NM systems operate under Discharge Plans
- 4) Are issued for **5 years**
- 5) **May require effluent limits** or might rely on ground water monitoring
- 6) **Sometimes** allow effluent with nitrates over the NM Water quality standard

70

NM Discharge Plans

- 7) Monitoring **samples must be analyzed under methodologies in NMAC, Title 20**
- 8) **Large facilities may** analyze their own samples
- 9) **Most small and medium sized dischargers** use **contract labs**
- 10) Monitoring reports are **filed with NMED – GWQB** generally quarterly

71

Most (but not all) NM systems operate under Discharge Plans


By you have to know both sets of regs for the New Mexico operator certification exam.

72

Most (but not all) NM systems operate under Discharge Plans

In New Mexico you have to know both sets of regs for the OP cert exam.

What's the situation in your state?




73



EPA always retains oversight authority – even if permitting and enforcement authority have been authorized to the state.

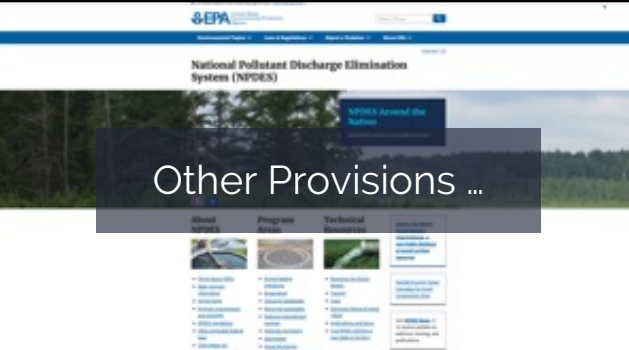
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EPA conducts inspections where it directly implements NPDES.

EPA may also conduct inspections in states where the state implements NPDES

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National Pre-treatment Program

40 C.F.R. 403

Focused on Indirect Dischargers:



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Sludge disposal is regulated under 40 CFR 503 (Federal Regulation)

78

40 CFR 503

- Two kinds of Activity
 - Beneficial Use**
 - Land Application in bulk or bags to public contact sites
 - Land Application in bulk to non-public contact sites
 - Disposal**
 - Surface Disposal
 - Incineration

(Note that landfill disposal is covered under NM Regs, not 40 CFR 503)

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40 CFR 503

Sets requirements for

- Pathogen reduction
- Vector attraction reduction
- Heavy metal and PCP pollution limitations
- Land application and disposal restrictions
- Management practices for disposal and land application
- How long storage can be stored (if more than 2 years, storage site usually IS considered a disposal site)

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Sample questions

Let's do a couple.

81

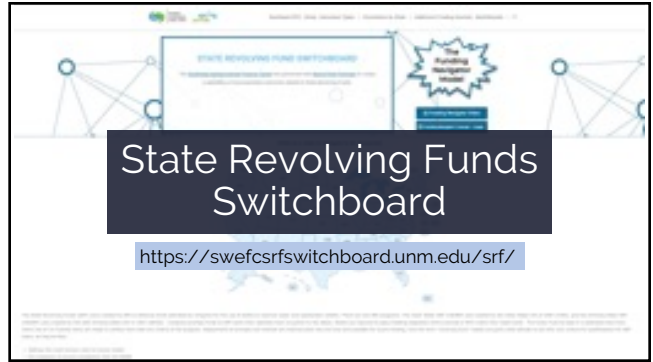
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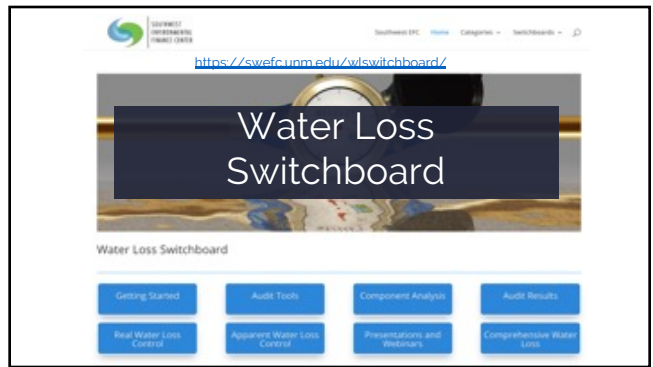
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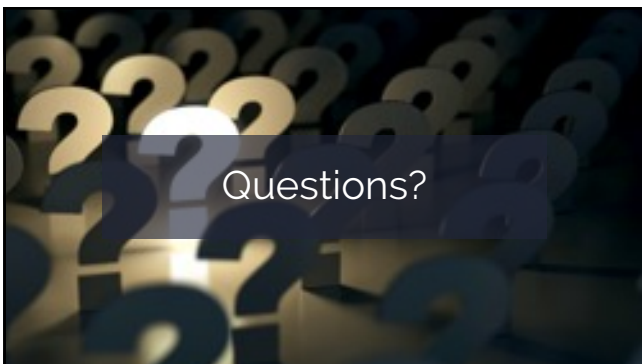
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