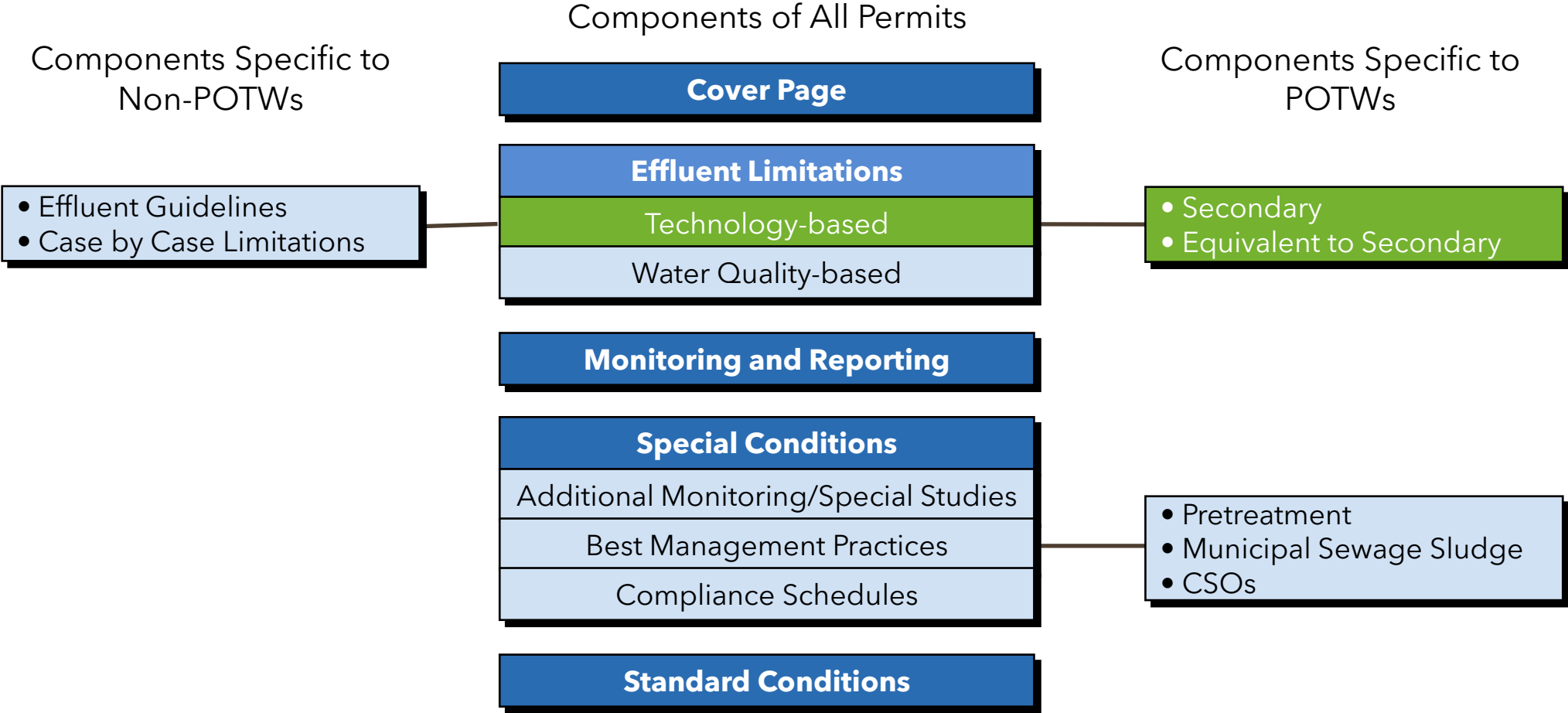


POTWs – What Does Your Permit Say? Part 2

February 28, 2024



Permit Components





Special Conditions: Pretreatment

*Recordings of existing pretreatment trainings
are available on EPA's website:*

<https://www.epa.gov/npdes>



About NPDES



- [Permit basics/FAQs](#)
- [State program information](#)
- [Permit limits](#)
- [Program management and oversight](#)
- [NPDES regulations](#)
- [Other applicable federal laws](#)

Program Areas



- [Animal feeding operations](#)
- [Aquaculture](#)
- [Industrial wastewater](#)
- [Municipal wastewater](#)
- [National pretreatment program](#)
- [Pesticides permitting](#)
- [Stormwater](#)

Technical Resources



- [Resources for Permit Writers](#)
- [Training](#)
- [Tools](#)
- [Electronic Notice of Intent \(eNOI\)](#)
- [Applications and forms](#)
- [Find NPDES permits in your state or territory](#)

[Explore the NPDES Permit Writers' Clearinghouse, a searchable database of permit writing resources.](#)

[Rainfall Erosivity Factor Calculator for Small Construction Sites](#)

Join **NPDES News** EXIT to receive updates on webinars, training, and publications.

Poll Question

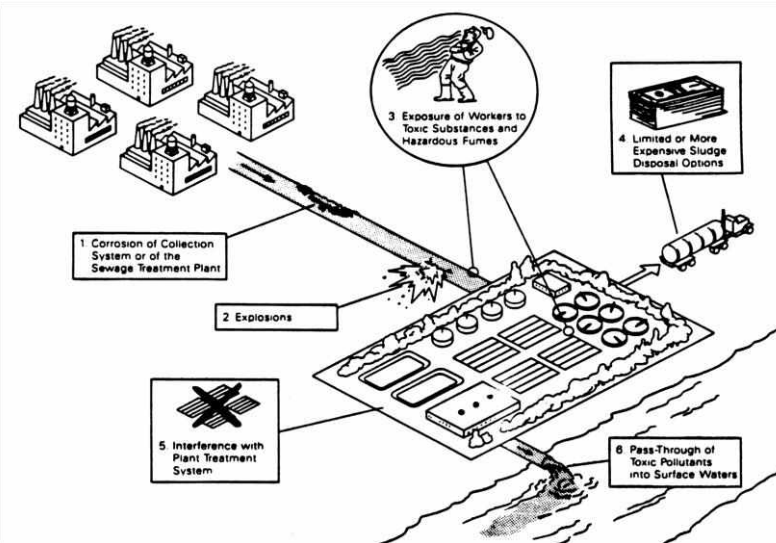
What is your current level of knowledge of pretreatment?



- A. I'm a pretreatment coordinator, and pretreatment is my life.
- B. Actively involved in pretreatment program through implementation or regulatory oversight.
- C. We have a pretreatment program, but it is not my responsibility, and I am not familiar with it.
- D. What's a pretreatment? Is that like conditioner before shampoo?

National Pretreatment Program

- Major goal is controlling discharges in order to:
 - Prevent interference with POTW processes
 - Prevent pass through of pollutants
 - Protect sludge management options
- Additional programmatic goals
 - Encourage recycling and reclamation
 - Ensure POTW personnel health and safety
- General and Specific Prohibitions
 - 40 CFR 403.5(a) and (b)



<https://www.epa.gov/npdes/national-pretreatment-program>

Pretreatment Regulatory Requirements

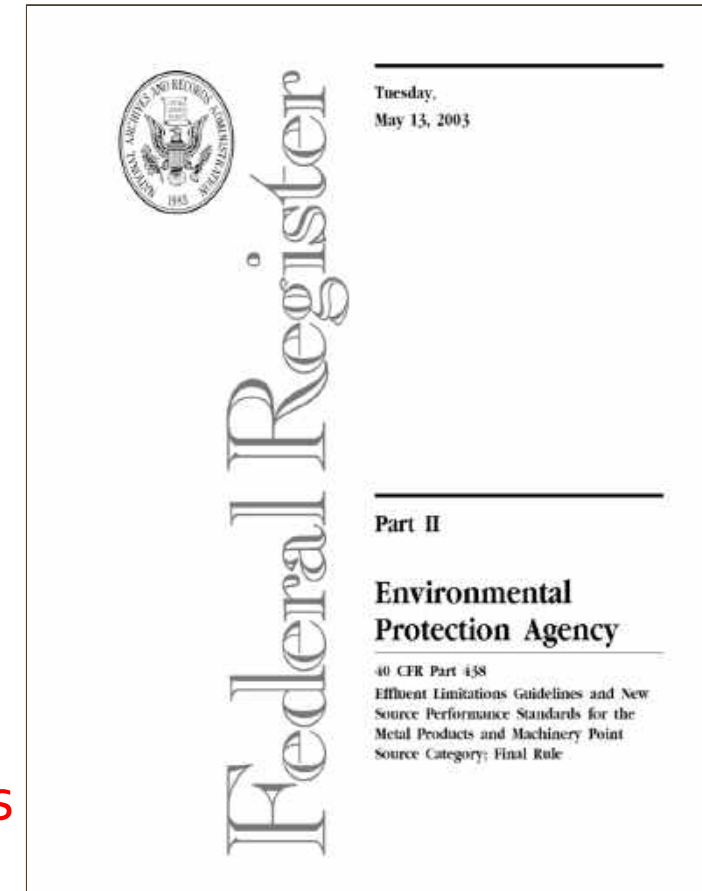
- Program Approval Authority
 - Regulates and ensures POTW pretreatment programs comply with the regulations.
 - EPA or the State
- Program Control Authority
 - Implements controls on Industrial Users discharging to the POTW to ensure pretreatment requirements are met.
 - POTW or State
- NPDES permits contain language requiring the POTW to implement the requirements of 40 CFR Part 403 which ensure legal authority, setting of limitations and conditions, compliance program and reporting.

<https://www.epa.gov/npdes/national-pretreatment-program-implementation>



Pretreatment Regulatory Requirements

- **Who is required to have a pretreatment program?**
 - POTWs > 5 MGD with dischargers subject to standards
 - POTWs < 5 MGD with past problems
 - Unless state assumes total responsibility for program implementation [§ 403.10(e)]
- **General Pretreatment Regulations for Existing and New Sources of Pollution [40 CFR Part 403]**
 - National Pretreatment Standards
 - Prohibited Discharges and Local Limits [§ 403.5]
 - **Categorical Standards [§ 403.6]**
 - Requirements for POTW and state, territorial, or tribal programs
 - **Industrial and POTW monitoring and reporting requirements**



Local Pretreatment Programs

- § 403.8 Requirements of a POTW pretreatment program
- § 403.9 Contents of a POTW submission for requesting program approval
- § 403.11 Approval procedures for POTW pretreatment program
- § 403.18 Modifications of POTW pretreatment programs



NPDES Conditions: Pretreatment-Related Requirements

Citation	Description
40 CFR 122.21(j)(6)	Application Requirements for New and Existing POTWs – Industrial User information
40 CFR 122.42(b)	POTW requirements to provide adequate notice of new pollutants to the Director
40 CFR 122.44(j)	Pretreatment Requirements for POTW if a Program is Required
40 CFR 124.3(a) and (c)	The POTW must submit a timely and completed application for an NPDES permit or NPDES permit renewal
40 CFR 124.8(a) and (b)	The permitting authority must prepare a fact sheet for every draft permit for a major NPDES facility. Fact sheets must briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit including references.

NPDES Permit Application Industrial User Information

- 40 CFR 122.21(j)(6)
- (i) Number of significant industrial users (SIUs) and non-significant categorical industrial users (NSCIUs), as defined at 40 CFR 403.3(v), including SIUs and NSCIUs that truck or haul waste, discharging to the POTW; and

FACILITY NAME AND PERMIT NUMBER:		Form Approved 1/14/00 OMB Number 2040-0080
SUPPLEMENTAL APPLICATION INFORMATION		
PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES		
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.		
GENERAL INFORMATION:		
F.1. Pretreatment Program. Does the treatment works have, or is it subject to, an approved pretreatment program?		
<input type="checkbox"/> Yes <input type="checkbox"/> No		
F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.		
a. Number of non-categorical SIUs.	<input type="text"/>	
b. Number of CIUs.	<input type="text"/>	
SIGNIFICANT INDUSTRIAL USER INFORMATION:		
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.		
F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.		
Name:	<input type="text"/>	
Mailing Address:	<input type="text"/>	
F.4. Industrial Processes. Describe all of the industrial processes that affect or contribute to the SIU's discharge.		
<input type="text"/>		
F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.		
Principal product(s):	<input type="text"/>	
Raw material(s):	<input type="text"/>	
F.6. Flow Rate.		
a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.		
<input type="text"/> gpd (<input type="checkbox"/> continuous or <input type="checkbox"/> intermittent)		
b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.		
<input type="text"/> gpd (<input type="checkbox"/> continuous or <input type="checkbox"/> intermittent)		
F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:		
a. Local limits	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Categorical pretreatment standards	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If subject to categorical pretreatment standards, which category and subcategory?		
<input type="text"/>		

NPDES Permit Application

Industrial User Information

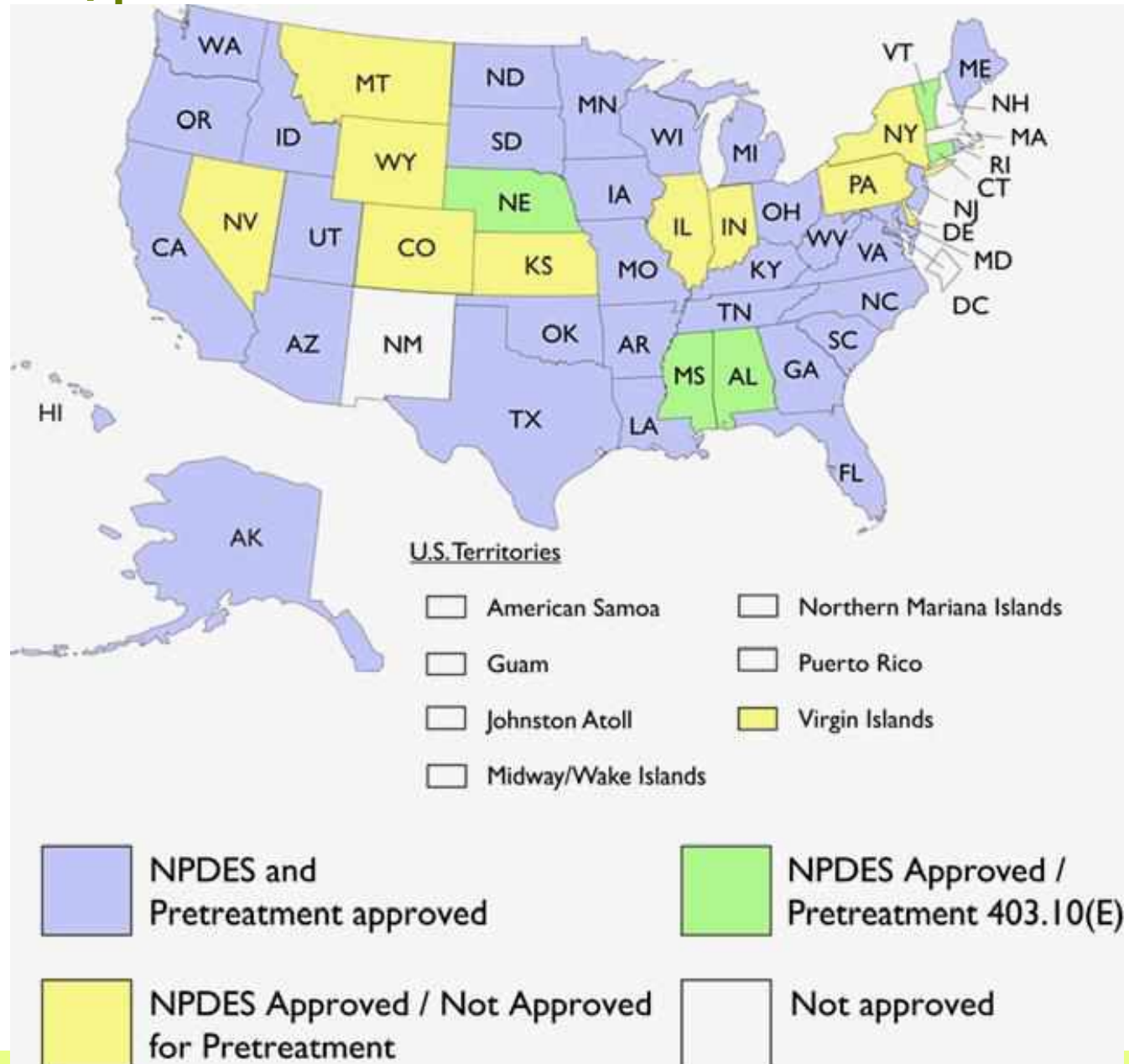
- **40 CFR 122.42(b) – NPDES Permit must require notice to the Director of any new introduction of pollutants into the POTW from an indirect discharger**
 - 40 CFR 403.8(f)(6) – POTWs shall prepare and maintain a list of Industrial Users meeting the criteria out in 40 CFR 403.3(v)(1).
- **40 CFR 122.44(j) - NPDES Permit must have requirements for the following:**
 - Identification of SIUs
 - Program submission when required.
 - Written technical evaluation of local limits

Pretreatment Conditions in NPDES Permits

Typically, States have either developed, or EPA Regions have provided, template language for the pretreatment portion of the permit and the EPA Regions review all POTW permits. The template language varies based on the status of the POTW:

- A POTW that is implementing an existing approved pretreatment program;
- A POTW that needs to develop a new pretreatment program and submit it to EPA for approval; or
- A POTW that is not required to develop or implement a pretreatment program but has SIUs or CIUs.

NPDES/pretreatment authorization status



Biosolids and NPDES Permits a very short review

****Not meant to cover all combinations and variations of Biosolids use and disposal under 40CFR503 (not possible in 14 slides)****

Robert B. Brobst, P.E.
Eastern Research Group
PG Environmental



<https://www.epa.gov/biosolids>

<https://nepis.epa.gov/Exe/ZyNET.exe?ZyActionL=Register&User=anonymous&Password=anonymous&Client=EPA&Init=1>

Poll Question

True or False?



I only have to comply with biosolids requirements at 40 CFR 503 if the conditions are in my permit.

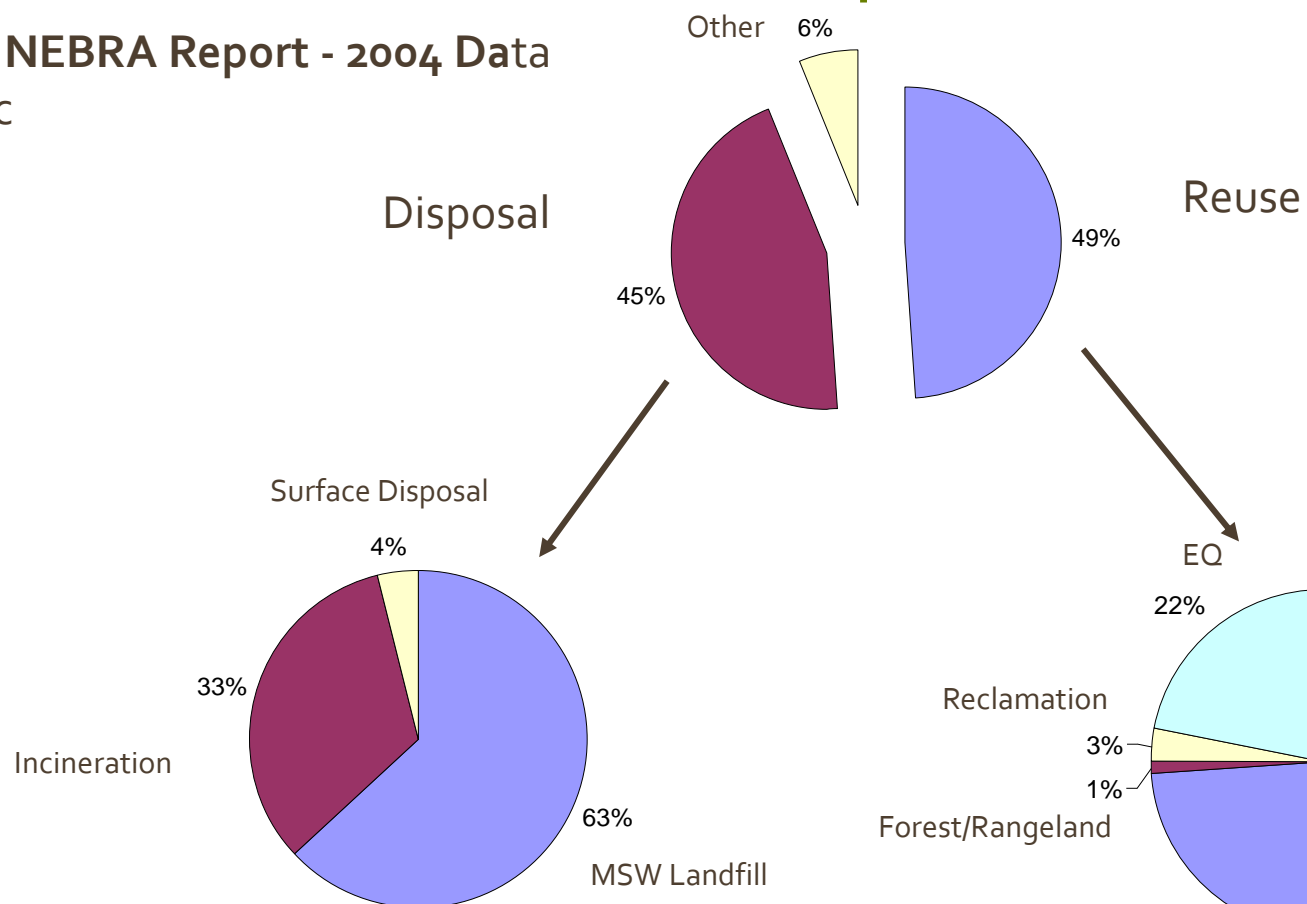
False: The conditions found at 40 CFR 503 may be implemented through an NPDES permit, but they are also directly enforceable without permit conditions for applicable facilities.

US production/utilization

- Nationally - ~7 million dry tons per year
- Regionally - range 100,000 dt – 1E6 dt/y
- State (ranges)
 - Rural states ~6-12,000dt/y
 - Urbanized states ~ 775,000dt/y (CA) most ~350,000dt
- One way to estimate your DRY Treated (Biosolids) Production ~0.35-0.5dt/MG
 - e.g. a facility treating 5 MGD should produce $\frac{640 \sim 910 \text{ dt/y}}{(5 \times 365 \times 0.35 \rightarrow 638)}$
 - If all 7E6dt were land applied ~ 1% of the cultivated farmland could be fertilized @5T/A

National Biosolids Use/Disposal

After 2007 NEBRA Report - 2004 Data
See graphic



2017 Data

Land Application

(include Class A) 52%

Landfill(MSW) 30%

Incineration 15%

Surface Disposal 2%

Reuse

Disposal

Latest info:

<https://www.biosolidsdata.org/national-summary>

Current Quality--2006 Biosolids Data when compared to typical soils

Regulated Contaminate	CO 2006 mg/Kg ¹	R8 2006 mg/Kg ¹	National 2006 mg/Kg ²	Typical Soils Conc. mg/Kg ³	503 LA Table 3 mg/Kg ⁴
As	4	8	7	5.2	41
Cd	2.5	3	3	0.2	39
Cr⁵	25	30	83	30	N.R.
Cu	550	525	569	14.4	1500
Pb	34	45	80	18.1	300
Hg	0.8	2.3	1.3	0.02	17
Mo	11	12	17	0.78	(75)
Ni	18	24	53	13.5	420
Se	8	10	7	0.2	100
Zn	599	645	1029	58	2800

Notes: ¹2006 Annual Reports summarized in US EPA Region 8 BDMS², Smith et al 2013(median value)³, USEPA 1993⁴ Cr not Regulated in 40 CFR 503⁵

REGULATING BIOSOLIDS IN NPDES PERMITS

- Self-implementing rule 40CFR 503.3
 - Must meet requirements even when not in NPDES Permit
 - Permit may contain State Requirements but must meet at a min. 503
 - Requires reporting regardless if in permit
 - Although CWA implementation through 402 permits - 40CFR503 is self implementing (see 503.3)
- Most states have adopted Part 503 or something more restrictive
 - Typically including additional requirements to address local concerns/factors
 - Nine states are formally authorized at least parts of 40 CFR 503 (**UT, OK, SD, WI, TX, AZ, OH, MI & ID (ID most recent 7/1/21)**)
- Choice of use/disposal practice remains a local decision

<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-O/part-503>

Current Federal Rules Impacting Sewage Sludge/Biosolids Use or or disposal

- 40 CFR Part 503 *Sewage Sludge Use/Disposal* requirements
 - Land application (52% of current Biosolids production)
 - Surface disposal (2% of current Biosolids production)
 - Incineration (15% of current Biosolids production)
- 40 CFR Part 258 *Municipal Solid Waste Landfill* requirements – requirements here are the landfills 40CFR503.4
 - (LandFill 30% for current Biosolids Production)
 - Buried daily (no req except pass paint filter test 40CFR258.28 and Nonhaz)
 - Alternate Daily Cover (no req except pass paint filter test 40CFR258.28 and Nonhaz must also VAR/Class B) 40CFR258.21b
- Additional Requirements may impact Incineration
 - May have Air Pollution Regulations that apply in addition to 503

IMPORTANT 503 REQUIREMENT – 503.7 THE PREPARER IS RESPONSIBLE FOR THE APPLIER

SINCE MOST NPDES PERMIT HOLDERS ARE THE PREPARERS

Methods of Biosolids Land Application



The Basics 40 CFR 503 Standards/Requirements

- Generalized Areas of 503 coverage
 - General Requirements
 - Pollutant Limits (e.g. LA Summarized below)
 - Management Practices (e.g. Agronomic Rate)
 - Operational Standards(e.g. Anaerobic Digestion time/temp)
 - Frequency of Monitoring(Summarized below)
 - Record Keeping (Summarized below)
 - Reporting (Summarized below)

-All 503 USE/DISPOSAL
Surface Disposal
Land Application
Incineration

Land Application METALS BASED CLASSIFICATION

Maximum Concentration mg/kg dry --- Table 1

	Table III	Table I
Arsenic	41	75
Cadmium	39	85
Copper	1500	4300
Lead	300	840
Mercury	17	57
Molybdenum	-	75
Nickel	420	420
Selenium	100	100
Zinc	2800	7500

Pathogen Destruction Criteria

Impact



IMPACTS
Land application
Surface disposal
landfill

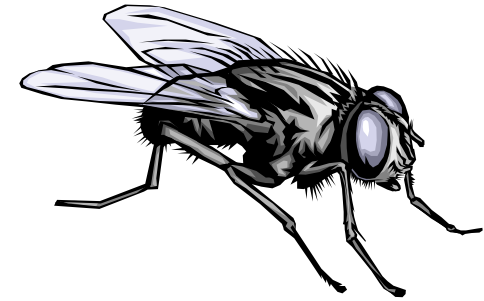
Class A Biosolids*

Class B Biosolids*

***with respect to pathogens**

Vector Attraction Reduction (VAR)

- (1-3) 38% VSR through treatment with anaerobic or aerobic digester
- (4) Anaerobic - bench scale test (40 days)
- (5) Aerobic - bench scale test (30 days)
- (6) Aerobic - SOUR $\leq 1.5 \text{ mg O}_2/\text{hr}$ @ 20°C
- (7) Aerobic - 14+ days @ $>40^\circ \text{C}$ (avg $>45^\circ \text{C}$) (e.g. Compost)
- (8) pH \wedge 12+ for 2 hr then 11.5+ for 22hr
- (9) Dry to 75% when stabilized solids used (digested)
- (10) Dry to 90% when unstabilized solids used (undigested)
- (11) Sub. injection (no significant after 1hr)
- (12) Surface application w/incorporation (w/in 6hrs)



Impacts

Land Application
Surface Disposal
Landfill (ADC)

Requirements at the Site of Land Application

- Management Practices
 - Agronomic Rate
 - No harm to Endangered Species
 - No harm to Historic Sites
 - Groundwater protection
 - Frozen/snow covered sites
 - Wet weather
 - Storage requirements



Monitoring & Analysis Biosolids



-All 503 USE/DISPOSAL
Surface Disposal
Land Application
Incineration

Biosolids Frequency of Sampling & Analysis	
Annual Production DST/YR	Frequency
Less than 319 (<290 DMT/Yr)	Once per year
319 to 1,649	Once per quarter
1,650 to 16,499	Once per two months
16,500 +	Monthly
Lagoons	Prior to removal

Record Keeping / Reporting

-All 503 USE/DISPOSAL
Surface Disposal
Land Application
Incineration

- On or before February 19 of each year (e-reporting)
- Authorized State programs – report as requested by state - others
 - $\geq 1,000,000$ gpd; serving 10,000; designated by Regions
- For each site used, the following information:
 - a. The **amount of biosolids** (e.g tons or kilograms per acre or hectare);
 - b. The application loading **rates** (e.g. tons or kilograms per acre or hectare, and gallons per acre for domestic septage);
 - c. The **concentrations of the pollutants** (e.g. milligrams per kilogram of biosolids on a dry-weight basis);
 - d. The **pathogen treatment** methodologies used during the year and the results; and
 - e. The **vector attraction reduction** methodologies used during the year and the results.



Standard Conditions

Standard Conditions Requirements

- Standard conditions regulations
 - § 122.41—Conditions applicable to all permits
 - § 122.42—Additional conditions applicable to specified categories of NPDES permits
- Standard conditions must appear in every NPDES permit either
 - Expressly (verbatim) or
 - By reference
- States, tribes, or territories might have more stringent requirements

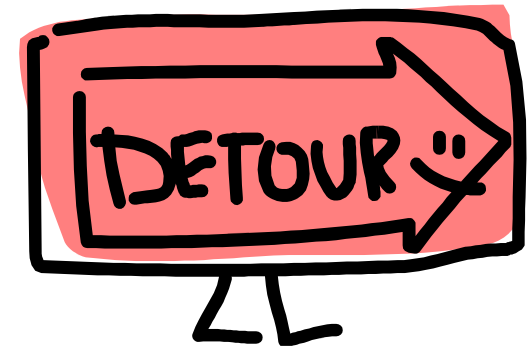


List of Standard Conditions - § 122.41

- a. Duty to comply
- b. Duty to reapply
- c. Need to halt or reduce activity
not a defense
- d. Duty to mitigate
- e. Proper O & M
- f. Permit actions
- g. Property rights
- h. Duty to provide information
- i. Inspection and entry
- j. Monitoring and records
- k. Signatory requirements
- l. Reporting requirements
 - 1. Planned changes
 - 2. Anticipated noncompliance
 - 3. Transfers
 - 4. Monitoring reports
 - 5. Compliance schedules
 - 6. 24-hour reporting
 - 7. Other noncompliance
 - 8. Other information
 - 9. Identification of initial
recipient
- m. Bypass
- n. Upset

Bypass [§ 122.41(m)]

- Intentional diversion of waste streams from any portion of a treatment facility
- Bypass not exceeding limitations allowed without notification only where for essential maintenance to assure efficient operation [§ 122.41(m)(2)]
- Bypass prohibited otherwise except where [§ 122.41(m)(4)]
 - A bypass was unavoidable to prevent loss of life, personal injury or severe property damage **and**
 - There were no feasible alternatives to the bypass **and**
 - Facility gives notice before bypass or within 24 hours if bypass is unexpected



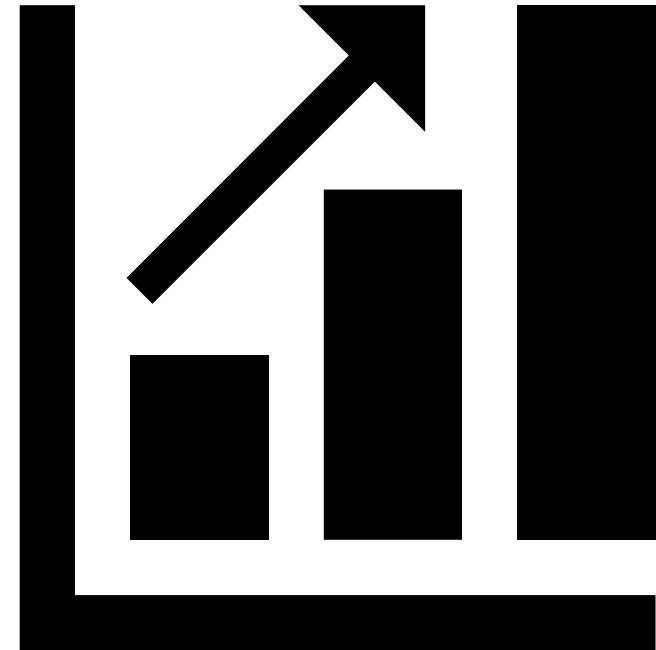
Upset [§ 122.41(n)]

- An exceptional incident that causes an unintentional, temporary non-compliance with a technology-based effluent limitation
- A demonstrated upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based limitations
- Conditions necessary to demonstrate upset:
 - Identify cause of upset
 - Show that facility was operated properly at the time
 - Proper notice to permitting authority (24-hour reporting)
 - Compliance with remedial measures under § 122.41(d)



Additional Standard Conditions - § 122.42

- Notification for POTWs [§ 122.42(b)]
 - Introduction of new pollutants from indirect discharger that would be subject CWA technology requirements if discharging directly
 - Change in pollutant volume or character of pollutants introduced



Poll Question

True or False?

The permit writer can remove irrelevant standard conditions from the permit upon request?

False: All standard conditions must be included in each permit. Federal regulations require standard conditions in all permits be at least as stringent as the federal requirements. They should not be revised on a case-by-case basis.