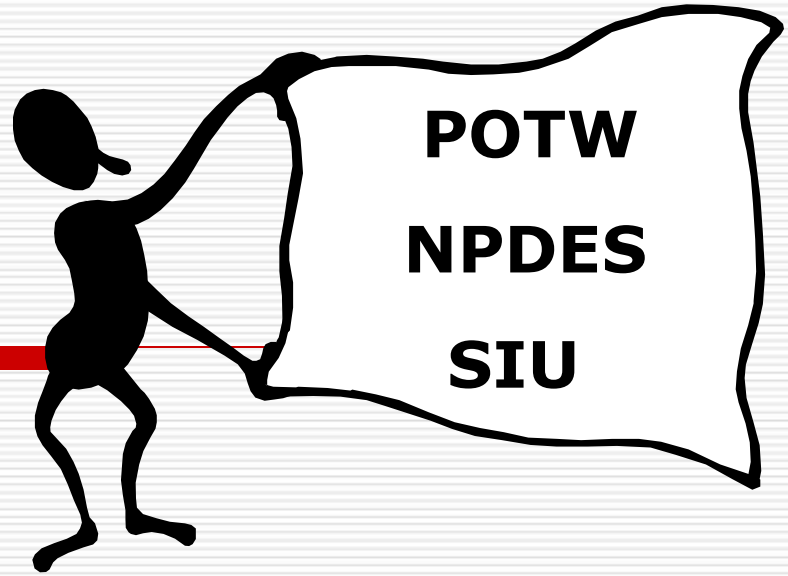
# ACRONYMS and DEFINITIONS

*Pretreatment 102:*

*What Your Local Regulator Wants You to Know About Pretreatment Anatomy*

December 6, 2023 – NC-PC Industry Day

# PRETREATMENT ACRONYMS




Agency Acronyms
Regulation Acronyms
Reporting Acronyms
Enforcement Acronyms
Laboratory Acronyms
Lab/Math/Science Acronyms and Symbols

# Agency Acronyms

- EPA
  - U.S. Environmental Protection Agency
- NC-DEQ
  - North Carolina Department of Environmental Quality
    - DWR
      - Division of Water Resources (State of NC)
- POTW
  - Publicly Owned Treatment Works

# Agency Acronyms

- AA
  - Approval Authority
  - In North Carolina for Pretreatment it is the State of North Carolina Division of Water Resources
- CA
  - Control Authority
  - In North Carolina it will be a town, municipality, county or other government agency that owns the wastewater treatment plant

# General Acronyms

- SIU
  - Significant Industrial User
- CIU
  - Categorical Industrial User
- CEC
  - Contaminants of Emerging Concern
- WWTP
  - Wastewater Treatment Plant
- IWS
  - Industrial Waste Survey

# General Acronyms

- NPDES
  - National Pollutant Discharge Elimination System
- SIC
  - Standard Industrial Classification (#)
- NAICS
  - North American Industrial Classification System (#)
- BPJ
  - Best Professional Judgment

# Regulation Acronyms

- CFR
  - Code of Federal Regulations
- CWA
  - (Federal) Clean Water Act
- NCGS
  - North Carolina General Statutes
- SUO
  - Sewer Use Ordinance

# Regulation Acronyms

- PSES (Federal Categorical Standards)
  - Pretreatment Standards for Existing Sources
- PSNS (Federal Categorical Standards)
  - Pretreatment Standards for New Sources

# Reporting Acronyms

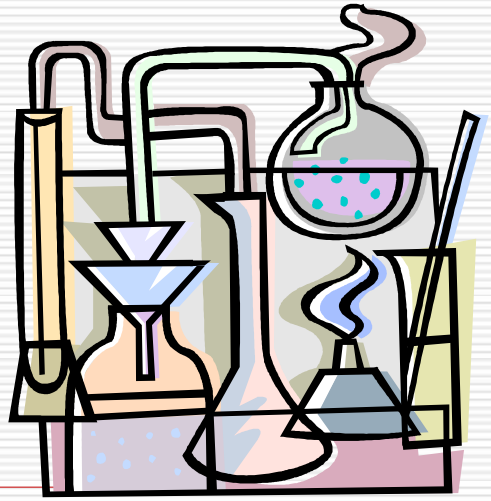
- BMR
  - Baseline Monitoring Report
- BMP
  - Best Management Practices
- TTO
  - Total Toxic Organics
- TOMP
  - Toxic Organic Management Plan

# Enforcement Acronyms

- ERP
  - Enforcement Response Plan
- NOV
  - Notice of Violation
- AO
  - Administrative Order
- SNC
  - Significant Non-Compliance
- CJP
  - Compliance Judgment Point

# Laboratory Test Acronyms

- $BOD_5$
  - Biochemical Oxygen Demand (5 Day)
- $CBOD_5$
  - Carbonaceous Biochemical Oxygen Demand (5 Day)
- TSS
  - Total Suspended Solids
- COD
  - Chemical Oxygen Demand
- O&G
  - Oil and Grease
- PFAS
  - Per- and Poly-fluoroalkyl substances

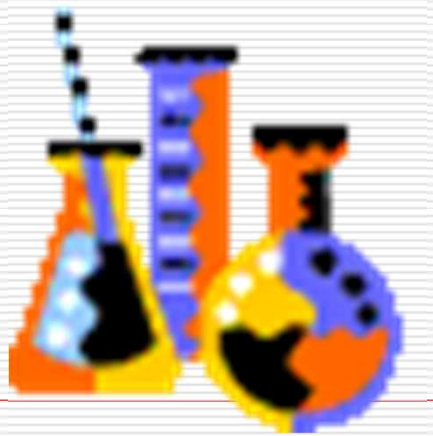


# Laboratory/Math/Science Acronyms and Symbols

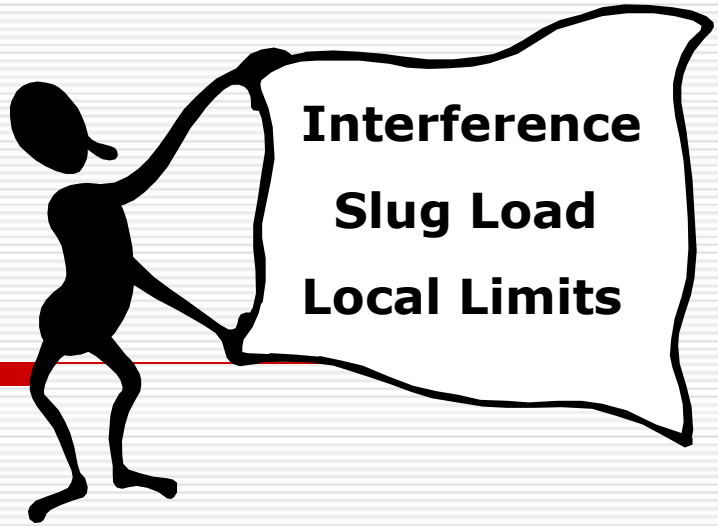
- gpd
  - Gallons per day
- MGD
  - Million gallons per day
- mg/L
  - Milligrams per liter
- ug/L
  - Micrograms per liter

# Laboratory/Math/Science Acronyms and Symbols

- ppm
  - Parts per million
- ppb
  - Parts per billion
- >
  - Greater than
- <
  - Less than



# PRETREATMENT DEFINITIONS




General Pretreatment Definitions

Regulation Definitions

Enforcement Definitions

Reporting Definitions

Laboratory Definitions

Permit Limit Definitions

# General Pretreatment Definitions

- Pretreatment
  - The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW.

# General Pretreatment Definitions

- Publicly Owned Treatment Works [POTW]
  - As defined by Section 212 of the Clean Water Act
  - Wastewater Treatment Plant that is owned by a State, municipality or county [but NOT Federal]
  - Any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature
  - It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW treatment plant

# General Pretreatment Definitions

- Significant Industrial User
  - An industrial user that:
    - Is subject to a Federal Categorical Pretreatment Standard; OR
    - Discharges 25,000 gallons per day or more of process wastewater; OR
    - Contributes 5% or more of any hydraulic or organic capacity of the POTW; OR
    - Has a reasonable potential, in the opinion of the POTW, to adversely affect the POTW's operation or to violate any pretreatment or requirement

# General Pretreatment Definitions

- Categorical Industrial User [CIU]
  - An (significant) industrial user subject to Federal categorical pretreatment standards
    - Examples:
      - Metal Finishing [40 CFR Part 433]
      - Organic Chemicals, Plastics and Synthetic Fibers [40 CFR Part 414]
      - Electroplating [40 CFR Part 413]
      - Electrical and Electronic Components [40 CFR Part 469]
      - Pharmaceutical Manufacturing [40 CFR Part 439]

# General Pretreatment Definitions

- Process Wastewater
  - Any water which, during manufacturing or processing, comes into direct contact with or results from the production of or use of any raw material, intermediate product, finished product, byproduct, or waste product.
  - Process wastewater does <u>NOT</u> include domestic wastewater, non-contact cooling water, boiler blowdown or cooling tower blowdown

# General Pretreatment Definitions

- Slug Discharge
  - Any discharge of a non-routine, episodic nature, including but not limited to, an accidental spill or a non-customary batch discharge
- Slug Load
  - Any pollutant (including BOD) released in a discharge at a flow rate or concentration which will cause interference with the operation of the treatment works

# General Pretreatment Definitions

- Best Management Practices [BMPs]
  - Schedule of activities, prohibitions or practices, maintenance procedures, and other management practices to prevent or reduce pollution discharges.
  - BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spills or leaks, sludge or waste disposal, or drainage from raw material storage.

# General Pretreatment Definitions

- Conventional Pollutants
  - Biochemical Oxygen Demand, Total Suspended Solids, fecal coliform, oil and grease, and pH
- Non-Conventional Pollutants
  - Any pollutant that is neither a toxic pollutant nor a conventional pollutant (e.g., manganese, ammonia, etc.)

# General Pretreatment Definitions

- Contaminants of Emerging Concern
  - Chemical/other waste contaminants posing unique issues & challenges to the environmental community as a result of the recent development of new chemicals; new/recently identified byproducts/waste products; newly discovered/suspected adverse health/environmental impacts; physical/chemical properties that are not fully evaluated or understood; an absence of/pending changes to fully defined risk levels, water quality criteria/standards, or other environmental program levels of control.
  - Include but not limited to: PFAS, 1,4-dioxane, nanomaterials, pharmaceuticals & their constituents, steroids & hormones.

# Regulation Definitions

- Code of Federal Regulations
  - Title 40 of the Code of Federal Regulations published in an U.S. Government publication, the Federal Register, which contains environmental regulations.
    - 40 CFR Part 403 – General Pretreatment Regulations
    - 40 CFR Parts 405 through 471 – Federal Categorical Pretreatment Standards

# Regulation Definitions

- Categorical Pretreatment Standards
  - Pollutant discharge limits promulgated by EPA in accordance with Section 307 of the CWA that apply to regulated process wastewater
  - Based on the capability of a specific wastewater treatment technology or series of technologies to reduce pollutant discharges
  - Different Standards for different "categories" of industrial processes

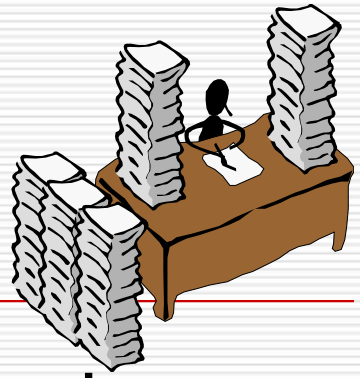
# Regulation Definitions

- Sewer Use Ordinance
  - A legal mechanism/document written and implemented by a local government entity which sets out, among others, requirements for the discharge of pollutants into a publicly owned treatment works.

# Reporting Definitions

- Baseline Monitoring Report [BMR]
  - Applicable to Categorical Industrial Users only
  - Report to POTW that indicates compliance status with applicable categorical standards
    - Existing Source – Report due 180 days after effective date of a new standard
      - If standards cannot be met without installation of additional pretreatment, report must contain compliance schedule
    - New Source – Report due 90 days prior to commencement of discharge

# Reporting Definitions



- 90-Day (Final) Compliance Report
  - Applicable to Categorical Industrial Users only
  - Report to POTW that indicates compliance status with applicable categorical standards
    - Existing Source – Report due within 90 days after final compliance date of standard
    - New Source – Report due within 90 days after commencement of discharge

# Enforcement Definitions

- Enforcement Response Plan
  - Step-by-step enforcement procedures followed by the Control Authority staff to identify, document, and respond to violations.

# Enforcement Definitions

- Interference
  - A discharge which, alone or in conjunction with a discharge or discharges from other sources, both
    - Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; AND
    - Therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with…(applicable regulations).

# Enforcement Definitions

- Pass-Through
  - A discharge of pollutant which cannot be treated adequately by the POTW, and therefore exits into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

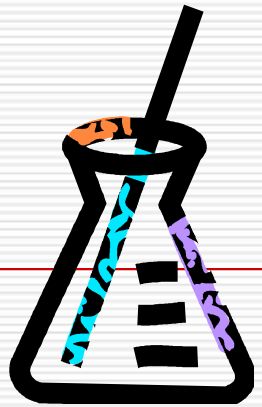
# Laboratory Definitions

- Composite Sample
  - Sample composed of two or more discrete samples. A “composite” sample will reflect the average water quality covering the compositing or sample period.
- Grab Sample
  - A sample which is taken from a wastestream on a one-time basis with no regard to the flow of the wastestream but within a 15-minute time period.

# Laboratory Definitions

- Biochemical Oxygen Demand (BOD-5 Day)
  - A measurement of the amount of oxygen depletion over a specified time period (usually 5 days) in a wastewater sample; it is a measurement of non-toxic organic strength of a wastewater
- Carbonaceous Biochemical Oxygen Demand (CBOD-5 Day)
  - BOD minus the nitrogenous oxygen demand
  - Same test procedure as BOD with chemical added to “remove” nitrogen demand

# Laboratory Definitions



- Chain of Custody
  - Written record of sample possession for all persons who handle (collect, transport, analyze, dispose of) a sample, including the names, dates, times, and procedures followed

# Permit Limit Definitions

- Local Limits
  - Site-specific discharge limits developed and enforced by POTWs to control discharges from industrial or commercial facilities to the POTW
  - Limits developed to implement the general and specific discharge prohibitions listed in 40 CFR 403.5(a)(1) and (b)

# Permit Limit Definitions

- Concentration Based Limits/Standard
  - A discharge limit based on the relative strength of a pollutant in a wastestream, usually expressed as milligrams per liter (mg/l).
- Mass-Based Limit/Standard
  - A discharge limit which is measured in a mass unit such as pounds per day
  - Pounds = mg/l * 8.34 * Flow in MGD

# Permit Limit Definitions

- Total Toxic Organics [TTO]
  - The sum of the concentrations of the specific toxic organic compounds regulated by specific categorical pretreatment regulations
    - Examples: Metal Finishing [40 CFR Part 433], Electroplating [40 CFR Part 413], Electrical and Electronic Components [40 CFR Part 469]
  - Sum of concentrations found at 0.01 mg/l or greater

# Permit Limit Definitions

- Toxic Organic Management Plan [TOMP]
  - Written plan submitted by industrial user as an alternative to Total Toxic Organic monitoring
  - Plan includes:
    - Specific toxic organic compounds used
    - Method of disposal used
    - Procedures for assuring that toxic organics do not routinely spill or leak into the sanitary sewer system

# Permit Limit Definitions

- Best Professional Judgment [BPJ]
  - The highest quality technical opinion developed by a permit writer after consideration of all reasonable available and pertinent data or information which forms the basis for the limits, terms and/or conditions of a permit

# QUESTIONS?