

EPA's Industrial Pretreatment Program

Presented by:

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Pretreatment 101 Overview

- Origin / history of the National Pretreatment Program.
- Definition / objectives of the National Pretreatment Program.
- Who must develop a pretreatment program.

Pretreatment 101 Overview

- Components of a technically and legally defensible pretreatment program.
- What industries must be regulated by a POTW.
- Pretreatment program requirements for POTWs.

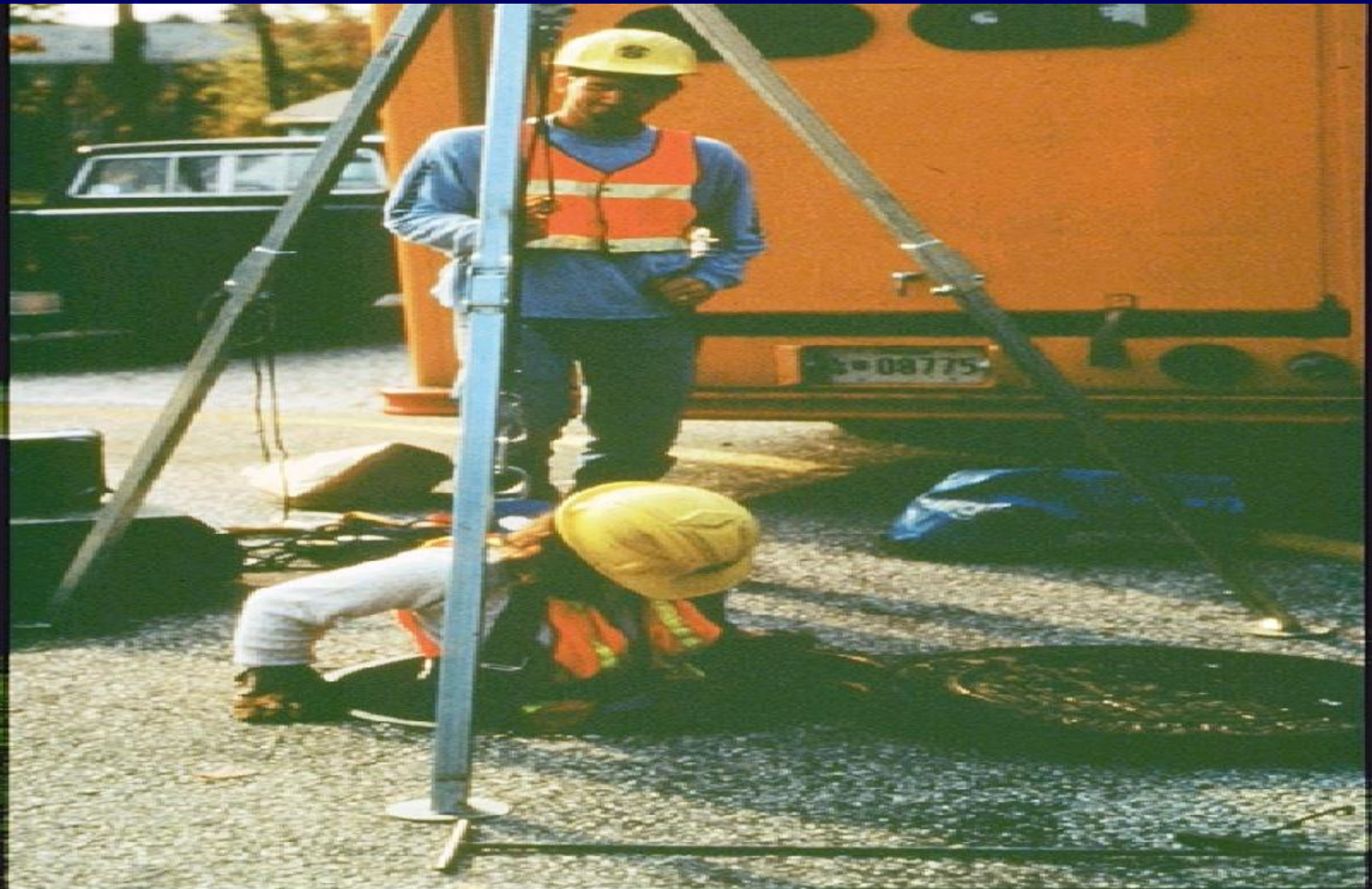
Pretreatment 101 Overview

- Local limits development process.
- POTW reporting requirements under the National Pretreatment Program.
- Updating Your Industrial Pretreatment Program and Associated Components.
- Categorical Industries and Determinations

Pretreatment 101 Overview

- Emerging Issues and Programs under IPP.
 - Fats, oils and grease
 - Mercury amalgam

Allows for exotic travel opportunities



Origin / History of the National Pretreatment Program

Clean Water Act

- Cornerstone legislation protecting surface water quality in the United States.
- First enacted in 1972 - as the Federal Water Pollution Control Act (FWPCA).
- Established and directed EPA to develop and implement regulations for limiting pollutants discharged to surface waters.
- FWPCA amended several times since 1972 – now known as the *Clean Water Act*.

Key Elements of the Clean Water Act

Provides EPA with the legal authority to:

- Establish the National Pollutant Discharge Elimination System (NPDES) program – regulating direct discharges to surface waters of the United States (POTWs and industrial dischargers).

Key Elements of the Clean Water Act

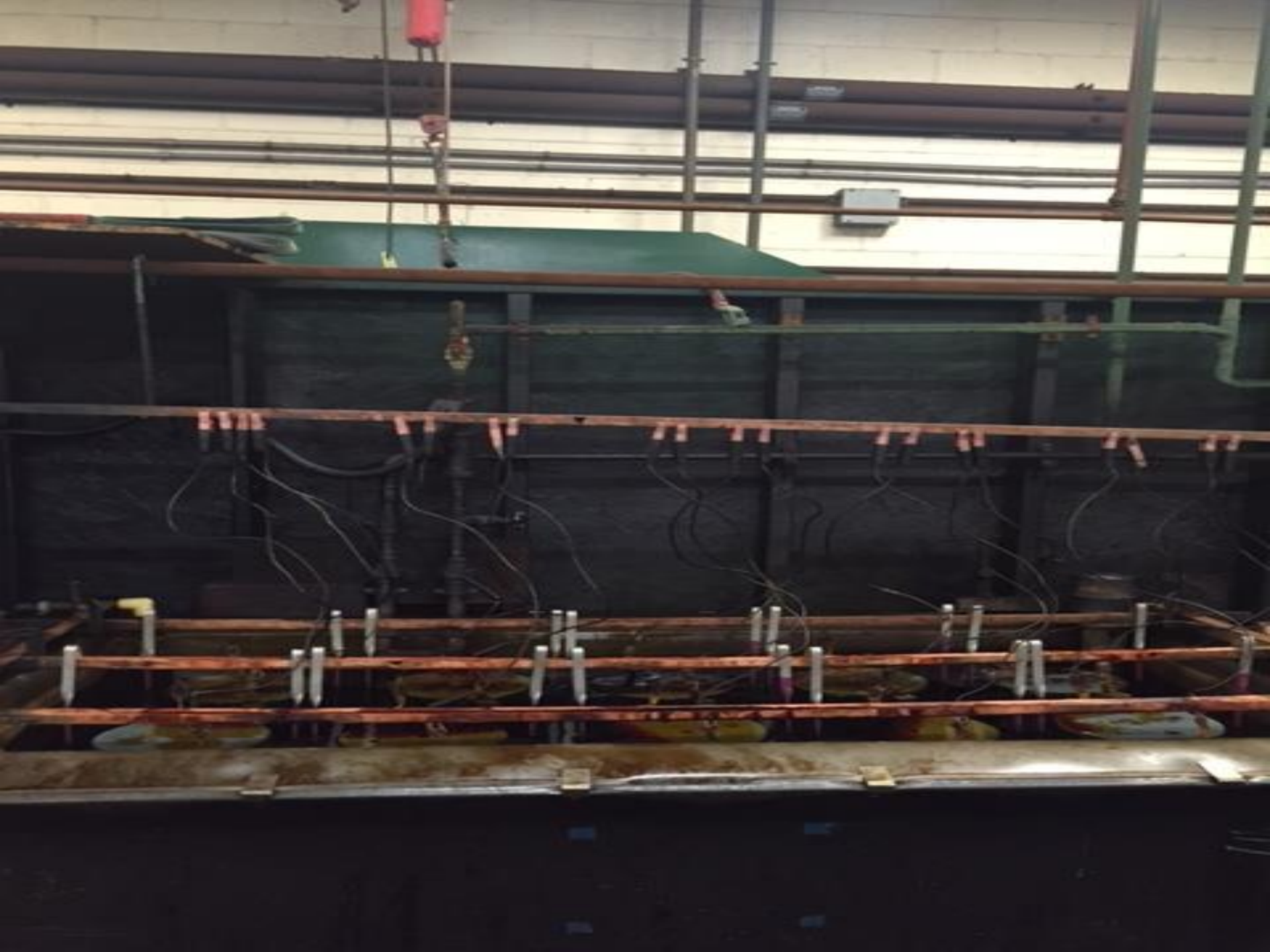
Provides EPA with the legal authority to:

- Establish the National Industrial Pretreatment Program – regulating industrial discharges (indirect discharges) to POTWs.
 - Recognizing that the NPDES program alone would not achieve the intended objectives of the Clean Water Act – that additional surface water pollution control mechanisms were needed – June 1978 (as a result of litigation).



***General Pretreatment
Regulations 40 CFR Part 403
January, 1981***







Pretreatment Program Legal Framework

This is the only environmental program where EPA has authorized local governments (POTWs) directly to implement and enforce Federal Regulations.

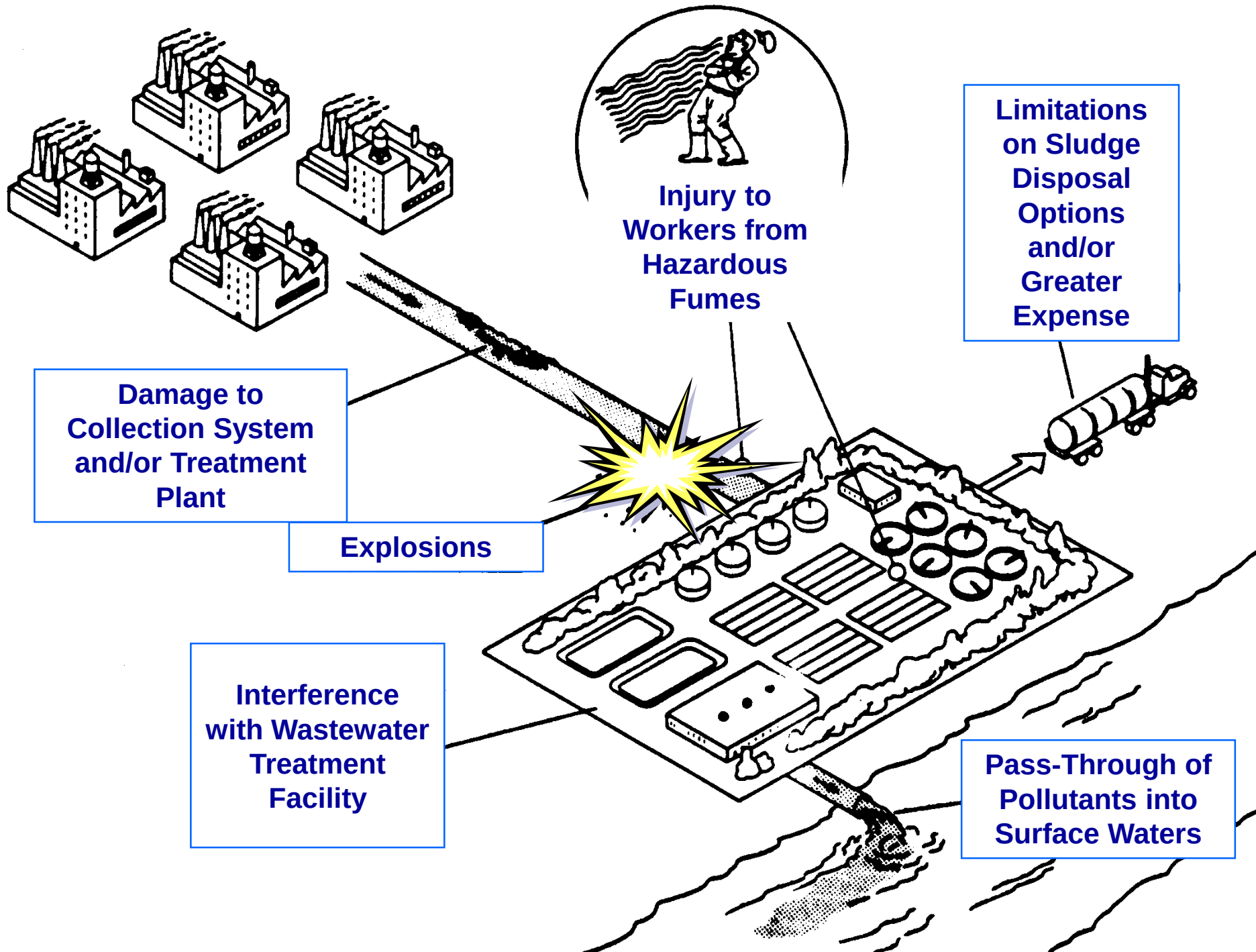
History of Pretreatment Regulations

- 1970: FWPCA Amendments create NPDES Program. Establishes Effluent Guidelines (technology-based effluent limits).
- 1972: EPA established general prohibitions against Pass Through and Interference (40 CFR Part 128).
- 1978: EPA sued and lost resulting in promulgation of Part 403, General Pretreatment Regulations (replaced Part 128).
- 1990: EPA promulgates DSS and PIRT changes: addressed RCRA discharges to POTWs (Domestic Sewage Exclusion) and other significant changes.
- 2005: Streamlining Pretreatment Regulations: October 14, 2005 - Published in the Federal Register: [(Volume 70, Number 198). Pages 60133-60198]

Intent of the Pretreatment Program

The objectives of the Pretreatment Program are to prevent the introduction of pollutants to a POTW (sewerage system or treatment works) that may cause Pass Through or Interference or otherwise interfere with the disposal of biosolids.

To protect POTW and sewer systems' workers as well as general public.



Pass Through



Definitions

Pass Through: A discharge which exits the POTW into Waters of the U.S. 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 permit.

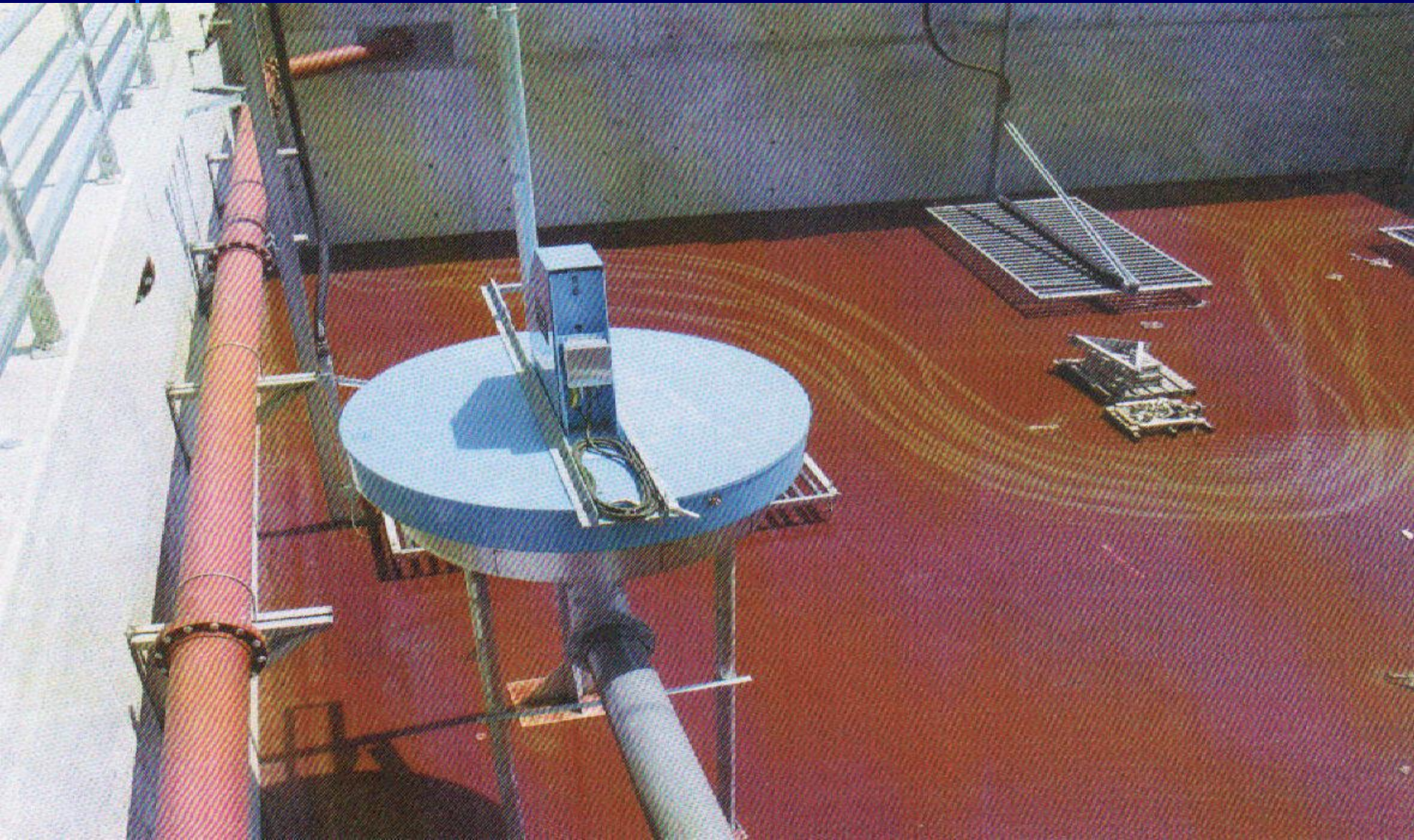
Interference: A discharge which alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and, therefore is a cause of a violation of any requirement of the POTW's NPDES permit.

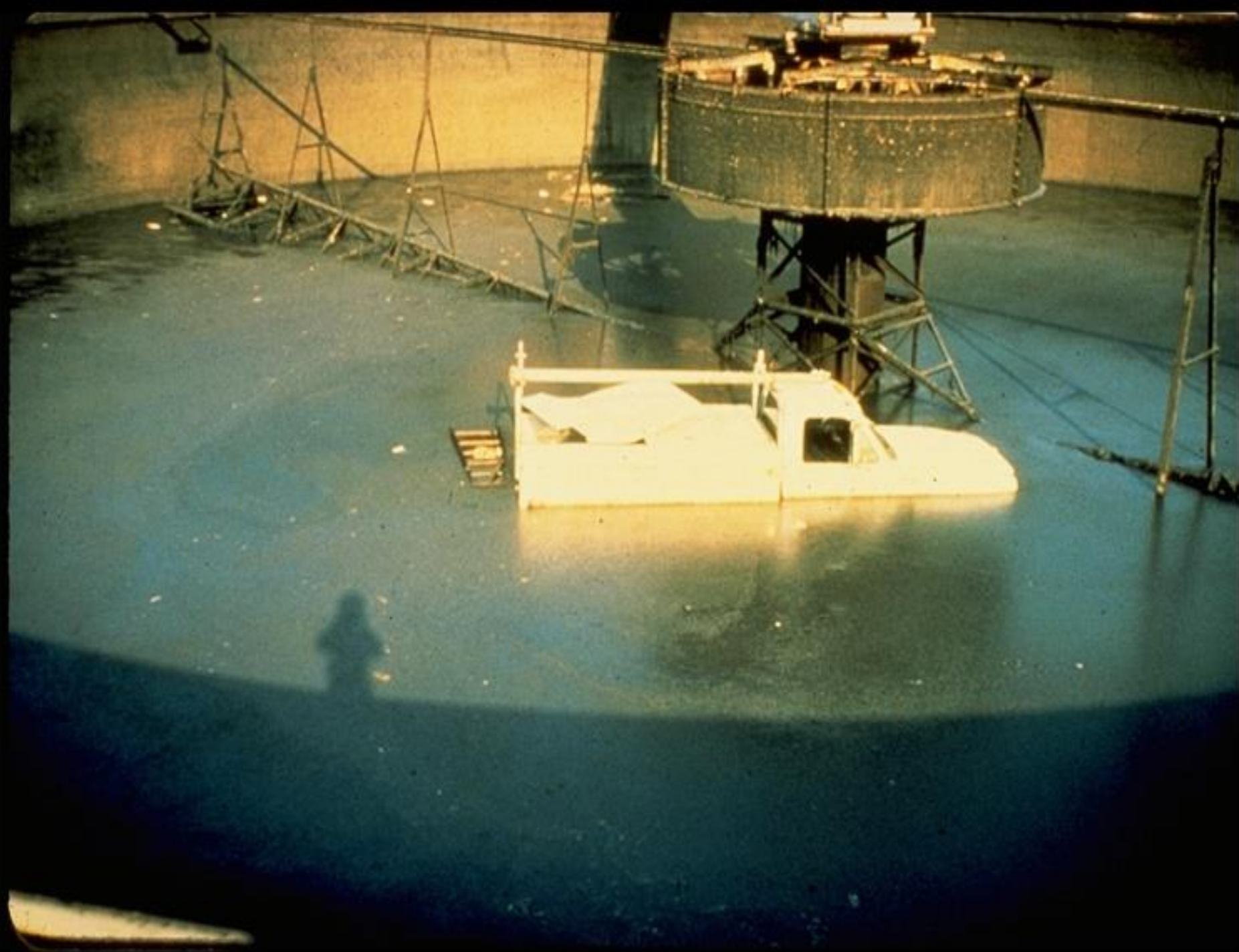
Cause Interference



APR 27 2004

Be incompatible to treatment









Pretreatment Standards

- General prohibitions
- Specific prohibitions
- Local limits
- Categorical standards

General Prohibitions
[40 CFR § 403.5(a)(1)]

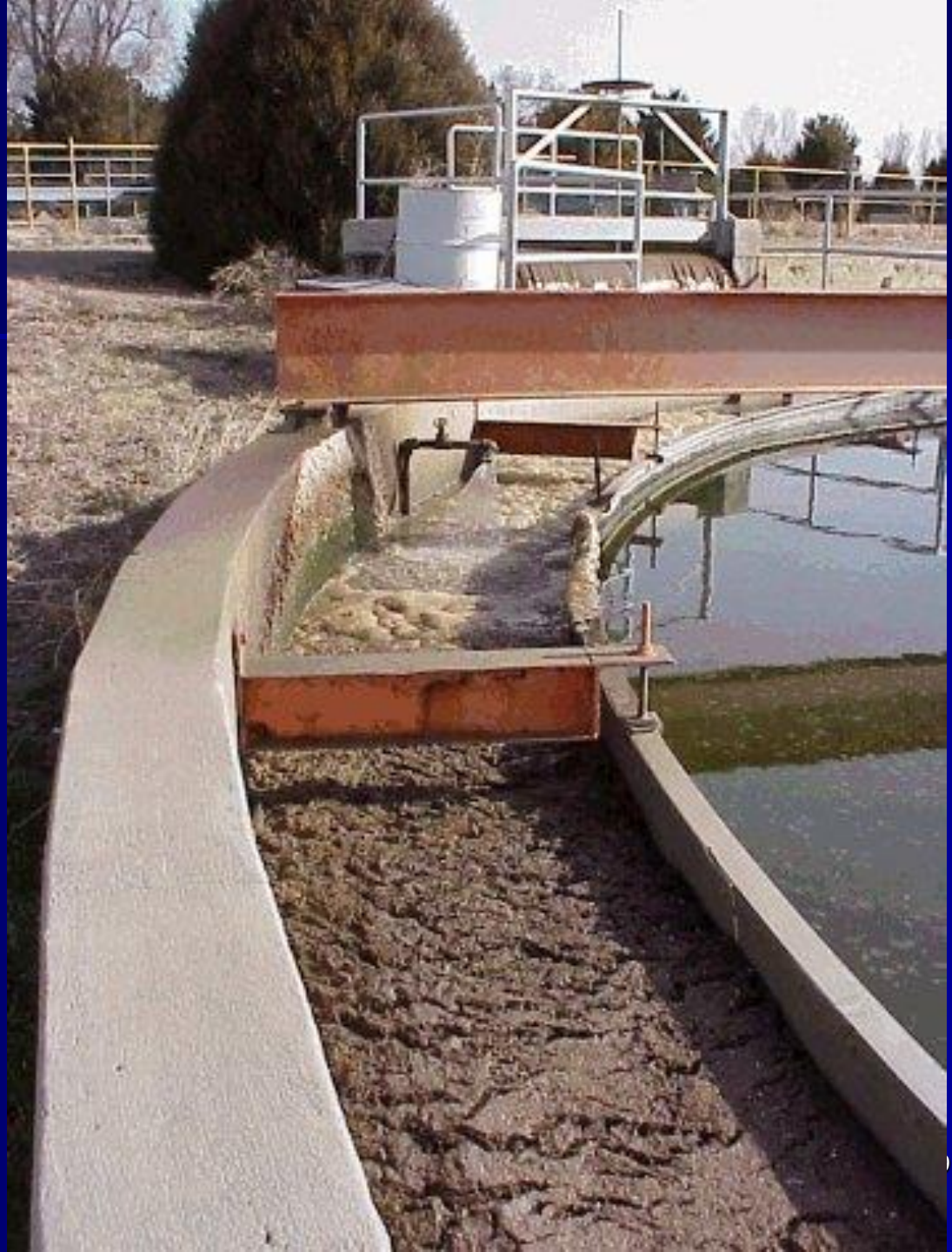
No non-domestic user shall
introduce into a POTW any
pollutants which cause
Interference or Pass
Through.

Specific Prohibitions [40 CFR § 403.5(b)]

- (1)** Pollutants which create a fire or explosion hazard;
- (2)** Pollutants which will cause corrosive structural damage to the POTW; but in no case Discharges with pH less than 5.0 S.U.
- (3)** Solid or viscous pollutants causing obstruction and resulting in interference;
- (4)** Pollutants released at a flow rate and/or concentration causing interference
- (5)** Heat in amounts which will inhibit biological activity in the POTW resulting in interference;
- (6)** Oils in amounts that will cause interference or pass through;
- (7)** Pollutants which result in the presence of toxic gases, vapors, or fumes; and
- (8)** Trucked or hauled pollutants, except at discharge points designated by the POTW.



We don't
have a
grease
problem!



Definitions

Approval Authority: EPA or an authorized state.

Control Authority: EPA or state in a non-approved program. The POTW in an approved program.

Industrial User: Any non-domestic source that introduces of pollutants into a POTW regulated under section 307(b), (c) or (d) of the Act.

Categorical Industrial User (CIU): Covered by specific Federal effluent guidelines. There are now 3 classes of CIUs per Streamlining Regulations.

Significant Industrial User (SIU): CIUs plus all other IUs that meet the definition at 40 CFR 403.3(v).

Definitions

POTW: means a treatment works which is owned by a state or municipality. Includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It includes sewers, pipes, and other conveyances if they convey wastewater to the treatment plant.

Definitions

Pretreatment Standards: This term includes categorical standards, local limits, general and specific prohibitions, and Best Management Practices (BMPs). Once these are adopted by the POTW (due process afforded), these Pretreatment Standards become Federally enforceable.

Definitions

Local Limits: Technically developed pollutant limits adopted by the POTW. The limits are the concentrations or loadings of pollutants that a POTW can accept and prevent Pass Through, Interference or a violation of General and Specific Prohibitions.

Local limits include the final approved limit, the MAHL, MAIL, other loadings and the package submitted by the POTW.

Who Must Develop a Local Pretreatment Program?

- POTWs with total design flow > 5 MGD, and
 - Receives pollutants from industrial users that pass through or interfere or
 - Receives discharges from categorical industrial users (discussed later in the presentation).

Learn more in: 40 CFR 403.8(a)

Who Must Develop a Local Pretreatment Program?

- POTWs less than 5 MGD if the Approval Authority (state or EPA) determines that a program is required to prevent pass-through and interference – or has significant industrial contribution or chronic NPDES violations due to non-domestic discharges.
- NPDES states may assume responsibility

Learn more in: 40 CFR 403.10(e)

Components of a Technically and Legally Defensible Pretreatment Program

- Legal Authority to implement and enforce program's requirements (as derived from State law that confers federal legal authority on Control Authority)
- Technically-based Local Limits
- Adequate funding and staffing for continued program implementation/execution

Learn more in: 40 CFR 403.8(f)

Legal Authority

Must Enable the POTW to:

- Require IU compliance with applicable standards
- Deny IU contribution of pollutants that do not meet applicable requirements
- Issue industrial user permits
- Perform surveillance monitoring activities
- Obtain remedies for non-compliance (orders/fines)
- Comply with confidentiality requirements

Learn more in: 40 CFR 403.8(f)(1) & Model Pretreatment Ordinance (EPA 833-B-06-002).

Are yours up to date?

Which Industries Must POTWs Regulate?

1. All Categorical Industrial Users (CIUs) regardless of flow.
2. Significant Industrial Users ("SIUs"), which are industrial users that:
 - Discharge an average of 25,000 gpd of *process* wastewater
 - Contribute 5% or more of a POTW's average dry weather hydraulic or organic (i.e., BOD) capacity
 - Are determined to have "reasonable potential" to adversely affect POTW's operation, or violate pretreatment standards or requirements.
3. Any other non-domestic user that discharges pollutants of concern.

Categorical Industrial Users

- Defined types of industries subject to National Categorical Pretreatment Standards
- Examples:
 - Electroplating (40 CFR 413)
 - Metal Finishing (40 CFR 433)
 - Plastics Molding and Forming (40 CFR 463)
 - Metals Molding and Casting (40 CFR 464)
 - Electrical and Electronic Components (40 CFR 469)
 - Pharmaceuticals (40 CFR 439)

Program Requirements for POTWs

- Conduct annual (or more frequent) inspections of permitted industrial users
- Maintain compliance monitoring database
- Issue Notices of Violation
- Apply enforcement actions consistent with Enforcement Response Plan
- Develop, enforce, and update Local Limits as required (changes in regulations, treatment plant compliance status and/or capacity).

Learn more in: 40 CFR 403.8(f)

Monitoring Requirements for POTWs

POTWs must:

- Inspect each CIU / SIU at least once per year
- Sample each CIU/ SIU at least once per year for ALL REGULATED POLLUTANTS (including local limits).
- Require a minimum of 2 semi-annual self-monitoring reports from each CIU/SIU for ALL REGULATED POLLUTANTS (including local limits)

Learn more in: 40 CFR 403.8(f)(2)(v)

What Is a Regulated Pollutant?

A pollutant that:

- Is listed in a categorical effluent guideline (for CIUs)
- Is a local limit AND contained in an industrial user permit (for CIUs and non-categorical SIUs)

Note: POTWs may need to sample for more local limits to evaluate loading for the annual report where the pollutant in the POTW headworks is elevated.

Surprise!

Inspections

- **Unannounced vs. Announced**
- **Signing facility entry waivers**
- **Delays**
- **Safety issues**

***Monday,
Nov. 14, 2002
at 10:00am.***

POTW IPP Reporting Requirements

Approved Programs - Annual Report to EPA/State (403.12(i))

- Updated list of IUs/SIUs/CIUs
- Summary of IU compliance status
- Summary of POTW's IU enforcement and inspections

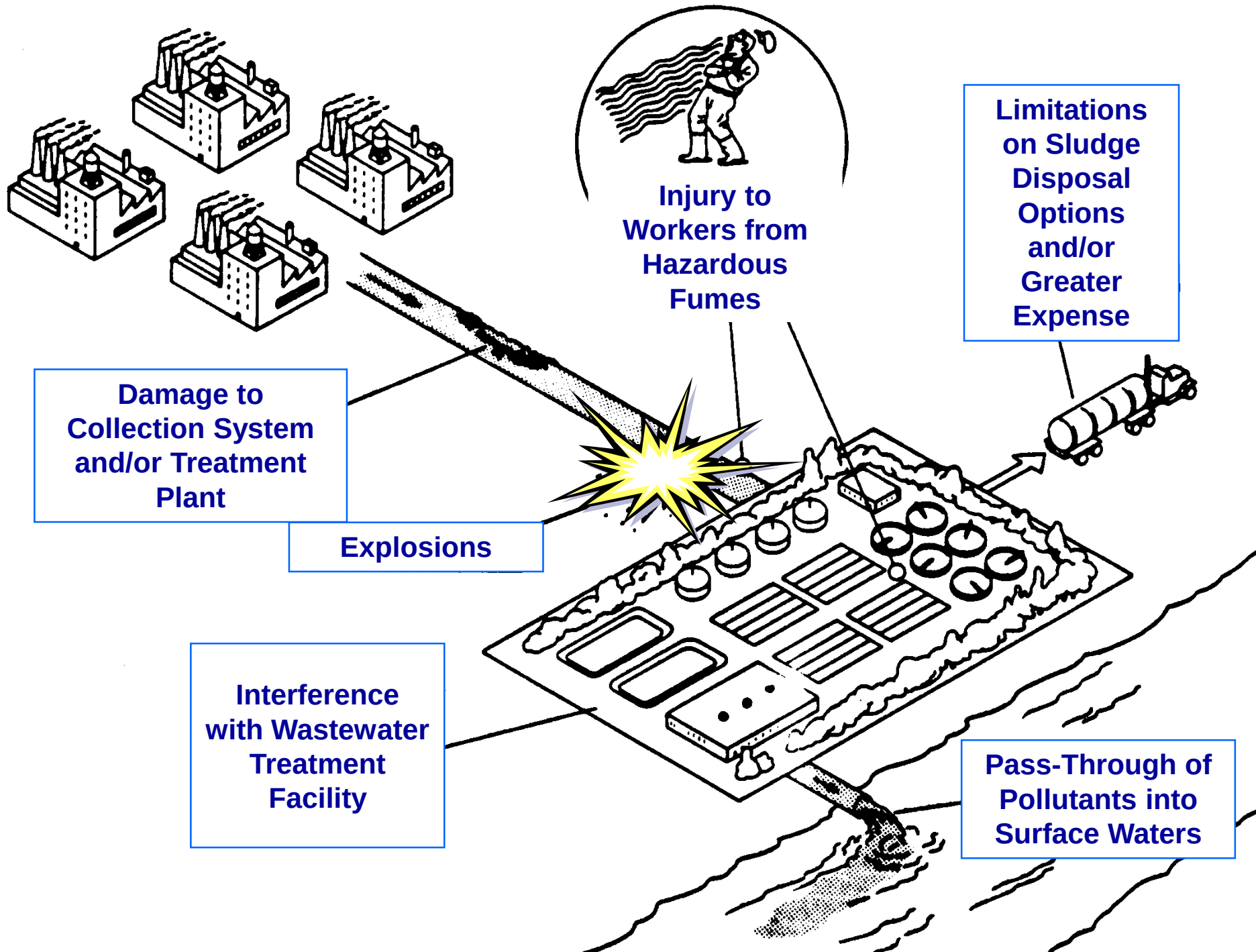
IU Reporting – Non-Approved Pretreatment Programs

SIUs/CIUs must:

- Submit a minimum of 2 semi-annual self-monitoring reports to EPA or State for ALL REGULATED POLLUTANTS

Local Limits

- Protect the POTW
- Protect POTW personnel
- Improve sludge disposal options
- Protect Water Quality
- Protect NPDES Permit



Introduction

- **Local limits are designed to keep the POTW in compliance with its NPDES permit and prevent problems from occurring in the collection system**
- **Violations should be considered serious**
- **State and EPA are not the only audience for analysis**
- **Local limits should be believable, real and technically based**

When to Update?

- **NPDES Permit change/requirement**
- **Increase/Decrease in SIUs**
- **Upgrade of POTW**
- **Increase/Decrease in POTW
Removal Efficiency**
- **Increase/Decrease in Flow**

Local Pollutants of Concern

- Facility-specific POCs: phosphorous, ammonia, etc. (limited by NPDES permit)
- Collection system issues: Oil and Grease

Local Limits

Nomenclature

- Maximum Allowable Headworks Loading (MAHL)- This is the amount of any single pollutant that can come from all sources
- Maximum Allowable Industrial Loading (MAIL)- This is the amount that would be regulated through your industrial sources. THIS IS THE BASIS FOR THE LOCAL LIMIT

Local Limits Observations

- Greatly affected by changes in state water quality standards through NPDES permit limits
- Generally not comparable between POTWs
- Allocations first to uncontrollable sources (domestic and infiltration/inflow) and then controllable sources (industrial and commercial)
- Greatly affected by allocation method (uniform, BMPs, contributory)

Local Limit Approval Process

Categorical Standards

- ◆ Applicable to specific industry categories
- ◆ Technology-based limitations
- ◆ Clean Water Act section 307 and 1976 EPA/NRDC consent decree.
- ◆ Currently at 58 categories.
- ◆ Found in 40 CFR Parts 405-471.
- ◆ Applicable to direct & indirect dischargers.

Part 405 - Dairy Products Processing

Part 406 - Grain Mills

**Part 407 - Canned and Preserved Fruits and
Vegetables Processing**

Part 408 - Canned and Preserved Seafood Processing

Part 409 - Sugar Processing

Part 410 - Textile Mills

Part 411 - Cement Manufacturing

Part 412 - Feedlots

Part 413 - Electroplating

**Part 414 - Organic Chemicals, Plastics and Synthetic
Fibers**

Part 415 - Inorganic Chemical Manufacturing

Part 417 - Soap and Detergent Manufacturing

Part 418 - Fertilizer Manufacturing

Part 419 - Petroleum Refining

Part 420 - Iron and Steel Manufacturing

Part 421 - Nonferrous Metals Manufacturing

Part 422 - Phosphate Manufacturing

Part 423 - Steam Electric Power Generating

Part 424 - Ferroalloy Manufacturing

Part 425 - Leather Tanning and Finishing

Part 426 - Glass Manufacturing

Part 427 - Asbestos Manufacturing

Part 428 - Rubber Manufacturing

Part 429 - Timber Products Processing

Part 430 - Pulp, Paper and Paperboard

Part 431 - The Builders' Paper and Boardmills

Part 432 - Meat Products

Part 433 - Metal Finishing

Part 434 - Coal Mining

Part 435 - Oil and Gas Extraction

Part 436 - Mineral and Mining Processing

Part 437 – Centralized Waste Treatment

Part 438 – Metal Products and MAchinery

Part 439 - Pharmaceutical Manufacturing

Part 440 - Ore Mining and Dressing

Part 441 – Dental Amalgam

Part 442 – Transportation Equipment Cleaning

Part 443 - Paving and Roofing Materials(Tars and Asphalt)

Part 444 – Waste Combustors

Part 445 - Landfills

Part 446 - Paint Formulating

Part 447 - Ink Formulating

Part 451 – Concentrated Animal Production

Part 454 - Gum and Wood Chemicals Manufacturing

Part 455 - Pesticide Chemicals

Part 457 - Explosives Manufacturing

Part 458 - Carbon Black Manufacturing

Part 459 - Photographic Processing

Part 460 - Hospital

Part 461 - Battery Manufacturing
Part 463 - Plastics Molding and Forming
Part 464 - Metal Molding and Casting
Part 465 - Coil Coating
Part 466 - Porcelain Enameling
Part 467 - Aluminum Forming
Part 468 - Copper Forming
Part 469 - Electrical and Electronic Components
Part 471 - Nonferrous Metals Forming and Metal Powder

The CWA(304(m)) requires that every two years EPA develop and publish plans for effluent guidelines, review, revision, development, and adoption.

Categorical Standards

- **National standards**
 - ◆ **technology available**
 - ◆ **economic impacts**
 - ◆ **processes performed**
- **Apply to regulated process flow only**
- **Concentration or mass based limits**
- **Daily maximum and long term averages**
- **Developed for new and existing sources**

Categorical Determinations

- Production processes/products
- Raw Materials
- Production volume
- Determine applicable category
- Determine applicable subcategory
- Contact Approval Authority for assistance

Why is Existing/New Source Determination So Important?

- New source standards generally are more stringent
- New sources are required to be in compliance upon commencement of discharge
- New source requirements are triggered by some facility modifications

When to Update Your Program

- When there is “significant change in the operation of a POTW Pretreatment Program that differs from the information in the POTW's submission” that could result in increased pollutant loadings to POTW or less stringent requirement on IU, such as relaxing Local Limits – headworks loading analysis

Streamlining Rule 2005

- All approved programs must have updated their:
 - Ordinance
 - Rules and Regulations
 - By-Laws

Conclusion / Questions?