INDUSTRIAL WASTEWATER COMPLIANCE

CUSTOMIZED ENVIRONMENTAL TRAINING

INSTRUCTOR

Insert Instructor Name Here

OBJECTIVES

- **☑** Discuss the National Pretreatment Program.
- **☑** Discuss the Permitting Process.
- **☑** Discuss Regulatory Inspections.
- ☑ Discuss Wastewater Sampling Requirements.
- **☑** Discuss Regulatory Enforcement Actions.
- **☑** Discuss Reporting Requirements.
- ☑ Discuss Signatory Requirements.
- Discuss Self-Monitoring Requirements.
- ☑ Discuss Recordkeeping Requirements.
- **☑** Discuss Use of Contractors.

GOALS

- Understand the National Pretreatment Program.
- Understand the Wastewater Permitting Process.
- ☑ Understand Regulatory Inspections.
- ☑ Be Familiar With Regulatory Enforcement Actions.
- ☑ Be Familiar With Reporting Requirements.
- ☑ Be Familiar With Signatory Requirements.
- ☑ Be Familiar With Self-Monitoring Requirements.
- ☑ Be Familiar With Recordkeeping Requirements.

BACKGROUND

- ☑ June 22, 1969, the Cuyahoga River in Cleveland is so polluted that it catches on fire.
- ☑ Nearly 95% of the Great Lakes shoreline is impaired, primarily due to pollutants in fish tissue at levels that exceed standards to protect human health.
- ☑ Nearly 40% of the waters of the U.S. are too polluted for basic uses such as fishing or swimming.

LEARNERS

- **☑** Supervisors
- **☑** Facility Engineers
- ☑ Department Managers
- **☑** Building Occupants
- ☑ Process Specialists
- **☑** Environmental and Safety Committees

OVERVIEW

The goal of this course is to provide supervisors with the tools needed to understand the industrial wastewater compliance standard. It recommends practical, actions that can be carried out by facility management, maintenance personnel and building occupants. The course will help you to integrate good industrial wastewater practices into your existing organization and identify which of your staff have the necessary skills to carry out those activities.

WHAT THIS COURSE DOES NOT DO

The course is not intended to teach wastewater permit writing or to recommend alternative technologies. These specialties required training beyond the intended scope of this course. Where this expertise is needed, outside assistance should be solicited.

CLEAN WATER ACT

✓ In 1972, Congress passed the Clean Water Act (CWA) to restore and maintain the integrity of the nation's waters.

FEDERAL REGULATIONS

Pertinent Regulations:

√ 40 CFR 403 - General Pretreatment Regulations For Existing And New Sources Of Pollution.

INDUSTRIAL WASTEWATER

- ✓ Wastewater entering a treatment plant may contain organic pollutants, metals, nutrients, sediment, bacteria, and viruses.
- ✓ Industrial processes, such as steel or chemical manufacturing, produce billions of gallons of wastewater daily. Some industrial pollutants are similar to those in municipal sewage, but often are more concentrated. Other industrial pollutants are more exotic and include a variety of heavy metals and synthetic organic compounds.
- ✓ In sufficient dosages, they may present serious hazards to human health and aquatic organisms.

PRETREATMENT

- ✓ The National Pretreatment Program is a cooperative effort of federal, state, and local regulatory environmental agencies established to protect water quality.
- ✓ The program is designed to reduce the level of pollutants discharged by industry and other nondomestic wastewater sources into municipal sewer systems.
- ✓ The objective of the program is to protect the Publicly Owned Treatment Works (POTW) from pollutants that may interfere with plant operation, prevent untreated pollutants from being introduced into the POTW, and to improve opportunities for the POTW to reuse wastewater and biosolids that are generated.

PRETREATMENT

- ✓ The General Pretreatment Regulations require POTWS that meet certain requirements to develop local pretreatment programs to control industrial discharges into their municipal sewer systems. These programs must be approved by either EPA or the state acting as the pretreatment Approval Authority. More than 1,500 POTWs have developed Approved Pretreatment Programs.
- ✓ EPA has also developed national categorical pretreatment standards that apply numeric pollutant limits to industrial users in specific industrial categories. The General Pretreatment Regulations include reporting and other requirements necessary to implement these categorical standards.

All Industrial Users (IUSs) must obtain permit, order, or similar means to ensure compliance with applicable pretreatment standards and requirements.

Permits contain at a minimum:

- ✓ Statement of duration (not to exceed five years);
- ✓ Statement of nontransferability (unless outlined provisions are met);
- ✓ Effluent limitations based on applicable standards;
- ✓ Self-monitoring, sampling, reporting, notification, and record keeping requirements;
- √ Statement of applicable civil and criminal penalties;
- ✓ A schedule of compliance (where appropriate).

- ✓ Significant Industrial User (SIU) permits issued are site specific and tailored to the unique circumstances of the IU.
- ✓ Permit conditions must establish clear and explicit requirements for the permittee.
- ✓ Whether developing or reissuing a permit, the permitting process consists of three phases:
- Phase I Collection and verification of information
- Phase II Data interpretation and fact sheet development
- Phase III Permit development and issuance.

Phase I

- ✓ As part of Phase I, Control Authorities may review and verify information contained in the permit application, perform an inspection of the IU for confirmation of facts, tally data, and potentially sample and analyze the IU's wastestream.
- ✓ Knowledgeable Control Authority personnel, effective communication, and SIU cooperation are essential to collection of complete and accurate information.

Phase II

- ✓ Phase II requires that the Control Authority interpret data and other information and document the permit decision-making rationale, preferably in a permit fact sheet.
- ✓ Although the contents of a fact sheet will vary by permittee, fact sheets should provide a justification of all permitting decisions.
- ✓ Completed fact sheets should be included as part of the permit and provided to the Permittee to document the soundness of permitting decisions.

The following are components of a Permit Fact Sheet:

- ✓ The basis for the categorical determination(s)
- ✓ The identity and flow volume of all wastestreams generated and discharged to the POTW, and classified accordingly (i.e., regulated, unregulated, or dilution)
- ✓ Data used and/or justification for estimates used to determine categorical limitations
- ✓ Basis for limits imposed for categorical parameters.
- ✓ Basis for limits imposed for non-categorical parameters.
- ✓ Rationale for compliance schedules, special plans required, special conditions, etc.
- ✓ Basis for monitoring and reporting frequencies.

Phase III

- ✓ After all permitting decisions are made, the Control Authority must incorporate those decisions into a permit. The permit, signed by the specified Control Authority official is provided to the Permittee for comment and after comments are addressed, a final permit is issued to the IU.
- ✓ While many comments may be easily addressed/resolved by the Control Authority, occasionally resolution must be obtained through a formal adjudicatory hearing process where both the Permittee and Control Authority present their case to a third party.

- ✓ Many POTWs also control contributions from non-SIUs using various means, such as through general permits issued to an entire industrial sector. These types of control mechanisms may not necessarily require compliance with specific pollutant limitations.
- ✓ For example:
- Grease trap maintenance and record keeping requirements for food establishments;
- Maintenance and record keeping requirements for photo processors' silver reclamation units;
- Best management practices for mercury recovery by hospitals and dentists.

INSPECTIONS

- ✓ Control Authorities are required to inspect and sample all Significant Industrial Users (SIUs) a minimum of once per year.
- ✓ The frequency with which a Control Authority actually inspects an SIU may vary depending on issues such as the variability of an SIU's effluent, the impact of their discharge on the POTW, and their compliance history.
- ✓ Unscheduled inspections may more accurately reflect IU compliance status when the inspection is performed for that reason.

INSPECTIONS

- ✓ POTWs must evaluate, at least once every two years, whether each SIU needs a plan to control slug discharges (i.e., a discharge of a non-routine, episodic nature, including but not limited to an accidental spill or non-customary batch discharge).
- ✓ To accurately evaluate the slug potential, Control Authorities likely will have to examine the SIU during normal operating conditions.
- ✓ If undetected, slug discharges can have serious impacts on the POTW.

SAMPLING

- ✓ The General Pretreatment Regulations require
 Control Authorities to monitor each SIU at least annually
 and each SIU to self-monitor semi-annually.
- ✓ The Control Authority should assess site-specific issues.
- ✓ Sampling is the most appropriate method for verifying compliance with pretreatment standards.
- ✓ Monitoring location(s) are designated by the Control Authority and must be such that compliance with permitted discharge limits can be determined.

SAMPLING

- ✓ Flow-proportional Composite Sampling Control Authorities should measure flow to allow for collection of flow-proportioned composite samples, which are required, unless flow-proportional sampling is not feasible.
- ✓ **Grab Sampling** Desired analyses dictate the preparation protocols, equipment, and collection bottles to use to avoid contamination of samples or loss of pollutants through improper collection. Sampling for such pollutants as pH, cyanide, oil and grease, flashpoint, and volatile organic compounds require manual collection of grab samples.

SAMPLING

Proper sample collection and handling protocols include:

- ✓ Field measurement records may require information regarding sample location, condition of and programmed settings for sampling equipment, wastewater meter readings, and information for such parameters as pH and temperature which require analysis in the field.
- ✓ Chain of custody forms serve as a link between field personnel and the laboratory and contain information regarding sample matrix, type, and handling.
- ✓ Lab reports should contain the minimum information specified in 40 CFR §403.12(o)(1)(ii-iv).

ENFORCEMENT

The Enforcement Response Guides (ERG) identify responsible Control Authority officials, general time frame for actions, expected IU responses, and potential escalated actions based on:

- ✓ The nature of the violation
- pretreatment standards
- reporting (late or deficient)
- compliance schedules
- ✓ Magnitude of the violation
- ✓ Duration of the violation
- ✓ Frequency of the violation (isolated or recurring)
- ✓ Potential impact of the violation
- ✓ Economic benefit gained by the violator
- ✓ Attitude of the violator

ENFORCEMENT

Common enforcement mechanisms include:

- ✓ Informal notice to IU
- ✓ Informal meetings
- ✓ Warning letter or Notice of Violation (NOV)
- ✓ Administrative orders and compliance schedules
- ✓ Administrative fines
- ✓ Civil suits
- ✓ Criminal prosecution
- ✓ Termination of service (revocation of permit)

REQUIREMENTS

- ✓ Industrial Users (IUs) are required to comply with all applicable pretreatment standards and requirements.
- ✓ Demonstration of compliance requires certain IUs to submit reports, self-monitor, and maintain records.



- ✓ Each existing Industrial User that is subject to a categorical pretreatment standard (identified as a Categorical Industrial User, or CIU) is required to submit a BMR within 180 days after the effective date of the standard.
- ✓ If a category determination has been requested, the BMR is not due until 180 days after a final administrative decision has been made concerning the industry's inclusion in the category.
- ✓ At least 90 days prior to commencement of discharge, new sources are required to submit a Baseline Monitoring Report.

There is a three-fold purpose for the BMR:

- 1.To provide baseline information on the industrial facility to Control Authority.
- 2.To determine wastewater discharge sampling points.
- 3.To determine compliance status with categorical pretreatment standards.



The BMR must contain the following information:

- ✓ Name and address of the facility and names of the operator and owners
- ✓ List of all environmental control permits held by or for the facility
- ✓ Description of operations, including the average rate of production, applicable Standard Industrial Classification (SIC) codes, schematic process diagrams, and points of discharge to the POTW from regulated processes.
- ✓ Flow measurements (average daily and maximum daily) for regulated process wastestreams and nonregulated wastestreams, where necessary.

The BMR must contain the following information: (continued)

- ✓ Pollutant measurements [daily maximum, average concentration, and mass (where applicable)]and applicable standard.
- ✓ Certification, by a qualified professional, reviewed by a representative of the CIU, of whether applicable pretreatment standards are being met and, if not, a description of the additional operation and maintenance (O&M) or pretreatment facilities that are needed to comply with the standards.
- ✓ A schedule by which the IU will provide the additional O&M or pretreatment needed to comply with the applicable pretreatment standards.

COMPLIANCE SCHEDULE REPORT

- ✓ A Categorical Industrial User that is not in compliance with applicable categorical standards by the time the standards are effective often will have to modify process operations and/or install end-of-pipe treatment to comply.
- ✓ Federal regulations require that the Control Authority develop and impose a compliance schedule for the CIU to install technology to meet applicable standards.
- ✓ In no case can the final or completion date in the schedule be later than the final compliance date specified in the categorical standards.

COMPLIANCE SCHEDULE REPORT

- ✓ Compliance schedules are to contain increments of progress in the form of dates (not to exceed nine months per event) for commencement and completion of major actions leading to construction and operation of a pretreatment system and/or in-plant process modifications.
- ✓ Major activities could include hiring an engineer, completing preliminary analysis and evaluation, finalizing plans, executing a contract for major components, commencing construction, completion of construction, or testing operation.

COMPLIANCE SCHEDULE REPORT

The CIU must submit progress reports to the Control Authority no later than 14 days following each date in the compliance schedule that include:

- ✓ A statement of the CIU's status with respect to the compliance schedule.
- ✓ A statement of when the CIU expects to be back on schedule if it is falling behind, and the reason for the delay.

When a CIU is falling behind schedule, the Control Authority will closely monitor the CIU. If the CIU fails to demonstrate good faith in meeting the schedule, the Control Authority may consider initiating appropriate enforcement action to correct the problem(s).

90-DAY COMPLIANCE REPORT

- ✓ CIUs are required to submit a final compliance report to the Control Authority.
- ✓ An existing source must file a final compliance report within 90 days following the final compliance date specified in a categorical regulation or within 90 days of the compliance date specified by the Control Authority, whichever is earlier.
- ✓ A new source must file a compliance report within 90 days from commencement of discharge to the POTW.

90-DAY COMPLIANCE REPORT

The 90-Day Report reports must contain:

- ✓ Flow measurements (average daily and maximum daily) for regulated process wastestreams and nonregulated wastestreams, where necessary.
- ✓ Pollutant measurements [daily maximum, average concentration, and mass (where applicable)] and applicable standards.
- ✓ Certification, by a qualified professional, reviewed by a representative of the CIU, of whether applicable pretreatment standards are being met and, if not, a description of the additional operation and maintenance (O&M) or pretreatment facilities that are needed to comply with the standards.

- ✓ An Upset is defined as an exceptional incident in which there is unintentional and temporary noncompliance with categorical standards due to factors beyond the reasonable control of the CIU.
- ✓ An upset does not include noncompliance to the extent caused by operational error, improperly designed or inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

- ✓CIUs are allowed an affirmative defense for noncompliance with categorical standards if they can demonstrate that the noncompliance was the result of an upset.
- ✓ The CIU must submit at least an oral report to the Control Authority within 24 hours of becoming aware of the upset and a written report must also be submitted within five days.
- ✓ In any enforcement action, the IU has the burden of proof in establishing that an upset has occurred. EPA is responsible for determining the technical validity of this claim.

An Industrial User who wishes to establish the affirmative defense of Upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence the following three criteria:

- (1) An Upset occurred and the Industrial User can identify the cause(s) of the Upset;
- (2) The facility was at the time being operated in a prudent and workman-like manner and in compliance with applicable operation and maintenance procedures;

- (3) The Industrial User has submitted the following information to the POTW and Control Authority within 24 hours of becoming aware of the Upset (if this information is provided orally, a written submission must be provided within five days):
- (i) A description of the Indirect Discharge and cause of noncompliance;
- (ii) The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue;
- (iii) Steps being taken and/or planned to reduce, eliminate and prevent recurrence of the noncompliance.

- ✓ In any enforcement action, the IU has the burden of proof in establishing that an upset has occurred.
- ✓ EPA is responsible for determining the technical validity of this claim.



PERIODIC COMPLIANCE REPORTS

- ✓ After the final compliance date, CIUs are required to report, during the months of June and December, the self-monitoring results of their wastewater discharge(s). The Control Authority must also require semi-annual reporting from SIUs not subject to categorical standards.
- ✓ EPA assumes that larger IUs and those that have more potential to cause problems would be required by the Control Authority to sample and report more often. All results for self-monitoring performed must be reported to the Control Authority, even if the IU is monitoring more frequently than required.

PERIODIC COMPLIANCE REPORTS

Periodic compliance reports must include:

- ✓ Nature and concentration of pollutants limited by applicable categorical standards or required by the Control Authority
- ✓ Flow data (average and maximum daily) as required by the Control Authority
- ✓ Mass of pollutants discharged (applicable to CIUs where mass limits have been imposed)
- ✓ Production rates (applicable to CIUs where equivalent limits have been imposed or where limits imposed are expressed in allowable pollutant discharged per unit of production).

PERIODIC COMPLIANCE REPORTS

- A Control Authority may choose to monitor IUs in lieu of the IU performing the self-monitoring.
- Additionally, 40 CFR §403.12(e) and (h) require compliance with 40 CFR Part 136 (Guidelines for Establishing Test Procedures for the Analysis of Pollutants). To demonstrate compliance with these requirements, IUs may have to submit information regarding sample handling and analytical procedures to the Control Authority.

BYPASS

The General Pretreatment Regulations define "bypass" as the intentional diversion of wastestreams from any portion of a users treatment facility.

If a bypass results in noncompliance, even if it was due to essential maintenance, the IU must provide a report to the Control Authority detailing a description of the bypass and the cause, the duration of the bypass, and the steps being taken and/or planned to reduce, eliminate, and prevent reoccurrence of the bypass.



BYPASS

- ✓ Oral notice must be provided to the Control Authority within 24 hours of the detection of an unanticipated bypass, with a written follow-up due within 5 days.
- ✓ For an anticipated bypass, the IU must submit notice to the Control Authority, preferably 10 days prior to the intent to bypass.
- ✓ All IUs are required to notify the Control Authority immediately of any discharges which may cause potential problems. These discharges include spills, slug loads, or any other discharge which may cause a potential problem to the POTW.

NON-COMPLIANCE NOTIFICATION

- ✓ The purpose of the Noncompliance Notification is to alert the POTW of a known violation and potential problems which may occur.
- ✓ If monitoring performed by an IU indicates noncompliance, the IU is required to notify the Control Authority within 24 hours of becoming aware of the violation. In addition, the IU must repeat sampling and analysis and report results of the resampling within 30 days.
- ✓ The repeat sampling is not required if the Control Authority samples the IU at least once per month or if the Control Authority samples the IU between the time of the original sample and the time the results of the sampling are received.

NOTIFICATION OF CHANGED DISCHARGE

All Industrial Users shall promptly notify the POTW in advance of any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous wastes for which the Industrial User has submitted initial notification.



NOTIFICATION OF DISCHARGE OF HAZARDOUS WASTES

- ✓ IUs discharging more than 15 kilograms per month of a waste, which if otherwise disposed of, would be a hazardous waste pursuant to the RCRA requirements under 40 CFR Part 261 are required to provide a one time written notification of such discharge to the Control Authority, State, and EPA.
- ✓ IUs discharging any amount of waste, which if disposed of otherwise, would be an acutely hazardous waste pursuant to RCRA must also provide this notification.
- ✓ This written notification must contain the EPA hazardous waste number and the type of discharge (i.e., batch, continuous).

NOTIFICATION OF DISCHARGE OF HAZARDOUS WASTES

If the IU discharges more than 100 kilograms per month of the hazardous waste, the written notification must also include:

- ✓ An identification of the hazardous constituent in the IU's discharge,
- ✓ An estimate of the mass and concentration of the constituents in the IU's discharge, and
- ✓ An estimate of the mass and concentration of constituents in the IU's discharge in a year.

NOTIFICATION OF DISCHARGE OF HAZARDOUS WASTES

- ✓ IUs must also provide a certification accompanying this notification that a waste reduction program is in place to reduce the volume and toxicity of hazardous wastes to the greatest degree economically practical.
- ✓ Within 90 days of the effective date of the listing of any additional hazardous wastes pursuant to RCRA, IUs must provide a notification of the discharge of such wastes.

SIGNATORY AND CERTIFICATION REQUIREMENTS

Baseline Monitoring Reports, 90-day compliance reports and periodic compliance reports from CIUs must be signed by an authorized representative of the facility and contain a certification statement

The reports should be signed by one of the following:

- ✓ A responsible corporate officer if the IU is a corporation.
- ✓ A general partner or proprietor if the IU is a partnership or sole proprietorship.
- ✓ A duly authorized representative of the above specified persons if such authorization is in writing, submitted to the Control Authority and specifies a person or position having overall responsibility for the facility.

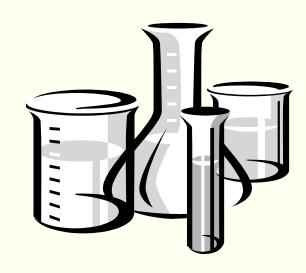
SIGNATORY AND CERTIFICATION REQUIREMENTS

The certification statement must read as follows:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

SELF-MONITORING REQUIREMENTS

- ✓ All SIUs, including CIUs must conduct self-monitoring as part of several different reporting requirements.
- ✓ For CIUs, this includes the BMR, 90day compliance report and periodic compliance reports. Non-categorical SIUs are required to self-monitor as part of the periodic reporting requirements.
- ✓ Sample collection and analysis for all required pretreatment program reports must be conducted using 40 CFR Part 136 procedures and its amendments.



SELF-MONITORING REQUIREMENTS

- ✓ Based on the specific pollutants regulated by categorical standards, different types of samples may have to be collected.
- ✓ For BMR and 90-day compliance reports, a minimum of four grab samples must be collected for pH, cyanide, total phenols, oil and grease, sulfide, and volatile organics. If these pollutants are not regulated by the specific categorical standard, monitoring is not required.
- ✓ Twenty-four hour flow-proportional composite samples must be collected for all other pollutants. The Control Authority may waive flow-proportional composite sampling if an IU demonstrates that flow-proportional is not feasible. In these cases, time-proportional composite samples may be collected.

SELF-MONITORING REQUIREMENTS

- ✓ For certain industries (i.e., electroplating, metal finishing, and electrical and electronic components) Control Authorities have the option of allowing the CIU to prepare and implement a Toxic Organic Management Plan (TOMP) in lieu of periodic monitoring.
- ✓ TOMPs should identify all potential sources from which toxic organic materials could enter the wastestream and propose control measures to eliminate the possibility. Where a TOMP is allowed, an IU can demonstrate compliance through adherence to the TOMP and submission of periodic certification statements.
- ✓ TOMPs cannot be used in lieu of monitoring for BMRs and 90-day compliance reporting requirements.

RECORDKEEPING

Information, at a minimum, shall include the following:

- ✓ Sampling methods, dates and times
- ✓ Identity of the person(s) collecting the samples and of the sampling location(s)
- ✓ The dates the analyses were performed and the methods used
- ✓ The identity of the person(s) performing the analyses and the results of the analyses.

These records shall be retained for at least 3 years, or longer in cases where there is pending litigation involving the Control Authority or IU, or when requested by the Approval Authority.

TIPS FOR USING CONTRACTORS

- ☑ Remember, <u>You</u> Control Your Facility or Area!
- ☑ Review Procedures With Them Before Starting the Job!
- ☑ Ensure They Are Properly Trained!
- ☑ Determine Their Environmental Compliance Record!
- ☑ Determine Who Is in Charge of Their People!
- ☑ Determine How They Will Affect Your Facility's

Environmental Compliance!

ELEMENTS OF A SUCCESSFUL WASTEWATER COMPLIANCE PROGRAM

- 1. DETAILED WRITTEN WASTEWATER COMPLIANCE INSPECTION GUIDELINES.
- 2. DETAILED WRITTEN WASTEWATER COMPLIANCE BEST MANAGEMENT PRACTICES.
- 3. EXTENSIVE EMPLOYEE TRAINING PROGRAMS
- 4. PERIODIC REINFORCEMENT OF TRAINING
- 5. SUFFICIENT DISCIPLINE REGARDING IMPLEMENTATION
- 6. PERIODIC FOLLOW-UP

THE IMPORTANCE OF A CLEAN ENVIRONMENT

"I would ask all of us to remember that protecting our environment is about protecting where we live and how we live. Let us join together to protect our health, our economy, and our communities -- so all of us and our children and our grandchildren can enjoy a healthy and a prosperous life."

Carol Browner Former EPA Administrator