



HOW TO IMPLEMENT A MUNICIPAL

PRETREATMENT PROGRAM

By Wessler Engineering

Introduction

You might be reading this because you are a wastewater treatment plant (WWTP) operator, and you have been asked to conduct industrial pretreatment inspections. We realize the environmental compliance regulations and industrial processes can be overwhelming, so we have assembled this information to help WWTP operators understand and execute the municipal program for industrial dischargers.

Industrial process water is any water or chemical used in the manufacturing process that is sent down the drain (discharged) to the municipal publically owned treatment works (POTW). Industrial process water can contain toxic or hazardous substances that cannot be removed by the POTW and would be discharged to a stream or river. These substances could include oils, corrosive chemicals, lead and cyanide.

The National Pretreatment Standards and Program was implemented to restrict harmful chemicals from entering the POTW and discharging to streams and rivers. These standards are enforced through federal and state regulations and by local sewer use ordinances implemented by the municipality. The standards limit the type of processed waters allowed to discharge to the POTW.

Implementing a Pretreatment Program

THE BACKBONE

Implementing an effective permit or sewer use ordinance (SUO) allows the POTW more legal authority over an industrial discharger by allowing inspections, ensuring compliance and providing the ability to issue notices of violations or fines. Verify the municipality's SUO includes the prohibited discharges in 327 IAC 5-18-2.

GETTING ORGANIZED

As with anything, the more organized you are, the smoother the pretreatment plan implementation. **The POTW's NPDES Permit will specify the requirements to implement a pretreatment program.** The first step is to identify the significant industrial users (SIU). When was the last time the service area was assessed for SIUs? We recommend reviewing your list on a routine basis and updating as needed. Here are tasks to consider when setting up a Pretreatment Program.

» **Identify and create a list of the SIUs.**

This list should include the facility name and address, responsible official, main contact, reason the site is considered a SIU, types and volume of pollutants discharged, and applicable pretreatment categories (if any).



» **Review self-monitoring reports** from industrial users and create a table or line chart to track the fluctuations in the results.

» **Create a sampling schedule** for each facility. Consider rotating the schedule periodically to get a good idea of the effluent types discharged during various times of the year.

» **Develop a documentation and recordkeeping system** for the inspections and correspondence to each facility. While we don't like to use more paper than necessary, documentation is a key element to communication with the facilities.

» **Retain records** for at least three years; however, we recommend scanning the documentation for longer retention. Another option is to request an electronic submittal copy in addition to hard copies.

» **Create a checklist** to use during the inspection to ensure you review the necessary processes and activities.

SITE INSPECTION

The Pretreatment Program includes inspecting each facility at least once a year. This would include meeting with site personnel or management to discuss the program, monitoring for noncompliance or trends and conducting a walk-around of the site. We suggest inspecting these items when conducting your walk-around of the site:

- » *Chemical storage areas*
- » *Wastewater generating processes*
- » *Treatment areas and process*
- » *Slug Discharge Control Plan and its Toxic Organic/Solvent Management Plan (if required)*
- » *Boiler or mechanical rooms*
- » *Transfer areas (loading and unloading operations)*
- » *Outside areas where stormwater runoff will flow away from the plant site*
- » *Sludge and waste disposal areas*
- » *Spill response and reporting procedures*

The image shows a sample of an "INDUSTRIAL PRETREATMENT INSPECTION REPORT" form. The form is divided into several sections: "Background Information" (including Inspection Date, Duration, Facility, Permit #, Chief Executive Officer, Responsible Official, Facility Representative, Last Inspection Date, and Delinquencies Identified), "Inspector Information" (including Inspector(s), Address, City/State/Zip, Phone, and Inspected By), "General Facility Information" (including # of Employees, Inspection Type, Bag Control Plan, SPOC Plan, and various compliance checkboxes), "Is IU Under Enforcement?", "Is IU on Compliance Schedule?", "Findings" (Toxic Organic Right Plan, On file, Adequate, Comply with T10s, Not Required), "Applicable Production Based BCL", "Current Avg Prod. Rate", "Planned Changes to the Permit", "Changes Since Last Inspection", and "Self Monitoring Reports to City". The form is labeled "Page 1 of 1" at the bottom.

ENFORCEMENT

To deal with noncompliance issues from industries, the POTW needs to have a good Enforcement Response Plan. Here are suggested steps to follow to develop a quality plan. You may also refer to the [USEPA's Guidance for Developing Control Authority Enforcement Response Plans](#) if you need assistance.

- » *Develop procedures describing the plan for investigating noncompliance instances.*
- » *Prepare descriptions of the escalating enforcement response types the POTW will implement in response to anticipated industrial user violations and the time periods within which responses will take place.*
- » *Identify by title the industry's official responsible party for each type of response.*

MONITORING

Avoid procrastination when it comes to monitoring and make sure you have the materials needed before a sampling event. Here are some tips for making the most of your sampling event.



- » *Contact an outside laboratory to order sample containers for the parameters identified in the industry's permit.*
- » *Contact the industrial facility to schedule a sampling event. Although this is not required, we recommend this be done as a courtesy.*
- » *Ensure the lab probes or monitoring devices (i.e. pH probe) are calibrated.*
- » *Prepare the chain-of-custody and container labels with the available information once the containers arrive.*
- » *Prevent cross-contamination during sample collection: ensure nothing touches the container threads or lids; do not overfill the container; and use chemical-resistant gloves.*
- » *Ensure you have and wear the appropriate personal protective equipment required for each facility (i.e. safety glasses, steel-toe boots or ear plugs).*
- » *Ensure grab samples are collected for the appropriate parameters.*
- » *Complete remaining container label information and the chain of custody after sample collection.*
- » *Place ice in plastic bags (i.e. Ziploc bags) in the sample cooler for transport to the outside laboratory.*

ANNUAL REPORT

An Annual Report is required to be submitted each year by April 1 to the IDEM Pretreatment Group. The below information is recommend for the report content:

- » *Copies of the completed industrial user surveys*
- » *Summary of the industrial user survey results*
- » *Description of facility changes, including operations and the volume or nature of the discharge*
- » *Synopsis of the previous year's compliance status*
- » *Summary of the pretreatment inspection conducted, including any deficiencies or violations*
- » *Report of the previous year's enforcement actions*
- » *Evaluation of the pretreatment program*

PUBLIC NOTICES

As part of the public participation requirements of the pretreatment program, the POTW personnel are required to provide public notification (in a newspaper) of significant noncompliance from industries at least once per year.

INDUSTRIAL SURVEY

An industrial user survey is to be conducted at least once every two years and provided to all possible industrial users within the POTW service area. Potential SIUs can be identified through local or county GIS resources, aerial photographs, water use records or general internet searches. Once sites are identified, POTW personnel will send the industrial user survey to possible SIUs to determine the volume and nature of wastewaters discharged to the POTW. They will need to determine if businesses should be included or removed from the pretreatment program after reviewing the survey results.

Industrial Compliance Tips for your Pretreatment Site Inspection

Feeling out of your element each year as a municipal operator when conducting industrial pretreatment inspections? Understanding the environmental compliance regulations and industrial processes can be overwhelming.

If your community has implemented a pretreatment program, or likes to keep an eye on the industrial facilities in the service area, the environmental regulations that industries follow may be helpful in identifying prohibited discharges or other issues during your pretreatment inspections.

HAZARDOUS WASTE (40 CFR 260-265)

An industrial facility may generate a material as a by-product or as a part of a process. When the facility determines this material can no longer be reused or recycled, or if it has certain chemical properties or characteristics, it is deemed a hazardous waste. Hazardous wastes are identified by a yellow label with the words “Hazardous Waste” in red. To assist inspectors, we have included a few circumstances where storing containers of hazardous waste is acceptable.

- » *A label is present or is marked as a “Hazardous Waste”.*
- » *No exterior dents or rusting and the container is in good condition.*
- » *It is compatible with the contents.*
- » *Remains closed unless waste is being added to the container.*

When dealing with hazardous waste, ensure the facility is secured against unauthorized entries; conduct weekly inspections of the hazardous waste containers and storage areas; complete annual training for employees; and implement a Hazardous Waste Contingency Plan that identifies emergency response procedures and equipment in the event of a hazardous waste spill. Any facility located within a 100-year floodplain has to implement additional procedures to ensure hazardous wastes are not washed out of the facility by flood waters (40 CFR 264.18).

USED OIL (40 CFR 273 AND 327 IAC 13)



Used oils may include a variety of oils including commonly generated oils such as motor oil, hydraulic oils, metalworking oils, wire drawing solutions, refrigeration oil, or electrical insulating oil. Any oil refined from crude oil or considered a synthetic oil that is spent is defined as used oil.

Containers or tanks containing used oil for recycling should be labeled or marked as “Used Oil.”

The containers should be stored in an area where spills would not flow to a sanitary sewer floor drain. Over the years, we have seen industrial facilities store oils next to their heating or cooling systems, cooling towers or other building systems. Be wary of this! It is most likely this area contains a floor drain connected to the sanitary sewer. All floor drains located near chemical storage areas should be permanently sealed, collared or have a drain plug available.

SPCC PLAN (40 CFR 112)

The Spill Prevention, Control and Countermeasures (SPCC) program is a Federal regulation that establishes procedures for the proper storage, spill response, training and management of oils in order to prevent a discharge to any waterways. Any facility that stores oils in aboveground containers or tanks totaling 1,320 gallons, or has more than 42,000 gallons of completely buried storage, is required to implement a SPCC Plan. These plans identify chemical storage locations, quantities, containment measures, emergency response measures and site drainage.

If you want to learn more about SPCC Plans, refer to Wessler’s blog [“Be Proactive; Plan Ahead for Disaster”](#) and Ebook on the requirements.

CONTAINER HANDLING (40 CFR 264.170 - 175)

Although some requirements are for hazardous waste facilities only, we believe the following container-handling practices are good to implement with any chemical used at an industrial facility that is stored in a drum, tote or tank.



- » **Condition of Containers** – *If a container of hazardous waste begins to leak or show signs of dents or rust, the contents must be transferred to a container in good condition or be similarly managed (i.e. over-pack container).*
- » **Container Compatibility** – *Containers used to store chemicals must be made of or lined with a material compatible with the chemical to prevent a possible chemical reaction or damage to the container. For example, corrosive chemicals are stored in plastic drums and not steel drums.*
- » **Container Management** – *Hazardous waste containers must always be closed unless adding or removing chemicals. Do not handle a hazardous waste container in a way that will cause damage or rupture. For example, don't store chemicals near heavy fork-truck traffic as the trucks might puncture the containers.*
- » **Inspections** – *Hazardous waste containers are to be inspected at least weekly for deterioration or leaks.*
- » **Containment** – *Storage containers must have a containment system free of cracks or gaps, impervious to contain liquids and precipitation, sloped or drained to remove spilled chemicals, and have a sufficient capacity to hold a spill. Stored containers must be elevated to prevent contact with any spilled chemicals or accumulated precipitation. Additionally, if a structural containment system is equipped with a release valve, that valve must remain closed to be considered secondary containment. The valve can only be opened to discharge uncontaminated precipitation.*
- » **Ignitable wastes** (liquid with a flash point $<140^{\circ}\text{F}$ or an ignitable compressed gas) **and reactive wastes** (unstable, explosive or reacts with water) must be stored within the boundaries of the property at least 50 feet from the facility's property line.

SECONDARY CONTAINMENT FOR HAZARDOUS MATERIALS (327 IAC 2-10)

Facilities that store hazardous materials in aboveground storage tanks/storage areas or that operate a transfer area are required to provide secondary containment to prevent chemical releases. Secondary containment can include dikes, berms, retaining walls, trenches, double-walled tanks, or diversionary systems. There are some exemptions from secondary containment based on the amounts stored, but here are the basic requirements.

Storage Inside a Building

» Hazardous materials stored in tanks or containers located inside a building must have a floor compatible with the chemicals stored and be able to prevent a spill from entering any streams, storm sewers or ditches. Typically, this can be done with a completely sealed concrete floor (no cracks) that has a specialized coating applied to it.



Storage Outside a Building

- » Secondary containment must be compatible with the materials being stored.
- » Containment must be able to contain at least 110% of the volume of the largest tank or be sized to contain the precipitation from a 25-year/24-hour storm event.
- » Maintain the structural integrity of the containment area and ensure that the full containment capacity is maintained by removing accumulated liquids and keeping the containment area free of obstructions.
- » Accumulated precipitation must be removed within 72 hours of its discovery.

Transfer Areas

This refers to areas where tanker trucks are staged when unloading or loading hazardous materials.

» *Transfer areas must be designed with materials that are compatible with the materials being transferred.*



» *Area must contain the volume of material pumped during one minute. For example, if a truck pump is rated at 150 gallons per minute, the facility needs to design a structural system or maintain spill equipment that will absorb 150 gallons.*

» *Accumulated precipitation must be removed within 72 hours of its discovery.*

HAZARD COMMUNICATION PROGRAM/MSDS/SDS



Industrial facilities are required to maintain Materials Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for chemicals used and stored onsite. Each facility ensures that employees are trained on the hazards of the chemicals, proper labeling and MSDS/SDSs. Never hesitate to request a MSDS/SDS from an industrial facility for a chemical they are using.

Refer to Wessler's blog "[In case you missed it...GHS Training](#)" for more information on the new Global Harmonization System requirements included in the Hazard Communication Program.

SLUG DISCHARGE CONTROL PLANS (SLUG PLAN) & TOXIC ORGANIC MANAGEMENT PLANS (TOMP)

Good sources of information are a facility's Slug Plan and TOMP. The basic purpose of these industrial wastewater plans is to explain how a facility keeps the bad stuff from getting in the sanitary sewer. The Slug Plan and TOMP are required by a City Ordinance or through an Industrial Wastewater Pretreatment (IWP) Permit from a delegated City, Town or IDEM.

Slug Plan

According to 40 CFR 403.8 (f)(2)(vi) and 327 IAC 5-19-3 (2)(I), a Slug Plan should include the following:

1. Description of discharge practices including non-routine batch discharges
2. Description of stored chemicals
3. Description of notification procedures to the POTW in the event of a slug discharge and procedures for a follow-up written notification submittal in 5 days
4. Procedures, if necessary, to prevent adverse impacts from accidental spills, including, but not limited to, the following:
 - a. Inspection and maintenance of storage areas
 - b. Handling and transfer of materials
 - c. Loading and unloading operations
 - d. Control of facility runoff
 - e. Worker training
 - f. Building containment structures or equipment
 - g. Measures for containing toxic organic pollutants including solvents
 - h. Measures and equipment necessary for response activities

TOMP

A TOMP is also called a Solvent Management Plan and may be required under federal pretreatment standards for certain categorical users that use toxic organic compounds. The requirements of the plan are usually specified in the industrial facility's permit, but at a minimum should include:

- » *A list of the toxic organic compounds used*
- » *A description of the methods of disposal used instead of dumping, such as reclamation, contract hauling, or incineration*
- » *The procedures for ensuring that toxic organics do not routinely spill or leak into the wastewater*

If you inspect a facility that needs some assistance with creating an acceptable TOMP, [click here](#) for an EPA guide on how to create one.

CONCLUSION

By following these guidelines and tips, you are well on your way to implementing your pretreatment program and being able to identify compliance items industrial facilities may (or may not) be implementing.

Resources:

- » [Pretreatment of Wastewater \(Industrial Users\) Compliance Monitoring](#)
- » [Sacramento State Office of Water Programs](#)
- » [IDEM Industrial Pretreatment Permits](#)



About Wessler

Wessler is an engineering firm dedicated to bringing our clients' vision to life. We strive to make our relationships
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Wessler Engineering is headquartered in Indianapolis, Indiana with additional offices in Fort Wayne, Evansville, and West Lafayette. Our markets and services include:

- » *Wastewater Treatment*
- » *Wastewater Collection*
- » *Drinking Water Treatment*
- » *Drinking Water Distribution*
- » *Stormwater*
- » *Environmental Services*
- » *Transportation*
- » *Electrical*
- » *Field Services*
- » *Construction Services*
- » *Airports*
- » *Industrial*

About the Author



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