



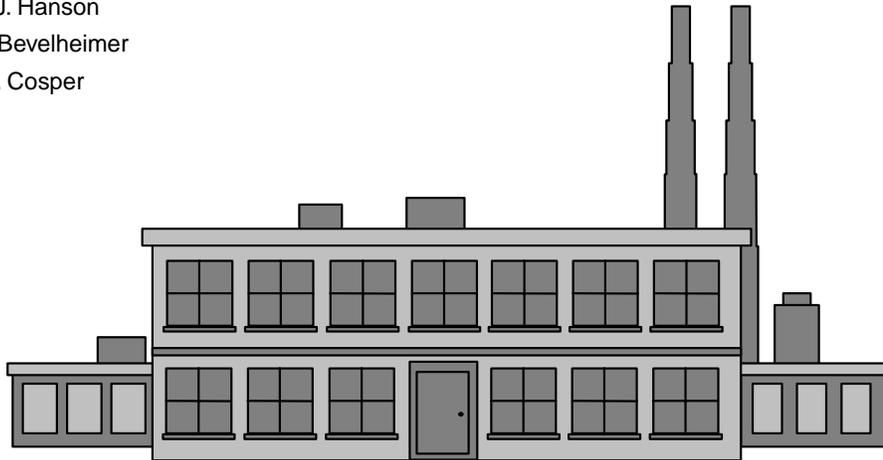
**US Army Corps  
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# Protocol for the Preparation of Installation Pretreatment Programs

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This Protocol was prepared in the anticipation of pending USEPA guidance that will require Army installations to have formal Pretreatment Programs, prepared in accordance to guidance in 40 CFR 403. The Protocol is targeted for Army installation environmental program managers. The report is in two parts: (1) a written document with step-by-step instructions for accumulating the Industrial User information necessary for an Installation Pretreatment Program; and (2) a Microsoft Access-based program for establishing local limits for industrial users, and for preparing tables and reports to present Industrial User information necessary for the Program. A User Guide (Volume 2, unattached Appendix D to this report) accompanies the Access database. An example Installation Pretreatment Program that includes tables generated by the Access program, is included as an appendix to the written Protocol.



**SF 298**

## Foreword

This report was prepared for the U.S. Army Environmental Center under AEC project EWW (EC) Environmental Support. Funding from that project supported CERL work units WF6, "Pretreatment Protocol Alpha Test" WS6, "Reformat Existing Protocol to Step-by-Step Guidance Documentation" and VR8, "Pretreatment Protocol Site Visits." The AEC technical monitor and Project Officer was Billy Ray Scott, SFIM-AEC-ECC.

The work was performed by the Environmental Processes Branch (CN-E) of the Installations Division (CN), U.S. Army Construction Engineering Research Laboratory (CERL). Special recognition is given to James Carter, wastewater manager for the Fort Leonard Wood DPW Environmental Division. The Alpha Test could not have been completed without his assistance, and his efforts are much appreciated. The CERL Principal Investigator was Gary L. Gerdes. L. Jerome Benson is Chief, CECER-CN-E and John T. Bandy is Chief, CECER-CN. The CERL technical editor was William J. Wolfe, Information Technology Laboratory.

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# 1 Introduction

## Background

### *Regulations Affecting Pretreatment*

The Clean Water Act, enacted in 1972 as the Federal Water Pollution Control Act of 1972 (with amendments in 1977 and 1987) has as its goal the prevention of discharges of pollutant into any water of the United States. The Clean Water Act (CWA) mandates the National Pretreatment Program.

The National Pretreatment Program is designed to reduce the amount of pollutants discharged by industry and other nondomestic wastewater sources into municipal sewer systems, and thereby reduce the amount of pollutants released into the environment from wastewater treatment plants. The program is a cooperative effort of Federal, State, and local regulatory environmental agencies established to protect water quality. The objectives of the program are to protect the publicly owned treatment works (POTW) or municipal wastewater treatment facility from pollutants that may interfere with plant operation, or that may pass through the plant untreated; and also to improve opportunities for the POTW to reuse treated wastewater and biosolids (sludges) that are generated.

The National Pretreatment Standards do not apply to sources that discharge to a sewer not connected to a POTW treatment plant. Therefore, it does not directly apply to Army or other Federally owned treatment works (FOTW). The U.S. Environmental Protection Agency (USEPA) approved and enforceable pretreatment programs are, for the most part, only found at POTWs because of the definitions and applicability (POTWs only) found in the CWA. This situation has caused some confusion in regard to the Solid Waste Disposal Act (SWDA). Under the SWDA, there is an exclusion from the definition of solid waste (and therefore the definition of hazardous waste [HW]) for mixtures of domestic sewage and other wastes that discharge to a POTW. The USEPA further expanded this exclusion (40 CFR 261.4) to include industrial wastewater point source discharges permitted under Section 402 of the CWA. For Army installations and other Federal facilities, the definition of POTW found in the SWDA, and in the subsequently promulgated USEPA regulations, clearly excludes FOTWs.

Note that Army installations are not required to have pretreatment programs pending further interpretation of the Federal Facility Compliance Act (FFCA). One goal of Section 108 of the FFCA (FFCA-108) was to eliminate the discrepancies between the Federal facility aspects of two, sometimes overlapping, environmental statutes (SWDA and the CWA). The FFCA-108 grants a conditional HW exclusion for mixtures of HW and domestic sewage discharged to an FOTW when one of the following conditions is met:

- The discharge is subject to a pretreatment standard issued under the CWA, and it is in compliance with the standard.
- The discharge comes from an industrial pretreatment facility in an effluent category for which the USEPA has established a schedule for developing a standard.
- The discharge would not be prohibited from land disposal under the SWDA because it has been treated accordingly.
- The discharge is generated by a household or individual that generates less than 100 kilograms of HW per month (excluding acutely HW).

The net effect of FFCA-108 was to allow FOTWs to enjoy some of the benefits enjoyed by their publicly owned counterparts. Federal installations operating domestic sewage treatment plants (STPs) that accept “industrial wastewater” can now enjoy some of the regulatory relief from the SWDA given to POTWs. However, FFCA-108 does not give FOTWs the same blanket exclusion from the definition of HW given to public facilities. Mixtures of solid or dissolved material and domestic sewage flowing to a Federally owned STP are not considered HW *only if* the discharge meets one of the aforementioned conditions.

There are pretreatment programs already in existence as required by NPDES permit requirements at several Army installations. Installations without mandatory (e.g., NPDES permit) pretreatment requirements could still use portions of the total program to determine compliance with FFCA-108. Those portions would include the industrial waste survey and industrial discharge sampling. If industrial discharges were found that did conform to the standards, then installations could implement complete pretreatment programs to obtain and maintain compliance.

### ***Categorical Pretreatment Standards***

The CWA sets forth pretreatment standards for industrial facilities that discharge into POTWs. For Army installations in general, Categorical Pretreatment Standards do not directly apply unless the facility discharges to a local

POTW.\* Nevertheless, Army Regulation 200-1 requires that discharges to Army treatment plants comply with pretreatment standards.

The Categorical Pretreatment Standards are sets of discharge limits for an entire category of an industry. For example, all facilities that meet the definition for “metal finishing and discharge” to a POTW must comply with the applicable metal finishing categorical standards. The effluent discharge limits are based on the pollutant removal efficiency consistently demonstrated by the best available waste control technology economically achievable.

### ***Prohibited Discharge Standards***

Prohibited discharge standards have been developed to control wastewater produced by industrial users in a more general sense. These compliance requirements are applicable to all nondomestic sources, whether or not they can be considered a categorical industry.

#### *General Prohibitions*

The general prohibitions state that no industrial user can introduce into a POTW any pollutant that causes interference or that will “pass through” untreated. Interference, by definition, occurs if an industrial discharge: (1) inhibits or disrupts a POTW treatment process or adversely affects sludge production or, (2) causes the facility to violate its NPDES permit or prevent the disposal or reuse of its sewage sludge.

#### *Specific Discharge Prohibitions*

Specific discharge standards were developed to prevent the following types of materials from entering a POTW:

- ignitable and/or explosive wastes
- reactive discharges or materials that release hazardous fumes
- oil and grease in amounts that will adversely affect the POTW

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\* Categorical effluent standards are written specifically for industrial discharges to POTWs. However, Army installations will often find identical numerical criteria written into their NPDES permits. In many cases a “categorical” activity within an installation’s boundary that discharges to the FOTW will be regulated as an additional “outfall.” Furthermore, the Federal Facility Compliance Act adopted categorical standards for discharges to FOTWs, thereby indirectly making them applicable to Army industrial activities.

- corrosive materials or discharges with a pH of less than 5
- solid or viscous pollutants in amounts that obstruct the POTW
- any pollutant, or heat, in amounts that will cause interference.

#### *State Program Exception*

FOTWs that meet the above criteria are not required to have pretreatment programs if the NPDES State exercises its option to assume local responsibilities as provided for in 40 CFR 403.10(e).

### **Who Needs a Pretreatment Program**

At the time of writing this report, Army FOTWs were not required by Federal Law to have Pretreatment Programs, though it is anticipated that USEPA will issue guidance that will require such programs. Some States with primacy over NPDES permitting have required Pretreatment Programs at Federal installations.

Considering the current requirements, one may fairly ask why an Army installation should have a pretreatment program. In fact, whether required by law or not, an Installation Pretreatment Program can be a valuable, cost-saving, tool for the installation environmental manager. The Pretreatment Program can be used to:

1. *Manage Compliance with Categorical Pretreatment Discharge Requirements.* According to the FFCA and AR 200-1, the Army must comply with the specific categorical pretreatment discharge requirements delineated in 40 CFR Part N (discussed in Chapter 3, p 5). These rules establish pollutant limits on discharges from specific industrial processes to domestic wastewater treatment systems. Most significant of these is the pending Machine Products and Metalworking rule, commonly referred to as MP&M. This rule will regulate discharges from vehicle maintenance and washing operations.
2. *Prepare the Installation for Privatization of the Domestic Wastewater Collection and Treatment System.* The Army has been directed to privatize all wastewater treatment systems wherever feasible. Privatization can involve turning over ownership of an installation system to the private sector. In that case, the industrial facilities at that installation will be discharging to a POTW rather than an FOTW. It is likely that the new owner of the wastewater system will impose limits on pollutants discharged from those industrial facilities. Implementation of a pretreatment program prior to privatization will: (a) identify potential problem areas, (b) allow time to correct those problems through pollution prevention or

- other low-cost methods, and (c) prevent high-cost corrections that could be required by a POTW.
3. *Meet the General Pretreatment Requirements Established in the Clean Water Act.* The Clean Water Act describes general pretreatment goals that are required for all domestic wastewater systems. Most applicable of these is the requirement to eliminate discharges of pollutants to the collection system that cause interference with the treatment processes or pass through the treatment system untreated. Pass-through of toxic pollutants is monitored by the Whole Effluent Toxicity test (WET test). Implementation of a Pretreatment Program can achieve the general pretreatment goals, and specifically, help to comply with the NPDES permit requirement to pass the WET test.
  4. *Maintain Compliance with Pollutant Limitations on Wastewater Treatment Sludge Disposal.* 40 CFR 503 establishes disposal criteria for domestic sewage sludge. Specific pollutant limits are imposed, and those limits depend on the final disposal of the sludge. (Refer to the U.S. Army Environmental Center report: *Sewage Sludge (Biosolids) Management Manual for Army Facilities*.) A Pretreatment Program can be valuable to achieve the pollutant levels desired for existing sludge disposal, or to achieve a higher classification of sludge and decrease sludge disposal costs.

According to most interpretations of the FFCA, FOTWs are currently not required by Federal Law to have Pretreatment Programs to manage the industrial discharges. However, it is anticipated that the USEPA will soon issue guidance that FOTWs are to be subject to the same pretreatment program requirements now imposed on POTWs. In fact, draft guidance implementing the Federal Facilities Compliance Act will require military FOTWs to comply with CWA pretreatment requirements for POTWs, if:

Any individual activity on the installation generates more than 100 kg hazardous waste per month, or any quantity of acutely hazardous waste.  
(MIL-HDBK 1005/17, p 11)

Note that most Army Installations will meet the above criteria.

When FOTWs are regulated the same as POTWs by the Clean Water Act, then those FOTWs that meet all of the following criteria will be required to have Pretreatment Programs:

1. At least 50 percent of the influent received is domestic sewage.
2. The effluent of the treatment works is subject to a permit issued pursuant to Section 402 of the Clean Water Act.

3. The treatment works (or combination of treatment works owned/operated by the same installation) has a total design flow greater than 5 million gal per day (MGD). (Note: In many cases, this requirement may not apply.)
4. Significant industrial users are discharging nondomestic wastewater to the FOTW.

Note that States may determine the requirement for pretreatment programs using criteria that are more inclusive than those listed above. FOTW that have less than 5 MGD design flow, or have no significant industrial users discharging, may still be required to have pretreatment programs. Other regulatory requirements, such as the requirement to meet biosolids management or air emissions criteria, may require an installation to establish a pretreatment program.

### ***Significant Industrial Users***

The sources of industrial wastewater that are to be managed by the installation Pretreatment Program are delineated in 40 CFR 403. Those sources are referred to as *significant industrial users*. All sources that are subject to the Categorical Standards listed in Subpart N of the Clean Water Act (40 CFR 405-471) are significant industrial users. Over 50 industrial wastewater sources are regulated by Subpart N.

The criteria for a noncategorical source to be defined as a Significant Industrial User are:

1. The industrial user generates more than 100 kg of hazardous waste (as defined by RCRA) per month, including that which is sent to the FOTW

and

2. The industrial user discharges an average of 25,000 gal per day or more of process wastewater to the FOTW (excluding sanitary, noncontact cooling, and boiler blowdown wastewater), or the industrial user that contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the FOTW treatment plant

or

3. The industrial user is designated by the pretreatment program control authority as having a reasonable potential to adversely affect the FOTW's operation, including causing noncompliance with NPDES discharge and sludge management requirements.

## Funding To Establish an Installation Pretreatment Program

### *A106 Submission*

An installation may request funding to establish a Pretreatment Program as an Environmental Program Requirement project. Guidance to prepare an A106 submission specifically for developing a Pretreatment Program is included in “The U.S. Army EPR Project Catalog,” which is a periodical publication prepared by the Special Programs Branch at the U.S. Army Environmental Center (AEC). Copies of the catalog may be obtained by calling the EPR Action Officer, AEC Special Programs Branch at 410-436-7102. The catalog can also be downloaded from DENIX at:

<http://denix.cecer.army.mil/denix/DOD/Interaction/Reporting/EPR/Catalog/catalog.html>.

### *Doing a Site Survey*

The largest expense in preparing a program is performing the industrial facility site survey and doing the baseline wastewater characterization. The cost to prepare a Pretreatment Program depends on the number of industrial wastewater sources at an installation. Remember that some facilities, such as DOL maintenance shops, will have several industrial wastewater sources. Because of the intermittent nature of most industrial sources at an Army installation, an accurate site survey can be somewhat labor intensive. To prepare the example Pretreatment Program (Appendix C), CERL conducted a site survey at a large troop installation. A suggested approach for an outside agency or contractor to perform the site surveys prior to developing a pretreatment program, as done for the example (shown in Appendix C), is:

1. Prior to the survey, give all industrial facilities advance notice to the coming site visits.
2. Do a “windshield tour” with installation person familiar with industrial facilities.

Allow 5 minutes per facility.

3. Perform an initial visit to each industrial facility to obtain background information, i.e., POC, process description, etc. Walk through the facility. Identify potential pollutants. Schedule a return visit to do sampling when wastewater is representative of typical to worst case. (Note: visits to medical facilities usually require appointments.)

Assume two persons per site, five sites per day.

4. Conduct sampling. If a headworks analysis is done at the sewage treatment plant, do sampling at the industrial facilities at the same time.

Assume two persons per site, two sites per day

Sample analysis cost will depend on pollutants identified for analysis.

A typical analysis will be for heavy metals, cyanide, and oil and grease.

Allow an additional man-week for preparation, i.e., for making arrangements for analysis, organizing sampling equipment, preparing a sampling schedule, and for other administrative tasks.

5. Prepare the report using the automated protocol program (Appendix D) and text from the example program.

Allow 4 man-weeks to enter data and generate report.

## Objective

The objective of this Protocol is to provide Army installations with a tool to establish comprehensive wastewater pretreatment programs.

## Approach

### *Discharging to FOTW*

This Protocol consists of 10 chapters each of which describes specific Pretreatment Program elements, as defined in 40 CFR 403 and Army documents. When a Program element is specifically required by regulation, the words "**Pretreatment Program Requirement**" will appear in the chapter, followed by a statement of the requirement. For clarity, the term "POTW" has been replaced in most 403 excerpts with the term "Treatment Works," or sometimes "FOTW." The terms "Control Authority" and "Approval Authority" are replaced with "Pretreatment Program Manager" (PPM).

Some chapters in this Protocol contain worksheets and sub-worksheets to help develop the installation program. Use these worksheets as tools to collect and

collate installation data, and to establish action plans necessary to maintain the goals of the program. Four general types of worksheets are provided:

1. Worksheets to record information specific to each industrial wastewater discharge, including the industrial processes that generate wastewater
2. Worksheets to establish pretreatment water quality goals, and pretreatment program responsibilities
3. Worksheets for recordkeeping and reporting the data
4. Worksheets to generate schedules and resource action plans that will ensure successful accomplishment of the program goals.

Many of the worksheets depend entirely on entries made on other worksheets. Annotations are made on those worksheets where these cross-references occur.

A Pretreatment Program developed by using this Protocol will have some variations of the program described in 40 CFR 403. For example, one purpose of the pretreatment programs that are established through the CFR is to give regulatory authority to the POTWs to control industrial discharges to those treatment works. But the Army is owner of both the treatment works (FOTW) and the facilities generating industrial wastewater, and thus does not need regulatory authority in that it already has complete control. That authority is already defined in "Military Service Regulations, Installation Instructions and Host/Tenant Support Agreements." Because of this existing control, the Army installation pretreatment programs shall place emphasis on *performance of pretreatment structures and the actions necessary to achieve that performance*, of which maintenance and pollution prevention are major elements. However, the Army pretreatment programs shall focus on the general goals established in 40 CFR 403.

A Microsoft Access-based automated version of this Protocol accompanies this report. This automated Protocol is useful to prepare the Facility Inventory and to establish pretreatment discharge limits. An example Installation Pretreatment Program is included as Appendix C.

The following checklist of actions must be taken to develop the components of an installation's Pretreatment Program. These actions and other program requirements are described in Chapters 2 through 10.

<b>Check List (See Chapter 2)</b>		
1.	Identify the activities meeting the criteria as "industrial users" in 40 CFR part 403.3(t)(1) and identify which of those are "significant industrial users."	
2.	Prepare a facility inventory for each significant industrial user.	
3.	Include identifying information such as the facility name and location, and point of contact.	
4.	List the environmental permits currently held by each location.	
5.	Describe the regulated processes that discharge to the treatment works. Include the average rates of production and the Standard Industrial Classification (SIC) code(s) for the processes.	
6.	Diagram the processes to indicate the points of discharge to the treatment works.	
7.	Provide a measurement of the average and maximum daily flows (in GPD) from the regulated process streams. If process streams are mixed with other waste streams, flow from those streams must be measured as well.	
8.	Sample and analyze the discharges from each industrial source to identify the character and volume of pollutants contributed to the FOTW as required by 403.12(b)(5).	
9.	Identify the Pretreatment Standards applicable to each regulated process or establish pretreatment limits.	
10.	Submit the results of sampling and analysis identifying the nature and concentration (or mass, where required by the Standard or Pretreatment Program Manager) of regulated pollutants in the discharge from each regulated process.	

### ***Discharging to POTW***

Army installations that have industrial facilities that discharge to POTW would not be required to develop their own pretreatment program. Those facilities would be subject to the pretreatment program of the POTW. The POTW will determine all compliance goals of the pretreatment program with which the installation must comply. The installation will be required to: (1) meet general and specific discharge limits for industrial users (including Categorical limits), (2) follow a specific monitoring plan, (3) provide industrial user source information, and (4) submit results of monitoring and other information to satisfy reporting requirements. This Protocol may be valuable to the installation environmental manager when establishing an internal program to maintain compliance with the POTW pretreatment program.

### **Scope**

It is not intended to be a general reference for pretreatment or pretreatment programs. Only program elements that are relevant to the Army FOTW are discussed.

*An Army installation's treatment works qualifies as an FOTW when it is owned or operated by the DoD, the majority of the influent received is domestic sewage, and its effluent is subject to a permit issued pursuant to Section 402 of the CWA (RCRA Section 3023, 42 USC Section 6939e).*

The information within this manual is based on the pretreatment program guidance for POTWs contained in the General Pretreatment Regulation, 40 CFR 403. This regulation was used because draft guidance implementing the Federal Facilities Compliance Act will require military FOTWs to comply with CWA pretreatment requirements for POTWs, if:

*Any individual activity on the installation generates more than 100 kg hazardous waste per month, or any quantity of acutely hazardous waste. (p 11, Handbook)*

## Mode of Technology Transfer

It is anticipated that this protocol and associated data base program will be made available through AEC, Aberdeen Proving Ground, MD.

## Units of Weight and Measure

U.S. standard units of measure are used throughout this report. A table of conversion factors for Standard International (SI) units is provided below.

SI conversion factors		
1 in.	=	2.54 cm
1 ft	=	0.305 m
1 yd	=	0.9144 m
1 sq in.	=	6.452 cm <sup>2</sup>
1 sq ft	=	0.093 m <sup>2</sup>
1 sq yd	=	0.836 m <sup>2</sup>
1 cu in.	=	16.39 cm <sup>3</sup>
1 cu ft	=	0.028 m <sup>3</sup>
1 cu yd	=	0.764 m <sup>3</sup>
1 gal	=	3.78 L
1 lb	=	0.453 kg
1 kip	=	453 kg
1 psi	=	6.89 kPa
°F	=	(°C x 1.8) + 32

## 2 Facility Inventory

**Pretreatment Program Requirement:** The installation will prepare a facility inventory that identifies, locates, and provides a detailed report on each location that is subject to the FOTW Pretreatment Program as a Significant Industrial User.

The facility inventory must contain the following information along with the criteria by which specific facilities are categorized as Significant Industrial Users (p 10):

1. *Standard identifying information on each Significant Industrial User such as the facility name and location.* The POCs and phone numbers should also be included.
2. *A listing of environmental permits currently held by the facility.* This may include NPDES permits, hazardous materials or waste permits, air permits, or any other environmental permit pertaining to the individual user.
3. *A description of operations occurring at the facility.* This will include the processes occurring at the facility, the rates of production (if applicable), the Standard Industrial Classification (SIC code), and a process diagram which indicates the points of discharge to the FOTW.\*
4. A measurement of the average and maximum daily flows (in gallons per day) of the process streams leaving the facility. If process streams are mixed with other waste streams, flow from those streams must be measured as well.
5. Identify the character and volume of pollutants contributed to the FOTW by each user. This will involve sampling and analysis of the discharge as required by 403.12(b)(5) listed below. Those pollutants detected in the waste

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\* Note that, since the printing of 40 CFR 404, the SIC code has been replaced by the NAICS. Information on NAICS is available at <http://www.webplaces.com/naics/>.

stream will be monitored as “pollutants of concern.” (See Chapter 5 - Monitoring, p 30).

- a. Identify the Pretreatment Standards applicable to each industrial user.
- b. Perform sampling and analysis to identify the nature and concentration (or mass) of regulated pollutants in the discharge from each industrial user. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of discharges from normal operations.
- c. For most pollutants, 24-hour composite samples should be obtained through flow-proportional composite sampling techniques where feasible. Where not feasible, the PPM may allow for the collection of samples obtained through time-proportional composite sampling or through a minimum of four grab samples, as long as these samples are considered representative of the discharge. For pH, cyanide, total phenols, oil and grease, sulfide, and volatile organics (when measurement of these pollutants is required), samples shall be collected through a minimum of four grab samples.



## Worksheet 1-2: Individual User Information

Complete this worksheet for each of the user listed in Worksheet 1-1.

1. Complete the following:

a. Facility name:

---

b. Building number:

---

c. Operator name and telephone number:

---

d. Activity description:

---

e. Existing pretreatment device:

---

2. List any environmental permits for this facility:

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3. Complete the following for the source listed above.

a. Describe the operation(s) generating wastewater for this source, including why it is a Significant Industrial User:

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---

---

b. Average rate of production:

---

c. Standard Industrial Classification (SIC) or NAICS designation of the operation(s) carried out at this source:

---

d. Attach a schematic drawing of each of the facility's existing pretreatment structures to this work sheet. Be certain to indicate flow patterns and points of discharge.

4. Complete the following for the facility listed above:

- a. For each regulated process stream at this facility, enter the average daily and maximum daily usage and flows:

Process Stream	Average Daily Usage (gal/day)	Maximum Daily Flow (gpm)

- b. Are process streams at this facility combined with other waste streams prior to pretreatment?  
 \_\_\_ Yes \_\_\_ No

- c. If yes, enter the average daily and maximum daily flows for these waste streams in the spaces below:

Process Stream	Average Daily Flow (gal/day)	Maximum Daily Flow (gpm)

5. For the facility listed above, provide the following wastewater quality information. All sampling and analysis shall be performed according to techniques described in 40 CFR 136. Samples should be taken immediately downstream from pretreatment facilities if they exist, or immediately downstream from the process stream if no pretreatment exists.

- a. List all regulated pollutants generated by or used in the industrial processes at this facility, and that can be expected in the wastewater stream:

1.	4.	7.
2.	5.	8.
3.	6.	9.

- b. Obtain a minimum of one 24-hour composite sample from each location as described in 5, above. For each pollutant (except those listed in paragraph c below), list the following:

Date/Time	Location	Max. Conc.	Ave. Conc.	Methods Used for Analysis
1.				
2.				
3.				
4.				

- c. If pH, cyanide, total phenols, oil and grease, sulfide, or volatile organics are identified as potential pollutants of concern at a location, then obtain a minimum of four grab samples from each location (as described in para. 5 above) and test for the identified pollutants. For each sample, list the following:

Date/Time	Location	Max. Conc.	Ave. Conc.	Methods Used for Analysis
1.				
2.				
3.				
4.				

### 3 Establishing Discharge Goals/Requirements

To protect the FOTW from regulated pollutants that will pass through the system untreated, and from pollutants that will interfere with the treatment works processes, pretreatment discharge goals are established for each significant industrial user. The established discharge goals will be specific to the industrial source generating the wastewater. Those goals will affect both wastewater pollutant concentrations and wastewater flow.

Discharge goals for some industrial facilities are already specified in Subpart N of the Clean Water Act. These are referred to as “Categorical Standards.” The goals for the facilities not covered by Subpart N must be established by the installation Pretreatment Program Manager.

#### Discharge Goals for Facilities Subject to Categorical Standards

Discharges from certain industrial facilities specified in Subpart N of 40 CFR are subject to Categorical Pretreatment Standards (40 CFR 405-471). Appendix A contains portions of 40 CFR dealing with those industrial facilities most likely to exist at Army installations. Refer to Appendix A when establishing discharge goals for the following types of facilities:

1. Electroplating (40 CFR 413)
2. Chemical Manufacturing (40 CFR 415)
3. Metal Finishing (40 CFR 433)
4. Metals molding and casting (40 CFR 464).

Note: The pretreatment regulation for discharges from explosives manufacture (40 CFR 457) specifically applies to commercial facilities. However, processes at Army ammunition plants may be regulated by one or more of the above categorical standards.

40 CFR 403.6(c) provides the following guidance on how the discharge goals are to be expressed (concentration/mass limits) in the installation FOTW Pretreatment Program.

(1) “Pollutant discharge limits in categorical Pretreatment Standards will be either as concentration or mass limits. Wherever possible, where concentration limits are specified in standards, equivalent mass limits will be provided so that local, State, or Federal authorities responsible for enforcement may use either concentration or mass limits.”

(2) “When limits in a categorical Pretreatment Standard are expressed only in terms of mass of pollutant per unit of production, the [Pretreatment Program Manager] may convert the limits to equivalent limitations expressed either as mass of pollutant discharged per day (or) effluent concentration...”

#### EXAMPLE

Suppose an industrial facility at an Army installation produces the chemical RIP. The Categorical Standard for RIP production is 0.01 grams RIP discharged per kilogram produced. Suppose you wish to set a concentration goal rather than a mass goal. Then the concentration goal is:

$$[RIP]_{goal} = 0.01 \text{ gr} / \text{kg} \times ADM / ADF$$

where:

ADM = average daily mass produced, based on a reasonable measure of the actual average daily production (*not the designed production capacity*)

ADF = average daily flow, based on a reasonable measure of the actual daily flow rate during a representative year.

## Discharge Goals for Significant Industrial Users

40 CFR 403 lists specific prohibitions that must be imposed on all significant industrial users. Those prohibitions are as follows:

1. Pollutants that create a fire or explosive hazard in the treatment works, including waste streams with closed cup flashpoint of less than 140 °F.
2. Pollutants that will cause corrosive structural damage to the treatment works. In no case discharges with a pH lower than 5.0, unless the treatment works can accommodate such discharges.
3. Solid or viscous pollutants that will obstruct flow in the treatment works.
4. Any pollutants, including BOD, released at a flow rate or concentration that will pass through the FOTW untreated, or that will cause interference with the treatment works, including by causing violations of the NPDES permit.
5. Heat that will inhibit biological activity in the treatment works. In no case heat in such quantities that the temperature at the treatment plant exceeds 40 °C (104 °F), unless approved by the treatment works manager.
6. Petroleum Oils and Lubricants (POL), nondegradable cutting oil, or mineral oils in amounts that will cause interference or that will pass through untreated.
7. Pollutants that result in the presence of toxic gases, vapors, or fumes within the FOTW in a quantity that may cause acute worker health or safety problems.
8. Any trucked or hauled pollutants, except at discharge points designated by the FOTW manager.

**Pretreatment Program Requirement:** The Pretreatment Program shall develop and enforce specific pollutant limits for each Significant Industrial User, to implement the prohibitions listed in the above paragraphs.

The purpose of establishing local discharge limits is to achieve the following goals:

1. Protect the treatment system biological treatment processes from toxic inhibition.
2. Assure that the treatment system effluent complies with its NPDES permit limitations and applicable water quality standards.
3. Assure that the quality of biosolids (treatment plant sludge) complies with disposal criteria.
4. Protect the sewer system from damage and obstruction, and protect workers from exposure to toxic or explosive fumes.

The Pretreatment Program Manager is free to use any reliable method for establishing local discharge limits. General approaches and methodologies for developing local limits are described in the USEPA document, *Guidance Manual for*

*the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program*, EPA-833-B-87-202 (1987). USEPA has also developed software for establishing local limits called PRELIM 5.0, which is available on the USEPA website.

Four technical approaches are outlined in the USEPA manual:

1. *Maximum allowable headworks loading (MAHL)*. This approach is recommended for developing local limits for pollutants that affect treatment system performance and regulatory compliance, such as heavy metals and cyanide. This approach is described further in Appendix B.
2. *Collection system protection*. This approach is recommended as the basis for establishing prohibited discharge standards to protect against fire/explosion, corrosion, flow obstruction, heat effects, and fume toxicity. This approach is described further in Appendix B.
3. *Pollution prevention*. This approach is an alternative to setting quantifiable discharge limits. Pollution prevention measures are used to minimize or eliminate the discharge of toxic or hazardous pollutants to the sewer, or to minimize their impacts. It is Army policy to reduce pollutants at the source as the first means for achieving compliance. Therefore this approach must be integrated into all Installation Pretreatment Programs, regardless of the method for setting local limits.
4. *Best professional judgement*. This approach is recommended to establish limits on a case-by-case basis where a rational methodology and technical basis for a limit may not exist. A sewage treatment plant manager may be able to set local limits using professional judgement augmented by industrial site survey information, sludge disposal requirements, and the toxicity information in Appendix B. This approach may be adequate at many Army installations with few Significant Industrial Users.

The automated version of this Protocol establishes limits for specific pollutants based on the capacity of the treatment plant to accept those pollutants and meet permit requirements. Note that this method does not evaluate the effect pollutants have on specific treatment processes. The steps used to establish those limits are:

1. Establish the removal efficiency at the treatment plant, using PRELIM 5.0, or another reasonable method.
2. Use this data to determine the maximum concentration of each pollutant allowable in the influent without violating the NPDES Permit.

3. Determine the total mass of each pollutant allowable in the WWTP influent using the following equation:

$$TPM = AIF \times SF \times [P]$$

where:

- TPM = the total mass for a given pollutant per day
- AIF = the average daily influent flow to the WWTP in liters/minute
- [P] = the maximum allowable concentration of a given pollutant in the WWTP influent
- SF = a safety factor to allow for pollutants from uncontrolled sources (suggest using a SF of 0.9 or less).

4. Determine the discharge limit for each pollutant using the following equation:

$$PDL = TPM \div TPF$$

where:

- PDL = the discharge limit for a specific pollutant
- TPM = the total pollutant mass per day allowed to enter the treatment plant (calculated above)
- TPF = sum of all maximum daily flows containing that pollutant.

### Varying Discharge Limits

It is the total mass for a particular pollutant that is important to the wastewater treatment plant operator. Therefore the Pretreatment Program Manager may raise and lower the calculated discharge limits for given sources, as long as the total allowable mass remains the same. There may be an economic advantage to requiring a greater degree of treatment at one source and less treatment at another, due to economies of scale, etc.

The concept of varying discharge limits should only be applied to facilities directly under the control of the Garrison Commander. This concept may not be practical for installations that have large tenants that build and maintain their own facilities.

## Slug Discharge Control Provision

**Pretreatment Program Requirement:** The Pretreatment Program shall evaluate, at least every 2 years, whether each significant industrial user needs a plan to control slug discharges.

A slug discharge is any nonroutine discharge of a high concentration pollutants, such as would occur due to an accidental spill or noncustomary batch discharge. The installation Pollution Prevention Plan, the Installation Spill Prevention Control and Countermeasure Plan, and the Installation Spill Contingency Plan all should address the prevention of accidental spill causing slug discharges to the FOTW. The installation Pretreatment Program manager should determine if these plans are adequate to provide reasonable slug control. If these plans are not adequate, the Program manager could provide input during the renewal of one or more of the existing plans, or decide that a separate slug control plan is necessary.

Typical noncustomary batch discharges are: (1) the disposal of septage and portable toilet waste from vacuum collection trucks, and (2) dumping of spent cleaning liquid from recycle parts washers. The Pretreatment Program manager should ensure that discharges from batch disposal will not cause interference or pass-through of pollutants at the sewage treatment plant.

According to 40 CFR 403.8, a plan that controls slug discharges should include:

1. A description of discharge practices, including nonroutine batch discharges
2. A description of stored chemicals
3. A provision to immediately notify the FOTW of slug discharges, with procedures for a follow-up written notification within 5 days
4. If necessary, procedures to prevent adverse impact from accidental spills. Those procedures would include inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, worker training, building of containment structures, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response.

## 4 Allowable Changes to Categorical Discharge Limits

40 CFR 403 allows the discharge limits stated in the Categorical Discharge Standards to be altered under certain circumstances. The following paragraphs describe those circumstances, as well as the calculations necessary to determine the alternative discharge limits.

Note: While 40 CFR 403 allows variations to established Categorical discharge limits, a State or regional regulatory authority may have primacy, and not allow the variation.

### Combined Waste Stream Allowance

When wastewater from a Categorical industrial process is mixed with wastewaters other than those generated by the regulated process, alternative discharge limits may be applied to the mixed waste stream. The alternative discharge limit will account for the dilution caused by the noncategorical waste stream. The noncategorical waste streams that are applicable are:

- Boiler blowdown
- Noncontact cooling water
- Storm water
- Demineralizer backwash
- Domestic wastewater
- Waste streams containing pollutants of concern:
  - Not detectable in the effluent
  - Present in trace amount not likely to cause toxic effects
  - Present in amounts too small to be removed by known technologies
- Waste streams containing pollutants compatible with the FOTW.

## Removal Credit Due to Treatment at FOTW

Some pollutants regulated by categorical standards are removed, to some extent, by the treatment processes at the FOTW treatment plant. The effluent goal(s) for a specific pollutant(s) for a significant industrial user can be reduced, depending on the extent of removal of that pollutant(s) by the FOTW, if the following requirements (stated in 40 CFR 403.7) are met:

1. "The (FOTW) demonstrates and continues to achieve consistent removal of the pollutant..."
2. "The granting of removal credits will not cause the (FOTW) to violate the local, State, and Federal Sludge Requirements which apply to the sludge management method chosen by the (FOTW)."
3. "The granting of removal credits will not cause a violation of the (FOTWs) permit limitations or conditions."

Quantifying consistent removal by the FOTW. Results of influent and effluent analysis shall be used to justify and quantify removal credits. Sampling and analysis shall be conducted according to the following criteria:

1. The data shall be representative of normal influent and effluent flow and quality characteristics.
2. Monthly, 24-hour flow-proportional, composite samples shall be taken throughout 1 full year.
3. The 12 sampling days should be evenly distributed over the days of the week, to include nonwork days as well as work days. Historical data of this nature is acceptable.
4. Sampling and analysis shall be performed in accordance with 40 CFR 136.
5. Any day when the pollutant is not detectable in the influent may not be used as a sample day.
6. Samples shall be taken on days when influent is representative of normal discharge from the significant industrial user.
7. The pollutant concentration is always recorded at the level of detection or above.

$$\text{Percent Removal} = \frac{[\text{influent}] - [\text{effluent}]}{[\text{influent}]}$$

"Consistent Removal" shall mean the average of the lowest six removals recorded during the 12 sampling days.

Calculation of revised discharge goals. Revised discharge goals for a specific pollutant shall be derived by use of the following formula:

$$y = x/(1 - r)$$

where:

x = the pollutant discharge limit specified in the categorical standard

r = removal credit for the pollutant, the “consistent removal” percentage

y = revised discharge limit for the specified pollutant.

### **Allowance for Pollutants in Intake Water**

The Categorical Pretreatment Standard for the discharge of a specific pollutant to the FOTW may be increased because the pollutant is in the user’s intake water. The amount of the increase may be up to, but not exceed, the amount that is in the intake water. For this adjustment to be made, the following conditions, stated in 40 CFR 403.15, must be met:

1. The Industrial User must demonstrate that the control system it proposes or uses would meet the Standards if the pollutants were not in the intake water.
2. Credit for generic pollutants (such as BOD, TSS, and Oil and Grease) are granted if the generic pollutant concentrations are essentially the same in the user’s intake and discharge.
3. The intake water is drawn from the same body of water as that into which the FOTW discharges. This requirement may be waived if no environmental degradation will result.
4. The applicable categorical pretreatment standards contained in 40 CFR subchapter N specifically provide that they shall be applied on a net basis (i.e., adjusted to reflect credits).
5. The Industrial User has received from the USEPA a variance from categorical pretreatment standards for fundamentally different factors.

The procedures and criteria for obtaining a variance from the USEPA are described in 40 CFR 403. It is unlikely that an Army industrial facility would pursue such a variance, but it would be pursued on the DA level. Details for obtaining this change to the categorical standards will not be provided here.

## 5 Monitoring

**Pretreatment Program Requirement:** Each facility is required to demonstrate compliance with the discharge standards at least twice a year. This includes reporting the nature and concentration of pollutants and average daily and maximum daily flow rates. The frequency of reporting for an individual facility may be increased if the user/facility has a history of noncompliance or for any other reason that the installation feels is necessary. These regulations are found in 40 CFR 403.12(e) for categorical pretreatment standards, and 40 CFR 403.12 (h) for users not subject to categorical pretreatment standards:

403.12(e) "Periodic reports on continued compliance. (1) Any Industrial User subject to a categorical Pretreatment Standard, after the compliance date of such Pretreatment Standard, or, in the case of a New Source, after commencement of the discharge into the (*Treatment Works*), shall submit to the [Pretreatment Program Manager] during the months of June and December, unless required more frequently in the Pretreatment Standard or by the [Pretreatment Program Manager] or the Approval Authority, a report indicating the nature and concentration of pollutants in the effluent which are limited by such categorical Pretreatment Standards. In addition, this report shall include a record of measured or estimated average and maximum daily flows for the reporting period for the Discharge reported in paragraph (b)(4) of this section except that the [Pretreatment Program Manager] may require more detailed reporting of flows. At the discretion of the [Pretreatment Program Manager] and in consideration of such factors as local high or low flow rates, holidays, budget cycles, etc., the [Pretreatment Program Manager] may agree to alter the months during which the above reports are to be submitted."

403.12(h). "Reporting requirements for Industrial Users not subject to categorical Pretreatment Standards. The [Pretreatment Program Manager] shall require appropriate reporting from those Industrial Users with discharges that are not subject to categorical Pretreatment Standards. Significant Noncategorical Industrial Users shall submit to the [Pretreatment Program Manager] at least once every 6 months (on dates specified by the [Pretreatment Program Manager]) a description of the nature, concentration, and flow of the pollutants required to be reported by the [Pretreatment Program Manager]."

Note that, at most installations, the Pretreatment Program Manager will assume responsibility for some or all monitoring.

**Worksheet 5-1: Monitoring**

Reference: 403.12. The following monitoring information should be completed for each Significant Industrial User two times per year.

- a. Facility name:
- b. Building number:
- c. Operator name and telephone number:
- d. For each regulated process stream at this facility, enter the average daily and maximum daily flows:

Process Stream	Average Daily Usage (gal/day)	Maximum Daily Flow (gpm)

- e. Are process streams at this facility combined with other waste streams prior to pretreatment?  
 Yes  No

- f. If yes, enter the average daily usage and maximum daily flows for these waste streams in the spaces below:

Process Stream	Average Daily Flow (gal/day)	Maximum Daily Flow (gal/day)

- g. Samples shall be taken to measure pollutants of concern. At each location where pH, cyanide, total phenols, oil and grease, sulfide, or volatile organics are identified as pollutants of concern, a minimum of four grab samples shall be taken. For other pollutants of concern, a minimum of one 24-hour composite sample shall be taken from each location as described in 5, above. For each sample, list the following:

Sample ID	Date	Time	Location

- h. For each sample listed above, list all pollutants found and the level of each.

Sample ID	Pollutant	Level	Methods Used for Analysis

## 6 Recordkeeping

**Pretreatment Protocol Requirement:** The Pretreatment Program Manager must keep a record of each activity that discharges to the FOTW. This record must include the activity's name, location, and type and quantity of pollutant discharged to the FOTW. Instructions for gathering this information are found in the "Facility Inventory" section of this manual (Chapter 2, p 16).

The Pretreatment Program Manager must formally document all industrial discharges to the FOTW. Records must be kept of all sampling and monitoring activities (as described in the "Monitoring" section of this manual) conducted at either the discharging activities or the FOTW. For each sample, the following information must be recorded:

The worksheets in the previous sections of this manual are sufficient records once they have been completely filled out according to the instructions. The Pretreatment Program Manager must keep these records at least 3 years. This period of retention shall be extended during the course of any regulatory action or litigation regarding an Industrial User or FOTW or when requested by any Federal, State, or regional regulator. The USEPA may request copies of these records.

### 403.12(o). Record-keeping requirements.

For any Industrial User and FOTW subject to the reporting requirements established in this section [the Pretreatment Program Manager] shall maintain records of all information resulting from any monitoring activities required by this section. Such records shall include for all samples:

- The date, exact place, method, and time of sampling and the names of the person or persons taking the samples;
- The dates analyses were performed;
- Who performed the analyses;
- The analytical techniques/methods used; and
- The results of such analyses.

[Note that §403.12(i) says that annual reports must be submitted to regulatory agencies. The Department of the Army is currently negotiating with the USEPA to waive this requirement for Army facilities.]

## 7 Notifications

**Pretreatment Program Requirement:** In the event of a sudden change in industrial processes, a spill, or other emergency, the discharging activity must notify the FOTW, and, under certain circumstances, notify the appropriate regulatory agency.

These situations are spelled out in various sections of 40 CFR 403:

- 1) Ref: §403.8(f)(2)(v). If the FOTW decides that a slug control plan is needed, the plan shall contain procedures for immediately notifying the FOTW of slug discharges, with procedures for follow-up written notification within 5 days.
- 2) Ref: §403.12(j). All Industrial Users shall promptly notify the (FOTW) in advance of any substantial change in the volume or character of pollutants in the discharge, including any listed or characteristic hazardous wastes.
- 3) Ref: §403.12(p)(1). The industrial user shall notify the (FOTW), the USEPA Regional Waste Management Division Director, and State hazardous waste authorities in writing of any discharge into the FOTW of a substance, which, if otherwise disposed of, would be a hazardous waste under 40 CFR 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR 261, the USEPA hazardous waste number, and the type of discharge (continuous, batch, or other). If the industrial user discharges more than 100 kg of such waste per calendar month to the (FOTW), the notification shall also contain the following information to the extent such information is known and readily available to the industrial user: An identification of the hazardous constituents contained in the wastes, an estimation of the mass and concentration of such constituents in the waste stream discharged in during that calendar month, and an estimation of the mass of constituents in the waste stream expected to be discharged during the following 12 months. All notifications must take place within 180 days of the effective date of this rule. Industrial users who commence discharging after the effective date of this

rule shall provide the notification no later than 180 days after the discharge of the listed characteristic hazardous waste. Any notification under this paragraph need be submitted only once for each hazardous waste discharged. However, notifications of changed discharges must be submitted under 40 CFR 403.12(j). The notification requirement in this section does not apply to pollutants already reported under the self-monitoring requirements of 40 CFR 403.12 (b), (d), and (e) (see Chapter 5, p 30).

4) §403.12(p)(3). In the case of any new regulations under section 3001 of RCRA identifying additional characteristics of hazardous waste (or) listing any additional substance as a hazardous waste, the industrial user must notify the (FOTW), the USEPA Regional Waste Management Division Director, and State hazardous waste authorities of the discharge of such substance within 90 days of the effective date of such regulations.

5) §403.12(p)(2). Dischargers are exempt from the requirements of paragraph (p)(1) of this section during a calendar month in which they discharge no more than 15 kg of hazardous wastes, unless the wastes are acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e). Discharge of more than 15 kg of nonacute hazardous wastes in a calendar month, or of any quantity of acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e), requires a one-time notification.

6) §403.12(p)(4). In the case of any notification made under paragraph (p) of this section, the industrial user shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

7) §403.16(c). Conditions necessary for a demonstration of upset. An Industrial User who wished to establish the affirmative defense of Upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

§403.16(c)(3) The Industrial User has submitted the following information to the (FOTW) and Pretreatment Program Manager within 24 hours of becoming aware of the Upset (if this information is provided orally, a written submission must be provided within 5 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.

8) §403.17(c)(1). If an Industrial User knows in advance of the need for a bypass, it shall submit prior notice to the (FOTW), if possible at least 10 days before the date of the bypass.

§403.17(c)(2) An Industrial User shall submit oral notice of an unanticipated bypass that exceeds applicable Pretreatment Standards to the (FOTW) within 24 hours from the time the Industrial User becomes aware of the bypass. A written submission shall also be provided within 5 days of the time the Industrial User becomes aware of the bypass. The written submission shall contain a description of the bypass and its cause; the duration of the bypass, including exact dates and times; and, if the bypass has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduced, eliminate, and prevent reoccurrence of the bypass. The Pretreatment Program Manager may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

Under certain circumstances (as discussed in Chapter 2 and 8 of this protocol), a slug control plan is necessary. As part of that plan, the industrial user must notify the FOTW immediately after a slug discharge. Formal written notification must also be given to the FOTW.

The user must also notify the FOTW if the volume or the pollutants in the discharge from your activity substantially change. This notification must be ahead of time if possible.

The user must notify the FOTW, State hazardous waste regulators, and the USEPA regional director if they are discharging any pollutant that the USEPA considers a hazardous waste (per 40 CFR 261). You must tell them which pollutants, the frequency discharged, and the quantity to be released in the next 12 months. If any new pollutants that you discharge are added to the USEPA's list in the future, you must notify the same agencies. Pollutants that the USEPA considers "acute hazardous wastes" (per 40 CFR 261.30(d)) must be reported in any quantity. Activities can discharge up to 15 kg/month of nonacute hazardous

wastes without notifying the agency. If you do make a notification for a specific pollutant as described above, you must have a plan to reduce the discharge of that pollutant, where practical.

In the event of an upset condition, or a bypass of the industrial activity's pre-treatment plant, the FOTW must be immediately notified. This notification must be properly documented. The records must show that the activity notified the FOTW of the upset condition or bypass within 24 hours, followed up by formal written notification. You must tell the FOTW what was discharged and when; how long will it/did it last; and what you are doing to solve the problem and prevent it happening in the future.

## 8 Compliance Schedules

During the preparation and initial execution of an installation Pretreatment Program, the Program Manager must prepare schedules for achieving compliance with pretreatment regulatory requirements. Two schedules are required, one containing the steps for the preparation of the Pretreatment Plan, and the second schedule containing steps to achieve compliance with categorical Pretreatment Standards, where violations of those standards occur:

1. **Pretreatment Program Requirement:** Prepare a schedule for the development of the Pretreatment Program (Ref 40 CFR 403.12(k)).

This schedule will include dates for the commencement and completion of major events leading to the development and implementation of an FOTW Pretreatment Program. The major events included in the schedule generally correspond to the guidance set forth in this Protocol. The schedule of major events should include, but not be limited to:

- Preparation of the facility inventory (Chapter 2)
- Establishing discharge goals (Chapter 3)
- Establishing a monitoring program (Chapter 5)
- Preparing funding request documents (Chapter 9)
- Establishing Program responsibilities (Chapter 9)
- Establishing Program authority (Chapter 9)
- Preparing a Program organizational chart
- Determining manpower and funding requirements
- Establishing a training program.

2. **Pretreatment Program Requirement:** Prepare a schedule for meeting Categorical Pretreatment Standards at industrial facilities in noncompliance (Ref 40 CFR 403.12(c)).

The Pretreatment Program manager shall prepare a schedule for meeting Categorical Pretreatment Standards at facilities where initial discharge testing show noncompliance with those standards. The schedule shall contain dates for the commencement and completion of major events leading to meeting the applicable

categorical Pretreatment Standard. No increment in the schedule shall exceed 9 months. Major events in the schedule shall include, but not be limited to:

- Hiring a consultant
- Initiating pollution prevention measures
- (include significant events to accomplish pollution prevention)
- Initiating construction of additional pretreatment
- Prepare A106 and 1398 documents
- Contract with private design firm or Corps of Engineer District
- Complete preliminary plans
- Complete final plans
- Commence construction
- Complete construction
- Industrial facility coming into compliance.

## 9 Ensuring Compliance

The installation Pretreatment Program manager must include in the Program measures to ensure compliance with the Program. These measures include:

- establishing authority within the installation
- establishing responsibilities within the installation
- obtaining funding and/or manpower necessary to initiate and execute the program
- training
- where necessary, maintaining pretreatment performance.

### **Pretreatment Program Requirement: Establish Authority**

The Program shall be established by a directive from the Installation Commander (or his designee), naming and empowering a Pretreatment Program manager to establish a Pretreatment Program to comply with Federal, State, local, and Army (AR200-1) regulations. This directive shall be provided to all facilities or persons within the installation affected by the Program.

### **Pretreatment Program Requirement: Establish Responsibilities**

The Program shall include an organization chart of the FOTW and other personnel who will administer the Program. The chart shall establish responsibilities of specific individuals for carrying out all requirements of the Program. These responsibilities shall include signatory authority, if required by State or local law. Requirements to be assigned to personnel include, but are not limited to:

- Managing the Program
- Preparation and updating the Facility Inventory
- Establishment (and modification) of discharge goals
- Maintaining a monitoring program, including sampling and analysis
- Recordkeeping
- Public notifications
- Preparation of an annual report

- Updating the Pretreatment Program document
- Preparing funding request documents
- Operation and maintenance of pretreatment structures, including scheduling
- Establishing and executing training programs.

Also, each significant industrial user must designate persons responsible for operation of the industrial processes, operation of the pretreatment, and compliance with the Program discharge goals for that user.

### **Pretreatment Program Requirement: Obtain Resources Necessary To Execute the Program**

Funding request and planning documents, such as the A106, shall be prepared to obtain the resources necessary to establish and execute the program (see Sect 1-5). A106 funding requests may include, but not be limited to:

- Surveys of industrial facilities and preparation of the Facility Inventory.
- Upgrades to pretreatment
- Implementation of pollution prevention measures
- Engineering studies
- Program initiation costs, including temporary funding for sampling, analysis, and pretreatment O&M.

It may be necessary to initiate requests to augment the O&M/BASOPS funding for the installation to cover additional sampling and analysis to monitor discharge goals, provide additional O&M to pretreatment structures, and provide additional manpower to manage/execute the Program.

### **Training**

*Training of affected personnel is not required by regulation.* However, training should be an integral part of any Army installation Pretreatment Program. At most installations, environmental divisions or directorates already execute some type of training program for the military and civilian tenants. It is recommended that these existing programs be augmented to include instruction to enhance awareness and compliance with pretreatment regulation.

## 10 Provisions To Update Program

Changes such as the addition or deletion of users or changes in discharge limits can greatly affect the influent to the FOTW. Therefore, it is recommended that the installation update their pretreatment program annually. Areas to look for changes when preparing an update to the pretreatment program are:

1. *The addition of new users or facilities.* If new users or facilities exist, the installation should update the list of sources worksheet and prepare new facility information worksheets. Both of these are found in the “Facilities Inventory” section (p 16) of this manual.
2. *The removal of users or facilities.* If a significant industrial user is no longer discharging to the FOTW, that user may be removed from the list of sources worksheet. This is found in the “Facilities Inventory” section of this manual.
3. *Change in mission.* If a significant industrial user adds or changes a process or operation, the installation should update the facility information worksheets for that user. These are found in the “Facility Inventory” section (p 16) of this manual.
4. *Changes in discharge limits/requirements.* If the installation determines that it must set more restrictive discharge limits or requirements, it should update those limits according to the “Establish Discharge Goals/Requirements” section (p 21) of this manual.
5. *New categorical standards.* If Subpart N of 40 CFR is changed to include new types of industrial facilities, the installation should review user information to determine if it is affected by the change. If so, the installation should update the information in the “Establishing Discharge Goals/Requirements” section (p 21) of their program.
6. *Changes in production.* If an industrial user significantly increases or decreases production, the installation should update the facility information worksheets and the worksheets found in the “Establish Discharge Goals/Requirements” section (p 21) of this manual.
7. *Pretreatment structure upgrades.* The upgrade of an existing pretreatment structure, or the addition of a new pretreatment structure at an existing industrial source will impact both the site information data sheets and the eventually the discharge data. It may be beneficial to update general discharge limits.

## 11 FOTWs With Flow $\leq$ 5 MGD

The program requirements specified in the previous sections of this manual were for FOTWs with a total design flow greater than 5 million gal per day (MGD). This section specifies requirements for those FOTWs with flow less than or equal to 5 MGD.

For those FOTWs with a total design flow of 5 MGD or less, the Military Services headquarters or USEPA may recommend adherence to the standards for FOTWs with flow greater than 5 MGD, which have been previously described in this manual. This recommendation may be made based on the nature or volume of the industrial influent, upsets in treatment processes at the FOTW, violations of FOTW effluent limitations, contamination of municipal sludge, or other when other circumstances warrant to prevent interference with the FOTW or its pass through.

To ensure the adequacy of pretreatment programs on DoD installations, for those FOTWs with a design flow of 5 MGD or less that are not required to comply with the standards described in the previous chapters, the following requirements will be implemented:

1. Identify and locate each facility that might be subject to the FOTW pretreatment program. Instructions for preparing this information can be found in the “Introduction” (p 5) and “Chapter 1 Facility Inventory” (p 16) sections of this manual.
2. Identify the character and volume of pollutants contributed to the FOTW by the facility identified in 1 above. Procedures for this can be found in the “Facility Inventory” section of this manual.
3. Investigate instances of noncompliance with the general and categorical pretreatment standards and requirements as indicated by surveillance activities. Categorical limits can be found in Appendix A of this manual.

The installation, in the process of administering the pretreatment program described in this section for the various industrial process waste streams it monitors, will incorporate pollution prevention activities to reduce the volume or toxicity of the wastes it is receiving.

## Acronyms and Abbreviations

AEC	Army Environmental Center
AMC	Army Materiel Command
BOD <sub>5</sub>	Biochemical Oxygen Demand
CFR	Code of Federal Regulations
COD	Chemical Oxygen Demand
CWA	Clean Water Act
DoD	Department of Defense
USEPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FFCA	Federal Facility Compliance Act
FOTW	Federally Owned Treatment Works
GOCO	Government-Owned, Contractor-Operated
MACOM	Major Command (Army)
MDW	Military District of Washington
MGD	Million Gallons per Day
NPDES	National Pollutant Discharge Elimination System
POTW	Publicly Owned Treatment Works
PSES	Pretreatment Standards for Existing Sources

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PSNS	Pretreatment Standards for New Sources
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
SPDES	State Pollutant Discharge Elimination System
SIC	Standard Industrial Classification
STP	Sewage Treatment Plant
TTO	Total Toxic Organics
TSS	Total Suspended Solids
USC	United States Code

## Glossary

**Approval Authority** - The Director in an NPDES State with an approved State pretreatment program and the appropriate Regional Administrator in a nonplus State or NPDES State without an approved State pretreatment program. This is not established for FOTWs.

**Average Daily Flow** - A reasonable measure of the average daily flow over a 30-day period.

**Bioassay** - The exposure of test organisms to a concentration of an effluent or toxicant within a predefined time under controlled conditions to determine an identifiable effect.

**BOD<sub>5</sub>** - Five day biochemical oxygen demand.

**Bypass** - The intentional diversion of waste streams from any portion of an Industrial User's treatment facility.

**BTEX** - Benzene, Toluene, Ethylbenzene, and Xylene.

**Categorical Pretreatment Standards** - National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories. Established as separate regulations under the appropriate subpart of 40 CFR chapter I, subchapter N. These standards, unless specifically noted otherwise, are in addition to all applicable pretreatment standards and requirements.

**COD** - Chemical Oxygen Demand.

**Composite Sample** - Sample composed of two or more discrete samples.

**Control Authority** - The Treatment Works if the Treatment Works' submission for its pretreatment program (§§403.3(t)(1)) has been approved in accordance with the requirements of §403.11; or the Approval Authority if the submission has not been approved.

**CWA** - Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. 1251, et seq.

**Discharge or Indirect Discharge** - The introduction of pollutants into a Treatment Works from any nondomestic source regulated under section 307(b), (c) or (d) of the CWA.

**Domestic Sources** - Wastewater contributed to the sanitary sewer from strictly residential areas.

**FOTW or Federally Owned Treatment Works** - A DoD wastewater treatment works qualifies for FOTW status under RCRA Section 3023, 42 USC Section 6939e, if it meets all of the following requirements:

The treatment works is owned or operated by the DoD;

The majority of the influent received at the treatment works is domestic sewage from such sources as housing areas, bachelor officer quarters, bachelor enlisted quarters, recreational areas, and sanitary sewage from workplaces; and

The effluent of the treatment works is subject to a permit issued pursuant to Section 402 of the CWA.

**gpm** - Gallons per minute.

**Grab Sample** - Sample which is taken on a one time basis without regard to flow or time.

**Industrial User** - A source of Indirect Discharge; any facility discharging wastewater which is not of comparable strength, origin and/or flow of typical domestic sources.

**Interference** - A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(1) Inhibits or disrupts the Treatment Works, its treatment processes or operations, or its sludge processes, use or disposal; and

(2) Therefore is a cause of a violation of any requirement of the NPDES permit or of the prevention of sewage sludge use or disposal in compliance with Section 503 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and

Recovery Act (RCRA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

**mg/L** - Milligrams per liter

**New Source** - Any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed Pretreatment Standards under section 307(c) of the CWA which will be applicable to such source if such Standards are thereafter promulgated in accordance with that section, provided that:

(1) The building, structure, facility, or installation is constructed at a site at which no other source is located; or

(2) The building, structure, facility, or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or

(3) The production or wastewater generating processes of the building, structure, facility, or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source should be considered.

**NPDES** - National Pollutant Discharge Elimination System.

**Pass Through** – A discharge which exits the Treatment Works 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 NPDES permit.

**Pretreatment** - The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Treatment Works. The reduction or alteration may be obtained by physical, chemical or biological processes, process changes or by other means, except as prohibited by §§403.6(d).

**Pretreatment Standard** or **National Pretreatment Standard** - Any regulation containing pollutant discharge limits promulgated by the USEPA in accordance with section 307 (b) and (c) of the CWA, which applies to Industrial

Users. This term includes prohibitive discharge limits established pursuant to §403.5.

**POTW or Publicly Owned Treatment Works** - A treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes 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. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the discharges to and the discharges from such a treatment works.

**POTW Treatment Plant** - That portion of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste.

**RCRA** - Resource Conservation and Recovery Act.

**Significant Industrial User or SIU** -

(1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR part 403.6 and 40 CFR chapter I, subchapter N; and

(2) Any other industrial user that: discharges an average of 25,000 gal per day or more of process wastewater to the Treatment Works (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or is designated as such by the Pretreatment Program Manager as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the Treatment Works' operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR part 403.8(f)(6)).

**Total Toxic Organics** - The summation of the organic compounds listed in appendix A which are present in quantities greater than 0.01 mg/L.

**Treatment Works** - A wastewater collection and treatment system that primarily accepts domestic wastewater.

**TSS** - Total suspended solids.

**Upset** - An exceptional incident in which there is unintentional and temporary noncompliance with the discharge standards established by this regulation because of factors beyond the reasonable control of the industrial user.

**WWTP or Wastewater Treatment Plant** - Treatment facility which receives both domestic and industrial wastewater. Can also be referred to as POTW or FOTW treatment plant, or a sewage treatment plant (STP).

**Whole-Effluent Toxicity (WET)** – Testing which involves performing bioassays using two or more aquatic species as test organisms to determine any acute or chronic toxicity, as defined by test results. The USEPA has published methods for measuring the acute and chronic toxicity of effluents and receiving water to freshwater, marine, and estuarine organisms.

## References

Aberdeen Proving Ground (APG) Regulation No. 200-41 "Wastewater Discharge Management" (APG, MD, 20 May 1996).

Code of Federal Regulations, Chapter 40, Part 403 (40 CFR 403).

*FOTW Position/Comment Paper – Phase 1 and 2*, Final Report prepared for the U.S. Army Environmental Center (AEC), APG, MD (Horne Engineering Services, Inc, September 30, 1997).

*U.S. Army Wastewater Pretreatment Programs Development Protocol*, prepared for AEC (U.S. Army Center for Health Promotion and Preventive Medicine, undated).

*Military Handbook (for) Wastewater Pretreatment Design and Control*, Draft MIL-HDBK-1005/17 (Headquarters, Department of the Army [HQDA], 22 May 1998).

*Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program*, U.S. Environmental Protection Agency (EPA)-833-B-87-202 (1987).

*Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors*, EPA-812-B-92-001 (June 1992).

U.S. Army Environmental Center report: Sewage Sludge (Biosolids) Management Manual for Army Facilities (AEC, APG, MD, 26 April 1996).

*The U.S. Army EPR Project Catalog*, which is a periodical publication prepared by the Special Programs Branch at AEC. Copies of the catalog may be obtained by calling the EPR Action Officer, AEC Special Programs Branch at 410-436-7102. The catalog can also be downloaded from DENIX at:

<http://denix.cecer.army.mil/denix/DOD/Interaction/Reporting/EPR/Catalog/catalog.html>.

# Appendix A: Discharge Limits Established by Categorical Pretreatment Standards

## 1. ELECTROPLATING

### 40 CFR Part 413 – Electroplating Point Source Category

NOTE: Part 413 applies only to “job shops” in existence since 7 September 1997. Job shops are defined as those facilities that in a calendar year do not own more than 50 percent (by surface area) of the material undergoing metal finishing. Electroplating facilities that do not meet that criteria are covered by 40 CFR 433 that regulates metal finishing.

Part 413 limits the pollutants in process wastewater from the plating of metal with copper, nickel, chromium, zinc, tin, lead, cadmium, iron, aluminum, or any combination these. Part 413 establishes discharge limits for each of six types of electroplating subcategories:

1. Electroplating of common metals
2. Electroplating of precious metals
3. Anodizing
4. Coatings processes – chromating, phosphating, or immersion plating
5. Chemical etching and milling
6. Electroless plating.

Discharge limits are placed on some or all of the following pollutants in the process wastewater for the above facilities: Ag; CN,A (amenable to chlorination); CN,T (total); Cu; Ni; Cr; Zn; Pb; Cd; Total Metals; Total Suspended Solids; and pH. Limits are also established for Total Toxic Organics (TTO). A list of these organic chemicals is presented in Section 413.02 “General Definitions.”

Discharge limits are expressed in terms of mass per volume (usually mg/L) and/or mass per area of metal electroplated (usually mg/m<sup>2</sup>). Limits are expressed as the maximum for any 1 day, and as the average of daily values for 4 consecutive monitoring days.

Because inclusion of all discharge limits for this subcategory would be quite lengthy, and because application of this subcategory is somewhat limited, not all specific discharge parameters are included in this report. Facilities having electroplating processes should refer to 40 CFR Section 413.

## 2. INORGANIC CHEMICALS

40 CFR Part 415 — Inorganic Chemicals Manufacturing Point Source Category.

Sixty-seven chemicals are listed in Subparts A through BO in Part 415. Twenty of these chemicals are designated as [Reserved], i.e., no pretreatment criteria have been established for them. Because the information in this regulation is so extensive, and because there is limited application to most Army facilities, pretreatment criteria for inorganic chemicals manufacturing will not be included here. Army facilities which manufacturer the chemicals in the following list of subcategories should refer to 40 CFR Part 415.

- A. Aluminum Chloride
- B. Aluminum Sulfate
- C. Calcium Carbide
- D. Calcium Chloride
- E. Calcium Oxide
- F. Chlor-alkali (Chlorine and Sodium or Potassium Hydroxide)
- H. Hydrofluoric Acid
- I. Hydrogen Peroxide
- K. Potassium Metal
- L. Potassium Dichromate
- M. Potassium Sulfate
- N. Sodium Bicarbonate
- P. Sodium Chloride
- Q. Sodium Dichromate and Sodium Sulfate
- T. Sodium Sulfite
- V. Titanium Dioxide
- W. Aluminum Fluoride
- X. Ammonium Chloride

AA. Borax  
AB. Boric Acid  
AC. Bromine  
AD. Calcium Carbonate  
AE. Calcium Hydroxide  
AG. Carbon Monoxide and By-product Hydrogen  
AH. Chrome Pigments  
AI. Chromic Acid  
AJ. Copper Salts  
AL. Ferric Chloride  
AN. Fluorine  
AO. Hydrogen  
AP. Hydrogen Cyanide  
AQ. Iodine  
AR. Lead Monoxide  
AS. Lithium Carbonate  
AU. Nickel Salts  
AW. Oxygen and Nitrogen  
AX. Potassium Chloride  
AY. Potassium Iodide  
BA. Silver Nitrate  
BB. Sodium Bisulfate  
BC. Sodium Fluoride  
BH. Stannic Oxide  
BK. Zinc Sulfate  
BL. Cadmium Pigments  
BM. Cobalt Salts  
BN. Sodium chlorate  
BO. Zinc Chloride

Note: 40 CFR 457 — “Explosives Manufacturing Point Source Category” applies to point source discharge (not pretreatment) of effluent from *commercial* manufacture of explosives, including load, assembly, and pack (LAP) plants.

### 3. METAL FINISHING

#### 40 CFR Part 433 — Metal Finishing Point Source Category

Part 433 applies to the following six metal finishing operations: (1) Electroplating, (2) Electroless Plating, (3) Anodizing, (4) Coating (chromating, phosphating, and coloring), (5) Chemical Etching and Milling, and (6) Printed Circuit Board Manufacture — if they are not covered by Part 413 Electroplating. If any of those six operations are present, then Part 433 also applies to the following 40 process operations: Cleaning, Machining, Grinding, Polishing, Tumbling, Burnishing, Impact Deformation, Pressure Deformation, Shearing, Heat Treating, Thermal Cutting, Welding, Brazing, Soldering, Flame Spraying, Sand Blasting, Other Abrasive Jet Machining, Electric Discharge Machining, Electrochemical Machining, Electron Beam Machining, Laser Beam Machining, Plasma Arc Machining, Ultrasonic Machining, Sintering, Laminating, Hot Dip Coating, Sputtering, Vapor Plating, Thermal Infusion, Salt Bath Descaling, Solvent Degreasing, Paint Stripping, Painting, Electrostatic Painting, Electropainting, Vacuum Metalizing, Assembly, Calibration, Testing, and Mechanical Plating.

Part 433 does NOT apply to Metal Molding and Casting, which is covered by Part 464 (described below).

Because inclusion of all discharge limits for this subcategory would be quite lengthy, and because application of this subcategory is somewhat limited, specific discharge parameters are not included in this report. Facilities having metal finishing processes should refer to 40 CFR Part 433.

### 4. METALS MOLDING AND CASTING

#### 40 CFR Part 464 — Metal Molding and Casting Point Source Category.

This regulation is divided into four Subparts:

Subpart A — Aluminum Casting Subcategory

Subpart B — Copper Casting Subcategory

### Subpart C — Ferrous Casting Subcategory

### Subpart D — Zinc Casting Subcategory.

Each subpart contains effluent limitations for the various operations involved in metal molding and casting. For each operation, separate limitations are listed for the degree of reduction achievable using the best practicable control technology (BPT) currently available, and for the degree of reduction economically achievable using the best available technology (BAT). Those operations are as follows:

Casting Cleaning Operations

Casting Quench Operations

Die Casting Operations

Dust Collection Scrubber Operations

Grinding Scrubber Operations

Investment Casting

Melting Furnace Scrubber Operations

Mold Cooling Operations

Because inclusion of all discharge limits for this subcategory would be quite lengthy, and because application of this subcategory is somewhat limited, specific discharge parameters are not included in this report. Facilities having metal molding and casting processes should refer to 40 CFR Part 464.

## Appendix B: Development of Technically Based Local Limits

*Note: This appendix has been taken in its entirety from the (draft) Military Handbook (for) Wastewater Pretreatment Design and Control, MIL-HDBK-1005/17 (22 May 1998).*

Overview. The purpose of this section is to provide guidance for the development of technically based local limits to control pollutant discharges from nondomestic military sources FOTWs. For military installations that discharge to a POTW, the guidance will be useful in assessing whether local limits developed by the POTW are reasonable and defensible.

The MAHL Approach. A schematic diagram of the development process for local limits based on the maximum allowable headworks loading approach is given in **Figure 1**. The process is further described in the following subsections.

Regulatory Criteria. The regulatory guidelines and criteria that serve as the technical basis for developing local limits encompass process inhibition, biosolids disposal, and effluent disposal.

3.4.1.1 Process Inhibition. Any biological treatment process is potentially subject to toxic inhibition, including the activated sludge process, the trickling filter process, and the anaerobic digestion process. Threshold inhibition levels for these processes are given in the previously referenced USEPA-833-B-87-202 and are summarized in **Table 4**. The aerobic digestion process is not included in this table because it apparently is rarely, if ever, subject to toxic inhibition as long as the biological process feeding it is free of toxicity.

3.4.1.2 Biosolids Disposal. Allowable pollutant concentrations in biosolids disposed by a treatment plant depend on the final use or disposal destination of the solids. **Table 5** presents the allowable pollutant concentrations for land-spreading and surface disposal of biosolids, based on Federal regulations (40 CFR 503). State requirements generally follow the Federal regulations, but may be more stringent. For lagoon treatment systems, biosolids regulations would not apply unless sludge is removed from the lagoons for disposal.

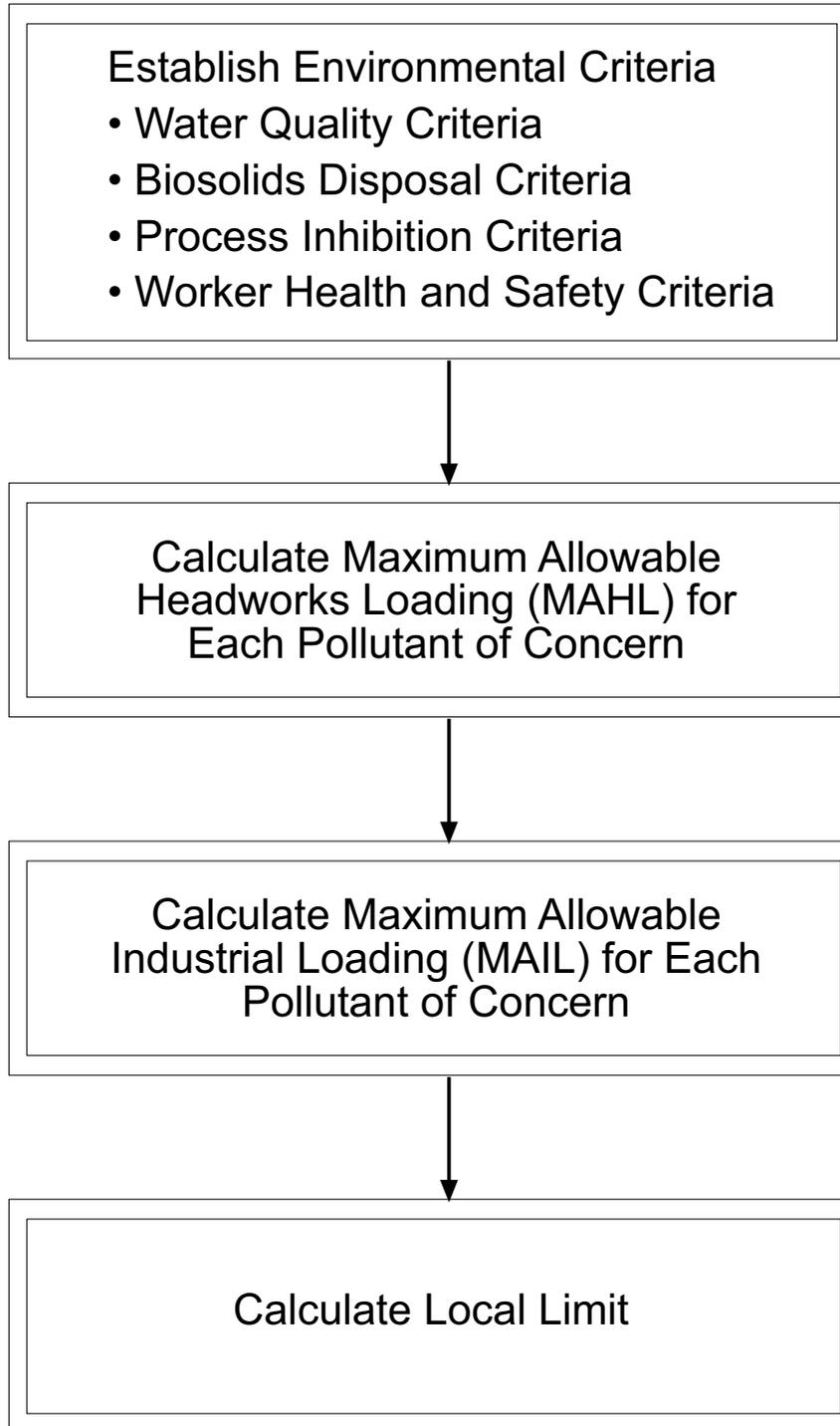


Figure 1. Schematic for development of local limits.

3.4.1.3 Effluent Discharge. Allowable pollutant concentrations in treatment system effluent are sometimes specified in the system's NPDES permit. If not, they may be derived from applicable receiving water quality criteria. Table 6 presents the USEPA's water quality criteria under

Table 4. Toxic pollutant inhibition threshold levels.

Pollutant	Activated Sludge	Nitrification	Trickling Filters	Anaerobic Digestion
Arsenic	0.1	1.5	—	1.6
Cadmium	1-10	5.2	—	20
Chromium (total)	1-100	0.25-1.9	1-100	—
Chromium (III)	10-50	—	3.5-67.6	130
Chromium (VI)	1	1-10	—	110
Copper	1	0.05-0.48	—	40
Lead	1	0.5	—	340
Nickel	1	0.25-5	—	10-36
Zinc	0.3-10	0.08-0.5	—	400
Mercury	0.1	—	—	—
Silver	0.25-5	—	—	13-65
Cyanide	0.1-5	0.34-0.5	30	1-100
Acrylonitrile	—	—	—	5
Anthracene	500	—	—	—
Benzene	100	—	—	—
Carbon Tetrachloride	—	—	—	2-159.4
Chlorobenzene	—	—	—	0.96-3
Chloroform	—	10	—	1-16
2-Chlorophenol	5-200	—	—	—
1,2 Dichlorobenzene	5	—	—	0.23-3.8
1,3 Dichlorobenzene	5	—	—	—
1,4 Dichlorobenzene	5	—	—	1.4-5.3
2,4 Dichlorophenol	64	64	—	—
2,4 Dinitrophenol	—	150	—	—
2,4 Dimethylphenol	40-200	—	—	—
2,4 Dinitrotoluene	5	—	—	—
1,2 Diphenylhydrazine	5	—	—	—
Ethylbenzene	200	—	—	—
Hexachlorobenzene	5	—	—	—
Pentachlorophenol	0.95-150	—	—	0.2-1.8
Phenanthrene	500	—	—	—
Phenol	50-200	4-10	—	—
Tetrochloroethylene	—	—	—	2-
Trichloroethylene	—	—	—	1-20
Toluene	200	—	—	—
2,4,6 Trichlorophenol	50-100	—	—	—
Surfactants	100-500	—	—	—

Source: EPA-833-B-87-202, Tables 3-2 through 3-5, EPA Office of Water, December 1987.  
Note: All units are in mg/L.



Table 5. USEPA sludge pollutant limitations for land application.

Pollutant	Condition 1a Ceiling Concentration (mg/kg)	Condition 2b		Condition 3c Maximum Concentrations (mg/kg)	Condition 4d		Condition 5e Maximum Concentration (mg/kg)
		Alternate 1 Maximum Cumulative Loads (kg/ha)	Alternate 2 Maximum Concentrations (mg/kg)		Alternate 1 Maximum Concentrations (mg/kg)	Alternate 2 Maximum Annual Pollutant Loading Rates (kg/ha/yr)	
Arsenic	75	41	41	41	41	2.0	73
Cadmium	85	39	39	39	39	1.9	—
Chromium	00	00	00	00	00	00	600
Copper	4,300	1,500	1,500	1,500	1,500	75	—
Lead	840	300	300	300	300	15	—
Mercury	57	17	17	17	17	0.85	—
Molybdenum	75	—	—	—	—	—	—
Nickel	420	420	420	420	420	21	420
Selenium	100	100	36	100	36	5.0	—
Zinc	7,500	2,800	2,800	2,800	2,800	140	—

a Condition 1: Bulk sewage sludge or sewage sludge sold or given away in a bag or container [40 CFR 503.13(a)(1) - Table 1].  
b Condition 2: Bulk sewage sludge applied to agricultural land, forest, a public contact site, or a reclamation site [40 CFR 503.13(a)(2) - Tables 2 and 3].  
c Condition 3: Bulk sewage sludge applied to a lawn or home garden [40 CFR 503.13(a)(3) - Table 3].  
d Condition 4: Sewage sludge sold or given away in a bag or other container [40 CFR 503.13(a)(4) - Tables 3 and 4].  
e Condition 5: Sewage sludge placed in a surface disposal site (sludge-only landfill) [40 CFR 503.13(a)(1) - Table 6].  
Note: Maximum concentrations are less than those shown if distance from sludge unit to property line is less than 150 meters.

Table 6. Water quality criteria for selected pollutants.

Pollutant	Freshwater		Saltwater		Human Health	
	Criterion Maximum Concentration (µg/L)	Criterion Continuous Concentration (µg/L)	Criterion Maximum Concentration (µg/L)	Criterion Continuous Concentration (µg/L)	Criterion Maximum Concentration (µg/L)	Criterion Continuous Concentration (µg/L)
Antimony					14	4,300
Arsenic	360	190	69	36	0.018	0.14
Cadmium	3.9 a	1.1 a	43	9.3	16	170
Chromium (III)	1,700 a	210 a	—	—	33,000	670,000
Chromium (VI)	16	11	1,100	50	170	3,400
Copper	18 a	12 a	2.9	2.9	—	—
Lead	82 a	3.2 a	220	8.5	—	—
Mercury	2.4	0.012	2.1	0.025	0.14	0.15
Nickel	1,400 a	160 a	75	8.3	610	4,600
Selenium	20	5	300	71	—	—
Silver	4.1 a	—	2.3	—	—	—
Thallium	—	—	—	—	1.7	6.3
Zinc	120 a	110 a	95	86	—	—
Cyanide	22	5.2	1	1	700	220,000
Benzene	—	—	—	—	1.2	71
Ethylbenzene	—	—	—	—	3,100	29,000
Methylene Chloride	—	—	—	—	4.7	1,600
Toluene	—	—	—	—	6,800	200,000
Pentachlorophenol	20 b	13 b	13	7.9	0.28	8.2
Phenol	—	—	—	—	21,000	4,600,000

Source: National Toxics Rule, *Federal Register*, December 22, 1992.

<sup>a</sup> Freshwater criteria are a function of total hardness; values shown correspond to a total hardness of 100 mg/L.

<sup>b</sup> Freshwater criteria are a function of pH; values shown correspond to a pH of 7.8.



Section 304(a) of the Clean Water Act for some key priority toxic pollutants. These criteria are applicable in states that have not developed their own water quality criteria and are the basis for the criteria developed and enforced individually by other states. Some differences in the values of individual parameters may exist from State to State.

The approach used to derive allowable treatment system effluent concentrations from water quality criteria also varies from State to State. The basic approach is to assume that the effluent must comply with the Criterion Maximum Concentrations (CMCs) at or near the point of discharge and comply with the Criterion Continuous Concentrations (CCCs) and Human Health Concentrations (HHCs) after dilution in a mixing zone. However, a number of different factors should be discussed with regulatory authorities in implementing this approach, including the following:

- a) Establishment of the dimensions of the mixing zone to which the CCCs and HHCs apply, or the dimensions of the zone of initial dilution (ZID), the smaller area within the mixing zone, to which the CMCs apply.
- b) If the discharge is to a flowing stream, determination of the low stream flow available for dilution.
- c) Determination of the bioavailability of the pollutants of concern, recognizing that some processes discharge heavy metals that are organically bound or otherwise not bioavailable. The USEPA and some states recognize and accept various approaches to account for metals bioavailability, including chemical translator ratios, bioassay water effects ratios, and significant indigenous species evaluations.
- d) Establishment of the hardness, pH, and chloride content of the receiving water, which impact the toxicity of some metals and hence the magnitude of some water quality criteria.
- e) Establishment of the background concentrations of pollutants in the receiving water; the lower the background concentration, the greater the allowable effluent discharge concentration.
- f) Consideration of the practical quantitative level of a pollutant in cases where the water quality criterion may actually be lower than USEPA's approved method detection limit for the pollutant.

3.4.1.4 Air Emissions. Hazardous air pollutants (HAPs) at wastewater treatment plants are regulated under the Federal Clean Air Act Amendments (CAAA) of 1990. Four titles under the CAAA of 1990 may apply to WWTPs, but only one of these, Title III, has potential ramifications on the development and setting of local limits. Title III requires implementation of maximum achievable control technology (MACT) for major sources of HAPs at WWTPs. Major sources are defined as those that have the potential to emit at least 10 tons/year of any individual HAP, or 25 tons/year total HAPs. The USEPA has designated 189 compounds and elements as Federal HAPs, but only about 26 of these have been detected at WWTPs. For practical purposes, the conventional priority pollutant scans address the HAPs of concern at WWTPs.

The USEPA has issued guidance to assist in determining whether a WWTP is a major source of HAPs and therefore subject to implementation of MACT. Under this guidance, a WWTP would be subject to installing MACT if it met two of the following three criteria:

1. It has a capacity greater than 50 MGD
2. It accepts more than 30 percent industrial waste contribution
3. It has influent priority pollutant volatile organic chemical (VOC) concentrations greater than 5 mg/L.

Few FOTWs and POTWs are expected to exceed these criteria and thus be subject to implementation of MACT. However, under Section 112(r) of Title III, even nonmajor sources of HAPs must prepare a Risk Management Plan if they use or store acutely hazardous material in quantities above specified threshold limits. The threshold limits are 2,500 lb for chlorine, 5,000 lb for sulfur dioxide, and 10,000 lb for ammonia and methane.

Pollutants of Concern. "Pollutants of concern" are those having the potential to cause treatment system upset, interference, permit violations, or endangerment of worker health and safety. Local limits must be developed for all pollutants of concern.

The USEPA has provided guidance for identifying pollutants of concern, which is described in EPA-833-B-87-202. Pollutants of concern must generally include cadmium, chromium, copper, lead, nickel, zinc, silver, arsenic, mercury, and cyanide. In addition, USEPA guidance directs that a toxic pollutant may be classified as a pollutant of concern if it meets any one of the following screening criteria:

- a) The maximum concentration of the pollutant in the WWTP influent is more than 1/500th of the allowable biosolids concentration, or more than one-fourth of the inhibition threshold for the biological process.
- b) The maximum concentration of the pollutant in the WWTP biosolids is more than half of the allowable biosolids concentration. The allowable biosolids concentration will depend on the method of disposal. (See Table 5 and 40 CFR 503 for further details.)
- c) The maximum concentration of the pollutant in the diluted mixture of WWTP effluent and receiving water is more than half of the allowable receiving water concentration.

Treatment Plant Removal Efficiencies. Treatment plant removal efficiencies must be determined to compute MAHLs from effluent and biosolids criteria. Site specific data collected over a period of at least a year are preferred for this purpose. The removal efficiency, R, for any given pollutant may be computed as follows:

$$R = \frac{(Influent\ Concentration - Effluent\ Concentration)}{Influent\ Concentration}$$

The measured influent and effluent concentrations are frequently near, or even less than, the method detection limit. Consequently, computed removal efficiencies can be erratic.

Where adequate data is lacking to establish reliable percentage removals, regulatory agencies may allow USEPA national survey values to be used. These are summarized in **Table 7**.

**Table 7. Literature values for POTW pollutant removal efficiencies.**

Pollutant	Removal Through Primary Treatment (median value, %)	Removal Through Activated Sludge Treatment (median value, %)	Removal Through Trickling Filter Treatment (median value, %)
Arsenic	—	45	—
Cadmium	15	67	68
Chromium	27	82	55
Copper	22	86	61
Cyanide	27	69	—
Lead	57	61	55
Mercury	10	60	50
Nickel	14	42	29
Selenium	—	50	—

Pollutant	Removal Through Primary Treatment (median value, %)	Removal Through Activated Sludge Treatment (median value, %)	Removal Through Trickling Filter Treatment (median value, %)
Silver	20	75	66
Zinc	27	79	67
Benzene	25	80	75
Chloroform	14	67	73
1,2 trans-Dichloroethylene	36	67	50
Ethylbenzene	13	86	80
Methylene chloride	—	62	70
Tetrachloroethylene	4	80	80
Toluene	—	93	93
1,1,1-Trichloroethane	40	85	89
Trichloroethylene	20	89	94
Anthracene	—	67	—
Bis (2-ethylhexyl) phthalate	—	72	58
Butyl benzyl phthalate	62	67	60
Di-n-butyl phthalate	36	64	60
Diethyl phthalate	56	62	57
Naphthalene	44	78	71
Phenanthrene	—	68	—
Phenol	8	90	84
Pyrene	—	86	—

Source: EPA-833-B-87-202, Tables 3-9 and 3-10, EPA Office of Water, December 1987.

**Calculation of MAHLs.** The MAHL of a treatment plant is the maximum pollutant load in pounds per day that the plant can receive without exceeding effluent, biosolids, or process inhibition criteria. The MAHL for any given pollutant of concern is the smallest value computed from these equations.

MAHL based on effluent discharge criteria:

$$MAHL = \frac{\text{Allowable effluent concentration (mg / L)} \times Q \times 8.34}{1 - R_T}$$

MAHL based on biosolids criteria:

$$MAHL = \frac{\text{Allowable biosolids concentration (mg / kg)} \times P_T \times 10^{-6}}{R_T}$$

MAHL based on activated sludge or trickling filter inhibition criteria:

$$MAHL = \frac{\text{Inhibition level (mg / L)} \times Q \times 8.34}{1 - R_p}$$

MAHL based on anaerobic digestion inhibition criteria:

$$MAHL = \frac{\text{Inhibition level (mg / kg)} \times P_D \times 10^{-6}}{R_T}$$

where:

MAHL = Maximum Allowable Headworks Loading, lb/day

Q = Average daily treatment plant flow (MGD)

RT = Total plant pollutant removal rate

RP = Primary treatment removal rate

PT = Plant average daily biosolids disposal rate (lb/day)

P<sub>D</sub> = Average daily sludge feed to digester (lb/day)

Allocation of MAHLs to Nondomestic Sources. The portion of each pollutant MAHL allocable to nondomestic users, termed the maximum allowable industrial loading (MAIL), is equal to the total MAHL, less the loading contributed by domestic/background sources (L<sub>D/B</sub>), less an amount held in reserve as a safety factor (L<sub>SF</sub>):

$$MAIL = MAHL - L_{D/R} - L_{SF} \text{ (all units in lb/day)}$$

Domestic/Background Pollutant Loadings. The USEPA recommends that domestic/background pollutant concentrations be obtained through site-specific monitoring conducted at locations that receive wastewater solely from domestic sources. However, alternative approaches may be accepted. One approach, which takes advantage of data that may already exist, is to subtract known industrial loads from treatment plant influent loads. A second approach is to use the USEPA's national survey results for domestic/background pollutant concentrations, which are summarized in **Table 8**.

Safety Factors. The USEPA recommends allocating only a portion of the MAHL for each pollutant to the treatment plants current users. The remaining portion is recommended to be held in reserve as a safety factor to account for future industrial growth, potential slug loadings, and other uncertainties. A safety factor of 10 to 20 percent should be adequate in most cases, i.e., L<sub>SF</sub> = (0.1 to 0.2) MAHL.

**Table 8. Residential/background pollutant concentrations from USEPA survey data.**

Pollutant	Average Concentration (mg/L)
Arsenic	0.007
Cadmium	0.008
Chromium	0.034
Copper	0.109
Cyanide	0.082
Lead	0.116
Mercury	0.002
Nickel	0.047
Silver	0.019
Zinc	0.212
Methylene Chloride	0.027
Tetrochloroethene	0.014
1,2 Dichloroethene	0.013
Chloroform	0.009
1,1 Dichloroethene	0.007
1,1 Dichloroethane	0.007

Source: Supplemental Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program, USEPA Office of Water, May 1991.

**Calculation of Local Limits.** Local limits are calculated by allocating MAHL values to domestic and nondomestic users. Three basic alternative allocation methods are accepted:

a) Uniform concentration method

$$Local\ Limit = L_{NDU} / Q_{NDU} \quad (8.34)$$

Here,  $Q_{NDU}$  represents the total flow from all nondomestic users not included as part of the domestic/background class. This method results in the same local limits for all such nondomestic users, regardless of whether they discharge the pollutant in question.

b) Contributory flow method

$$Local\ Limit = L_{NDU} / Q_{NDU\ CONTRIB} \quad (8.34)$$

Here,  $Q_{NDU\ CONTRIB}$  represents the total flow from only those nondomestic users who actually discharge the pollutant in question in concentrations above the background. All such users would have the same local limits, while other nondomestic users would be allowed to discharge up to the background concentration of the particular pollutant.

c) Wasteload allocation method

$$\text{Local Limit} = L_x/Q_x \text{ (8.34)}$$

Here, Local Limit<sub>x</sub> and Q<sub>x</sub> represents the allocated pollutant load and corresponding flow of nondomestic user "X." In this method, all significant nondomestic users have their own individual limits.

### 3.5 Development of Discharge Limitations Based on Protection of the Collection System and Worker Health and Safety

3.5.1 Prohibited Discharge Standards. These standards, applicable to all users, prohibit the discharge of any nondomestic wastes containing certain types or amounts of pollutants that would interfere with the operation of collection and treatment systems. Nationally prohibited discharges under 40 CFR 403.5 include the following:

- a) Pollutants that create a fire or explosion hazard, including but not limited to waste streams with a closed cup flash-point of less than 140 °F or 60 °C
- b) Pollutants that will cause corrosive structural damage, and in no case discharges with pH lower than 5.0 unless the treatment works is designed to accommodate such discharges
- c) Solid or viscous pollutants in amounts that will cause obstruction to the flow resulting in interference
- d) Any pollutant, including oxygen-demanding pollutants released in a discharge at a flow rate and/or pollutant concentration that will cause interference
- e) Heat in amounts that will inhibit biological activity in the treatment plant resulting in interference, but in no case heat in such quantities that the temperature at the treatment plant exceeds 40 °C unless alternate temperature limits are approved
- f) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through
- g) Pollutants that result in the presence of toxic gases, vapors, or fumes within the collection or treatment system in a quantity that may cause acute worker health and safety problems

h) Any trucked or hauled pollutants, except at approved discharge points.

**3.5.2 Oil and Grease Limits.** Although many municipal sewer use ordinances contain a numeric oil and grease limitation, these limits vary greatly because no technical basis presently exists for establishing such a limit (see Section 2). As preliminary guidance, the USEPA has suggested that a limit of 100 mg/L may be used for “petroleum oils, nonbiodegradable cutting oils, or products of mineral oil origin.” Likewise, a limit of 100 to 200 mg/L may be appropriate for polar oils and greases derived from animal and vegetable materials, which is approximately their background concentration in raw domestic wastewater.

**3.5.3 Protection Against Vapor Toxicity.** Discharges to sewers of volatile pollutants with toxic vapors can create conditions hazardous to workers who must enter the sewer system. The national prohibited discharge standard given previously (par. 3.5.1g) is the minimum standard of protection for discharges of volatile pollutants. Some POTWs have also developed numeric limits based on worker health and safety criteria.

**3.5.3.1 Developing Local Limits Based on Vapor Toxicity.** A simplified approach for calculating the aqueous concentration of a given VOC that results in an equilibrium atmospheric concentration harmful to workers is given in the USEPA guidance manual *Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors*, EPA-812-B-92-001 (June 1992). The approach is based on Henry’s Law and maximum atmospheric concentrations established by the American Conference of Governmental Industrial Hygienists (ACGIH), which are based on continuous worker exposure during a 40-hour work week. These limiting concentrations are termed threshold limit values – time-weighted averages (TLV-TWA). These limits are conservative because equilibrium concentrations are not attained in a sewer system and because workers would likely not be exposed to fumes 40 hours/week. As a result, the USEPA recommends this approach for establishing screening levels (trigger for further action) and not enforceable limits.

**3.5.4 Protection Against Flammability/Explosivity.** USEPA amendments to the General Pretreatment Regulations require municipalities to implement local limits that prevent flammable/explosive conditions from occurring in the sewer atmosphere (Federal Register, 55, 142, 1990). As noted previously, the specific requirement prohibits pollutants with a closed cup flashpoint of less than 140 °F (60 °C). While the flashpoint limitation is not in itself a sufficient local limit for all industrial users, it does provide a good supplement to other limitations by effectively prohibiting the discharge of undiluted volatiles such as gasoline, diesel, jet fuel, BTEX compounds, methyl ethyl ketone (MEK), and ethyl alcohol.

As an adjunct to the flashpoint limitation, the USEPA has also provided screening levels of the aqueous concentration of selected volatile chemicals that can be used to identify explosion hazards. Screening levels for the four BTEX compounds, which are based on 10 percent of their lower explosive limit (LEL), are given below:

<u>Compound</u>	<u>Explosivity Screening Level (mg/L)</u>
Benzene	20
Ethylbenzene	16
Toluene	17
Total Xylenes	17

Because these screening levels are higher than the local limits computed based on vapor toxicity, they do not control the establishment of local limits. They may be used as a screening tool where explosivity is the only consideration.

## Appendix C: Example Pretreatment Program

Significant portions of the following example were taken from the Aberdeen Proving Ground pretreatment regulation. This example is intended to serve both troop garrison and industrial installations.

If this example is used to develop an Installation Pretreatment Program regulation, it must be edited to include information specific to the installation. This example has text bracketed and in bold where installation information must be included. Other text should be added to tailor this example to specific installation requirements.

The following Example is a modified version of the Pretreatment Program developed during the Protocol alpha test exercise. Significant portions of this Example were taken from the Aberdeen Proving Ground pretreatment regulation and modified to comply with Protocol guidance. The tables in Appendix A of the Example were prepared using the MS Access based automated Protocol database.

Some elements of the Example vary somewhat from the guidance in the Protocol, for the purpose of brevity or to make Example appear site specific. Process diagrams for the industrial processes generating wastewater are not included. There are only 15 Industrial Users and 4 Significant Industrial Users included in the Facility Inventory — normally a large Army installation would have 50 or more industrial wastewater sources.

While the alpha test was at a TRADOC installation, this example is intended to serve both troop garrison and industrial installations. If text from this Example is used to create an Installation Pretreatment Program, it must be edited to include information and requirements specific to the installation.

DEPARTMENT OF THE ARMY  
FORT CIVIL WAR GENERAL

September 1998

INSTALLATION PRETREATMENT PROGRAM

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## 1 Purpose

This Pretreatment Program document assigns responsibilities and establishes policies and procedures for the control of wastewater discharges from industrial processes to the Fort Civil War General Treatment Works.

## 2 Scope

This document applies to all the Commanders, Directors, and heads of all U.S. Army Garrison, Fort Civil War General, tenant and user activities that discharge industrial (non-domestic) wastewater to the Fort Civil War General Treatment Works.

## 3 Definitions

*Act.* The Federal Water Pollution Control Act later known as the Clean Water Act.

*Bi-annual.* Twice each year.

*BOD5.* Five day biochemical oxygen demand.

*COD.* Chemical Oxygen Demand.

*Composite Sampling.* Sample composed of two or more discrete samples.

*Domestic Sources.* Wastewater contributed to the sanitary sewer from strictly residential areas.

*DPW.* Directorate of Public Works.

*Grab Sample.* A sample which is taken on a one time basis without regard to flow or time.

*Industrial User.* Any facility discharging wastewater which is not of comparable strength, origin and/or flow of typical domestic sources. A source of non-domestic wastewater.

*Installation.* Fort Civil War General

*IPP.* Installation Pretreatment Program

*Interference.* A discharge which, alone or in conjunction with a discharge or discharges from other sources,

(1) Inhibits or disrupts the wastewater treatment plant, its treatment processes or operations, or its sludge processes, use or disposal and

(2) Therefore, is a cause of a violation of any requirement of the WWTP's NPDES permit or prevention of sewage sludge use or disposal in compliance with Section 405 of the Act, Subtitles C and D of RCRA, the Clean Air Act or any State or

Local regulations issued thereunder are available for review at the ECD, Bldg 4603.

*NPDES.* National Pollutant Discharge Elimination System.

*Pass-Through.* A discharge of pollutant(s) which cannot be treated adequately by the WWTP and therefore exits into waters of the U.S. in quantities or concentrations which alone or in conjunction with other discharges from other sources, is a cause of a violation of any requirement of the WWTP's NPDES permit.

*PPM.* Pretreatment Program Manager

*RCRA.* Resource Conservation and Recovery Act.

*Significant Industrial User.* 1) Industrial Users which meet the criteria delineated in 40 CFR 403 and "Protocol for the Preparation of Installation Pretreatment Programs". 2) Any Industrial User designated as such by the Pretreatment Program Manager.

*State.* State of location.

*Surety Agents.* Any materials designated by the Department of the Army as chemical surety materials, to include blister agents, nerve agents and others identified by the Army. Simulated and experimental surety agents which produce the characteristic effect of surety materials on living tissue; i.e., blistering, acetylcholinesterase inhibition, etc., but which are not designated as surety agents by the Army, are included as surety agents.

*TSS.* Total suspended solids.

*TTO.* Total Toxic Organics. A single, quantifiable measurement which sums the concentration of all toxic organic compounds in a specified list. Limits for TTO are often established in categorical pretreatment standards. The list of compounds varies, dependent on the industrial source.

*Upset.* An exceptional incident in which there is unintentional and temporary noncompliance with the discharge standards established by this program because of factors beyond the reasonable control of the industrial user. Also, an incident where a process (or processes) at a domestic treatment plant receiving industrial wastewater is rendered ineffective because of industrial pollutant loading, thus causing that treatment plant to be in non-compliance with its NPDES permit.

*Wastewater Treatment Plant.* The treatment facility which receives both domestic and industrial wastewater from Fort Civil War General, and is subject to an NPDES permit.

*WWTP.* Wastewater treatment plant.

## **4 Responsibilities**

### **a. Commanders, Directors and All Heads of Activities**

Commanders, Directors and all Heads of Activities will:

- (1) Authorize directives, issue orders, and assign responsibilities to ensure compliance with this program.
- (2) Ensure adequate funding (A106, OMA, etc.) is requested, authorized, and budgeted in order to carry out the requirements of this program.

#### **b. Pretreatment Program Manager**

Chief, Environmental Division, Directorate of Public Works, Fort Civil War General, will assume the title, duties, and responsibilities of Pretreatment Program Manager. The installation Pretreatment Program Manager, or his/her designee, will:

- (1) Investigate sources of non-domestic wastewater and prepare an inventory of industrial facilities. Update that inventory whenever changes to facility personnel or processes occurs. Include the inventory as Appendix A of this Program.
- (2) Determine pollutants of concern by conducting a background sampling survey of all potential pollutants entering the Fort Civil War General wastewater collection system. Establish new, and update existing, discharge standards (local limits) on pollutants of concern expected to occur in industrial wastewater discharging to the wastewater collection system from Significant Industrial Users. [Discharge limits are presented in Chapter 5 "Procedures," b. Discharge Limits, (2) Specific Prohibitions.]
- (3) Determine which industrial activities shall be designated as Significant Industrial Users using criteria presented in the "Protocol for Preparation of Installation Pretreatment Programs," including those subject to categorical pretreatment regulations as defined by part 403 through 473, title 40, Code of Federal Regulations (40 CFR 403 through 473).
- (4) Conduct sampling and analysis of discharges from Significant Industrial Users to demonstrate compliance with this program on an annual basis, and update the Monitoring report in Appendix A of this Program to record the results of that sample analysis.
- (5) Develop and execute plans to bring industrial discharges which are found to be not in compliance with this program, into compliance. These plans may include, but not be limited to: implementing pollution prevention measures, upgrading pretreatment structures, improving maintenance, upgrading the

wastewater treatment plant, and recommending closure or consolidation of industrial processes.

(6) Augment existing, or establish new, training for industrial facility personnel focusing on pollution prevention and defining the capabilities and limitations of existing pretreatment systems.

(7) Update the facility and compliance data included in the appendices of this Program.

(8) Perform other duties as described in this document.

### **c. User/Activity Commanders or Managers**

Each User/Activity Commander or Manager will:

(1) Ensure that processes generating industrial wastewater are operated or performed properly.

(2) Ensure that personnel involved in industrial processes have received pollution prevention and spill control training provided by the Installation.

(3) Ensure that pollution prevention and spill control measures are enforced at the activity to prevent violation of pretreatment standards.

(4) Provide all notifications as required by this program.

### **d. Director of Public Works.**

The Director of Public Works, or his designee, will:

(1) Maintain all pretreatment structures/equipment employed to meet the effluent requirements stated in Appendix A of this program. Maintenance shall include removal and disposal of all solid waste residues and/or sludges from pretreatment structures.

(NOTE: If maintenance is provided by a contractor, then the Director of Public Works will ensure that a detailed description of maintenance service for all pretreatment structures and equipment shall be included in performance requirements of that contract.)

- (2) Acquire necessary equipment to meet the requirements of this program when and if needed.

#### **e. Wastewater Treatment Plant Manager**

The Wastewater Treatment Plant Manager will:

(NOTE: If this facility is operated under contract, these and other duties of the WWTP manager delineated in this document will be added to the performance requirements of that contract.)

- (1) Assist the Pretreatment Program Manager in establishing new and updating existing pretreatment standards.
- (2) Report upsets and pass-throughs at the wastewater treatment plant to the Pretreatment Program Manager.
- (3) Manage and control septage and other slug discharge points.
- (4) Report to the Pretreatment Program Manager the monthly volume of septage discharged.

## **5 Program Criteria**

### **a. Policy.**

The Federal Water Pollution Control Act, enacted in 1972, and subsequent amendments, requires discharges to the Nation's Waterways be of a nature and quality which will maintain the chemical, physical and biological integrity of said waters. In order to achieve the goals of the Act, operators of wastewater treatment plants are required to identify and control the discharges from industrial users of the wastewater treatment facility and conveyance system. Industrial users are classified as any facility which is discharging wastewater which is not of comparable strength, origin and/or flow of typical domestic sources. Wastewater treatment plants are subject to interference, upset and pass-through from discharges originating from industrial sources. It is the goal

of the Act to prevent such detrimental occurrences through the use of a pretreatment program. All industrial users on the Installation will control, modify or pretreat their waste streams to a degree that will ensure compliance with this program and protect the wastewater treatment plant.

## **b. Discharge Limits.**

(1) General Prohibitions - The following prohibitions apply to all non-domestic users regardless of and in addition to any specific pretreatment standards.

(a) Pollutants may not be introduced into the sewer which will pass through the wastewater treatment plant or interfere with the operation and/or performance of the treatment facility.

(b) The following pollutants will not be introduced into the sanitary sewer system:

1. Pollutants which create a fire or explosion hazard in the treatment plant or its conveyance system. In no case will a waste stream have a flashpoint of less than 140°F using test methods specified in section 21, part 261, title 40, Code of Federal Regulations (40 CFR 261.21). These pollutants include but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, and pyrogenic and explosive materials.

2. Pollutants that will cause corrosive structural damage to the WWTP. In no case discharges with a pH lower than 5.5 or greater than 10.0 standard units.

3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the WWTP or its conveyance system resulting in interference, including but not limited to, ashes, cinders, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch or manure.

4. Any pollutant, including oxygen demanding pollutants (BOD, COD), released in a discharge and at a flow rate and/or pollutant concentration which will cause interference with the WWTP.

5. Heat in amounts which will inhibit biological activity in the WWTP resulting in interference, but in no case heat in such quantities that the temperature at the WWTP exceeds 40° C unless the Pretreatment Program Manager, in conjunction with the State, approves alternate temperature limits.

6. Toxic pollutants which may interfere with any wastewater treatment process and which then pass-through the WWTP thereby constituting a hazard to humans or animals, pollute the waters of the State or contaminate the sludge so as to restrict the disposal option(s) selected by the WWTP.

7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the WWTP in a quantity that may cause acute worker health and safety problems.

8. Any chemical surety materials. Chemical surety materials will be defined as all chemical warfare agents designated by the Department of the Army as chemical surety materials, to include blister agents, nerve agents and other identified by the Army. Simulated and experimental surety agents which produce the characteristic effects of surety materials on living tissue; i.e. blistering, acetylcholinesterase inhibition, etc., but have not been designated by the Army as surety materials, also are prohibited from being discharged to the sanitary sewer.

9. Any RCRA listed hazardous wastes, or mixtures that contain those wastes, that do not meet the requirements of section 3(a) (2) (iv), part 261, title 40, Code of Federal Regulations (40 CFR 261.3(a) (2) (iv)), and that do not meet the local discharge limits established by this program.

10. Any waste containing or contaminated by mercury or its compounds.

11. Any wastewater containing radionuclide concentrations greater than natural background levels unless approved by the Pretreatment Program Manager.

12. Any substance which may cause a violation of the Army's NPDES Permit or render as hazardous, the sludge produced by the wastewater treatment plant.

13. Pollutants incorporated in any State standard for the purpose of protecting the WWTP and as specified in the WWTP's NPDES permit, will be enforceable as pretreatment standards.

(2) Specific Prohibitions.

(a) All silver contaminated wastewater will be collected and disposed of through a silver recovery unit. The total combined effluent from the facility housing the recovery unit, will not have a silver concentration greater than 0.20

mg/L at the point the effluent enters the sanitary sewer and before dilution by other sources.

(b) Petroleum based products, nonbiodegradable cutting oil, or products of mineral oil origin will not be discharged to the sewer except the incidental amounts which are generated during washing operations of equipment and facilities. Discharge will then only be allowed after the effluent is pretreated through the use of an oil/water separator or some other device designed to remove oil from water. The oil and grease concentration in any discharge to the sanitary sewer will not exceed 100 mg/L.

(c) Any operation determined to be a categorical industrial operation, part 403 through 473, title 40, Code of Federal Regulations (40 CFR 403 through 473), and amendments thereto, are required to meet the pretreatment requirements for that particular categorical industry.

(d) Pollutant levels in all non-domestic discharges shall not exceed the concentrations listed in Table C1. These “local limits” are established to prevent pollutant concentrations from exceeding the maximum allowable pollutant concentrations in the wastewater treatment plant influent as stated in Table C2. The Pretreatment Program Manager and the Wastewater Treatment Plant Manager will modify these limits as is necessary to meet the goals of this Program. The list of organic compounds used measure Total Toxic Organics (TTO) is contained in 40 CFR Part 413 “Electroplating Point Source Category,” paragraph 413.02, sub-paragraph (i).

**Table C1. Local limits for industrial discharges to sewer.**

<b>Pollutant</b>	<b>Maximum Concentration at each source (mg/L)</b>
1,3,5-Trimethyl benzene	2.00
Benzene	2.00
Cadmium	1.20
Copper	2.00
Chromium	2.00
Cyanide	5.00
Ethyl Benzene	2.00
Lead	5.00
n-Propyl Benzene	2.00
Naphthalene	2.00
Nickel	10.00
O & G	100.00
o-m Xylenes	1.40
p-Xylenes	0.60
Phenol	0.50

Pollutant	Maximum Concentration at each source (mg/L)
Sec-Butyl Benzene	2.00
Silver	2.00
Sulfides	2.50
Tetrachloro Ethane	2.00
Toluene	2.00
Trichloro Ethane	2.00
Total Toxic Organics (TTO)	4.60

**Table C2. WWTP influent limits.**

Pollutant	Maximum Concentration (mg/L)
1,3,5-Trimethyl benzene	0.002
Benzene	0.010
Cadmium	0.030
Copper	0.030
Chromium	0.010
Cyanide	0.010
Ethyl Benzene	0.001
Lead	0.100
n-Propyl Benzene	0.010
Naphthalene	0.010
Nickel	0.500
O & G	50.000
o-m Xylenes	0.010
p-Xylenes	0.010
Phenol	0.010
Sec-Butyl Benzene	0.010
Silver	0.100
Sulfides	0.100
Tetrachloro Ethane	0.010
Toluene	0.010
Total Toxic Organics (TTO)	2.000
Trichloro Ethane	0.010

### (3) Discharge of Hazardous Waste.

40 CFR 261.3(A) (2) (IV) Mixtures of sewage and RCRA listed hazardous wastes may be discharged to the sewer provided the mixture meets the following requirements:

The following mixtures of solid wastes and hazardous wastes listed in Subpart D are not hazardous wastes (except by application of paragraph (a)(2) (i) or (ii) of this section) if the generator can demonstrate that the mixture consists of

wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and:

(a) One or more of the following spent solvents listed in 261.331 — carbon tetrachloride, tetrachloroethylene, trichloroethylene — Providing, that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million; or

(b) One or more of the following spent solvents listed in 261.31 — methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents — provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million; or

(c) One of the following wastes listed in 261.32 — heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K050); or

(d) A discarded commercial chemical product, or chemical intermediate listed in 261.33, arising from de minimis losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. For purposes of this subparagraph, "de minimis" losses include those from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing; or

(e) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in Subpart D, provided that the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system, or

provided the waste's combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. (Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation.) Wastewaters in this case refers to waters which are normally part of the laboratory's wastewater effluent and are generated from such operations as glassware and equipment cleaning, laboratory facilities cleaning, etc. Laboratory discharges must also comply with the restrictions under paragraph 5b(2)(e) of this program.

### **c. Monitoring.**

(1) The Pretreatment Program Manager will demonstrate compliance with the discharge limitations for Significant Industrial Users on an annual basis. The frequency may be increased as the PPM or WWTP Manager deems necessary to protect the treatment plant, if a user has a history of non-compliance or for any other reasons which the PPM feels are necessary.

(2) Compliance demonstration will be achieved by one day of sampling representative of normal to peak flow and pollutant concentrations. Sampling and analysis will follow the "Guidelines Establishing Test Procedures for the Analysis of Pollutants," part 136, title 40, Code of Federal Regulations (40 CFR 136). Frequency of sampling for Categorical discharges shall be according to the appropriate CFR.

(a) For measurement of pH, total petroleum hydrocarbons, volatile organics, sulfides, cyanide and total phenols, four grab samples are required spaced evenly through the duration of the day's discharge. If the duration of the discharge is less than 30 minutes, two samples may be taken.

(b) Flow proportional composite sampling will be performed for all other regulated pollutants (time proportional will be allowed if flow proportional is not feasible). If the duration of the discharge is less than 30 minutes, a composite of two or more grab samples may be used.

(3) Pollutants of Concern. The Monitoring report (Appendix A) will show the initial analysis of potential pollutants of concern, and subsequent annual analysis for those pollutants identified as Pollutants of Concern.

(4) Right of Entry. The Pretreatment Program Manager, or his/her representative will have the right of entry upon or through any premises

discharging non-domestic wastewater for the purpose of ensuring compliance with this program or to gather information pertinent to the requirements of this program including document copying. All right of entry and document copying will be in compliance with Army regulations regarding protection of national security.

(5) Safety Equipment. All safety equipment necessary to the specific user operations will be supplied by the user. All safety equipment which would be required during any compliance determination will be supplied by the Pretreatment Program Manager, or his designee.

#### **d. Non-Routine Discharges.**

The Pretreatment Program Manager will implement the Non-routine Discharge Control Plan presented in Appendix B.

(1) Slug Control. The Pretreatment Program Manager will ensure that the Installation Pollution Prevention Plan, Installation Spill Contingency Plan, and Installation Spill Control and Countermeasure Plan contain measures to prevent spill and routine leaks of pollutants into the sanitary sewer system.

(2) Septage. All septic waste haulers will be considered industrial users for the purpose of this program. A Septage Control Plan is incorporated into Appendix B of this document. Tenants or organizations discharging non-domestic wastes into septic tanks and septic holding tanks are required to meet the standards set forth in this program. Trucked wastes will only be discharged at the approved septage discharge points, coordinated through the Wastewater Treatment Plant Manager

#### **e. Standard Conditions.**

(1) Pretreatment System Operation and Maintenance. If pretreatment is necessary to meet the requirements of this program, such treatment systems will be operated and maintained in a manner which assures pollutant removal is in accordance with the designed operating parameters of the system. System maintenance should be scheduled during non-operational hours. If maintenance is required during operating times, the industrial user will cease or reduce wastewater discharges in an attempt to mitigate any adverse impacts on the wastewater treatment plant or conveyance system resulting from the discharge of untreated waters. If maintenance requires greater than 4 hours during which

time the discharge is not in compliance with the quality restrictions of this program, then discharges will cease until maintenance is complete.

(2) Bypass of Pretreatment Facilities. Bypass is prohibited unless it is unavoidable to prevent loss of life, personal injury or severe property damage or no feasible alternative exists. Bypasses which do not exceed the discharge limits established by this program are permitted only if the bypass is necessary to perform maintenance on the system. All planned bypass events will be reported to the PPM and receiving Wastewater Treatment Plant Manager in writing at least 5 working days prior to the bypass. If an unanticipated bypass occurs, the PPM and wastewater treatment plant will immediately be verbally notified followed by written notification to both provided within 10 calendar days. Notification of bypass will include reasons for bypass, steps taken to mitigate, bypass duration, and if condition creating bypass has been corrected.

(3) Dilution to Meet Standards. Increase of process water beyond what is normally required and for the sole purpose of meeting the discharge limits established by this program, is strictly prohibited.

(4) Removed Substances. Solids, sludges, filter backwash and any other materials removed from the waste stream will be disposed of in accordance with Section 405 of the Act and Subtitles C and D of RCRA. Hazardous sludge disposal will be coordinated through the Hazardous Waste Branch.

(5) Hazardous Waste.

(a) All users will immediately notify the Pretreatment Program Manager and WWTP Manager verbally, and then in writing, of any discharge into the sewer which, if otherwise disposed of, would be a hazardous waste under part 261, title 40, Code of Federal Regulations (40 CFR 261) and/or State hazardous waste regulations. The notification will contain:

1. Name of hazardous waste.
2. The EPA hazardous waste number.
3. Type of discharge (batch, continuous, etc.).
4. Identification of hazardous constituents.
5. Estimation of mass and concentration of constituents.
6. Estimation of future discharges for the next 12 month period.

(b) Notification is only required one time unless the waste characteristics or volumes change as in (6) below.

(c) Notification is not required if the monthly discharge is below 15 kilograms of hazardous waste unless the discharged waste is an acute waste section 33, part 261, title 40, Code of Federal Regulations (40 CFR 261.33 (e) and/or State hazardous waste regulations for which any volume must be reported.

(6) Notification of Changed Discharge. All users will promptly notify the PPM in advance of any substantial change (increase *or* decrease) in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous wastes for which each user has submitted notification of discharge under (5) above.

(7) Discharge of Radionuclide Materials. All users desiring to discharge material with radionuclide concentrations greater than natural background levels must request approval in writing from the PPM prior to any discharge. Request must include the following:

- (a) Radionuclide name and concentration.
- (b) Quantity of the material.
- (c) Description of the material (i.e., scintillation fluid).
- (d) Type of discharge (batch, continuous, etc.).
- (e) Location of desired discharge.

## **Annex A — Current Facility Information and Reports**

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## Facility Inventory

<b>Bldg. No.</b>	<b>Industrial User</b>	<b>POC</b>	<b>POC Phone No.</b>	<b>Significant Industrial User?</b>
200	Garbage Dumpster Washrack	Carl Stenger	555-0007	No
212	Used Oil/Diesel Fuel ASTs	Carl Stenger	555-0007	No
350	Hospital -Silver Recovery Unit	John Smith	555-0009	No
383	Auto Craft Shop	Ed Cain	555-0002	Yes
440	Oily Sludge Drying Basin	Kenny Worhal	555-0010	No
500	Harper Dental Clinic	LT Alexander	555-0008	No
515	POV Car Wash	Jim Smith	555-0011	No
872	5th Engineering Battalion	BMO Palagar	555-0001	No
950	58th Transportation Battalion, Washrack	Warren Brabant	555-0000	Yes
1100	TMP Automatic Car Wash	Ray Long	555-0012	No
5138	ECS Washrack	Paul Ritter	555-0005	No
5265	DOL Battery Shop	Terry Tyler	555-0003	Yes
5265	DOL Plating Shop	Al Carrasco	555-0014	Yes
5265	DOL Wheeled Vehicle Shop	Dale Waters	555-0013	No
5265	DOL Paint Booth	Al Carrasco	555-0004	No
6000	Fire Fighting Training Facility	Jeff Scheer	555-0006	No

## Source Information

Facility Name	58th Transportation Battalion, Washrack
Building Number	950
POC	Warren Brabant
POC phone number	555-0000
Activity Description	Washracks, Individual
NAICS Code	811198
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	30720
Average daily flow (gal/day)	20500
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	Yes
Categorical Discharger	No
P2 Measures	Central Vehicle Wash Facility
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
O & G	6		5/5/98

Facility Name	5th Engineering Battalion
Building Number	872
POC	BMO Palagar
POC phone number	555-0001
Activity Description	Washracks, Individual
NAICS Code	811198
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	9600
Average daily flow (gal/day)	5000
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	Central Vehicle Wash Facility
Environmental permits	None

<b>Pollutant</b>	<b>Maximum Conc (mg/L)</b>	<b>Average Conc (mg/L) (categorical dischargers only)</b>	<b>Interval, Date</b>
O & G	74		5/7/98

Facility Name	Auto Craft Shop
Building Number	383
POC	Ed Cain
POC phone number	555-0002
Activity Description	Automotive Craft Shops
NAICS Code	811198
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	800
Average daily flow (gal/day)	
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	Yes
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
Benzene	0.62		5/8/98
Ethyl Benzene	0.33		5/8/98
n-Propyl	0.013		5/8/98
Benzene			
Naphthalene	0.038		5/8/98
o-m Xylenes	0.85		5/8/98
Toluene	1.76		5/8/98
p-Xylenes	0.37		5/8/98
Sec-Butyl	0.19		5/8/98
Benzene			
O & G	22		5/8/98
Phenol	0.09		5/8/98
1,3,5-Trimethyl	0.056		5/8/98
Benzene			

Facility Name	DOL Battery Shop
Building Number	5265
POC	Terry Tyler
POC phone number	555-0003
Activity Description	Battery Shops
NAICS Code	811198
Device Type	pH Control
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	105
Average daily flow (gal/day)	105
Slug flow duration (minutes)	40
Slug flow frequency (per month)	8
Significant Industrial User	Yes
Categorical Discharger	No
P2 Measures	Adjust Battery Neutralization to pH 7
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
Lead	40		5/7/98
Sulfides	0.024		5/7/98
Nickel	3.2		5/7/98
Cyanide	0.1		5/7/98
Chromium	0.3		5/7/98
Copper	6.7		5/7/98
Cadmium	0.8		5/7/98
Silver	0.16		5/7/98

Facility Name	DOL Paint Booth
Building Number	5265
POC	Al Carrasco
POC phone number	555-0004
Activity Description	Paint Booth - Water Curtain
NAICS Code	811121
Device Type	None
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	1380
Average daily flow (gal/day)	1380
Slug flow duration (minutes)	20
Slug flow frequency (per month)	1
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
O & G	17		5/7/98
Phenol	0.009		5/7/98
Cyanide	0.03		5/7/98
Trichloro	0.012		5/7/98
Ethane			
Toluene	0.019		5/7/98

Facility Name	DOL Plating Shop
Building Number	5265
POC	Al Carrasco
POC phone number	555-0014
Activity Description	Plating (C)
NAICS Code	332813
Device Type	Chromium Recovery Unit
GPS Location	unavailable
Average rate of production	100 sq m/day
Peak daily flow (gal/day)	2000
Average daily flow (gal/day)	1000
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	Yes
Categorical Discharger	Yes
P2 Measures	Rinse water reuse
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
Total Toxic	4.3		5/6/98
Organics			
Lead	0.4	0.2	
4 day, 5/6/98			
Cyanide	3.6	2.9	
4 day, 5/6/98			
Cadmium	1	0.5	4 day, 5/6/98

Facility Name	DOL Wheeled Vehicle Shop
Building Number	5265
POC	Dale Waters
POC phone number	555-0013
Activity Description	Aqueous Parts Washers
NAICS Code	811198
Device Type	None
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	340
Average daily flow (gal/day)	340
Slug flow duration (minutes)	15
Slug flow frequency (per month)	1
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
O & G	2355		5/6/98
Tetrachloro	0.014		5/6/98
Ethene			
Phenol	0.004		5/6/98

Facility Name	ECS Washrack
Building Number	5138
POC	Paul Ritter
POC phone number	555-0005
Activity Description	Washracks, Individual
NAICS Code	811198
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	3000
Average daily flow (gal/day)	2000
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	Central Vehicle Wash Facility
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
O & G	57		5/17/98
Phenol	0.073		5/17/98
Cyanide	0.02		5/17/98

Facility Name	Fire Fighting Training Facility
Building Number	6000
POC	Jeff Scheer
POC phone number	555-0006
Activity Description	Fire Training Pit
NAICS Code	unavailable
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	10000
Average daily flow (gal/day)	10000
Slug flow duration (minutes)	30
Slug flow frequency (per month)	1
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

<b>Pollutant</b>	<b>Maximum Conc (mg/L)</b>	<b>Average Conc (mg/L) (categorical dischargers only)</b>	<b>Interval, Date</b>
Sulfides	0.09		5/10/98
Cyanide	0.004		5/10/98
O & G	52		5/10/98
Phenol	0.017		5/10/98

Facility Name	Garbage Dumpster Washrack
Building Number	200
POC	Carl Stenger
POC phone number	555-0007
Activity Description	Washracks, Individual
NAICS Code	562111
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	120
Average daily flow (gal/day)	50
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
Cyanide	10		5/10/98
O & G	2		5/10/98
Phenol	0.76		5/10/98
Sulfides	0.482		5/10/98
Toluene	0.022		5/10/98

Facility Name	Harper Dental Clinic
Building Number	500
POC	LT Alexander
POC phone number	555-0008
Activity Description	Dental Office or Complex
NAICS Code	621210
Device Type	Silver Recovery Unit
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	5
Average daily flow (gal/day)	2
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

<b>Pollutant</b>	<b>Maximum Conc (mg/L)</b>	<b>Average Conc (mg/L) (categorical dischargers only)</b>	<b>Interval, Date</b>
Nickel	0.014		5/16/98
Copper	0.103		5/16/98
Chromium	0.002		5/16/98
Cadmium	0.078		5/16/98
Silver	0.13		5/16/98
Lead	0.012		5/16/98

Facility Name	Hospital -Silver Recovery Unit
Building Number	350
POC	John Smith
POC phone number	555-0009
Activity Description	Hospitals (C)
NAICS Code	621111
Device Type	Silver Recovery Unit
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	10
Average daily flow (gal/day)	7
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	Yes
P2 Measures	None
Environmental permits	None

<b>Pollutant</b>	<b>Maximum Conc (mg/L)</b>	<b>Average Conc (mg/L) (categorical dischargers only)</b>	<b>Interval, Date</b>
Silver	0.27		5/6/98

Facility Name	Oily Sludge Drying Basin
Building Number	440
POC	Kenny Worhal
POC phone number	555-0010
Activity Description	Oily Sludge Dewatering
NAICS Code	unavailable
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	5760
Average daily flow (gal/day)	1000
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

<b>Pollutant</b>	<b>Maximum Conc (mg/L)</b>	<b>Average Conc (mg/L) (categorical dischargers only)</b>	<b>Interval, Date</b>
Copper	1.3		5/19/98
O & G	82		5/19/98
Chromium	0.5		5/19/98
Cadmium	0.07		5/19/98
Lead	0.7		5/19/98

Facility Name	POV Car Wash
Building Number	515
POC	Jim Smith
POC phone number	555-0011
Activity Description	POV Car Wash
NAICS Code	811192
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	2880
Average daily flow (gal/day)	2000
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
Cyanide	0.1		5/4/98
Sec-Butyl	0.011		5/4/98
Benzene			
O & G	24		5/4/98
Sulfides	0.007		5/4/98
Phenol	0.102		5/4/98

Facility Name	TMP Automatic Car Wash
Building Number	1100
POC	Ray Long
POC phone number	555-0012
Activity Description	Washracks, Individual
NAICS Code	811198
Device Type	None
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	15370
Average daily flow (gal/day)	12000
Slug flow duration (minutes)	0
Slug flow frequency (per month)	0
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

<b>Pollutant</b>	<b>Maximum Conc (mg/L)</b>	<b>Average Conc (mg/L) (categorical dischargers only)</b>	<b>Interval, Date</b>
Cyanide	0.09		5/20/98
Sulfides	0.018		5/20/98
O & G	5		5/20/98

Facility Name	Used Oil/Diesel Fuel ASTs
Building Number	212
POC	Carl Stenger
POC phone number	555-0007
Activity Description	Fuel/Chemical Storage Areas
NAICS Code	unavailable
Device Type	Oil/Water Separation - Cast-in-place/precast concrete gravity separator
GPS Location	unavailable
Average rate of production	n/a
Peak daily flow (gal/day)	150
Average daily flow (gal/day)	150
Slug flow duration (minutes)	35
Slug flow frequency (per month)	2
Significant Industrial User	No
Categorical Discharger	No
P2 Measures	None
Environmental permits	None

Pollutant	Maximum Conc (mg/L)	Average Conc (mg/L) (categorical dischargers only)	Interval, Date
Sec-Butyl	0.046		5/20/98
Benzene			
Toluene	0.106		5/20/98
O & G	15		5/20/98
Benzene	0.22		5/20/98
p-Xylenes	0.031		5/20/98
o-m Xylenes	0.069		5/20/98
Naphthalene	0.021		5/20/98
Ethyl Benzene	0.017		5/20/98
Sulfides	0.025		5/20/98
Phenol	0.05		5/20/98
Cyanide	0.6		5/20/98

## Sources of Pollutants Detected

Pollutant	Facility Name
1,3,5-Trimethyl benzene	Auto Craft Shop
Benzene	Used Oil/Diesel Fuel ASTs Auto Craft Shop
Cadmium	Harper Dental Clinic DOL Battery Shop Oily Sludge Drying Basin DOL Plating Shop
Copper	DOL Battery Shop Harper Dental Clinic Oily Sludge Drying Basin
Chromium	DOL Battery Shop Oily Sludge Drying Basin Harper Dental Clinic
Cyanide	DOL Plating Shop ECS Washrack TMP Automatic Car Wash POV Car Wash Fire Fighting Training Facility Garbage Dumpster Washrack DOL Paint Booth DOL Battery Shop Used Oil/Diesel Fuel ASTs
Ethyl Benzene	Auto Craft Shop Used Oil/Diesel Fuel ASTs
Lead	Harper Dental Clinic DOL Battery Shop Oily Sludge Drying Basin DOL Plating Shop
n-Propyl benzene	Auto Craft Shop
Naphthalene	Used Oil/Diesel Fuel ASTs Auto Craft Shop
Nickel	Harper Dental Clinic DOL Battery Shop

Pollutant	Facility Name
O & G	Fire Fighting Training Facility Garbage Dumpster Washrack POV Car Wash Auto Craft Shop 58th Transportation Battalion, Washrack TMP Automatic Car Wash DOL Paint Booth DOL Wheeled Vehicle Shop Used Oil/Diesel Fuel ASTs ECS Washrack Oily Sludge Drying Basin 5th Engineering Battalion
o-m Xylenes	Used Oil/Diesel Fuel ASTs Auto Craft Shop
p-Xylenes	Auto Craft Shop Used Oil/Diesel Fuel ASTs
Phenol	Auto Craft Shop Fire Fighting Training Facility POV Car Wash Garbage Dumpster Washrack Used Oil/Diesel Fuel ASTs DOL Wheeled Vehicle Shop ECS Washrack DOL Paint Booth
Sec-Butyl Benzene	POV Car Wash Auto Craft Shop Used Oil/Diesel Fuel ASTs
Silver	DOL Battery Shop Hospital -Silver Recovery Unit Harper Dental Clinic
Sulfides	POV Car Wash DOL Battery Shop Used Oil/Diesel Fuel ASTs Garbage Dumpster Washrack TMP Automatic Car Wash Fire Fighting Training Facility
Tetrachloro Ethane	DOL Wheeled Vehicle Shop
Toluene	Used Oil/Diesel Fuel ASTs DOL Paint Booth Auto Craft Shop Garbage Dumpster Washrack
Total Toxic Organics (TTO)	DOL Plating Shop
Trichloro Ethane	DOL Paint Booth

### Discharge Limits for Pollutants at Each Source

Facility Name	Pollutant	Max Conc Allowed (mg/L)	Max Avg. Conc Allowed (mg/L)
58th Transportation Battalion, Washrack	O & G	100.00	
5th Engineering Battalion	O & G	100.00	
Auto Craft Shop	Benzene	2.00	
	Ethyl Benzene	2.00	
	n-Propyl benzene	2.00	
	Naphthalene	2.00	
	o-m Xylenes	1.40	
	Toluene	2.00	
	p-Xylenes	0.60	
	Sec-Butyl Benzene	2.00	
	O & G	100.00	
	Phenol	0.50	
	1,3,5-Trimethyl benzene	2.00	
DOL Battery Shop	Lead	5.00	
	Sulfides	2.50	
	Nickel	10.00	
	Cyanide	5.00	
	Chromium	2.00	
	Copper	2.00	
	Cadmium	1.20	
	Silver	2.00	
DOL Paint Booth	O & G	100.00	
	Phenol	0.50	
	Cyanide	5.00	
	Trichloro Ethane	2.00	
	Toluene	2.00	

Facility Name	Pollutant	Max Conc Allowed (mg/L)	Max Avg. Conc Allowed (mg/L)
DOL Plating Shop	Total Toxic Organics (TTO)	4.57	0.4
	Lead	0.60	2.7
	Cyanide	5.00	0.7
	Cadmium	1.20	
DOL Wheeled Vehicle Shop	O & G	100.00	
	Tetrachloro Ethane	2.00	
	Phenol	0.50	
ECS Washrack	O & G	100.00	
	Phenol	0.50	
	Cyanide	5.00	
Fire Fighting Training Facility	Sulfides	2.50	
	Cyanide	5.00	
	O & G	100.00	
	Phenol	0.50	
Garbage Dumpster Washrack	Cyanide	5.00	
	O & G	100.00	
	Phenol	0.50	
	Sulfides	2.50	
	Toluene	2.00	
Harper Dental Clinic	Nickel	10.00	
	Copper	2.00	
	Allowed (mg/L)	2.00	
	Chromium	1.20	
	Cadmium	2.00	
	Silver	5.00	
	Lead		
Hospital -Silver Recovery Unit	Silver	2.00	

Facility Name	Pollutant	Max Conc Allowed (mg/L)	Max Avg. Conc Allowed (mg/L)
Oily Sludge Drying Basin	Copper	2.00	
	O & G	100.00	
	Chromium	2.00	
	Cadmium	1.20	
	Lead	5.00	
POV Car Wash	Cyanide	5.00	
	Sec-Butyl Benzene	2.00	
	O & G	100.00	
	Sulfides	2.50	
	Phenol	0.50	
TMP Automatic Car Wash	Cyanide	5.00	
	Sulfides	2.50	
	O & G	100.00	
Used Oil/Diesel Fuel ASTs	Sec-Butyl Benzene	2.00	
	Toluene	2.00	
	O & G	100.00	
	Benzene	2.00	
	p-Xylenes	0.60	
	o-m Xylenes	1.40	
	Naphthalene	2.00	
	Ethyl Benzene	2.00	
	Allowed (mg/L)	2.50	
	Sulfides	0.50	
	Phenol	5.00	
	Cyanide		

# Monitoring Report

Facility Name	Date	Flow (mg/L)	Pollutant (mg/L)	Time	Max Conc	Avg. Conc	Interval	Sample Procedure	Sample	
									Taken by	Analyzed by
58th Transportation Battalion, Washrack	5/5/98	30720	O & G	15:30	6			Grab	Bevelheimer	XYZ Labs
	5/5/98		Phenol	15:30	0.058			Grab	Bevelheimer	XYZ Labs
	5/5/98		Sulfides	15:30	0.038			Grab	Bevelheimer	XYZ Labs
	5/7/99	28500	O & G	9:00	12			Grab	Carter	XYZ Labs
Auto Craft Shop	5/7/98	800	1,3,5-Trimethyl- Benzene	16:00	0.056			Grab	Hanson	XYZ Labs
	5/7/98		Benzene	16:00	0.62			Grab	Hanson	XYZ Labs
	5/7/98		Ethyl Benzene	16:00	0.33			Grab	Hanson	XYZ Labs
	5/7/98		n-Propyl Benzene	16:00	0.013			Grab	Hanson	XYZ Labs
	5/7/98		Naphthalene	16:00	0.038			Grab	Hanson	XYZ Labs
	5/7/98		O & G	16:00	1.5			Grab	Hanson	XYZ Labs
	5/7/98		o-m Xylenes	16:00	0.85			Grab	Hanson	XYZ Labs
	5/7/98		p-Xylenes	16:00	0.37			Grab	Hanson	XYZ Labs
	5/7/98		Phenol	16:00	0.097			Grab	Hanson	XYZ Labs
	5/7/98		Sec-Butyl Benzene	16:00	0.19			Grab	Hanson	XYZ Labs
	5/7/98		Toluene	16:00	1.76			Grab	Hanson	XYZ Labs
	5/13/99	750	Benzene	9:00	0.75			Grab	Carter	XYZ Labs
	5/13/99		Ethyl Benzene	9:00	0.41			Grab	Carter	XYZ Labs
	5/13/99		o-m Xylenes	9:00	0.68			Grab	Carter	XYZ Labs
	5/13/99		p-Xylenes	9:00	0.25			Grab	Carter	XYZ Labs
5/13/99		Toluene	9:00	1.69			Grab	Carter	XYZ Labs	
DOL Battery Shop	5/7/98	105	Cadmium	10:15	0.8			Grab	Cosper	XYZ Labs
	5/7/98		Copper	10:15	6.7			Composite	Cosper	XYZ Labs
	5/7/98		Chromium	10:15	0.3			Composite	Cosper	XYZ Labs
	5/7/98		Cyanide	10:15	0.1			Composite	Cosper	XYZ Labs
	5/7/98		Lead	10:15	40			Composite	Cosper	XYZ Labs
	5/7/98		Nickel	10:15	3.2			Composite	Cosper	XYZ Labs
	5/7/98		Silver	10:15	0.16			Composite	Cosper	XYZ Labs
	5/7/98		Sulfides	10:15	0.024			Composite	Cosper	XYZ Labs

Facility Name	Date	Flow (mg/L)	Pollutant (mg/L)	Time	Max Conc	Avg. Conc	Interval	Sample Procedure	Sample	
									Taken by	Analyzed by
	5/13/99		Copper	8:30	5.3			Composite	Carter	XYZ Labs
	5/13/99	110	Lead	8:30	35			Composite	Carter	XYZ Labs
	5/13/99		Nickel	8:30	2.8			Composite	Carter	XYZ Labs
DOL Plating Shop	5/20/98	2000	Cadmium	10:00	0.5	0.3	4 day	Composite	Carter	XYZ Labs
	5/20/98		Cyanide	10:00	3.6	2.4	4 day	Grab	Carter	XYZ Labs
	5/20/98		Lead	10:00	0.5	0.2	4 day	Composite	Carter	XYZ Labs
	5/20/98		Total Toxic Organics (TTO)	10:00	4.3			Composite	Carter	XYZ Labs
	5/29/99	2000	Cadmium	9:00	0.6	0.3	4 day	Composite	Carter	XYZ Labs
	5/29/99		Cyanide	9:00	3.2	2.2	4 day	Grab	Carter	XYZ Labs
	5/29/99		Lead	9:00	0.5	0.3	4 day	Composite	Carter	XYZ Labs
	5/29/99		Total Toxic Organics (TTO)	9:00	4.2					
DOL Wheeled Vehicle Shop	5/6/98	340	O & G	10:00	2355			Grab	Gerdes	XYZ Labs
	5/6/98		Phenol	10:00	0.004			Grab	Gerdes	XYZ Labs
	5/6/98		Tetrachloro Ethane	10:00	0.014			Grab	Gerdes	XYZ Labs
	5/10/99	340	O & G	10:00	1745			Grab	Carter	XYZ Labs

## Compliance Plan and SIU Compliance Report

### COMPLIANCE PLAN

Date: 15 June 1998

1. The Pretreatment Program Manager will request funding for, and install, a metals recovery pretreatment process at the DOL Battery Shop. The earliest that funding can be expected is in FY 2000. Construction may begin 3<sup>rd</sup> Quarter FY 2000.

2. The Pretreatment Program Manager will request funding for, and install, an oil/water separator at the DOL wheeled vehicle shop parts washer. The earliest that funding can be expected is in FY 2000. Construction could begin 3<sup>rd</sup> Quarter FY 2000.

Date: 30 June 1998

1. A106 funding requests have been submitted for both the DOL metals recovery process and oil/water separator.

Date: 15 Sep 1999

1. EPR funding is programmed for FY 2000 for both the metals recovery process and the oil/water separator.

# SIU Compliance Report

Facility Name	Date	Pollutant	Max Conc Limit (mg/L)	Measured Conc (mg/L)	Over Limit?	Avg. Conc Limit (mg/L)	Avg. Conc (mg/L)	Over Limit?
58th Transportation Battalion, Washrack	5/5/98	O & G	100.00	6				
	5/7/99	O & G	100.00	12				
Auto Craft Shop	5/7/98	1,3,5-Trimethyl benzene	2.00	0.056				
	5/7/98	Benzene	2.00	0.62				
	5/7/98	Ethyl Benzene	2.00	0.33				
	5/7/98	n-Propyl benzene	2.00	0.013				
	5/7/98	Naphthalene	2.00	0.038				
	5/7/98	O & G	100.00	1.5				
	5/7/98	o-m Xylenes	1.40	0.85				
	5/7/98	p-Xylenes	0.60	0.37				
	5/7/98	Phenol	0.50	0.097				
	5/7/98	Sec-Butyl Benzene	2.00	0.19				
	5/7/98	Toluene	2.00	1.76				
	5/13/99	Benzene	2.00	0.75				
	5/13/99	Ethyl Benzene	2.00	0.41				
	5/13/99	o-m Xylenes	1.40	0.68				
	5/13/99	p-Xylenes	0.60	0.25				
5/13/99	Toluene	2.00	1.69					

DOL Battery Shop	5/7/98	Cadmium	1.20	0.8				
	5/7/98	Copper	2.00	6.7	Over Limit			
	5/7/98	Chromium	2.00	0.3				
	5/7/98	Cyanide	5.00	0.1				
	5/7/98	Lead	5.00	40	Over Limit			
	5/7/98	Nickel	10.00	3.2				
	5/7/98	Silver	2.00	0.16				
	5/7/98	Sulfides	2.50	0.024				
	5/13/99	Copper	2.00	5.3	Over Limit			
	5/13/99	Lead	5.00	35	Over Limit			
	5/13/99	Nickel	10.00	2.8				
DOL Plating Shop	5/20/98	Cadmium	1.20	0.5		0.5	0.3	
	5/20/98	Cyanide	5.00	3.6		2.9	2.4	
	5/20/98	Lead	0.60	0.5		0.2	0.2	
	5/20/98	Total Toxic Organics (TTO)	4.57	4.3				
	5/29/99	Cadmium	1.20	0.6		0.5	0.3	
	5/29/99	Cyanide	5.00	3.2		2.9	2.2	
	5/29/99	Lead	0.60	0.5		0.2	0.3	
	5/29/99	Total Toxic Organics (TTO)	4.57	4.2				
DOL Wheeled Vehicle Shop	5/6/98	O & G	100.00	2355	Over Limit			
	5/6/98	Phenol	0.50	0.004				
	5/6/98	Tetrachloro Ethane	2.00	0.014				
	5/10/99	O & G	100.00	1745	Over Limit			

## Recommended Pollution Prevention Measures

P2 Measures	Facility Name	Building Number	
Adjust Battery Neutralization to pH 7	DOL Battery Shop	5265	
Central Vehicle Wash Facility	ECS Washrack	5138	
	58th Transportation Battalion, Washrack	950	
	5th Engineering Battalion	872	
	Harper Dental Clinic	500	
None	Hospital -Silver Recovery Unit	350	
	Auto Craft Shop	383	
	Used Oil/Diesel Fuel ASTs	212	
	Garbage Dumpster Washrack	200	
	TMP Automatic Car Wash	1100	
	DOL Paint Booth	5265	
	POV Car Wash	515	
	Oily Sludge Drying Basin	440	
	Fire Fighting Training Facility	6000	
	DOL Wheeled Vehicle Shop	5265	
	Rinse water reuse	DOL Plating Shop	5265

## Annex B — Non-Routine Discharge Control Plan

1. PURPOSE. Implementation of this plan will ensure that septage and other slugs of wastewater discharged to the installation sanitary sewer will not adversely effect the Sewage Treatment Plant (STP) operations.

2. SEPTAGE MANAGEMENT PLAN.

a. Contents of septic tanks, holding tanks and port-a-johns throughout the installation are collected and discharged to the WWTP at a location designated by the WWTP manager.

b. Limit on quantity. Not more than 20,000 gal of septage can be discharged to the sanitary sewer in any 24-hour period. Additionally, not more than 5,000 gal can be discharged within any 1-hour period.

NOTE: The designated quantities were calculated, based on the maximum allowable concentration of BOD in septage received at the sewage treatment plant (400 mg/L), such that those quantities will add a maximum of 5 mg/L of BOD to the primary clarifiers, at a flow of 1.0 MGD. Based on an average BOD concentration in the influent of 150 mg/L, an additional 5 mg/L will still result in a BOD less than average strength for sanitary sewage, and should cause no problems for our trickling filters. Using a removal efficiency of 90 percent this will add 0.5 mg/L to our effluent and will not cause excursion of our 10 mg/L BOD discharge limit. Pumpage from port-a-johns is limited to not more than 500 gal in any 24-hour period.

c. Limit on quality. Septage with a biochemical oxygen demand BOD/COD of greater than 400/1300 mg/L is prohibited from being discharged to sanitary sewer. However, if a high strength septage is encountered at a pumping location, it can be mixed with a dilute septage location to arrive at a material that meets the less than 400/1300 BOD/COD criteria. However, pumpage from port-a-johns does not have to meet this criteria, provided the quantity criteria noted at a above is met.

d. Quality control. If deemed necessary by the WWTP manager, a sufficient number of trucks will be sampled to fully characterize the septage entering the installation sewer system to ensure that high strength waste is not entering the sewer system. If these analysis show there is a potential problem, the PPM and WWTP manager will revise the septage control plan accordingly. Subsequently, random quality assurance samples will be taken quarterly by the WWTP. The sources of septage to be sampled will be rotated to ensure that all sources of septage are sampled.

e. Controlled access to septage discharge port. The WWTP manager and his staff will control access to the septage discharge point, and maintain a record of septage discharged to the WWTP.

### 3. NON-ROUTINE DISCHARGES

a. Non-routine discharges (slugs) are defined as any quantify of industrial (non-domestic) wastewater that is discharged to the sanitary sewer on less than a daily frequency, and has the potential to cause interference with or pass-through the wastewater treatment plant.

b. Non-routine discharges will be reported to the Sewage Treatment Plant Manager prior to discharge. The STP Manager must be notified of quantity and type of waste. A follow-up written notification will be sent to the STP Manager within 5 days for discharges greater than 500 gal.

c. The Pretreatment Program Manager, on recommendation from the Sewage Treatment Plant Manager, may require:

i) metering the waste into the sewer at a specified flow rate, or

ii) additional pretreatment of the waste.

d. Non-routine discharges will be monitored at the same frequency as other significant industrial user waste streams.

e. Information on sources of non-routine discharges is included in Appendix A of this document (Facility and Pollutant Inventory).

f. Examples of sources of non-routine discharges are recycling aqueous parts washers and fire fighting training pits.

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