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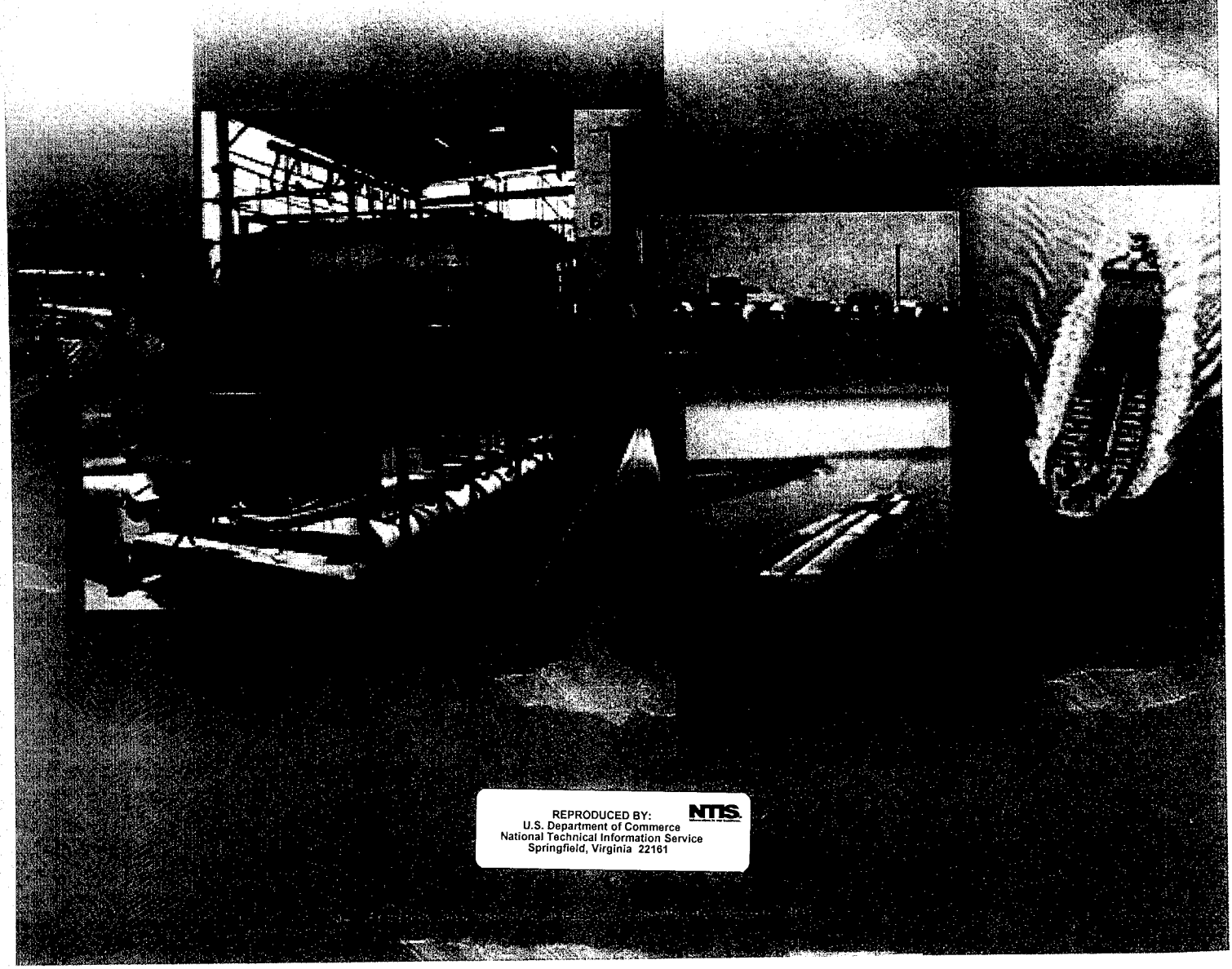
Transportation Equipment Cleaning Point Source Category (40 CFR § 442)



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Disclaimer

This guidance is designed to help implement national policy on effluent limitations guidelines and standards for the Transportation Equipment Cleaning (TEC) Point Source Category. This document does not, however, substitute for the Clean Water Act or EPA's regulations, nor is it a regulation itself. Thus, the guidance does not modify in any way the TEC guidelines and pretreatment standards which EPA has issued. This guidance cannot impose legally binding requirements on EPA, states, or the regulated community and may not apply to a particular situation based upon these circumstances. If there appears to be any difference between this guidance and the TEC rule, the TEC rule provisions prevail. EPA and state decision-makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. EPA may change this guidance in the future.

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Section 1: Introduction

On August 14, 2000, the U.S. Environmental Protection Agency (EPA) promulgated final effluent limitations guidelines, pretreatment standards and new source performance standards under the Clean Water Act (CWA) (65 FR 49666) for the following subparts of the Transportation Equipment Cleaning (TEC) Industry:

Subpart A	Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos
Subpart B	Rail Tank Cars Transporting Chemical and Petroleum Cargos
Subpart C	Tank Barges and Ocean/Sea Tankers Transporting Chemical and Petroleum Cargos
Subpart D	Tanks Transporting Food Grade Cargos (direct discharging facilities only)

These guidelines and standards are codified at 40 CFR Part 442. Permit writers and control authorities are required to issue permits and individual control mechanisms to ensure that affected facilities are complying with the new regulations. **This document is specifically written to provide guidance to permitting and pretreatment control authorities in issuing NPDES and POTW permits and individual control mechanisms to TEC facilities that fall within the four subparts mentioned above.** The permitting or pretreatment control authority will need to determine which facilities fall under 40 CFR Part 442 and how to write the permits/individual control mechanisms for these facilities to ensure their compliance under the new regulations. EPA has provided information in Sections 2 through 8 of this document to help in this process.

Section 2: Scope of 40 CFR Part 442

Transportation equipment cleaning (TEC) facilities are those facilities that generate wastewater from cleaning the interior of tank trucks, closed-top hopper trucks, rail tank cars, closed-top hopper rail cars, intermodal tank containers, tank barges, closed-top hopper barges, and ocean/sea tankers used to transport materials or cargos that come into direct contact with the tank or container interior. Operations that may be subject to the rule are generally reported under one or more of the following Standard Industrial Classification (SIC) codes: SIC 7699, SIC 4741, or SIC 4491 (1987 SIC Manual).

How Has the TEC Point Source Category Been Subcategorized?

EPA divided the TEC Point Source Category into the following seven subcategories based on types of cargos carried and transportation mode. EPA has chosen to regulate four of these subcategories:

- Truck/Chemical & Petroleum Subcategory;
- Rail/Chemical & Petroleum Subcategory;
- Barge/Chemical & Petroleum Subcategory; and
- Food Subcategory.

EPA has chosen not to regulate the remaining three subcategories:

- Truck/Hopper Subcategory;
- Rail/Hopper Subcategory; and
- Barge/Hopper Subcategory.

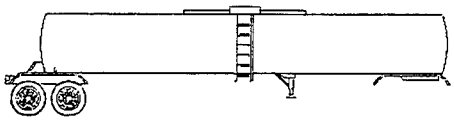
The effluent limitations guidelines and standards promulgated on August 14, 2000 apply to only the Truck/Chemical & Petroleum, Rail/Chemical & Petroleum, Barge/Chemical & Petroleum, and Food Subcategories. The subparts of the rule that correspond to these subcategories are:

- **Subpart A** - Tank Trucks and Intermodal Tank Containers Transporting Chemical & Petroleum Cargos (40 CFR Part 442.10-16);
- **Subpart B** - Rail Tank Cars Transporting Chemical & Petroleum Cargos (40 CFR Part 442.20-26);
- **Subpart C** - Tank Barges and Ocean/Sea Tankers Transporting Chemical & Petroleum Cargos (40 CFR Part 442.30-36); and
- **Subpart D** - Tanks Transporting Food Grade Cargos (40 CFR Part 442.40-44).

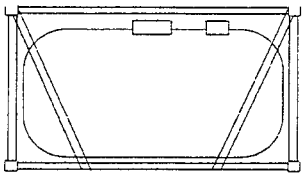
Tank trucks and intermodal tank containers covered under Subpart A may be confused with each other, and with intermediate bulk containers (wastewater generated by cleaning intermediate bulk containers is excluded from this rule). These tanks and containers are defined in Section 442.2(a) as follows:

- **Tank truck** means a motor-driven vehicle with a completely enclosed storage vessel used to transport liquid, solid, or gaseous materials over roads and highways. The storage vessel may be detachable, as with tank trailers, or permanent-

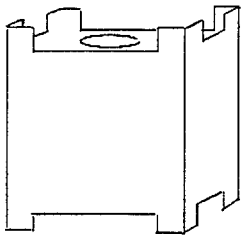
ly attached. The commodities or cargos transported come in direct contact with the tank interior. A tank truck may have one or more storage compartments. There are no maximum or minimum vessel or tank volumes. Tank trucks are also commonly referred to as cargo tanks or tankers.



- **Intermodal tank container** means a completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which come in direct contact with the tank interior. Intermodal tank containers may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. Containers larger than 3,000 liters capacity are considered intermodal tank containers.



- **Intermediate bulk container ("IBC" or "Tote")** means a completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the container interior. IBCs may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. IBCs are portable containers with 450 liters (119 gallons) to 3,000 liters (793 gallons) capacity. IBCs are also commonly referred to as totes or tote bins.



What Operations Are Performed at TEC Facilities?

Tank and container interiors are cleaned for two primary purposes: (1) to prevent contamination of materials from one cargo shipment to the next and (2) to facilitate inspection and repair. A typical sequence for a cleaning process is as follows:

- Review shipping manifest forms to determine the cargo last transported in the tank;
- Determine the next cargo to be transported in the tank;
- Drain the tank heel;
- Rinse the tank with water;
- Wash the tank using one or more cleaning methods and solutions;
- Rinse the tank with water; and
- Dry the tank.

Tanks are typically cleaned using spinner nozzles and/or hand-held wands, and operating cycles may range from a few seconds to 20 minutes.

The wastewater generated at TEC facilities varies depending upon tank type cleaned and the various commodities cleaned. Many TEC facilities have on-site wastewater treatment. Although most TEC facilities are indirect dischargers, a few facilities (predominantly barge/chemical & petroleum facilities) discharge directly to surface waters.

The language that discusses general applicability of the rule, gives general definitions, and discusses the general pretreatment standards is presented at 40 CFR Part 442.1-3.

This rule excludes:

- ✓ Facilities that do NOT clean the interiors of tanks.
- ✓ Facilities that clean tank interiors solely for the purposes of repair and maintenance. These facilities may be subject to the Metal Products & Machinery (MP&M) rule (to be listed in 40 CFR 438 when promulgated). Wastewater generated from cleaning tank interiors for the purpose of shipping products (i.e., cleaned for purposes other than maintenance and repair) is considered TEC process wastewater and is covered under the TEC rule. Only facilities that discharge 100,000 gallons or more per year of TEC process wastewater are covered under the TEC rule. (It is possible that a facility may be subject to both the TEC regulations and the MP&M regulations. If a facility generates wastewater from MP&M activities that are subject to the MP&M regulations and also discharges wastewater from cleaning tanks for purposes other than repair and maintenance of those tanks, then that facility may be subject to both rules.)
- ✓ Wastewaters associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's on-site processes.
- ✓ Facilities that discharge less than 100,000 gallons per year of TEC process wastewater (only wastewater generated from a regulated TEC subcategory).
- ✓ Wastewater generated from cleaning the interiors of drums, intermediate bulk containers, or closed-top hoppers.
- ✓ Wastewater generated from a non-regulated TEC subcategory.

What Wastewaters Are Covered by the Guideline?

Figure 2-1 (at the end of this section) is a logic chart that shows the applicability of the August 14, 2000 TEC effluent limitations guidelines and standards. The rule covers all wash waters that have come into direct contact with the tank or container interior, including prerinse cleaning solutions, chemical cleaning solutions, and final rinse solutions. Additionally, for regulated facilities, the rule covers wastewater generated from washing vehicle exteriors, equipment and floor washings, and TEC-contaminated wastewater at facilities that clean tank interiors.

How Does the Low Flow Exclusion Apply to a Facility?

Section 442.1(b)(3) specifies that wastewater from a facility that discharges less than 100,000 gallons per year of TEC process wastewater is excluded from the TEC regulation.

In the calculation of the total facility flow, the following wastewaters are defined in Section 442.2 as TEC process wastewater:

- Interior cleaning wastewater;
- Exterior cleaning wastewater;
- Equipment and floor washings;
- TEC-contaminated stormwater;
- Wastewater prerinse cleaning solutions;
- Chemical cleaning solutions; and
- Final rinse solutions.

The following wastewaters are NOT considered TEC process wastewater and are not included in the calculation of total facility flow:

- Drum, IBC, and closed-top hopper cleaning wastewater (excluded per Section 442.1(b)(2));
- Wastewater generated from tank cleaning for the purposes of maintenance and repair (excluded per definition of TEC process wastewater in Section 442.2);
- Wastewater generated from tank cleaning associated with other industrial, commercial, or POTW operations (as defined in Section 442.1(b)(1));
- Tank cleaning wastewater generated from a non-regulated subcategory (excluded per definition of TEC process wastewater in Section 442.2); and
- Bilge and ballast water.

For example, a chemical manufacturing facility cleans rail cars on site. The facility discharges 200,000 gallons per year of tank cleaning wastewater, but 90% of the tank cars previously contained raw materials, by-products, or finished products that are associated with the facility's on-site processes.

Total regulated process wastewater = 200,000 gal/yr × 10% = 20,000 gal/yr

Therefore, the facility qualifies for the low flow exclusion because it discharges only 20,000 gallons per year of wastewater defined as "TEC process wastewater."

For another example, a facility not associated with any other industrial or commercial activity discharges 400,000 gallons per year of tank cleaning wastewater to the POTW. The facility discharges 60,000 gallons generated by cleaning truck hoppers, 90,000 gallons generated by cleaning tank trucks that have last contained food grade products, 50,000 gallons generated by cleaning intermodal tank cars that last contained chemical products, and 200,000 gallons generated by cleaning tank trucks that last contained chemical and petroleum products.

Total regulated process wastewater = Intermodal wastewater + Tank truck wastewater

Total regulated process wastewater = 50,000 gal/yr + 200,000 gal/yr

Total regulated process wastewater = 250,000 gal/yr

The 90,000 gallons generated from cleaning food grade products is not considered TEC regulated process wastewater because EPA did not establish pretreatment standards for Subpart D: Tanks Transporting Food Grade Cargos. Therefore, the facility discharges 250,000 gallons of TEC process wastewater per year and is subject to Subpart A: Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Products.

What Are Examples of Interior Cleaning Wastewater Generated At Other Industrial or Commercial Facilities?

The focus of EPA's exclusion is manufacturing, industrial, or commercial facilities which clean their own transportation equipment and treat the interior cleaning wastewater in their treatment system. These include, for example, facilities covered, or proposed to be covered, under other Clean Water Act categorical stan-

dards. Note, however, that EPA is not providing a blanket exclusion for all manufacturing, industrial, and commercial facilities. EPA believes that a facility which cleans tanks last containing off-site cargos not associated with on-site activities should be regulated as TEC because the wastewater generated from these cargos may not be compatible with the treatment system in place and may not be compatible with the existing discharge limitations established for that facility.

Product stewardship activities, tolling or contract manufacturing operations, and manufacturing agreements that are part of divestitures, partnerships, or joint ventures are all examples where interior cleaning wastewater is generated at other industrial or commercial facilities. Wastewater generated by these activities are excluded from this rule, provided the tanks and containers cleaned last contained raw materials, by-products, or finished products that are associated with the facility's on-site processes.

Product stewardship activities are intended to promote recycling and reuse of products, and to reduce the environmental impact of chemical products. Product stewardship activities may include recovering: spent, used, or unused products; containers (i.e., those used for shipping) with product residues; off-specification products; and waste materials from use of products. Where possible, these materials are recovered and reused in chemical processes at the manufacturing plants. Returned materials that are not reusable, or residues that remain after reuse, are treated or disposed in the existing on-site wastewater treatment system, incinerator, or placed in an appropriately regulated landfill.

Tolling or contract manufacturing operations are used in the chemical industry to enable a company to contract with a second company (i.e., a "toller") to engage in specified production activities on behalf of the first company. Tollers often perform one step in a primary manufacturer's multistep production process (e.g., produce an intermediate). The primary manufacturer often provides the raw materials used by tollers who return the intermediate along with any by-products and waste materials.

Manufacturing facilities that have individual operating units or have created joint venture partnerships under separate legal ownership are considered "on site" under this rule provided the facilities continue to manufacture the same products and generate the same wastewater destined for the same on-site treatment system, including TEC wastewater. Any infrastructure operations, such as waste treatment and TEC operations, continue to be provided to the new company per an agreement established at the time of divestiture or formation of the joint venture partnership.

What Are Examples of Interior Cleaning Wastewater Generated At POTW Facilities?

POTW facilities may clean Vactor®, biosolids, or septage tank trucks that are used to haul wastewater and solids. Wastewater generated from these cleanings is excluded from this rule.

Are Garbage Trucks Covered by the TEC Regulation?

Garbage trucks and similar vehicles are not considered to be tanks and are therefore not included within the scope of the rule.

Are Facilities that Clean Tanks to Perform Repair and Maintenance Covered by the TEC Regulation?

Wastewater generated from cleaning tank interiors for purposes of repair and maintenance is not considered TEC process wastewater and therefore is not subject to the TEC regulation. Wastewater generated from cleaning tank interiors for purposes of shipping products (i.e., cleaned for purposes other than maintenance and repair) is considered TEC process wastewater. (See definition of TEC process wastewater in Section 442.2.)

Are Facilities Subject to the Centralized Waste Treatment (CWT) Point Source Category (40 CFR Part 437) Covered by the TEC Regulation?

A facility covered by CWT that also cleans tank interiors is subject solely to the CWT regulation. At a CWT facility, tank cleaning wastewater is considered "wastewater generated from tank cleaning associated with other industrial, commercial, or POTW operations" and is thus excluded from the TEC regulation. (See Section 442.1 (b)(1).) At a CWT facility, tank cleaning wastewater is considered a process wastewater and is subject to the guidelines established under the CWT point source category. (See Section 437.2(d) and 437.1(b)(10).)

If A Facility Does Not Meet Any of The Exclusion Criteria Listed Above, Is It Necessarily Subject To This Rule?

EPA believes that its exclusion for other industrial, commercial, or POTW facilities allows considerable discretion in determining if the tank cleanings are performed as part of, or in addition to, the facility's on-site processes.

For guidance in exercising this discretion, the permitting or pretreatment control authority should consider EPA's rationale for the exclusion for tank cleanings operated in conjunction with other industrial, commercial, or POTW operations. This rationale includes: 1) the wastewater generated from tank cleaning operations at these facilities is typically a very small percentage of the total flow, 2) that tank cleaning wastewater is typically included in the coverage of other categorical standards that may apply, and 3) that the characteristics of the tank cleaning wastewater are similar in treatability to the wastewater generated at the rest of the facility.

Case studies further illustrating the applicability of the TEC effluent limitations guidelines and standards are included in Section 7 of this document.

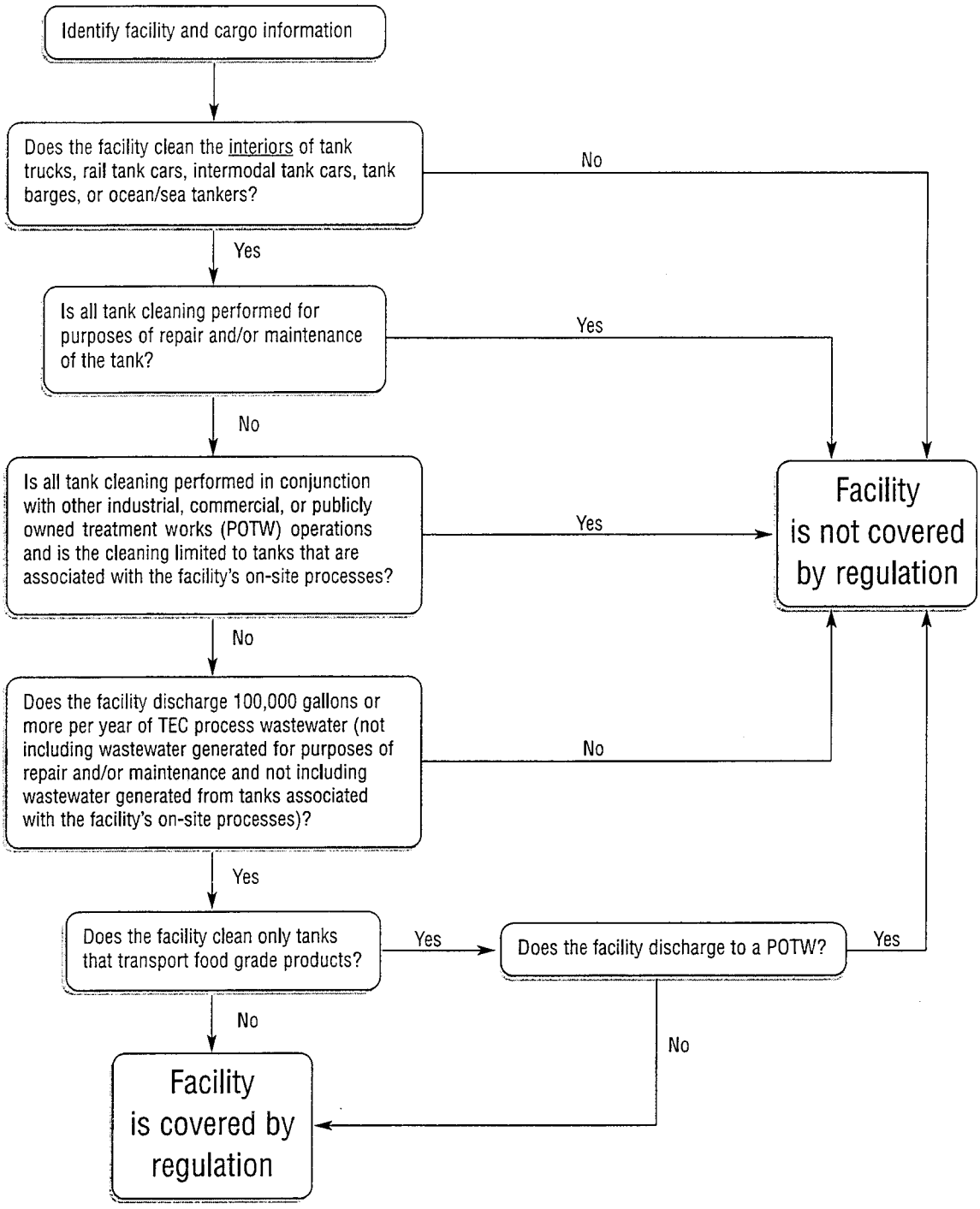


Figure 2-1. Determining Applicability of the Rule

Section 3: Overview of NPDES Program and National Pretreatment Program

This section presents a brief overview of the NPDES Program and the National Pretreatment Program. For more background information regarding EPA's programs to develop national standards for point source categories, refer to the *U.S. EPA NPDES Permit Writer's Manual* (EPA-833-B-96-003) and to the *U.S. EPA Industrial User Permitting Guidance Manual* (EPA 833/R-89-001).

What is the NPDES Program?

Section 301(a) of the Clean Water Act prohibits the discharge of pollutants except in compliance with CWA Section 402, among other sections. Section 402 authorizes the issuance of NPDES permits for direct dischargers (i.e., existing or new industrial facilities that discharge process wastewaters from any point sources into receiving waters). Permit writers must develop NPDES permits to control these discharges using effluent limitations guidelines and water-quality-based effluent limitations.

What are Effluent Limitations Guidelines?

EPA establishes effluent limitations guidelines to require a minimum level of process control and treatment for industrial point sources. They are based on the demonstrated performance of model process and treatment technologies that are within the economic means of an industrial category. Although effluent limitations guidelines are based on the performance of model process and treatment technologies, EPA does not require the use of specific technologies; therefore, dischargers are free to use any available control technique to meet the limitations.

What are Water-Quality-Based Effluent Limitations (WQBELs)?

All receiving waters have ambient water quality standards established by the states or EPA to maintain and protect designated uses of the receiving water (e.g., aquatic life- warm water habitat, public water supply, primary contact recreation). Permit writers may find that applying effluent limitations guidelines results in pollutant discharges that exceed the water quality standards in particular receiving waters. In such cases, permit writers are required by the CWA and federal guidelines to develop more stringent WQBELs for the pollutant to ensure that the water quality standards are met. States can use the total maximum daily load (TMDL) process as one way of quantifying the allowable pollutant loadings in receiving waters, based on the relationship between pollution sources and in-stream water quality standards.

Because EPA and state permitting authorities are familiar with their respective water quality standards and knowledgeable in waste load allocations and other procedures to maintain water quality standards, these issues are not addressed in this document. To learn more about how TMDLs are developed, refer to *Guidance*

for Water-Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001). To learn how to apply water quality standards in NPDES permits, refer to the *Technical Support Document for Water Quality-Based Toxics Control* (EPA 505/2-90-001).

What is the National Pretreatment Program?

Section 402(b)(8) of the CWA requires that permits for certain publicly owned treatment works (POTWs) (i.e., those receiving pollutants from significant industrial sources subject to pretreatment standards under CWA Section 307(b)) establish a pretreatment program to ensure compliance with these standards. EPA has published national regulations to define the requirements of this POTW pretreatment control program.

What are National Pretreatment Standards?

40 CFR Part 403.5(a)(1) generally prohibits users of a POTW (indirect dischargers) from discharging pollutants that pass through or interfere with the POTW's operation. Pass- through is a discharge that exits the POTW into waters of the United States in quantities or concentrations that, alone or in conjunction with a discharge or discharges from other sources, violates any requirements of the POTW's NPDES permit. Interference is defined as a discharge that, alone or in conjunction with a discharge or discharges from other sources, both: (1) inhibits or disrupts the POTW, its treatment processes, or its operations, or its sludge processes, use or disposal; and (2) causes the POTW to violate any requirement of its NPDES permit, or prevents sewage sludge use, or disposal (40 CFR Part 403.3).

40 CFR Part 403.5(c) and 40 CFR Part 403.8 specify that POTWs that have design flows greater than 5.0 million gallons per day (mgd) and that receive pollutants that pass through or interfere with their operations, or are otherwise subject to categorical pretreatment standards must develop and enforce local limits to comply with the National Pretreatment Standards.

How are Effluent Limitations Guidelines and Standards Applied?

With the August 14, 2000 promulgation of the regulation, EPA established BPT, BCT, BAT, NSPS, PSES, and PSNS for the Transportation Equipment Cleaning Point Source Category, which are summarized in the following table.

Program	Type of Discharger	Existing or New Source	Applicable Effluent Limitations Guidelines and Standards
NPDES Permit Program	Direct Discharger	Existing Source	BPT BCT BAT
		New Source	NSPS
National Pretreatment Program	Indirect Discharger	Existing Source	PSES
		New Source	PSNS

TEC facilities that discharge waters to receiving streams or POTWs may be required to meet one (or more) of the following effluent limitations guidelines and standards established by the CWA. For the TEC Point Source Category, effluent limitations for BPT, BCT, BAT, and NSPS are equivalent. Similarly, pretreatment standards for existing sources and new sources are equivalent.

Acronym	Is:	Guideline or standard for the control of:
BPT	Best practicable control technology currently available	Toxic, nonconventional, and conventional pollutants at an existing direct discharger
BCT	Best conventional pollutant control technology	Conventional pollutants at an existing direct discharger
BAT	Best available technology economically achievable	Toxic and nonconventional pollutants at an existing direct discharger
NSPS	New source performance standards	Toxic, nonconventional, and conventional pollutants at a new source, direct discharger
PSES	Pretreatment standards for existing sources	Toxic and nonconventional pollutants at an existing indirect discharger
PSNS	Pretreatment standards for new sources	Toxic and nonconventional pollutants at a new source, indirect discharger

Section 4: What are the Effluent Limitations Guidelines and Standards for Subparts A through D?

This section presents the numerical effluent limitations guidelines and standards for TEC facilities in Subparts A through D and the technologies on which they are based. This section also discusses where facilities are required to demonstrate compliance.

Indirect dischargers in Subparts A and B (tank trucks, intermodal tank containers, and rail tank cars transporting chemical and petroleum cargos) have the option of complying with a Pollutant Management Plan in place of meeting the numeric pretreatment standards presented in this section. See Section 5 for more information on the Pollutant Management Plan.

What are the Regulatory Bases for Effluent Limitations Guidelines and Standards for Subparts A through D?

EPA established numerical effluent limitations guidelines and pretreatment standards for Subparts A through D based on model process technologies and wastewater treatment technologies. Although effluent guidelines and pretreatment standards must be applied in the NPDES permit or pretreatment control agreement, facilities in these subcategories are not required to implement the specific technologies upon which the limitations are based. Facility owners and operators may use any combination of process technologies and in-process or end-of-pipe wastewater treatment technologies to comply with the numeric effluent limitations guidelines and pretreatment standards. EPA also established a regulatory compliance option for indirect dischargers in Subparts A and B to comply with a pollution prevention option (based on development and implementation of a Pollutant Management Plan).

What are the Model Process Technologies and Treatment Systems?

Table 4-1 lists the model technologies used to form the regulatory bases of BPT, BCT, BAT, NSPS, PSES, and PSNS. Refer to the *Technical Development Document for Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category* (EPA-821-R-00-012, June 2000, **http://www.epa.gov/ost/guide**) for a complete description of each technology element.

Table 4-1. Model Technologies as the Regulatory Bases for the TEC Industry

Subpart	Regulation	Technology Basis
Subpart A—Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos	BPT, BCT, BAT, and NSPS	Equalization, Oil/Water Separation, Chemical Oxidation, Neutralization, Coagulation, Clarification Biological Treatment, Activated Carbon Adsorption, and Sludge Dewatering.
	PSES and PSNS	Equalization, Oil/Water Separation, Chemical Oxidation, Neutralization, Coagulation, Clarification, and Sludge Dewatering.
Subpart B—Rail Tank Cars Transporting Chemical and Petroleum Cargos	BPT, BCT, BAT, and NSPS	Oil/Water Separation, Equalization, Dissolved Air Flotation (with Flocculation and pH Adjustment), Biological Treatment, and Sludge Dewatering.
	PSES and PSNS	Oil/Water Separation, Equalization, Dissolved Air Flotation (with Flocculation and pH Adjustment), and Sludge Dewatering.
Subpart C—Tank Barges and Ocean/Sea Tankers Transporting Chemical and Petroleum Cargos	BPT, BCT, BAT, and NSPS	Oil/Water Separation, Dissolved Air Flotation, Filter Press, Biological Treatment, and Sludge Dewatering.
	PSES and PSNS	Oil/Water Separation, Dissolved Air Flotation, Filter Press, Biological Treatment, and Sludge Dewatering.
Subpart D—Tanks Transporting Food Grade Cargos	BPT, BCT, and NSPS	Oil/Water Separation, Equalization, Biological Treatment, and Sludge Dewatering.

What are the Pollution Prevention Elements Incorporated Into the Regulatory Bases?

EPA considered pollution prevention controls and water conservation practices when designing the regulatory bases. EPA incorporated good heel removal and management practices into all technology options. (Heel is residual cargo remaining in tanks following unloading.) TEC facilities incur significant environmental and economic benefits by implementing an effective heel minimization program. To achieve these benefits, TEC facilities should use appropriate heel reduction techniques, such as performing a hot or cold water prerinse, or steaming the tank to improve heel removal.

In addition, TEC facilities can benefit from reducing the volume of wastewater they discharge. EPA did not include flow reduction in the regulatory bases; however, EPA believes that facilities will incorporate flow reduction in their compliance strategy. Section 7.0 of the *Technical Development Document for Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category* (EPA- 821-R-00-012, June 2000, **http://www.epa.gov/ost/guide**) discusses heel reduction techniques and water conservation practices in detail.

Numerical Effluent Limitations Guidelines and Standards

Tables 4-2 through 4-5 present the BPT, BCT, BAT, and NSPS limitations for existing and new direct dischargers with operations in Subparts A through D, respectively. EPA has reserved BAT limitations for Subpart D (Tanks Transporting Food Grade Cargos).

Note that EPA proposed effluent limitations and pretreatment standards for chromium in Subpart A; however, EPA did not promulgate effluent limitations and pretreatment standards for chromium for reasons described in the Preamble for the TEC rule. EPA sampling of raw wastewater at TEC facilities found a maximum concentration of 18.6 mg/L (although the average concentration was 2.4 mg/L). Exterior acid washing is a common service that tank truck facilities provide to their customers to brighten and remove the tarnish from the chrome parts of a tank truck. This service may leach chromium from the external truck parts. Best management practices or adequate pretreatment may be required to control pollutants generated by such washings.

Table 4-2. Subpart A—Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos: BPT, BCT, BAT, and NSPS Concentration-Based Limitations for Discharges to Surface Waters

Pollutant or Pollutant Property	[mg/L]	
	Maximum for Any One Day	Monthly Average
BOD_5	61	22
TSS	58	26
Oil and grease (HEM)	36	16
pH	(a)	(a)
Copper	0.84	NA
Mercury	0.0031	NA

(a) Within 6 to 9 at all times.
NA - Not applicable.

Table 4-3. Subpart B—Rail Tank Cars Transporting Chemical and Petroleum Cargos: BPT, BCT, BAT, and NSPS Concentration-Based Limitations for Discharges to Surface Waters

Pollutant or Pollutant Property	[mg/L]	
	Maximum for Any One Day	Monthly Average
BOD_5	61	22
TSS	58	26
Oil and grease (HEM)	36	16
pH	(a)	(a)
Fluoranthane	0.076	NA
Phenanthrene	0.34	NA

(a) Within 6 to 9 at all times.
NA - Not applicable.

Table 4-4. Subpart C— Tank Barges and Ocean/Sea Tankers Transporting Chemical and Petroleum Cargos: BPT, BCT, BAT, and NSPS Concentration-Based Limitations for Discharges to Surface Waters

Pollutant or Pollutant Property	[mg/L]	
	Maximum for Any One Day	Monthly Average
BOD_5	61	22
TSS	58	26
Oil and grease (HEM)	36	16
pH	(a)	(a)
Cadmium	0.020	NA
Chromium	0.42	NA
Copper	0.10	NA
Lead	0.14	NA
Mercury	0.0013	NA
Nickel	0.58	NA
Zinc	8.3	NA

(a) Within 6 to 9 at all times.
NA - Not applicable.

Table 4-5. Subpart D—Tanks Transporting Food Grade Cargos: BPT, BCT, and NSPS Concentration-Based Limitations for Discharges to Surface Waters

Pollutant or Pollutant Property	[mg/L]	
	Maximum for Any One Day	Monthly Average
BOD_5	56	24
TSS	230	86
Oil and grease (HEM)	20	8.8
pH	(a)	(a)

(a) Within 6 to 9 at all times.

Tables 4-6 and 4-7 present the concentration-based limitations for existing and new indirect dischargers in Subparts A and B, respectively, that choose not to use the pollution prevention compliance option (see Section 5 for more information). Table 4-8 shows the concentration-based limitations for those facilities in Subpart C.

Table 4-6. Subpart A—Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos: PSES and PSNS Concentration-Based Limitations for Discharges to POTWs

Note! Indirect dischargers in Subparts A and B have the option of complying with a Pollutant Management Plan in lieu of numeric limits. See Section 5 for details.

Pollutant or Pollutant Property	Maximum for Any One Day (mg/L)
Nonpolar material (SGT-HEM)	26
Copper	0.84
Mercury	0.0031

Table 4-7. Subpart B—Rail Tank Cars Transporting Chemical and Petroleum Cargos: PSES and PSNS Concentration-Based Limitations for Discharges to POTWs

Note! Indirect dischargers in Subparts A and B have the option of complying with a Pollutant Management Plan in lieu of numeric limits. See Section 5 for details.

Pollutant or Pollutant Property	Maximum for Any One Day (mg/L)
Nonpolar material (SGT-HEM)	26
Fluoranthene	0.076
Phenanthrene	0.34

Table 4-8. Subpart C—Tank Barges and Ocean/Sea Tankers Transporting Chemical and Petroleum Cargos: PSES and PSNS Concentration-Based Limitations for Discharges to POTWs

Pollutant or Pollutant Property	Maximum for Any One Day (mg/L)
Nonpolar material (SGT-HEM)	26
Cadmium	0.020
Chromium	0.42
Copper	0.10
Lead	0.14
Mercury	0.0031
Nickel	0.58
Zinc	8.3

Where Are Facilities Required to Demonstrate Compliance with the Numerical Limitations and Standards?

BPT, BCT, BAT, and NSPS for the TEC industry are end-of-pipe limitations that apply to the process wastewater fraction of the final effluent at the point of discharge to waters of the United States. PSES and PSNS are applicable to the final effluent at the point of discharge to the POTW sewer system.

Section 5: What is the Pollutant Management Plan and How Can It Be Used To Demonstrate Compliance With the TEC Effluent Limitations Guidelines and Standards?

When developing the rule, EPA identified and evaluated a number of pollution prevention controls applicable to the TEC industry, including the use of dedicated tanks, heel minimization, water conservation practices, and reduction in the toxicity and amount of chemical cleaning solutions. These controls are also described in more detail in Section 7.0 of the *Technical Development Document for the Transportation Equipment Cleaning Point Source Category* (EPA-821-R-00-012, **http://www.epa.gov/ost/guide**). EPA identified these controls as voluntary practices that many facilities in the industry were already implementing as environmental controls. POTWs have also required such practices as part of their local pretreatment requirements.

EPA believes that pollution prevention and effective pollutant management are appropriate and effective ways of reducing pollutant discharges from Subparts A and B facilities (tank trucks, intermodal tank containers, and rail tank cars transporting chemical and petroleum cargos). Therefore, for indirect dischargers in these two subparts, EPA provided two compliance options to allow owners and operators maximum flexibility to meet these standards: comply with a pollution prevention option (based on development and implementation of a Pollutant Management Plan (PMP)), or meet a set of numeric limits at the discharge point. The PMP is described below.

Note! Only indirect dischargers in Subparts A and B have the option of complying with a Pollutant Management Plan in lieu of numeric limits.

EPA has determined that a PMP is an appropriate compliance alternative to the numeric pretreatment standards. Therefore, a facility using the PMP option does not have to conduct numeric pollutant monitoring in order to demonstrate compliance. A pretreatment authority may still establish local limits where necessary to prevent pass-through or interference. However, EPA considers compliance with the components of the PMP sufficient to demostrate compliance with PSES and PSNS.

Facilities that elect the pollution prevention compliance option must also meet the paperwork requirements under the General Pretreatment Regulation (40 CFR 403), such as submittal of a baseline monitoring report (BMR) (40 CFR 403.12(b)). Guidance on the requirements of the BMR for TEC facilities electing the pollution prevention compliance option is included in Appendix B.

Overview of the Pollutant Management Plan

The PMP is an effective alternative for indirect dischargers in Subparts A and B to reduce pollutant discharges. The PMP consists of 10 provisions that a facility is to meet to achieve an allowable discharge. A PMP may be a less costly method of compliance than meeting numeric standards for these subcategories due to savings of additional monitoring and treatment costs. Each facility subject to the final

TEC rule will need to choose how to comply with the regulation (i.e., comply with the numeric pretreatment standards or agree to develop and implement a PMP). Facilities will also need to agree to make the PMP enforceable, meaning the facility would agree to include it in its individual control mechanism or POTW permit.

Facilities should work closely with permit writers to develop a plan that effectively protects the environment, results in pollutant source reduction and waste minimization, and adequately prevents POTW pass-through and interference.

How Does a Facility Demonstrate Compliance with the Plan?

If a facility chooses to develop and implement a PMP, it must notify the appropriate control authority of its intent to achieve the pollution prevention allowable discharge pretreatment standard[1] prior to obtaining, renewing, or modifying its individual control mechanism or POTW permit. To do this, a facility should submit to the control authority a statement of its intent to implement a PMP, which must be certified by the responsible corporate officer as defined in 40 CFR 403.12(l). A responsible corporate officer is defined as "(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures." The certification should state that the facility intends to develop and implement a PMP to comply with the rule.

The facility will submit a copy of its PMP, as described below, to the control authority at the time the facility applies to obtain, renew, or modify the individual control mechanism or POTW permit. The facility must maintain a copy of the PMP on site and make it available for inspection. This paperwork must be available to the control authority and enforcement officials, and must document the compliance option chosen by the facility.

Components of the Pollutant Management Plan

According to 40 CFR 442, the PMP (Plan) will include the following components:

(i) procedures for identifying cargos, the cleaning of which is likely to result in discharges of pollutants that would be incompatible with treatment at the POTW;

(ii) for cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that heels be fully drained, segregated from other wastewaters, and handled in an appropriate manner;

[1] 40 CFR 442, pollution prevention allowable discharge means the quantity of/concentrations of pollutants in wastewaters being discharged to POTWs after a facility has demonstrated compliance with the PMP provisions.

(iii) for cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that the tank be prerinsed or presteamed as appropriate and the wastewater segregated from wastewaters to be discharged to the POTW and handled in an appropriate manner, where necessary to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW;

(iv) all spent cleaning solutions, including interior caustic washes, interior presolve washes, interior detergent washes, interior acid washes, and exterior acid brightener washes shall be segregated from other wastewaters and handled in an appropriate manner, where necessary, to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW;

(v) provisions for appropriate recycling or reuse of cleaning agents;

(vi) provisions for minimizing the use of toxic cleaning agents (solvents, detergents, or other cleaning or brightening solutions);

(vii) provisions for appropriate recycling or reuse of segregated wastewaters (including heels and prerinse/presteam wastes);

(viii) provisions for off-site treatment or disposal, or effective pretreatment of segregated wastewaters (including heels, prerinse/presteam wastes, spent cleaning solutions);

(ix) information on the volumes, content, and chemical characteristics of cleaning agents used in cleaning or brightening operations; and

(x) provisions for maintaining appropriate records of heel management procedures, prerinse/presteam management procedures, cleaning agent management procedures, operator training, and proper operation and maintenance of any pretreatment system.

These components are described in detail below.

(i) Procedures for identifying cargos, the cleaning of which is likely to result in discharges of pollutants that would be incompatible with treatment at the POTW

The PMP will outline these procedures; however, the POTW should work with the facility to identify which pollutants may not be compatible with its sewer lines or treatment system so that the facility can appropriately manage cargos containing these pollutants. It is critical that the facilities identify these pollutants before the cargos are cleaned. Rinse waters that contain pesticides, herbicides, hazardous waste, priority pollutants, heavy metals, or dioxins may not be compatible with biological treatment or sludge management at a POTW.

Based on responses to EPA's TECI 1994 Detailed Questionnaire, facilities potentially have methods available to identify the commodities or cargos transported in tanks accepted for cleaning. These methods include:

- Bill of lading;
- Material Safety Data Sheet (MSDS);
- Hazardous waste manifest;

- Verbal description;
- Placards; and
- Facility cleaning certifications.

Most facilities use both the bill of lading and MSDSs to identify the cargo and its chemical components.

As an example, several facilities have implemented computer tracking systems to streamline the identification process. Such systems typically store information in a comprehensive database about a particular fleet or carrier, the cargos cleaned, and the chemical content of the cargos. The database stores historical records and documents the appropriate management of incompatible cargos.

However, based on information that EPA obtained during facility site visits, MSDSs are not required and may not be available. In some cases, drivers may know the cargo hazard class, but may not have a proper cargo shipping name, which identifies chemical contents. In other cases, shipping names such as "Not otherwise indicated" or "Not otherwise specified" are used, which are not sufficient to identify the chemical contents of the cargo. The PMP for facilities that accept tanks that contain such unidentified cargos should provide a basis for determining whether cleaning would result in discharges of pollutants that would be incompatible with treatment at a POTW.

(ii) For cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that heels be fully drained, segregated from other wastewaters, and handled in an appropriate manner

Facilities that identify incompatible cargos in item (i) are required to implement the item (ii) provisions. As required by component (ii), after draining and segregating heels from other wastewater, facilities must handle these heels appropriately, as discussed below.

Incompatible heels can be segregated into drums or tanks either for disposal by landfilling or incineration, or for reuse by alternative means (which may include reuse on site, return to the consignee, or sale to a reclamation facility) or for on-site pretreatment. Facilities may reuse heels comprising soaps, detergents, solvents, acids, or alkalis as tank cleaning solutions or as neutralizers for future heels and for wastewater treatment.

According to the TECI 1994 Detailed Questionnaire, the largest volumes of heels are reused or recycled off site. The largest percentage of reused or recycled heel consists of food grade products, petroleum and coal products, organic and inorganic chemicals, and chemical products. Heel from food grade products is often reused as animal feed; heel from petroleum and coal products is typically sold for product recovery.

The most common methods of heel disposal reported in the Detailed Questionnaire include:

- Discharge with tank cleaning wastewater;
- Discharge or haul separately from tank cleaning wastewater to a centralized waste treater (CWT);

- Discharge or haul separately from tank cleaning wastewater to a hazardous waste treatment, storage, and disposal facility (TSDF);
- Evaporation;
- On-site or off-site land disposal;
- On-site or off-site land application;
- On-site or off-site incineration;
- On-site or off-site heat recovery;
- On-site or off-site reuse or recycle; and
- Deep-well injection.

(iii) For cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that the tank be prerinsed or presteamed as appropriate and the wastewater segregated from wastewaters to be discharged to the POTW and handled in an appropriate manner, where necessary, to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW

Facilities that identify incompatible cargos in item (i) are required to carry out the item (iii) provisions. Appropriate handling of prerinse/presteam wastewaters typically includes recycle/reuse, off-site treatment or disposal, or on-site pretreatment that has been demonstrated to sufficiently reduce the pollutant level to prevent pass-through or interference (as described in item (viii)).

During or after heel removal and before cleaning the tank, TEC facilities rinse the tank interior with a short burst of water (e.g., 5 to 10 seconds) to remove additional heel that adheres to the tank's interior, or apply steam to the tank interior and collect the steam condensate that contains residual heel. Purposes of the prerinse or presteam include: (1) enhancing heel removal; (2) minimizing the amount of heel ultimately contained in tank cleaning wastewater (pollution prevention); (3) extending the service life of tank cleaning solutions by reducing solution contamination from tank heel; and (4) protecting the facility and POTW wastewater treatment system, which may not be designed to treat residual heel. Incompatible prerinse/presteam wastewater may be segregated into drums or tanks for appropriate handling.

(iv) All spent cleaning solutions, including interior caustic washes, interior presolve washes, interior detergent washes, interior acid washes, and exterior acid brightener washes shall be segregated from other wastewaters and handled in an appropriate manner, where necessary, to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW

Appropriate handling of spent cleaning solutions typically includes regeneration of the solutions, off-site treatment or disposal, or pretreatment that has been demonstrated to sufficiently reduce the pollutant level to prevent pass-through or interference (as described in item (viii)).

For many cargo types, facilities may have to use chemical cleaning solutions in the tank cleaning process. Responses to the TECI 1994 Detailed Questionnaire

indicate that facilities typically use four types of cleaning solutions: (1) acid solution; (2) caustic solution; (3) detergent solution; and (4) presolve solution.

Acid solutions most commonly used by TEC facilities are composed of hydrofluoric and/or phosphoric acid and water. Facilities use these acid solutions for tank interior washing and for tank exterior washing to brighten aluminum and stainless steel tank exteriors. Best management practices or adequate pretreatment may be required to control pollutants generated by such washings.

Caustic solutions typically are a mixture of sodium hydroxide and water in different proportions. The most common ingredients in detergent solutions are sodium metasilicate and phosphate-based surfactants. Some facilities use off-the-shelf brands of detergent solutions such as Tide®, Arm & Hammer®, and Pine Power®. Often, concentrated detergents ("boosters") such as glycol ethers or esters are added to acid and caustic solutions to improve their effectiveness.

Presolve solutions usually consist of diesel fuel, kerosene, or some other petroleum-based solvent. Other miscellaneous chemical cleaning solutions include passivation agents (oxidation inhibitors), odor controllers such as citrus oils, and sanitizers; these solutions are usually applied on a cargo-specific or tank-specific basis.

Responses to the TECI 1994 Detailed Questionnaire indicate no obvious trends between the chemical cleaning solutions used and the cargo types cleaned (i.e., facilities reported using each chemical cleaning solution category to clean all types of cargos). The chemical cleaning solutions used depend on facility preference, customer preference, wastewater treatment system compatibility, and/or POTW limitations.

Facilities may haul spent cleaning solutions off site for treatment or disposal or discharge them to their on-site wastewater treatment system, if compatible. Most facilities currently reuse their cleaning solutions and then discharge one or more spent cleaning solutions to their on-site wastewater treatment system.

(v) Provisions for appropriate recycling or reuse of cleaning agents

The PMP is to include provisions for recycle or reuse of cleaning agents. As mentioned in item (iv), many facilities currently reuse or recycle their cleaning solutions. The facilities generally reuse chemical cleaning solutions until they are no longer effective, as determined by cleaning personnel based either on experience or chemical testing (e.g., titration). Facility personnel periodically add make-up solution to replace solution lost in the final rinse or to boost efficacy. Once cleaning solutions have become spent, or are no longer effective, they must be either treated in on-site wastewater treatment systems or hauled off site for treatment or disposal.

Most TEC facilities that discharge chemical cleaning solutions with their tank cleaning wastewater recycle and reuse the solutions at least once prior to discharge. Facilities usually use automated cleaning systems or cleaning solution recirculation loops to reuse the cleaning solutions until their efficacy diminishes below accepted levels. This reduces the amount of additional chemical cleaning solution required for each tank cleaned; instead, smaller amounts of make-up solution are periodically added to replace solution lost in the final rinse or to boost efficacy. Recycle and reuse of heated cleaning solutions also reduces energy requirements.

(vi) Provisions for minimizing the use of toxic cleaning agents (solvents, detergents, or other cleaning or brightening solutions)

To minimize the use of toxic cleaning agents, facilities could include provisions such as recycling/reusing the toxic cleaning agents (see item (v)); reducing the volume of cleaning solution used per tank; and/or substituting less toxic cleaning agents.

Typically, presolve solutions are the most toxic chemical cleaning solutions and are least compatible with facility wastewater treatment systems. Presolve usually consists of diesel fuel, kerosene, or some other petroleum-based solvent and is used to clean hardened or caked-on products that are not easily removed by other cleaning processes. In many cases, presolve may be substituted by acidic or caustic solutions to which detergent "boosters" (e.g., glycol ethers or esters) are added to improve their effectiveness.

Other toxic and hazardous cleaning agents that may be used by a few TEC facilities include chlorinated organic solvents and hydrofluoric acid brighteners. Facilities could look for potential substitutes for these cleaning agents, such as nonchlorinated solvents and detergents. Detergent "boosters" or alkaline brighteners additives can improve effectiveness.

Some facilities may reduce or eliminate their use of chemical cleaning solutions by using steam cleaning or hot or cold water washes for water-soluble cargos or by extending the process time of cleaning steps that do not use toxic cleaning solutions.

Facilities can reduce the amount of toxicity of chemical cleaning solutions by having written cleaning process standard operating procedures and pollution prevention plans that their cleaning personnel carefully follow. Facilities could conduct ongoing training to ensure that their cleaning personnel practice the procedures contained in these resources at all times.

(vii) Provisions for appropriate recycling or reuse of segregated wastewaters (including heels and prerinse/presteam wastes)

Facilities should initially assess whether recycling or reuse of these wastewaters is appropriate. As discussed in item (ii), most segregated heels are reused or recycled on or off site.

Facilities do not generally reuse prerinse or presteam wastewater on site because of the high water content and high pollutant loadings associated with these streams. However, they should evaluate their wastewater to determine whether it is feasible to reuse or recycle any or all wastewaters, either in tank cleaning operations, or for some other purpose.

There are several ways to reuse and recycle heel. One method is to return the heel to the consignee. Another method is to reuse heels at the facility. For example, facilities can use fuel and fuel oil heels in their on-site boilers or in their own transportation equipment. They can also reuse heels comprising soaps, detergents, solvents, acids, or alkalis for tank cleaning, neutralization, or wastewater treatment. Many food grade heels can be recycled as animal feed. Some heels, such as

fertilizers, can be segregated, stored, and sold as product. The PMP will identify appropriate procedures for heel reuse and recycling processes.

(viii) Provisions for off-site treatment or disposal, or effective pretreatment of segregated wastewaters (including heels, prerinse/presteam wastes, spent cleaning solutions)

As described in items (ii), (iii), and (iv), the PMP should specify that the facility will appropriately handle segregated wastewaters and spent cleaning solutions by means such as off-site treatment or disposal, or demonstrate that pretreatment has sufficiently reduced pollutant levels to prevent pass-through or interference.

The most common method of heel disposal is land disposal, which is used most frequently for petroleum and coal product heels and for dry-bulk cargo heels. Land application, deep-well injection, and incineration are possible methods, but rarely used. Facilities may also haul heels to a privately owned treatment works, federally owned treatment works, centralized waste treater, ballast water treatment facility, or hazardous waste treatment, storage, and disposal facility, all of which may be better equipped to treat these wastes.

Facilities may dispose of prerinse/presteam waste off site because it is not easily pretreated or reused on site. Facilities can also haul prerinse/presteam wastewater to a facility that may be better equipped to treat these wastes.

Spent cleaning solutions may be hauled off site for disposal, discharged to the on-site wastewater treatment system if compatible, or hauled off site to a facility that is better equipped to treat these concentrated chemical wastes. Facilities can combine off-site disposal with recirculating and reusing of chemical cleaning solutions to reduce the need for fresh cleaning solution and to minimize the amount of cleaning solutions that enter their wastewater treatment system.

Facilities may also choose to pretreat segregated wastewaters on site, and discharge these wastewaters with other TEC process wastewater. In this case, the facility would have to demonstrate that the pretreatment is effective for the prevention of pass through and interference. On-site wastewater pretreatment may include any one or a combination of physical, chemical, and biological processes as needed to remove pollutants from TEC wastewater prior to discharge to a POTW. Some technologies for pretreatment include:

- Equalization;
- Gravity settling;
- pH adjustment;
- Oil/water separation;
- Dissolved air flotation;
- Coagulation/flocculation; and
- Clarification.

Section 7.0 of the *Technical Development Document for the Transportation Equipment Cleaning Point Source Category* (EPA-821-R-00-012, **http://www.epa.gov/ost/guide**) describes these technologies in greater detail.

Facilities choosing to pretreat and discharge segregated wastewaters must include a description of the treatment system in their PMP sufficient to demonstrate effective pretreatment. Information about treatment systems typically available at a facility may include:

- Process flow diagram;
- Operating conditions;
- Chemical usage;
- Maintenance and inspection schedules;
- Past effluent monitoring data.

Facilities choosing to implement EPA's technology bases for PSES and PSNS may state that the technology bases were demonstrated by EPA to reduce pollutant levels to prevent pass-through or interference.

(ix) Information on the volumes, content, and chemical characteristics of cleaning agents used in cleaning or brightening operations

Each PMP will specify its own record-keeping requirements for this information. For example, facilities may develop and maintain a cleaning agents use log which includes chemical purchase records and corresponding material safety data sheets (MSDSs). The log may also describe chemical solution preparation steps performed on site, such as dilution or use of additives not included in the original formulation. Facilities can use the data stored in records to analyze trends in their use of cleaning or brightening agents as well as to identify alternative agents and minimize use.

(x) Provisions for maintaining appropriate records of heel management procedures, prerinse/presteam management procedures, cleaning agent management procedures, operator training, and proper operation and maintenance of any pretreatment system.

Each PMP will specify its own record-keeping requirements for this information. For example, facilities may develop and maintain log entries for each of these operations. As in item (ix), facilities can use data stored in records to analyze trends and compliance in heel management procedures, prerinse/presteam management procedures, cleaning agent management procedures, operator training, and proper operation and maintenance of any pretreatment system.

Heel Management Procedures

Most facilities currently do not maintain heel management logs. Some facilities maintain waste heel disposal logs (e.g., drum disposal logs), but do not record specific cargos and heel volumes removed from tanks. Therefore, EPA anticipates that two log entries could be kept to document heel management procedures. First, a facility heel removal log may record the following information for cargos identified as incompatible with treatment at the POTW (items (i) and (ii) of the PMP): date, cargo, volume drained, and on-site storage (e.g., drum number). Second, a facility may record information such as on-site storage (as a link to the heel removal log), storage container capacity, accumulation start and end date, ultimate disposition and date, and manifest number (if hazardous waste).

Facilities should ensure that heel management records demonstrate compliance with provisions for heel recycling or reuse and ultimate disposition discussed in items (vii) and (viii) of the PMP.

Many facilities implement measures to reduce the amount of heel received. The most commonly practiced of these measures is to refuse or reject tanks for cleaning if they contain excessive heel. Some facilities charge an extra fee per weight or volume of heel received as an incentive to tank owners to minimize heel. Most TEC facilities maintain good communications with their customers, and drivers are instructed to inspect all tanks to ensure that the product is completely offloaded, and to eliminate the need to reject tanks for cleaning or to assess extra fees. Heel removal log entries may also record the shipper, consignee, and driver to help target heel reduction efforts.

Prerinse/Presteam Management Procedures

Appropriate records for prerinse/presteam management procedures may include a log entry to record information similar to that recorded for heel management. Because prerinse/presteam is required for cargos identified as being incompatible with treatment at a POTW, records should include a one-to-one correspondence between heel removal and prerinse/presteam to document compliance. Records should also demonstrate compliance with provisions for prerinse/presteam waste recycling and reuse and ultimate disposition discussed in items (vii) and (viii) of the PMP.

Cleaning Agent Management Procedures

Appropriate records for cleaning agent management procedures may include a log entry to document compliance with provisions for appropriate recycling or reuse of cleaning agents (items (v) of the PMP), minimizing use of toxic cleaning solutions (item (vi) of the PMP), and appropriate management of spent solutions (item (viii) of the PMP). Information recorded may include: cleaning agent, titration or other test results and date, makeup volume and date, volume when spent, on-site storage, ultimate disposition and date, and manifest number (if hazardous waste).

Operator Training

Operators will require training to understand and implement the provisions and procedures of the PMP. In particular, tank cleaning personnel should be appropriately trained to identify cargos, the cleaning of which is likely to result in discharges of pollutants that would be incompatible with treatment at the POTW. Wastewater treatment operators should be appropriately trained to operate the system, use the correct treatment chemicals in appropriate quantities, and operate the system within the stated design parameters (e.g., pH and flow rate). Appropriate records for operator training may include log entries to document operator training on heel management, prerinse/presteam waste management, cleaning agent management, wastewater treatment operation and maintenance, information collection, and record-keeping.

Proper Operation and Maintenance of Any Pretreatment System

Examples of appropriate records for pretreatment systems include operating, inspection, and maintenance and repair documents. Operating log entries may record data for key operating parameters for each treatment unit. For example, key operating parameters for chemical treatment units include typical wastewater flow rate, chemicals used and chemical addition rates, and wastewater pH. Inspection logs document inspections performed each operating shift to identify spills and leaks and monitor equipment function (e.g., wastewater and sludge pumps, chemical addition pumps, and pH monitors). Maintenance and repair log entries may document system cleanout and residue management, parts replacement, equipment repair and adjustment, and meter calibration.

Based on its knowledge of the industry, EPA believes that improper pretreatment system operation and maintenance can significantly reduce pretreatment efficiency. For example, during site visits and sampling episodes, EPA observed pretreatment systems with excessive accumulation of settled solids and floating oil and grease. Excessive settled solids and floating oil and grease can significantly reduce treatment system capacity and wastewater detention times in treatment units such as equalization, chemical treatment, and settling tanks. Excessive settled solids can impede or interfere with treatment mechanisms such as air lines in dissolved air flotation units. Excessive floating oil and grease can significantly reduce the effective surface area of tubes and corrugated and/or inclines plates in coalescing-type oil/water separators.

How Does a Facility Determine Whether to Implement a Pollutant Management Plan or to Comply With Numeric Limitations?

A facility subject to the TEC regulation must choose to comply with either the PMP or with numeric limitations. EPA acknowledges that costs for some facilities to comply with numeric limitations may be high relative to removals. In considering the wide variety of tanker cargos accepted for cleaning and the potentially high cost of compliance with numeric limitations, EPA recognizes that one of the most successful means of reducing the discharge of pollutants in wastewater may be pollution prevention and source reduction. The pollution prevention compliance option may be more cost-effective for those facilities already using good pollution prevention practices and/or operating in accordance with a PMP. On the other hand, it may be more cost-effective for facilities that already have extensive wastewater treatment in place to comply with the numeric limitations.

Each facility may want to fully explore the costs associated with both compliance options and then determine which option is more cost-effective. EPA has provided detailed cost estimates and cost equations for the treatment technologies evaluated for BPT, BAT, and PSES. These cost equations can be found in Section 9.0 of the *Technical Development Document for Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category* (EPA-821-R-00-012, June 2000, **http://www.epa.gov/ost/guide**).

Section 6: How are Permits Developed for Numerical Limitations?

This section describes the step-by-step process of establishing numerical permit limits using effluent limitations guidelines and standards for facilities in Subparts A through D. This discussion will help in establishing permits for these facilities. Note that this discussion does not apply to facilities choosing to demonstrate compliance using a PMP. See Section 5 for information on how to demonstrate compliance using a PMP.

Reviewing Permit Applications

Direct dischargers (new and existing) must submit the following forms when applying for an NPDES permit:

- **Form 1:** Requests basic facility information and the SIC codes for the products manufactured.
- **Form 2C (existing sources) or Form 2D (new sources):** Requests information on outfall locations, flow characteristics, sources of pollutants, influent and effluent characteristics, pollutants expected to be present, treatment technologies, and production information.

These forms, if completed properly, should provide the permit writer most of the background information necessary to establish an NPDES permit. The permit writer may wish to also visit facilities to gather more information.

Indirect dischargers or POTWs may request written certification from EPA on whether they are subject to new pretreatment standards. New indirect dischargers must request written certification from EPA prior to commencing discharge. Each request describes which subcategories might be applicable along with evidence and reasons why a particular subcategory is applicable and why others are not. EPA will send the written certification to the facility and the POTW.

Indirect discharging facilities must meet the paperwork requirements under the General Pretreatment Regulation (40 CFR 403), such as submittal of a baseline monitoring report (BMR) (40 CFR 403.12(b)). The BMR, if completed properly, should provide most of the background information necessary to establish an individual control mechanism or POTW permit. The control authority may wish to also visit facilities to gather more information.

Developing Permit Limits

Permit writers and control authorities must apply the effluent limitations guidelines and standards developed by EPA to establish numerical permit limits for facilities. Note that permits may also include WQBELs (see Section 2); however, this document focuses on developing permit limits based on effluent limitations guidelines and standards for the TEC Point Source Category.

The effluent limitations guidelines and standards for the TEC industry are concentration-based and adhere to the "building block" concept. Each regulated wastestream in an outfall is typically assigned a mass-based discharge allowance based on a calculation of its applicable concentration-based limitation and annual average flow. The sum of the allowances is the total mass discharge allowance for the outfall. In other words, the applicable permit limitations for facilities in more than one subcategory is the sum of the mass loadings based upon production in each subcategory and the respective subcategory effluent limitations guidelines.

Mass-based limitations for unregulated or dilution wastewater streams at direct discharging facilities are established using best professional judgement.

Indirect dischargers are subject to mass-based limitations or alternative concentration-based limitations. The permit writer may use the combined wastestream formula (CWF) to establish pretreatment standards. The CWF (40 CFR 403.6(e)) is a method for calculating alternative pollutant limits at industrial facilities where regulated process effluent is mixed with other wastewaters (either regulated or nonregulated) prior to treatment.

Permit limits are generally expressed in terms of allowable mass (in units of pounds or kilograms) of pollutant per day. However, the TEC industry regulations are concentration-based. To convert the concentration-based limitations to mass-based limitations, the permit writer or control authority will need to accurately determine the annual average process wastestream flow. The permit writer or control authority may elect to include unregulated waste streams, which are not regulated on a national level, in a facility permit. The permit writer or control authority also decides if a facility may discharge an unregulated waste stream and the conditions at which the facility may discharge the waste.

How are Annual Average Process Wastewater Discharges Calculated?

When establishing the final limitations and standards, permit writers and control authorities must account for the facility's dilution and unregulated wastewater contained in the discharged effluent to develop either mass-based or concentration-based permit limits.

"Process wastewater" is defined, in general, by 40 CFR Part 122.2. TEC process wastewater includes all wastewaters associated with cleaning the interiors of tanks including: tank trucks, rail tank cars, intermodal tank containers, tank barges, and ocean/sea tankers used to transport commodities or cargos that come into direct contact with the interior of the tank or container. At those facilities that clean tank interiors, TEC process wastewater includes wastewater generated from washing vehicle exteriors, equipment and floor washings, TEC-contaminated stormwater, wastewater prerinse cleaning solutions, chemical cleaning solutions, and final rinse solutions. Permit writers and control authorities must determine, on a case-by-case basis, the appropriate process wastewater stream to be used in developing mass-based limitations.

The annual average flow is defined as the average of daily flow measurements calculated over at least a year; data from multiple years may be useful to calculate a more representative average daily flow. It may be difficult to determine the appropriate flow rate, since often TEC facilities may not know how many tanks they will clean and, as a result, how much wastewater they will generate. In addition, it is difficult to know the types of cargos that will be cleaned, which may vary the amount of wastewater generated. However, permit writers and control authorities have flexibility when determining a facility's annual average flow rate. For example, if a facility is expecting significant changes in production as evidenced by previous years' data, the permit writer or control authority may establish a flow rate expected to be representative during the permit term.

If no historical data or actual process wastewater flow data exist (such as for a new source), permit writers and control authorities should reasonably estimate the facility's projected flow. This may include a request for the facility to measure process wastewater flows for a representative period of time to establish a flow basis. Permit writers and control authorities are advised to establish a flow rate that is expected to be representative during the entire term of the permit.

In cases where the wastewater discharge flow claimed by the facility appears to be excessive, a more appropriate process wastewater discharge flow may be developed to compute the mass-based limitations. Permit writers and control authorities should review the following items to evaluate whether the facility's process wastewater discharge flow is excessive.

- For the proposed rule, the Agency considered good water conservation practices to be represented by the median tank interior cleaning wastewater volume discharged per tank cleaning (including non-TEC waste streams not easily segregated) for each subcategory. Table 6-1 presents these median wastewater flows. While the median flow per tank may not be appropriate for some facilities (because of variation due to cargo cleaned, tank type and construction, and tank condition), most facilities should be able to attain it.
- Table 6-2 provides wastewater generation rates for various cargo and tank types.

EPA envisions that permit writers and control authorities will compare the wastewater flow discharged by a specific facility to the industry averages presented in these tables. If a facility discharges an excessive amount of water, permit writers and control authorities can then determine if those flows are warranted by reviewing records of the types of cargos and tanks cleaned at that facility.

Table 6-1. Median Wastewater Flows for the TEC Industry

Facility Type	Median Flow (gallons/tank)
Truck/Chemical	605
Rail/Chemical	2,091
Barge/Chemical & Petroleum	4,857
Truck/Food	790
Rail/Food	4,500
Barge/Food	4,500
Truck/Petroleum	193
Rail/Petroleum	193
Truck/Hopper	144
Rail/Hopper	267
Barge/Hopper	712

Table 6-2. Average Volume of Interior Cleaning Wastewater Generated per Tank Cleaning by Cargo Group and Tank Type - Discharging Facilities Only

Cargo Group	Average Volume of Interior Cleaning Wastewater Generated (gallons/tank)							
	Truck Tank	Rail Tank	Tank Barge	Truck Hopper	Rail Hopper	Barge Hopper	Intermediate Bulk Container	Intermodal Tank Container
Food Grade Products	360	1,200	19,000	520	1,800	17,000	NC	430
Petroleum and Coal Products	410	990	13,000	(a)	(a)	(a)	87	430
Latex, Rubber, and Resins	610	1,600	(a)	(a)	(a)	NC	50	230
Soaps and Detergents	440	620	NC	(a)	(a)	NC	(a)	550
Biodegradable Organic Chemicals	330	1,200	9,100	(a)	(a)	NC	(a)	(a)
Refractory Organic Chemicals	400	1,200	11,000	NC	NC	NC	NC	NC
Inorganic Chemicals	410	1,300	12,000	(a)	(a)	NC	(a)	NC
Agricultural Chemicals and Fertilizers	330	1,700	3,600	(a)	(a)	850	NC	NC
Chemical Products	640	1,700	3,700	NC	(a)	NC	(a)	810
Hazardous Waste	170	NC	NC	NC	NC	NC	NC	NC
Nonhazardous Waste	280	530	(a)	NC	NC	NC	NC	NC
Dry Bulk Commodities or Cargos	580	(a)	NC	470	1,900	(a)	NC	NC

(a) Not disclosed to prevent compromising confidential business information.
NC - Not characterized by the 1994 TEC Detailed Questionnaire sample population.

How are Mass-Based Permit Limitations Calculated?

After determining the facility's annual average process wastewater discharge flow, permit writers and control authorities can use the annual average process wastewater discharge flow or other established flow rate to convert concentration-based limitations into mass-based limitations, using the following equation:

$$L_m = L_c \times Q \times k$$

where: L_m = mass-based effluent limitation (lbs/day)

L_c = concentration-based limitation (mg/L)

Q = average process wastewater discharge (gal/day)

k = unit conversion factor

In this example, the unit conversion factor, k, is used to convert from [(mg/L) x (gal/day)] to (lbs/day), as follows:

$$k = \left(\frac{1L}{0.264\ gal}\right) \times \left(\frac{1g}{1{,}000\ mg}\right) \times \left(\frac{1\ lb}{453.59\ g}\right) = 8.35 \times 10^{-6}\ \frac{L \times lb}{gal \times mg}$$

Should the Permit Include Limits Based on Effluent Limitations Guidelines or WQBELs?

All receiving waters have water quality standards established by the states or EPA that protect the designated uses of the receiving water. The effluent limitations guidelines established by EPA cannot be less stringent than WQBELs. After determining the allowable limits based on effluent limitations guidelines, permit writers must compare them to the receiving water's WQBELs. If limits based on effluent limitations guidelines for a particular pollutant result in discharges that exceed the WQBELs for the receiving water, permit writers must establish permit limits that are based on WQBELs (see Section 2 for more information regarding WQBELs). Therefore, if upon reviewing the effect of a discharge on a receiving water it is determined that technology-based permit limits are not sufficient to meet these water quality standards, then permit writers have the authority to require more stringent effluent limits.

Developing Monitoring Requirements

Permit writers and control authorities must also establish monitoring requirements for regulated facilities. NPDES permits require dischargers to monitor their effluent to ensure that they are complying with permit limitations. As specified in 40 CFR Parts 122.41, 122.44, and 122.48, all NPDES permits must specify requirements for using, maintaining, and installing (if appropriate) monitoring equipment, monitoring frequencies, analytical methods, and reporting and record-keeping. Control authorities must generally require similar monitoring techniques and frequencies for indirect dischargers.

The NPDES program requires permittees to monitor pollutant mass (or other applicable unit of measure), measure effluent volume, provide other measurements (as appropriate), and use the test methods established at Part 136. It also requires permittees (with certain specific exceptions) to monitor for limited pollutants and report data at least once per year. Finally, it requires that all permits specify requirements for the proper use, maintenance, and installation of monitoring equipment or methods. All permits must also specify the required monitoring, including the type, intervals, and frequency that will provide representative data.

Note! Permit writers should be aware that EPA has finalized revisions to 40 Part CFR 122.44(a), which could be particularly relevant to the development of NPDES permits for the TEC Point Source Category (see FR 30989, May 15, 2000). The revision requires that permits have limitations for all applicable guideline-listed pollutants but allows sampling requirements for guideline-listed pollutants to be waived on a case-by-case basis if the dischargers can certify that the pollutant is not present in the discharge or present in only background levels from intake water with no increase due to the activities of the dischargers.

New sources and new dischargers are not eligible for this waiver for their first permit term, and a permit writer can re-establish monitoring through a minor modification to the permit if the discharger expands or changes its process. Further, the permittee must notify the permit writer of any modifications that they have implemented during the permit term and, if necessary, the permit writer can re-establish monitoring through a minor modification. In specific cases, the permit writer may also elect to establish technology-based permit limits for pollutants not covered by this regulation.

What are the Monitoring Locations?

Permit writers and control authorities are responsible for determining the most appropriate monitoring location and specifying this in the permit. Permit writers and control authorities must also select locations that are representative of the expected wastewater discharge. The BPT, BCT, BAT, and NSPS effluent limitations are end-of-pipe limitations that apply to the final effluent at the point of discharge to waters of the United States. PSES and PSNS are applicable to an end-of-pipe discharge at a point prior to discharge to the POTW sewer system.

The permit writer or control authority may need to establish internal monitoring locations if a facility combines process and nonregulated wastewater prior to discharge through a common outfall. There may be cases where, by combining process and nonregulated wastewater, a facility may dilute a regulated pollutant to the point where it is not detectable using approved analytical methods. By establishing an internal monitoring point for the pollutant, the permit writer or control authority will enable the facility to characterize the wastewater pollutant before it is diluted with other wastewater. Permit writers and control authorities also need to consider whether a facility should monitor the influent to a particular wastewater treatment unit to determine influent wastewater characteristics and treatment performance of the unit.

What are the Monitoring Frequencies?

Permit writers and control authorities are also responsible for determining an appropriate frequency for compliance monitoring of all pollutants. EPA's monitor-

ing costs for this regulation assumed compliance monitoring four times per month for conventional pollutants and once per month for priority and nonconventional pollutants. These monitoring frequencies may be lower than those generally set by some permitting authorities; however, monitoring four times per month for conventional pollutants should ensure that TEC processes and wastewater treatment systems are properly operated to achieve the associated pollutant long term averages. Monitoring once per month for toxic pollutants should be less costly for regulated facilities while ensuring their processes and wastewater treatment systems are designed and operated to control the discharge of toxic pollutants.

Permit writers and control authorities should consider the nature of facility discharges when determining appropriate sampling protocols for compliance monitoring. Twenty-four-hour composite samples are most appropriate for continuous dischargers. For facilities with batch treatment or batch discharges, composite samples collected during the discharge period are most appropriate. Facilities can obtain the composite samples by collecting four or more grab samples and compositing the samples under chilled conditions, or by analyzing each grab sample separately, and then calculating the composite as the mean of the individual grab samples.

What are the Appropriate Analytical Methods?

Dischargers must use the test methods promulgated at 40 CFR Part 136.3 or incorporated by reference in the tables at 40 Part CFR 136.3 to monitor their pollutant discharges, unless otherwise specified by the permit writer or control authority. Regulated pollutants for the TEC Point Source Category include BOD_5, TSS, oil and grease (HEM), nonpolar material (SGT-HEM), cadmium, chromium, copper, lead, mercury, nickel, zinc, fluoranthene, phenanthrene, and pH. (Not all pollutants are regulated in all subparts.) EPA has approved test methods for all these pollutants at 40 CFR Part 136.3.

EPA promulgated Method 1664, the analytical method for HEM and SGT-HEM, on May 14, 1999 (see FR 26315) to support phasing out the of use of CFC-113. This rulemaking revised 40 CFR Part 136 to list Method 1664 as an approved method to analyze oil and grease and non-polar material (i.e., HEM and SGT-HEM). Note that EPA, by extending the laboratory use exemption of CFC-113 through 2005, will allow continued use of methods that use CFC-113; however, EPA strongly encourages dischargers/generators/industrial users and permit authorities to substitute use of Method 1664 for CFC-113 methods. EPA will use Method 1664 in its wastewater program for regulation development, permit applications, and compliance monitoring. Anticipating the promulgation of Method 1664, EPA analyzed all data in support of the TECI effluent limitations guidelines and standards using Method 1664. Therefore, all effluent limitations promulgated for oil and grease and nonpolar material in this effluent limitations guidelines and standards are to be measured by Method 1664.

EPA analyzed metals in this rulemaking by EPA Method 1620. This method is a consolidation of the EPA 200 series methods for the quantitative determination of

27 trace metals by inductively coupled plasma (ICP) and graphite furnace atomic adsorption (GFAA), and determination of mercury by cold vapor atomic adsorption (CVAA). (The method also provides a semiquantitative ICP screen for 42 additional elements.) The ICP technique measures atomic emissions by optical spectroscopy. GFAA measures the atomic absorption of a vaporized sample, and CVAA measures the atomic absorption of mercury vapor.

EPA analyzed semivolatile organics in this rulemaking using Method 1625C. EPA recently published an amendment to EPA Methods 625 and 1625 that expands the list of analytes that can be measured using these methods (see Landfills final rule, 65 FR 3008, January 19, 2000). In 1998, EPA also proposed to amend Methods 625 and 1625 to include additional pollutants to be measured under effluent guidelines for the Centralized Waste Treatment Point Source Category (64 FR 2345). Since then, EPA has gathered data on the capacity of these methods to measure the additional pollutants. The modifications to Methods 625 and 1625 consist of text, performance data, and quality control (QC) acceptance criteria for the additional analytes. EPA validated the QC acceptance criteria for the additional analytes in single-laboratory studies that included TEC wastewater. EPA approved the use of EPA Method 1625 (published at 40 CFR Part 136.3, Appendix A) for fluoranthene and phenanthrene in the final TEC rule (65 FR 157). Method 625 (also published at 40 CFR Part 136.3, Appendix A) may also be used to monitor for fluoranthene and phenanthrene, since these two analytes are listed in that method for general application.

What is the Minimum Level of Detection?

The minimum level (ML) specified for each method is the lowest level at which laboratories calibrate their equipment. To achieve this, laboratories use standards (i.e., samples at several known concentrations). Calibration is necessary because laboratory equipment does not measure concentration directly, but generates signals or responses from analytical instruments that must be converted to concentration values. The calibration process establishes a relationship between the signals and the known concentration values of the standards. This relationship is then used to convert signals from the instruments for samples with unknown concentrations. In the calibration process, one of the standards will have a concentration value at the ML for the pollutant analyzed. Because the ML is the lowest level for which laboratories calibrate their equipment, measurements below the ML are to be reported as <ML.

For various pollutants, EPA has established effluent limitations guidelines and standards that are near the ML. Permit writers and control authorities must require facilities to demonstrate compliance with those limitations using the appropriate methods (which have ML values at or below the specified limitations and standards). Appropriate methods and minimum levels for each pollutant are listed in 40 CFR Part 136. Facilities cannot demonstrate compliance using an analytical method with an ML above the limitations and standards.

What are Reporting and Record-Keeping Requirements?

In accordance with Section 122.44(I)(2), the permit writer must require direct dischargers to report the results of compliance monitoring at least once per year. However, facilities may be required to submit the results more frequently. Indirect dischargers must report the results of compliance monitoring twice per year (in June and December), unless the control authority requires them to report more frequently, in accordance with Section 403.12(e).

Developing Compliance Schedules

When Must Existing Facilities Comply With the August 14, 2000 Promulgated Rule?

Permit writers should establish, for direct dischargers, pollutant limits based on the newly promulgated BPT, BCT, and BAT effluent limitations guidelines on the date the NPDES permit is issued. Under the Clean Water Act, the NPDES permit requires immediate compliance with those new limitations (see CWA Section 301(b)(2)(C)- (F)). Therefore, as a matter of law, NPDES permits cannot include a compliance schedule.

For indirect dischargers, however, the Clean Water Act imposes different compliance requirements. Under CWA Section 307(b)(1), existing indirect dischargers must comply with applicable pretreatment standards by the date specified in those standards, with the time for compliance not to exceed three years from the date of promulgation. As specified in the TEC rule, existing indirect dischargers subject to Subparts A through C must comply with pretreatment control limits based on the newly promulgated PSES on or before August 14, 2003.

What if Existing Direct Dischargers Cannot Meet the August 14, 2000 Promulgated Rule Immediately?

NPDES rules require facilities to meet permit limits for all pollutants on the date the NPDES permit is issued. Some facilities are capable of demonstrating compliance within this timeframe. In fact, some facilities already use several (or all) of the model pollution prevention and treatment technologies that form the basis of BPT, BCT, and BAT. Some facilities, however, may determine that they need additional time to implement the pollution prevention and treatment technologies to comply with the new effluent limitations guidelines. For these facilities, the permit writers may exercise discretion and issue an administrative order in the permit authorizing additional time for compliance (see 40 CFR Part 122).

When Must New Sources Comply With the August 14, 2000 Promulgated Rule?

The owner or operator of a new source subject to Subpart A, B, C, or D must install and have in operating condition, at "start-up," all pollution controls necessary to meet the applicable NSPS/PSNS before discharging. The facility must meet permit limitations based on those standards within 90 days of commencing discharge (see 40 CFR Part 122.29(d)(4)).

Indirect dischargers considered to be new sources prior to August 14, 2000 must meet the applicable PSNS within 90 days of the effective date of the rule. (The effective date of the rule is September 13, 2000.) In accordance with Section 403.12(d) for indirect dischargers, new sources must submit their initial report of compliance within 90 days following commencement of the introduction of wastewater into the POTW.

Section 7: Case Studies

Because there are complex permitting issues associated with 40 CFR Part 442, this section presents six case studies showing the development of NPDES and pretreatment permits for facilities subject to the TEC rule under Subparts A, B, C, and D. The case studies present the following situations:

Case Study	Description
1	Direct discharger with TEC process wastewater
2	Indirect discharger with nonprocess and TEC process wastewater
3	Indirect discharger with wastewater generated from maintenance
4	Indirect discharger with wastewater generated from cleaning tank trucks, closed-top hoppers, and intermediate bulk containers
5	Direct discharger with wastewater associated with other industrial operations
6	Direct discharger with wastewater associated with other industrial operations

Each case study presents the following:

- General site description;
- Information about facility operations relevant to establishing permit limits;
- Step-by-step approach to determining limits for each regulation (e.g., BPT, BAT); and
- Final limits as they would appear in each example facility's permit.

Case Study #1

Facility A is a direct discharging TEC facility that cleans tank barges that last contained chemical cargos, which discharges into the New River. The facility has submitted an application for an NPDES permit.

General Site Description

Facility A cleans approximately three tank barges per day. On average, the facility discharges 20,000 gallons of TEC process wastewater per tank barge cleaned. The facility operates 260 days per year.

What type of discharger is the facility?	Direct
Under which subparts do the facility's operations fall?	Tank Barges and Ocean/Sea Tankers Transporting Chemical and Petroleum Cargos (Subpart C)
Which effluent limitation guideline and standard is the facility subject to?	BPT (40 CFR § 442.31) BCT (40 CFR § 442.32) BAT (40 CFR § 442.33)
Does the facility discharge 100,000 gallons or more per year of TEC process wastewater?	Yes (see following calculation)

Developing Permit Limits for Pollutants Regulated Under BPT/BCT/BAT

The effluent limitations guidelines are concentration-based and, as such, do not regulate wastewater flow. The permit writer must use a reasonable estimate of process wastewater discharge flow and the concentration-based limitations to develop mass- based limitations for the NPDES permit using the following three steps. Tables 4-2 through 4-5 present the maximum daily and monthly average BPT effluent limitations for Subparts A through D, respectively.

Step 1. Determine Allowable Wastewater Discharge Flow

The first step in establishing permit limitations is to determine the types of waste streams (i.e., regulated process, unregulated process, and dilute waste streams) at the facility. The following shows the flow breakdown at Facility A:

Average daily Subpart C flow:

Tank barge wastewater = 3 tank barges/day × 20,000 gallons/tank = 60,000 gallons/day

Total regulated process wastewater = 60,000 gallons/day × 260 days/yr

Total regulated process wastewater = **15,600,000 gallons/yr***

*Total regulated process wastewater exceeds 100,000 gallons per year; therefore, Facility A is subject to the TEC rule.

Step 2. Determine Maximum Effluent Limitations for Any One Day

The maximum daily limitation for oil and grease (HEM) for Subpart C is 36 mg/L. Below is an example for calculating the HEM limit:

ML = Mass limit of HEM in tank barge cleaning wastewater

= 36 mg/L × 60,000 gal/day × [8.345 × 10^{-6} ((L × lb)/(gal × mg))] = **18 lbs/day**

Step 3. Determine Monthly Average Effluent Limitations

The monthly average limitation for oil and grease (HEM) for Subpart C is 16 mg/L. Below is an example for calculating the HEM limit:

ML = Mass limit of HEM in tank barge cleaning wastewater

= 16 mg/L × 60,000 gal/day × [8.345 × 10^{-6} ((L × lb)/(gal × mg))] = **8.0 lbs/day**

Compare this monthly average limitation to the average of all daily mass discharge amounts in a calendar month to determine facility compliance.

Final Limits as They Would Appear in a Permit for Facility A

Table 7-1 presents the final limits as they would appear for Facility A on a mass basis. The permit writer can choose to show limits on a concentration basis in addition to the mass-based limits.

Table 7-1. Final Limits for Facility A

Pollutant or Pollutant Property	Maximum for Any One Day (lbs/day)	Monthly Average (lbs/day)
BOD_5	31	11
TSS	29	13
Oil and grease (HEM)	18	8.0
Cadmium	0.010	NA
Chromium	0.21	NA
Copper	0.050	NA
Lead	0.070	NA
Mercury	0.00065	NA
Nickel	0.29	NA
Zinc	4.2	NA
pH (a)	NA	NA

NA - Not applicable.
(a) Within 6 to 9 at all times.

Case Study #2

Facility B is an indirect discharging TEC facility that discharges to a POTW.

General Site Description

Facility B cleans approximately 20 tank trucks and two rail cars per day. A wide range of cargos is cleaned, but all cargos are classified as chemical or petroleum (as defined in §442.2). On average, the facility discharges 800 gallons of TEC process wastewater per tank truck cleaned and 2,500 gallons of TEC process wastewater per rail tank car cleaned. The facility also commingles into its treatment system approximately 100 gallons per day of equipment and floor-washing wastewater and approximately 100 gallons per day of boiler blowdown. The facility operates approximately 300 days per year.

What type of discharger is the facility?	Indirect
Under which subparts do the facility's operations fall?	Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos (Subpart A) Rail Tank Cars Transporting Chemical and Petroleum Cargos (Subpart B)
Which effluent limitation guideline and standard is the facility subject to?	PSES (40 CFR § 442.15 and 442.25)
Does the facility discharge 100,000 gallons or more per year of TEC process wastewater?	Yes (see following calculation)

Developing Permit Limits for Pollutants Regulated Under PSES

The final effluent limitation standards are concentration-based and, as such, do not regulate wastewater flow. The limitations apply at the end of pipe. Tables 4-5 through 4-7 presents the maximum daily PSES effluent limitations for Subparts A through C, respectively.

Step 1. Determine Allowable Wastewater Discharge Flow

The first step in establishing permit limitations is to determine the types of wastestreams (i.e., regulated process, unregulated process, and dilute) at the facility. The following shows the process wastewater flow breakdown at Facility B:

Average daily Subpart A flow:

Tank truck wastewater = 20 tank trucks/day × 800 gallons/tank truck = 16,000 gallons/day

Average daily Subpart B flow:

Rail car wastewater = 2 rail tank cars/day × 2,500 gallons/rail tank car = 5,000 gallons/day

Equipment and floor washing wastewater = 100 gallons/day

Total regulated process wastewater = 21,100 gallons/day × 300 days/yr

Total regulated process wastewater = **6,330,000 gallons/yr***

*Total regulated process wastewater exceeds 100,000 gallons per year; therefore, Facility B is subject to the TEC rule.

Step 2. Determine PSES Maximum Limitations for Any One Day

Use the combined waste stream formula (40 CFR 403.6(e)) in Equation 1 to establish effluent limitations. Note that boiler blowdown is the only dilute waste stream at this facility.

$$C_T = \left(\frac{\sum_{i=1}^{N} C_i F_i}{\sum_{i=1}^{N} F_i} \right) \left(\frac{F_T - F_D}{F_T} \right) \qquad (1)$$

Step 2. Determine Maximum Limitations for Any One Day (CONTINUED)

where:

C_T = Alternative concentration limit for the combined wastestream (mg/L)

C_i = Concentration limit for a pollutant in the regulated stream i (mg/L)

F_i = Average daily flow (at least a 30-day average) of regulated stream i (gallons/day)

F_D = Average daily flow (at least a 30-day average) of dilute waste stream(s) (gallons/day)

F_T = Average daily flow (at least a 30-day average) through the combined treatment facility (including regulated, unregulated, and dilute waste streams) (gallons/day)

N = Total number of regulated streams

Below is an example for calculating the mercury limit:

The average daily flow through the combined treatment system is 21,200 gallons/day. The maximum daily concentration limitation for mercury for Subpart A is 0.0031 mg/L (from §442.15). Mercury is not regulated for Subpart B and this flow is considered an unregulated process flow. C_T for mercury is calculated as:

$$C_T = \left(\frac{0.0031 \times 16{,}000}{16{,}000}\right)\left(\frac{21{,}200 - 100}{21{,}200}\right) = 0.0031 \text{ mg/L}$$

Use the same methodology to establish pretreatment standards for all pollutants regulated under §442.15 and/or §442.25 (SGT-HEM, copper, fluoranthene, and phenanthrene). SGT-HEM is the only pollutant regulated under both Subparts A and B. Because the SGT-HEM limitation is the same in both subparts (26 mg/L), C_T for SGT-HEM for this example facility is calculated as:

$$C_T = \left(\frac{(26 \times 16{,}000) + (26 \times 5{,}000)}{21{,}000}\right)\left(\frac{21{,}200 - 100}{21{,}200}\right) = 26 \text{ mg/L}$$

Final Limits as They Would Appear in a Permit for Facility B

Table 7-2 presents the final limits as they would appear for Facility B. The control authority can choose to show limits on a mass basis in addition to the concentration-based limits.

Table 7-2. Final Limits for Facility B

Pollutant or Pollutant Property	Maximum for Any One Day (mg/L)
Nonpolar material (SGT-HEM)	26
Copper	0.84
Mercury	0.0031
Fluoranthene	0.076
Phenanthrene	0.34

Note! Only indirect dischargers in Subparts A and B have the option of complying with a Pollutant Management Plan in lieu of numeric limits.

Case Study #3

Facility C is an indirect discharging TEC facility that cleans rail cars that last contained chemical cargos.

General Site Description

Facility C cleans rail tank cars for both shipping products and repair. The facility discharges an average of 200,000 gallons of tank cleaning wastewater per year and performs an average of 100 cleanings per year. All tanks last transported chemical and petroleum cargos. According to facility records, approximately 80% of all cleanings are performed for the purpose of maintenance and repair on the tank, with the remainder performed for the purpose of shipping. The facility operates year-round.

What type of discharger is the facility?	Indirect
Under which subparts do the facility's operations fall?	Rail Tank Cars Transporting Chemical and Petroleum Cargos (Subpart B)
Which effluent limitation guideline and standard is the facility subject to?	PSES (40 CFR § 442.25)
Does the facility discharge 100,000 gallons or more per year of TEC process wastewater?	No (see calculation below)

Step 1. Determine Allowable Wastewater Discharge Flow

By definition, only 20% of the facility's total average annual wastewater flow is considered TEC process wastewater.

Average daily Subpart B flow:
Total regulated process wastewater = 200,000 gallons/yr × 0.20 = **40,000 gallons/yr**

This facility qualifies for the low-flow exclusion because it discharges less than 100,000 gallons per year of TEC process wastewater, and is therefore not subject to TEC effluent limitations. Facilities discharging less than 100,000 gallons per year of TEC process wastewater will remain subject to limitations and standards established by its permitting authority using best professional judgement on a case-by-case basis.

Case Study #4

Facility D is an indirect discharging TEC facility that cleans tank trucks, closed-top hoppers, and intermediate bulk containers.

General Site Description

Facility D cleans tank trucks, closed-top hoppers, and intermediate bulk containers. The tank trucks and intermediate bulk containers last contained chemical products. The closed-top hoppers last contained dry bulk cargos. The facility discharges an average of 200,000 gallons of tank and container cleaning wastewater per year.

What type of discharger is the facility?	Indirect
Under which subparts do the facility's operations fall?	None (see below)
Which effluent limitation guideline and standard is the facility subject to?	Not Applicable
Does the facility discharge 100,000 gallons or more per year of TEC process wastewater?	Not Applicable

Step 1. Determine Allowable Wastewater Discharge Flow

As described in §442.1(b)(2), the TEC effluent guidelines do not apply to "wastewater resulting from cleaning the interiors of drums, intermediate bulk containers, or closed-top hoppers."

This facility is covered by the TEC rule if the facility discharges 100,000 gallons or more per year of TEC process wastewater from cleaning tank trucks. Wastewater discharged from cleaning closed-top hopper trucks and intermediate bulk containers is not regulated by this rule and is not considered when determining whether this facility meets the low-flow exclusion.

Case Study #5

Facility E is an international chemical manufacturer that cleans tank trucks that transport chemicals supplied by a contract manufacturer.

General Site Description

Facility E has an agreement with a contractor who provides propylene glycol, which Facility E then uses to formulate aircraft deicing fluid. The contractor supplies the propylene glycol, along with the manufacturing waste, in tank trucks to the chemical manufacturer. The chemical manufacturer cleans the tank trucks and combines the wastewater from the cleaning and manufacturing waste for treatment in its on-site treatment system, followed by discharge to a river.

What type of discharger is the facility?	Direct
Under which subparts do the facility's operations fall?	None (see below)
Which effluent limitation guideline and standard is the facility subject to?	Not Applicable
Does the facility discharge 100,000 gallons or more per year of TEC process wastewater?	Not Applicable

Step 1. Determine Allowable Wastewater Discharge Flow

As described in §442.1(b)(1), the TEC effluent guidelines do not apply to "wastewater associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's on-site processes."

This facility is not covered by the TEC rule since the wastewater is generated at a facility that cleans only tanks that have contained raw materials, by-products, and finished products that are associated with the facility's on-site processes. Note that this exclusion also applies to the waste from the contractor, since that waste is considered part of the chemical manufacturer's on-site processes.

Case Study #6

Facility F is a direct discharging chemical manufacturing facility that cleans tank trucks that last contained chemical cargos.

General Site Description

This chemical manufacturer operates a distribution center 50 miles from its main facility where all chemicals are manufactured. The facility mainly operates as a chemical distributor (e.g., unloading and loading products), but it also cleans tank trucks between changes of cargo. The wastewater generated from tank cleaning is not currently covered by a point source category. The distributor cleans an average of 500 tank trucks per year and discharges 250,000 gallons of tank cleaning wastewater per year to surface waters. The facility has no other significant sources of process wastewater. The facility operates year-round.

What type of discharger is the facility?	Direct
Under which subparts do the facility's operations fall?	Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos (Subpart A)*
Which effluent limitation guideline and standard is the facility subject to?	BPT (40 CFR § 442.11) BCT (40 CFR § 442.12) BAT (40 CFR § 442.13)
Does the facility discharge 100,000 gallons or more per year of TEC process wastewater?	Yes

Step 1. Determine Allowable Wastewater Discharge Flow

As described in §442.1(b)(1), the TEC effluent guidelines do not apply to "wastewater associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's on-site processes."

*EPA believes that product distribution centers may be covered by the TEC regulation if they discharge 100,000 or more gallons of TEC process wastewater and the tank and container cleanings are not associated with other industrial, commercial, or POTW activities. EPA believes its exclusion for other industrial, commercial, or POTW facilities allows the permit writer considerable discretion in determining if the tank cleanings are performed as part of, or in addition to, the facility's on-site processes. In this example, the permit writer may consider EPA's rationale for the exclusion for tank cleanings operated in conjunction with other industrial, commercial, or POTW operations discussed in Section 2 of this document. Because Facility D does not meet the intended focus of EPA's exclusion, the permit writer may exercise discretion to determine that the TEC pretreatment standards would be appropriate for use as the basis of the permit.

Section 8: Where to Get Additional Help

This section presents additional sources of information, including EPA contacts, that may help permit writers and control authorities obtain additional information related to implementation of the final TEC effluent limitations guidelines and standards for Subparts A, B, C, and D. Specifically, this section presents a list of selected documents and web sites relating to the August 14, 2000 promulgated rule. These lists also include information on how to reach EPA program personnel and how to access these information sources.

Specific questions related to the effluent limitations guidelines and standards for the TEC Point Source Category should be directed to:

John Tinger
Engineering and Analysis Division
Office of Water
U.S. EPA
401 M Street, SW
Washington, D.C. 20460
Phone: (202) 260-4992
Fax: (202) 260-7185
E-mail: tinger.john@epamail.epa.gov

Documents Supporting the Promulgated Rule

- *Final Development Document for Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category*, EPA-821-R-00-012
- *Final Economic Analysis of Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category*, EPA-821-R-00-0013
- *Final Cost-Effectiveness Analysis of Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category*, EPA-821-R-00-0014

General Information About Permits and NPDES Program

- ***NPDES Permit Writer's Manual*** **(EPA-833-B-96-003)**. This 1996 EPA manual was prepared to provide the basic regulatory framework and technical considerations that support the development of wastewater discharge permits as required under the National Pollutant Discharge Elimination System (NPDES) program.
- ***NPDES Compliance Inspection Manual*** **(EPA-300-B-94-014)**. This 1994 EPA manual was developed to support wastewater inspection personnel in conducting NPDES field inspections, and to provide standardized inspection procedures. The manual encourages a consolidated inspection approach, and is organized into two parts. The first part addresses basic inspection components, including technical information on documentation, record-keeping and reporting, sampling, and laboratory procedures. The second part provides information on specific types of inspections, concluding with a discussion of multimedia concerns.

- *Guidance for Water Quality-Based Decisions: The TMDL Process* (EPA-440-4-91). This document is intended to define and clarify the requirements under Section 303(d) of the Clean Water Act. Its purpose is to aid state water-quality program managers in understanding the application of total maximum daily loads within the water-quality-based approach to establish pollution control limits for waters not meeting water quality standards.
- *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001). This document was prepared as technical guidance for assessing and regulating the discharge of toxic substances to waters of the United States.
- *Industrial User Permitting Guidance Manual: (A Training Manual for Control Authorities to Develop Industrial User Permits)* (EPA 833/R-89-001). This document assists permit writers and legal and administrative personnel involved in implementing industrial user permitting program in preparing effective and enforceable industrial permits. (This document may be obtained on EPA's web site. See below.) This document also references the following EPA documents, which may be helpful: *Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Wastestream Formula* (September 1985), *Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program* (December 1987), and *Pretreatment Compliance Monitoring and Enforcement Guidance* (September 1986).

Web Sites

EPA's web server is the primary public access mechanism on the Internet for EPA. The web server provides a range of EPA-generated information in electronic format, and also offers access to EPA's Online Library Service (OLS), the national online catalog of the EPA library network. It includes the catalogs of the Headquarters Information Resource Center and all the Regional libraries.

EPA's homepage:
http://www.epa.gov

EPA's TEC rulemaking actions for TEC:
http://www.epa.gov/OST/guide/teci

Other Sources

EPA Headquarters Information Resource Center

The EPA Headquarters Information Resource Center provides information support services to EPA staff and maintains a varied collection of environmental resources, including CD-ROMs, an online catalog, and other program-specific services. The library provides services to the general public and develops several publications, including newsletters and brochures. Library hours are 8:00 a.m. to 5:00 p.m. ET, Monday through Friday. EPA's OLS is available on the Internet: **http://www.epa.gov/natlibra/ols.htm**

National Technical Information Service (NTIS)

Located in the U.S. Department of Commerce, the National Technical Information Service (NTIS) is the U.S. Government's central source for distributing scientific, technical, engineering, and related business information. It is also a central source of federally generated machine-processible data files. NTIS contains reports on air pollution, acid rain, water pollution, marine pollution, marine ecosystems, land use planning, fisheries management, solar energy, offshore oil drilling, solid wastes, traffic noise, and radiation monitoring.

For more information, contact:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Phone: (703) 605-6000
http://www.ntis.gov

Appendix A - Glossary

BOD_5 - Five-day biochemical oxygen demand. A measure of biochemical decomposition of organic matter in a water sample. It is determined by measuring the dissolved oxygen consumed by microorganisms to oxidize the organic matter in a water sample under standard laboratory conditions of five days and 20°C (see Method 405.1). BOD_5 is not related to the oxygen requirements in chemical combustion.

Cargo - Any chemical, material, or substance transported in a tank truck, closed-top hopper truck, intermodal tank container, rail tank car, closed-top hopper rail car, tank barge, closed-top hopper barge, or ocean/sea tanker that comes in direct contact with the chemical, material, or substance. A cargo may also be referred to as a commodity.

Closed-top hopper rail car - A completely enclosed storage vessel pulled by a locomotive that is used to transport dry bulk commodities or cargos over railway access lines. Closed-top hopper rail cars are not designed or contracted to carry liquid commodities or cargos and are typically used to transport grain, soybeans, soy meal, soda ash, lime, fertilizer, plastic pellets, flour, sugar, and similar commodities or cargos. The commodities or cargos transported come in direct contact with the hopper interior. Closed-top hopper rail cars are typically divided into three compartments, carry the same commodity or cargo in each compartment, and are generally top loaded and bottom unloaded. The hatch covers on closed-top hopper rail cars are typically longitudinal hatch covers or round manhole covers.

Closed-top hopper truck - A motor-driven vehicle with a completely enclosed storage vessel used to transport dry bulk commodities or cargos over roads and highways. Closed-top hopper trucks are not designed or constructed to carry liquid commodities or cargos and are typically used to transport grain, soybeans, soy meal, soda ash, lime, fertilizer, plastic pellets, flour, sugar, and similar commodities or cargos. The commodities or cargos transported come in direct contact with the hopper interior. Closed-top hopper trucks are typically divided into three compartments, carry the same commodity or cargo in each compartment, and are generally top loaded and bottom unloaded. The hatch covers used on closed-top hopper trucks are typically longitudinal hatch covers or round manhole covers. Closed-top hopper trucks are also commonly referred to as dry bulk hoppers.

Closed-top hopper barge - A non-self-propelled vessel constructed or adapted primarily to carry dry commodities or cargos in bulk through rivers and inland waterways, and may occasionally carry commodities or cargos through oceans and seas when in transit from one inland waterway to another. Closed-top hopper barges are not designed to carry liquid commodities or cargos and are typically used to transport corn, wheat, soy beans, oats, soy meal, animal pellets, and similar commodities or cargos. The commodities or cargos transported come in direct contact with the hopper interior. The basic types of tops on closed-top hopper barges are telescoping rolls, steel lift covers, and fiberglass lift covers.

COD - Chemical oxygen demand. A nonconventional bulk parameter that measures the oxygen-consuming capacity of refractory organic and inorganic matter present in water or wastewater. COD is expressed as the amount of oxygen consumed from a chemical oxidant in a specific test (see Methods 410.1 through 401.4).

Commodity - Any chemical, material, or substance transported in a tank truck, closed-top hopper truck, intermodal tank container, rail tank car, closed-top hopper rail car, tank barge, closed-top hopper barge, ocean/sea tanker, or similar tank that comes in direct contact with the chemical, material, or substance. A commodity may also be referred to as a cargo.

Consignee - Customer or agent to whom commodities or cargos are delivered.

Conventional pollutants - The pollutants identified in Sec. 304(a)(4) of the CWA and the regulations thereunder (biochemical oxygen demand (BOD_5), total suspended solids (TSS), oil and grease, fecal coliform, and pH).

Daily discharge - The discharge of a pollutant measured during any calendar day or any 24-hour period that reasonably represents a calendar day. For pollutants with limitations expressed as mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

Direct discharger - A facility that conveys or may convey untreated or facility-treated process wastewater or nonprocess wastewater directly into waters of the United States, such as rivers, lakes, or oceans (also called receiving waters). (See United States surface waters definition.)

Discharge - The conveyance of wastewater: (1) to United States surface waters such as rivers, lakes, and oceans, or (2) to a publicly owned, privately owned, federally owned, centralized, or other treatment works.

Drum - A metal or plastic cylindrical container with either an open-head or a tight-head (also known as bung-type top) used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the container interior. Drums typically range in capacity from 30 to 55 gallons.

Effluent limitation - Any restriction, including schedules of compliance, established by a state or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean. (CWA Sections 301(b) and 304(b).)

End of the pipe - The point at which final effluent is discharged to waters of the United States or introduced to a POTW.

Food grade cargo - Food grade cargos include edible and nonedible food products. Specific examples of food grade products include but are not limited to: alcoholic beverages, animal by-products, animal fats, animal oils, caramel, caramel coloring, chocolate, corn syrup and other corn products, dairy products, dietary supplements, eggs, flavorings, food preservatives, food products that are not suit-

able for human consumption, fruit juices, honey, lard, molasses, nonalcoholic beverages, salt, sugars, sweeteners, tallow, vegetable oils, and vinegar.

Heel - Any material remaining in a tank or container following unloading, delivery, or discharge of the transported cargo. Heels may also be referred to as container residue, residual materials, or residuals.

Hexane extractable material (HEM) - A method-defined parameter that measures the presence of relatively nonvolatile hydrocarbons, vegetable oils, animal fats, waxes, soaps, greases, and related materials that are extractable in the solvent n-hexane (see Method 1664). HEM is also referred to as oil and grease.

Indirect discharger - A facility that discharges or may discharge pollutants into a publicly owned treatment works or treatment works not owned by the discharging facility.

Intermediate bulk container (IBC or tote) - A completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos that are in direct contact with the tank interior. Intermediate bulk containers may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. IBCs are portable containers with 450 liters (119 gallons) to 3000 liters (793 gallons) capacity. IBCs are also commonly referred to as totes or tote bins.

Intermodal tank container - A completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which come in direct contact with the tank interior. Intermodal tank containers may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. Containers larger than 3,000 liters capacity are considered intermodal tank containers. Containers smaller than 3,000 liters capacity are considered IBCs.

Maximum daily discharge limitation - The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents a calendar day.

Nonconventional pollutant - Pollutants other than those specifically defined as conventional pollutants (identified in Section 304(a)(4) of the Clean Water Act) or priority pollutants (identified in 40 CFR Part 423, Appendix A).

Nonpolar material - A method-defined parameter that measures the presence of mineral oils that are extractable in the solvent n-hexane and not absorbed by silica gel (see Method 1664). Nonpolar material is also referred to as SGT-HEM.

NPDES - The National Pollutant Discharge Elimination System authorized under Sec. 402 of the CWA. NPDES requires permits for discharge of pollutants from any point source into waters of the United States.

Nonprocess wastewater - Wastewater that is not generated from industrial processes or that does not come into contact with process wastewater. Nonprocess wastewater includes, but is not limited to, wastewater generated from restrooms, cafeterias, and showers.

NSPS - New Source Performance Standards, under Sec. 306 of the CWA.

Ocean/sea tanker - A self- or non-self-propelled vessel constructed or adapted to transport commodities or cargos in bulk in cargo spaces (or tanks) through oceans and seas, where the commodity or cargo carried comes in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

Off site - Outside the established boundaries of the facility.

Oil and grease - A method-defined parameter that measures the presence of relatively nonvolatile hydrocarbons, vegetable oils, animal fats, waxes, soaps, greases, and related materials that are extractable in either n-hexane (referred to as HEM, see Method 1664) or Freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane, see Method 413.1). Data collected by EPA in support of the TEC effluent guideline utilized Method 1664.

On site - Within the established boundaries of the facility.

Outfall - The mouth of conduit drains and other conduits from which a facility effluent discharges into receiving waters.

Petroleum cargo - Petroleum cargos include the products of the fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other refining processes. For purposes of this rule, petroleum cargos also include products obtained from the refining or processing of natural gas and coal. For purposes of this rule, specific examples of petroleum products include but are not limited to: asphalt; benzene; coal tar; crude oil; cutting oil; ethyl benzene; diesel fuel; fuel additives; fuel oils; gasoline; greases; heavy, medium, and light oils; hydraulic fluids, jet fuel; kerosene; liquid petroleum gases (LPG) including butane and propane; lubrication oils; mineral spirits; naphtha; olefin, paraffin, and other waxes; tall oil; tar; toluene; xylene; and waste oil.

POTW - Publicly owned treatment works, as defined at 40 CFR 403.3(0).

Pretreatment standard - A regulation that establishes industrial wastewater effluent quality required for discharge to a POTW (CWA Section 307(b)).

Priority pollutants - The pollutants designated by EPA as priority in 40 CFR Part 423 Appendix A.

Process wastewater - Any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. Specifically, TEC process wastewater includes all wastewaters associated with cleaning the interiors of tanks including: tank trucks; rail tank cars; intermodal tank containers; tank barges; and ocean/sea tankers used to transport commodities or cargos that come into direct contact with the tank or container interior. At those facilities subject to the TEC guidelines and standards, TEC process wastewaters also include wastewater generated from washing vehicle exteriors, equipment and floor washings, and TEC-contaminated stormwater.

Rail tank car - A completely enclosed storage vessel pulled by a locomotive that is used to transport liquid, solid, or gaseous commodities or cargos over railway access lines. A rail tank car storage vessel may have one or more storage compart-

ments and the stored commodities or cargos come in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

Silica gel-treated hexane extractable material (SGT-HEM) - A method-defined parameter that measures the presence of mineral oils that are extractable in the solvent n-hexane and not adsorbed by silica gel (see Method 1664). SGT-HEM is also referred to as nonpolar material.

Tank - A generic term used to describe any closed container used to transport commodities or cargos. The commodities or cargos transported come in direct contact with the container interior, which is cleaned by TEC facilities. Examples of containers which are considered tanks include: tank trucks, closed-top hopper trucks, intermodal tank containers, rail tank cars, closed-top hopper rail cars, tank barges, closed-top hopper barges, and ocean/sea tankers. Containers used to transport prepackaged materials are not considered tanks, nor are 55-gallon drums or pails or intermediate bulk containers.

Tank barge - A non-self-propelled vessel constructed or adapted primarily to carry commodities or cargos in bulk in cargo spaces (or tanks) through rivers and inland waterways, and may occasionally carry commodities or cargos through oceans and seas when in transit from one inland waterway to another. The commodities or cargos transported are in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

Tank truck - A motor-driven vehicle with a completely enclosed storage vessel used to transport liquid, solid, or gaseous materials over roads and highways. The storage vessel or tank may be detachable, as with tank trailers, or permanently attached. The commodities or cargos transported come in direct contact with the tank interior. A tank truck may have one or more storage compartments. There are no maximum or minimum vessel or tank volumes. Tank trucks are also commonly referred to as cargo tanks or tankers.

Totes or tote bins - A completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which come in direct contact with the vessel interior. Totes may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. There are no maximum or minimum values for tote volumes, although larger containers are generally considered to be intermodal tank containers. Totes or tote bins are also referred to as intermediate bulk containers or IBCs. Fifty-five gallon drums and pails are not considered totes or tote bins.

Waters of the United States - The same meaning set forth in 40 CFR 122.2.

United States surface waters - Waters including, but not limited to, oceans and all interstate and intrastate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds.

Zero discharge facility - A facility that does not discharge pollutants to waters of the United States or to a POTW. Also included in this definition is the discharge of pollutants by way of evaporation, deep-well injection, off-site transfer to a treatment facility, and land application.

Appendix B: Guidance on the Requirements of the Baseline Monitoring Report (BMR) for Facilities Electing the Pollution Prevention Compliance Option

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
WATER

MEMORANDUM February 15, 2001

SUBJECT: Baseline Monitoring Report Requirements for Transportation Equipment Cleaning Facilities.

FROM: Sheila Frace, Director
Engineering and Analysis Division

Jeff Lape, Acting Director
Water Permits Division

TO: Water Management Division Directors
Regions 1-10

Background

The Transportation Equipment Cleaning (TEC) final effluent limitations guidelines and pretreatment standards were published in the Federal Register on August 14, 2000 (65 FR 49666) and became effective on September 13, 2000. The pretreatment regulations at 40 CFR 403.12(b) require TEC facilities discharging to Publicly Owned Treatment Works (POTWs) to submit a Baseline Monitoring Report (BMR) within 180 days of the effective date of the rule (March 12, 2001). One of the requirements of the BMR is for the facility to "submit the results of sampling and analysis identifying the nature and concentration...of regulated pollutants in the Discharge from each regulated process."

The final TEC regulation provides certain TEC facilities a choice between meeting numerical discharge limitations or establishing a "Pollutant Management Plan" (PMP) as an alternative pollution prevention (P2) option. This P2 option is available only for facilities discharging to POTWs in two subcategories: Subpart A - Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos and Subpart B - Rail Tank Cars Transporting Chemical and Petroleum Cargos.

The PMP does not include numerical standards and therefore, does not specifically

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include discharge monitoring requirements.

Issues

The BMR requirements in 40 CFR 403.12 do not directly address a situation where compliance is measured through a P2 alternative rather than a numeric standard and corresponding monitoring. This situation was similarly encountered for the final Pesticide Formulating, Packaging and Repackaging (PFPR) effluent limitations and pretreatment standards.

Recently, POTW pretreatment personnel have requested guidance on how to comply with the BMR requirements for those facilities choosing the PMP alternative.

We recognize that in order to address this situation, ultimately, the regulation requiring submittal of the BMR (403.12(b)) will need to be modified. We plan to make this modification as part of the larger streamlining initiative that is currently underway.

However, such modifications may not be finalized prior to the BMR submittal date of March 12, 2001. Therefore, we have developed the following guidance in order to assist these facilities prior to the modification of the Pretreatment Regulations. This guidance is based on the guidance that was developed for the PFPR regulation in a April 3, 1997 memo to the Water Management Division Directors.

Guidance

In order to comply with the requirements of 40 CFR 403.12(b)5, an Industrial User (IU) subject to the TEC pretreatment standards (40 CFR 442) intending to prepare a PMP should submit a BMR that contains a list of pollution prevention practices (e.g., those incorporated in the TEC P2 alternative) currently employed by the IU. The IU is not required to submit analytical monitor data in the BMR. Note that the IU must still comply with the other sections of 403.12(b).

For additional information, contact John Tinger at (202) 260-4992 or Jan Pickrel at (202) 564-7904.

cc: Regional Pretreatment Coordinators (Regions 1-10)