



PRIMACY AGENCY  
DATA ENTRY  
INSTRUCTIONS, WITH  
EXAMPLES, FOR THE  
IESWTR



This document does not substitute for EPA regulation nor is this document regulation itself. Thus, it cannot impose legally-binding requirements on EPA, States (Primacy Agencies), or the regulated community, and its examples may not apply to a particular situation based upon the particular circumstances.

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# Acronyms, Abbreviations and Definitions

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“C”	Residual Disinfectant Concentration
CFE	Combined Filter Effluent
CFR	Code of Federal Regulations
CPE	Comprehensive Performance Evaluation
CT	Residual Disinfectant Concentration in mg/L “C” x Disinfectant Contact Time in min “T”
CWS	Community Water System
DBP	Disinfection Byproducts
DBPP	Disinfection Byproduct Precursors
DBPR	Disinfectants/Disinfection Byproducts Rule
DTF	Data Transfer File
EPA	Environmental Protection Agency
GWUDI	Ground Water Under the Direct Influence of Surface Water
HAA5	Haloacetic acids (Monochloroacetic, Dichloroacetic, Trichloroacetic, Monobromoacetic and Dibromoacetic Acids)
IESWTR	Interim Enhanced Surface Water Treatment Rule
IFE	Individual Filter Effluent
MCL	Maximum Contaminant Level
MDBP	Microbial and Disinfectants/Disinfection Byproducts
M&R	Monitoring and Reporting
MRT	Maximum Residence Time
NTU	Nephelometric Turbidity Unit
PWS	Public Water System
RTC	Return to Compliance
SCADA	Supervisory Control And Data Acquisition (System)
SDWA	Safe Drinking Water Act, or “The Act,” as amended 1996
SDWIS/FED	Safe Drinking Water Information System/Federal Government
Stage 1 DBPR	Stage 1 Disinfectants and Disinfection Byproducts Rule
Subpart H	PWS using surface water or ground water under the direct influence of surface water
SWTR	Surface Water Treatment Rule
“T”	Disinfectant Contact Time
TT	Treatment Technique
TTHM	Total Trihalomethanes
USEPA	United States Environmental Protection Agency
WSF	Water System Facilities

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# **Section 1**

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## **Introduction**

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## Introduction

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### **1.1 *What is the purpose of this Guidance Document?***

On December 16, 1998, the USEPA published in the *Federal Register* the Interim Enhanced Surface Water Treatment Rule (IESWTR). This document is intended to provide guidance to Primacy Agencies regarding the monitoring and reporting requirements of the IESWTR. It discusses, through the use of typical water system examples, system inventory and reporting required under the rule and the Primacy Agency's reporting responsibilities to EPA's database, the Safe Drinking Water Information System/Federal Government (SDWIS/FED). Using this reference, Primacy Agencies will be able to identify the situations that define noncompliance under the IESWTR, and they will be better prepared to identify violations and report appropriate non-compliance information to EPA. Throughout this document, the term Primacy Agency will be used to refer to a State, Tribal Government, or EPA Region with primary enforcement authority for the SDWA.

### **1.2 *How is this Document Organized?***

The document includes an introduction in Section 1 and three additional sections as follows: Section 2 discusses inventory reporting requirements for the rule, as well as violation determination and when, where and what to report; Section 3 provides basic SDWIS reporting information regarding the IESWTR; Section 4 describes additional resources for information on the IESWTR. Section 2 is divided into four subsections that discuss system inventory reporting, treatment technique (TT) violations, monitoring and reporting (M&R) violations and recordkeeping violations. Each violation type subsection uses example facility descriptions and the appropriate SDWIS/FED violation type codes to illustrate the typical violations that may be encountered during routine operations of water systems. Example DTF (data transfer file) transactions that Primacy Agencies would report to EPA, representing the information or violations are also included.

### **1.3 *What is the benefit of the Interim Enhanced Surface Water Treatment Rule (IESWTR)?***

The IESWTR is part of a series of rules, the "Microbial-Disinfectants/Disinfection Byproducts Cluster" (M-DBP Cluster) that are intended to control microbial pathogens while minimizing the public health risks of disinfectants and disinfection byproducts (DBPs). The IESWTR is designed to address the health risks from microbial contaminants without significantly increasing the potential risks from chemical contaminants. The rule was published concurrently with the Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 DBPR), which addresses control of disinfectants and their byproducts.

The IESWTR will increase the level of protection from exposure to *Cryptosporidium* and other pathogens for drinking water systems serving 10,000 or more persons.

### **1.4 *What is the General Applicability of the IESWTR?***

The IESWTR applies to public water systems (PWSs) that use surface water or ground water under the direct influence of surface water (GWUDI), in whole or in part, and serve 10,000 or more people. (The term Subpart H systems is used to refer to PWSs that use surface water or ground water under the direct influence of surface water.) It establishes a schedule by which Primacy Agencies are required to conduct sanitary surveys for *all* Subpart H PWSs.

Any system that serves 10,000 or more people and uses a surface water or GWUDI source must comply with the requirements of the IESWTR. Systems that use these sources seasonally or for emergency purposes are required to comply with the IESWTR during any time the surface water or GWUDI source is used.

A system that purchases water from a subpart H system that must comply with the provisions of the IESWTR will be provided with public notice of any violations of the IESWTR by the Seller, and must then provide that notice to its consumers according to the provisions of 40 CFR 141.201. Since the provisions of the IESWTR generally apply to subpart H system treatment plants; systems that purchase water generally do not have direct responsibilities under the IESWTR unless the purchased water is untreated.

Systems were required to comply with the turbidity and monitoring requirements no later than January 1, 2002. In addition, PWSs with elevated levels of DBPs were required to develop an evaluation of their existing disinfection practice (a *disinfection profile*) beginning no later than March 16, 2000. For more information on the IESWTR, please contact the Safe Drinking Water Hotline at 1-800-426-4791 or visit EPA's website at [www.epa.gov/safewater/mdbp/implement.html](http://www.epa.gov/safewater/mdbp/implement.html).

### **1.5 What is SDWIS and How Does it Work?**

SDWIS/FED (Safe Drinking Water Information System/Federal version) is an EPA national database storing routine information about the Nation's drinking water.

Primacy Agencies supervise the drinking water systems within their jurisdictions to implement and enforce the Safe Drinking Water Act (SDWA). The SDWA requires reporting drinking water information periodically to EPA; this information is maintained in SDWIS/FED.

Primacy Agencies report the following information to EPA:

1. Basic information on each water system, including: name, PWS-ID number, number of people served, type of system (year-round or seasonal), and source of water (ground water or surface water).
2. Violation information for each water system: whether it has failed to follow established monitoring and reporting schedules, complied with mandated treatment techniques, or violated any Maximum Contaminant Levels (MCLs).
3. Enforcement information: what actions Primacy Agencies have taken to ensure that drinking water systems return to compliance if they are in violation of a drinking water regulation.
4. Monitoring results for unregulated contaminants and for regulated contaminants in certain instances when the monitoring results exceed the MCL.

EPA uses this information to determine if and when it needs to take action against non-compliant systems, oversee Primacy Agency drinking water programs, track contaminant levels, respond to public inquiries, and prepare national reports. EPA also uses this information to evaluate the effectiveness of its programs and regulations, and to determine whether new regulations are needed to further protect public health. A subset of the data is posted to EPA's Envirofacts web page for public access.

## **1.6 *How is this Document Used?***

Primacy Agency personnel should evaluate each system for its need to comply with the provisions of the IESWTR. For those systems required to comply with the IESWTR, this document provides information to assist Primacy Agency evaluation of compliance for each rule requirement (i.e., required system monitoring, system reporting to the Primacy Agency, system public notice, and reporting by the Primacy Agency to SDWIS/FED). The descriptions of the example systems in this document include example monitoring data and the calculations and data comparisons necessary to determine compliance with the requirements of the IESWTR. Example SDWIS/FED Data Transfer File (DTF) tables show how the data describing violations of the IESWTR are to be encoded to be entered into the SDWIS/FED system. In addition, the examples provide guidance regarding public notification requirements consistent with EPA's Public Notification Rule. This guidance document does not offer any examples of public notification associated with water system violations of these requirements. Users should refer to the document, *Final State Implementation Guidance for the Public Notification Rule* (EPA 816-R-01-010) for additional information on these requirements.

## **Section 2**

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# **Inventory and Violations Reporting**

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## Inventory and Violations Reporting

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### 2.1 Inventory and Reporting Requirements

Primacy Agencies are required to identify and report all sources of drinking water to EPA using SDWIS/FED. Table 2-1 below identifies the types of sources and the code values for reporting sources of water. Further, for each source of water, an identification of the type of water the source provides is also required.

**Table 2-1. SDWIS/FED Water Sources and Codes**

Type Code (C405)	Description	Permissible Water Type Codes (C407)
IN	Intake	Surface Water (SW)
WL	Well	Ground Water (GW), GWUDI (GU)
RC	Roof Catchment	Ground Water (GW)
SP	Spring	Surface (SW), ground (GW) or GWUDI (GU)
IG	Infiltration Gallery	GWUDI (GU) or Surface (SW)
RS	Reservoir	Surface (SW)
NP	Non-piped	Surface (SW), ground (GW) or GWUDI (GU)
CC	Consecutive Connection	Surface (SW), ground (GW) or GWUDI (GU)

All treatment that is applied to sources of drinking water must also be reported by Primacy Agencies. If a source of water is not treated, Primacy Agencies must affirm that as well. Treatment is reported via a Treatment Plant facility record. Finally, the Primacy Agency must report a linkage between the source of water facility and treatment plant facility.

The following rules apply to source, treatment plant and treatment reporting:

1. All treatment records will be posted to the SDWIS/FED database connected to treatment plant records, regardless of whether the treatment is occurring at a large treatment plant or is a small building in which disinfectant is added.
2. EPA is eliminating reporting flexibility in reporting treatment data by eliminating the “generated treatment plants.” Primacy Agencies may only report the treatment for treatment plant records.
3. Primacy Agencies must provide information to allow SDWIS/FED to link the source records to the treatment plant records.
4. For consecutive connections, EPA is aware of the complex relationships that may exist between water systems and their treatment. For the purchasing water system, EPA will only require reporting whether the seller is treating the source other than by filtration, filtering the source, or

not providing any treatment. Any buyer treatment must be reported as discussed above. Sellers must report all treatment performed on their sources of water.

5. Explicit reporting of “no treatment” for a source is required.

The following discussion identifies the method to be used to meet the SDWIS/FED reporting requirement for the linkage between sources of water and treatment plants:

- Add a Source/Entity (SE) Flow Form (B3).
- Require the PWS ID for Qualifier #1.
- Require stable and unchanging Source/Entity ID (i.e., WSF State Assigned ID) of the source of water for Qualifier #2, as well as for the treatment plant to which the source is flowing.
- Use the data element (A5000) for use in conjunction with Form B3.
- Link one source to one or more treatment plants.
- Prohibit linkage between a source and itself, or a treatment plant and itself.
- Prohibit linkage between two sources.
- Prohibit linkage between two treatment plants.
- Prohibit duplicate links between a specific source - treatment plant combination.
- Restrict links to sources of water and treatment plants of the same PWS (i.e., inter-PWS linkages will not be allowed).

In summary, the Primacy Agency must report all sources of water, all treatment, assign the treatment to a treatment plant record, and link the source records to the treatment plant records. With regard to SWTR reporting, they must also inform EPA of decisions made on unfiltered sources of water.

The example system below consists of four sources, and two treatment plants. What follows is an example of the system information provided, data elements needed and the DTF transactions that need to be created and reported to represent sources, treatment plants, treatment and linkages in the example water system. The water system is responsible for reporting the data to the Primacy Agency, which in turn reports to SDWIS/ FED.

Example #1: Example Water System Inventory                      PWS ID:            AZ1234567

The Well #1, SE ID: 00001, and Well #2, SE ID: 00002, are permanent ground water and ground water under the direct influence of surface water sources, respectively, that are treated at Treatment Plant #1, SE ID: 00005. The C River source, SE ID: 00004, is a permanent surface water source treated at Treatment Plant #2, SE ID: 00006. In addition, the example water system purchases water from the Apple Water System, SE ID: 00003. The Apple Water System is a permanent surface water source and is filtered by the seller prior to delivery to the example water system. Water purchased from the Apple water system is sent directly to the example system’s distribution system with no further treatment. The only treatment provided at Treatment Plant #1 is chlorination. The treatment processes at Treatment

Plant #2 include oxidation, coagulation, rapid mix, flocculation, sedimentation, rapid sand filtration, and chlorination. Exhibits 2.1 - 2.7 illustrate the data elements needed and the DTF transactions that need to be entered into SDWIS/FED.

<u>System Information:</u>								
SE ID:	00001 ( <i>Qualifier 2</i> )							
SE Name:	Well #1							
SE Record Type:	Well							
SE Code:	Groundwater							
<u>Data Elements:</u>								
Number	Name	Value or Comment						
C0101	PWS-ID	AZ1234567 ( <i>Qualifier 1</i> )						
C0403	Name	Well #1						
C0405	Type Code	WL ( <i>Well Source</i> )						
C0407	Water Type	GW ( <i>Ground Water</i> )						
C0409	Availability	P <i>Permanent</i>						
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B1	AZ1234567	00001		I	C0403	WELL #1		
B1	AZ1234567	00001		I	C0405	WL		
B1	AZ1234567	00001		I	C0407	GW		
B1	AZ1234567	00001		I	C0409	P		

**Exhibit 2.1 System Information, Data Elements and DTFs for Source 00001**



System Information:

SE ID: 00002 (*Qualifier 2*)  
SE Name: Well #2  
SE Record Type: Well  
SE Code: Groundwater UDI  
SE Availability: Permanent

Data Elements:

<u>Number</u>	<u>Name</u>	<u>Value or Comment</u>
C0101	PWS-ID	AZ1234567 ( <i>Qualifier 1</i> )
C0403	Name	Well #2
C0405	Type Code	WL ( <i>Well Source</i> )
C0407	Water Type	GU ( <i>Ground Water UDI</i> )
C0409	Availability	P <i>Permanent</i>

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B1	AZ1234567	00002		I	C0403	WELL #2		
B1	AZ1234567	00002		I	C0405	WL		
B1	AZ1234567	00002		I	C0407	GU		
B1	AZ1234567	00002		I	C0409	P		

**Exhibit 2.2 System Information, Data Elements and DTFs for Source 00002**

System Information:

SE ID: 00003 (*Qualifier 2*)  
SE Name: Apple Water System (AZ7654321)  
SE Record Type: Consecutive Connection  
SE Code: Surface  
SE Availability: Permanent  
Buyer Treatment: Not Treated  
Seller Treatment: Filtered

Data Elements:

Number	Name	Value or Comment
C0101	PWS-ID	AZ1234567 ( <i>Qualifier 1</i> )
C0403	Name	Apple Water
C0405	Type Code	CC ( <i>Consecutive Connection</i> )
C0407	Water Type	SW ( <i>Surface Water</i> )
C0409	Availability	P ( <i>Permanent</i> )
C0411	Sell ID	AZ7654321
C0433	Buyer Treatment	N ( <i>Not Treated</i> )
C0435	Seller Treatment	F ( <i>Filtered</i> )

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B1	AZ1234567	00003		I	C0403	APPLE WATER		
B1	AZ1234567	00003		I	C0405	CC		
B1	AZ1234567	00003		I	C0407	SW		
B1	AZ1234567	00003		I	C0409	P		
B1	AZ1234567	00003		I	C0411	AZ7654321		
B1	AZ1234567	00003		I	C0433	N		
B1	AZ1234567	00003		I	C0435	F		

**Exhibit 2.3 System Information, Data Elements and DTFs for Source 00003**

System Information:

SE ID: 00004 (*Qualifier 2*)  
SE Name: C River  
SE Record Type: Intake  
SE Code: Surface  
SE Availability: Permanent

Data Elements:

Number	Name	Value or Comment
C0101	PWS-ID	AZ1234567 ( <i>Qualifier 1</i> )
C0403	Name	C River
C0405	Type Code	IN ( <i>Surface Water Intake</i> )
C0407	Water Type	SW ( <i>Surface Water</i> )
C0409	Availability	P <i>Permanent</i>

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B1	AZ1234567	00004		I	C0403	C RIVER		
B1	AZ1234567	00004		I	C0405	IN		
B1	AZ1234567	00004		I	C0407	SW		
B1	AZ1234567	00004		I	C0409	P		

**Exhibit 2.4 System Information, Data Elements and DTFs for Source 00004**

System Information:

SE ID: 00005 (*Qualifier 2*)  
SE Name: Treatment Plant #1  
SE Record Type: Treatment Plant  
Treatment ID: 00001 (*Qualifier 3*)  
Treatment Process: Chlorination

Data Elements:

Number	Name	Value or Comment
C0403	Name	Treatment Plant #1
C0405	Type Code	TP ( <i>Treatment Plant</i> )
C0483	Treatment Objective	D ( <i>Disinfection</i> )
C0485	Treatment Process	401 ( <i>Chlorination</i> )

Treatment ID 00001 is entered in Qualifier #3

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B1	AZ1234567	00005		I	C0403	TREATMENT PLANT #1		
B1	AZ1234567	00005		I	C0405	TP		
B2	AZ1234567	00005	00001	I	C0483	D		
B2	AZ1234567	00005	00001	I	C0485	401		

**Exhibit 2.5 System Information, Data Elements and DTFs for Treatment Plant #1**

System Information:

SE ID: 00006 (*Qualifier 2*)  
SE Name: Treatment Plant #2  
SE Record Type: Treatment Plant  
Treatment ID: 00001 (*Qualifier 3*)  
Treatment Process: Oxidation  
Treatment ID: 00002 (*Qualifier 3*)  
Treatment Process: Coagulation  
00003 (*Qualifier 3*)  
Rapid Mix  
00004 (*Qualifier 3*)  
Flocculation  
00005 (*Qualifier 3*)  
Sedimentation  
00006 (*Qualifier 3*)  
Filtration, Rapid Sand  
Treatment ID: 00007 (*Qualifier 3*)  
Treatment Process: Chlorine

Data Elements:

Number	Name	Value or Comment
C0403	Name	Treatment Plant #2
C0405	Type Code	TP ( <i>Treatment Plant</i> )
C0483	Treatment Objective	O ( <i>Organics Removal</i> )
C0485	Treatment Process	543 ( <i>Ozonation, Pre</i> )
C0483	Treatment Objective	P ( <i>Particulate Removal</i> )
C0485	Treatment Process	240 ( <i>Coagulation</i> )
C0483	Treatment Objective	P ( <i>Particulate Removal</i> )
C0485	Treatment Process	600 ( <i>Rapid Mix</i> )
C0483	Treatment Objective	P ( <i>Particulate Removal</i> )
C0485	Treatment Process	360 ( <i>Flocculation</i> )
C0483	Treatment Objective	P ( <i>Particulate Removal</i> )
C0485	Treatment Process	660 ( <i>Sedimentation</i> )
C0483	Treatment Objective	P ( <i>Particulate Removal</i> )
C0485	Treatment Process	345 ( <i>Filtration, Rapid Sand</i> )
C0483	Treatment Objective	D ( <i>Disinfection</i> )
C0485	Treatment Process	401 ( <i>Gaseous Chlorine, Post</i> )

**Exhibit 2.6a System Information, Data Elements for Treatment Plant #2**

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B1	AZ1234567	00006		I		TREATMENT PLANT #2		
B1	AZ1234567	00006		I		TP		
B2	AZ1234567	00006	00001	I	C0483	O		
B2	AZ1234567	00006	00001	I	C0485	543		
B2	AZ1234567	00006	00002	I	C0483	P		
B2	AZ1234567	00006	00002	I	C0485	240		
B2	AZ1234567	00006	00003	I	C0483	P		
B2	AZ1234567	00006	00003	I	C0485	600		
B2	AZ1234567	00006	00004	I	C0483	P		
B2	AZ1234567	00006	00004	I	C0485	360		
B2	AZ1234567	00006	00005	I	C0483	P		
B2	AZ1234567	00006	00005	I	C0485	660		
B2	AZ1234567	00006	00006	I	C0483	P		
B2	AZ1234567	00006	00006	I	C0485	345		
B2	AZ1234567	00006	00007	I	C0483	D		
B2	AZ1234567	00006	00007	I	C0485	401		

**Exhibit 2.6b DTFs for Treatment Plant #2**

Data Elements:

<u>Number</u>	<u>Name</u>	<u>Value or Comment</u>
A5000	Facility Flow	Linkage between source entity ID and Treatment ID - Data Value (32-71)
C0101	PW-SID	Qualifier #2 of Treatment AZ1234567 ( <i>Qualifier 1</i> )

SE ID in Qualifier #2  
Treatment ID in Data Value 32-71

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B3	AZ1234567	00001		I	A5000	00005		
B3	AZ1234567	00002		I	A5000	00005		
B3	AZ1234567	00004		I	A5000	00006		

**Exhibit 2.7 Data Elements and DTFs for Linkage Between Source Entity ID and Treatment ID**

Under the existing Surface Water Treatment Rule, Primacy Agencies must report certain treatment decisions for water systems subject to the rule. Specifically, where the Primacy Agency decides that an unfiltered source successfully meets filtration avoidance criteria, then that “successfully avoiding filtration” (SAF) status must be reported to EPA. If an unfiltered source fails to meet the filtration avoidance criteria, then the “must install filtration” (MIF) decision must be reported to EPA. These requirements continue to be in effect in the IESWTR.

When either of these conditions exist, the Primacy Agency must report “SAF” or “MIF” in data element C0408 (In the past, these were reported as treatment codes - that capability is being replaced by this more direct reporting method). Example #2 and Example #3 show the DTF transactions for reporting “SAF” and “MIF” status for drinking water systems. For existing sources of water (i.e., already exist in SDWIS/FED, for States performing traditional processing), the Primacy Agency must submit a “modify” transaction to change the value of this field. For sources to be newly inserted into SDWIS/FED, or for a Primacy Agency performing total replace processing, the field should be inserted along with the remainder of the source data.

#### Example #2: Successfully Avoiding Filtration

System AA, which serves 25,000 people, has one treatment plant. Treatment Plant A1, SE ID: 00002 draws water from a high quality surface water source, D Lake, SE ID: 00001. The only treatment provided at Treatment Plant A1 is chlorination. Water quality records show that the total coliform concentration has been less than 100 per 100 mL in at least 90 percent of the measurements taken over 6 months immediately prior to the point of disinfectant application since Treatment Plant A1 went on-line in 1985. The fecal coliform concentration is not measured. The source water turbidity, which is measured immediately prior to the point of disinfectant application, has not exceeded 5 NTU since Treatment Plant A1 went on-line. Based on these measurements, System AA continues to meet the filtration avoidance criteria and is not required to install filtration. The data elements and DTF transactions that would be needed for the initial reporting of this source to SDWIS are shown in Exhibit 2.8.



System Information:

SE ID: 00001 (Qualifier 2)  
SE ID Name: D Lake  
SE Record Type: Intake  
SE Code: Surface  
SE Availability: Permanent

Data Elements:

Number	Name	Value or Comment
C0101	PWS-ID	GA1234568 ( <i>Qualifier 1</i> )
C0403	Name	D Lake
C0405	Type Code	IN ( <i>Surface Water Intake</i> )
C0407	Water Type	SW ( <i>Surface Water</i> )
C0408		SAF ( <i>Successfully Avoiding Filtration</i> )

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
B1	GA1234568	00001		I	C0405	IN		
B1	GA1234568	00001		I	C0407	SW		
B3	GA1234568	00001		I	C0408	SAF		

**Exhibit 2.8 System Information, Data Elements and DTF's for a System that is Successfully Avoiding Filtration**

Example #3: Must Install Filtration

System AB, which serves 15,000 people, has one treatment plant. Treatment Plant B1, SE ID: 00003 draws water from Reservoir E, SE ID: 00001. The only treatment provided at Treatment Plant B1 is chlorination. Water quality records show that in the first 8 years of operation, the total coliform concentration was less than 100 cfu per 100 mL in at least 90 percent of the measurements taken over 6 months immediately prior to the point of disinfectant application. The fecal coliform concentration is not measured. The source water turbidity, which is measured immediately prior to the point of disinfectant application, did not exceed 5 NTU in the first 8 years that Treatment Plant B1 was in operation. However, the treatment plant operators have noticed that in the last 12 months the water quality of the reservoir has begun to deteriorate. From January 1, 2002 through June 30, 2002 the total coliform concentration exceeded 100 per 100 mL in 15 percent of the measurements taken in those 6 months. Therefore, System AB no longer qualifies for filtration avoidance and is now required to install filtration by December 29, 2003. The data elements and DTF transactions that would be reported to SDWIS for failure to meet the filtration avoidance criteria are shown in Exhibit 2.9 below.

System ID:	00001 ( <i>Qualifier 2</i> )							
SE Name:	Reservoir E							
SE Record Type:	Reservoir							
SE Code:	Surface							
SE Availability	Permanent							
Data Elements:								
<u>Number</u>	<u>Name</u>		<u>Value or Comment</u>					
C0101	PWS-ID		GA1234569 ( <i>Qualifier 1</i> )					
C0408			MIF ( <i>Must Install Filtration</i> )					
<b>1-2</b>	<b>3-11</b>	<b>12-18</b>	<b>19-25</b>	<b>26</b>	<b>27-31</b>	<b>32-71</b>	<b>72-74</b>	<b>75-80</b>
B1	GA1234569	00001		M	C0408	MIF		

**Exhibit 2.9 System Information, Data Elements and DTF's for a System that Must Install Filtration**

## 2.2 Violations Reporting

Violations of the Interim Enhanced Surface Water Treatment Rule include treatment technique (TT), Monitoring and Reporting (M&R) and record keeping. They are summarized in tables 2-2a and 2-2b below.

**Table 2-2a: Violations of the IESWTR**

VIOLATION DEFINITION	DESCRIPTION	MAJOR MINOR	VIOLATION TYPE	DETAILS
Type 09/0300 Failure to maintain the results of individual filter monitoring for at least 3 years.	Begins: When State becomes aware of violation (e.g. during a site visit or sanitary survey).  Ends: When system has 3 years of data.	N/A	Record Keeping	This is considered a record keeping violation
Type 29/0300 – Failure to produce and/or report to State individual filter profile within 7 days of exceedance (>0.5 NTU in 2 consecutive measurements taken 15 minutes apart). – Failure to produce and/or report to State individual filter profile within 7 days of exceedance (>1.0 NTU in 2 consecutive measurements taken 15 minutes apart). – Failure to conduct and/or report to State a self-assessment of an individual filter within 14 days of exceedance (>1.0 NTU in 2 consecutive measurements taken 15 minutes apart in each of 3 consecutive months).	Violations reported monthly at the system level.	Major	M&R	

VIOLATION DEFINITION	DESCRIPTION	MAJOR MINOR	VIOLATION TYPE	DETAILS
Type 29/0300 Failure to have a CPE conducted by State or third party no later than 30 days after exceedance (>2.0 NTU in 2 consecutive measurements taken 15 minutes apart in 2 consecutive months) and have the CPE completed and submitted to the State no later than 90 days following the exceedance.	Begins: When system fails to take action indicated.  Ends: When system has reported to State's satisfaction that follow-up action complete.	Major	M&R	Have a future end date = 12/31/2015) with the end date modified as a result of a link to an RTC, to be reported
Type 37/0300 Failure to consult with State before making a significant change to a disinfection practice if required to develop a disinfection profile.	Begins: Either date of change or when State becomes aware of the change.  Ends: When State notifies the facility that it approves of the change.	N/A	TT	Have a future end date = 12/31/2015) with the end date modified as a result of a link to an RTC, to be reported
Type 38/0300 – MAJOR: Failure to collect and report at least 90 percent of required samples. – MAJOR: Failure to report that the system has conducted all individual filter monitoring to State within 10 days after the end of each month. – MAJOR: Failure to report that the system has exceeded 1 NTU (or maximum set by State) in representative samples by end of next business day. – MINOR: Any other failure to monitor or report.	Violations reported monthly at the system level. No severity indicator.	Either	M&R	The fact that users will not be able to distinguish between the different major violations is acceptable to EPA. If it is needed, EPA will get that information from the States on an as-needed basis

VIOLATION DEFINITION	DESCRIPTION	MAJOR MINOR	VIOLATION TYPE	DETAILS
Type 43/0300 Failure to achieve CFE turbidity level 1 NTU if PWS uses conventional or direct filtration OR exceedance of the State-set maximum turbidity performance requirements for PWSs using alternative filtration technologies.	Report violations on a monthly basis, with severity indicated by the number of exceedances >1 NTU (max. is 31x6 = 186), using data element C1112	N/A	TT	For water systems with multiple sets of filters, or multiple treatment plants with filtration, add the total number of exceedances at all locations for the month to compute the value for C1112
Type 44/0300 Failure to achieve CFE turbidity level of 0.3 NTU in 95 percent of monthly measurements if PWS uses conventional or direct filtration OR failure to meet the State-set turbidity performance requirements in 95 percent of monthly measurements of PWSs using alternative filtration technologies.	Violations reported monthly at the system level. No severity indicator.	N/A	TT	
Type 47/0300 Systems are not allowed to begin construction of any uncovered finished water storage facility.	Begins: At beginning of construction.  Ends: Either when the storage facility is covered or when the storage facility is no longer used to store <i>finished</i> water.	N/A	TT	

Violation reporting fields

Only the fields identified below in Table 2-2b are to be reported to represent IESWTR rule violations. All other violation fields should NOT be included in submissions to EPA. Those fields will be rejected.

**Table 2-2b: Violation Reporting Fields for the IESWTR**

<b>Violation</b>	<b>Type</b>	<b>Contaminant Code (C1103)</b>	<b>Type Code (C1105)</b>	<b>Compliance Period Begin Date (C1107)</b>	<b>Compliance Period End Date (C1109)</b>	<b>Severity Indicator count (C1112)</b>	<b>Major Violation Indicator (C1131)</b>
Failure to maintain the results of individual filter monitoring for at least 3 years.	Record keeping	0300	09	When State becomes aware of violation (e.g. during a site visit or sanitary survey).	When system has 3 years of data.	Do not report	Do not report

Violation	Type	Contaminant Code (C1103)	Type Code (C1105)	Compliance Period Begin Date (C1107)	Compliance Period End Date (C1109)	Severity Indicator count (C1112)	Major Violation Indicator (C1131)
<ul style="list-style-type: none"> <li>– Failure to produce and/or report to State individual filter profile within 7 days of exceedance (&gt;0.5 NTU in 2 consecutive measurements taken 15 minutes apart).</li> <li>– Failure to produce and/or report to State individual filter profile within 7 days of exceedance (&gt;1.0 NTU in 2 consecutive measurements taken 15 minutes apart).</li> <li>– Failure to conduct and/or report to State a self-assessment of an individual filter within 14 days of exceedance (&gt;1.0 NTU in 2 consecutive measurements taken 15 minutes apart in each of 3 consecutive months).</li> </ul>	M&R	0300	29	first day of month	last day of month	do not report	always major

<b>Violation</b>	<b>Type</b>	<b>Contaminant Code (C1103)</b>	<b>Type Code (C1105)</b>	<b>Compliance Period Begin Date (C1107)</b>	<b>Compliance Period End Date (C1109)</b>	<b>Severity Indicator count (C1112)</b>	<b>Major Violation Indicator (C1131)</b>
Failure to have a CPE conducted by State or third party no later than 30 days after exceedance (>2.0 NTU in 2 consecutive measurements taken 15 minutes apart in 2 consecutive months) and have the CPE completed and submitted to the State no later than 90 days following the exceedance.	M&R	0300	29	When system fails to take action indicated	Have a future end date = 12/31/2015) with the end date modified as a result of a link to an RTC (SOX/EOX), or intentional no action code (SO6/EO6) or no longer subject to the rule code (SO0/EO0) to be reported	do not report	always Major
Failure to consult with State before making a significant change to a disinfection practice if required to develop a disinfection profile.	TT	0300	37	Either date of change or when State becomes aware of the change	Have a future end date = 12/31/2015) with the end date modified as a result of a link to an RTC (SOX/EOX), or intentional no action code (SO6/EO6) or no longer subject to the rule code (SO0/EO0) to be reported	do not report	do not report



<b>Violation</b>	<b>Type</b>	<b>Contaminant Code (C1103)</b>	<b>Type Code (C1105)</b>	<b>Compliance Period Begin Date (C1107)</b>	<b>Compliance Period End Date (C1109)</b>	<b>Severity Indicator count (C1112)</b>	<b>Major Violation Indicator (C1131)</b>
- Failure to collect and report at least 90 percent of required samples, or failure to report that the system has conducted all individual filter monitoring to State within 10 days after the end of each month, or - failure to report that the system has exceeded 1 NTU (or maximum set by State) in representative samples by end of next business day or - any other failure to monitor or report.	M&R	0300	38	first day of month	last day of month	do not report	<u>yes</u> = failure to collect at least 90 percent of samples, or failure to report that the system has conducted all individual filter monitoring to State within 10 days after the end of each month. or failure to report that the system has exceeded 1 NTU (or maximum set by State) in representative samples by end of next business day. <u>no</u> =any other failure to report
Failure to achieve CFE turbidity level 1 NTU if PWS uses conventional or direct filtration OR exceedance of the State-set maximum turbidity performance requirements for PWSs using alternative filtration technologies.	TT	0300	43	first day of month	last day of month	the number of exceedances >1 NTU (max. is 31x6 = 186)	do not report

<b>Violation</b>	<b>Type</b>	<b>Contaminant Code (C1103)</b>	<b>Type Code (C1105)</b>	<b>Compliance Period Begin Date (C1107)</b>	<b>Compliance Period End Date (C1109)</b>	<b>Severity Indicator count (C1112)</b>	<b>Major Violation Indicator (C1131)</b>
Failure to achieve CFE turbidity level of 0.3 NTU in 95 percent of monthly measurements if PWS uses conventional or direct filtration OR failure to meet the State-set turbidity performance requirements in 95 percent of monthly measurements of PWSs using alternative filtration technologies.	TT	0300	44	first day of month	last day of month	do not report	do not report
Systems are not allowed to begin construction of any uncovered finished water storage facility	TT	0300	47	At beginning of construction	Either when the storage facility is covered or when the storage facility is no longer used to store <i>finished</i> water	do not report	do not report

## 2.2 Treatment Technique (TT) Violations Reporting

### 2.2.1 Type 37/0300: Failure to Profile or Consult with Primacy Agency (Disinfection Changes)

Violation type 37/0300 is the failure to produce a disinfection profile or to consult with the Primacy Agency before making a significant change to disinfection practice if required to develop a disinfection profile.

***Cross-reference to IESWTR Implementation Guidance:***

Section II, pages 4 & 5

Section IV-F, page 28

Appendix D, page 24

<b>Table 2-3. Violation Type: 37/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Treatment Technique Violation</b>	<b>Rule Citation</b>
37	0300	Failure to develop a disinfection profile or consult with the Primacy Agency before making a significant change to a disinfection practice if required to develop a disinfection profile	40 CFR141.172 (b) and (c)

#### Example System Description – System A

System A is a subpart H system that has a conventional treatment plant treating a single surface water source. System A's plant has six individual filters and serves 18,200 persons. The system adds chlorine ahead of the flocculators and again to the combined filter effluent (CFE). Monitoring conducted under 40 CFR141.172(a) showed that System A had disinfection byproduct levels that required preparation of a disinfection profile. Therefore, System A calculated the log inactivation for *Giardia lamblia* on a daily basis at peak hour flow for one full year as described in 40 CFR141.172(b). System A retained the disinfection profile data in a spreadsheet format that was approved by the Primacy Agency.

#### Example #4: TT 37/0300

System A's operator collects the required samples for TTHM and HAA5 under the Stage 1 Disinfectants and Disinfection Byproducts Rule for the first two quarters of calendar year 2002. The operator believes these data show the system will likely incur MCL violations for TTHMs and/or HAA5 at the end of the first full year of monitoring. Therefore, after checking to see that he can meet the CT requirements of the SWTR with chlorination of the combined filter effluent alone, he discontinues the addition of chlorine ahead of the flocculators and begins operation with chlorine only added to the CFE. The Primacy Agency becomes aware of this change to the disinfection practice when conducting a sanitary survey on March 1, 2004. During the sanitary survey, the Primacy Agency notes that the operator made changes to the disinfection practice on about August 1, 2002. The Primacy Agency ultimately approves the changes made by the PWS on July 15, 2004.

#### Example #4 Decision

This TT violation is SDWIS coded as 37/0300. System A has incurred a treatment technique violation because it did not submit to the Primacy Agency a description of the proposed change, the disinfection profile and benchmark, an analysis of how the proposed change would affect the levels of disinfection, and did not consult with the Primacy Agency prior to making the significant change to disinfection practices.

In reporting to SDWIS, the violation begin date is either the date on which the disinfection process change is initiated, or the date on which the Primacy Agency becomes aware of the change(s). Since the date of the change is known, it would be the preferred entry into SDWIS. For this type of violation, the end date should not be reported to SDWIS/FED. The SDWIS/FED database processing will default the end date to 20151231 (December 31, 2015). Since the Primacy Agency approved the disinfection changes on July 15, 2004, it must then submit an enforcement action to SDWIS/FED indicating a return to compliance (Code SOX) with a transaction to link it to the original violation.

#### Public Notice Requirement

According to the requirements of 40 CFR141.201, the system must provide Tier 2 public notice regarding this violation.

#### System Reporting Requirement

The system must submit to the Primacy Agency a description of the proposed change, the disinfection profile and benchmark, an analysis of how the proposed change would affect the levels of disinfection, and must consult with the Primacy Agency prior to making a significant change to disinfection practices.

#### Primacy Agency to SDWIS/FED Reporting

The appropriate SDWIS/FED data elements and the DTF transactions for the specific TT violation described as a Failure to Profile or Consult with the Primacy Agency are listed in Exhibit 2.10.

Data Elements:

Number	Name	Value or Comment
C0101	PWS-ID	<i>Qualifier 1</i>
C1101	Violation ID	<i>Qualifier 2</i>
C1103	Contaminant	0300
C1105	Violation Type	37
C1107	Compliance Period Begin Date	<i>Date / Primacy Agency (PA) aware date</i>
C1109	Compliance Period End Date	A date should not be provided with the original violation report to SDWIS/FED. SDWIS/FED processing would generate default date of 12/31/2015. When the Primacy Agency reaches agreement with the PWS about the disinfection processes to be implemented and has determined that the PWS is compliant with them, then the Primacy Agency needs to submit a “returned to compliance” enforcement action and link it to the original treatment technique violation. The date of the action should represent the date the Primacy Agency made that determination. SDWIS/FED processing will modify the end date of the original violation to be the same date as the “returned to compliance” reported.
C1203	Executive Action Date	
C1205	Enforcement Follow-Up Action	SOX ( <i>Primacy Agency</i> )
Y5000	Associated Violation ID	0400111 ( <i>Refers to this particular violation ID</i> )

DTF Transactions:

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234582	0400111		I	C1103	0300		
D1	GA1234582	0400111		I	C1105	37		
D1	GA1234582	0400111		I	C1107	20020801		
E1	GA1234582	0400001		I	C1203	20040715		
E1	GA1234582	0400001		I	C1205	SOX		
E1	GA1234582	0400001		I	Y5000	0400111		

**Exhibit 2.10 Failure to Profile or Consult with Primacy Agency TT Violation Data Elements and DTF Transactions and Associated “RTC” Transaction**

**2.2.2 Type 43/0300: CFE Exceeds 1 NTU or Primacy Agency-Set Alternative Technology Maximum Value**

***Cross-reference to IESWTR Implementation Guidance:***

Section II, pages 4 & 5

Section IV, page 32

Appendix D, page 10 & 13

<b>Table 2-4. Violation Type: 43/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Treatment Technique Violation</b>	<b>Rule Citation</b>
43	0300	<p>Failure to achieve combined filter turbidity level that at no time exceeds 1 NTU if PWS uses conventional or direct filtration</p> <p>or</p> <p>Failure to achieve combined filter turbidity level that at no time exceeds the Primacy Agency-set maximum turbidity performance standard if PWS uses an alternative filtration technology</p>	40 CFR141.173(a)(2) and (b)

Example System Description – System B

System B is a subpart H system utilizing a membrane microfiltration treatment plant (i.e. an alternative filtration technology) that treats water from Lake P. System B’s water treatment plant includes six individual filter modules and serves 11,000 persons. The system adds chlorine to the CFE ahead of the clearwell where detention time is provided to ensure adequate CT. Pursuant to the requirements of 40 CFR 141.173(b), System B has conducted a pilot study that showed the plant capable of removing 99 percent of *Cryptosporidium* oocysts, and removing or inactivating 99.9 percent of *Giardia lamblia* cysts and 99.99 percent of viruses when the CFE is maintained below 0.5 NTU in 95 percent of all measurements taken at 4-hour intervals and below 1 NTU at all times. Subsequently, the Primacy Agency established treatment technique turbidity performance standards of 0.5 NTU that System B must meet in 95 percent of all measurements taken of the CFE at 4-hour intervals, and a level of 1 NTU that the CFE may not exceed at any time.

Example #5: TT 43/0300

The System B operator measures the CFE turbidity every four hours that the plant is in operation. Those measurements are recorded on a form provided by the Primacy Agency and the completed form is submitted to the Primacy Agency prior to the 10<sup>th</sup> of the following month. The report provides the Primacy Agency with the total number of filtered water turbidity measurements taken each month, the number and percentage of CFE measurements taken each month that are less than or equal to 0.5 NTU, and the date and value of any CFE turbidity measurement that exceeds 1 NTU. The following information was included on the system’s monthly report submitted on October 7, 2002:

<b>Table 2-5. System B September 2002 CFE Turbidity Monthly Report (Excerpt)</b>				
Total Filter Measurements	# 0.5 NTU	% 0.5 NTU	Date > 1 NTU	Value of > 1 NTU
180	179	99%	9-12-02	2 NTU

On the 12<sup>th</sup> of September, 2002, a membrane failure caused one of the four-hour CFE turbidity measurements to be read and recorded at 1.6 NTU. This value is rounded to 2 NTU.

#### Example #5 Decision

This is a TT violation and is SDWIS coded as 43/0300. The report submitted to the Primacy Agency by System B on October 7, 2002 identifies this measurement as being >1 NTU and indicates that the system has violated a TT requirement.

Since this violation can occur multiple times in a single month, EPA has opted to have Primacy Agencies provide a single violation record for any month in which there is an exceedance with a field that identifies the number of times during the month that the standard was exceeded. A data element, C1112 (severity indicator count) will be used to capture this number.

#### Public Notice Requirement

According to the requirements of 40 CFR141.201, the system must provide Tier 2 public notice, unless in consultation with the Primacy Agency, which must occur within 24 hours, it is determined that Tier 1 public notice should be provided. Failure to consult the Primacy Agency automatically results in a Tier 1 public notice requirement for this type of TT violation.

#### System Reporting Requirement

Within 10 days after the end of the month, the system must provide a report of turbidity measurements to the Primacy Agency which includes the total number of measurements taken during the month, the number and percentage of measurements less than or equal to 0.5 NTU (the Primacy Agency-set value for the 95<sup>th</sup> percentile turbidity value), and the date and value of any measurements taken during the month which exceed 1 NTU.

#### Primacy Agency to SDWIS/FED Reporting

The appropriate SDWIS/FED CFE data elements and DTF transactions for the specific violation described as a Treatment Technique violation Type 43/0300 are listed in Exhibit 2.11.

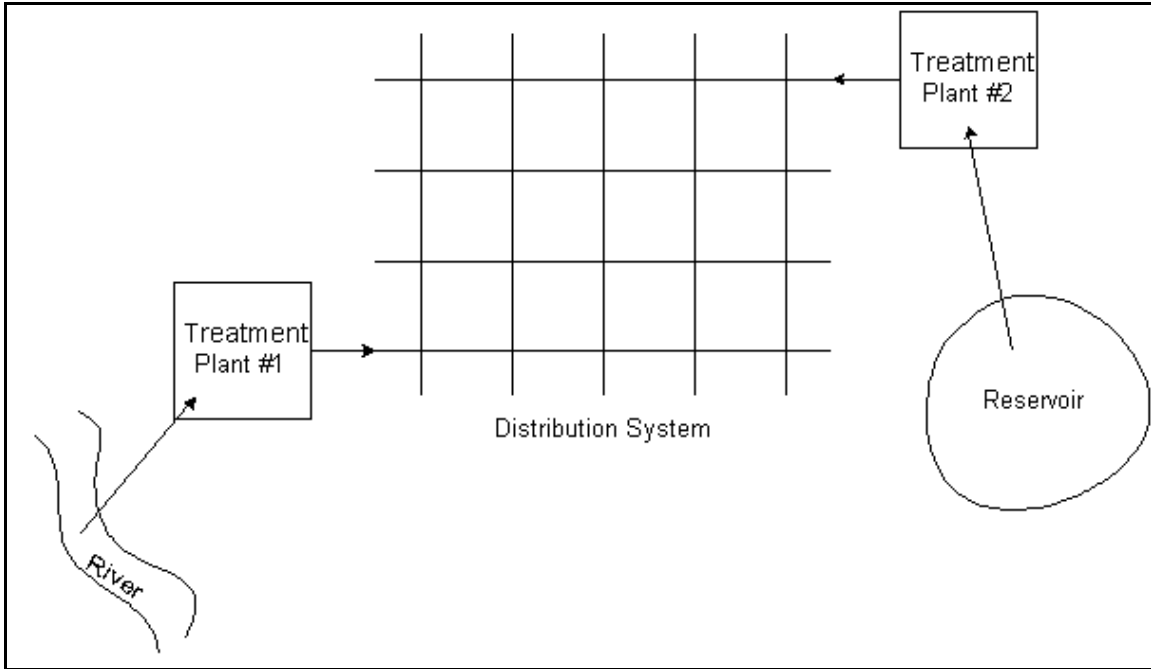
<u>Data Elements:</u>								
Number	Name		Value or Comment					
C0101	PWS-ID		<i>Qualifier 1</i>					
C1101	Violation ID		<i>Qualifier 2</i>					
C1103	Contaminant		0300					
C1105	Violation Type		43					
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date		<i>Must be one month later than C1107</i>					
C1112	Severity Indicator		<i>The number of times during the month the standard was exceeded</i>					
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234584	0200001		I	C1103	0300		
D1	GA1234584	0200001		I	C1105	43		
D1	GA1234584	0200001		I	C1107	20020901		
D1	GA1234584	0200001		I	C1109	20020930		
D1	GA1234584	0200001		I	C1112	1		

**Exhibit 2.11 Combined Filter Effluent Exceedance Treatment Technique Violation Data Elements and DTF Transactions for a Single Exceedance**

Example System Description - System BB

System BB has two treatment plants which both use surface water as a source and together serve 15,000 people (see the system schematic in Exhibit 2.12). Treatment Plant #1 is a conventional filtration plant that draws water from a small river. Treatment Plant #2 is a direct filtration plant that draws water from a reservoir. Both treatment plants use chlorine as a pre-disinfectant and primary disinfectant and add the chlorine directly after the intake and ahead of the clearwell. Detention time is provided in the clearwell in both plants to ensure adequate CT. The treatment technique standard in 40 CFR 141.551(b) for direct and conventional filtration systems require that the CFE must be maintained below 0.3 NTU in 95 percent of all measurements taken at 4-hour intervals and below 1 NTU at all times during each monthly reporting period.





**Exhibit 2.12 System BB Schematic**

Example #6: TT 43/0300

The System BB operator measures the CFE turbidity every four hours that the plant is in operation. Those measurements are recorded on a form provided by the Primacy Agency and the completed form is submitted to the Primacy Agency by the 10<sup>th</sup> of the following month. The report provides the Primacy Agency with the total number of combined filter effluent turbidity measurements taken each month, the number and percentage of CFE measurements taken each month that are less than or equal to 0.3 NTU, and the date and value of any CFE turbidity measurement that exceeds 1 NTU. The following information was included on the system’s monthly report submitted on February 6, 2006.

<b>Table 2-6. System BB, Treatment Plant #1 January 2006 CFE Turbidity Monthly Report (Excerpt)</b>				
Total Filter Measurements	# 0.3 NTU	% 0.3 NTU	Date > 1 NTU	Value of > 1 NTU
180	173	96%	1-5-06	3 NTU

On the 5<sup>th</sup> of January, 2006, one of the four-hour CFE turbidity measurements was read and recorded at 3.2 NTU in treatment plant #1. This value is rounded to 3 NTU.

**Table 2-7. System BB, Treatment Plant #2 January 2006 CFE Turbidity Monthly Report (Excerpt)**

Total Filter Measurements	# 0.3 NTU	% 0.3 NTU	Date > 1 NTU	Value of > 1 NTU
180	176	98%	1-17-06	2 NTU

On the 17<sup>th</sup> of January, 2006, one of the 4-hour turbidity measurements at Treatment Plant #2 was read and recorded at 1.9 NTU. This value is rounded to 2 NTU.

Example #6 Decision

The violations at both plants are TT violations and are SDWIS coded as 43/0300. The report submitted to the Primacy Agency by System BB on February 6, 2006 identifies that the CFE measurement greater than 1 NTU at Treatment Plant #1 is 3 NTU and indicates that the system has violated a TT requirement. Likewise, the CFE measurement greater than 1 NTU at Treatment Plant 2, reported in the February 6, 2006 submission by the system is 2 NTU and indicates that the system has violated a TT requirement.

Since this violation can occur multiple times in a single month, EPA has opted to have Primacy Agencies provide a single violation record for any month in which there is an exceedance with a field that identifies the number of times during the month that the standard was exceeded. A data element, C1112 (severity indicator count) will be used to capture this number. Although there are two treatment plants in System BB, the Primacy Agency would only submit one violation record for the month of January, 2006 for System BB. However, the severity indicator count (data element C1112) would indicate that two violations had occurred within System BB in January, 2006.

Public Notice Requirement

According to the requirements of 40 CFR141.201, the system must provide Tier 2 public notice, unless in consultation with the Primacy Agency, which must occur within 24 hours, it is determined that Tier 1 public notice should be provided. If the Primacy Agency is not contacted within 24 hours, then the violation automatically becomes Tier 1.

System Reporting Requirement

Within 10 days after the end of the month, the system must provide a report of turbidity measurements for each treatment plant to the Primacy Agency which includes the total number of measurements taken during the month, the number and percentage of measurements less than or equal to 0.3 NTU, and the date and value of any measurements taken during the month which exceed 1 NTU.

Primacy Agency to SDWIS/FED Reporting

The appropriate SDWIS/FED CFE data elements and DTF transactions for the specific violation described as a Treatment Technique violation Type 43/0300 are listed in Exhibit 2.13 below.

<u>Data Elements:</u>								
Number	Name	Value or <i>Comment</i>						
C0101	PWS-ID	<i>Qualifier 1</i>						
C1101	Violation ID	<i>Qualifier 2</i>						
C1103	Contaminant	0300						
C1105	Violation Type	43						
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date	<i>Must be one month later than C1107</i>						
C1112	Severity Indicator	<i>The number of times during the month the standard was exceeded</i>						
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234681	0600001		I	C1103	0300		
D1	GA1234681	0600001		I	C1105	43		
D1	GA1234681	0600001		I	C1107	20060101		
D1	GA1234681	0600001		I	C1109	20060130		
D1	GA1234681	0600001		I	C1112	2		

**Exhibit 2.13 Combined Filter Effluent Exceedance Treatment Technique Violation Data Elements and DTF Transactions for Multiple Exceedances**

**2.2.3 Type 44/0300: > 5 Percent Monthly CFE Samples Exceed 0.3 NTU or Primacy Agency-Set Alternative Technology Maximum Value**

***Cross-reference to IESWTR Implementation Guidance:***

Section II, pages 4 & 6  
 Section IV-F, page 32  
 Appendix D, page 10 & 13

<b>Table 2-8. Violation Type: 44/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Treatment Technique Violation</b>	<b>Rule Citation</b>
44	0300	Failure to achieve CFE turbidity level of 0.3 NTU in 95 percent of monthly measurements if system uses conventional or direct filtration  or Failure to meet Primacy Agency-set turbidity performance standard in 95 percent of monthly measurements if system uses an alternative filtration technology	40 CFR141.173 (a)(1) & (b)

Example #7: TT 44/0300

The System B operator measures the CFE turbidity every four hours that the plant, which uses membrane filtration, is in operation. Those measurements are recorded on a form provided by the Primacy Agency and the completed form is submitted to the Primacy Agency prior to the 10<sup>th</sup> of the following month. The report provides the Primacy Agency with the total number of filtered water turbidity measurements taken each month, the number and percentage of CFE measurements taken each month that are less than or equal to 0.5 NTU (the Primacy Agency set performance standard for this alternative filtration technology), and the date and value of any CFE turbidity measurement that exceeds 1 NTU. The November 2002 report submitted by System B to the Primacy Agency on December 10, 2002, showed that only 92 percent of the CFE turbidity measurements taken every four hours were less than or equal to 0.5 NTU. The following information was included in the system’s November 2002 report to the Primacy Agency.

<b>Table 2-9. System B November 2002 CFE Turbidity Monthly Report (Excerpt)</b>				
Total Filter Measurements	# 0.5 NTU	% 0.5 NTU	Date > 1 NTU	Value of > 1 NTU
180	166	92%	--	--

Example #7 Decision

The TT violation is SDWIS coded as 44/0300. System B has a treatment technique violation for November 2002 as a result of its failure to meet the 95 percent performance standard set by the Primacy Agency (i.e., more than 5 percent of the CFE turbidity measurements taken in the month exceeded 0.5 NTU).

Public Notice Requirement

According to the requirements of 40 CFR141.201, this system must provide Tier 2 public notice, regarding this violation.

System Reporting Requirement

Within 10 days after the end of the month, the system must provide a report of turbidity measurements to the Primacy Agency which includes the total number of measurements taken during the month, the number and percentage of measurements less than or equal to 0.5 NTU (the Primacy Agency-set value for the 95<sup>th</sup> percentile turbidity value), and the date and value of any measurements taken during the month which exceed 1 NTU.

Primacy Agency to SDWIS/FED Reporting

These TT violations are reported monthly and there is no severity indicator. The appropriate SDWIS/FED Monthly CFE Treatment Technique violation Type 44/0300 data elements and individual DTF transactions are listed below in Exhibit 2.14.

<u>Data Elements:</u>								
Number	Name		Value or <i>Comment</i>					
C0101	PWS-ID		<i>Qualifier 1</i>					
C1101	Violation ID		<i>Qualifier 2</i>					
C1103	Contaminant		0300					
C1105	Violation Type		44					
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date		<i>Must be one month later than C1107</i>					
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234585	0300001		I	C1103	0300		
D1	GA1234585	0300001		I	C1105	44		
D1	GA1234585	0300001		I	C1107	20021101		
D1	GA1234585	0300001		I	C1109	20021130		

**Exhibit 2.14 Monthly Combined Filter Effluent (CFE) Exceedance Treatment Technique Violation Data Elements and DTF Transactions**

Example System Description – System BC

System BC is a system that serves 15,000 people and utilizes four conventional filtration water treatment plants, each with four filter beds.

Example #8: TT 44/0300

During the month of July 2003, the operator measures CFE turbidity every four hours at each plant while they are in operation and records the results on a form provided by the Primacy Agency. His report, that he submits to the Primacy Agency on the August 9, 2003, includes the following information:

<b>Table 2-10. System BC Plant #1 July 2003 CFE Turbidity Monthly Report (Excerpt)</b>				
<b>Total Filter Measurements</b>	<b># 0.3 NTU</b>	<b>% 0.3 NTU</b>	<b>Date &gt; 1 NTU</b>	<b>Value of &gt; 1 NTU</b>
186	167	90%	--	--

<b>Table 2-11. System BC Plant #2 July 2003 CFE Turbidity Monthly Report (Excerpt)</b>				
<b>Total Filter Measurements</b>	<b># 0.3 NTU</b>	<b>% 0.3 NTU</b>	<b>Date &gt; 1 NTU</b>	<b>Value of &gt; 1 NTU</b>
186	169	91%	--	--

<b>Table 2-12. System BC Plant #3 July 2003 CFE Turbidity Monthly Report (Excerpt)</b>				
<b>Total Filter Measurements</b>	<b># 0.3 NTU</b>	<b>% 0.3 NTU</b>	<b>Date &gt; 1 NTU</b>	<b>Value of &gt; 1 NTU</b>
186	184	99%	--	--

<b>Table 2-13. System BC Plant #4 July 2003 CFE Turbidity Monthly Report (Excerpt)</b>				
<b>Total Filter Measurements</b>	<b># 0.3 NTU</b>	<b>% 0.3 NTU</b>	<b>Date &gt; 1 NTU</b>	<b>Value of &gt; 1 NTU</b>
186	151	81%	--	--

The report shows that during the month of July, 2003, Plants #1, #2 and #4 failed to achieve a 0.3 NTU or less CFE turbidity at least 95 percent of the time operating.

Example #8 Decision

TT violations are SDWIS coded as 44/0300. System BC has incurred multiple Type 44/0300 violations, since three of the system's water treatment plants failed to achieve 0.3 NTU or less CFE turbidity 95

percent of the time operating in July 2003. Although there are multiple Type 44/0300 violations observed at this facility during the month, only one record of violation is reported to SDWIS/FED.

Public Notice Requirement

According to the requirements of 40 CFR141.201, this system must provide Tier 2 public notice.

System Reporting Requirement

Within 10 days after the end of the month, the system must provide a report of turbidity measurements to the Primacy Agency which includes the total number of measurements taken during the month, the number and percentage of measurements less than or equal to 0.3 NTU, and the date and value of any measurements taken during the month which exceed 1 NTU.

Primacy Agency to SDWIS/FED Reporting

The appropriate SDWIS/FED CFE Treatment Technique violation Type 43/0300 data elements and individual DTF transactions are shown below in Exhibit 2.15.

<u>Data Elements:</u>								
Number	Name		Value or Comment					
C0101	PWS-ID		<i>(Qualifier 1)</i>					
C1101	Violation ID		<i>(Qualifier 2)</i>					
C1103	Contaminant		0300					
C1105	Violation Type		44					
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date		<i>(Must be one month later than C1107)</i>					
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234585	0300002		I	C1103	0300		
D1	GA1234585	0300002		I	C1105	44		
D1	GA1234585	0300002		I	C1107	20030701		
D1	GA1234585	0300002		I	C1109	20030731		

**Exhibit 2.15 Data Elements and DTF Transactions Monthly CFE Exceedance TT Violation**

**2.2.4 Type 47/0300: Begin Construction of Uncovered Water Storage Facility After February 16, 1999**

***Cross-reference to IESWTR Implementation Guidance:***

Section II, pages 4 & 6

Appendix D, page 10

<b>Table 2-14. Violation Type: 47/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Treatment Technique Violations</b>	<b>Rule Citation</b>
47	0300	Construction of an uncovered finished water storage reservoir on or after February 16, 1999.	40 CFR141.170(c)

Example System Description - System C

System C is an unfiltered subpart H system that meets the filtration avoidance criteria and uses water from Y2 Lake. System C chlorinates the unfiltered water to provide adequate CT, then pumps it into the distribution system. The system provides water to 32,000 persons.

Example #9: TT 47/0300

On May 15, 2001 System C had a construction company begin construction of an uncovered finished water storage reservoir. The storage facility was constructed and put on-line on October 31, 2001. During a sanitary survey conducted by the Primacy Agency in March, 2002, the completed reservoir was discovered and a cease and desist order was issued. The reservoir was physically disconnected from the water system on January 15, 2003.

Example #9 Decision

This TT violation is SDWIS coded as 47/0300. System C incurred a Type 47/0300 TT violation that began on October 31, 2001, the day the uncovered finished water storage reservoir was put on-line. The violation would end when the reservoir was properly covered or taken off-line (physically disconnected from the system).

Public Notice Requirement

According to the provisions of 40 CFR141.201, the system must provide Tier 2 public notice.

Primacy Agency to SDWIS/FED Reporting

The appropriate SDWIS/FED Construction of an Uncovered Storage Facility Treatment Technique violation data elements and the individual DTF transactions are listed below in Exhibit 2.16.



<u>Data Elements:</u>								
Number	Name		Value or Comment					
C0101	PWS-ID		<i>Qualifier 1</i>					
C1101	Violation ID		<i>Qualifier 2</i>					
C1103	Contaminant		0300					
C1105	Violation Type		47					
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date		A date should not be provided with the original violation report to SDWIS/FED if the PWS has not returned to compliance at the time that original violation is sent to EPA. When a date is not provided, SDWIS/FED processing will generate a default date of 12/31/2015. When the Primacy Agency has determined that the PWS has returned to compliance (i.e., either covered the reservoir or physically taken offline), then the Primacy Agency should submit a “returned to compliance” enforcement action and link it to the original treatment technique violation. The date of the action should be the date the Primacy Agency made that determination. SDWIS/FED processing will modify the end date of the original violation to be the same date as the “returned to compliance” reported.					
C1203	Enforcement Action Date		20030115					
C1205	Enforcement Follow-Up Action		SOX ( <i>Followed-up by Primacy Agency</i> )					
Y5000	Associated Violation ID		0200001					
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234586	0200001		I	C1103	0300		
D1	GA1234586	0200001		I	C1105	47		
D1	GA1234586	0200001		I	C1107	20011031		
E1	GA1234586	0300001		I	C1203	20030115		
E1	GA1234586	0300001		I	C1205	SOX		
E1	GA1234586	0300001		I	Y5000	0200001		

**Exhibit 2.16 Construction of an Uncovered Finished Water Storage Facility  
Treatment Technique Violation Data Elements and DTF Transactions**

## 2.3 Monitoring & Reporting (M&R) Violations

### General Discussion of Monitoring and Reporting (M&R) Violations

M&R violations of the IESWTR are reported for water systems that have failed to conduct the required turbidity monitoring or report the results of the monitoring, have failed to conduct appropriate individual filter turbidity trigger response activities or have otherwise failed to report required information to the Primacy Agency. All IESWTR violations are reported as violations of the rule, rather than of a specific contaminant. The contaminant code 0300 is utilized for the IESWTR violations reported to SDWIS/FED. Only one M&R violation may be reported for a facility per compliance period, for each violation type. The Type 29 violation is considered by EPA to be a major violation. The Type 38 violation can be either major or minor, depending upon the severity of the missed sampling and reporting. Thus, for Type 29 violations, the Major Violation flag (C1131) field is to be reported as “Y” to represent “Yes” instead of reporting multiple violation. The following Table 2-15 is a summary of the CFE and IFE turbidity monitoring requirements under the IESWTR.

<b>Table 2-15. Turbidity Monitoring Requirements for Conventional and Direct Filtration Systems</b>	
Type/Location of Sample	Frequency
Combined Filter Effluent (CFE)	Collect and analyze a sample every four (4) hours of operation
Individual Filter Effluent (IFE)	Monitor continuously and record values every 15 minutes of filter operation

#### 2.3.1 Type 29/0300: M&R Violation - Failure to conduct individual filter monitoring follow-up activities

***Cross-reference to IESWTR Implementation Guidance:***

Section II, pages 4 & 7

Section IV-F, page 32

Appendix D, page 10 & 20

<b>Table 2-16. Violation Type: 29/0300</b>		
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Monitoring and Reporting Violations</b>
29	0300	Failure to conduct follow-up activities triggered by individual filter turbidity exceedances.

<b>Table 2-17. Individual Filter Follow Up Activities*</b>		
<b>Violation</b>	<b>Rule Citation</b>	<b>Section Where Discussed in This Document</b>
Failure to produce and/or report to the state an individual filter profile within 7 days of a turbidity exceedance (> 1.0 NTU in 2 consecutive measurements taken 15 minutes apart) if the PWS is not able to identify an obvious reason for abnormal filter performance	40 CFR141.175(b)(1)	Section 2.3.1.1
Failure to produce and/or report to the Primacy Agency an individual filter profile within 7 days of a turbidity exceedance (> 0.5 NTU in 2 consecutive measurements taken 15 minutes apart after the first 4 hours of operation after filter backwash or otherwise taken offline) if the PWS is not able to identify an obvious reason for abnormal filter performance	40 CFR141.175(b)(2)	Section 2.3.1.2
Failure to conduct and/or report to the Primacy Agency a self-assessment of an individual filter within 14 days of a turbidity exceedance (>1.0 NTU in 2 consecutive recordings taken 15 minutes apart in each of 3 consecutive months)	40 CFR141.175(b)(3)	Section 2.3.1.3
Failure to have a comprehensive performance evaluation conducted by the Primacy Agency or a third party no later than 30 days after a turbidity exceedance (> 2.0 NTU in 2 consecutive recordings taken 15 minutes apart in 2 consecutive months) and have the evaluation completed and submitted to the Primacy Agency no later than 60 days following the exceedance.	40 CFR141.175(b)(4)	Section 2.3.1.4

\* These follow-up activities apply only to systems using conventional or direct filtration treatment.

### **2.3.1.1 Type 29/0300: Failure to Generate an Individual Filter Profile**

***Cross-reference to Rule:*** 40 CFR141.175(b)(1)

#### Example System Description – System D

System D is a subpart H system that treats a single surface water source with a direct filtration plant that has ten individual filters capable of producing 8.64 MGD over a 24-hour period. The system serves 22,500 persons. Pursuant to the treatment technique requirements of the IESWTR, System D must measure the turbidity of the CFE every four hours of operation and record those measurements on a form approved by the Primacy Agency. Additionally, System D must have continuous monitoring turbidimeters placed on the effluent of each individual filter and must measure the turbidity continuously while each filter is producing water that goes to the clearwell. These individual filter turbidity readings must be recorded every 15 minutes during the time each filter is in operation and records of the 15-minute measurements must be retained by the system for at least 3 years. Systems must also report that they have conducted individual filter monitoring within 10 days following the end of each month.

At the time of the Primacy Agency’s sanitary survey, conducted on January 21, 2003, the inspector printed out the individual filter monitoring data and learned the following information, presented in the following four example scenarios. A description of the violation, example data reports, and the data elements and DTF transactions which should be used to report these kinds of violations to SDWIS are presented.

In the following examples #10.A-#10.D, relevant data is excerpted from turbidity monitoring forms and presented numerically. Shaded cells represent data that has been recorded but does not trigger follow-up activities under the IESWTR. The PN Requirements, System Reporting and SDWIS/FED data elements and individual DTF transactions are summarized after the discussion of Example #10.D. The DTF transactions are illustrated in Exhibit 2.13.

Example #10.A: M&R 29/0300

Filter # 7 had exceeded 1.0 NTU in two consecutive measurements taken 15 minutes apart on November 11, 2002 and again on December 6, 2002. No filter profile was produced and no report was provided to the Primacy Agency.

Table 2-18. System D Filter #7 November 2001 IFE Turbidity Monitoring Form (Excerpt)								
Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
11/11			1.2 NTU	1.1 NTU				
11/12								

**Table 2-19. System D Filter #7 December 2001 IFE Turbidity Monitoring Form (Excerpt)**

Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
12/6						1.3 NTU	1.1 NTU	
12/7								

Example #10.A. Decision

These M&R violations are SDWIS coded as 29/0300. System D has incurred two (2) Major M&R violations because of the failure to produce an individual filter profile for filter #7 within 7 days after the observation of two consecutive exceedances of 1.0 NTU taken 15 minutes apart in November 2002 (filter profile due by November 18, 2002) and in December 2002 (filter profile due by December 13, 2002). The SDWIS/FED data elements and individual DTF transactions are summarized at the end of the section.

**2.3.1.2 Type 29/0300: Failure to Generate an Individual Filter Profile**

*Cross-reference to Rule:* 40 CFR141.175(b)(2)

Example #10.B: M&R 29/0300

Filter #7 had two consecutive turbidity measurements taken 15 minutes apart that exceeded 0.5 NTU at the end of the first 4 hours following a backwash. This event occurred on December 6, 2002. No filter profile was produced and no report was provided to the Primacy Agency.

**Table 2-20. System D Filter #7 December 2001 IFE Turbidity Monitoring Following Backwash Form (Excerpt)**

Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
12/6			0.8 NTU	0.8 NTU				
12/7								

Example #10.B. Decision

This M&R violation is SDWIS coded as 29/0300. System D has incurred one (1) Major M&R violation because of the failure to produce and/or report to the Primacy Agency an individual filter profile for filter #7 after the observation of two consecutive measurements exceeding 0.5 NTU on December 6, 2002 (filter profile due by December 13, 2002). This violation can only occur when two consecutive measurements that are taken at 4 hours and again at 4 hours and 15 minutes after water is sent to the clearwell after filter backwash ends exceed 0.5 NTU. The SDWIS/FED data elements and individual DTF transactions are summarized at the end of the section.

**2.3.1.3 Type 29/0300: Failure to Perform a Self-Assessment of Individual Filter**

*Cross-reference to Rule:* 40 CFR141.175(b)(3)

Example #10.C: M&R 29/0300

Filter #3 exceeded 1.0 NTU in two consecutive measurements taken 15 minutes apart on October 31, 2002, November 1, 2002 and December 2, 2002 (3 consecutive months). System D failed to conduct a self-assessment of filter #3 within 14 days of the exceedance and made no report to the Primacy Agency.

<b>Table 2-21. System D Filter #3 October 2002 IFE Turbidity Monitoring Form (Excerpt)</b>								
Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
10/30								
10/31		1.2 NTU	1.1 NTU					

<b>Table 2-22. System D Filter #3 November 2002 IFE Turbidity Monitoring Form (Excerpt)</b>								
Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
11/1						1.3 NTU	1.1 NTU	
11/2								

**Table 2-23. System D Filter #3 December 2002 IFE Turbidity Monitoring Form  
(Excerpt)**

Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
12/2		1.2 NTU	1.4 NTU					
12/3								

Example #10.C. Decision

This M&R violation is SDWIS coded as 29/0300. System D has incurred a Major M&R violation because of the failure to conduct a self-assessment of filter #3 within 14 days of the observation of two consecutive measurements exceeding 1.0 NTU taken 15 minutes apart in three consecutive months on December 2, 2002. The SDWIS/FED data elements and individual DTF transactions are summarized at the end of the section.

**2.3.1.4 Type 29/0300: Failure to Arrange for a Comprehensive Performance Evaluation**

*Cross-reference to Rule:* 40 CFR141.175(b)(4)

Example #10.D: M&R 29/0300

Filter #5 exceeded 2.0 NTU in two consecutive measurements taken 15 minutes apart on both November 1, 2002 and December 2, 2002 (2 consecutive months) which triggered a CPE. System D had not, at the time of the sanitary survey (January 21, 2003), made arrangements for the Primacy Agency or a third party approved by the Primacy Agency to conduct a CPE (required to have been arranged within 30 days of the last trigger).

**Table 2-24. System D Filter #5 November 2002 IFE Turbidity Monitoring Form  
(Excerpt)**

Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
11/1						2.3 NTU	2.1 NTU	
11/2								

**Table 2-25. System D Filter #5 December 2002 IFE Turbidity Monitoring Form  
(Excerpt)**

Date	Time							
	<12:00 pm	12:00 pm	12:15 pm	12:30 pm	12:45 pm	1:00 pm	1:15 pm	>1:15 pm
12/2		2.2 NTU	2.4 NTU					
12/3								

Example #10.D. Decision

This M&R violation is SDWIS coded as 29/0300. System D has incurred a Major M&R violation because of the failure to have the CPE arranged by no later than 30 days after the observation of two consecutive measurements exceeding 2.0 NTU taken 15 minutes apart in two consecutive months on December 2, 2002. System D is at risk of being out of compliance for additional time if they do not complete the CPE and submit the results within 90 days of the date the second consecutive (month) filter #3 exceedance was measured. The CPE must be submitted to the Primacy Agency by no later than March 3, 2003. The SDWIS/FED data elements and individual DTF transactions are summarized at the end of the section.

Public Notice Requirements

According to the provisions of 40 CFR 141.201, the system must provide Tier 3 public notice for these violations.

System Reporting Requirement

Within 10 days after the end of each month the system must report to the Primacy Agency that continuous monitoring was conducted at each individual filter and that the system recorded results of that monitoring every 15 minutes and will maintain the records for 3 years. The system must also report for any individual filter turbidity measurement (based on two consecutive measurements taken 15 minutes apart) that meets any of the following:

- results > 1.0 NTU
- results > 0.5 NTU after the first four hours of operation after backwash
- results > 1.0 NTU in each of three consecutive months
- results > 2.0 NTU in two consecutive months

The report must include the filter number, the turbidity measurement, and the date(s) on which the exceedance(s) occurred.

Primacy Agency to SDWIS/FED Reporting

Although the Primacy Agency should appropriately respond to all documented violations of the rule, SDWIS/FED should receive only one M&R violation report per monitoring period for each violation type for each PWS. Since Type 29/0300 violations are reported monthly, by system, to the Primacy



Agency, and since all Type 29/0300 violations are Major violations, the Primacy Agency should report one Type 29/0300 M&R violation, flagged as Major (“Y” in C1131) for November 2002, December 2002 and January 2003. In example #7D above, the issue of a potential Major M&R violation during March of 2003 is raised, however, at the time of the sanitary survey, System D’s compliance with the March submittal date for the required CPE is unknown.

During the month of November, the system incurred one Type 29/0300 M&R violation:

- Failure to produce an individual filter profile following a turbidity exceedance greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart in filter #7.

During the month of December, the system incurred three Type 29/0300 M&R violations:

- Failure to produce an individual filter profile following a turbidity exceedance greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart in filter #7.
- Failure to produce an individual filter profile within 7 days of a turbidity exceedance greater than 0.5 NTU in 2 consecutive measurements taken 15 minutes apart after the first 4 hours of operation after filter backwash in filter #7.
- Failure to conduct and/or report to the Primacy Agency a self-assessment of an individual filter within 14 days of a turbidity exceedance greater than 1.0 NTU in 2 consecutive recordings taken 15 minutes apart in each of 3 consecutive months in filter #3.

During the month of January the system incurred one Type 29/0300 violation:

- Failure to arrange for a CPE within 30 days after the observation of two consecutive measurements exceeding 2.0 NTU taken 15 minutes apart in 2 consecutive months in filter #5.

Although the Primacy Agency should appropriately respond to all of the violations from the month of December, the Primacy Agency should only submit one M&R violation report to SDWIS for the month of December.

The appropriate SDWIS/FED Individual Filter Trigger Response violation (29/0300) data elements and individual DTF transactions for a violation in November 2002 are listed below in Exhibit 2.17. The same entry should be made for the months of December 2002 and January 2003 (with associated C1107 & C1109 dates). It should be noted that the deadline date by which the system should have arranged for a CPE falls in January 2003. All individual filter M&R violations are considered Major. The Major violation flag (C1131), if reported, must be “Y.” SDWIS/FED will default the value to “Y” if not it is not reported.

<u>Data Elements:</u>								
Number	Name	Value or Comment						
C0101	PWS-ID	<i>Qualifier 1</i>						
C1101	Violation ID	<i>Qualifier 2</i>						
C1103	Contaminant	0300						
C1105	Violation Type	29						
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date	<i>Must be one month later than C1107</i>						
C1131	Major Violation Flag	<i>Y (default)</i>						
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234588	0300001		I	C1103	0300		
D1	GA1234588	0300001		I	C1105	29		
D1	GA1234588	0300001		I	C1107	20021101		
D1	GA1234588	0300001		I	C1109	20021130		
D1	GA1234588	0300001		I	C1131	Y		

**Exhibit 2.17 Major M&R Violation – Response to Individual Filter Triggers  
Data Elements and DTF Transactions**

**2.3.2 Type 38/0300: Failure to Collect and Report Filter Effluent Turbidity Monitoring**

***Cross-reference to IESWTR Implementation Guidance:***  
Section II, pages 4, 8 & 9

***Cross-reference to Rule:***  
40 CFR141.175(a)  
40 CFR141.175(b)  
40 CFR141.175(c)

There are three distinct situations that define a Type 38/0300 M&R violation. They are described below in Sections 2.3.2.1, 2.3.2.2, and 2.3.2.3. They are followed by individual examples of each definition (Examples #11, #12 and #13). Finally, the data elements and individual DTFs used to report to SDWIS/FED are presented.

Example System Description – System E

System E is a subpart H system that treats a single surface water source with a direct filtration plant that has ten individual filters capable of producing 8.64 MGD over a 24 hour period. The system serves 22,500 persons. Pursuant to the treatment technique requirements of the SWTR and IESWTR, System E must measure the turbidity of the CFE every four hours of operation and record those measurements on a

form approved by the Primacy Agency. Additionally, System E must have continuous monitoring turbidimeters placed on the effluent of each individual filter and must measure the turbidity continuously while each filter is producing water that goes to the clearwell. These individual filter turbidity readings must be recorded every 15 minutes during the time each filter is in operation and records of the 15-minute measurements must be retained by the system for at least 3 years.

**2.3.2.1 Type 38/0300: Failure to Monitor or Report Required CFE Samples**

<b>Table 2-26. Violation Type: 38/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Monitoring and Reporting Violations</b>	<b>Rule Citation</b>
38	0300	Major: Failure to collect and report 90 percent of required combined filter effluent turbidity sample results.  Minor: Any other failure to monitor or report	40 CFR141.175(a)

**2.3.2.1.1 Major - Failure to Collect and Report at Least 90 Percent of Required Combined Filter Effluent Samples**

**Minor - Any Other Failure to Monitor or Report**

Example #11: M&R 38/0300

System E’s operator takes samples of the CFE every 4-hours and measures turbidity. The results of these turbidity measurements are recorded on a daily CFE form approved by the Primacy Agency and the operator submits the completed forms to the Primacy Agency prior to the 10<sup>th</sup> day of the following month. However, on April 15, 2003, System E’s operator went on extended medical leave for 90 days. During this period of time (April 15, 2003 to July 15, 2003) although some samples were taken, the backup operators failed to collect or report 25 percent of the required CFE samples, resulting in collection of only 75 percent of required samples during that time period.

Example #11 Decision: M&R 38/0300

This M&R violation is SDWIS coded as 38/0300. System E has incurred three Major M&R reporting violations (one for each month) for the months of April, May and June of 2003 because of the failure to collect or report the necessary CFE samples.

Public Notice Requirement

According to the requirements of 40 CFR141.201, the system must provide Tier 3 public notice regarding the violation.

System Reporting Requirement

Within 10 days after the end of each month the system must report to the Primacy Agency that continuous monitoring was conducted at each individual filter and that the system recorded results of that monitoring every 15 minutes and will maintain the records for 3 years. The system must also report for

any individual filter turbidity measurement (based on two consecutive measurements taken 15 minutes apart) that meets any of the following:

- results > 1.0 NTU
- results > 0.5 NTU after the first four hours of operation after backwash
- results > 1.0 NTU in each of three consecutive months
- results > 2.0 NTU in two consecutive months

The report must include the filter number, the turbidity measurement, and the date(s) on which the exceedance(s) occurred.

The operator submits the completed turbidity monitoring forms to the Primacy Agency prior to the 10<sup>th</sup> day of the following month.

Primacy Agency to SDWIS/FED Reporting

The SDWIS/FED data elements and individual DTF transactions are summarized at the end of the section and are illustrated in Exhibit 2.18.

**2.3.2.2 Type 38/0300 Major: Failure to Complete and Report Required Individual Filter Monitoring**

<b>Table 2-27. Violation Type: 38/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Monitoring and Reporting Violations</b>	<b>Rule Citation</b>
38	0300	Major: Failure to report, within 10 days of end of month, that all individual filter monitoring has been conducted	40 CFR141.175(b)

Example #12: M&R 38/0300

During the 90 day period that System E’s operator is on extended medical leave the backup operators also fail to report on a monthly basis that individual filter effluent has been monitored on a continuous basis and that the results of such monitoring has been measured and recorded at 15-minute intervals for each filter.

Example #12 Decision

This M&R violation is SDWIS coded as 38/0300. System E has incurred three Major M&R violations (one for each month) for the failure in each month to report the that individual filter effluent has been monitored as required.

Public Notice Requirement

According to the requirements of 40 CFR141.201, the system must provide Tier 3 public notice regarding the violation.

System Reporting Requirement

Within 10 days after the end of each month the system must report to the Primacy Agency that continuous monitoring was conducted at each individual filter and that the system recorded results of that monitoring every 15 minutes and will maintain the records for 3 years. The system must also report for any individual filter turbidity measurement (based on two consecutive measurements taken 15 minutes apart) that meets any of the following:

- results > 1.0 NTU
- results > 0.5 NTU after the first four hours of operation after backwash
- results > 1.0 NTU in each of three consecutive months
- results > 2.0 NTU in two consecutive months

The report must include the filter number, the turbidity measurement, and the date(s) on which the exceedance(s) occurred.

Within 10 days of his return the operator submits the completed notification to the Primacy Agency that continuous monitoring was conducted at each individual filter and that the results were recorded.

Primacy Agency to SDWIS/FED Reporting

The SDWIS/FED data elements and individual DTF transactions are summarized at the end of the section and are illustrated in Exhibit 2.18.

**2.3.2.3 Type 38/0300 Major: Failure to Report CFE Exceedances of 1 NTU (or Primacy Agency-set maximum) by End of Next Business Day**

<b>Table 2-28. Violation Type: 38/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Monitoring and Reporting Violations</b>	<b>Rule Citation</b>
38	0300	Major: Failure to report CFE exceedances of 1 NTU by end of next business day if the system uses conventional or direct filtration or failure to report CFE exceedances of Primacy Agency-set maximum if system uses alternative filtration technology	40 CFR141.175(c)

Example #13: M&R 38/0300

When System E’s operator returns from his 90-day leave, he examines the CFE monitoring data and discovers that most of the sampling was not performed, but on June 29, 2003, one of the CFE samples measured 1.8 NTU. He also discovers that during the 90-day period that he was on extended medical leave, the backup operators failed to report CFE turbidity exceedances (> 1 NTU) to the Primacy Agency by the end of the next business day.

Example #13 Decision

This M&R violation is SDWIS coded as 38/0300. System E has incurred a Major M&R violation for the month of June 2003, because of the failure to report the June 29, 2003 CFE exceedance of 1 NTU, to the Primacy Agency by the end of the next business day (June 30, 2003).

### Public Notice Requirements

According to the requirements of 40 CFR141.201, the system must provide Tier 3 public notice regarding the violation.

### System Reporting Requirement

Within 10 days after the end of each month the system must report to the Primacy Agency that continuous monitoring was conducted at each individual filter and that the system recorded results of that monitoring every 15 minutes. The system must maintain the records for 3 years. The system must also report for any individual filter turbidity measurement (based on two consecutive measurements taken 15 minutes apart) that meets any of the following:

- results > 1.0 NTU
- results > 0.5 NTU after the first four hours of operation after backwash
- results > 1.0 NTU in each of three consecutive months
- results > 2.0 NTU in two consecutive months

The report must include the filter number, the turbidity measurement, and the date(s) on which the exceedance(s) occurred.

### Primacy Agency to SDWIS/FED Reporting

Although the Primacy Agency should appropriately respond to all documented violations of the rule, only one M&R violation is reported per monitoring period for each violation type. Type 38 /0300 violations are reported monthly, by system, to the Primacy Agency, and Type 38/0300 violations may be either Major or Minor violations. The examples above illustrate that the water system incurred a number of Major and Minor violations during the months of April, May and June. If there are both Major and Minor Type 38/0300 violations at the same system, during the same reporting period (month in this case), then preference for SDWIS reporting should be given to the Major violation. The details of the violation are not reported to SDWIS, only the type.

The appropriate SDWIS/FED Major M&R sampling violation data elements and individual DTF transactions for Example #11, Example #12, and Example #13 are listed below in Exhibit 2.18.

<u>Data Elements:</u>								
Number	Name	Value or Comment						
C0101	PWS-ID	<i>Qualifier 1</i>						
C1101	Violation ID	<i>Qualifier 2</i>						
C1103	Contaminant	0300						
C1105	Violation Type	38						
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date	<i>Must be one month later than C1107 (defaulted if neither C1109 nor C1111 is reported)</i>						
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234589	0300001		I	C1103	0300		
D1	GA1234589	0300001		I	C1105	38		
D1	GA1234589	0300001		I	C1107	20030401		
D1	GA1234589	0300001		I	C1109	20030430		
D1	GA1234589	0300001		I	C1131	Y		
D1	GA1234589	0300002		I	C1103	0300		
D1	GA1234589	0300002		I	C1105	38		
D1	GA1234589	0300002		I	C1107	20030501		
D1	GA1234589	0300002		I	C1109	20030531		
D1	GA1234589	0300002		I	C1131	Y		
D1	GA1234589	0300003		I	C1103	0300		
D1	GA1234589	0300003		I	C1105	38		
D1	GA1234589	0300003		I	C1107	20030601		
D1	GA1234589	0300003		I	C1109	20030630		
D1	GA1234589	0300003		I	C1131	Y		

**Exhibit 2.18 IESWTR M&R Major Sampling Violation Data Elements and DTF Transactions**

## 2.4 Recordkeeping Violations

### General Discussion of Recordkeeping Violations

Under the IESWTR, one type of Recordkeeping violation is reported to SDWIS/FED. A Recordkeeping violation is reported for water systems that fail to maintain, in a reviewable format, the results of individual filter monitoring for at least 3 years from the date of sample collection. All IESWTR violations are reported as violations of the rule, rather than of a specific contaminant. The contaminant code 0300 is utilized for the IESWTR violations reported to SDWIS/FED.

#### 2.4.1 Type 09/0300: Failure to Maintain the Results of Individual Filter Monitoring for at Least 3 Years From Date of Sample Collection

*Cross-reference to IESWTR Implementation Guidance:*

Section II, pages 4 & 10

Appendix D, page 10-11, 23

<b>Table 2-29. Violation Type: 09/0300</b>			
<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Recordkeeping Violations</b>	<b>Rule Citation</b>
09	0300	Failure to maintain the results of individual filter monitoring for at least 3 years after the date of sample collection.	40 CFR 141.175(b)

#### Example System Description – System F

System F is a subpart H system that treats a single surface water source with a direct filtration plant that has ten individual filters capable of producing 8.64 MGD over a 24-hour period. The system serves 22,500 persons. Pursuant to the treatment technique requirements of the IESWTR, System F must measure the turbidity of the CFE every four hours of operation and record those measurements on a form approved by the Primacy Agency. Additionally, System F must have continuous monitoring turbidimeters placed on the effluent of each individual filter and must measure the turbidity continuously while each filter is producing water that goes to the clearwell. These individual filter turbidity readings must be recorded every 15 minutes during the time each filter is in operation and records of the 15-minute measurements must be retained by the system for at least 3 years.

#### Example #14: Recordkeeping 09/0300

A representative from the Primacy Agency travels to System F on January 5, 2003 to conduct a sanitary survey. During the sanitary survey, she asks to see the individual filter monitoring results and learns that they are purged from System F's SCADA system at the end of each quarter and no other records of such measurements are retained.

#### Example #14 Decision

This violation is SDWIS coded as 09/0300. System F has incurred a recordkeeping violation because records of individual filter turbidity measurements have not been maintained for at least 3 years after the date of sample collection (they are purged from the SCADA system at the end of each quarter and no other records are kept).



Public Notice Requirements

According to the requirements of 40 CFR141.201, the system must provide Tier 3 public notice regarding the violation.

Primacy Agency to SDWIS/FED Reporting

For SDWIS/FED reporting, the violation begin date is the date on which the Primacy Agency becomes aware of the failure on January 5, 2003 (20030105). The violation is considered to be returned to compliance when the water system documents to the Primacy Agency that it has 3 years of filter turbidity monitoring data. The appropriate SDWIS/FED recordkeeping violation data elements and individual DTF transactions for violation Type 09/0300 are listed in Exhibit 2.19.

<u>Data Elements:</u>								
Number	Name		Value or Comment					
C0101	PWS-ID		<i>Qualifier 1</i>					
C1101	Violation ID		<i>Qualifier 2</i>					
C1103	Contaminant		0300					
C1105	Violation Type		09					
C1107	Compliance Period Begin Date							
C1109	Compliance Period End Date		This date should not be provided with the violation. SDWIS/FED processing would generate a default date of 12/31/2015. When the Primacy Agency has determined that the PWS is compliant (i.e., collected and kept on site 3 years of individual filter turbidity measurements), then the Primacy Agency needs to submit a “returned to compliance” enforcement action and link it to the original record keeping violation. The date of the action should represent the date the Primacy Agency made that determination. SDWIS/FED processing will modify the end date of the original violation to be the same date as the “returned to compliance” reported.					
<u>DTF Transactions:</u>								
1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
D1	GA1234585	0300001		I	C1103	0300		
D1	GA1234585	0300001		I	C1105	09		
D1	GA1234585	0300001		I	C1107	20030105		

**Exhibit 2.19 Recordkeeping Violation - Failure to Maintain Results of Individual  
Filter Effluent Measurements For at Least 3 Years After Date of Sample Data  
Elements and DTF Transactions**

## **Section 3**

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# **General SDWIS Reporting**

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## General SDWIS Reporting & SDWIS Inventory Reporting

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### 3.1 Federally Reported Violations

Under SDWIS/FED reporting, Primacy Agencies report when violations occur. In the interest of reducing the reporting burden on Primacy Agencies, EPA has limited the number and type of violations to be reported to SDWIS/FED. However, PWSs must still keep records and report all required information to the Primacy Agency. Any violation of the rule, whether included in the accompanying table or not, is a basis for a Primacy Agency or federal enforcement action. Table 3-1 summarizes the violation and contaminant codes that will be used when it is necessary to report violations of the IESWTR to SDWIS/FED.

Table II-2, from the *IESWTR Implementation Guidance*, Part II, page II-5, contains the federally reportable violations for the IESWTR in more detail. These violations are listed by contaminant or requirement and violation type. The table includes the SDWIS/FED reporting codes, the regulatory citation, system type affected, a detailed description of the violation, and the initial compliance date. This table will contribute to a user's understanding of those violations listed in SDWIS.

#### SDWIS/FED Reporting

This section provides guidance to EPA Regions and Primacy Agencies on reporting facility information and violations of the IESWTR and DBP rules to the national SDWIS/FED database.

The SDWIS/FED reporting requirements in this section apply to systems of all types and sizes. Although the method of violation determination may differ between systems, a particular violation code will define the same violation at any system.

#### SDWIS/FED Data Transfer File (DTF) Format

Data are reported to SDWIS/FED via a formatted Data Transfer File (DTF). Exhibit 3.1 depicts the format of a DTF transaction. Refer to *SDWIS/FED Data Entry Instructions* for further information regarding DTF processing and construction, particularly modification and deletion issues which are not covered in this document.

**Table 3-1. SDWIS/FED Codes for Federal Reporting Under the IESWTR**

<b>Violation Code</b>	<b>Contaminant Code</b>	<b>Treatment Technique (TT) Violations</b>
37	0300	Failure to profile or consult w/Primacy Agency (disinfection changes)
43	0300	Combined filter effluent exceeds 1 NTU/Primacy Agency-set maximum requirements
44	0300	More than 5 percent of monthly combined filter effluent samples exceed 0.3 NTU/Primacy Agency-set maximum requirements
47	0300	Construction of an uncovered finished water storage facility
<b>Monitoring and Reporting Violations</b>		
29	0300	<b>Major:</b> Failure to conduct follow-up activities triggered by individual filter turbidity exceedances.
38 <sup>1</sup>	0300	<p><b>Major:</b> Failure to collect and report 90 percent of required combined filter effluent turbidity samples</p> <p><b>Major:</b> Failure to report all individual filter monitoring has been conducted</p> <p><b>Major:</b> Failure to report combined filter effluent exceedances by the end of the next business day</p> <p><b>Minor:</b> Any other failure to monitor or report</p>
<b>Recordkeeping Violations</b>		
09	0300	Failure to maintain the results of individual filter monitoring for at least 3 years

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<sup>1</sup> Flag used to denote major or minor

1-2	3-11	12-18	19-25	26	27-31	32-71	72-74	75-80
Form ID	Qual 1	Qual 2	Qual 3	DIM Code	DE Number	Data Value	Blank	Batch Sequence Number

Form ID	An identification number that allows input of certain types of data.
Qualifier 1	The Public Water System Identifier (PWS-ID) of the Water System to be inserted, modified, or deleted.
Qualifier 2	Contains an ID that further defines what record is to be inserted, modified, or deleted. Qualifier 2 contains the SE ID when reporting facilities and Treatments, the violation ID when reporting violations, and the enforcement ID when reporting enforcements.
Qualifier 3	Contains an ID that further defines what record is to be inserted, modified, or deleted. Qualifier 3 contains the treatment ID when reporting treatments.
DIM Code	D= Delete I= Insert M= Modify
Data Element Number	The DTF data element number (e.g., C0483, C1105) identifying a specific element to be inserted, modified, or deleted.
Data Value	The data value associated with the data element number.
Batch Sequence Number	The number assigned to the group of data being submitted. Used to sequence processing against the database, if required.

### Exhibit 3.1 DTF File and Transaction Format

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## **Section 4**

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# **Additional Sources of Information**

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## **Additional Sources for Technical Information on the IESWTR**

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### **SDWIS/FED Documents**

#### SDWIS/FED Data Entry Instructions

This document provides details for the creation of all parts of DTF transactions

#### SDWIS/FED Online Data Dictionary

This application provides details on every table and field contained in SDWIS/FED, including definitions, permitted values, names, and editing requirements.

#### Disinfection Profiling and Benchmarking Guidance Manual (EPA 815-R-99-013)

- Objective:** Help determine if a disinfection profile (an evaluation of current disinfection practices) is required and how to do one; when a disinfection benchmark must be determined and how to extract it from the profile; and how a PWS should use the benchmark, in consultation with the Primacy Agency, to assure protection from microbial risk is maintained when the system changes its disinfection practice.
- Contents:** The manual provides detailed information on the following subjects: applicability of the profiling and benchmarking requirements to PWSs; procedures for generating a disinfection profile, including example profiles; methods for calculating the disinfection benchmark, including example calculations; the use of the benchmark in modifying disinfection practices, communication with the Primacy Agency, and assessing significant changes to disinfection practices; the development of the profiling and benchmarking regulations; the significance of the log inactivation concept and CT values for inactivations achieved by various disinfectants; and the determination of contact time.

#### Guidance Manual for Compliance with the Interim Enhanced Surface Water Treatment Rule: Turbidity Provisions (EPA 815-R-99-010)

- Objective:** The first section provides information regarding specific requirements of the IESWTR relating to turbidity and is intended for experienced operators and others in the regulated community. The second section of the document provides background on concepts surrounding turbidity and serves as a primer for less experienced operators and individuals.
- Contents:** The first section contains key regulatory requirements, including CFE monitoring and individual filter monitoring; recordkeeping and reporting requirements; additional compliance issues, such as compliance schedules, public notification, variances/exemptions, and follow-up action requirements; approved methods and additional methods and additional measurement and calibration issues; components and description of a filter self-assessment; and components and description of a Comprehensive Performance Evaluation. The second section of the manual includes more basic information on turbidity; description of the particles (both natural and man-made) that typically contribute to turbidity; discussion of typical steps in a treatment process and how turbidity is removed or created in each step; discussion of turbidity in different source waters with an emphasis of how changes in source water affect turbidity; and basic turbidimeter design.

#### Alternative Disinfectants and Oxidants Guidance Manual (EPA 815-R-99-014)

- Objective: To provide technical data and engineering information on disinfectants and oxidants that are not as commonly used as chlorine so that systems can evaluate their options for developing disinfection schemes to control water quality problems such as zebra mussels and Asiatic clams, and oxidation to control water quality problems associated with iron and manganese.
- Contents: The manual discusses six disinfectants and oxidants: ozone, chlorine dioxide, potassium permanganate, chloramines, ozone/hydrogen peroxide combinations, and ultraviolet light. A decision tree is provided to assist in evaluating which disinfectant, or disinfectants, is most appropriate given certain site-specific conditions (e.g., water quality conditions, existing treatment, and operator skill). The manual also contains a summary of existing alternative disinfectants used in the U.S. and cost estimates for the use of alternative disinfectants.

#### Guidance Manual for Conducting Sanitary Surveys of Public Water Systems (EPA 815-R-99-016)

- Objective: Provides an overview of how to conduct a sanitary survey of all water systems using surface water and ground water under the direct influence of surface water. It is intended to help Primacy Agency agencies improve their sanitary survey programs where needed.
- Contents: The manual provides information about the objective and regulatory context of sanitary surveys. It covers four principal stages of a sanitary survey: planning, including preparatory steps to be taken by inspectors before conducting the on-site portion conducting the on-site survey, compiling a sanitary survey report, and performing follow-up activities.

#### Uncovered Finished Water Reservoirs Manual (EPA 815-R-99-011)

- Objective: To provide information on ways to limit water quality degradation in existing uncovered finished water reservoirs.
- Contents: Provides detailed information on the following subjects: developing and implementing comprehensive open finished water reservoir management plans based on site-specific conditions; identifying potential sources of contamination in open finished water reservoirs and potential mitigation measures; employing different methods to control the degradation of water quality while it resides in the reservoir; monitoring schemes that can be used to characterize water quality and identify water quality degradation before it becomes severe and difficult to correct.

#### Microbial and Disinfection Byproducts Rules Simultaneous Compliance Guidance Manual (EPA 815-R-99-015)

- Objective: To assist PWSs on complying simultaneously with various drinking water regulations (e.g., Stage 1 DBPR, IESWTR, Lead and Copper Rule, and the Total Coliform Rule). The manual discusses operational problems systems may encounter when implementing these rule.
- Contents: The manual provides detailed information on the requirements in the Stage 1 DBPR and the IESWTR.