# TURBIDITY AND LT2 ESWTR REPORTING INSTRUCTIONS

**for**

## PUBLIC WATER SYSTEMS USING FILTERED SURFACE WATER OR GROUNDWATER UNDER THE DIRECT INFLUENCE OF SURFACE WATER (GUDI) SOURCES

**Technical Guidance Number**
**383-3301-106**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**
**Bureau of Safe Drinking Water**

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| **DOCUMENT NUMBER:** | 383-3301-106 |
| **TITLE:** | Turbidity and LT2 ESWTR Rule Reporting Instructions for Public Water Systems Using Filtered Surface Water or Groundwater Under the Direct Influence of Surface Water (GUDI) Sources |
| **EFFECTIVE DATE:** | January 17, 2015 |
| **AUTHORITY:** | Pennsylvania's Safe Drinking Water Act (35 P.S. §721.1 *et seq*.) and regulations at Title 25 *Pa. Code* Chapter 109 |
| **POLICY:** | The Department of Environmental Protection (DEP) provides laboratory directors of accredited laboratories and public water supply personnel with the information necessary to complete Safe Drinking Water Act (SDWA) forms and to properly report filtered surface water or GUDI turbidity data under the safe drinking water program. |
| **PURPOSE:** | The purpose of this document is to establish uniform instructions and protocol for completing forms and implementing the drinking water reporting requirements for turbidity and additional treatment technique requirement reporting under the LT2 ESWTR for systems using surface water or GUDI sources. |
| **APPLICABILITY:** | This guidance will apply to public water systems that are required to submit surface water turbidity monitoring and LT2 ESWTR reporting to DEP. |
| **DISCLAIMER:** | The policies and procedures outlined in this guidance document are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.<br><br>The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give these rules that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant. |
| **PAGE LENGTH:** | 55 pages |
| **DEFINITIONS:** | See Title 25 *Pa. Code* Chapter 109 |

## TABLE OF CONTENTS

## SECTION 1: INTRODUCTION

The *Turbidity and LT2 ESWTR Reporting Instructions* technical guidance provides instructions for reporting turbidity measurements for public drinking water systems. The *Pennsylvania (PA) Filter Rule* (Filter Rule) (based on the Final Federal Surface Water Treatment Rule), the Interim Enhanced Surface Water Treatment Rule (IESWTR) and the Long Term 1 & Long Term 2 Enhanced Surface Water Treatment Rules (LT1 & LT2 ESWTR) require public drinking water monitoring and the reporting of the results to Department of Environmental Protection (DEP).

## BACKGROUND

The Filter Rule, which was adopted by the Environmental Quality Board (EQB) and published in the *Pennsylvania Bulletin* on March 25, 1989, establishes treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts to protect consumers from the adverse health effects of these contaminants. Both the IESWTR and LT1 ESWTR rules provide a series of requirements to strengthen the turbidity requirements of the Filter Rule. Both rules also introduce continuous turbidity monitoring of individual filters for systems using conventional or direct filtration. The LT2 ESWTR introduces source water quality monitoring and additional treatment requirements for higher risk water systems, to enhance public health protection against pathogenic microbial contaminants, especially *Cryptosporidium*. The instructions in this manual were previously updated (February 19, 2005) to reflect the new federal monitoring and reporting requirements for turbidity, as specified in the IESWTR and LT1 ESWTR rules. This update incorporates compliance reporting requirements for the LT2 ESWTR rule. The instructions pertain to both the performance monitoring and performance level requirements (PLR) established by the Filter Rule for public water systems (PWSs) using *filtered surface water (SW) or filtered groundwater under the direct influence of surface water (GUDI) sources*, as well as the turbidity monitoring requirements of the IESWTR.

## GENERAL MONITORING AND REPORTING INFORMATION

Drinking water analysis results are entered into the *Pennsylvania Drinking Water Information System (PADWIS)* via the *Drinking Water Electronic Laboratory Reporting (DWELR)* System. PADWIS is a computerized data management system used by DEP to track drinking water monitoring results. An effective surveillance program requires prompt follow-up to violations for the protection of public health. More instructions about reporting through DWELR are available in Section 3: *Electronic Assistance Tools* in this technical guidance manual and on DEP's website at www.dep.state.pa.us, (enter keyword "DWELR").

Please read the instructions in this technical guidance manual thoroughly. Failure to monitor, analyze and/or report analytical results correctly may result in the water supplier incurring a violation of the Safe Drinking Water Regulations. *DWELR* forms (*SDWA-1* and *SDWA-5*) are used to report turbidity data electronically. Accurate and prompt data reporting is essential. Correct use of the forms is explained in Section 3: *Electronic Assistance Tools,* through Section 5: *Reporting Requirements for LT2 ESWTR Compliance,* of this technical guidance manual.

The monitoring and reporting requirements described in this manual are in addition to other routine monitoring and reporting requirements for PWSs, and do not supersede them.

In summary, the Filter Rule, IESWTR and LT1 ESWTR establish performance level monitoring and reporting requirements for the following:

1. Combined filter effluent (CFE) turbidity.
2. Continuous turbidity monitoring for all individual filter effluents (for conventional or direct filtration).

The LT2 ESWTR rule established monitoring requirements for additional treatment for *Cryptosporidium*, based on the risk category (bin classification) of each source, as established through source water monitoring. These reporting requirements include:

1. Reporting the highest bin source utilized during each month.
2. Reporting the Microbial Toolbox Option utilized to provide the required additional treatment for *Cryptosporidium* based on the bin classification.
3. Reporting verification of compliance with removal/inactivation requirements.

In addition to the above, the Filter Rule also requires monitoring and reporting of the disinfectant residual at entry points to the distribution system, as well as at locations within the distribution system. Refer to the technical guidance document *Laboratory Reporting Instructions for Disinfectants, Disinfection Byproducts and Precursors* (DEP ID: 383-3301-306). The technical guidance manuals are available on the DEP website at www.elibrary.dep.state.pa.us/dsweb/HomePage. Enter keyword "Laboratory Reporting Instructions" into the search at the top of the Web page.

Refer to Section 4: *Reporting Requirements for Turbidity* for a concise review of the Filter Rule performance monitoring/reporting requirements and Performance Level Requirements (PLRs) for systems with filtered surface water sources. For a more detailed description of requirements, refer to Title 25 *Pa. Code* Chapter 109 Safe Drinking Water Regulations available on the web at www.pacode.com.

## SECTION 2: RESPONSIBILITIES OF THE WATER SUPPLIER

Under the provisions of Title 25 *Pa. Code* Chapter 109, Safe Drinking Water Regulations, and the authority of the PA SDWA, it is the responsibility of the public water supplier to:

1. Submit to DEP, in an electronic format acceptable to DEP, the results of analyses performed by the supplier under the Safe Drinking Water Regulations.

2. Report the results within either the first 10 days following the month in which the result is determined or the first 10 days following the end of the required monitoring period as stipulated by DEP, *whichever is shorter*. ***Failure to report on or before the 10th day of the following month will result in the water supplier being charged with a violation for failure to monitor.***

3. Whenever a *maximum allowable turbidity level is exceeded on a CFE sample*, which indicates a violation of a *treatment technique* requirement for pathogenic bacteria, viruses, and protozoan cysts, the public water supplier must:

   (a) Notify the appropriate DEP regional or district office within 1 hour of the determination. DEP and County Health Department (CHD) phone numbers and addresses may be found in Appendix I: *Department of Environmental Protection (DEP) and County Health Department (CHD) Offices Contact List (revised December 2014)* and Appendix II: *Emergency Phone Numbers for the Department of Environmental Protection Regional Offices* in this manual.
   (b) Follow the appropriate Tier 1 public notification requirements.

   **Note**: This applies to any CFE turbidity value that exceeds the Maximum Allowable Turbidity Level, not just the 4 hour readings used to determine the monthly Performance Level Requirements (PLRs).

4. Whenever the *CFE monthly PLR is not met*, the public water supplier must*:*

   (a) Notify the appropriate DEP district office within 48 hours of the determination.
   (b) Follow the appropriate Tier 2 public notification requirements.

5. For conventional or direct filtration systems, whenever an *individual filter turbidity trigger level* is exceeded, notify DEP within 24 hours of the turbidity exceedance and proceed with the appropriate follow-up activity in accordance with 25 *Pa. Code* 109.714. For additional requirements see the Table 1: *Summary of Individual Filter Follow-up Activities Where DEP Notification is Required* on the following page.

6. SDWA-1 and SDWA-5 form reports are required to be submitted electronically pursuant to DEP's drinking water regulations at *25 Pa. Code* 109.701(j). For example, when reporting turbidity exceedance results, all CFE turbidity measurements that exceeded the maximum allowable turbidity level must be reported on a SDWA-1 form along with the appropriate SDWA-5 form. This is accomplished via a DEP internet website for public water systems and accredited laboratories utilizing a secure computer application provided by DEP called the Drinking Water Electronic Laboratory Reporting System (DWELR). See Section 3: *Electronic Assistance Tools* in this technical guidance manual.

7. Data must be retained by the public water supplier in accordance with 25 *Pa. Code* 109.701. The water supplier must retain plant operational log sheets or continuous analyzer recording charts on file, as a permanent record of plant performance. Upon request, plant operational records must be available for review by DEP or CHD staff; operators must keep turbidity records for at least 5 years.

**Table 1: Summary of Individual Filter Follow-up Activities Where DEP Notification is Required**

| ***Individual Filter Event*** | ***Notify DEP* Within:*** |
|---|---|
| Report the occurrence of an exceedance. | 24 hours |
| Report the obvious reasons for the exceedance | 24 hours |
| Produce a filter profile within 7 days of the exceedance (> 10,000 people) | 10 days after the end of the month |
| Conduct a filter self-assessment within 14 days of the exceedance | 10 days after the end of the month |
| Request a Comprehensive Performance Evaluation (CPE) | 30 days (60 days if population is < 10,000 people) |

* See Appendix I: *Department of Environmental Protection (DEP) and County Health Department (CHD) Offices Contact List (revised December 2014)* and Appendix II: *Emergency Phone Numbers for Department of Environmental Protection Regional Offices* in this Laboratory Reporting manual.

## SECTION 3: ELECTRONIC ASSISTANCE TOOLS

The following electronic assistance tools are available from DEP:

### SUBSECTION A: DRINKING WATER ELECTRONIC LABORATORY REPORTING (DWELR)

To report electronically, systems must use the DEP *DWELR*, according to 25 *Pa. Code* 109.810 Reporting and notification requirements. This system is a DEP internet web application for accredited laboratories and public water supplies to upload sample files and/or enter sample results using a web screen entry form. Detailed instructions are contained in the DWELR web application. Entities choosing to upload their data can retrieve the data formats from within DWELR. The electronic system features allow accredited laboratories or PWSs to:

- Submit data via either upload or data entry.
- Preview the data entered. A submitting entity is allowed to edit and view only the data that it submitted.
- Submit the data ***until the 10th (at midnight)*** of the month. On the 11th of each month as required by Chapter 109, all data is cleared from DWELR and passed to the Pennsylvania Drinking Water Information System (PADWIS) for monthly compliance processing.
- View error reports. Upon submittal, the data is checked and an error report is generated that can be used to correct data.
- Correct data and resubmit.

Access is via DEP Greenport: www.depgreenport.state.pa.us. The DWELR registration form and instructions are available on-line at www.elibrary.dep.state.pa.us/dsweb/HomePage. Search for keyword "DWELR". A submitter must register with DEP Greenport in order to use DWELR. Please contact the DEP Greenport Helpdesk at 717-705-3768 if you need further information about setting up a user account. In addition, contact the DEP Bureau of Safe Drinking Water, Operations and Monitoring Division, PADWIS Section, at 717-787-9633 or 717-772-4018 or ra-padwis@pa.gov, for more information about DWELR. When reporting electronically, the laboratory must provide the laboratory results to the water supplier. The format used to report these results to the supplier is a decision to be determined mutually by the laboratory and the client.

### SUBSECTION B: DWRS AND CONSUMER CONFIDENCE REPORTING SYSTEM

DEP provides the following assistance tools found on the DEP website at www.drinkingwater.state.pa.us:

- ***Drinking Water Reporting System (DWRS)***: Provides dynamic reports on *inventory*, *violations* and *sample* information for water systems from PADWIS. System *monitoring* calendars may also be accessed in DWRS. Instructions on how to use DWRS can be accessed from the DEP Web page.
- ***Consumer Confidence Reporting System***: Provides *detection* and *violation* information from PADWIS to assist community water systems with the preparation of the annual Consumer Confidence Reports.

## SECTION 4: REPORTING REQUIREMENTS FOR TURBIDITY

The Filter Rule requires all filtered surface water and GUDI systems to ***measure and record turbidity results at least once every 4 hours at the CFE location***.

Additionally, IESWTR and LT1 ESWTR rules require all filtered surface water and GUDI systems that use conventional or direct filtration to ***conduct continuous monitoring and record the turbidity results at least every 15 minutes for each individual filter.***

### COMBINED FILTER EFFLUENT (CFE)

To demonstrate that systems are meeting the treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts, *Performance Level Requirements* (*PLRs)* are established for turbidity. See Table 2: *Performance Level Requirements Based on Filtration Types* below.

Filter performance samples or measurements should be taken on the CFE. The sample tap should be located on the CFE piping immediately after all individual filter effluent pipes have joined into one pipe, before the clearwell and before post treatment chemical addition. Sample taps located on dead ends or side piping should be avoided. Keep sampling lines as short as possible to avoid a delayed response from the turbidimeter. CFE data that is collected while the filter plant is off line should be tagged or otherwise identified as such and not used for compliance. CFE data collected while the filter plant is in service should be used for compliance. Turbidimeters are required to be calibrated at least quarterly using a primary standard per Chapter 109.301(1)(iv)(A). Recorded data must match the value on the turbidimeter. Turbidity data must be kept on file by the water supplier for at least 5 years and made available to DEP upon request.

DEP may approve an alternative CFE sample location for filter plants that do not have the traditional CFE piping configuration. For example, DEP may approve individual filter cell measurements to be taken and the arithmetic average of those readings may be calculated to represent the CFE measurement. If the individual filter cell flow rates differ significantly, each individual filter turbidity value will need to be weighted by using a multiplier that represents its portion of the total plant flow rate.

**Table 2: Performance Level Requirements (PLRs) Based on Filtration Types**

| ***Filtration Type*** | ***CFE Performance Level Requirements*** |
|---|---|
| Conventional, Direct, Membrane, Other | *Maximum Allowable = 1 NTU<br>Monthly PLR $\leq$ 0.3 NTU in 95% of samples |
| Slow Sand or Diatomaceous Earth filtration | *Maximum Allowable = 2.0 NTU<br>Monthly PLR $\leq$ 1.0 NTU in 95% of samples |

****Notify the local DEP district office within 1 hour of any CFE value exceeding a Maximum Allowable Turbidity Level. This applies to any CFE turbidity value that exceeds the Maximum Allowable Turbidity Level, not just the 4 hour readings used to determine the monthly PLR.***

**Continuous Analyzer Measurements for CFE Reporting**

Read the measurements from the recorder printout or chart. If a recorder is not available, read and record the measurement from the analyzer every 4 hours. If the filter plant is shut down before the next scheduled 4-hour turbidity measurement, record the turbidity measurement prior to plant shutdown. For example, if a filter plant runs 7 hours per day, a turbidity measurement must be recorded at 4 hours and at 7 hours (at least 2 measurements each day).

At the end of the month, on the SDWA-5 form (see Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for details):

- Report the total the number of measurements taken. Enter this number into field 6A (Number of Measurements).
- Determine the number of turbidity results that were within the plant's PLR. Enter this number into field 6B (Number of Results Meeting PLR).

## INDIVIDUAL FILTER EFFLUENT (IFE)

PWSs using conventional or direct filtration are required to *conduct continuous turbidity monitoring and record the results at least every 15 minutes for each individual filter.*

Performance samples or measurements should be taken at the Individual Filter Effluent (IFE). The sample tap should be located on the IFE piping immediately after the filter. Sample taps located on dead ends or side piping such as filter-to-waste lines should be avoided. Keep sampling lines as short as possible to avoid a delayed response from the turbidimeter. IFE data that is collected during backwashing, filter-to-waste, or when the filter is off line should be tagged or otherwise identified as such and not used for compliance. IFE data collected while the filter is in service must be used for compliance. Turbidimeters must be calibrated at least quarterly using a primary standard. Recorded data must match the value on the turbidimeter. Turbidity data must be kept on file by the water supplier for at least 5 years and made available to DEP upon request.

**Note:** Water Suppliers should use the *Individual Filter Follow-up Activities DEP Notification* form (3900-FM-BSDW0002) to report a turbidity exceedance and the associated follow-up activity to the appropriate DEP district office. The form is also available on the DEP website at: www.elibrary.dep.state.pa.us/dsweb/HomePage. Search on "Individual Filter Follow-up Activities".

The turbidity trigger levels and the required water system follow-up activity are shown in Table 3: *Individual Filter Event*s, for conventional or direct filtration, on the following page.

**Table 3: Individual Filter Events (Applies to Conventional and Direct Filtration Only)**

| ***Turbidity Trigger Levels*** *(on the same filter)* | ***Water System Follow-up Activity*** |
|---|---|
| > 1.0 NTU in 2 consecutive measurements taken 15 minutes apart.<br><br>**OR**<br><br>> 0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous filter operation after filter has been backwashed or taken off-line for any reason. | For all PWSs:<br><br>• Notify DEP within 24 hours of the turbidity exceedance.<br><br>• Using an SDWA-1 form, report the plant ID, filter ID, date, time and NTU value(s).<br><br>• Report the ***obvious reason*** for the turbidity exceedance within 24 hours.<br><br>For PWSs serving 10,000 or more people:<br><br>• If systems do not report the ***obvious reason*** for the turbidity exceedance within 24 hours, they must produce a filter profile within 7 days of the exceedance and report that profile was produced within 10 days following the end of the month. |
| > 1.0 NTU in 2 consecutive measurements taken 15 minutes apart in ***3 consecutive months.*** | • All activities listed in the first row above.<br><br>• Conduct a filter self-assessment and write a report within 14 days. |
| > 2.0 NTU in 2 consecutive measurements taken 15 minutes apart in ***2 consecutive months.*** | • All activities listed in the first row above.<br><br>For PWSs serving less than 10,000 people:<br><br>• Request, within 60 days, that a CPE be conducted by DEP.<br><br>For PWSs serving 10,000 people or more:<br><br>• Request, within 30 days, that a CPE be conducted by DEP. |

PWSs must report the turbidity data *monthly* on the electronic forms as listed in the following Table 4: *Turbidity Data and Correct Reporting Forms*:

**Table 4: Turbidity Data and Correct Reporting Forms**

| ***Applies to:*** | ***Purpose*** | ***Form*** |
|---|---|---|
| PWSs using any filtration type (conventional, direct, membrane, other, slow sand, diatomaceous earth) | Report filter plant operational information, summarized ***CFE*** turbidity results | SDWA-5 |
| PWSs using conventional or direct filtration | Report ***individual filter*** turbidity monitoring | SDWA-5 |
| PWSs using any filtration type (conventional, direct, membrane, other, slow sand, diatomaceous earth) | Report ***CFE*** turbidity results which exceed 1 NTU for systems using conventional, direct, membrane, or other filtration<br><br>OR<br><br>2.0 NTU for slow sand or diatomaceous earth filtration | SDWA-1 |
| PWSs using conventional or direct filtration | Report ***individual filter*** turbidity results that exceed 1.0 NTU in 2 consecutive measurements taken 15 minutes apart<br><br>OR<br><br>0.5 NTU in 2 consecutive measurements taken 15 minutes apart 4 hours after filter is returned to service | SDWA-1 |

**Note:** See Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for detailed descriptions of the SDWA-5 and SDWA-1 forms.

## SECTION 5: REPORTING REQUIREMENTS FOR LT2 ESWTR COMPLIANCE

### Applicability

The LT2 ESWTR Rule applies to all public water supplies using surface water and groundwater under the direct influence of surface water (GUDI).

Compliance begin dates are staggered according to system size per the following table.

**Table 5: Compliance and Reporting Starting Dates Per System Size**

| *System Schedule #* | *Population Size* | *Reporting Begin Date* |
|---|---|---|
| 1 | 100,000 or more | April 1, 2012 |
| 2 | 50,000 to 99,999 | October 1, 2012 |
| 3 | 10,000 to 49,999 | October 1, 2013 |
| 4 | Fewer than 10,000 | October 1, 2014 |

### Source BIN Classification for Filtered Systems

All systems are required to conduct source water monitoring and make a bin classification determination pursuant to Chapter 109, Subchapter L and per 40 CFR Chapter I, per DEP and EPA requirements. See Table 6 below.

**Table 6: Source Water Monitoring and Bin Classification Determination**

| *Cryptosporidium Concentration (oocysts/L)* | *Bin Classification* | *Additional Cryptosporidium Treatment Required* | | | |
|---|---|---|---|---|---|
| | | *Conventional Treatment* | *Direct Filtration* | *Slow Sand or Diatomaceous Earth Filtration* | *Alternative Filtration* |
| < 0.075 | Bin 1 | No additional treatment required | No additional treatment required | No additional treatment required | No additional treatment required |
| 0.075 to <1.0 | Bin 2 | 1 Log | 1.5 Log | 1 Log | (1) |
| 1.0 to < 3.0 | Bin 3 | 2 Log | 2.5 Log | 2 Log | (2) |
| > = 3.0 | Bin 4 | 2.5 Log | 3 Log | 2.5 Log | (3) |

(1) As determined by DEP such that the total removal/inactivation> 4.0 log
(2) As determined by DEP such that the total removal/inactivation> 5.0 log
(3) As determined by DEP such that the total removal/inactivation> 5.5 log

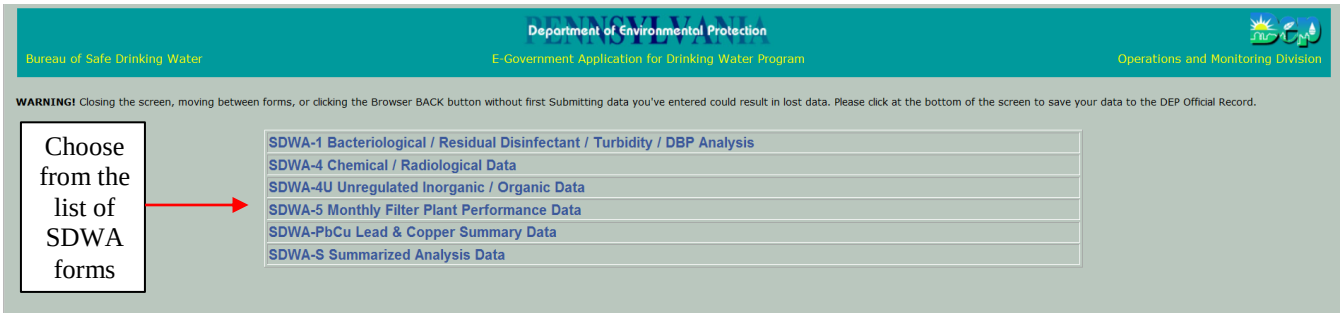
### LT2 ESWTR Toolbox Monthly Operational Report Form

The LT2 ESWTR Rule requires additional reporting on applicable forms. See Appendix III: *Monthly Operational Report Form* (MOR) for form 3900-FM-BSDW0517 and information about other forms.

**Note:** The Reference for form 3900-FM-BSDW0518 no longer applies. For UV forms, go to the DEP website at: www.elibrary.dep.state.pa.us/dsweb/HomePage and enter "UV Reporting Forms" into the Search window.

## SUBSECTION A: SDWA 5-MONTHLY FILTER PLANT PERFORMANCE FORM; INSTRUCTIONS FOR REPORTING

In DEP Greenport, enter *DWELR* and go to the Main Menu:

# SAFE DRINKING WATER ACT

## SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

**I. General Plant Information**

PWS Name:

| (1) PWSID | (2) Trans | (3) Filter Plant ID | (4) Report Month |
|---|---|---|---|
| | 09 | | MMDDYY (1st of the month) |

**II. Combined Filter Effluent Turbidity** (All filtered systems)

| (5) Plant Operation Hours | Combined Filter Effluent Turbidity | | (7) Plant Performance Level (xx.x%) |
|---|---|---|---|
| | (6A) Number of Measurements | (6B) Number of Results Meeting PLR | 6B X 100/6A = % |
| | | | |

| Filter Type Keys for PLRs | | | Turbidity Performance Level Requirements (NTUs) |
|---|---|---|---|
| C = Conventional | D = Direct | M = Membrane | <=0.3 for C, D, or O |
| S = Slow sand | E = DE | O = Other | <=1.0 for S or E |

**III. Combined Filter Effluent Turbidity Exceedance Reporting** (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level?

Select

Maximum Allowable Turbidity (NTUs)
1 for C, D, M, or O
2.0 for S or E

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See SDWA-1 instructions for reporting CFE turbidity measurements.)

**IV. Individual Filter Turbidity** (Conventional or direct filters only)

(9) Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minutes?

Select

Yes (Go directly to Section V)

No (Proceed to question #10)

(10) Was continuous monitoring or recording interrupted on any filter due to a failure in equipment?

Select

Yes (Proceed to question #11)

No (Go directly to Section V)

(11) Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving >= 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment?

Select

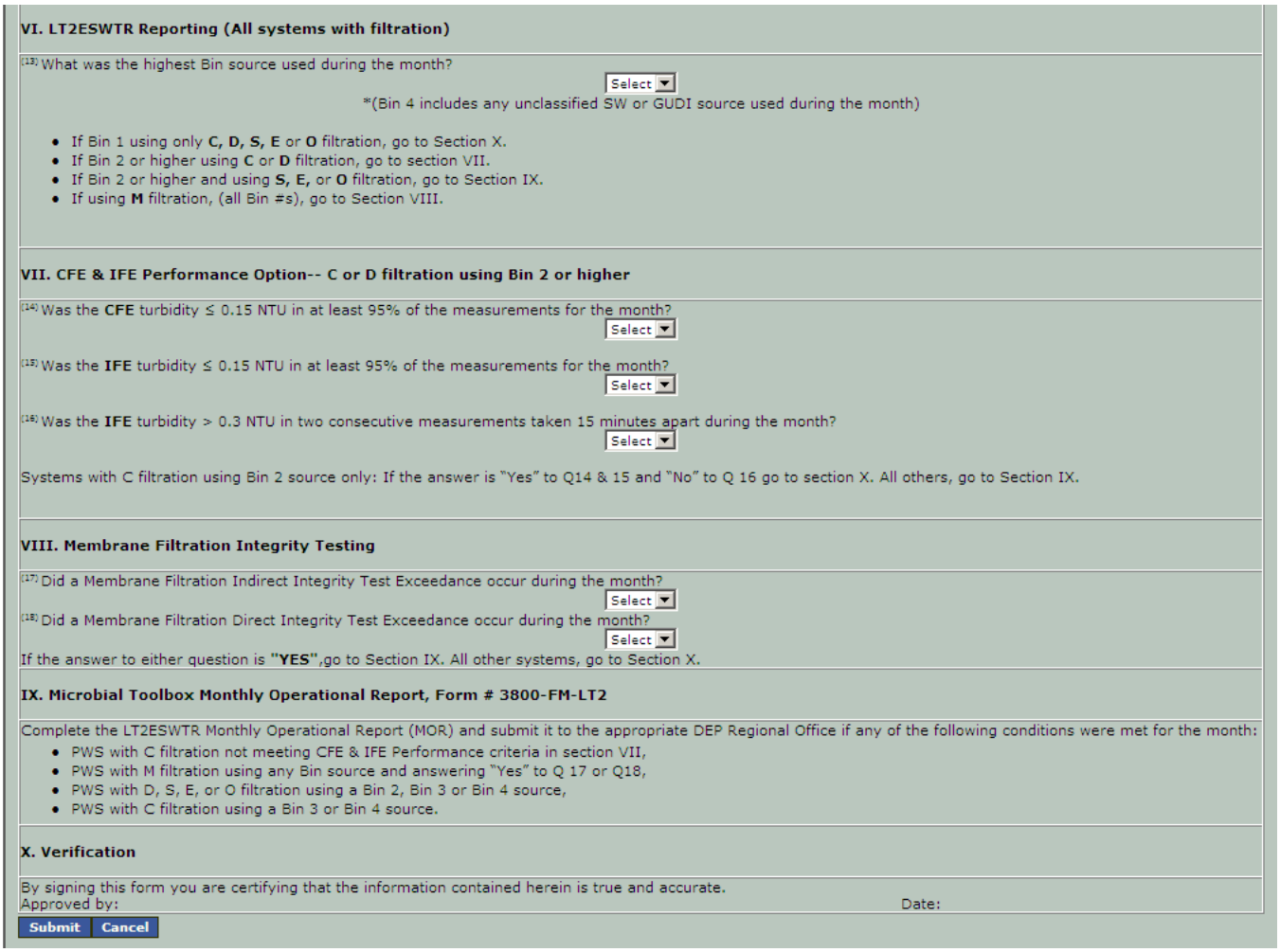
**V. Individual Filter Turbidity Exceedance Reporting** (Conventional or direct filters only)

(12) Did any individual filter measurements exceed trigger level #1 or trigger level #2?

Select

Trigger Level #1. Turbidity >1.0 NTU in 2 consecutive 15 minute measurements.
Trigger Level #2. Turbidity >0.5 NTU in 2 consecutive 15 minute measurements 4 hours after filter returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters in this plant, regardless of the reason. Record all measurements on an SDWA-1 form. (See SDWA-1 instructions for reporting individual filter turbidity measurements.)

## SDWA 5-Monthly Filter Plant Performance Form Instructions for Reporting (continued)



**VI. LT2ESWTR Reporting (All systems with filtration)**

(13) What was the highest Bin source used during the month?

Select

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **C, D, S, E** or **O** filtration, go to Section X.
- If Bin 2 or higher using **C** or **D** filtration, go to section VII.
- If Bin 2 or higher and using **S, E,** or **O** filtration, go to Section IX.
- If using **M** filtration, (all Bin #s), go to Section VIII.

**VII. CFE & IFE Performance Option-- C or D filtration using Bin 2 or higher**

(14) Was the **CFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(15) Was the **IFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(16) Was the **IFE** turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

Select

Systems with C filtration using Bin 2 source only: If the answer is "Yes" to Q14 & 15 and "No" to Q 16 go to section X. All others, go to Section IX.

**VIII. Membrane Filtration Integrity Testing**

(17) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

Select

(18) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

Select

If the answer to either question is **"YES"**,go to Section IX. All other systems, go to Section X.

**IX. Microbial Toolbox Monthly Operational Report, Form # 3800-FM-LT2**

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were met for the month:

- PWS with C filtration not meeting CFE & IFE Performance criteria in section VII,
- PWS with M filtration using any Bin source and answering "Yes" to Q 17 or Q18,
- PWS with D, S, E, or O filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with C filtration using a Bin 3 or Bin 4 source.

**X. Verification**

By signing this form you are certifying that the information contained herein is true and accurate.

Approved by: Date:

Submit Cancel

**Note**: Currently the Section IX Monthly Operational Report (MOR) form #3800-FM-LT2 listed on the SDWA-5 input form, has been updated to form #3900-FM-BSDW0517. See Appendix III in this manual for a copy of the new form or go to the DEP website at www.elibrary.dep.state.pa.us/dsweb/HomePage and search on keywords "Toolbox Monthly Operational Report".

The SDWA-5 form field descriptions and instructions for reporting the summarized filter turbidity information are listed on the following pages.

**SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS**
**FOR REPORTING SUMMARIZED FILTER TURBIDITY INFORMATION**

| ***Data Field*** | ***Descriptions/Explanation*** |
|---|---|
| PART I. General Plant Information | |
| PWS Name | The PWS name will be automatically populated by the system on the electronic form, after the PWSID is entered. |
| 1. PWSID | Enter the 7-digit public water system identification (PWS ID) number of the PWS to which these samples apply. Failure to enter the PWS ID will result in the water supplier not receiving credit for conducting the required monitoring. If you do not know the PWS ID number, contact the local Department of Environmental Protection (DEP) or County Health Department (CHD) office. All PWS ID numbers are assigned by the local DEP or CHD office. |
| 2. Trans | Transaction Code is already filled in on the forms. |
| 3. Filter Plant ID | Enter the 3-digit filter plant ID number to which these turbidity performance measurements apply. Failure to enter the correct plant ID will result in the water supplier not receiving credit for conducting the required performance monitoring. If you do not have an ID number assigned for the plant, contact the local DEP or CHD office to have this ID number assigned. Plant ID numbers range from 300-399. |
| 4. Report month | Enter the date of the first day of the reporting period (MMDDYY). Example: For the April 2015 monitoring period enter 040115. |
| PART II. Combined Filter Effluent Turbidity | |
| 5. Plant Operation Hours | Enter the total number of hours the filter plant was in operation for the month, rounded to the nearest whole hour.<br>Do not report fractional hours or minutes. The total hours operated will be used to calculate the total number of monthly effluent turbidity measurements required. Whether the monitoring is performed by a continuous turbidity analyzer or by taking grab samples, at least one turbidity measurement must be recorded for every 4 hours of plant operation. |

**SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS**
**FOR REPORTING SUMMARIZED FILTER TURBIDITY INFORMATION** (continued)

| ***Data Field*** | ***Descriptions/Explanation*** |
|---|---|
| PART II. Combined Filter Effluent Turbidity (continued) | |
| 6. Combined Filter Effluent Turbidity<br><br>6A. Number of Measurements Taken: | Enter the total number of Combined Filter Effluent (CFE) turbidity measurements taken prior to disinfection during the month.<br><br>Do not count each individual filter cell reading as a measurement.<br><br>**Note:** See Section 4: *Reporting Requirements for Turbidity* for an explanation of how to report measurements from a continuous analyzer. If you are uncertain about filter effluent turbidity sampling location, contact your local DEP or CHD office for assistance. A turbidity performance monitoring sampling plan acceptable to DEP must be followed by PWSs. See Appendix I and Appendix II in this manual for DEP and CHD contacts and phone numbers. |
| 6B. Number of Results Meeting PLR: | Enter the number of CFE turbidity measurements that meet the filter plant PLR based on the type of filtration used. |
| 7. Plant performance Level (PL) (xx.x%) | Divide the number of turbidity results that met the Plant Level Requirements (PLR) by the total number of turbidity measurements taken for the month. Then multiply by 100 percent (%).<br><br>$$\%\ PL = [(number\ of\ samples\ that\ met\ PLR)/(number\ of\ samples\ taken)]\ x\ 100\%$$<br><br>Enter this percentage to the nearest tenth. Example: Report 94.599% as 94.6%<br><br>**Note**: If the % PL is less than 95%, notify the local DEP or CHD office within 48 hours. |
| PART III. Combined Filter Effluent Turbidity Exceedance Reporting (All Filtered Systems) | |
| 8. Did Any Results Exceed the Maximum Allowable Turbidity Level? | Select "Yes" or "No" to indicate if any of the turbidity results during the month exceeded the Maximum Allowable Turbidity Level expressed in Nephelometric Turbidity Units (NTUs): 1 NTU for Conventional (C), Direct (D), Membrane (M), or Other (O) and 2.0 NTU for Slow Sand (S) or Diatomaceous Earth (E). |

**SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION** (continued)

| ***Data Field*** | ***Descriptions/Explanation*** |
|---|---|
| PART III. Combined Filter Effluent Turbidity Exceedance Reporting (All Filtered Systems) (continued) | |
| | **Notes**:<br>➢ This means measurements exceed the Maximum Allowable Turbidity Level if they are equal to or exceed the following levels: 1.5 NTU (rounded to above 1 NTU) for C, D, M, or O or 2.05 NTU (rounded to above 2.0 NTU) for S and E.<br>➢ This applies to *any* CFE turbidity value that exceeds the Maximum Allowable Turbidity Level, not just the 4 hour readings used to determine the monthly PLR.<br>➢ All combined filter effluent (CFE) turbidity measurements that exceeded the Maximum Allowable Turbidity Level must be listed on an SDWA-1 form.<br>➢ The local DEP or CHD office must be notified within 1 hour of any turbidity measurements that exceed the Maximum Allowable Turbidity Level. See Appendix I and Appendix II for DEP and CHD Offices Contact Lists. |
| PART IV. Individual Filter Turbidity (Conventional or Direct Filtration Only) | |
| 9. Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minute? | Please carefully select "Yes" or "No", and follow the instructions per "Yes" or "No" answer.<br><br>If the answer to Question 9 is "Yes", go to Section V.<br>If the answer to Question 9 is "No", proceed to Question 10. |
| 10. Was continuous monitoring or recording interrupted on any filter due to a failure in equipment? | If the answer to Question 10 is "Yes", proceed to Question 11.<br>If the answer to Question 10 is "No", go to Section V.<br><br>Please note that "failure in equipment" includes *both monitoring* and *recording* equipment. |

**SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION** (continued)

| ***Data Field*** | ***Descriptions/Explanation*** |
|---|---|
| PART IV. Individual Filter Turbidity (Conventional or Direct Filtration Only) (continued) | |
| 11. Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving >= 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment? | Only select "Yes" or "No" if Question 10 is answered "Yes". |
| PART V. Individual Filter Turbidity Exceedance Reporting (Conventional or Direct Filters Only) | |
| 12. Did any individual filter measurements exceed trigger level #1 or trigger level #2? | Please select "Yes" or "No".<br><br>All individual filter turbidity measurements that exceed trigger level 1 or trigger level 2 must also be listed on an SDWA-1 form.<br><br>**Note**: This means measurements which are equal to or exceed 1.05 NTU in 2 consecutive 15 minute measurements or 0.55 NTU in 2 consecutive 15 minute measurements taken 4 hours after filter is returned to service, specifically at 4 hours and at 4 hours and 15 minutes after the filter is returned to service. |

| ***Data Field*** | ***Descriptions/Explanation*** |
|---|---|
| PART VI. LT2 ESWTR Reporting (All Systems With Filtration) | |
| 13. What was the highest Bin source used during the month? | All systems with filtration are required to report the highest Bin source utilized (at this plant) *at any time* during the month. (See Section 5: *Reporting Requirements for LT2 ESWTR* for more information about source water bin classification.)<br><br>Choose the correct Bin number.<br><br>Bin 4 includes any unclassified SW or GUDI source used during the month. For example, if a source is utilized that has not undergone LT2 source monitoring or did not have a bin classification assigned, Bin 4 must be checked. |
| PART VII. CFE & IFE Performance Option (Conventional or Direct Filtration Using Bin 2 or Higher) | |
| 14. Was the **combined filter effluent** (CFE) turbidity less than or equal to (≤) 0.15 NTU in at least 95% of the measurements for the month?<br><br>15. Was the **individual filter effluent** (IFE) turbidity less than or equal to (≤) 0.15 NTU in at least 95% of the measurements for the month? | Systems may choose to utilize the CFE and IFE Performance Toolbox Options to obtain *Cryptosporidium* treatment credit, to apply to their bin classification requirement for additional treatment.<br><br>Select "Yes" or "No".<br><br>Select "Yes" or "No". |

**SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION (CONT.)**

| *Data Field* | *Descriptions/Explanation* |
|---|---|
| PART VII. CFE & IFE Performance Option (Conventional or Direct Filtration Using Bin 2 or Higher) (continued) | |
| 16. Was the **individual filter effluent** (IFE) greater than (>) 0.30 NTU in two consecutive measurements taken at 15 minutes apart during the month? | Select "Yes" or "No".<br><br>For systems with ***conventional (C) filtration and using a Bin 2*** source only, if the answer is "Yes" to Questions 14 ***and*** 15 ***and*** "No" to Question 16, skip to Section X.<br>All other systems must go to Section IX.<br><br>**Note:** LT2 ESWTR monitoring frequency and compliance calculation requirements for the IFE option are that IFE turbidity must be measured every 15 minutes (excluding the first 15 minute period following return to service from a filter backwash). |
| PART VIII. Membrane Filtration Integrity Testing (All Systems With Bins 1-4, Utilizing Membrane Filtration.) | |
| 17: Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?<br><br>18: Did a Membrane Filtration Direct Integrity test occur during the month? | Select "Yes" or "No".<br><br>Select "Yes" or "No".<br><br>If the answer to either question is "Yes", go to Section IX. All other systems go to X.<br><br>**Note**: Continuous indirect integrity testing and direct integrity testing, on at least a daily basis, is required. |

**SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION (CONT.)**

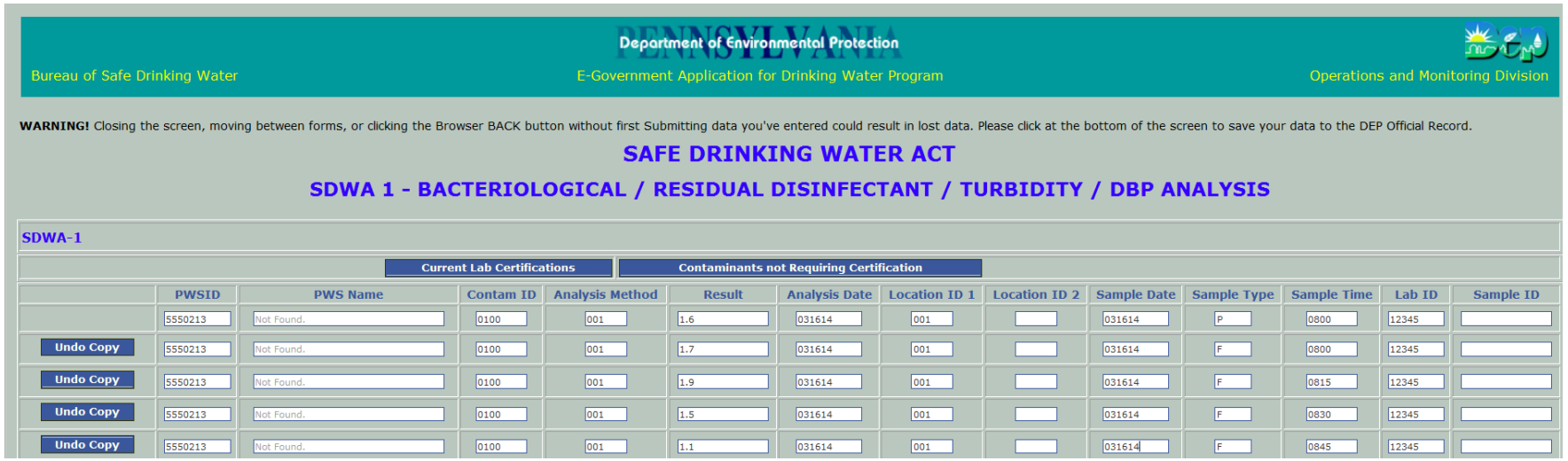
| ***Data Field*** | ***Descriptions/Explanation*** |
|---|---|
| PART IX. Microbial Toolbox Monthly Operational Report (Form #3900-FM-BSDW0517) | |
| Microbial Toolbox | The LT2 ESWTR and Chapter 109 regulations require routine monthly reporting for notification of what Toolbox option(s) were utilized during the month to meet bin classification log removal/inactivation requirements. Verification that all criteria were met to qualify for option credit, and where applicable, report necessary steps taken to correct problems where failure to meet criteria have occurred.<br><br>PWSs must complete the LT2 ESWTR Monthly Operational Report (MOR) and submit it to DEP, if any of the conditions listed on the SDWA-5 form applied for the month.<br><br>The LT2 Monthly Operational Report (MOR) Form #3900-FM-BSDW0517 may be found online at: www.elibrary.dep.state.pa.us/dsweb; search on keywords "LT2 ESWTR Toolbox". Submission of the LT2 MOR Form is made to the appropriate DEP Regional Office.<br><br>In addition, to the LT2 MOR Form, additional LT2 treatment option specific forms may be provided by the region for completion in the event of a failure to meet rule criteria. |
| PART X. Verification | |
| Approved By:<br>Date: | By signing this form you are certifying that the information contained here is true and accurate. (Signature of the responsible plant official and date. On an electronic form, submitting the record is the same as a signature.) |

For a copy of the SDWA-5 in "paper" form, see Appendix IV.

## SUBSECTION B: SDWA-1 FORM; INSTRUCTIONS FOR REPORTING TURBIDITY

In DEP Greenport, go to *DWELR* and go to the Main Menu. Choose "Add Records" and the correct SDWA from the menus:

Choose the SDWA-1 BACTERIOLOGICAL/RESIDUAL DISINFECTANT/TURBIDITY/DBP ANALYSIS *input screen* to add the results.



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**WARNING!** Closing the screen, moving between forms, or clicking the Browser BACK button without first Submitting data you've entered could result in lost data. Please click at the bottom of the screen to save your data to the DEP Official Record.

**SAFE DRINKING WATER ACT**

**SDWA 1 - BACTERIOLOGICAL / RESIDUAL DISINFECTANT / TURBIDITY / DBP ANALYSIS**

SDWA-1

Current Lab Certifications | Contaminants not Requiring Certification

| | PWSID | PWS Name | Contam ID | Analysis Method | Result | Analysis Date | Location ID 1 | Location ID 2 | Sample Date | Sample Type | Sample Time | Lab ID | Sample ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5550213 | Not Found. | 0100 | 001 | 1.6 | 031614 | 001 | | 031614 | P | 0800 | 12345 | |
| Undo Copy | 5550213 | Not Found. | 0100 | 001 | 1.7 | 031614 | 001 | | 031614 | F | 0800 | 12345 | |
| Undo Copy | 5550213 | Not Found. | 0100 | 001 | 1.9 | 031614 | 001 | | 031614 | F | 0815 | 12345 | |
| Undo Copy | 5550213 | Not Found. | 0100 | 001 | 1.5 | 031614 | 001 | | 031614 | F | 0830 | 12345 | |
| Undo Copy | 5550213 | Not Found. | 0100 | 001 | 1.1 | 031614 | 001 | | 031614 | F | 0845 | 12345 | |

Submit Data, and go to View and Edit records. **Note that this is also the *Printer Friendly* version**.

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**SAFE DRINKING WATER ACT**

**VIEW and EDIT RECORDS**

Click here for a Printer Friendly Version

View a Monitoring Calendar

SDWA-1

Current Lab Certifications | Contaminants not Requiring Certification

| | PWSID | Contam ID | Analysis Method | Result | Analysis Date | Location ID 1 | Location ID 2 | Sample Date | Sample Type | Sample Time | Lab ID | Sample ID | Record ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sort | Sort Entry Point Chlorine | | | | | | Sort | | | Sort | | |
| | 5550213 | 0100 | 001 | 1.6 | 031614 | 001 | | 031614 | P | 0800 | 12345 | | STUDENTE_525 |
| | 5550213 | 0100 | 001 | 1.7 | 031614 | 001 | | 031614 | F | 0800 | 12345 | | STUDENTE_526 |
| | 5550213 | 0100 | 001 | 1.9 | 031614 | 001 | | 031614 | F | 0815 | 12345 | | STUDENTE_527 |
| | 5550213 | 0100 | 001 | 1.5 | 031614 | 001 | | 031614 | F | 0830 | 12345 | | STUDENTE_528 |
| | 5550213 | 0100 | 001 | 1.1 | 031614 | 001 | | 031614 | F | 0845 | 12345 | | STUDENTE_529 |

**SDWA-1 FORM: Bacteriological/Residual Disinfectant/Turbidity/DBP Analysis**
(Instructions for Reporting Turbidity Exceedances)

| ***Data Field*** | ***Description/Explanation*** |
|---|---|
| PWSID | Enter the 7-digit PWSID to which these samples apply. Failure to enter the PWSID will result in the water supplier not receiving credit for conducting the required monitoring. If you do not know the PWSID number, contact the local DEP or CHD office. All PWSID numbers are assigned by the local DEP or CHD office. |
| PWS Name | The system will automatically enter the name of the PWS after the PWSID is entered. |
| Contaminant ID | Enter the 4-digit identification code for the contaminant/parameter being reported. The code for turbidity is 0100. |
| Analysis Method | Enter the 3-digit code of the approved analysis method used to analyze the turbidity samples. The code is 001; units are Nephelometric Turbidity Units (NTU). |
| Result | Enter each turbidity measurement that exceeds the Maximum Allowable Turbidity Level, and/or all individual filter turbidity values that exceed either trigger level. Results should be reported as recorded at the treatment facility. For example, if the recording device records 1.54 NTU, it should be reported as 1.54 on the SDWA-1 form. If the recording device records 1.5 NTU, it should be reported as 1.5.<br><br>For more information on reporting/recording turbidity results, refer to Section 4 of this manual. |
| Analysis Date | Enter the date (MMDDYY) on which the sample analysis was performed or measurement taken. For turbidity, the analysis date will be the same as the sample date (the samples must be analyzed immediately). Enter the format as shown in the screenshot located on the previous page. EXAMPLE: Enter March 16, 2014, as 031614. |
| Location ID1 (Location ID, Entry Point number, or Plant ID number) | *Filter Plant Turbidity*: Enter the 3-digit Treatment Plant ID in the Location ID1 column. Performance samples or measurements must be taken at the CFE before the clearwell and post treatment chemical addition at each treatment plant.<br><br>**Note**: DEP or CHD assigned treatment plant ID numbers, which always begin with "3", must be entered in this field (e.g., 301). |

**SDWA-1 FORM: Bacteriological/Residual Disinfectant/Turbidity/DBP Analysis**
(Instructions for Reporting Turbidity Exceedances)

| ***Data Field*** | ***Description/Explanation*** |
|---|---|
| Location ID2<br>(Location ID, Entry Point number, or Plant ID number) | ***Individual Filter Turbidity (IFE)***: Enter the 3-digit Individual Filter Number in the Location ID2 column.<br><br>**Note**: The ***location ID2*** column must only be used for ***individual filter (IFE) IDs***. DEP or CHD assigns the IFE ID numbers. |
| Sample Date | Enter the date (MMDDYY) on which the sample was collected. For turbidity, the sample date will be the same as the analysis date. Example: Enter March 16, 2014, as 031614. |
| Sample Type | Enter the appropriate letter code which corresponds to the type of sample collected as follows:<br><br>P = Plant: All CFE turbidity samples. For filtered surface water systems, "P" means plant filtered water before the clearwell and post treatment chemical addition.<br><br>F = Individual Filter: Samples taken at the individual filters are "F" samples.<br><br>**Note**: Failure to report analysis results with the correct and appropriate *Sample Type Codes* will result in the water supplier receiving a *violation* for failure to monitor. |
| Sample Time | Enter the time of day at which the sample was collected. All times must be in military time. ***This field must be completed in order for the results to be accepted***. If the exact time is not known, enter an approximate time. Enter the format as shown in the screen shot, using military time. EXAMPLES: 5:15 p.m. enter as 1715 and 8:30 a.m. enter as 0830. |
| Lab (Laboratory) ID | Enter the 5-digit PA certification ID number assigned to the laboratory. For any analysis conducted by a certified laboratory, the ID number must be entered for results to be accepted. Do not use dashes or symbols. |
| Sample ID | For turbidity, this field may be left blank. |

## SECTION 6: INSTRUCTIONS FOR SDWA CORRECTION FORMS

Data are entered electronically into DWELR via SDWA forms. Refer to Section 3: Electronic Assistance Tools in this manual for more information. Reporting instructions are available on-line at www.elibrary.dep.state.pa.us/dsweb/HomePage. Click on the "Forms" folder and enter keywords "SDWA corrections". Examples of SDWA-1 and SDWA-5 original corrections forms may be also found in Appendix V.

**Note**: The SDWA correction forms are for the correction of previously submitted data no longer in DWELR. Omitted sample results and summary forms should be submitted through DWELR.

The two permitted methods to correct previously submitted data are as follows:

1) A copy of a DWELR printed report of the original submission may also be used for corrections. If using a DWELR printout, strikeout the incorrect information and write the correct information on the report. Initial and date the correction. (Note: Do not strikeout the incorrect information heavily so that the original information cannot be read or faxed. Do not use a highlighter on forms to be faxed or copied.)

   The following information, which can be handwritten on the form, must also be included:
   - The reason for the correction.
   - The name of the laboratory, the authorizing personnel and the date of the corrected submission.

2) SDWA Correction forms are shown in Appendix V in this document (examples only). To download the forms, click on the link in the DEP e-library at www.elibrary.dep.state.pa.us/dsweb/HomePage. Search for 'SDWA Corrections'. Enter all the correct information as it should have been submitted. This information is required in order to identify the record. In the 'Submitted' sections, only the incorrect information should be entered.

Distribute SDWA corrections forms as follows:

ORIGINAL COPY: Send a copy to DEP's central office at the following mailing or direct carrier service (UPS, Fed Ex) address.

Distribute SDWA corrections forms as follows:

| USPS | UPS or FED EX |
|---|---|
| PA DEP SDWA MONITORING DATA | PA DEP SDWA MONITORING DATA |
| 10TH FLOOR RCSOB | 10TH FLOOR RCSOB |
| PO BOX 8467 | 400 MARKET STREET |
| HARRISBURG PA 17105-8467 | HARRISBURG PA 17101 |

Corrections may be submitted by fax if requested by DEP Safe Drinking Water central office or field personnel. Obtain the fax number directly from them. Only upon specific request by DEP field personnel should corrections be sent directly to the field office instead of the central office. In this case, a copy does not need to be sent to central office.

SECOND COPY: Send a copy to the water supplier.

THIRD COPY: Retain a copy for the laboratory's records.

## SECTION 7: CASE STUDIES/EXAMPLES

**Note**: In addition to turbidity monitoring, the Filter Rule also requires monitoring and reporting of the disinfectant residual at entry points to the distribution system as well as locations within the distribution system. Although disinfectant monitoring is not covered in the following example case studies, it is vital that operators understand their responsibilities regarding the monitoring and reporting of disinfectant residuals. Refer to the *Laboratory Reporting Instructions for Disinfectants, Disinfection Byproducts and Precursors* for all reporting information regarding disinfectant residuals. The technical guidance manual is available on the Department of Environmental Protection (DEP) website at www.elibrary.dep.state.pa.us/dsweb/HomePage. Enter "Laboratory Reporting Instructions" into the search at the top of the Web page.

Refer to Section 4: *Turbidity & LT2 Reporting Instructions* and Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for more information about reporting the turbidity data.

### CASE STUDY #1: ABC WATER COMPANY

(Exceeding both the CFE levels and IFE trigger levels)

#### Background

The ABC Water Co. (PWSID 5550213) has one surface water source that supplies one conventional filter plant (Plant ID 300). The filter plant has two individual filters that operate continuously and serve one entry point to the distribution system. Their source is classified as Bin 2, with a 1 log additional LT2 treatment requirement which they have elected to meet utilizing the Combined & Individual Filter Effluent Performance Toolbox Options.

ABC Water Co. is required to:

- Measure and record the turbidity of the CFE at least once every 4 hours.
- Continuously monitor the turbidity of each IFE.
- Record the turbidity level of each individual filter every 15 minutes.

#### Requirements

The ABC Water Co. is required to meet the following:

*CFE turbidity PLR requirements:*

- At least 95 percent of the monthly CFE measurements must be $\leq$ 0.3 NTU.
- Maximum allowable turbidity level for all CFE measurements must be $\leq$ 1 NTU.

*IFE trigger levels:*

- > 0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter has been backwashed or taken off-line for any reason.
- > 1.0 NTU in 2 consecutive measurements taken 15 minutes apart.

- > 1.0 NTU in 2 consecutive measurements taken 15 minutes apart in 3 consecutive months.
- > 2.0 NTU in 2 consecutive measurements taken 15 minutes apart in 2 consecutive months.

*LT2 ESWTR Compliance Requirements (CFE, IFE):*

- At least 95 percent of the monthly CFE measurements must be < = to 0.15 NTU.
- At least 95 percent of the monthly IFE measurements must be < = to 0.15 NTU excluding the 15 minute period following return to service from a filter backwash.
- No IFE may have a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 minutes apart.

**Events**

- During the month of March 2014, the filter plant operated continuously.
- Six turbidity measurements were required for each day (1 for each of the six 4-hour periods).
- Therefore, the total number of CFE measurements required for March is 186 (31 x 6 = 186).
- Of the 186 routine CFE turbidity measurements, 20 exceeded the Performance Level Requirement (PLR) of 0.3 NTU. Therefore, 166 (186 – 20 = 166) of the routine measurements met the turbidity PLR of 0.3 NTU.
- Of the 186 routine CFE turbidity measurements, 34 exceeded the LT2 CFE Performance Option criteria of < = to 0.15 NTU. Therefore, 152 (186 – 34 = 152) of the 15 minute measurements met the turbidity criteria of <= to 0.15 NTU.
- IFEs that met or exceeded 0.15 NTU: Filter #1 had 100 readings that exceeded 0.15 NTU; Filter #2 had zero (0) readings that exceeded 0.15 NTU.
- On March 16, 2014, 1 of the CFE measurements exceeded 1 NTU. The measurement at Location ID 300 was 1.6 NTU.
- Also on March 16, 2014, 4 consecutive IFE measurements between 8:00 a.m. and 8:45 a.m. from Location ID 300, filter 001 exceeded 1.0 NTU. The 4 measurements were: 1.7 NTU; 1.9 NTU; 1.5 NTU; and 1.1 NTU.

**SDWA-5 Form:**

Case Study #1 Screenshot #1 in this manual shows a completed SDWA-5 form reflecting the above events.

*Section 1*

This is general system information.

*Section II*

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.3 NTU turbidity PLR (166) by the total number of measurements taken (186) and multiply that by 100 percent.

$$\frac{166}{186} = 0.89247 \text{ x } 100\% = 89.2\%$$

*Section III*

The "Yes" box is selected for Question 8 because one of the CFE measurements exceeded 1 NTU.

**Note:** *An SDWA-1 form will need to be completed to report this exceedance measurement.*

*Section IV*

The "Yes" box is selected for Question 9; however, Questions 10 and 11 are left blank because individual filter monitoring and recording was conducted as required.

*Section V*

The "Yes" box is selected for Question 12 because 4 consecutive IFE measurements from filter 001 exceeded 1.0 NTU.

**Note:** *These individual filter measurements must also be reported on an SDWA-1 form.*

*The following sections relate to the LT2 ESWTR reporting:*

*Section VI*

The second box is selected for Question 13, because a Bin 2 source was the highest bin used during the month.

*Section VII*

For Question 14, to determine whether the LT2 CFE Performance Toolbox Option Criteria was met, divide the number of measurements that were <= to 0.15 NTU turbidity by the total number of measurements taken and multiply that by 100 percent.

$$\frac{152}{186} = 0.81720 \text{ x } 100\% = 81.7\%$$

The "No" box is selected for Question 14 because the number of CFE measurements exceeding 0.15 NTU were such that the 95% < = to 0.15 NTU criteria was not met. Additional log removal credit cannot be obtained for this month.

For Question 15, to determine whether the first LT2 IFE Performance Toolbox Option Criteria was met, divide the number of measurements that met the 0.15 NTU turbidity criteria by the total number of measurements taken and multiply that by 100 percent. If the criteria were met *for each filter*, select

"Yes". If not, Select "No". For the purposes of this example, filter #1 had 2,976 readings (31 days x 24 hours per day x 4 readings per hour); 2,876 IFE readings met the <= to 0.15 NTU turbidity criteria.

$$\frac{2{,}876}{2{,}976} = 0.966 \text{ x } 100\% = 97\% \text{ rounded}$$

For Question 16, to determine whether the second LT2 IFE Performance Toolbox Option Criteria was met, indicate whether or not any IFE turbidity ever exceeded 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month, *in any filter*. Because on March 16, 4 consecutive readings exceeded 0.3, the answer to Question 16 is "Yes", a Monthly Operational Report (MOR) must be completed and submit it to the DEP Regional Office.

**SDWA-1 Form**

Case Study #1 Screenshot #2 shows a completed SDWA-1 form reflecting the above events.

- All CFE (> 1 NTU) and IFE (> 1.0 NTU) exceedances must be reported on the SDWA-1 form.
- The treatment plant ID is used in the Location ID 1 field for both CFE and IFE measurements.
- The Location ID 2 field is completed with the individual filter ID for IFE measurements, but left blank for CFE measurements.
- Use sample type "P" for CFE measurements and sample type "F" for IFE measurements.

**Case Study #1, Screenshot #1**
**SDWA-5**

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**WARNING!** Closing the screen, moving between forms, or clicking the Browser BACK button without first Submitting data you've entered could result in lost data. Please click at the bottom of the screen to save your data to the DEP Official Record.

## SAFE DRINKING WATER ACT

## SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

**I. General Plant Information**

PWS Name: ABC Water Company

| (1) PWSID | (2) Trans | (3) Filter Plant ID | (4) Report Month |
|---|---|---|---|
| 5550213 | 09 | 300 | 030114 MMDDYY (1st of the month) |

**II. Combined Filter Effluent Turbidity** (All filtered systems)

| (5) Plant Operation Hours | Combined Filter Effluent Turbidity | | (7) Plant Performance Level (xx.x%) |
|---|---|---|---|
| | (6A) Number of Measurements | (6B) Number of Results Meeting PLR | |
| 744 | 186 | 166 | 6B X 100/6A = 89.2 % |

| Filter Type Keys for PLRs | | | Turbidity Performance Level Requirements (NTUs) |
|---|---|---|---|
| C = Conventional | D = Direct | M = Membrane | <=0.3 for C, D, or O |
| S = Slow sand | E = DE | O = Other | <=1.0 for S or E |

**III. Combined Filter Effluent Turbidity Exceedance Reporting** (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level? Yes

Maximum Allowable Turbidity (NTUs)
1 for C, D, M, or O
2.0 for S or E

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See SDWA-1 instructions for reporting CFE turbidity measurements.)

**IV. Individual Filter Turbidity** (Conventional or direct filters only)

(9) Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minutes? Yes

Yes (Go directly to Section V)
No (Proceed to question #10)

(10) Was continuous monitoring or recording interrupted on any filter due to a failure in equipment? Select

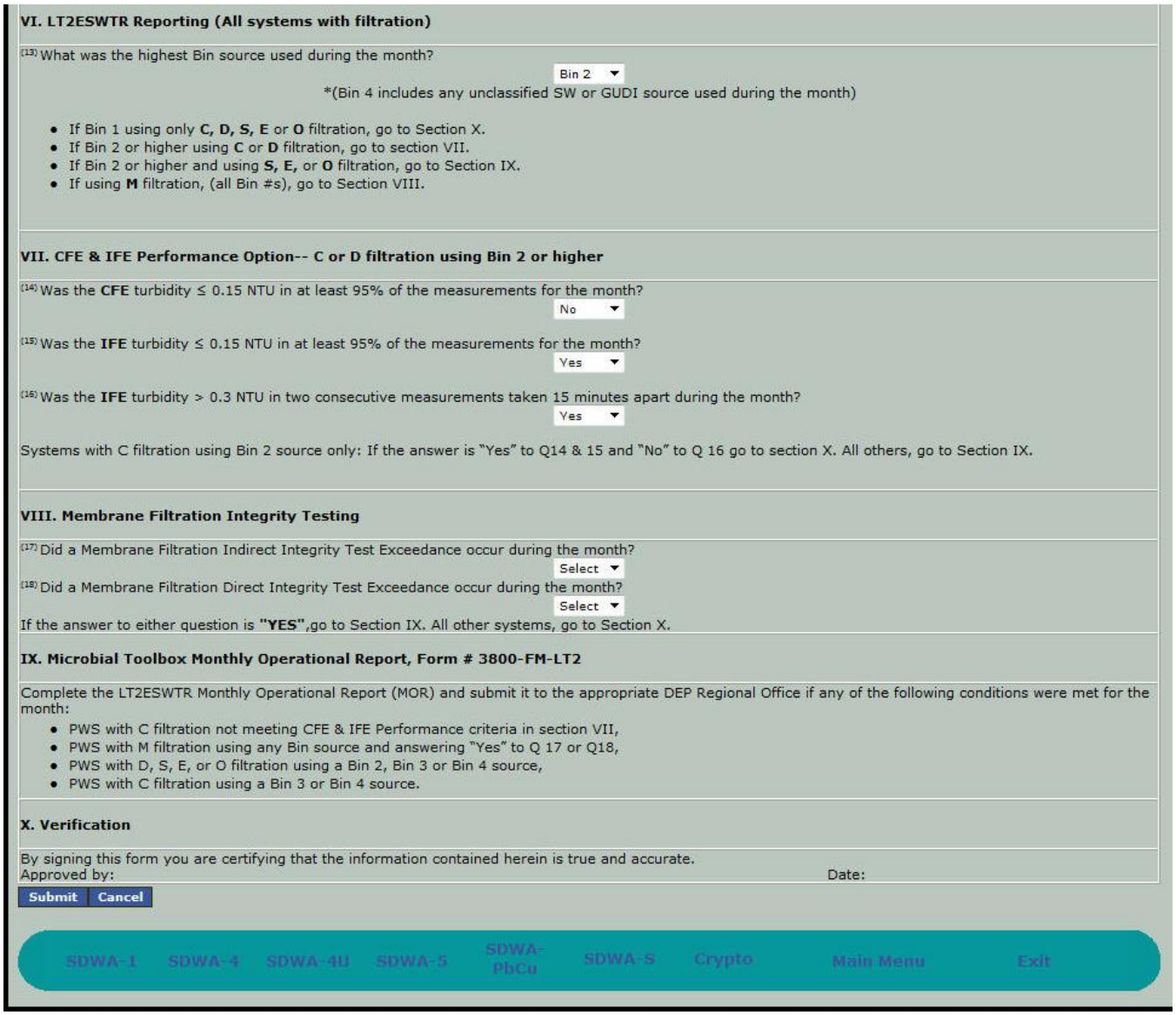
Yes (Proceed to question #11)
No (Go directly to Section V)

(11) Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving >= 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment? Select

**V. Individual Filter Turbidity Exceedance Reporting** (Conventional or direct filters only)

(12) Did any individual filter measurements exceed trigger level #1 or trigger level #2? Yes

Trigger Level #1. Turbidity >1.0 NTU in 2 consecutive 15 minute measurements.
Trigger Level #2. Turbidity >0.5 NTU in 2 consecutive 15 minute measurements 4 hours after filter returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters in this plant, regardless of the reason. Record all measurements on an SDWA-1 form. (See SDWA-1 instructions for reporting individual filter turbidity measurements.)




In this case, a warning message will appear because a Monthly Operational Report (MOR) must be completed:

**Case Study #1, Screenshot #2**
**SDWA-1**

Department of Environmental Protection

Bureau of Safe Drinking Water | E-Government Application for Drinking Water Program | Operations and Monitoring Division

## SAFE DRINKING WATER ACT

### VIEW and EDIT RECORDS

Click here for a Printer Friendly Version
View a Monitoring Calendar

SDWA-1

Current Lab Certifications | Contaminants not Requiring Certification

| | PWSID | Contam ID | Analysis Method | Result | Analysis Date | Location ID 1 | Location ID 2 | Sample Date | Sample Type | Sample Time | Lab ID | Sample ID | Record ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sort | | | Sort Entry Point Chlorine | | | | Sort | | | Sort | | |
| | 5550213 | 0100 | 001 | 1.6 | 031614 | 300 | | 031614 | P | 0800 | 12345 | | STUDENTE_525 |
| | 5550213 | 0100 | 001 | 1.7 | 031614 | 300 | 001 | 031614 | F | 0800 | 12345 | | STUDENTE_526 |
| | 5550213 | 0100 | 001 | 1.9 | 031614 | 300 | 001 | 031614 | F | 0815 | 12345 | | STUDENTE_527 |
| | 5550213 | 0100 | 001 | 1.5 | 031614 | 300 | 001 | 031614 | F | 0830 | 12345 | | STUDENTE_528 |
| | 5550213 | 0100 | 001 | 1.1 | 031614 | 300 | 001 | 031614 | F | 0845 | 12345 | | STUDENTE_529 |

## CASE STUDY #2: XYZ WATER COMPANY

(Turbidimeter Failure)

Refer to Section 4: *Turbidity & LT2 Reporting Instructions* and Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for more information about reporting turbidity.

### Background

The XYZ Water Company (PWSID 5648509) has two surface water sources that supply water to one conventional filter plant (Plant ID 300). The filter plant has four individual filters operating continuously and serves one entry point to the distribution system. The system's Source ID 001 is a "Bin 1" source. Source ID 002 is a "Bin 3" source and was not used as a source in October 2014.

### Requirements

XYZ Water Co. is required to:

- Measure and record the turbidity of the CFE at least once every 4 hours.
- Continuously monitor the turbidity of each IFE.
- Record the turbidity level of each individual filter every 15 minutes.
- Conduct grab sampling/manual recording every 4 hours in the event of monitoring or recording equipment failure for a period not to exceed 5 days.

### Events

- During the month of October 2014, the filter plant operated continuously for a total of 744 hours. Therefore, the total number of CFE measurements required for October is 186. The system took 186 CFE turbidity measurements, and all of the measurements met the Performance Level Requirement (PLR) of 0.3 NTU.
- On October 4, 2014, at approximately 11 a.m., the IFE turbidimeters for individual filters 001 and 002 malfunctioned. The IFE turbidimeters were still operating for the other filters. The operators began manually measuring and recording IFE readings on filters 001 and 002 every 4 hours until the turbidimeters were repaired and operating. On October 8, 2014 at approximately 3 p.m., the turbidimeters were repaired and resumed measuring the IFE turbidity every 15 minutes. None of the IFE measurements exceeded a trigger level at any time during the month (based on recorded IFE measurements and the manually recorded measurements).

### SDWA-5 Form

The Case Study #2 Screenshot on the following pages shows a completed SDWA-5 form. In the event of IFE equipment failure, systems must conduct grab sampling for IFE turbidity measurements for a period not to exceed 14 days.

*Section I*

This is general system information.

*Section II*

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.3 NTU PLR (186) by the total number of measurements taken (186) and multiply that by 100 percent.

*Section III*

The box is checked "No" for Question #8 because none of the CFE measurements exceeded 1 NTU.

*Section IV*

The box for Question #9 is checked "No" because individual filter monitoring was not conducted continuously on filters 001 and 002 during the month.

The box for Question #10 is checked "Yes" because continuous monitoring was interrupted due to equipment failure.

The box for Question #11 is checked "Yes" because grab sampling was conducted every 4 hours on filters 001 and 002, as required, and lasted for 4 days and 4 hours, which does *not* exceed the maximum of 5 working days.

*Section V*

The box for Question #12 is checked "No" because all of the IFE measurements were below 1.0 NTU.

*The following sections relate to the LT2 ESWTR Reporting:*

*Section VI*

The box for Question #13 "Bin 1" is selected because the only source used that month was a Bin 1 source.

*Sections VII, VIII, and IX*

These sections do not pertain; skip to Section X.

*Section X*

Complete and submit Section X.

**Note**: Because both the CFE and IFE measurements *did not exceed the maximum allowable turbidity (NTUs),* an SDWA-1 form is not required in this situation.

**Case Study #2, Example Screenshot**

Department of Environmental Protection

Bureau of Safe Drinking Water | E-Government Application for Drinking Water Program | Operations and Monitoring Division

**WARNING!** Closing the screen, moving between forms, or clicking the Browser BACK button without first Submitting data you've entered could result in lost data. Please click at the bottom of the screen to save your data to the DEP Official Record.

# SAFE DRINKING WATER ACT

## SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

**I. General Plant Information**

PWS Name: XYZ Water Company

| (1) PWSID | (2) Trans | (3) Filter Plant ID | (4) Report Month |
|---|---|---|---|
| 5648509 | 09 | 300 | 100114 MMDDYY (1st of the month) |

**II. Combined Filter Effluent Turbidity** (All filtered systems)

| (5) Plant Operation Hours | Combined Filter Effluent Turbidity | | (7) Plant Performance Level (xx.x%) |
|---|---|---|---|
| | (6A) Number of Measurements | (6B) Number of Results Meeting PLR | |
| 744 | 186 | 186 | 6B X 100/6A = 100 % |

| Filter Type Keys for PLRs | | | Turbidity Performance Level Requirements (NTUs) |
|---|---|---|---|
| C = Conventional | D = Direct | M = Membrane | <=0.3 for C, D, or O |
| S = Slow sand | E = DE | O = Other | <=1.0 for S or E |

**III. Combined Filter Effluent Turbidity Exceedance Reporting** (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level? No

Maximum Allowable Turbidity (NTUs)
1 for C, D, M, or O
2.0 for S or E

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See SDWA-1 instructions for reporting CFE turbidity measurements.)

**IV. Individual Filter Turbidity** (Conventional or direct filters only)

(9) Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minutes? No

Yes (Go directly to Section V)
No (Proceed to question #10)

(10) Was continuous monitoring or recording interrupted on any filter due to a failure in equipment? Yes

Yes (Proceed to question #11)
No (Go directly to Section V)

(11) Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving >= 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment? Yes

**V. Individual Filter Turbidity Exceedance Reporting** (Conventional or direct filters only)

(12) Did any individual filter measurements exceed trigger level #1 or trigger level #2? No

Trigger Level #1. Turbidity >1.0 NTU in 2 consecutive 15 minute measurements.
Trigger Level #2. Turbidity >0.5 NTU in 2 consecutive 15 minute measurements 4 hours after filter returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters in this plant, regardless of the reason. Record all measurements on an SDWA-1 form. (See SDWA-1 instructions for reporting individual filter turbidity measurements.)

**VI. LT2ESWTR Reporting (All systems with filtration)**

[13] What was the highest Bin source used during the month?

Bin 1

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **C, D, S, E** or **O** filtration, go to Section X.
- If Bin 2 or higher using **C** or **D** filtration, go to section VII.
- If Bin 2 or higher and using **S, E,** or **O** filtration, go to Section IX.
- If using **M** filtration, (all Bin #s), go to Section VIII.

**VII. CFE & IFE Performance Option-- C or D filtration using Bin 2 or higher**

[14] Was the **CFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

[15] Was the **IFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

[16] Was the **IFE** turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

Select

Systems with C filtration using Bin 2 source only: If the answer is "Yes" to Q14 & 15 and "No" to Q 16 go to section X. All others, go to Section IX.

**VIII. Membrane Filtration Integrity Testing**

[17] Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

Select

[18] Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

Select

If the answer to either question is **"YES"**,go to Section IX. All other systems, go to Section X.

**IX. Microbial Toolbox Monthly Operational Report, Form # 3800-FM-LT2**

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were met for the month:

- PWS with C filtration not meeting CFE & IFE Performance criteria in section VII,
- PWS with M filtration using any Bin source and answering "Yes" to Q 17 or Q18,
- PWS with D, S, E, or O filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with C filtration using a Bin 3 or Bin 4 source.

**X. Verification**

By signing this form you are certifying that the information contained herein is true and accurate.
Approved by: Date:

Submit Cancel

SDWA-1 SDWA-4 SDWA-4U SDWA-5 SDWA-PbCu SDWA-S Crypto Main Menu Exit

## CASE STUDY #3: 123 WATER AUTHORITY

(Recorder Failure)

### Background

The 123 Water Authority (PWSID 3649728) has two surface water sources that supply water to one direct filtration plant (Plant ID 300). The filtration plant has four individual filters operating continuously and serves one entry point to the distribution system. The system's two sources were in use. Source ID 001 is a "Bin 1" source and Source ID 002 is a "Bin 2" source.

### Requirements

- Measure and record the turbidity of the CFE at least once every 4 hours.
- Continuously monitor the turbidity of each IFE.
- Record the turbidity level of each individual filter every 15 minutes.
- Conduct grab sampling/manual recording every 4 hours in the event of monitoring or recording equipment failure for a period not to exceed 5 days.

### Events

- During the month of October 2014, the filtration plant operated continuously. The total number of CFE measurements required for October is 186. All of these 186 routine CFE turbidity measurements met the Performance Level Requirement (PLR) of 0.3 NTU.
- On October 1, 2014, at 2:30 p.m., the computer system recording the IFE measurements failed. The IFE turbidimeters were still operating continuously, but the IFE measurements were not being recorded. The operators manually recorded readings every 4 hours until the computer system was back up and running. On October 6 at 12:45 p.m., the computer system was restored and the IFE measurements were again being recorded every 15 minutes. None of the IFE measurements exceeded a trigger level at any time during the month (based on recorded IFE measurements, the manually recorded measurements and the fact that the IFE alarms were not triggered).

### SDWA-5 Form

The Case Study #3 Screenshot on the following pages shows a correctly completed SDWA-5 form. In the event of IFE equipment failure, systems must conduct manual recording for IFE turbidity measurements for a period not to exceed 14 days.

*Section I*

This is general system information.

*Section II*

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.3 NTU turbidity PLR (186) by the total number of measurements taken (186) and multiply that by 100 percent.

*Section III*

For Question #8, the "No" box is selected because none of the CFE measurements exceeded 1 NTU. Therefore, an SDWA-1 form does NOT need to be completed for this month.

*Section IV*

The "No" box for Question #9 is selected because the results of individual filter monitoring were not recorded every 15 minutes during the month.

The "Yes" box for Question #10 is selected because continuous monitoring was interrupted due to equipment failure.

The "Yes" box for Question #11 is selected because manual recording was conducted every 4 hours as required, and the manual recording lasted for less than the maximum allowed of 5 days.

*Section V*

The "No" box for Question #12 is selected because all of the IFE measurements were below 1.0 NTU.

*The following sections relate to the LT2 ESWTR Reporting:*

*Section VI*

For Question #13, "BIN 2" should be selected because it's the highest Bin level source in use.

*Sections VII, VIII, and IX*

See example screenshot Case Study #3 on the following page; skip to Section IX and complete the MOR.

*Section X*

Complete and submit Section X.

**Case Study #3, Screenshot**

Department of Environmental Protection

Bureau of Safe Drinking Water | E-Government Application for Drinking Water Program | Operations and Monitoring Division

**WARNING!** Closing the screen, moving between forms, or clicking the Browser BACK button without first Submitting data you've entered could result in lost data. Please click at the bottom of the screen to save your data to the DEP Official Record.

## SAFE DRINKING WATER ACT

## SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

**I. General Plant Information**

PWS Name: 123 Water Authority

| (1) PWSID | (2) Trans | (3) Filter Plant ID | (4) Report Month |
|---|---|---|---|
| 3649728 | 09 | 300 | 100114 MMDDYY (1st of the month) |

**II. Combined Filter Effluent Turbidity** (All filtered systems)

| (5) Plant Operation Hours | Combined Filter Effluent Turbidity | | (7) Plant Performance Level (xx.x%) |
|---|---|---|---|
| | (6A) Number of Measurements | (6B) Number of Results Meeting PLR | |
| 744 | 186 | 186 | **6B X 100/6A =** 100 % |

| Filter Type Keys for PLRs | | | Turbidity Performance Level Requirements (NTUs) |
|---|---|---|---|
| C = Conventional | D = Direct | M = Membrane | <=0.3 for C, D, or O |
| S = Slow sand | E = DE | O = Other | <=1.0 for S or E |

**III. Combined Filter Effluent Turbidity Exceedance Reporting** (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level? No

Maximum Allowable Turbidity (NTUs)
1 for C, D, M, or O
2.0 for S or E

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See SDWA-1 instructions for reporting CFE turbidity measurements.)

**IV. Individual Filter Turbidity** (Conventional or direct filters only)

(9) Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minutes? No

Yes (Go directly to Section V)
No (Proceed to question #10)

(10) Was continuous monitoring or recording interrupted on any filter due to a failure in equipment? Yes

Yes (Proceed to question #11)
No (Go directly to Section V)

(11) Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving >= 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment? Yes

**V. Individual Filter Turbidity Exceedance Reporting** (Conventional or direct filters only)

(12) Did any individual filter measurements exceed trigger level #1 or trigger level #2? No

Trigger Level #1. Turbidity >1.0 NTU in 2 consecutive 15 minute measurements.
Trigger Level #2. Turbidity >0.5 NTU in 2 consecutive 15 minute measurements 4 hours after filter returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters in this plant, regardless of the reason. Record all measurements on an SDWA-1 form. (See SDWA-1 instructions for reporting individual filter turbidity measurements.)

**VI. LT2ESWTR Reporting (All systems with filtration)**

(13) What was the highest Bin source used during the month?

Bin 2

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **C, D, S, E** or **O** filtration, go to Section X.
- If Bin 2 or higher using **C** or **D** filtration, go to section VII.
- If Bin 2 or higher and using **S, E,** or **O** filtration, go to Section IX.
- If using **M** filtration, (all Bin #s), go to Section VIII.

**VII. CFE & IFE Performance Option-- C or D filtration using Bin 2 or higher**

(14) Was the **CFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Yes

(15) Was the **IFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Yes

(16) Was the **IFE** turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

No

Systems with C filtration using Bin 2 source only: If the answer is "Yes" to Q14 & 15 and "No" to Q 16 go to section X. All others, go to Section IX.

**VIII. Membrane Filtration Integrity Testing**

(17) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

Select

(18) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

Select

If the answer to either question is **"YES"**,go to Section IX. All other systems, go to Section X.

**IX. Microbial Toolbox Monthly Operational Report, Form # 3800-FM-LT2**

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were met for the month:

- PWS with C filtration not meeting CFE & IFE Performance criteria in section VII,
- PWS with M filtration using any Bin source and answering "Yes" to Q 17 or Q18,
- PWS with D, S, E, or O filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with C filtration using a Bin 3 or Bin 4 source.

**X. Verification**

By signing this form you are certifying that the information contained herein is true and accurate.
Approved by: Date:

Submit Cancel

SDWA-1 SDWA-4 SDWA-4U SDWA-5 SDWA-PbCu SDWA-S Crypto Main Menu Exit

## CASE STUDY #4: THE MEMBRANE FILTRATION WATER AUTHORITY

### Background

The Membrane Filtration Water Authority (PWSID 3649728) has two surface water sources that supply water to a membrane filtration plant (Plant ID 300). The filtration plant has four individual filters operating continuously and serving one entry point to the distribution system. The system serves 15,000 people. Source ID 001 is a "Bin 1" source and Source ID 002 is a "Bin 2" source. Both sources were in use during the month.

### Requirements

The Membrane Filtration Water Authority is required to:

- Measure and record the turbidity of the CFE at least once every 4 hours.
- Continuously monitor the turbidity of each IFE.
- Record the turbidity level of each individual filter every 15 minutes.
- Conduct grab sampling/manual recording every 4 hours in the event of monitoring or recording equipment failure for a period not to exceed 14 days.
- Conduct direct and indirect integrity tests of each filter.

### Events

During the month of May 2014, the filter plant operated continuously and as expected (i.e. they passed all pressure decay tests (PDT), and there were no indirect integrity exceedances). The total number of CFE measurements required for May is 186. All of these 186 routine CFE turbidity measurements met the Performance Level Requirement (PLR) of 0.3 NTU.

### SDWA-5 Form

The Case Study #4 Screenshot on the following pages shows a correctly completed SDWA-5 form. In the event of IFE equipment failure, systems must conduct manual recording for IFE turbidity measurements for a period not to exceed 14 days.

*Section I*

This is general system information.

*Section II*

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.3 NTU turbidity PLR (186) by the total number of measurements taken (186) and multiply that by 100 percent.

*Section III*

"No" is selected for Question #8 because none of the CFE measurements exceeded 1 NTU. Therefore, an SDWA-1 form does NOT need to be completed for this month.

*Section IV*

Question #9 is left blank for membrane filters.

Skip to Section V.

*Section V*

Question #12 is left blank for membrane filters.

The following sections relate to the LT2 ESWTR Reporting:

*Section VI*

For Question #13, "BIN 2" is selected because the highest Bin source is a "BIN 2" and both sources were used throughout the month. For all membrane filtration systems "M" (all Bin #s), skip Section VII and go to Section VIII.

*Sections VII*

This section does not pertain; skip to Section VIII.

*Sections VIII*

Because the plant did not have a direct or indirect filter exceedance, answer "No" to Question #17 (Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month) and Question #18 (Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month), skip to Section X because the answer for both questions is "No".

*Sections IX*

This section does not pertain to this example, but if either question had been answered "Yes", submission of a Monthly Operating Report (MOR) form #3900-FM-BSDW0517 would be required.

*Section X*

Complete Section X and submit electronically.

**Case Study #4, Screenshot**

Department of Environmental Protection

Bureau of Safe Drinking Water | E-Government Application for Drinking Water Program | Operations and Monitoring Division

**WARNING!** Closing the screen, moving between forms, or clicking the Browser BACK button without first Submitting data you've entered could result in lost data. Please click at the bottom of the screen to save your data to the DEP Official Record.

## SAFE DRINKING WATER ACT

## SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

**I. General Plant Information**

PWS Name: The Membrane Filtration Water Authority

| (1) PWSID | (2) Trans | (3) Filter Plant ID | (4) Report Month |
|---|---|---|---|
| 3649728 | 09 | 300 | 050114 MMDDYY (1st of the month) |

**II. Combined Filter Effluent Turbidity** (All filtered systems)

| (5) Plant Operation Hours | Combined Filter Effluent Turbidity | | (7) Plant Performance Level (xx.x%) |
|---|---|---|---|
| | (6A) Number of Measurements | (6B) Number of Results Meeting PLR | |
| 744 | 186 | 186 | 6B X 100/6A = 100 % |

| Filter Type Keys for PLRs | | | Turbidity Performance Level Requirements (NTUs) |
|---|---|---|---|
| C = Conventional | D = Direct | M = Membrane | <=0.3 for C, D, or O |
| S = Slow sand | E = DE | O = Other | <=1.0 for S or E |

**III. Combined Filter Effluent Turbidity Exceedance Reporting** (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level? No

Maximum Allowable Turbidity (NTUs)
1 for C, D, M, or O
2.0 for S or E

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See SDWA-1 instructions for reporting CFE turbidity measurements.)

**IV. Individual Filter Turbidity** (Conventional or direct filters only)

(9) Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minutes? Select

Yes (Go directly to Section V)
No (Proceed to question #10)

(10) Was continuous monitoring or recording interrupted on any filter due to a failure in equipment? Select

Yes (Proceed to question #11)
No (Go directly to Section V)

(11) Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving >= 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment? Select

**V. Individual Filter Turbidity Exceedance Reporting** (Conventional or direct filters only)

(12) Did any individual filter measurements exceed trigger level #1 or trigger level #2? Select

Trigger Level #1. Turbidity >1.0 NTU in 2 consecutive 15 minute measurements.
Trigger Level #2. Turbidity >0.5 NTU in 2 consecutive 15 minute measurements 4 hours after filter returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters in this plant, regardless of the reason. Record all measurements on an SDWA-1 form. (See SDWA-1 instructions for reporting individual filter turbidity measurements.)

**VI. LT2ESWTR Reporting (All systems with filtration)**

(13) What was the highest Bin source used during the month?

Bin 2

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **C, D, S, E** or **O** filtration, go to Section X.
- If Bin 2 or higher using **C** or **D** filtration, go to section VII.
- If Bin 2 or higher and using **S, E,** or **O** filtration, go to Section IX.
- If using **M** filtration, (all Bin #s), go to Section VIII.

**VII. CFE & IFE Performance Option-- C or D filtration using Bin 2 or higher**

(14) Was the **CFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(15) Was the **IFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(16) Was the **IFE** turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

Select

Systems with C filtration using Bin 2 source only: If the answer is "Yes" to Q14 & 15 and "No" to Q 16 go to section X. All others, go to Section IX.

**VIII. Membrane Filtration Integrity Testing**

(17) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

No

(18) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

No

If the answer to either question is **"YES"**,go to Section IX. All other systems, go to Section X.

**IX. Microbial Toolbox Monthly Operational Report, Form # 3800-FM-LT2**

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were met for the month:

- PWS with C filtration not meeting CFE & IFE Performance criteria in section VII,
- PWS with M filtration using any Bin source and answering "Yes" to Q 17 or Q18,
- PWS with D, S, E, or O filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with C filtration using a Bin 3 or Bin 4 source.

**X. Verification**

By signing this form you are certifying that the information contained herein is true and accurate.
Approved by: Date:

Submit Cancel

SDWA-1 SDWA-4 SDWA-4U SDWA-5 SDWA-PbCu SDWA-S Crypto Main Menu Exit

## Appendix I: Department of Environmental Protection (DEP) and County Health Department (CHD) Offices Contact List (revised December 2014)

| County | PWS ID# 1st 3 Digits | Address | Telephone Number |
|---|---|---|---|
| Adams | 701 | 150 Roosevelt Ave., Ste. 200, York, PA 17401 | 717-771-4481 |
| * Allegheny | 502 | Allegheny Co. Health Dept., PDWWM, Bldg. 5, 3901 Penn Ave., Pittsburgh, PA 15224 | 412-578-8047 |
| Armstrong | 503 | 131 Broadview Rd, New Stanton, PA 15672 | 724-925-5500 |
| Beaver | 504 | 715 15th St., Beaver Falls, PA 15010 | 724-847-5270 |
| Bedford | 405 | 3001 Fairway Dr., Altoona, PA 16602-4473 | 814-946-7292 |
| Berks | 306 | 1005 Cross Roads Blvd., Reading, PA 19605 | 610-916-0100 |
| Blair | 407 | 3001 Fairway Dr., Altoona, PA 16602-4473 | 814-946-7292 |
| Bradford | 208 | 600 Gateway Dr., Mansfield, PA 16933 | 570-662-0830 |
| Bucks | 109 | 2 E. Main St., Norristown, PA 19401 | 484-250-5900 |
| Butler | 510 | 121 N. Mill St., New Castle, PA 16101 | 724-656-3160 |
| Cambria | 411 | 286 Industrial Park Rd., Ebensburg, PA 15931-4119 | 814-472-1900 |
| Cameron | 612 | 186 Enterprise Dr., Philipsburg, PA 16866 | 814-342-8200 |
| Carbon | 313 | 5 W. Laurel Blvd., Pottsville, PA 17901 | 570-621-3118 |
| Centre | 414 | 186 Enterprise Dr., Philipsburg, PA 16866 | 814-342-8200 |
| Chester | 115 | 2 E. Main St., Norristown, PA 19401 | 484-250-5900 |
| Clarion | 616 | 1st Floor, White Memorial Bldg., 310 Best Ave., Knox, PA 16232 | 814-797-1191 |
| Clearfield | 617 | 186 Enterprise Dr., Philipsburg, PA 16866 | 814-342-8200 |
| Clinton | 418 | 186 Enterprise Dr., Philipsburg, PA 16866 | 814-342-8200 |
| Columbia | 419 | 309 N. 5th St., Ste. D, Sunbury, PA 17801 | 570-988-5500 |
| Crawford | 620 | 230 Chestnut St., Meadville, PA 16335 | 814-332-6899 |
| Cumberland | 721 | 150 Roosevelt Ave., Ste. 200, York, PA 17401 | 717-771-4481 |
| Dauphin | 722 | 909 Elmerton Ave., Harrisburg, PA 17110 | 717-705-4708 |
| Delaware | 123 | 2 E. Main St., Norristown, PA 19401 | 484-250-5900 |
| Elk | 624 | 321 N. State St., North Warren, PA 16365 | 814-723-3273 |
| **Erie | 625 | DEP, 321 North State St., North Warren, PA 16365<br>Erie Co. Health Dept., 606 W. 2nd St, Erie, PA 16507 | 814-723-3273<br>814-451-6700 |
| Fayette | 526 | 25 Technology Dr., California Technology Park, Coal Center, PA 15423 | 724-769-1100 |
| Forest | 627 | 321 N. State St., North Warren, PA 16365 | 814-723-3273 |
| Franklin | 728 | 150 Roosevelt Ave., Ste. 200, York, PA 17401 | 717-771-4481 |
| Fulton | 429 | 150 Roosevelt Ave., Ste. 200, York, PA 17401 | 717-771-4481 |
| Greene | 530 | 25 Technology Dr., California Technology Park, Coal Center, PA 15423 | 724-769-1100 |
| Huntingdon | 431 | 3001 Fairway Dr., Altoona, PA 16602-4473 | 814-946-7292 |
| Indiana | 532 | 286 Industrial Park Rd., Ebensburg, PA 15931-4119 | 814-472-1900 |
| Jefferson | 633 | 1st Floor, White Memorial Bldg., 310 Best Ave, Knox, PA 16232 | 814-797-1191 |
| Juniata | 434 | 909 Elmerton Ave., Harrisburg, PA 17110 | 717-705-4708 |

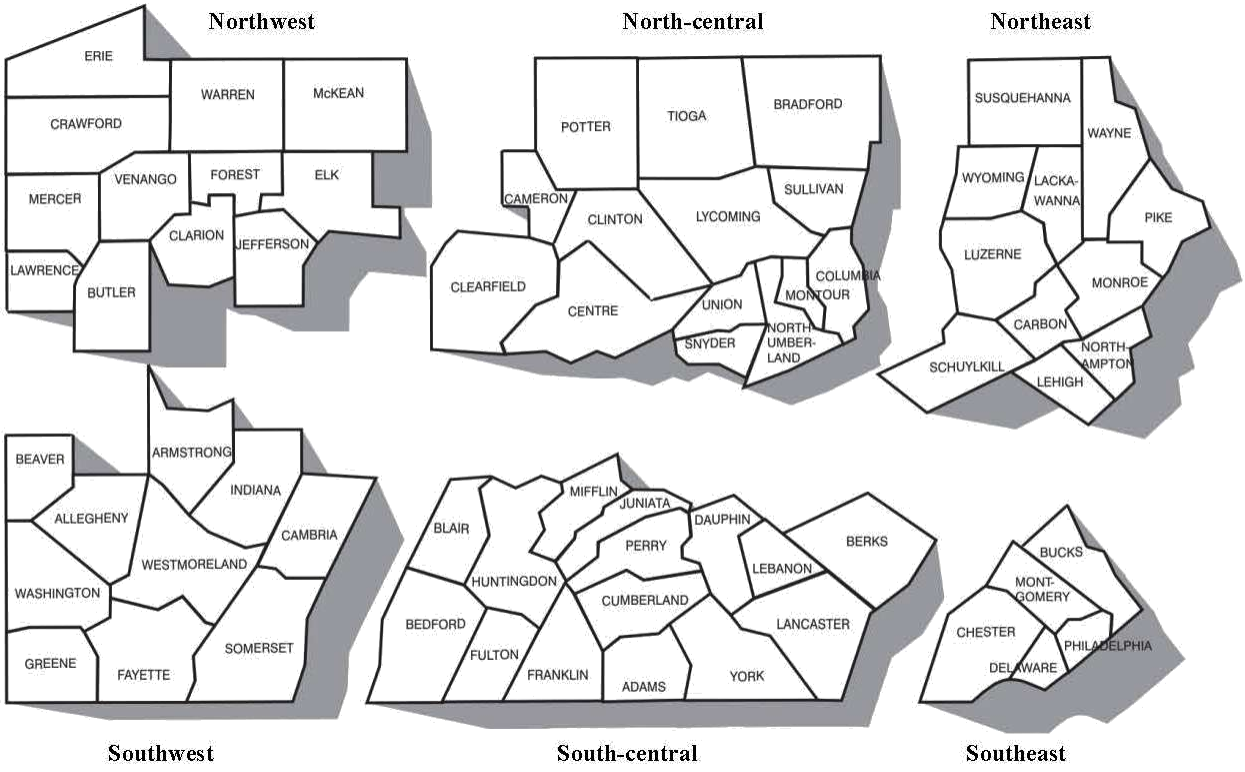
* = County Health Department

** = Transient Noncommunity Water Systems (TNCWS) are under the County Health Department.

## Appendix I: Department of Environmental Protection (DEP) and County Health Department (CDH) Offices Contact List (revised December 2014), continued

| County | PWS ID# 1st 3 Digits | Address | Telephone Number |
|---|---|---|---|
| Lackawanna | 235 | 321 Spruce St., Ste. 300, Scranton, PA 18503 | 570-963-4521 |
| Lancaster | 736 | 1661 Old Philadelphia Pike, Lancaster, PA 17602 | 717-299-7601 |
| Lawrence | 637 | 121 N. Mill St., New Castle, PA 16101 | 724-656-3160 |
| Lebanon | 738 | 1661 Old Philadelphia Pike, Lancaster, PA 17602 | 717-299-7601 |
| Lehigh | 339 | 4530 Bath Pike, Bethlehem, PA 18017 | 610-861-2070 |
| Luzerne | 240 | 2 Public Sq., Wilkes-Barre, PA 18701-1915 | 570-826-2511 |
| Lycoming | 441 | 208 W. 3rd St., Ste. 101, Williamsport, PA 17701 | 570-327-3490 |
| McKean | 642 | 321 N. State St., North Warren, PA 16365 | 814-723-3273 |
| Mercer | 643 | (South) 121 N. Mill St., New Castle, PA 16101 | 724-656-3160 |
| | | (North) 230 Chestnut St., Meadville, PA 16335 | 814-332-6899 |
| Mifflin | 444 | 3001 Fairway Dr., Altoona, PA 16602-4473 | 814-946-7292 |
| Monroe | 245 | 2174B Rte. 611, Swiftwater, PA 18370 | 570-895-4040 |
| Montgomery | 146 | 2 E. Main St., Norristown, PA 19401 | 484-250-5900 |
| Montour | 447 | 309 N. 5th St., Ste. D, Sunbury, PA 17801 | 570-988-5500 |
| Northampton | 348 | 4530 Bath Pike, Bethlehem, PA 18017 | 610-861-2070 |
| Northumberland | 449 | 309 N. 5th St., Ste. D, Sunbury, PA 17801 | 570-988-5500 |
| Perry | 750 | 909 Elmerton Ave., Harrisburg, PA 17110 | 717-705-4708 |
| Philadelphia | 151 | 2 E. Main St., Norristown, PA 19401 | 484-250-5900 |
| Pike | 252 | 2174B Rte. 611, Swiftwater, PA 18370 | 570-895-4040 |
| Potter | 653 | 600 Gateway Dr., Mansfield, PA 16933 | 570-662-0830 |
| Schuylkill | 354 | 5 W. Laurel Blvd., Pottsville, PA 17901 | 570-621-3118 |
| Snyder | 455 | 309 N. 5th St., Ste. D, Sunbury, PA 17801 | 570-988-5500 |
| Somerset | 456 | 286 Industrial Park Rd., Ebensburg, PA 15931-4119 | 814-472-1900 |
| Sullivan | 257 | 600 Gateway Dr., Mansfield, PA 16933 | 570-662-0830 |
| Susquehanna | 258 | 321 Spruce St., Ste. 300, Scranton, PA 18503 | 570-963-4521 |
| Tioga | 259 | 600 Gateway Dr., Mansfield, PA 16933 | 570-662-0830 |
| Union | 460 | 309 N. 5th St., Ste. D, Sunbury, PA 17801 | 570-988-5500 |
| Venango | 661 | 230 Chestnut St., Meadville, PA 16335 | 814-332-6899 |
| Warren | 662 | 321 N. State St., North Warren, PA 16365 | 814-723-3273 |
| Washington | 563 | 715 15th St., Beaver Falls, PA 15010 | 724-847-5270 |
| Wayne | 264 | 321 Spruce St., Ste. 300, Scranton, PA 18503 | 570-963-4521 |
| Westmoreland | 565 | 131 Broadview Rd, New Stanton, PA 15672 | 724-925-5550 |
| Wyoming | 266 | 2 Public Sq., Wilkes-Barre, PA 18701-1915 | 570-826-2511 |
| York | 767 | 150 Roosevelt Ave., Ste. 200, York, PA 17401 | 717-771-4481 |
| Out of State | 999 | PA DEP, Bureau of Safe Drinking Water, Division of Operations & Monitoring, P.O. Box 8467, Harrisburg, PA 17105-8467 | 717-772-4018 |

## Appendix II: Emergency Phone Numbers for the Department of Environmental Protection Regional Offices




## DEP Regional Offices

**Northwest Region**
230 Chestnut St.
Meadville, PA 16335-3481
Main Telephone: 814-332-6945
24-Hour Emergency: 800-373-3398

***Counties:*** *Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren*

**Southwest Region**
400 Waterfront Drive
Pittsburgh, PA 15222-4745
Main Telephone: 412-442-4000
24-Hour Emergency: 412-442-4000

***Counties:*** *Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland*

**North-central Region**
208 W. Third St., Suite 101
Williamsport, PA 17701-6448
Main Telephone: 570-327-3636
24-Hour Emergency: 570-327-3636

***Counties:*** *Bradford, Cameron, Clearfield, Centre, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union*

**South-central Region**
909 Elmerton Ave.
Harrisburg, PA 17110-8200
Main Telephone: 717-705-4700
24-Hour Emergency: 866-825-0208

***Counties:*** *Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York*

**Northeast Region**
2 Public Square
Wilkes-Barre, PA 18701-1914
Main Telephone: 570-826-2511
24-Hour Emergency: 570-826-2511

***Counties:*** *Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming*

**Southeast Region**
2 E. Main St.
Norristown, PA 19401-4915
Main Telephone: 484-250-5900
24-Hour Emergency: 484-250-5900

***Counties:*** *Bucks, Chester, Delaware, Montgomery and Philadelphia*

# Appendix III: Monthly Operational Report Form (MOR)

3900-FM-BSDW0517 Rev. 11/2014

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

## LT2 ESWTR TOOLBOX
## MONTHLY OPERATIONAL REPORT FORM

### I. General Information

| Public Water System Name: | | | Reporting Month/Year: | | |
|---|---|---|---|---|---|
| PWSID #: | Plant ID #: | | Plant Name: | | |
| Contact Name: | | | Phone #: | | |
| DEP Source ID# | Source Name | LT2 Bin Classification | DEP Source ID# | Source Name | LT2 Bin Classification |
| | | | | | |
| | | | | | |
| | | | | | |

Note: Systems with multiple sources or with the potential to switch between multiple sources should report all sources used to supply the treatment plant during this reporting month.

### II. LT2 ESWTR Summary

**Bin 1 sources using alternative treatment:** log removal/inactivation needed: logs

**Bin 2 or higher sources:** additional log treatment credits needed: logs

**Toolbox Options Available;** check all options used during the reporting month:

Complete the applicable form(s)*:

☐ Membrane Filtration - Removal credits claimed: logs (3900-FM-BSDW0158b; 3900-FM-BSDW0162b)

☐ UV - Inactivation credits claimed: logs (3900-FM-BSDW0483 through 3900-FM-BSDW0489)

☐ Chlorine Dioxide - Inactivation credits claimed: logs (Form not required)

☐ Ozone - Inactivation credits claimed: logs (Form not required)

☐ Bag / Cartridge Filters - Removal credits claimed: logs (Form not required)

☐ Other - Treatment credits claimed: logs (Form not required)

List Option(s):

**Did the plant achieve the total log treatment required for the month?** ☐ Yes ☐ No

**Does the System have an approved Watershed Control Plan?** ☐ Yes ☐ No

### III. Verification

| Responsible Official's Name (printed): | |
|---|---|
| Responsible Official's Signature: | Date: |

* To find the form on elibrary go to: www.elibrary.dep.state.pa.us/dsweb/HomePage. Enter the document number into the "Search".

3900-FM-BSDW0130 Rev. 5/2013

pennsylvania
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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

# Safe Drinking Water Act SDWA-5
# Monthly Filter Plant Performance

## I. General Plant Information

**PWS Name:**

**Address:**

**Phone:**

| 1 PWSID | 2 Trans | 3 Filter Plant ID# | Filter Plant Name | 4 Report Month MMYY |
|---|---|---|---|---|
| | 09 | | | |

## II. Combined Filter Effluent Turbidity (All filtered systems)

| 5 Plant Operation Hours | Combined Filter Effluent Turbidity | | 7 Plant Performance Level (xx.x%) |
|---|---|---|---|
| | 6A Number of Measurements | 6B Number of Results Meeting PLR | 6B X 100 / 6A = .% |
| | | | |

Filter (Plant) Type Codes

C = Conventional D = Direct M = Membrane
S = Slow sand E = DE O = Other

Turbidity Performance Level Requirements (NTUs)

≤0.3 for C, D, M, or O
≤1.0 for S or E

## III. Combined Filter Effluent Turbidity Exceedance Reporting (All filtered systems)

8 Did any results exceed the maximum allowable turbidity level? ☐ Yes ☐ No

Maximum Allowable Turbidity (NTUs)
1 for C, D, M, or O
2.0 for S or E

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See SDWA-1 instructions for reporting CFE turbidity measurements.)

## IV. Individual Filter Turbidity (Conventional or direct filters only)

9. Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minutes? ☐ Yes (Go directly to Section V) ☐ No (Proceed to question #10)

10. Was continuous monitoring or recording interrupted on any filter due to a failure in equipment? ☐ Yes (Proceed to question #11) ☐ No (Go directly to Section V)

11. Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving ≥ 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment? ☐ Yes ☐ No

## V. Individual Filter Turbidity Exceedance Reporting (Conventional or direct filters only)

12. Did any individual filter measurements exceed trigger level #1 or trigger level #2? ☐ Yes ☐ No

Trigger Level #1. Turbidity >1.0 NTU in 2 consecutive 15 minute measurements.
Trigger Level #2. Turbidity >0.5 NTU in 2 consecutive 15 minute measurements 4 hours after filter returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters in this plant, regardless of the reason. Record all measurements on an SDWA-1 form. (See SDWA-1 instructions for reporting individual filter turbidity measurements.

Please see the reverse side

## VI. LT2ESWTR Reporting (All systems with filtration)

13. What was the highest Bin source used during the month?

☐ Bin 1 ☐ Bin 2 ☐ Bin 3 ☐ Bin 4

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **C, D, S, E** or **O** filtration, go to Section X.
- If Bin 2 or higher using **C** or **D** filtration, go to section VII.
- If Bin 2 or higher and using **S, E,** or **O** filtration, go to Section IX.
- If using **M** filtration, (all Bin #s), go to Section VIII.

## VII. CFE & IFE Performance Option – C or D filtration using Bin 2 or higher

14. Was the CFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

☐ Yes ☐ No

15. Was the IFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

☐ Yes ☐ No

16. Was the IFE turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

☐ Yes ☐ No

Systems with C filtration using Bin 2 source only: If the answer is “Yes” to Q14 & 15 and “No” to Q16 go to Section x. All others, go to Section IX.

## VIII. Membrane Filtration Integrity Testing

17. Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

☐ Yes ☐ No

18. Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

☐ Yes ☐ No

If the answer to either question is “**YES**”, go to Section IX. All other systems, go to Section X.

## IX. Microbial Toolbox Monthly Operational Report, Form #3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were met for the month:

- PWS with C filtration not meeting CFE & IFE Performance criteria in Section VII,
- PWS with M filtration using any Bin source and answering “Yes” to Q17 or Q18,
- PWS with D, S, E, or O filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with C filtration using a Bin 3 or Bin 4 source.

## X. Verification

By signing this form you are certifying that the information contained herein is true and accurate.

Approved by: _____ Date: _____

3900-FM-BSDW0145 3/2013

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**COMMONWEALTH OF PENNSYLVANIA**
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**
**BUREAU OF SAFE DRINKING WATER**

# MONTHLY FILTER PLANT PERFORMANCE

**SDWA-5 CORRECTION**

Reason for Correction:

White Areas: Enter the complete information with the correct information.

Shaded Areas: Enter the information which was reported incorrectly. Enter only the data which needs to be changed.

## I. General Plant Information

| **PWS Name:** | **Reported PWS Name:** |
|---|---|
| **Address:** | **Address:** |
| **Phone:** | **Phone:** |

| | **PWSID** | **Filter Plant: ID#** | **Name** | **Report Month** (MMDDYY) |
|---|---|---|---|---|
| correct | | | | |
| submitted | | | | |

## II. Combined Effluent Turbidity (All filtered systems)

| | **Plant Operation Hours** | **Combined Effluent Turbidity** | | **Plant Performance Level (xx.x%)** |
|---|---|---|---|---|
| | | **Number of Measurements** | **Number of Results Meeting PLR** | |
| correct | | | | **6B X 100 / 6A = . %** |
| submitted | | | | **6B X 100 / 6A = . %** |

## III. Combined Effluent Turbidity Exceedance Reporting

| | correct | submitted |
|---|---|---|
| Did any results exceed the maximum allowable turbidity level? | ☐ Yes ☐ No | ☐ Yes ☐ No |

## IV. Individual Filter Turbidity (Conventional or direct plants only)

| | | |
|---|---|---|
| Was individual filter monitoring conducted continuously on all operating filters during the month, and were the results recorded at least every 15 minutes? (If Yes then go directly to Section V. If No then proceed to next question.) | ☐ Yes ☐ No | ☐ Yes ☐ No |
| Was continuous monitoring or recording interrupted on any filter due to a failure in equipment? (If Yes then proceed to next question. If No then go directly to Section V) | ☐ Yes ☐ No | ☐ Yes ☐ No |
| Did you conduct grab sampling or manual recording every 4 hours in lieu of continuous monitoring or recording for a period not exceeding 5 working days (for PWSs serving ≥ 10,000) or 14 days (for PWSs serving < 10,000) following failure of equipment? | ☐ Yes ☐ No | ☐ Yes ☐ No |

## V. Individual Filter Turbidity Exceedance Reporting (Conventional or direct plants only)

| | | |
|---|---|---|
| Did any individual filter measurements exceed trigger level #1 or trigger level #2? | ☐ Yes ☐ No | ☐ Yes ☐ No |

| VI. LT2ESWTR Reporting (All systems with filtration) | | | | |
|---|---|---|---|---|
| What was the highest Bin source used during the month? | | | | |
| **Correct** | ☐ **Bin 1** | ☐ **Bin 2** | ☐ **Bin 3** | ☐ **Bin 4** |
| **Submitted** | ☐ **Bin 1** | ☐ **Bin 2** | ☐ **Bin 3** | ☐ **Bin 4** |

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **C, D, S, E** or **O** filtration, go to Section X.
- If Bin 2 or higher using **C** or **D** filtration, go to section VII.
- If Bin 2 or higher and using **S**, **E**, or **O** filtration, go to Section IX.
- If using **M** filtration, (all Bin #s), go to Section VIII.

| VII. CFE & IFE Performance Option-- C or D filtration using Bin 2 or higher | correct | submitted |
|---|---|---|
| Was the **CFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month? | ☐ Yes ☐ No | ☐ Yes ☐ No |
| Was the **IFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month? | ☐ Yes ☐ No | ☐ Yes ☐ No |
| Was the **IFE** turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month? | ☐ Yes ☐ No | ☐ Yes ☐ No |

Systems with C filtration using Bin 2 source only: If the answer is "Yes" to Q14 & 15 and "No" to Q 16 go to section X. All others go to Section IX.

| VIII. Membrane Filtration Integrity Testing | correct | submitted |
|---|---|---|
| Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month? | ☐ Yes ☐ No | ☐ Yes ☐ No |
| Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month? | ☐ Yes ☐ No | ☐ Yes ☐ No |

If the answer to either question is "YES", go to Section IX. All other systems, go to Section X.

**IX. Microbial Toolbox Monthly Operational Report, Form # 3800-FM-LT2**

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were met for the month:

- PWS with C filtration not meeting CFE & IFE Performance criteria in section VII,
- PWS with M filtration using any Bin source and answering "Yes" to Q 17 or Q18,
- PWS with D, S, E, or O filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with C filtration using a Bin 3 or Bin 4 source.

**X. Verification**

By signing this form you are certifying that the information contained herein is true and accurate.

Approved by: _____ Date: _____

3900-FM-BSDW0143 3/2013

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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# BACTERIOLOGICAL / RESIDUAL DISINFECTANT / TURBIDITY / DBP ANALYSIS

**SDWA-1 CORRECTION**

Reason for Correction: _____

_____

_____

| **White Areas: Enter the complete information with the correct information.** | **Shaded Areas: Enter the information which was reported incorrectly. Enter only the data which needs to be changed.** | |
|---|---|---|
| PWS Name: | Reported PWS Name: | **CONTAMINANT NAME** |
| Address: _____ | Address: _____ | |
| Phone: | Phone: | |
| **PWS ID:** | **PWS ID:** | **CONTAM ID:** / **CONTAM ID:** |

| | **ANALYSIS** | | | **LOCATION ID 1** | **LOCATION ID 2** | **SAMPLE** | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **METHOD** | **RESULT (Incl. Decimal)** | **MMDDYY** | **(Loc, EP or Plant)** | **(Individual Filter)** | **MMDDYY** | **TYPE** | **TIME** | **SAMPLE ID** |
| **CORRECT DATA** | | | | | | | | | |
| **SUBMITTED DATA** | | | | | | | | | |
| **CORRECT DATA** | | | | | | | | | |
| **SUBMITTED DATA** | | | | | | | | | |
| **CORRECT DATA** | | | | | | | | | |
| **SUBMITTED DATA** | | | | | | | | | |
| **CORRECT DATA** | | | | | | | | | |
| **SUBMITTED DATA** | | | | | | | | | |

LAB. NAME: _____ PHONE: _____

APPROVED BY: _____ DATE: _____

**LAB ID**