

ESSENTIALS OF SURFACE WATER TREATMENT TRAINING

Exercise #6: Filling out the monthly surface water report

Example #1: Conventional or direct filter plant

Turbidity

1. Use the data in the graph to record the 4-hour daily turbidities on the first day of the month of the Conventional/Direct Filtration monthly reporting form.
2. What number should be entered in the “Highest Reading of the Day (NTU)” column? _____
3. Let’s say your plant runs 24 hours a day and you have turbidity readings filled in for every 4-hour interval for all 31 days of the month. How many readings could you have that were > 0.3 NTU? (Hint: 95% of readings should be ≤ 0.3 NTU) _____
4. What should you do if you answer “no” to the turbidity question “All readings ≤ 1 NTU?” on the bottom of the form? _____
 - a) Call the state
 - b) Issue a boil water notice
 - c) Issue a public notice within 30 days
 - d) Both a & c
5. What should you do if you answer “no” to the turbidity question “All readings $<$ IFE triggers?” on the bottom of the form? _____
 - a) Call the state
 - b) Issue a boil water notice
 - c) Issue a public notice within 30 days
 - d) Both a & c

CT Calculations (assume 2.5-log conventional plant)

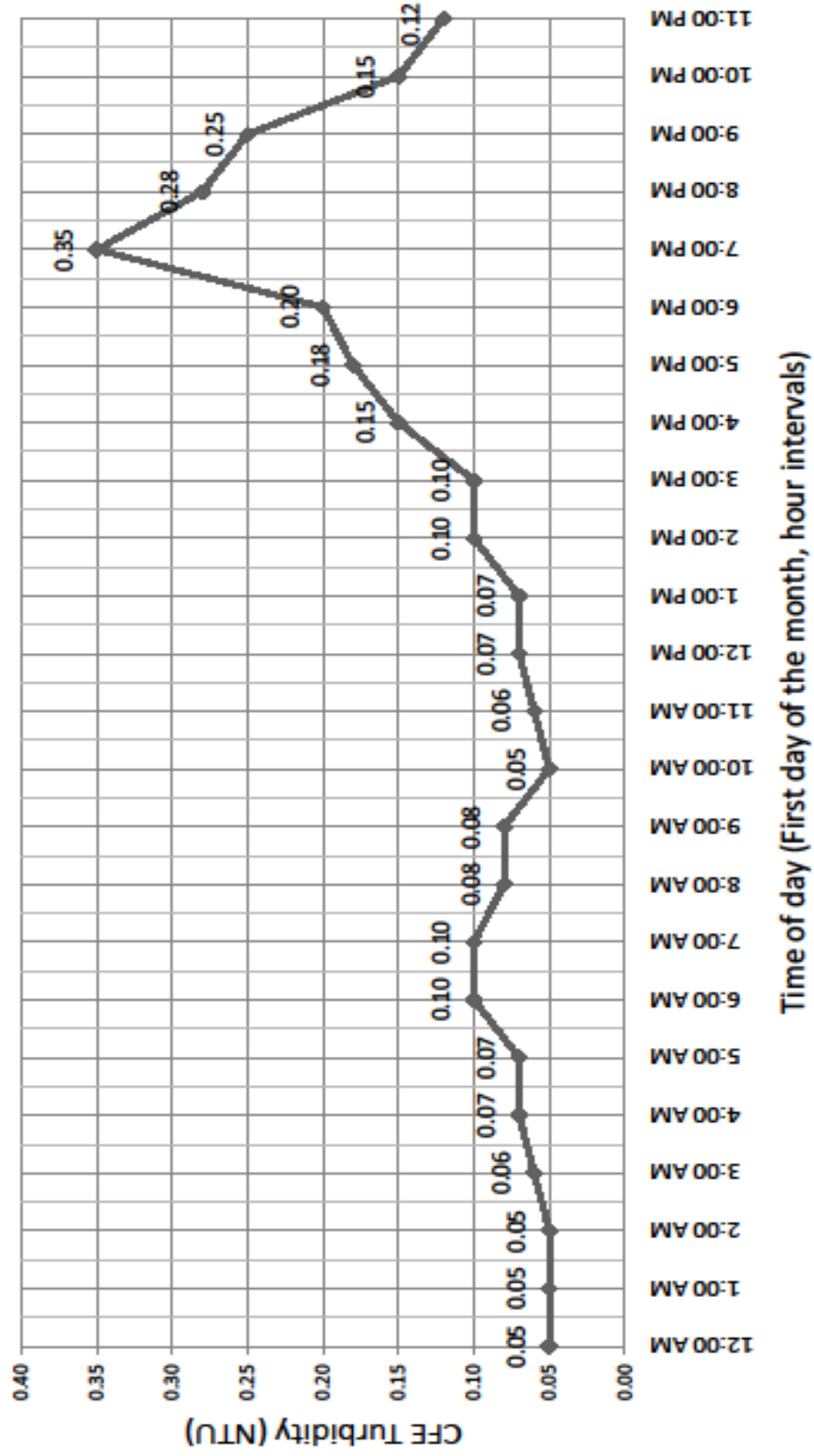
1. Use the following parameters to calculate the CTs achieved at the plant and fill it in on the form on first day of the month:
 - Free chlorine residual: 0.6 ppm
 - Contact time: 100 minutes
2. Use the following parameters to calculate the CTs required using the EPA tables from Exercise 5 and fill it in on the form:
 - Temp: 12°C
 - pH: 7.2
3. Are CTs met at the plant for this day? _____
4. Let’s say the Peak Hourly Demand Flow for the day was 2000 gpm. If the Peak Hourly Demand Flow during the tracer study was 1750 gpm, is this a problem? Why or why not? _____

5. What should you do if you answer “no” to either of the CT questions on the turbidity side of form?

- “CTs met at all times?” _____
 - a) Call the state
 - b) Issue a boil water notice
 - c) Issue a public notice within 30 days
 - d) Both a & c

- “Residual at $EP \geq 0.2$ ppm at all times?” _____
 - a) Call the state
 - b) Issue a boil water notice
 - c) Issue a public notice within 30 days
 - d) Both a & c

Conventional/Direct TP: Turbidity vs. Time



OHA - Drinking Water Program – Turbidity Monitoring Report Form County: Conventional or Direct Filtration

System Name:	ID #:	WTP-:	Month/Year:
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DAY	12 AM [NTU]	4 AM [NTU]	8 AM [NTU]	NOON [NTU]	4 PM [NTU]	8 PM [NTU]	Highest Reading of the Day ¹ [NTU]
1							
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31							

Conventional or Direct Filtration	Monthly Summary (Answer Yes or No)	
95% of the 4-hour turbidity readings ≤ 0.3 NTU? Yes / No	CT's met every day? (see back) Yes / No	All Cl ₂ residuals at entry point ≥ 0.2 mg/l? Yes / No
All the 4-hour turbidity readings ≤ 1 NTU? Yes / No		
All turbidity readings < IFE ² triggers? Yes / No ²		
Notes:	PRINTED NAME:	
	SIGNATURE:	DATE:
	PHONE #: ()	CERT #:

¹ Including continuous turbidity data, if applicable, for optimization recording purposes. Compliance values in columns "12 AM" through "8 PM" may not correspond to continuous readings' maximum. ² IFE = Individ. Filter Effl. (OAR 333-061-0040(1)(e)(B&C))

OHA - Drinking Water Program – Surface Water Quality Data Form - *Giardia* Inactivation

System Name:	ID #:	WTP-:	Month/Year:	Log Requirement (Circle One): 0.5 / 1.0
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Date / Time	Minimum Cl ₂ Residual at 1 st User (C) ³	Contact Time (T)	Actual CT	Temp	pH	Required CT	CT Met? ³	Peak Hourly Demand Flow
	[ppm or mg/L]	[minutes]	C X T	[°C]		Use tables	Yes / No	[GPM]
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³ If Cl₂ at entry point < 0.2 mg/l, OR CT not met, notify DWP by end of next business day.

Example #2: Slow sand, Membrane, or DE filter plant (2-log)

Turbidity

1. Use the data in the graph to record the daily CFE turbidity on the first day of the month of the Slow Sand/Membrane/DE Filtration monthly reporting form. Which 4-hour column should it be recorded in? Why? _____
2. What number should be entered in the “Highest Reading of the Day (NTU)” column? _____
3. Let’s say your plant runs every day and you have turbidity readings filled in once a day for all 31 days of the month. How many readings could you have that were > 1 NTU? (Hint: 95% of readings should be ≤ 1 NTU) _____
4. What should you do if you answer “no” to the turbidity question “All readings ≤ 5 NTU?” on the bottom of the form? _____
 - a) Call the state
 - b) Issue a boil water notice
 - c) Issue a public notice within 30 days
 - d) Both a & c

CT Calculations

1. Use the following parameters to calculate the CTs achieved at the plant and fill it in on the form on first day of the month:
 - Free chlorine residual: 0.3 ppm
 - Contact time: 60 minutes
2. Use the followin parameters to calculate the CTs required using the EPA tables from Exercise 5 and fill it in on the form:
 - Temp: 9°C
 - pH: 7.8
3. Are CTs met at the plant for this day? _____
4. What number should be entered in the “Peak Hourly Demand Flow” column? _____
5. What should you do if you answer “no” to either of the CT questions on the turbidity side of form?
 - “CTs met at all times?” _____
 - a) Call the state
 - b) Issue a boil water notice
 - c) Issue a public notice within 30 days
 - d) Both a & c
 - “Residual at EP ≥ 0.2 ppm at all times?” _____
 - a) Call the state
 - b) Issue a boil water notice
 - c) Issue a public notice within 30 days
 - d) Both a & c

**OHA - Drinking Water Program – Turbidity Monitoring Report Form County:
Slow Sand, Membrane, Diatomaceous Earth Filtration, or Unfiltered Systems**

System Name:	ID #:	WTP-:	Month/Year:
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DAY	12 AM [NTU]	4 AM [NTU]	8 AM [NTU]	NOON [NTU]	4 PM [NTU]	8 PM [NTU]	Highest Reading of the Day ¹ [NTU]
1							
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Slow Sand/Membrane/DE Filtration/Unfiltered	Monthly Summary (Answer Yes or No)	
95% of daily turbidity readings \leq 1 NTU? ² Yes / No All daily turbidity readings \leq 5 NTU? Yes / No	CT's met everyday? (see back) Yes / No	All Cl ₂ residual at entry point \geq 0.2 mg/l? Yes / No
Notes:	PRINTED NAME:	
	SIGNATURE:	DATE:
	PHONE #: ()	CERT #:

² Including continuous turbidity data, if applicable, for optimization recording purposes. Compliance values in columns "12 AM" through "8 PM" may not correspond to continuous readings' maximum. ² Filtered systems only.

OHA - Drinking Water Program – Surface Water Quality Data Form

System Name:	ID #:	WTP-:	Month/Year:
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Date / Time	Minimum Cl ₂ Residual at 1 st User (C) ³	Contact Time (T)	Actual CT	Temp	pH	Required CT	CT Met? ³	Peak Hourly Demand Flow
	[ppm or mg/L]	[minutes]	C X T	[°C]		Use tables	Yes / No	[GPM]
1 /								
2 /								
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9 /								
10 /								
11 /								
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³ If Cl₂ at entry point < 0.2 mg/l OR CT not met, notify DWP by end of next business day. Revised February 2012
 Download form at: public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Monitoring/Documents/turb-alt-unfiltered.pdf

Slow Sand/Membrane/DE TP: Turbidity vs. Time vs. Flow

