

Texas Commission on Environmental Quality

CHECKLIST WORKSHEET

PWS FOCUS DATA AUDIT

Regulating Entity Name

Date :

Additional I D:

Investigator Name:

Item Number	Description	Answer	Citations	Notes
	Records Retention and Availability			
Item Number 1	Description Does the system have the last 12 months of SWMORs available for review?			
		Answer	Citations 290.46(f)(3)(E)	Notes
Item Number	Description Are the SWMORs maintained for a period of 10 years?			
		Answer	Citations 290.46(f)(3)(E)	Notes
Item Number	Description Collect the SWMOR for the current month for review (if partially completed). An electronic file is preferred.			
		Answer	Citations	Notes
Item Number 2	Description Does the system have the last 12 months of daily bench sheets or operator logs available for review?			
		Answer	Citations 290.46(f)(3)	Notes
Item Number	Description Are the bench sheets and/or logs maintained for a period of 3 years?			
		Answer	Citations 290.46(f)(3)	Notes
Item Number	Description Collect the current day's bench sheet for review			
		Answer	Citations 290.46(f)(3)	Notes
Item Number	Description SWMOR Setup, Monthly Preparation, and File Management			
		Answer	Citations	Notes
Item Number 3	Description Is the current month's SWMOR up-to-date or do the operator's wait until the end of the month to fill it out?			
		Answer	Citations	Notes
Item Number	Description Are the SWMORs filled out by an administrative technician and checked by the chief operator at the end of the month?			
		Answer	Citations	Notes
Item Number 4	Description Are there data points entered into future days that have not yet occurred on the current month's SWMOR?			
		Answer	Citations	Notes
Item Number	Description Are there data points entered on the bench sheets or logs that have not yet occurred?			
		Answer	Citations	Notes
Item Number 5	Description Does the Chief Operator complete or QA the SWMOR before signing the report?			
		Answer	Citations	Notes
Item Number 6	Description Do system operators use the most recent computerized electronic version of the TCEQ's SWMOR?			
		Answer	Citations 290.111(h)	Notes
Item Number	Description Do system operators use electronic version of the TCEQ's SWMOR to do daily inactivation ratio calculations?			
		Answer	Citations 290.111(h)	Notes
Item Number	Description Do system operators a different spreadsheet or calculation method to do daily inactivation ratio calculations?			
		Answer	Citations	Notes
Item Number 7	Description Does the water system maintain a clean master copy of the SWMOR electronic file for future use?			

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		Answer	Citations	Notes
Item Number 8	Description	Does the water plant have a backup protection system so that they do not lose electronic files of their SWMORs?		
		Answer	Citations	Notes
Item Number 9	Description	Is the raw water turbidity variable or is it unusually consistent?		
		Answer	Citations	Notes
Item Number 10	Description	Do the process parameters entered into the SWMOR template match the process parameters in the most current approved CT study?		
		Answer	Citations 290.111(h)	Notes
Item Number 11	Description	Do the highest and lowest chlorine/chloramine residual values for each sampling site (D1, D2, D3, etc.) and at the entry point vary less than 0.3 mg/L for each site?		
		Answer	Citations 290.111(h)	Notes
Item Number 12	Description	Is there less than a 5 degrees C change in water temperature over the course of the year?		
		Answer	Citations	Notes
Item Number 13	Description	Does the pH in the disinfection zones vary less than 0.4 pH units? (i.e., is the highest pH value for zone D1 at least 0.4 pH units greater than the lowest pH value for zone D1?)		
		Answer	Citations	Notes
Item Number	Description	Combined Filter Effluent (CFE) Turbidity (Page 2)		
		Answer	Citations	Notes
Item Number 14	Description	Are instruments used to collect CFE turbidity data calibrated and are adequate calibration records available for review?		
		Answer	Citations 290.46(s)(2)(B)	Notes
Item Number 15	Description	If this is an online turbidimeter collecting CFE turbidity data, is the output signal capped? Are the SCADA records (or any other recording instrument records) for CFE turbidity data capped?		
		Answer	Citations 290.111(e)(5)(E)	Notes
Item Number 16	Description	If present, can online instrument displays and recording instrument records be demonstrated to track with each other?		
		Answer	Citations	Notes
Item Number 17	Description	Are the combined filter effluent (CFE) turbidity values skewed? (i.e., are there a disproportionate number of 0.30 NTU entries?)		
		Answer	Citations	Notes
Item Number 18	Description	Examine the monthly CFE turbidity record on page 2 of the SWMOR.		
		Answer	Citations	Notes
Item Number	Description	Confirm; using plant records, the SCADA record, etc.; that the plant was actually on-line during the times when these CFE turbidity events occurred.		
		Answer	Citations	Notes
Item Number 19	Description	Determine if the CFE turbidity entries on the SWMOR(s) are consistent with bench sheets, the SCADA record, the electronic record stored in the turbidimeter, or strip charts, as applicable.		
		Answer	Citations	Notes
Item Number 20	Description	If there are discrepancies between the data records (differences of 20% or more) for any of the three days, choose two more days in previous 12 months of SWMORs (a total of five days).		
		Answer	Citations	Notes
Item Number 21	Description	If there is only one CFE data entry that is not consistent with other records, cite the problem as an "Additional Issue" and notify the PDW so that they can followup if necessary.		
		Answer	Citations	Notes

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Item Number 22	Description	If the CFE readings exceed 1.0 NTU, copy the supporting documents and forward to PDW so that they can issue notices of violation, and/or handle as they determine to be appropriate.
	Answer	
	Citations	290.111(e)(2)(A)
	Notes	
Item Number 23	Description	If there is more than one CFE turbidity reading that differs from other records by 20% or more, copy the supporting documents and forward to PDW so that they can issue notices of violation, and/or initiate a Special Performance Evaluation (SPE), and/or initiate enforcement action, as they determine to be appropriate.
	Answer	
	Citations	
	Notes	
Item Number 24	Description	Are the operators filling out the 6 four-hour CFE turbidity measurements at the right times and only when the plant is treating water?
	Answer	
	Citations	
	Notes	
Item Number	Description	Individual Filter Effluent (IFE) Turbidity (Page 3)
	Answer	
	Citations	
	Notes	
Item Number 25	Description	Are instruments used to collect IFE turbidity data calibrated and are adequate calibration records available for review?
	Answer	
	Citations	290.46(s)(2)(B)
	Notes	
Item Number 26	Description	Are the output signals for the online turbidimeters collecting IFE turbidity data capped? Are the SCADA records (or other recording instrument records) for IFE turbidity data capped?
	Answer	
	Citations	290.111(e)(5)(E)
	Notes	
Item Number 27	Description	If present, can online instrument displays and recording instrument records be demonstrated to track with each other?
	Answer	
	Citations	
	Notes	
Item Number 28	Description	Select three days, lowest IR, highest IFE NTU, and one your choice. Make sure that the plant and the filter can be confirmed to be online for the days chosen. (it's usually good to do at least one day from summer and one day from winter)
	Answer	
	Citations	
	Notes	
Item Number 29	Description	Determine if the maximum daily IFE turbidity readings reported on the SWMORs are consistent with the respective 15-minute recorder readings for that filter on that day. [If the 1.0 NTU and 2.0 NTU IFE turbidity triggers are exceeded, ensure that the maximum daily IFE turbidity reading is "confirmed" (two consecutive 15-minute readings above the trigger)].
	Answer	
	Citations	290.111(e)(2)(A)
	Notes	
Item Number 30	Description	If there are discrepancies between the data records (differences of 20% or more) for more than one of the three days, choose two more filter-days in previous 12 months of SWMORs (a total of five filter-days).
	Answer	
	Citations	
	Notes	
Item Number 31	Description	If there is only one maximum daily IFE data entry that is not consistent with other records, cite the problem as an "Additional Issue" and notify the PDW so that they can follow up if necessary.
	Answer	
	Citations	
	Notes	
Item Number 32	Description	If there is more than one maximum daily IFE turbidity reading that differs from other records by 20% or more, copy the supporting documents and forward to PDW so that they can issue notices of violation, and/or initiate a Special Performance Evaluation (SPE), and/or initiate enforcement action, as they determine to be appropriate.
	Answer	
	Citations	
	Notes	
Item Number 33	Description	Concentration Time/Inactivation Ratio Calculations (Page 4 and 5)
	Answer	
	Citations	
	Notes	

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Item Number 34	Description If present, can online instrument displays and recording instrument records for flow rates, disinfectant residuals, pHs, and temperatures be demonstrated to track with each other?	Answer	Citations	Notes
Item Number 35	Description Select three SWMORs, including the current month, from the previous 12 months (you can use the same days from the CFE/IFE)	Answer	Citations	Notes
Item Number 36	Description Are the values recorded in the Disinfection Process Parameters boxes in the SWMOR consistent with the information contained in Table 2 of the appropriate CT Study Approval Letter?	Answer	Citations 290.111(h)	Notes
Item Number 37	Description Are the disinfectants, disinfectant residuals, flow rates, pHs, and temperatures consistent with the process data recorded on daily bench sheets, operations logs, SCADA records, strip charts and other logs for each disinfection zone?	Answer	Citations	Notes
Item Number 38	Description Are the operators collecting samples for disinfectant ratio calculations during peak flow conditions?	Answer	Citations	Notes
Item Number 39	Description Are the operators erroneously using the total daily raw water pumpage for inactivation calculations instead of using the maximum daily (peak) raw water flow rate?	Answer	Citations 290.111(h)	Notes
Item Number 40	Description Are the operators reporting process data for all disinfection zones on Pages 4 and 5 of the SWMOR, regardless of whether or not those zones are used for inactivation credit?	Answer	Citations	Notes
Item Number 41	Description Are the operators taking samples in one disinfection zone and reporting those test results for all disinfection zones even though the quality of the water changes?	Answer	Citations 290.111(h)	Notes
Item Number 42	Description If the reported disinfection parameters are not consistent with other records (more than a 20% error) select two additional days (for a total of five days) and repeat the process.	Answer	Citations 290.46(f)(3)(B)	Notes
Item Number 43	Description If there is only one day when the disinfection process parameter data differs from other records by 20% , cite the problem as an "Additional Issue" and notify the PDW so that they can follow up, if necessary.	Answer	Citations	Notes
Item Number	Description If there is more than one day when the disinfection process parameter data differs from other records by 20% or more, copy the supporting documents and forward to PDW so that they can issue notices of violation, and/or initiate a Special Performance Evaluation (SPE), and/or initiate enforcement action, as they determine to be appropriate.	Answer	Citations	Notes
Item Number	Description **Data Audit portion is concluded. If continuing to download plant data, and you have had training, please see the following:	Answer	Citations	Notes
Item Number	Description Data Integrity	Answer	Citations	Notes
Item Number	Description Turbidimeter maintenance	Answer	Citations	Notes
Item Number 44	Description Are they inspecting, flushing, and/or replacing sample lines;	Answer	Citations	Notes

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Item Number 45	Description Calibration history - required quarterly;	Answer	Citations 290.46(s)(2)(B)(i)	Notes
Item Number 46	Description Verification frequency - required weekly;	Answer	Citations 290.46(s)(2)(B)(i)	Notes
Item Number 47	Description Photocell inspection and cleaning: check for damaged membrane/cells-recommended quarterly	Answer	Citations	Notes
Item Number 48	Description Bulb replacement frequency - recommended annually;	Answer	Citations	Notes
Item Number 49	Description Flow rate check - HACH instruments usually 200-750, refer to manufacturer manual as needed.	Answer	Citations 290.46(s)(2)(B)	Notes
Item Number 50	Description Document all turbidimeters and models with serial numbers	Answer	Citations	Notes
Item Number 51	Description Controller model and data logging setting - Check to see if time and date are correct. Check frequency of the data interval. Default is 15 minutes for HACH models	Answer	Citations 290.46(s)(2)(B)	Notes
Item Number 52	Description Signal Averaging - Default for HACH models is 30 secs. This is acceptable in most cases	Answer	Citations	Notes
Item Number 53	Description Bubble reject - Default is YES for HACH models. This is acceptable in most cases	Answer	Citations	Notes
Item Number 54	Description Error Hold Mode - Specific to HACH 1720E and FilterTrak 660 models. Default is Hold Output (HO) and send last known value to SCADA when turbidimeter loses communication with controller. Better option is Transfer Outputs (TO) to send an operator-selected value to SCADA (e.g., 0, 10) to make operator aware of the problem	Answer	Citations	Notes
Item Number 55	Description Output Span - To avoid "capping" of data to SCADA, the output span should be at least 0 to 5.1 NTU (applicable to analog signals). Accessing output span for HACH SC200 controller: Menu/SC200 setup/output setup (select 1 or 2; select Source to see which turbidimeter is highlighted and then Back button)/Activation (low value; high value)	Answer	Citations	Notes