



**Environmental
Protection Agency**

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korteski, Director



1PB0003320101213

DARKE

VERSAILLES WWTP

MILLER, JOSEPH

2010/12/13

**Environmental
Protection Agency**

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korieski, Director

December 13, 2010

Mayor and Council
Village of Versailles
177 North Center Street
Versailles, OH 45380

**RE: Compliance Evaluation Inspection (CEI)
Village of Versailles Wastewater Treatment Plant
NPDES Permit 1PB00033*GD/OH0020656
Versailles, Darke County**

Mayor and Council:

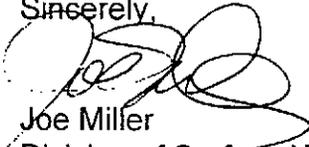
On December 7, 2010, I conducted a Compliance Evaluation Inspection at the Village of Covington wastewater treatment works. This inspection was conducted to determine compliance with the NPDES discharge permit. Mark Voisard, Water/WWTP Superintendent, Tim Wehrkamp and Frank Treon, wastewater operators, represented the Village during the inspection.

My inspection included a close examination of the wastewater laboratory. A greater emphasis on following proper methods to ensure accurate and defensible sampling data is being undertaken by Ohio EPA. It should be noted that this initial laboratory evaluation is being conducted to provide the operators with an opportunity to make corrections rather than initiate any enforcement action. The initial laboratory review (attached) identifies a number of areas requiring improvement.

Overall the facility was rated as "Satisfactory", while the laboratory was rated as "Marginal". A detailed inspection report is attached.

Provide a response to the "Items Requiring a Response" section of the inspection report by **January 10, 2010**. Your response should include items completed or planned to be completed to address identified issues. If you have any questions, I can be reached at (937) 285-6109 or joe.miller@epa.state.oh.us.

Sincerely,


Joe Miller
Division of Surface Water

ec: Mark Voisard, Dane Nagel, and Randy Gump, Village of Versailles

Southwest District Office
401 East Fifth Street
Dayton, OH 45402-2911

937 | 285 6357
937 | 285 6249 (fax)
www.epa.ohio.gov

Village of Versailles WWTP
Compliance Evaluation Inspection
December 7, 2010

ITEM REQUIRING A RESPONSE

1. Quality Assurance/Quality Control and Standard Operating Procedures-

A QA/QC Manual with SOPs for all analyses performed on-site needs to be developed. Provide a schedule for completion of the QA/QC Manual.

SOPs should include the following:

- Title
- Scope and Application
- Summary
- Sample Handling and Preservation
- Interferences
- Apparatus and Materials
- Reagents
- Procedure
- Calculations
- Quality Control
- Maintenance
- Corrective Action
- Reference (Parent Method)

Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.

2. Laboratory Deficiencies - Provide an update on laboratory improvements to address those noted during the inspection. The update should include items obtained, or planned to be obtained along with a schedule for improvements.

3. Escherichia coli (e.coli) – The indicator organism used to determine compliance with bacterial removal will be changed in the next NPDES permit from fecal coliform to *e.coli*. At the time of inspection, the operators felt that the switch to *e.coli* could be done as soon as the next permit modification or renewal becomes effective. Please confirm that this is the intention of the Village. Otherwise, a schedule of compliance should be requested.

Observations

The Versailles Wastewater Treatment Plant expansion and improvement project has been completed. The wastewater facility design flow was increased from 0.35 MGD to 0.75 MGD. Average daily flow from the period reviewed (November 2009 to November 2010) was 0.38 MGD.

The treatment expansion includes: main pump station improvements, screening building, oxidation ditch splitter box, oxidation ditch, final clarifier splitter box, (2) final clarifiers, RAS/WAS pump station, ultraviolet disinfection, effluent pumping, flow metering, and aerobic digester. The existing oxidation ditch and clarifiers were converted to flow equalization. The (3) existing digesters were retained as well. A new headwall and discharge location was also established.

SCADA improvements are still in development but are anticipated to be completed by December 2011.

A review of the effluent monitoring reports from the period of November 2009 to November 2010 revealed violations of the Total Suspended Solids effluent limitation in December 2009. Self-notification of the violation was provided. Any future incidences of non-compliance need to be reported as per Part III, Item 12 of your NPDES permit.

The compliance date for meeting an effluent total phosphorus concentration of 1.0 mg/l is September 2011. Efforts to utilize anaerobic zones in conjunction with the oxidation ditch to encourage biological phosphorus reduction are underway. Should enhanced biological phosphorus removal (EBPR) fail to meet the required effluent limitation, Versailles intends to add chemical precipitant to lower the effluent total phosphorus concentration.

The current NPDES permit will be modified to adjust the expiration date to May 31, 2011. This is due to the current limitation of extending NPDES permits beyond five years. The last modification extended the expiration date beyond the five year period. NPDES compliance dates will be extended into the subsequent NPDES permit renewal.



Permit # : 1PB00033*GD, 200033*GD
 NPDES #: OH0020656

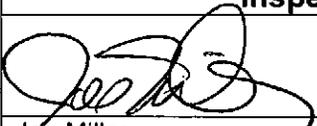
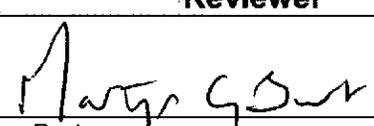
State of Ohio Environmental Protection Agency
 Southwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PB00033*GD	OH0020656	12/7/2010	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Versailles WWTP 300 Grand Avenue Versailles, OH 45380	9:45 AM	3/1/2010
	Exit Time	Permit Expiration Date
	12:25 PM	12/31/2011
Name(s) and Title(s) of On-Site Representatives		Phone Number(s)
Mark Voisard, Water/Wastewater Plant Manager		937-526-3148
Tim Wehrkamp, Wastewater II Operator		937-526-3148
Frank Treon, Wastewater I Operator		937-526-3148
Name, Address and Title of Responsible Official		Phone Number
Mayor and Council Village of Versailles 177 North Center Street Versailles, OH 45380		937-526-3294

Section C: Areas Evaluated During Inspection					
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)					
S	Permit	S	Flow Measurement	N	Pretreatment
S	Records/Reports	M	Laboratory	S	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	S	Self-Monitoring Program
N	Facility Site Review	S	Sludge Storage/Disposal	N	Other
S	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)	
A detailed laboratory evaluation identified areas requiring correction/improvement. See attached report.	
Collection system was rated as "Satisfactory", as there were no overflows reported during period of review and an I/I reduction program is ongoing.	
Inspector	Reviewer
 Joe Miller Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
12/13/10 Date	12/13/10 Date

Sections E thru K: Complete on all inspections as appropriate
Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

Section E: Permit Verification

Inspection observations verify the permit

- | | |
|--|-----|
| (a) Correct name and mailing address of permittee | Y |
| (b) Flows and loadings conform with NPDES permit..... | Y |
| (c) Treatment processes are as described in permit application... | Y |
| (d) All discharges are permitted..... | Y |
| (e) Number and location of discharge points are as described
in permit..... | N |
| (f) Storm water discharges properly permitted..... | N/E |

Comments/Status:

Wastewater treatment plant expansion to 0.75 MGD design flow facility completed.
Permit modification to be completed to correct NPDES expiration date to May 31, 2011.
Outfall location coordinates to be updated in permit.

Section F: Compliance

- | | |
|---|-----|
| (a) Any significant violations since the last inspection..... | Y |
| (b) Appropriate Non-compliance notification of violations..... | Y |
| (c) Permittee is taking actions to resolve violations..... | Y |
| (d) Permittee has a compliance schedule..... | Y |
| (e) Compliance schedule contained in...NPDES Permit Compliance Schedule | |
| (f) Permittee is in compliance with schedule..... | Y |
| (g) Has biomonitoring shown toxicity in discharge since last inspection | N/A |

Comments/Status:

A review of the self monitoring reports from the period of November 2009 to October 2010 revealed an incidence of non-compliance in December 2009. The NPDES effluent concentration limitation for Total Suspended Solids was exceeded (both 7-day and 30-day). Self notification of the violation was provided. The violation was suspected to be due to a bulking sludge problem. The violation occurred prior to wastewater treatment plant improvements.

A compliance schedule for phosphorus reduction is in the current NPDES permit with a compliance date of September 2011 for meeting an effluent total phosphorus monthly concentration limitation of 1.0 mg/l.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

(a) Standby power available.....generator or dual feed Y

i. What does the back-up power source operate.....

Entire Facility

ii. How often is the generator tested under load.....

Once a month, with weekly self test (45 min)

(b) Which components have an alarm system available for power or equipment failures.....

In process of determining extent of SCADA to provide power, pump, high level alarms, etc. throughout facility. Expected completion within a year.

(c) All treatment units in service other than backup units..... Y

(d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....

Excel spreadsheet currently, evaluating new software.

(e) Any major equipment breakdown since last inspection..... N

(f) Operation and maintenance manual provided and maintained..... Y

(g) Any plant bypasses since last inspection..... N

(h) Any plant upsets since last inspection..... N

Comments/Status:

All operator have cell phones that are dialer notified during alarm conditions.

Section G: Operation & Maintenance con't

Record Keeping/Operator of Record:

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... II
- (b) Operator of Record holds unexpired license of class required by Permit..... Y
- (c) Copy of certificate of Operator of Record displayed on-site..... Y
- (d) Has the Operator of Record submitted an ORC Notification form.. Y
- (e) Minimum operator staffing requirements fulfilled (OAC 3745-7).... Y
- (f) If a Staffing Reduction plan has been approved, are the stipulations of the plan being met..... N/A
- (g) Operator of Record log book provided..... Y
- (h) Format of log book (e.g. computer log, hard bound book)

Bound
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
 - I. Identification of treatment works..... Y
 - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... Y
 - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... Y
 - iv. Laboratory results (unless documented on bench sheets)... N
 - v. Identification of person making entries..... Y
- (k) Has the Operator of Record submitted written notifications to the permittee, Ohio EPA and, if applicable, any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred..... Y

Comments/Status:

Mark Voisard, Class II Operator
 Tim Wehrkamp, Class II Operator
 Frank Treon, Class I Operator

Section G: Operation & Maintenance con't

Collection System:

- (a) Are there pump stations in the collection system..... Y
 - i. How many publicly-owned pump stations equipped with permanent standby power or equivalent.....6
 - ii. How many pump stations have telemetered alarms.....1
 - iii. How many pump stations have operable alarms.....5

- (b) Any chronic collection system overflows since last inspection..... N
- (c) Regulatory agency notified of all overflows..... N/A
- (d) Are there CSOs in the collection system..... N/A
if so, what is the LTCP status.....
- (e) How are CSOs monitored (chalk, block, level sensor, etc.).....
- (f) Portable pumps available for collection system maintenance..... Y
- (g) RDII Program established and active..... Y
- (h) Any WIB complaint received since last inspection..... N
- (i) Is there a WIB response plan..... N/E
- (j) Is any portion of the collection system at or near dry weather capacity..... N

Comments/Status:

Lift Stations (all visually inspected daily)

Main Influent Lift Station - Telemetry, SCADA
Indian Creek - Plan to update to provide SCADA and power hookup
Homer Street - Daily checks
YMCA/Vertie - Capability of power hookup
IGA - No alarm, daily checks
Reed Road - Capability of power hookup

Infiltration/Inflow Program:
Dale Bruns provides predetermined number of hours of sewer cleaning annually
Brick manholes in a number of areas need to be lined or replaced
2011- West Street project will include sewer improvements

Section H: Sludge Management

- (a) Method of Sludge Disposal... Land Application
 Haul to Another NPDES Permittee
 Haul to a Mixed Solid Waste Landfill

*if one of the selected methods is land application, complete applicable charts.
Class A - Exception Quality Sewage Sludge (monitoring station 584)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options							
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized Solids	Option 8 - >75% Percent Solids with Unstabilized Solids
Alternative 1 - Time and Temperature Regime (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - High pH and High Temperature (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Other Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 4 - Unknown Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Composting (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Drying (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Treatment (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Thermophilic Aerobic Digestion (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Beta Ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Gamma ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Pasteurization (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 6 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Class B Sewage Sludge (monitoring station 581)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options									
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized	Option 8 - >75% Percent Solids with Unstabilized	Option 9 - Land Injection	Option 10 - Immediate Incorporation
Alternative 1 - Geometric Mean of Seven Fecal Samples (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Aerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Air Drying (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Anaerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Composting (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Lime Treatment (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (b) Has amount of sludge generated changed significantly since the last inspection..... N
- (c) How much sludge storage is provided at the plant.....
- (d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y
- (e) Any complaints received in last year regarding sludge..... N
- (f) 5/8" screen at headworks for facilities that land apply sludge..... Y
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... Y
- (h) Is a contractor used for sludge disposal..... N
 If so, what is the name of the contractor.....

Comments/Status:

Land application done by Village employees. Fields analyzed by Menke/Evers Consulting

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):
Radar and Parshall flume
- (b) Flow meter calibrated annually Y
(Date of last calibration:)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... Y
- (e) All discharged flow is measured..... Y

Comments/Status:

Section I: Self-Monitoring Program (con't)

Sampling:

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y
(see GLC page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

Comments/Status:

Doing sampling more frequent than required by NPDES permit.

Section I: Self-Monitoring Program (con't)

Laboratory:

General

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... N
- (b) Do SOP's include the following if applicable..... N
 - Title
 - Scope and Application
 - Summary
 - Sample Handling and Preservation
 - Interferences
 - Apparatus and Materials
 - Reagents
 - Procedure
 - Calculations
 - Quality Control
 - Maintenance
 - Corrective Action
 - Reference (Parent Method)

Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (d) If alternate analytical procedures are used, proper approval has been obtained..... N/A
- (e) Analyses being performed more frequently than required by permit. Y
- (f) If (e) is yes, are results in permittee's self-monitoring report..... Y
- (g) Satisfactory calibration and maintenance of instruments/equipment. N (see score from GLC page)
- (h) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: fecal coliform, metals, O&G, TKN, TP, NO2/NO3
Lab name: Belmont Labs

Discharge Monitoring Report Quality Assurance (DMRQA)

- (a) Participation in latest USEPA quality assurance performance sampling..... N
Date:
- (b) Were any parameters "Unsatisfactory" N/A
- (c) Reasons for "Unsatisfactory" parameters.....

Comments/Status:

Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: Headwall to Swamp Creek

Receiving Stream: Swamp Creek

Receiving Stream Description: Warmwater Habitat

Comments/Status:

New coordinates with change in outfall location

Section K: Multimedia Observations

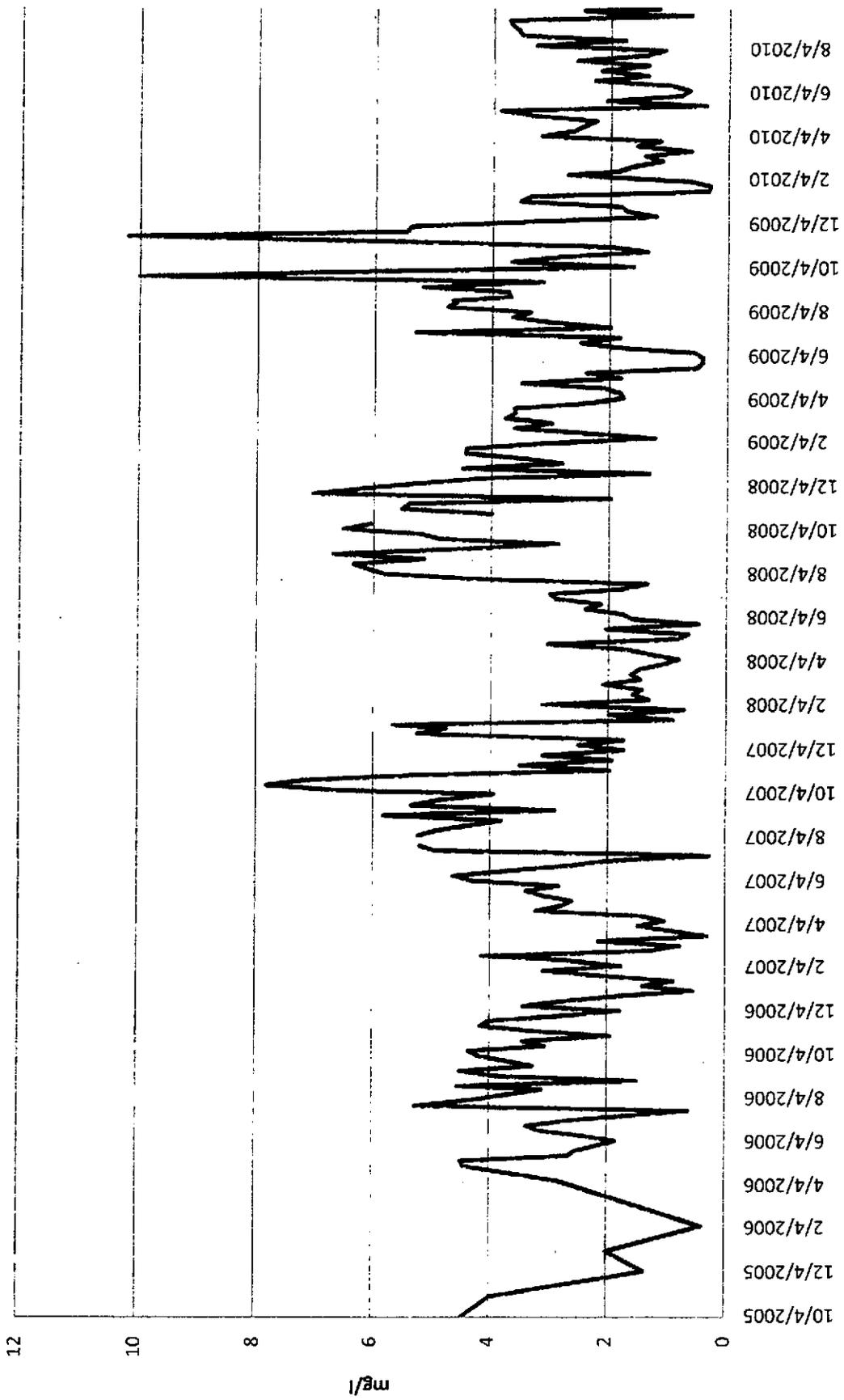
- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

If any of the above are observed, ask the following questions:

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

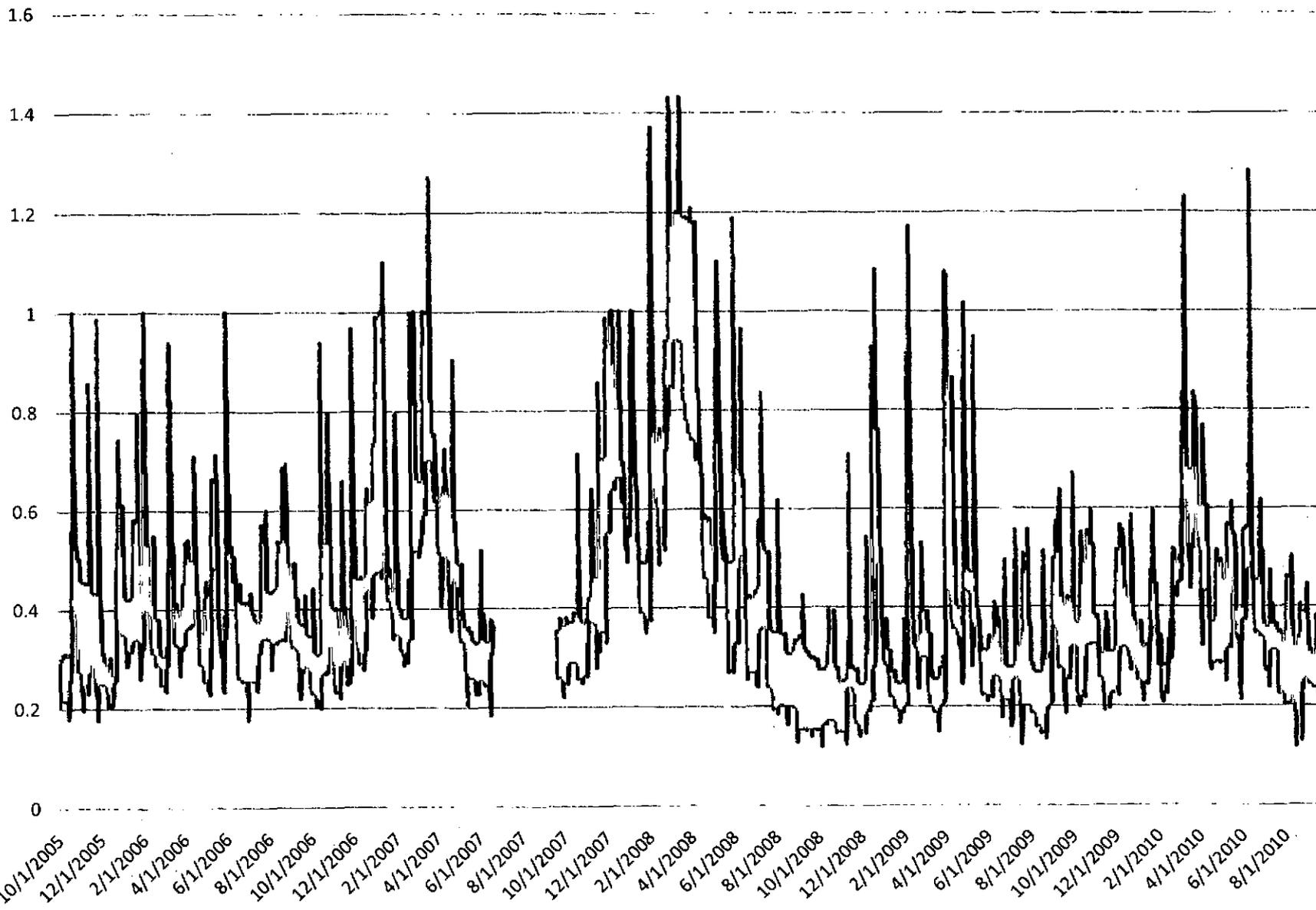
Comments/Status:

Versailles WWTP Total Phosphorus (mg/l) October 2005 to September 2010





Versailles WWTP Flow (MGD) October 2005 to September 2010





7

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Balance				
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights ^{1,2}	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	M
• Calibration Frequency / Documentation	• Calibration verification required at least once each day the balance is used. ³	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Cleanliness, air movement, vibration	• Cleanliness of balance is a must and air movement and vibration needs to be kept to a minimum ¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Service and recalibrate annually (manufacturer representative or comparable) ¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Must be able to measure to 0.1 grams ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained ²	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Comments: : Certification of weights not available. Need to calibrate daily when using balance.
 OHAUS Galaxy 200 balance.
 Provide indication of calibration in log book or equivalent.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Drying Oven (Suspended Solids)				
• Temperature Recordkeeping	• Temperature recorded with each use ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	U
	• Log book maintained ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2} . Correction factor posted on thermometer / equipment ¹	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Other	• Thermometer temperature accurate to 0.5° Celsius ⁵	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° C ⁴	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: : Need to obtain a thermometer that reads to 0.5 degrees Celsius calibrated annually with an NIST traceable thermometer. Readings of 106 degrees being recorded, maintain temperature between 103 and 105 degrees C.

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
pH Meter				
<ul style="list-style-type: none"> • Calibration Frequency / Documentation 	<ul style="list-style-type: none"> • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)³ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
	<ul style="list-style-type: none"> • Logbook maintained² 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Minimum of 2 point calibration 	<ul style="list-style-type: none"> • Calibration per manufacturer specification and calibration buffers must bracket anticipated result⁷ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Slope Documentation / Acceptability 	<ul style="list-style-type: none"> • Slope acceptable range indicated on benchsheet² 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Buffer Expiration Date 	<ul style="list-style-type: none"> • Buffers must not be expired 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Other 	<ul style="list-style-type: none"> • Instrument manual available 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Teflon covered magnetic stirrer or equivalent for mixing⁸ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: : ORION EA940

Criteria	Standard Methods Requirement	Acceptable?		Rating
Dissolved Oxygen Meter				
<ul style="list-style-type: none"> • Calibration Method 	<ul style="list-style-type: none"> • Air or known DO calibration method¹⁰ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
	<ul style="list-style-type: none"> • Calibration per manufacturer specification¹⁰ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Calibration Frequency / Documentation 	<ul style="list-style-type: none"> • Logbook maintained² 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> • Calibration verification required at least once each day the meter is used.³ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Other 	<ul style="list-style-type: none"> • Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil)¹¹ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Instrument manual available 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Record calibration in log book or equivalent.

General Lab Criteria

Criteria	Standard Methods Requirement		Acceptable?	Rating
Incubator (CBOD/ E-Coli)				
<ul style="list-style-type: none"> • Temperature Recordkeeping 	<ul style="list-style-type: none"> • Temperature checked / recorded twice daily for each shelf in use¹(E-Coli) 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	A
	<ul style="list-style-type: none"> • Temperature checked / recorded daily² (CBOD) 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Acceptable temperature range (CBOD) is 20° C ±1.0°¹² 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Acceptable temperature range (E-Coli) is 35° C ±0.5°²² 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Logbook maintained² 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Temperature Calibration / Documentation 	<ul style="list-style-type: none"> • Thermometer calibrated annually with NIST traceable thermometer^{1,2} 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> • Temperature correction information posted on incubator¹ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> • E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or mfg's multi-well tray 	<ul style="list-style-type: none"> • E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb)²³ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Other 	<ul style="list-style-type: none"> • Instrument manual available 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Temperature Log (thermometer accurate to 0.5 Celsius).¹ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: : Calibrate thermometer annually with NIST traceable thermometer. Temperature recorded on bench sheet.

Criteria	Standard Methods Requirement		Acceptable?	Rating
Refrigerator				
<ul style="list-style-type: none"> • Temperature Recordkeeping 	<ul style="list-style-type: none"> • Temperature Log (thermometer accurate to 0.5 Celsius).⁵ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	M
<ul style="list-style-type: none"> • Temperature Calibration / Documentation 	<ul style="list-style-type: none"> • Thermometer calibrated annually with NIST traceable thermometer^{1,2} 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> • Other 	<ul style="list-style-type: none"> • Thermometer held in water bath.¹ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Refrigerator temperature ≤6° Celsius.¹³ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Do not store volatile solvents, food, or beverages.¹⁴ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Obtain a thermometer accurate to 0.5 degrees Celsius calibrated annually with an NIST traceable thermometer.

General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Ammonia Meter	Acceptable?		
• Calibration Frequency / Documentation	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) ³	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	• Log book being maintained ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
• Slope acceptability	• Verify calibration slope is acceptable (per mfg. spec.).	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
• Calibration Method	• Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec. ¹⁷	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	• Standards used for calibration not expired	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
• Other	• Electrode free of deposits and foreign material	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	• Teflon covered magnetic stirrer or equivalent for mixing ¹⁸	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Comments: : Add 0.1 mg/l ammonia standard for calibration, standards should bracket expected result.			

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General Lab Criteria

Criteria	Standard Methods Requirement		Acceptable?	Rating
Sample Collection/Handling				A
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed). ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Chain of Custody	• Chain of custody (description, date, time, signature). ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Composite samples refrigerated during sample collection ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equipment blanks utilized ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• SOP for cleaning of sampling equipment	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Logbook being maintained ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: High temperature dishwasher used for cleaning sampling equipment.				
Desiccator				U
• General criteria	• Properly working seals.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Desiccant fresh (blue color)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Documentation	• Log book being maintained ²	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Comments: Dessicant expired/compacted and cannot be removed. Need to obtain new desiccator and track dessicant replacement. A replacement needs to be provided as soon as possible.				
Bench sheets				M
• General criteria	• Date(s) ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Analyst initials ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Blue or black ink pen ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Calibration information ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equations, calculations, units for all measurements, notations, and results present ²	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Corrections, single line through, initialed and dated ²	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Comments: Make sure to include calibration information, equations, calculations, and units for all measurements and results. Corrections should be done with a single line, initialed and dated.				

● General Lab Criteria ●

Criteria	Standard Methods Requirement	Acceptable?	Rating
Final Effluent Temperature Monitoring			
• General Criteria	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A
	• Thermometer accurate to 0.1° Celsius ⁵	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Log book being maintained ²	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: New final effluent temperature monitoring being completed with treatment plant upgrade and SCADA.			
Number of Criteria Rated:			
			Acceptable
			5
			Marginal
			4
			Unacceptable
			2
			Total Number of Areas Rated
			11
Acceptable Ratings – No action required (recommend SOP's written or updated, perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, written response not required).			
Marginal Ratings – Improvements required, written response required (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response).			
Unsatisfactory Rating - Improvements required, written response required, NOV issued (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response to NOV).			
Consider recommending PAI Audit from DES when:	>60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable		

Notation of Referenced Method

- | | |
|----------------------------|------------------------------|
| 1 Method 9020-B, Item 3 | 14 Method 1060A, Item 1 |
| 2 Method 1020-A, Item 1 | 15 Method 4500-CI I, Item 2 |
| 3 Method 1020-B, Item 10 | 16 Method 4500-CI I, Item 4 |
| 4 Method 2540-B, Item 2 | 17 Method 4500-NH3 D, Item 4 |
| 5 Method 2550-B, Item 1 | 18 Method 4500-NH3 D, Item 2 |
| 6 Method 1020-A, Item 1 | 19 Method 1060-B, Item 2 |
| 7 Method 4500-H B, Item 4 | 20 Method 1060-B, Item 1 |
| 8 Method 4500-H B, Item 2 | 21 Method 9222D, Item 1 |
| 9 Method 1020-B, Item 2 | 22 Method 9223 B, Item 2 |
| 10 Method 4500-O B, Item 3 | 23 Method 9223 B, Item 3 |
| 11 Method 4500-O G, Item 3 | 24 Method 1603, Item 2 |
| 12 Method 5210-B, Item 5 | 25 Method 9030-B, Item 3 |
| 13 CFR 136.3, Table II | 26 Method 9020 B, Table IV |

Equipment Logbook Content - all maintenance performed on a piece of equipment should be documented in the logbook. This should include parts replacement and routine maintenance activities. Entries should include date, maintenance performed and initials of person making entry.

General Lab Criteria

Preservation and Holding Times						
Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	6h	48h
TSS	P, G	200	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d
pH	P, G	50	G	Analyze immediately	0.25h	0.25 h
NH ₃ -N	P, G	500	G, C	Analyze as soon as possible or add H ₂ SO ₄ to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO ₃ to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH<2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H ₂ SO ₄ to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

Approved Standard Methods	
CBOD / BOD 5 Day	Std Methods 5210-B
Ammonia, Selective Electrode Method	Std Methods 4500-NH ₃ D
Total Residual Chlorine, DPD Colorimetric Method	Std Methods 4500-Cl G
Total Suspended Solids, Dried at 103-105 °C	Std Methods 2540-D
Dissolved Oxygen, Membrane Electrode Method	Std Method 4500-O G
pH, Electrometric Method	Std Methods 4500-H+ B
Fecal Coliform, Membrane Filter Procedure	Std Methods 9222D
Escherichia Coli, Enzyme Substrate Test	Std Method 9223B
Escherichia Coli Membrane Filtration Procedure	EPA Method 1603
Oil and Grease	USEPA 1664A or Std Methods 5520B
Metals, general	USEPA 200, Std Methods 3111B or C, or 3120B
Volatiles (Purgeables by purge and trap)	USEPA 6210, Std Methods 624
Semi-Volatiles (Base/Neutrals and acids)	USEPA 6410, Std Methods 625
Pesticides	USEPA 6410 and 6630, Std Methods 608

