



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

February 27, 2013

Mr. David Crouch
City of Fairfield
5350 Pleasant Avenue
Fairfield, Ohio 45014

RE: Butler County, City of Fairfield, Compliance Evaluation Inspection

Dear Mr. Crouch:

On February 5, 2013, Glen Vonderembse and I conducted a Compliance Evaluation Inspection at this facility (NPDES Permit No. OH0025071, OEPA Permit No. 1PD00003*OD). Representing the facility was Jason Hunold, Lynette Hodnicki and you. A copy of my inspection report is enclosed.

All areas evaluated in the inspection report were found to be acceptable. At this time, all areas noted in the inspection report are being addressed. Therefore, no response is required.

If you have any questions, please call me at (937) 285 - 6096.

Sincerely,

Ned Sarle
Environmental Specialist
Division of Surface Water – Permits Group

NS/tb

Enclosures

ec: Jason Hunold, City of Fairfield



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 |
| 1PD00003*OD | OH0025071 | 2/5/2013 | C | S | 1 |

| Section B: Facility Data | | |
|--|-----------------|------------------------|
| Name and Location of Facility Inspected | Entry Time | Permit Effective Date |
| Fairfield WWTP 4799 Groh Lane Fairfield, Ohio 45014 | 9:30 A.M. | 12/1/2009 |
| | Exit Time | Permit Expiration Date |
| | 1:25 P.M. | 7/31/2014 |
| Name(s) and Title(s) of On-Site Representatives | Phone Number(s) | |
| David Crouch, Public Utilities Director | (513) 867-5375 | |
| Jason Hunold, Interim Public Utilities Superintendent | (513) 858-7760 | |
| Lynette Hodnicki, Laboratory Supervisor | (513) 858-7760 | |
| Name, Address and Title of Responsible Official | Phone Number | |
| David Crouch, Public Utilities Director 5021 Groh Lane Fairfield, Ohio 45014 | (513) 867-5375 | |

| 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 | S | Laboratory | S | Compliance Schedule |
| S | Operations & Maintenance | S | Effluent/Receiving Waters | S | Self-Monitoring Program |
| S | Facility Site Review | S | Sludge Storage/Disposal | N | Other |
| S | Collection System | | | | |

| Section D: Summary of Findings (Attach additional sheets if necessary) | | | |
|--|--|--|--|
| See Attached Summary of Findings / Comments. | | | |
| Inspector | | Reviewer | |
|  Ned Sarle Division of Surface Water Southwest District Office | |  Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office | |
| Date | | Date | |

Permit #: 1PD00003*OD
NPDES #: OH0025071

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..... Y
- (f) Storm water discharges properly permitted..... Y

Comments/Status:

The site is covered by a General Industrial Storm Water NPDES Permit. This authorization was issued on February 17, 2012. The facility did not have a current copy of this permit. The city should obtain a copy so that they are aware of the current NPDES Permit requirements.

See Attached Summary of Findings / Comments for additional information.

Section F: Compliance

- (a) Any 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..... N
- (e) Compliance schedule contained in...N/A
- (f) Permittee is in compliance with schedule..... N/A
- (g) Has biomonitoring shown toxicity in discharge since last inspection N

Comments/Status:

See Attached Summary of Findings / Comments.

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.....

The dual power feed serves the whole WWTP. The City of Fairfield is still looking at installing a backup generator. This is looking likely for this year.

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

N/A.

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

The influent pump station, pretreatment system, aeration treatment system, secondary clarifiers and ultraviolet disinfection. A SCADA is used to alert the wastewater operators of these events.

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

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

Computer program.

(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..... Y

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

Comments/Status:

See Attached Summary of Findings / Comments.

Section G: Operation & Maintenance con't

Record Keeping/Operator of Record:

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... IV
- (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)

| |
|------------------|
| Computer system. |
|------------------|
- (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)... Y
 - 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:

| |
|-------|
| None. |
|-------|

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.....12
 - ii. How many pump stations have telemetered alarms.....12
 - iii. How many pump stations have operable alarms.....12

- (b) Any chronic collection system overflows since last inspection..... Y
- (c) Regulatory agency notified of all overflows..... Y
- (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..... Y
- (j) Is any portion of the collection system at or near dry weather capacity..... N

Comments/Status:

The community has one six inch pump and four three inch pumps that may be used for the collection system maintenance. See Attached Summary of Findings / Comments for additional information.

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 checked="" 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 - 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..... Y
 If so, what is the name of the contractor.....

Comments/Status:

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):

| |
|--------------------------------|
| Ultrasonic and Parshall Flume. |
|--------------------------------|
- (b) Flow meter calibrated annually Y
(Date of last calibration: 7/23/2012)
- (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:

Flow monitoring equipment is capable of measuring between 0 and 33 MGD.

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:

None.

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..... Y
- (b) Do SOP's include the following if applicable..... Y
 - 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. Y
(see score from GLC page)
- (h) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: Metals, sludge, TKN, phosphorus, Nitrate+Nitrite and Oil & Grease.

Lab name: Test America

Discharge Monitoring Report Quality Assurance (DMRQA)

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

Comments/Status:

None.

Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: Effluent pipe discharge.

Receiving Stream: Great Miami River

Receiving Stream Description: No adverse conditions were noted.

Comments/Status:

Outfall sign has been posted as required by the NPDES Permit.

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:

None.

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Summary of Findings / Comments

A review of the Discharge Monitoring Reports (DMRs) for June 2011 through December 2012 indicated several violations. These violations are as follows:

| Reporting Period | Parameter | Limit Type | Units | Permit Limit | Reported Value |
|------------------|-----------|------------|--------|--------------|----------------|
| August 2012 | Ammonia | Weekly | mg/l | 2.4 | 2.5 |
| September 2012 | Ammonia | Monthly | mg/l | 1.6 | 2.6 |
| September 2012 | Ammonia | Weekly | mg/l | 2.4 | 7.8 |
| September 2012 | Ammonia | Weekly | kg/day | 90.8 | 117 |

The August violation was due to a high pH on the influent from an unknown source. The September violations were due to an unknown industrial discharger. This discharge inhibited the nitrifying bugs in the wastewater. The city is trying to track down the source of these violations. The city has been working with Mari Piekutowski and the Butler County Environmental Services Department. Hopefully, the source of these violations will be found and controlled soon. At this time, these violations have been adequately addressed. Future violations must continue to be reported as required by the NPDES Permit as detailed in Part III.12 titled "Noncompliance Notification."

Excessive foam was noted in the WWTP influent. The source of this excessive foam appears to be PCI and has been occurring for the past year and a half. While the foam does not appear in the WWTP discharge, the foam will periodically overflow on to the ground around the grit tank. The city should try and minimize this foam as much as possible.

The Fairfield WWTP is designed to treat an average daily flow (ADF) of 10.0 MGD and a peak daily flow (PDF) of 18.0 MGD. For noted period, the ADF was 5.257 MGD, and the PDF was 17.267 MGD.

The manhole at 6265 Ross Road overflowed on December 5, 2011 and May 2, 2012. Internal WWTP bypass at station 602 were also reported on December 5 & 6, 2011. The December events were due to a 5 year rain event along with upgrades at the WWTP that limited the treatment capacity. The May event was due to a 25 year rain event.

The sanitary sewer system consists of 175 miles of gravity sanitary sewers and 12 pump stations. The sanitary sewers are typically cleaned once every five years. Last year, forty-three miles of sanitary sewers were cleaned. Sanitary sewers are visually inspected once every ten years. Last year, twelve miles of sanitary sewers were visually inspected. Sources of I/I are eliminated as found. Damaged manholes are also being repaired as needed. Fairfield must continue their efforts to minimize I/I into the sanitary sewer. No Water in Basement events were reported for 2011 and 2012. All future sewage collection system bypasses must continue to be reported in

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accordance to the NPDES Permit as detailed in Part III, Section 11 titled "Unauthorized Discharges."

Sludge is land applied by Synagro. In 2012, 543 dry tons of sludge were land applied. Sludge was not hauled to the landfill during the year.

The Operator of Record is Jason Hunold, and he is a Class IV operator. Finally, several other Class III operators are present at the WWTP.

The lab was inspected and my findings are detailed on the Attached General Lab Criteria checklist. No issues were noted in this report.

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 type="checkbox"/> No | NR |
| • Calibration Frequency / Documentation | • Calibration verification required at least once each day the balance is used. ³ | <input type="checkbox"/> Yes | <input 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 type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Other | • Service and recalibrate annually (manufacturer representative or comparable) ¹ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Must be able to measure to 0.1 grams ⁴ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Log book maintained ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: : None. | | | | |
| <hr/> | | | | |
| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
| Drying Oven (Suspended Solids) | | | | |
| • Temperature Recordkeeping | • Temperature recorded with each use ⁴ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | NR |
| | | • Log book maintained ² | <input type="checkbox"/> Yes | |
| • Calibration Frequency / Documentation | • Thermometer calibrated annually with NIST traceable thermometer ^{1,2} . Correction factor posted on thermometer / equipment ¹ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Other | • Thermometer temperature accurate to 0.5° Celsius ⁵ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Acceptable temperature range is 103° – 105° C ⁴ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: : None. | | | | |

General Lab Criteria

| Criteria | Standard Methods Requirement | | Rating |
|---|--|---|-----------|
| pH Meter | | | NR |
| <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 | Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <ul style="list-style-type: none"> • Logbook maintained² | <input 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 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 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 type="checkbox"/> Yes <input type="checkbox"/> No | |
| <ul style="list-style-type: none"> • Other | <ul style="list-style-type: none"> • Instrument manual available | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <ul style="list-style-type: none"> • Teflon covered magnetic stirrer or equivalent for mixing⁸ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Comments: : None. | | | |
| Criteria | Standard Methods Requirement | | Rating |
| Dissolved Oxygen Meter | | | A |
| <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 | |
| | <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 checked="" type="checkbox"/> Yes <input 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: None. | | | |

General Lab Criteria

| Criteria | Standard Methods Requirement | | Rating |
|---|--|---|----------|
| Incubator (CBOD/ E-Coli) | Acceptable? | | |
| • Temperature Recordkeeping | • Temperature checked / recorded twice daily for each shelf in use ¹ (E-Coli) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | A |
| | • Temperature checked / recorded daily ² (CBOD) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Acceptable temperature range (CBOD) is 20° C ±1.0 ° ¹² | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Acceptable temperature range (E-Coli) is 35° C ±0.5 ° ²² | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Logbook maintained ² | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Temperature Calibration / Documentation | • Thermometer calibrated annually with NIST traceable thermometer ^{1,2} | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Temperature correction information posted on incubator ¹ | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| • E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or mfg's multi-well tray | • E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) ²³ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Other | • Instrument manual available | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Temperature Log (thermometer accurate to 0.5 Celsius). ¹ | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |

Comments: : None.

| Criteria | Standard Methods Requirement | | Rating |
|---|--|--|-----------|
| Refrigerator | Acceptable? | | |
| • Temperature Recordkeeping | • Temperature Log (thermometer accurate to 0.5 Celsius). ⁵ | <input type="checkbox"/> Yes <input type="checkbox"/> No | NR |
| • Temperature Calibration / Documentation | • Thermometer calibrated annually with NIST traceable thermometer ^{1,2} | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Other | • Thermometer held in water bath. ¹ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Refrigerator temperature ≤6° Celsius. ¹³ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Do not store volatile solvents, food, or beverages. ¹⁴ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

Comments: None.

General Lab Criteria

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|------------------------------|-----------------------------|-----------|
| Chlorine Meter | | | | |
| • Calibration Frequency / Documentation | • pH / millivolt meter read to 0.1 mV ¹⁵ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | NR |
| | • 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 type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Calibration Method | • Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters or calibration per manufacturer specification ¹⁶ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Standards used for calibration not expired | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Slope Documentation / Acceptability | • Calibration curve (acceptable slope) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Other | • Electrode free of deposits and foreign material | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Log book being maintained. ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: : | | | | |

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|------------------------------|-----------------------------|-----------|
| Ammonia Meter | | | | |
| • 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 type="checkbox"/> Yes | <input type="checkbox"/> No | NR |
| | • Log book being maintained ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Slope acceptability | • Verify calibration slope is acceptable (per mfg. spec.). | <input 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 type="checkbox"/> No | |
| | • Standards used for calibration not expired | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Other | • Electrode free of deposits and foreign material | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Teflon covered magnetic stirrer or equivalent for mixing ¹⁸ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: : None. | | | | |

General Lab Criteria

| Criteria | Standard Methods Requirement | | Rating |
|---|---|--|--|
| Sample Collection/Handling | Acceptable? | | NR |
| • Sample Labeling | • Samples container labeled (description, date, time, preservative added, initialed). ¹⁹ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Chain of Custody | • Chain of custody (description, date, time, signature). ¹⁹ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Other | • Composite samples refrigerated during sample collection ¹⁴ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Equipment blanks utilized ¹⁴ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • SOP for cleaning of sampling equipment | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Logbook being maintained ² | | | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Comments: None. | | | |

| Criteria | Standard Methods Requirement | | Rating |
|--------------------|--|--|-----------|
| Desiccator | Acceptable? | | NR |
| • General criteria | • Properly working seals. | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Desiccant fresh (blue color) | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Documentation | • Log book being maintained ² | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Comments: None. | | | |

| Criteria | Standard Methods Requirement | | Rating |
|---------------------|--|--|-----------|
| Bench sheets | Acceptable? | | NR |
| • General criteria | • Date(s) ² | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Analyst initials ² | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Blue or black ink pen ² | <input 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 type="checkbox"/> No | |
| | • Corrections, single line through, initialed and dated ² | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Comments: None. | | | |

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 type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| | • Thermometer accurate to 0.1° Celsius ⁵ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| | • Log book being maintained ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| Comments: Area not evaluated. | | | | | |
| Number of Criteria Rated: | | | | Acceptable | 1 |
| | | | | Marginal | 0 |
| | | | | Unacceptable | 0 |
| | | | | Total Number of Areas Rated | 1 |
| <p>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).</p> | | | | | |
| <p>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).</p> | | | | | |
| <p>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).</p> | | | | | |
| 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 |