



Environmental
Protection Agency

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



1PG0001820101109

HAMILTON MAYFLOWER ESTATES WWTP

WARE, MAUREEN | 2010/11/09



**Environmental
Protection Agency**

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

November 9, 2010

Metropolitan Sewer District
1600 Gest St.
Cincinnati, Ohio 45204

RE: Mayflower Estates WWTP Compliance Enforcement Inspection (CEI)

Ladies and Gentlemen:

On November 4, 2010, I conducted a CEI at the Mayflower Estates WWTP. Edward Ewbank, Barb Wagner, and Bob Houser represented this facility. A copy of my inspection report is enclosed. As indicated on the NPDES CEI form, one section was rated as marginal.

The compliance inspection included a more in depth examination of the laboratory than has been done previously. The intent is to assist you in being able to document that the data produced by the laboratory is "true and accurate" and is therefore defensible. Please note that the NPDES permit in part III states that the permittee shall "Periodically calibrate and perform maintenance on all monitoring and instrumentation at intervals to ensure accuracy of measurements". Furthermore the certification statement required with the submittal of discharge monitoring reports asks the signer to certify "I believe the submitted information true, accurate and complete."

Please respond by December 9, 2010 with a description of how you intend to correct the Record/Reports issue noted in the CEI report.

I appreciate the time and courtesy that was extended to me during the inspection. If you have any questions or comments concerning the contents of this letter, please feel free to contact me at this office.

Sincerely,

Maureen M. Ware
Division of Surface Water

Enclosures

Ec: Hamilton County Health Dept.

MMW/mab





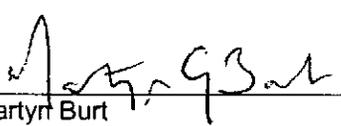
State of Ohio Environmental Protection Agency
Southwest District Office

NPDES Compliance Inspection Report

| Section A: National Data System Coding | | | | | |
|--|-----------|----------------|-----------------|-----------|---------------|
| Permit # | NPDES# | Month/Day/Year | Inspection Type | Inspector | Facility Type |
| 1PG00018 | OH0025623 | 11/4/2010 | C | S | 1 |

| Section B: Facility Data | | |
|---|-----------------|------------------------|
| Name and Location of Facility Inspected | Entry Time | Permit Effective Date |
| Mayflower Estates Wastewater Treatment Plant Wind Forest Dr. Springboro, Ohio 45066 | 12:15 PM | 4/1/2008 |
| | Exit Time | Permit Expiration Date |
| | 1:30 PM | 3/31/2011 |
| Name(s) and Title(s) of On-Site Representatives | Phone Number(s) | |
| Edward Ewbank, Senior Engineer | 513-244-5142 | |
| Name, Address and Title of Responsible Official | Phone Number | |
| Metropolitan Sewer District 1600 Gest St. Cincinnati, Ohio 45251 | | |

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

| Section D: Summary of Findings (Attach additional sheets if necessary) | |
|--|---|
| Records/Reports is rated as marginal due to the use of a spiral bound Operator Log Book. | |
| Inspector | Reviewer |
|  Madreen M. Ware Division of Surface Water Southwest District Office Date 11/9/10 |  Martyr Burt Environmental Supervisor Division of Surface Water Southwest District Office Date 11/9/10 |

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..... N/A

Comments/Status:

Section F: Compliance

- (a) Any significant violations since the last inspection..... N
- (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/A

Comments/Status:

Compliance history was evaluated from 2/1/2006 through 9/30/2010. All violations were reported via letters from MSD. Sheet 9 details the violations. Please note that daily maximum numerical violations can be reported electronically using the form that can be found at:
http://epa.ohio.gov/portals/35/permits/24-hour_reporting_Form4499_limits.doc
All other numerical violations can be reported electronically using the form that can be found at:
http://epa.ohio.gov/portals/35/permits/24-hour_reporting_Form4498_bypasses.doc
Both forms should be emailed to swdo24hournpdes@epa.state.oh.us, with a copy to maureen.ware@epa.state.oh.us

Section G: Operation & Maintenance

Treatment Works:

- Treatment facility properly operated and maintained..... Y
- (a) Standby power available.....generator or dual feed N
- i. What does the back-up power source operate.....
- There is no backup power. MSD is considering eliminating the Mayflower Estates WWTP, and as such wishes to minimize resources used towards the WWTP.
- ii. How often is the generator tested under load.....
-
- (b) Which components have an alarm system available for power or equipment failures.....
- Telemetry alarm system used power outage events and the blower.
- (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
- (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:

Section G: Operation & Maintenance con't

Record Keeping/Operator of Record:

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

Spiral datebook currently being used. MSD will begin using a hardbound book for the log book as soon as possible.
- (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/E
 - 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:

Bench sheets are kept at Taylor Creek WWTP.

Section G: Operation & Maintenance con't

Collection System:

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

- (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
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..... Y
- (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:

Section H: Sludge Management

- (a) Method of Sludge Disposal...
 - Land Application
 - Haul to Another NPDES Permittee
 - Haul to a Mixed Solid Waste Landfill
- (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..... N/A
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... N/A
- (h) Is a contractor used for sludge disposal..... N
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):
- (b) Flow meter calibrated annually Y
(Date of last calibration: 9/10)
- (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..... N/E
(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:

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..... N/E
 - 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/E
(see score from GLC page)
- (h) Commercial laboratory used..... N

Parameters analyzed by commercial lab: All laboratory work is done at the Taylor Creek WWTP laboratory. Parameters including D.O. and pH are obtained on-site using meters that are calibrated at the Taylor Creek WWTP.

Lab name:

Discharge Monitoring Report Quality Assurance (DMRQA)

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

Comments/Status:

SOP's are kept at the Taylor Creek WWTP.

Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: pipe in headwall.

Receiving Stream: unnamed tributary of Banklick Creek

Receiving Stream Description: clear.

Comments/Status:

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:

Permit # : 1PG00018
NPDES # : OH0025623

| Date | Parameter | Limit Type | Limit | Reported Value |
|---------|-----------|--------------|-------------|----------------|
| 4/15/06 | TSS | 7D Quantity | 5.45 kg/day | 9.47007 kg/day |
| 11/8/06 | TSS | 7D Conc. | 18 mg/l | 36 mg/l |
| 11/8/06 | TSS | 7D Quantity | 5.45 kg/day | 5.72292 kg/day |
| 11/8/06 | CBOD5 | 7D Conc. | 15 mg/l | 24 mg/l |
| 12/1/06 | TSS | 7D Conc. | 18 mg/l | 28 mg/l |
| 12/1/06 | TSS | 7D Quantity | 5.45 kg/day | 5.61694 kg/day |
| 3/1/08 | NH3 | 30D Conc. | 2.5 mg/l | 2.705 mg/l |
| 3/1/08 | NH3 | 30D Quantity | 0.76 kg/day | 1.11815 kg/day |
| 3/1/08 | NH3 | 7D Quantity | 1.51 kg/day | 1.77301 kg/day |
| 1/15/09 | TSS | 7D Conc. | 18 mg/l | 21 mg/l |
| 2/1/09 | TSS | 30 D Conc. | 12 mg/l | 12.75 mg/l |
| 2/1/09 | TSS | 7D Conc. | 18 mg/l | 32 mg/l |



General Lab Criteria

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|--|------------------------------|-----------------------------|--------|
| Balance | | | | |
| • Standard Weights | • Either NIST Class 1 or ASTM/ANSI Class 1 weights ^{1,2} | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • 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: :

| 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 | |
| | • Log book maintained ² | <input 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 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° F ⁴ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |

Comments: :

● 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 type="checkbox"/> Yes | <input type="checkbox"/> No | A |
| | <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: : | | | | |
| | | | | |
| 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 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: Air calibration is used. Calibration is done at Taylor Creek WWTP. Log book is maintained at Taylor Creek WWTP. | | | | |

General Lab Criter.

| Criteria | Standard Methods Requirement | | 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 |
| | <ul style="list-style-type: none"> • Temperature checked / recorded daily² (CBOD) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | <ul style="list-style-type: none"> • Acceptable temperature range (CBOD) is 20° C ±1.0^{o 12} | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | <ul style="list-style-type: none"> • Acceptable temperature range (E-Coli) is 35° C ±0.5^{o 22} | <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"> • Temperature Calibration / Documentation | <ul style="list-style-type: none"> • Thermometer calibrated annually with NIST traceable thermometer^{1,2} | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | <ul style="list-style-type: none"> • Temperature correction information posted on incubator¹ | <input type="checkbox"/> Yes | <input 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 type="checkbox"/> Yes | <input type="checkbox"/> No |
| | <ul style="list-style-type: none"> • Temperature Log (thermometer accurate to 0.5 Celsius).¹ | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Comments: :

| Criteria | Standard Methods Requirement | | 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 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 |
| <ul style="list-style-type: none"> • Other | <ul style="list-style-type: none"> • Thermometer held in water bath.¹ | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | <ul style="list-style-type: none"> • Refrigerator temperature ≤6° Celsius.¹³ | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | <ul style="list-style-type: none"> • Do not store volatile solvents, food, or beverages.¹⁴ | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Comments:

● 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 | |
| | • 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 | |
| | • 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: : | | | | |

General Lab Criteria

| Criteria | Standard Methods Requirement | | Rating |
|----------------------------|---|---|-----------------------------|
| Sample Collection/Handling | Acceptable? | | |
| • 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 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 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: Sample bottles are of effluent only. Laboratory parameters are conducted at Taylor Creek WWTP. Preservatives are added as needed at Taylor Creek WWTP. Composite samples are kept in a cooler with ice during compositing. Chain of custody sheets are kept at Taylor Creek WWTP, but the ORC indicated that they have the required information on them.

| Criteria | Standard Methods Requirement | | Rating |
|--------------------|--|------------------------------|-----------------------------|
| Desiccator | Acceptable? | | |
| • 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:

| Criteria | Standard Methods Requirement | | Rating |
|--------------------|--|---|-----------------------------|
| Bench sheets | Acceptable? | | |
| • 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 checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| | • Equations, calculations, units for all measurements, notations, and results present ² | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| | • Corrections, single line through, initialed and dated ² | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

Comments: Bench sheets are kept at Taylor Creek WWTP. ORC indicated that all the above information is on the bench sheets.

● General Lab Criteria ●

| | |
|--|--|
| | |
|--|--|

| Criteria | Standard Methods Requirement | | Rating |
|--|---|--|--------------------|
| Hot Water Bath (Fecal Coliform/E. coli) | | | Acceptable? |
| • Temperature Recordkeeping | • Temperature Log (thermometer accurate to 0.2° C) ²¹ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Incubator temperature 44.5° C ± 0.2° ^{21/24} | | |
| • Temperature Calibration / Documentation | • Thermometer calibrated annually with NIST traceable thermometer ^{1,2} | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Log book being maintained ² | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Water Level | • Thermometer total immersion or partial (line on thermometer to ID immersion depth) ^{1,5} | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Comments: | | | |

| Criteria | Standard Methods Requirement | | Rating |
|--|--|--|--------------------|
| Autoclaves/Steam Sterilizers | | | Acceptable? |
| • All apparatus utilized is adequately sterilized before use | • Sterilizing temperature 121° C ²⁵ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • 10 to 30 minutes time based on material being sterilized ²⁶ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Documentation | • Verify the autoclave temperature weekly by using a maximum registering thermometer (MRT) to confirm that 121°C has been reached as measured in the exhaust. ¹ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used ¹ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Temperature Calibration / Documentation | • Thermometer calibrated annually with NIST traceable thermometer ^{1,2} | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | • Log book being maintained ² | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| • Performance Checks | • Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules ¹ | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Comments: | | | |

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

● General Lab Criteria ●

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.

| 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 |