Ohio Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

November 30, 2011

**Re:** Belmont County
EORWA
Compliance Evaluation Inspection
NPDES Permit 0PQ00000*MD
Correspondence (PWW)

Board of Trustees
Eastern Ohio Regional Wastewater Authority
P.O. Box 508
Bridgeport, Ohio 43912

Dear Board Members:

On September 15, 2011, I conducted a compliance evaluation inspection at the Eastern Ohio Regional Wastewater Authority (EORWA) Treatment Plant. Mike Dobbs, Plant Superintendent, and Jeff Vaughn, Consultant, represented the facility during the inspection. The purpose of the inspection was to determine the facility's compliance status with the terms and conditions of NPDES permit number 0PB00031*FD. A copy of the inspection report is attached.

The following comments/problems were noted as a result of the inspection:

1. **Collection System Sanitary Sewer Overflows** – Violation of ORC 6111.04

Sanitary Sewer Overflows (SSOs) are discharges of sewage from the collection system, and are unauthorized discharges which are a violation of Ohio Revised Code Chapter 6111.04. The following is a list of sanitary sewer overflows from the collection system which have occurred since January 2009:

| Permit No. | Station | Parameter | Units | Date | Number of Occurrences |
|---|---|---|---|---|---|
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 9/1/2009 | 2 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 11/1/2009 | 1 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 12/1/2009 | 3 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 1/1/2010 | 2 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 2/1/2010 | 2 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 3/1/2010 | 4 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 6/1/2010 | 8 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 8/1/2010 | 9 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 9/1/2010 | 6 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 11/1/2010 | 5 |

**Southeast District Office**
2195 Front Street
Logan, OH 43138-8637

740 | 385 8501
740 | 385 6490 (fax)
www.epa.ohio.gov

| Permit No. | Station | Parameter | Units | Date | Number of Occurrences |
|---|---|---|---|---|---|
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 2/1/2011 | 5 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 3/1/2011 | 6 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 4/1/2011 | 2 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 5/1/2011 | 3 |
| 0PQ00000*MD | 300 | Overflow Occurrence | No./Month | 6/1/2011 | 5 |
| 0PQ00000*ND | 300 | Overflow Occurrence | No./Month | 9/1/2011 | 4 |

Within 60 days identify the location of the overflows and provide a plan for elimination, along with a schedule for submitting permit applications, and commencing and ending construction.

2. **Operation and Maintenance** - required by Part III, Item (3) of the NPDES permit.

   Laboratory – a laboratory evaluation was performed during the inspection. The laboratory check sheet is attached. The laboratory procedures were acceptable except for 2 of the 11 criteria which were rated marginal. The facility received marginal ratings for failure to have a standard operating procedure for cleaning sampling equipment and for failing to initial the bench sheets and make corrections through strike out rather than using whiteout. If there are any questions about these items please contact Steve Roberts at the Ohio EPA Division of Environmental Services (laboratory) at (614) 644-4225.

Please respond to comments 1 and 2 above, in writing, within 30 days of receipt of this notice. If you have any questions, please contact me at (740) 380-5284.

Sincerely,

Ms. Abbot Stevenson
Environmental Engineer
Permits and Enforcement Section
Division of Surface Water

AS/dh

Enclosure

c: Mike Dobbs, Operations Manager, EORWA
c: Jeff Vaughn, Vaughn, Coast and Vaughn
c: Paul Novak, Ohio EPA, DSW, CO

# NPDES
## Compliance Inspection Report

## A. NATIONAL DATA SYSTEM CODING

| Permit No. | NPDES No. | Date | Inspection Type | Inspector | Facility Type |
|---|---|---|---|---|---|
| 0PQ00000*MD | OH0049999 | September 15, 2011 | C | S | 1 |

## B. FACILITY DATA

| Name & Location of Facility Inspected | Entry Time | Permit Effective Date |
|---|---|---|
| Eastern Ohio Regional Wastewater Authority (EORWA)<br>Guernsey Street<br>Bellaire, Ohio | 9:45 a.m. | August 1, 2001 |
| | **Exit Time** | **Permit Expiration Date** |
| | 2:30 p.m. | January 31, 2016 |

| Name(s) & Title(s) of On-Site Representative(s) | Phone Number(s) |
|---|---|
| Jeff Vaughn, Technical Advisor<br>Mike Dobbs, Operations Manager | (740) 676-5911 |
| **Name, Address, & Title of Responsible Official** | **Phone Number** |
| Board of Trustees<br>EORWA<br>P.O. Box 502<br>Bridgeport, Ohio | (740) 676-5911 |

## C. AREAS EVALUATED DURING INSPECTION

| | | | | | |
|---|---|---|---|---|---|
| S | Permit | S | Flow Measurement | N | Pretreatment |
| S | Records/Reports | M | Laboratory | S | Compliance Schedules |
| S | Operations & Maintenance | S | Effluent/Receiving Waters | S | Self-Monitoring Program |
| S | Facility Site Review | S | Sludge Storage/Disposal | | Other |
| U | Collection System | | | | |

(S = Satisfactory; M = Marginal; U = Unsatisfactory; N = Not Evaluated; N/A = Not Applicable)

## D. SUMMARY OF FINDINGS/COMMENTS (attach additional sheets if necessary)

Collection System: Sanitary Sewer Overflows - See attached letter Item 1.
Laboratory: See attached letter Item 2.

**Abbot Stevenson**, Inspector, Ohio EPA, Southeast District Office — Date 11/30/11

**Jennifer M. Witte**, Reviewer, Ohio EPA, Southeast District Office — Date 11/30/11

Sections E through K: Complete on all inspections as appropriate (N/A = Not Applicable; N/E = Not Evaluated)

## E. PERMIT VERIFICATION

| Inspection Observations Verify the Permit | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Correct name & mailing address of permittee | ☒ | ☐ | ☐ | ☐ |
| b. Correct name & location of receiving waters | ☒ | ☐ | ☐ | ☐ |
| c. Product(s) & production rates conform with permit application (industries) | ☐ | ☐ | ☒ | ☐ |
| d. Flows & loadings conform with NPDES permit | ☒ | ☐ | ☐ | ☐ |
| e. Treatment processes are as described in permit application/briefing memo | ☒ | ☐ | ☐ | ☐ |
| f. New treatment process(es) added since last inspection | ☐ | ☒ | ☐ | ☐ |
| g. Notification given to state of new, different, or increased discharges | ☐ | ☐ | ☒ | ☐ |
| h. All discharges are permitted | ☐ | ☒ | ☐ | ☐ |
| i. Number & location of discharge points are as described in permit | ☐ | ☒ | ☐ | ☐ |

**Comments:**
h. SSOs are not permitted. See letter Item 1.
i. Permit does not identify specific SSOs.

## F. COMPLIANCE SCHEDULES/VIOLATIONS

| | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Any significant violations since the last inspection | ☐ | ☒ | ☐ | ☐ |
| b. Permittee is taking actions to resolve violations | ☒ | ☐ | ☐ | ☐ |
| c. Permittee has compliance schedule | ☒ | ☐ | ☐ | ☐ |
| d. Compliance schedule contained in: Consent Order (CO) & NPDES Permit | ☐ | ☐ | ☐ | ☐ |
| e. Permittee is meeting compliance schedule * | ☐ | ☒ | ☐ | ☐ |

**Comments:**
*Permittee is not in compliance with CO schedule. See attached letter Item (1).

## G. OPERATION AND MAINTENANCE

| Treatment Facility Properly Operated & Maintained | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Standby power available: Generator: ☒ Dual Feed: ☐ | ☒ | ☐ | ☐ | ☐ |
| b. Adequate alarm system available for power or equipment failures | ☒ | ☐ | ☐ | ☐ |
| c. All treatment units in service other than backup units | ☒ | ☐ | ☐ | ☐ |
| d. Sufficient operating staff provided: # of shifts: 3 Days/Week: 7 | ☒ | ☐ | ☐ | ☐ |
| e. Operator holds unexpired license of class required by permit. Class: III | ☒ | ☐ | ☐ | ☐ |
| f. Copy of certificate of Operator of Record displayed on-site | ☐ | ☐ | ☐ | ☐ |
| g. Minimum operator staffing requirements fulfilled (OAC 3745-7) | ☐ | ☐ | ☐ | ☐ |
| h. Routine & preventive maintenance schedule/performed on time | ☒ | ☐ | ☐ | ☐ |
| i. Any major equipment breakdown since last inspection | ☐ | ☒ | ☐ | ☐ |
| j. Operation & maintenance manual provided & maintained | ☒ | ☐ | ☐ | ☐ |
| k. Any plant bypasses since last inspection | ☐ | ☒ | ☐ | ☐ |
| l. Regulatory agency notified of bypasses: On MORS: ☐ 800 No.: ☐ | ☐ | ☐ | ☒ | ☐ |
| m. Any hydraulic and/or organic overloads experienced since last inspection | ☐ | ☒ | ☐ | ☐ |

**Comments:**
a. Generator is not capable of powering the entire WWTP.

| Record Keeping | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Log book provided | ☐ | ☐ | ☐ | ☐ |
| b. Log book kept on-site | ☐ | ☐ | ☐ | ☐ |
| c. Log book contains the following: | ☐ | ☐ | ☐ | ☐ |
| 1. Identification of treatment works | ☐ | ☐ | ☐ | ☐ |
| 2. Date/Time of arrival/departure of ORC | ☐ | ☐ | ☐ | ☐ |
| 3. Daily record of operation and maintenance activities | ☐ | ☐ | ☐ | ☐ |
| 4. Laboratory results (unless documented on bench sheets) | ☐ | ☐ | ☐ | ☐ |
| 5. Identification of person making log entries | ☐ | ☐ | ☐ | ☐ |
| d. Is the ORC submitting written notification to Ohio EPA and permittee when a collection system overflow, treatment plant bypass or effluent limit violation has occurred. | ☐ | ☐ | ☐ | ☐ |

**Comments:**

| Collection System | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Percent combined system. Percent: 100 | ☐ | ☐ | ☐ | ☐ |
| b. Any collection system overflows since last inspection: CSO: ☒ SSO: ☒ | ☒ | ☐ | ☐ | ☐ |
| c. Regulatory agency notified of overflow (SSOs) | ☒ | ☐ | ☐ | ☐ |
| d. CSO O&M plan provided and implemented | ☒ | ☐ | ☐ | ☐ |
| e. CSOs monitored and reported in accordance with permit | ☒ | ☐ | ☐ | ☐ |
| f. Portable pumps used to relieve system | ☐ | ☒ | ☐ | ☐ |
| g. Lift station alarm systems provided and maintained | ☒ | ☐ | ☐ | ☐ |
| h. Are lift stations equipped with permanent standby power or equivalent | ☒ | ☐ | ☐ | ☐ |
| i. Is there an inflow/infiltration problem (separate sewer system), or were there any major repairs to collection system since last inspection | ☒ | ☐ | ☐ | ☐ |
| j. Any complaints received since last inspection of basement flooding | ☒ | ☐ | ☐ | ☐ |
| k. Are any portions of the sewer system at or near capacity | ☒ | ☐ | ☐ | ☐ |

**Comments:**
h. 10 of 16 lift stations can be run by a backup generator.

## H. SLUDGE MANAGEMENT

| | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Sludge adequately disposed. Method: Land application | ☒ | ☐ | ☐ | ☐ |
| b. If sludge is incinerated, where is ash disposed of? _____ | ☐ | ☒ | ☐ | ☐ |
| c. Is sludge disposal contracted? Name: Synagro | ☒ | ☐ | ☐ | ☐ |
| d. Has amount of sludge generated changed significantly since last inspection | ☐ | ☒ | ☐ | ☐ |
| e. Adequate sludge storage provided at facility | ☒ | ☐ | ☐ | ☐ |
| f. Land application sites monitored and inspected per state rules | ☒ | ☐ | ☐ | ☐ |
| g. Records kept in accordance with state rules | ☒ | ☐ | ☐ | ☐ |
| h. Any complaints received in last year regarding sludge | ☐ | ☒ | ☐ | ☐ |
| i. Is sludge adequately processed (digestion, dewatering, pathogen control) in accordance with Ohio EPA rules | ☒ | ☐ | ☐ | ☐ |

**Comments:**

# I. SELF-MONITORING PROGRAM

| Part 1 – Flow Measurement | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Primary flow measuring device properly operated & maintained. Type of device:<br>☒ Ultrasonic & parshall flume ☐ Calculated from influent<br>☐ Weir ☐ Other<br>☐ Ultrasonic & weir specify: _____ | ☒ | ☐ | ☐ | ☐ |
| b. Calibration frequency adequate. Date of last calibration: 9/2011 | ☐ | ☐ | ☐ | ☐ |
| c. Secondary instruments (totalizers, recorders, etc.) properly operated and maintained | ☒ | ☐ | ☐ | ☐ |
| d. Flow measurement equipment adequate to handle expected ranges of flows | ☒ | ☐ | ☐ | ☐ |
| e. Actual flow discharged is measured | ☐ | ☒ | ☐ | ☐ |
| f. Flow measuring equipment inspection frequency:<br>☐ Daily ☒ Monthly<br>☐ Weekly ☐ Other | | | | |

**Comments:**
e. Flow meter is on influent.
f. Flow depth is measured manually once/month and compared to electronic depth measurement.

| Part 2 - Sampling | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Sampling location(s) are as specified by permit | ☒ | ☐ | ☐ | ☐ |
| b. Parameters and sampling frequency agree with permit | ☒ | ☐ | ☐ | ☐ |
| c. Permittee uses required sampling method | ☒ | ☐ | ☐ | ☐ |
| d. Sample collection procedures are adequate | ☒ | ☐ | ☐ | ☐ |
| i. Samples refrigerated during compositing | ☒ | ☐ | ☐ | ☐ |
| ii. Proper preservation techniques used | ☒ | ☐ | ☐ | ☐ |
| Conform with 40 CFR 136.3 | ☒ | ☐ | ☐ | ☐ |
| e. Monitoring records (e.g., flow, pH, D.O., etc.) maintained for a minimum of three years including all original strip chart recordings (e.g., continuous monitoring instrumentation, calibration, & maintenance records) | ☒ | ☐ | ☐ | ☐ |
| f. Adequate records maintained of sampling date, time, exact location, etc. | ☒ | ☐ | ☐ | ☐ |

**Comments:**

| Part 3 – Laboratory, General | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Written Standard Operating Procedures (SOPs) for all analysis performed on-site | ☐ | ☐ | ☐ | ☐ |
| b. EPA approved analytical testing procedures used (40 CFR 136.3) | ☒ | ☐ | ☐ | ☐ |
| c. If alternate analytical procedures are used, proper approval has been obtained | ☐ | ☐ | ☒ | ☐ |
| d. Analysis being performed more frequently than required by permit | ☐ | ☐ | ☐ | ☒ |
| e. If (c) is yes, are results reported in permittee's self-monitoring report | ☐ | ☐ | ☐ | ☒ |
| f. Commercial laboratory used:<br>1. Parameters analyzed by commercial lab: O&G, TKN Ortho Phos, Phos, cyanide, hardness, metals, toxicity<br>2. Lab name: Belmont Labs | | | | |

**Comments:**

| Part 3 – Laboratory, Quality Control/Quality Assurance | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Quality assurance manual provided and maintained | ☒ | ☐ | ☐ | ☐ |
| b. Satisfactory calibration and maintenance of instruments and equipment | ☒ | ☐ | ☐ | ☐ |
| c. Adequate records maintained | ☒ | ☐ | ☐ | ☐ |
| d. Results of latest U.S. EPA quality assurance performance sampling program: Date: 7/1/11 ☒ Satisfactory ☐ Marginal ☐ Unsatisfactory | | | | |

**Comments:**

## J. EFFLUENT/RECEIVING WATER OBSERVATIONS

| Outfall # | Oil Sheen | Grease | Turbidity | Visible Foam | Visible Float Solids | Color | Other |
|---|---|---|---|---|---|---|---|
| 001 | None | None | None | None | None | None | |

**Comments:**

## K. MULTIMEDIA OBSERVATIONS

| Collection System | YES | NO | N/A | N/E |
|---|---|---|---|---|
| a. Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories | ☐ | ☒ | ☐ | ☐ |
| b. Do you notice staining or discoloration of soils, pavement, or floors | ☐ | ☒ | ☐ | ☐ |
| c. Do you notice distressed (unhealthy, discolored, dead) vegetation | ☐ | ☒ | ☐ | ☐ |
| d. Do you see unidentified dark smoke or dustclouds coming from sources | ☐ | ☒ | ☐ | ☐ |
| e. Do you notice any unusual odors or strong chemical smells | ☐ | ☒ | ☐ | ☐ |
| f. Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities | ☐ | ☒ | ☐ | ☐ |

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

1. What is the cause of the conditions?
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:**

# General Lab Criteria

**Facility:** EORWA, 0PQ00000*MD

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Balance** | | **Acceptable?** | | |
| • Standard Weights | • Either NIST Class s or ASTM/ANSI Class 1 weights[1,2] | ☒ Yes | ☐ No | A |
| • Calibration Frequency/ Documentation | • Calibration verification required at least once each day the balance is used[3] | ☒ Yes | ☐ No | |
| • Cleanliness, air movement, vibration | • Cleanliness of balance is a must and air movement and vibration needs to be kept to a minimum[1] | ☒ Yes | ☐ No | |
| • Other | • Service and recalibrate annually (manufacturer representative or comparable)[1] | ☒ Yes | ☐ No | |
| | • Must be able to measure to 0.1 grams[4] | ☒ Yes | ☐ No | |
| | • Instrument manual available | ☒ Yes | ☐ No | |
| | • Log book maintained[6] | ☒ Yes | ☐ No | |
| Comments: | | | | |

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Drying Oven (Suspended Solids)** | | **Acceptable?** | | |
| • Temperature Recordkeeping | • Temperature recorded with each use[4] | ☒ Yes | ☐ No | A |
| | • Log book maintained[6] | ☒ Yes | ☐ No | |
| • Calibration Frequency/ Documentation | • Thermometer calibrated annually with NIST traceable thermometer[1,2]. Correction factor posted on thermometer/equipment[1] | ☒ Yes | ☐ No | |
| • Other | • Thermometer temperature in 0.1°C increments[5] | ☒ Yes | ☐ No | |
| | • Acceptable temperature range is 103° – 105°F[4] | ☒ Yes | ☐ No | |
| | • Instrument manual available | ☐ Yes | ☒ No | |
| Comments: Very old - no manual available | | | | |

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **pH 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] | ☒ Yes | ☐ No | A |
| | • Log book maintained[9] | ☒ Yes | ☐ No | |
| • Minimum of 2 point calibration | • Calibration per manufacturer specification and calibration buffers must bracket anticipated result[7] | ☒ Yes | ☐ No | |
| • Slope Documentation/ Acceptability | • Slope acceptable range indicated on benchsheet[2] | ☒ Yes | ☐ No | |
| • Buffer Expiration Date | • Buffers must not be expired | ☒ Yes | ☐ No | |
| • Other | • Instrument manual available | ☒ Yes | ☐ No | |
| | • Teflon covered magnetic stirrer or equivalent for mixing[8] | ☒ Yes | ☐ No | |
| Comments: | | | | |

# General Lab Criteria

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|---|---|---|
| **Dissolved Oxygen Meter** | | | | |
| • Calibration Method | • Air or known DO calibration method[10] | ☒ Yes | ☐ No | A |
| | • Calibration per manufacturer specification[10] | ☒ Yes | ☐ No | |
| • Calibration Frequency/ Documentation | • Logbook maintained[9] | ☒ Yes | ☐ No | |
| | • Calibration verification required at least once each day the meter is used.[3] | ☒ Yes | ☐ No | |
| • Other | • Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil)[11] | ☒ Yes | ☐ No | |
| | • Instrument manual available | ☒ Yes | ☐ No | |
| Comments: | | | | |

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|---|---|---|
| **Incubator (CBOD/E-Coli)** | | | | |
| • Temperature Recordkeeping | • Temperature checked/recorded twice daily for each shelf in use[1] | ☒ Yes | ☐ No | A |
| | • Temperature checked/recorded daily[2] (CBOD) | ☒ Yes | ☐ No | |
| | • Acceptable temperature range (CBOD) is 20°C ±1.0°[12] | ☒ Yes | ☐ No | |
| | • Acceptable temperature range (E-Coli) is 35°C ±0.5°[22] | ☐ Yes | ☐ No | |
| | • Logbook maintained[9] | ☒ Yes | ☐ No | |
| • Temperature Calibration/ Documentation | • Thermometer calibrated annually with NIST traceable thermometer[1,2] | ☒ Yes | ☐ No | |
| | • Temperature correction information posted on incubator[1] | ☒ Yes | ☐ No | |
| • E-Coli can use multiple tubes (five 20 ml or ten 10 mg), or mfg's multi-well tray | • E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb)[23] | ☐ Yes | ☒ NA | |
| • Other | • Instrument manual available | ☐ Yes | ☒ No | |
| | • Temperature Log (thermometer reads to 0.1 Celsius)[5] | ☒ Yes | ☐ No | |
| Comments: 40 years old - no manual | | | | |

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|---|---|---|
| **Refrigerator** | | | | |
| • Temperature Recordkeeping | • Temperature Log (thermometer reads to 0.1 Celsius)[5] | ☒ Yes | ☐ No | A |
| • Temperature Calibration/ Documentation | • Thermometer calibrated annually with NIST traceable thermometer[1,2] | ☒ Yes | ☐ No | |
| • Other | • Thermometer held in water bath[1] | ☒ Yes | ☐ No | |
| | • Refrigerator temperature ≤6° Celsius[13] | ☒ Yes | ☐ No | |
| | • Do not store volatile solvents, food, or beverages[14] | ☒ Yes | ☐ No | |
| Comments: | | | | |

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|---|---|---|
| **Chlorine Meter** | | | | |
| • Calibration Frequency/ Documentation | • pH/millivolt meter read to 0.1 mV[15] | ☐ Yes | ☐ 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] | ☐ Yes | ☐ No | |
| • Calibration Method | • Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters | ☐ Yes | ☐ No | |

# General Lab Criteria

| | | | | |
|---|---|---|---|---|
| | or calibration per manufacturer specification[16] | | | |
| | • Standards used for calibration not expired | ☐ Yes | ☐ No | |
| • Slope Documentation/ Acceptability | • Calibration curve (acceptable slope) | ☐ Yes | ☐ No | |
| • Other | • Electrode free of deposits and foreign material | ☐ Yes | ☐ No | |
| | • Log book being maintained[9] | ☐ Yes | ☐ No | |
| | • Instrument manual available | ☐ Yes | ☐ No | |
| Comments: N/A | | | | |

| 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] | ☒ Yes | ☐ No | **A** |
| | • Log book being maintained[9] | ☒ Yes | ☐ No | |
| • Slope Acceptability | • Verify calibration slope is acceptable (per mfg. spec.) | ☒ Yes | ☐ 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] | ☒ Yes | ☐ No | |
| | • Standards used for calibration not expired | ☒ Yes | ☐ No | |
| • Other | • Electrode free of deposits and foreign material | ☒ Yes | ☐ No | |
| | • Teflon covered magnetic stirrer or equivalent for mixing[18] | ☒ Yes | ☐ No | |
| | • Instrument manual available | ☒ Yes | ☐ No | |
| Comments: | | | | |

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Sample Collection/Handling** | | **Acceptable?** | | |
| • Sample Labeling | • Samples container labeled (description, date, time, preservative added, initialed)[19] | ☒ Yes | ☐ No | **M** |
| • Chain of Custody | • Chain of custody (description, date, time, signature)[19] | ☒ Yes | ☐ No | |
| • Other | • Composite samples refrigerated during sample collection[14] | ☒ Yes | ☐ No | |
| | • Equipment blanks utilized[14] | ☒ Yes | ☐ No | |
| | • SOP for cleaning of sampling equipment | ☐ Yes | ☒ No | |
| | • Log book being maintained[9] | ☒ Yes | ☐ No | |
| Comments: Needs SOP for cleaning equipment | | | | |

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Desiccator** | | **Acceptable?** | | |
| • General Criteria | • Properly working seals | ☒ Yes | ☐ No | **A** |
| | • Desiccant fresh (blue color) | ☒ Yes | ☐ No | |
| • Documentation | • Log book being maintained[9] | ☒ Yes | ☐ No | |
| Comments: | | | | |

# General Lab Criteria

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Bench Sheets** | | **Acceptable?** | | |
| • General Criteria | • Date(s)[2] | ☒ Yes | ☐ No | M |
| | • Analyst initials[2] | ☐ Yes | ☒ No | |
| | • Blue or black ink pen[2] | ☒ Yes | ☐ No | |
| | • Calibration information[2] | ☒ Yes | ☐ No | |
| | • Equations, calculations, units for all measurements, notations, and results present[2] | ☒ Yes | ☐ No | |
| | • Corrections, single line through, initialed and dated[2] | ☐ Yes | ☒ No | |
| Comments: Technician is reminded to provide analysts initials and to make proper corrections. | | | | |

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Hot Water Bath (Fecal Coliform/E. Coli)** | | **Acceptable?** | | |
| • Temperature Recordkeeping | • Temperature Log (thermometer reads 0.2° C)[21] | ☒ Yes | ☐ No | A |
| | • Incubator temperature 44.5° C ±0.2° [21/24] | ☒ Yes | ☐ No | |
| • Temperature Calibration/ Documentation | • Thermometer calibrated annually with NIST traceable thermometer[1,2] | ☒ Yes | ☐ No | |
| | • Log book being maintained[9] | ☒ Yes | ☐ No | |
| • Water Level | • Thermometer total immersion or partial (line on thermometer to ID immersion depth)[1,5] | ☐ Yes | ☒ NA | |
| Comments: | | | | |

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Autoclaves/Steam Sterilizers** | | **Acceptable?** | | |
| • All apparatus utilized is adequately sterilized before use | • Sterilizing temperature 121° C[25] | ☐ Yes | ☐ No | |
| | • 10 to 30 minutes time based on material being sterilized[26] | ☐ Yes | ☐ 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] | ☐ Yes | ☐ 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] | ☐ Yes | ☐ No | |
| • Temperature Calibration/ Documentation | • Thermometer calibrated annually with NIST traceable thermometer[1,2] | ☐ Yes | ☐ No | |
| | • Log book being maintained[9] | ☐ Yes | ☐ No | |
| • Performance Checks | • Test monthly for efficacy using a biological such as commercially available *Geobacillus stearothermophilus* in spore strips, suspensions, or capsules[1] | ☐ Yes | ☐ No | |
| Comments: N/A | | | | |

# General Lab Criteria

| Criteria | Standard Methods Requirement | | | Rating |
|---|---|---|---|---|
| **Final Effluent Temperature Monitoring** | | **Acceptable?** | | |
| • General Criteria | • Thermometer calibrated annually with NIST traceable thermometer[1,2] | ☒ Yes | ☐ No | |
| | • Thermometer reads in increments of at least 0.1°C[5] | ☒ Yes | ☐ No | |
| | • Log book being maintained[2] | ☒ Yes | ☐ No | |
| Comments: | | | | |

| | | |
|---|---|---|
| **Number of Criteria Rated:** | **Acceptable** | |
| | **Marginal** | |
| | **Unacceptable** | |
| | **Total Number of Areas Rated** | |

| | |
|---|---|
| **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<br>>45% of ratings are a combination of Marginal or Unacceptable<br>>30% of ratings are Unacceptable |

# General Lab Criteria

## Notation of Referenced Method

| | | | |
|---|---|---|---|
| 1 | Method 9020-B, Item 4 | 14 | Method 1060A, Item 1 |
| 2 | Method 1020-A, Item 1 | 15 | Method 4500-Cl I, Item 2 |
| 3 | Method 1020-B, Item 10 | 16 | Method 4500-Cl 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-B, 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.

**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 ≤6°C | 6h | 48h |
| TSS | P, G | 200 | G, C | Refrigerate ≤6°C | 7 d | 7 d |
| pH | P, G | 50 | G | Analyze immediately | 0.25h | 0.25 h |
| NH3-N | P, G | 500 | G, C | Analyze as soon as possible or add $H_2SO_4$ to pH <2, Refrigerate ≤6°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 ≤6°C | 7 d | 14 d |
| Base/Neutrals and acids | G (solvent rinsed or baked) | 1000 | G, C | Refrigerate ≤6°C | 7 d | 7 days until extraction 40 days after extraction |
| Pesticides | G (PTFE lined lid) | 1000 | C | Refrigerate ≤6°C | 7 d | 7 days until extraction 40 days after extraction |
| Fecal Coliform / E-Coli | G, P (Sterilized) | 100 | G | Refrigerate ≤10°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 $H_2SO_4$ to pH <2, Refrigerate ≤6°C | 28 d | 28 d |

# General Lab Criteria

| Approved Standard Methods | |
|---|---|
| CBOD / BOD 5 Day | Std Methods 5210-B |
| Ammonia, Selective Electrode Method | Std Methods 4500-NH3 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 Methods 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 |