



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

September 12, 2013

**Re:** Pike County  
Piketon WWTP  
Compliance Evaluation Inspection  
NPDES Permit 0PB00031\*GD

Mr. Billy Spencer, Mayor  
Village of Piketon  
109 Third Street  
Piketon, Ohio 45661

Dear Mr. Spencer:

On August 6, 2013, I conducted a compliance evaluation inspection of the wastewater treatment plant serving the village of Piketon. The purpose of the inspection was to determine the facility's compliance status with the terms and conditions of NPDES permit number 0PB00031\*GD.

As a part of the inspection, we have reviewed your self-monitoring reports from January 1, 2013 to August 1, 2013. Our review indicates the plant violated the E. coli limit of NPDES permit number 0PVB00031\*GD several times. We have your received your proposal to introduce PAA into the system to help with disinfection on a trial basis and feel the village should follow through with trial. If the study proves to be an effective solution to the disinfection problem, the village will need to submit a PTI for the new disinfection system.

A copy of the inspection report is attached. If there are any questions, please call me at (740) 380-5268.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jack Knapp", is written over the typed name and title.

Jack Knapp  
District Representative  
Division of Surface Water

JK/dh

Enclosure



State of Ohio Environmental Protection Agency  
Southeast District Office

Municipal NPDES Compliance Inspection Report

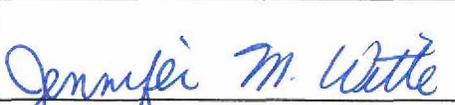
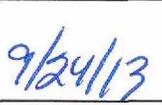
Section A: National Data System Coding					
Permit #	NPDES #	Month/Day/Year	Inspection Type	Inspector	Facility Type
OPB00031*GD	OH0027031	August 6, 2013	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Piketon WWTP 626 Piketon Road Piketon, Ohio	9:00 a.m.	May 1, 2012
	Exit Time	Permit Expiration Date
	11:10 a.m.	April 30, 2017
Name(s) and Title(s) of On-Site Representative(s)	Phone Number(s)	
Rhonda Clemmons, Village Administrator	(740) 289-8154	
Name, Address, and Title of Responsible Official	Phone Number	
Billy Spencer, Mayor 411 S West Street Piketon, Ohio 45661	(740) 289-8154	

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

**Section D: Summary of Findings** (attach additional sheets if necessary)

Please attached letter.

Inspector		Reviewer	
			
Jack Knapp Division of Surface Water Southeast District Office	Date 9/24/13	Jennifer M. Witte Compliance & Enforcement Supervisor Division of Surface Water Southeast District Office	Date 9/24/13

Sections E through 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..... 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/A

Comments/Status:

The UV system does not provide a sufficient kill which has led to E.Coli violations for the facility. The village has been in contact with PeraGreen Solutions and is proposing a study to see if introducing PAA to the system will help the village get back into compliance with their NPDES permit.

### Section G: Operation and Maintenance

**Treatment Works:**

Treatment facility properly operated and maintained

- (a) Standby power available generator  or dual feed .....
  - i. What does the back-up power source operate  

**entire plant**
  - ii. How often is the generator tested under load  

**weekly**

- (b) Which components have an alarm system available for power or equipment failures  
 Y
- (c) All treatment units in service other than backup units ..... Y
- (d) What method is used for scheduling routine and preventative maintenance (calendar, software, etc.)  
 Y
- (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:**

**Record Keeping/Operator of Record:**

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

**Comments/Status:**

The village needs to report all future violations to this office as soon as it becomes aware of a violation.

**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 4
  - II. How many pump stations have telemetered alarms..... 2
  - III. How many pump stations have operable alarms..... 4
- (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..... 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:**

**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.

- (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/A  
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
- (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:**

**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 (see GLC page) ..... Y
- (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:**

**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 & 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 ..... N
- (f) If (e) is yes, are results in permittee's self-monitoring report ..... N/A
- (g) Satisfactory calibration and maintenance of instruments/equipment (see score from GLC page) ..... Y
- (h) Commercial laboratory used ..... Y

Parameters analyzed by commercial lab: **Metals, E.Coli, Ammonia**  
Lab name: **MASI**

*Discharge Monitoring Report Quality Assurance (DMRQA)*

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

**Comments/Status:**

**Section J: Effluent/Receiving Water Observations**

Outfall #: **001**

Outfall Description: **Final**

Receiving Stream: **Scioto River**

Receiving Stream Description: **Warm Water Habitat**

Comments/Status:

**Section K: Multimedia Observations**

- (a) Are there indications of sloppy housekeeping or poor maintenance in work & 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:

# General Lab Criteria

Facility: Piketon WWTP

Criteria	Standard Methods Requirement		Acceptable?		Rating
<b>Balance</b>					
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights <sup>1,2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>	
• Calibration Frequency/ Documentation	• Calibration verification required at least once each day the balance is used <sup>3</sup>	<input checked="" 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 <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Other	• Service and recalibrate annually (manufacturer representative or comparable) <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Must be able to measure to 0.1 grams <sup>4</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Log book maintained <sup>6</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

Criteria	Standard Methods Requirement		Acceptable?		Rating
<b>Drying Oven (Suspended Solids)</b>					
• Temperature Recordkeeping	• Temperature recorded with each use <sup>4</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>	
	• Log book maintained <sup>6</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Calibration Frequency/ Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup> . Correction factor posted on thermometer/equipment <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Other	• Thermometer temperature in 0.1°C increments <sup>5</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Acceptable temperature range is 103° – 105°F <sup>4</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

Criteria	Standard Methods Requirement		Acceptable?		Rating
<b>pH Meter</b>					
• 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) <sup>3</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>	
	• Log book maintained <sup>9</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Minimum of 2 point calibration	• Calibration per manufacturer specification and calibration buffers must bracket anticipated result <sup>7</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Slope Documentation/ Acceptability	• Slope acceptable range indicated on benchsheet <sup>2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Buffer Expiration Date	• Buffers must not be expired	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Teflon covered magnetic stirrer or equivalent for mixing <sup>8</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

## General Lab Criteria

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

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Incubator (CBOD/E-Coli)</b>				<b>A</b>
• Temperature Recordkeeping	• Temperature checked/recorded twice daily for each shelf in use <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range (CBOD) is 20°C ±1.0° <sup>12</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35°C ±0.5° <sup>22</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Logbook maintained <sup>9</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Temperature Calibration/ Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Temperature correction information posted on incubator <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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) <sup>23</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Temperature Log (thermometer reads to 0.1 Celsius) <sup>5</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Refrigerator</b>				<b>A</b>
• Temperature Recordkeeping	• Temperature Log (thermometer reads to 0.1 Celsius) <sup>5</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Temperature Calibration/ Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Thermometer held in water bath <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Refrigerator temperature ≤6° Celsius <sup>13</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Do not store volatile solvents, food, or beverages <sup>14</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Chlorine Meter</b>				<b>NR</b>
• Calibration Frequency/ Documentation	• pH/millivolt meter read to 0.1 mV <sup>15</sup>	<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) <sup>3</sup>	<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 <sup>16</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

## General Lab Criteria

• 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 <sup>9</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: N/A				

Criteria	Standard Methods Requirement		Acceptable?		Rating
<b>Ammonia Meter</b>					
• 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) <sup>3</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<b>NR</b>	
	• Log book being maintained <sup>9</sup>	<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. <sup>17</sup>	<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 <sup>18</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments: MASI					

Criteria	Standard Methods Requirement		Acceptable?		Rating
<b>Sample Collection/Handling</b>					
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed) <sup>19</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>	
• Chain of Custody	• Chain of custody (description, date, time, signature) <sup>19</sup>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
• Other	• Composite samples refrigerated during sample collection <sup>14</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Equipment blanks utilized <sup>14</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• SOP for cleaning of sampling equipment	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Log book being maintained <sup>9</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments: The village will start requesting a chain of custody from MASI.					

Criteria	Standard Methods Requirement		Acceptable?		Rating
<b>Desiccator</b>					
• General Criteria	• Properly working seals	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>	
	• Desiccant fresh (blue color)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Documentation	• Log book being maintained <sup>9</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

## General Lab Criteria

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Bench Sheets</b>				
<ul style="list-style-type: none"> <li>General Criteria</li> </ul>	<ul style="list-style-type: none"> <li>Date(s)<sup>2</sup></li> </ul>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
	<ul style="list-style-type: none"> <li>Analyst initials<sup>2</sup></li> </ul>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>Blue or black ink pen<sup>2</sup></li> </ul>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>Calibration information<sup>2</sup></li> </ul>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>Equations, calculations, units for all measurements, notations, and results present<sup>2</sup></li> </ul>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>Corrections, single line through, initialed and dated<sup>2</sup></li> </ul>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Hot Water Bath (Fecal Coliform/E. Coli)</b>				
<ul style="list-style-type: none"> <li>Temperature Recordkeeping</li> </ul>	<ul style="list-style-type: none"> <li>Temperature Log (thermometer reads 0.2° C)<sup>21</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>NR</b>
	<ul style="list-style-type: none"> <li>Incubator temperature 44.5° C ±0.2°<sup>21/24</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>Temperature Calibration/ Documentation</li> </ul>	<ul style="list-style-type: none"> <li>Thermometer calibrated annually with NIST traceable thermometer<sup>1,2</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>Log book being maintained<sup>9</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>Water Level</li> </ul>	<ul style="list-style-type: none"> <li>Thermometer total immersion or partial (line on thermometer to ID immersion depth)<sup>1,5</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: MASI				

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Autoclaves/Steam Sterilizers</b>				
<ul style="list-style-type: none"> <li>All apparatus utilized is adequately sterilized before use</li> </ul>	<ul style="list-style-type: none"> <li>Sterilizing temperature 121° C<sup>25</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>NR</b>
	<ul style="list-style-type: none"> <li>10 to 30 minutes time based on material being sterilized<sup>26</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>Documentation</li> </ul>	<ul style="list-style-type: none"> <li>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<sup>1</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used<sup>1</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>Temperature Calibration/ Documentation</li> </ul>	<ul style="list-style-type: none"> <li>Thermometer calibrated annually with NIST traceable thermometer<sup>1,2</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>Log book being maintained<sup>9</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>Performance Checks</li> </ul>	<ul style="list-style-type: none"> <li>Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules<sup>1</sup></li> </ul>		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: N/A				

## General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?	Rating
<b>Final Effluent Temperature Monitoring</b>			
<ul style="list-style-type: none"> <li>• General Criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Thermometer calibrated annually with NIST traceable thermometer<sup>1,2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
	<ul style="list-style-type: none"> <li>• Thermometer reads in increments of at least 0.1°C<sup>5</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>• Log book being maintained<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments:			

<b>Number of Criteria Rated:</b>	<b>Acceptable</b>	10
	<b>Marginal</b>	
	<b>Unacceptable</b>	
	<b>Total Number of Areas Rated</b>	10

**Acceptable Ratings** – No action required (recommend SOP's written or updated, perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, written response not required).

**Marginal Ratings** – Improvements required, written response required (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response).

**Unsatisfactory Rating** – Improvements required, written response required, NOV issued (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response to NOV).

Consider recommending PAI Audit from DES when:

- >60% of ratings are Marginal
- >45% of ratings are a combination of Marginal or Unacceptable
- >30% of ratings are Unacceptable

# 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-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-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 $\leq 6^{\circ}\text{C}$	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
NH3-N	P, G	500	G, C	Analyze as soon as possible or add $\text{H}_2\text{SO}_4$ 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 $\text{HNO}_3$ 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	G, C	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 $\text{H}_2\text{SO}_4$ to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	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