



State of Ohio Environmental Protection Agency

Southeast District Office

2195 Front Street
Logan, Ohio 43138

TELE: (740) 385-8501 FAX: (740) 385-6490
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

June 2, 2010

Re: Vinton County
McArthur WWTP
Compliance Inspection
Correspondence (PWW)

Mayor and Council
Village of McArthur
24 W. Main Street
McArthur, Ohio 45651

Dear Mayor and Council:

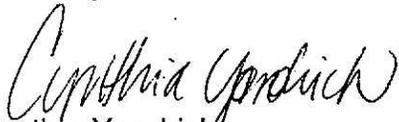
On April 20, 2010, Tim Campbell of this office and I performed a compliance inspection of the wastewater lagoons for the McArthur Wastewater Treatment Plant. Tony Walker represented the McArthur Wastewater Treatment Plant during the inspection. Janelle McManis was there representing the Vinton County Health Department. The purpose of the inspection was to determine if the treatment system was meeting the terms and conditions set forth in its NPDES permit. The results of the inspection are summarized below.

I inspected the new pump station, the influent pump station, waste grinder, the four aerated lagoons, two facultative lagoons, rock filter, and final discharge. The plant is in good condition and is operating well. Please see the inspection report for further details. There are two items that are of important note in the wastewater plant inspection that I will go into further detail of below.

1. I marked the effluent as marginal on the inspections report. The effluent was clear; however, directly downstream there was some sewage fungus present. This is a violation of Ohio Administrative Code 3745-1-04. Upon reviewing the facility's Monthly Operating Reports no violations of the permit limits are occurring, but the ammonia is high enough to cause problems. It may be causing the oxygen depletion in the force main to the outfall and sewage fungus directly downstream of the outfall. One option may be to try post-aeration in the wet well prior to discharge to help alleviate this problem.
2. We also evaluated the lab for the first time as part of the compliance inspection. Overall, lab operation appears to be good; however, a few items should be changed in order to obtain a satisfactory rating. The overall comment is to document calibration better in the log book. This can be done by initialing calibration and results in blue/black ink as well as writing down when each piece of equipment is calibrated. Please see lab inspection report for further details.

Please further investigate solutions to the sewage fungus downstream of the outfall and make the recommended changes to the lab. Please respond to this letter in writing within 21 days, indicating when the above items needing addressed will be corrected. Should you have any questions, please feel free to contact me at (740) 380-5266.

Sincerely,



Cynthia Yandrich
District Representative
Division of Surface Water

CY/dh

Enclosures

NPDES Compliance Inspection Report

A. NATIONAL DATA SYSTEM CODING

Permit No.	NPDES No.	Date	Inspection Type	Inspector	Facility Type
OPB00080*FD	OH0048241	April 20, 2010	C	S	1

B. FACILITY DATA

Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Village of McArthur Barleon Road McArthur, Vinton County, Ohio	10 & 12:30	February 1, 2007
	Exit Time	Permit Expiration Date
	11:30 & 1:50	January 31, 2012

Name(s) and Title(s) of On-Site Representative(s)	Phone Number(s)
Mark Walker, Superintendent	740-596-4060
Name, Address and Title of Responsible Official	Phone Number
Mark Walker, Superintendent 24 West Main Street McArthur, Ohio 45651	740-596-4060

C. AREAS EVALUATED DURING INSPECTION

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

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

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


Cynthia Yandrich, Inspector, Ohio EPA, Southeast District Office

6-1-10
Date


Timothy M. Campbell, Reviewer, Ohio EPA, Southeast District Office

6/1/10
Date

E. PERMIT VERIFICATION

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

Comments:

F. COMPLIANCE SCHEDULES/VIOLATIONS

	Yes	No	N/A	N/E
a. Any significant violations since the last inspection		X		
b. Permittee is taking actions to resolve violations			X	
c. Permittee has compliance schedule		X		
d. Compliance schedule contained in			X	
e. Permittee is meeting compliance schedule			X	

Comments:

G. OPERATION AND MAINTENANCE

Treatment Facility Properly Operated and Maintained	Yes	No	N/A	N/E
a. Standby power available: Generator ___ Dual Feed	X			
b. Adequate alarm system available for power or equipment failures	X			
c. All treatment units in service other than backup units	X			
d. Sufficient operating staff provided: # of shifts <u>7</u> Days/Week	X			
e. Operator holds unexpired license of class required by permit Class: I	X			
f. Routine and preventive maintenance schedule/performed on time	X			
g. Any major equipment breakdown since last inspection	X			
h. Operation and maintenance manual provided and maintained	X			
i. Any plant bypasses since last inspection		X		
j. Regulatory agency notified of bypasses ___ on MORS ___ 800 Number			X	
k. Any hydraulic and/or organic overloads experienced since last inspection	X			

Comments:

Significant improvement in decreased amount of infiltration and inflow due to construction project completed in 2008.

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

Comments:

Only SSOs not reported were basements, these are not required to be reported in this permit but will be next permit cycle. Lift stations are checked daily by staff. As stated before there were major repairs to the collection system in 2008 that decreased inflow. The village is continuing to resolve inflow and infiltration problems.

H. SLUDGE MANAGEMENT

- a. Sludge Management Plan (SMP): _____ Submitted Date
 _____ Approval Number
 _____ Not submitted
 X _____ N/A

	Yes	No	N/A	N/E
b. Sludge Management Plan current			X	
c. Sludge adequately disposed (Method: _____)			X	
d. If sludge is incinerated, where is ash disposed of?			X	
e. Is sludge disposal contracted (Name: _____)			X	
f. Has amount of sludge generated changed significantly since last inspection			X	
g. Adequate sludge storage provided at plant	X			
h. Land application sites monitored and inspected per SMP			X	
i. Records kept in accordance with state and federal law			X	
j. Any complaints received in last year regarding sludge		X		
k. Is sludge adequately processed (digestion, dewatering, pathogen control)			X	

Comments:

This is a six cell lagoon with rock filter, they check the sludge level yearly and it is only around 6-9 inches deep.

Part 3, Laboratory - Quality Control/Quality Assurance	Yes	No	N/A	N/E
f. Quality assurance manual provided and maintained	X			
g. Satisfactory calibration and maintenance of instruments and equipment	X			
h. Adequate records maintained		X		
i. Results of latest U.S. EPA quality assurance performance sampling program: N/A				
Date: _____ Satisfactory				
_____ Marginal				
_____ Unsatisfactory				

Comments:

See attached laboratory inspection for details.

J. EFFLUENT/RECEIVING WATER OBSERVATIONS

Outfall #	Oil Sheen	Grease	Turbidity	Visible Foam	Visible Float Solids	Color	Other
001	No	No	No	No	No	Clear	
Sewage fungus present close to outfall.							

Comments:

Sewage fungus was located close proximity to outfall though effluent at the pump station, discharge point and outfall is clear. Self monitoring reports show there are not fecal violations. The upstream fecal sampling shows significantly more fecal than downstream as well.

K. MULTIMEDIA OBSERVATIONS

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

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:

Very well kept and maintained facility.

General Lab Criteria

Facility: McArthur WWTP

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

Comments: Representative that was there to calibrate the equipment accidently took weights and manual.

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

Comments: Temperature should be recorded in log book. Old instrument, manual lost. Recommend replacing thermometer every two years, or calibrate NIST traceable thermometer with ice bath after two years.

Criteria	Standard Methods Requirement	Acceptable?	Rating
pH 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook maintained ⁹	<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 ⁷	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet ²	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Buffer Expiration Date	• Buffers must not be expired	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ⁸	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: The 10 buffer was just expired.

Criteria	Standard Methods Requirement	Acceptable?	Rating
Dissolved Oxygen Meter			
• Calibration Method	• Air or known DO calibration method ¹⁰	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Calibration per manufacturer specification ¹⁰	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Calibration Frequency	• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

General Lab Criteria

/ Documentation	<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	
• 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:

Criteria	Standard Methods Requirement	Acceptable?		Rating
Incubator (CBOD/ E-Coli)				
• Temperature Recordkeeping	<ul style="list-style-type: none"> Temperature checked / recorded twice daily for each shelf in use¹ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> Acceptable temperature range (CBOD) is 20° C ±1.0^{o12} 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> Acceptable temperature range (E-Coli) is 35° C ±0.5^{o22} 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> Logbook maintained⁹ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Temperature Calibration / Documentation	<ul style="list-style-type: none"> Thermometer calibrated annually with NIST traceable thermometer^{1, 2} 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> Temperature correction information posted on incubator¹ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• 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	
• Other	<ul style="list-style-type: none"> Instrument manual available 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> Temperature Log (thermometer reads to 0.1 Celsius).⁵ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Comments: Temperature should be recorded in log book twice daily. Recommend replacing thermometer every two years, or calibrate NIST traceable thermometer with ice bath after two years. Bacteria is sent within 6 hours.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Refrigerator				
• Temperature Recordkeeping	<ul style="list-style-type: none"> Temperature Log (thermometer reads to 0.1 Celsius).⁵ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Temperature Calibration / Documentation	<ul style="list-style-type: none"> Thermometer calibrated annually with NIST traceable thermometer^{1, 2} 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Other	<ul style="list-style-type: none"> Thermometer held in water bath.¹ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> Refrigerator temperature ≤6° Celsius.¹³ Do not store volatile solvents, food, or beverages.¹⁴ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Temperature should be recorded in log book twice a day. Recommend replacing thermometer every two years, or calibrate NIST traceable thermometer with ice bath after two years. Do not store food where you store samples.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Chlorine Meter				
• Calibration Frequency / Documentation	<ul style="list-style-type: none"> pH / millivolt meter read to 0.1 mV¹⁵ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<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	
• Calibration Method	<ul style="list-style-type: none"> Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters or calibration per manufacturer specification¹⁶ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> Standards used for calibration not expired 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	<ul style="list-style-type: none"> Calibration curve (acceptable slope) 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	<ul style="list-style-type: none"> Electrode free of deposits and foreign material 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> Log book being maintained.⁹ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

General Lab Criteria

	<ul style="list-style-type: none"> • Instrument manual available 	<input type="checkbox"/> Yes <input type="checkbox"/> No
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Comments: This facility is a lagoon and does not chlorinate.

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Log book being maintained ⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Slope acceptability	• Verify calibration slope is acceptable (per mfg. spec.).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Calibration Method	• Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec. ¹⁷	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Standards used for calibration not expired	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ¹⁸	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?	Rating
Sample Collection/Handling			
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed). ¹⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Chain of Custody	• Chain of custody (description, date, time, signature). ¹⁹	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Other	• Composite samples refrigerated during sample collection ¹⁴	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Equipment blanks utilized ¹⁴	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• SOP for cleaning of sampling equipment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	• Logbook being maintained ⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Excellent logbook, except must signature/initial everything in black/blue pen.

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

Comments: Should log in book when change desicant, it is being done at the proper time.

Criteria	Standard Methods Requirement	Acceptable?	Rating
Bench sheets			
• General criteria	• Date(s) ²	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Analyst initials ²	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	• Blue or black ink pen ²	<input type="checkbox"/> Yes <input checked="" 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: Excellent benchsheets, except must signature/initial everything in black/blue pen.

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?	Rating
Hot Water Bath (Fecal Coliform/E. Coli)			
<ul style="list-style-type: none"> Temperature Recordkeeping 	<ul style="list-style-type: none"> Temperature Log (thermometer reads 0.2° C)²¹ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> Incubator temperature 44.5° C ± 0.2°^{21/24} 		
<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"> Log book being maintained⁹ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Water Level 	<ul style="list-style-type: none"> Thermometer total immersion or partial (line on thermometer to ID immersion depth)^{1,5} 	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Fecals not done at this lab.

Criteria	Standard Methods Requirement	Acceptable?	Rating
Autoclaves/Steam Sterilizers			
<ul style="list-style-type: none"> All apparatus utilized is adequately sterilized before use 	<ul style="list-style-type: none"> Sterilizing temperature 121° C²⁵ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> 10 to 30 minutes time based on material being sterilized²⁶ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Documentation 	<ul style="list-style-type: none"> 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	
	<ul style="list-style-type: none"> Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used¹ 	<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"> Log book being maintained⁹ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Performance Checks 	<ul style="list-style-type: none"> Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules¹ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: N/A

Number of Criteria Rated:	Acceptable		
	Marginal		X
	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
- >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 H_2SO_4 to $\text{pH} < 2$, 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 $\text{pH} < 2$	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to $\text{pH} < 2$, 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_2SO_4 to $\text{pH} < 2$, 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 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