



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

June 4, 2013

Mr. Ron Coffey  
Village of Greenfield  
P.O. Box 300  
300 Jefferson Street  
Greenfield, Ohio 45123

**RE: Village of Greenfield WWTP  
NPDES Permit 1PD00022\*HD/OH0021083  
Compliance Evaluation Inspection 5/22/2013**

Dear Mr. Coffey:

On May 22, 2013, Betsy VanWormer and I conducted a site visit of the Wastewater Treatment Plant to determine compliance with the NPDES Permit for this facility and to familiarize ourselves with the treatment works for purposes of renewing the NPDES permit this fall. Jim McCoy was present for the inspection and provided us with the requested information and documents reviewed for the site inspection.

Attached is a copy of my report. All areas evaluated during the inspection were rated as satisfactory except for effluent/receiving stream which was rated as Marginal. The report includes a Notice of Violation for the effluent limit violations that occurred during the review period of May 2012 – April 2013.

Betsy VanWormer will also review the facility's compliance with the land application of biosolids and will send a separate letter to the Village.

A response is required regarding the three items identified in the General Lab Criteria review as discussed on page 9 on the Summary of Findings/Comments. Please submit a response by June 18, 2013.

Mr. Ron Coffey  
Village of Greenfield  
June 4, 2013  
Page 2

Joshua Jackson of this office will continue to be your facility contact regarding any operational or compliance issues you may need to discuss with him. If you have any questions regarding this letter or report, please contact me at (937) 285-6101.

Sincerely,

A handwritten signature in cursive script, appearing to read "Mary Osika".

Mary Osika  
Environmental Specialist  
Division of Surface Water

MO/kb

Enclosure

ec: Jim McCoy, Village of Greenfield  
Betsy VanWormer, Ohio EPA, DSW-CO  
Joshua Jackson, Ohio EPA, DSW-SWDO



State of Ohio Environmental Protection Agency  
Southwest District Office

NPDES Compliance Inspection Report

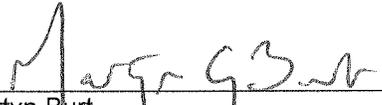
Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PD00022*HD	OH0021083	5/22/2013	Compliance	State	Public

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Village of Greenfield WWTP 187 Lost Bridge Road Greenfield, Ohio	10:00 am	June 1, 2011
	Exit Time	Permit Expiration Date
	1:40 pm	July 31, 2013
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Jim McCoy, Operator of Record	(937) 981-3413	
Name, Address and Title of Responsible Official	Phone Number	
Ron Coffey, City Manager Village of Greenfield P.O. Box 300 300 Jefferson Street Greenfield, Ohio 45123	(937) 981-3500	

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

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

See end of Report for Summary of Findings and Comments.

Inspector	Reviewer
	
6/5/2013 Date	6/6/2013 Date
Mary Osika Environmental Specialist Division of Surface Water Southwest District Office	Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office

Sections E thru K: Complete on all inspections as appropriate  
**Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated**

**Section E: Permit Verification**

Inspection observations verify the permit

- (a) Correct name and mailing address of permittee ..... Y
- (b) Flows and loadings conform with NPDES permit..... Y
- (c) Treatment processes are as described in permit application... Y
- (d) All discharges are permitted..... Y
- (e) Number and location of discharge points are as described  
 in permit..... Y
- (f) Storm water discharges properly permitted..... Y

Comments/Status:

Village of Greenfield submitted a renewal application on 12/10/2012.

**Section F: Compliance**

- (a) Any permit 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..... Y
- (e) Compliance schedule contained in...NPDES Permit Compliance Schedule
- (f) Permittee is in compliance with schedule..... Y
- (g) Has biomonitoring shown toxicity in discharge since last inspection N

Comments/Status:

(a) During the Review Period of May 2012 – April 2013, for Outfall 001, three effluent limit violations occurred. Notice of Violation is incorporated in this report following this comment box.

**Notice of Violation for Outfall 1PD00022001**

**Please be advised that failure to comply with the effluent limitations or reporting requirement of your NPDES permit may be cause for enforcement action pursuant to the Ohio Revised Code Section 6111.**

<u>Date</u>	<u>Parameter</u>	<u>Limit</u>	<u>Reported Value</u>
7/13/2012	Dissolved Oxygen	6.0 mg/l	5.6 mg/l
9/1/2012	Phosphorus, Total	1.5 mg/l	1.68 mg/l
12/22/2012	Nitrogen, Ammonia	4.5 mg/l	7.36 mg/l

**Section G: Operation & Maintenance**

**Treatment Works:**

Treatment facility properly operated and maintained

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

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

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

All components are connected to SCADA
- (c) All treatment units in service other than backup units..... Y
- (d) What method is used for scheduling routine & preventative maintenance ( PM software) ..... 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:

Some issues with repair of aeration pumps.

**Section G: Operation & Maintenance con't**

**Record Keeping/Operator of Record:**

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... Y
- (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..... Y
- (g) Operator of Record log book provided..... Y

- (h) Format of log book (e.g. computer log, hard bound book)  
 Hard bound book
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
- I. Identification of treatment works..... Y
  - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... Y
  - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... Y
  - iv. Laboratory results (unless documented on bench sheets)... Y
  - v. Identification of person making entries..... Y
- (k) Has the Operator of Record submitted written notifications to the permittee, Ohio EPA and, if applicable, any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred..... Y

Comments/Status:

Facility has a 5 hour reduction due to back up operators ( 3 to cover ORC).

**Section G: Operation & Maintenance con't**

**Collection System:**

- (a) Are there pump stations in the collection system..... Y
- i. How many publicly-owned pump stations equipped with permanent standby power or equivalent.....0
  - ii. How many pump stations have telemetered alarms.....1
  - iii. How many pump stations have operable alarms.....0
- (b) Any chronic collection system overflows since last inspection..... N
- (c) Regulatory agency notified of all overflows..... Y
- (d) CSOs in the collection system....if so, what is the LCTP status..... N/A
- (e) How are CSOs monitored (chalk, block, level sensor, etc.)..... N/A
- (f) Portable pumps available for collection system maintenance..... Y
- (g) RDII Program established and active..... Y
- (h) Any WIB complaint received since last inspection..... Y
- (i) Is there a WIB response plan..... Y
- (j) Is any portion of the collection system at or near dry weather Capacity..... N

Comments/Status:

Facility has rerouted sewers to handle large storm events.

**Section H: Sludge Management**

- (a) Method of Sludge Disposal...  Land Application  
 Haul to Another NPDES Permittee  
 Haul to a Mixed Solid Waste Landfill

\*if one of the selected methods is land application, complete applicable charts.

**Class B Sewage Sludge Chart (monitoring station 581)**

**Pathogen Reduction Alternative = Alternative 2 Aerobic Digestion (46396)**

**Vector Attraction Reduction Option = Option10 – Immediate Incorporation**

- Has amount of sludge generated changed significantly since the last inspection..... N  
(b) How much sludge storage is provided at the plant.....  
6 mon ths at least  
(c) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y  
(d) Any complaints received in last year regarding sludge..... N  
(e)  $\leq 5/8$ " screen at headworks for facilities that land apply sludge..... Y  
(f) Are sludge application sites inspected to verify compliance with NPDES permit..... Y

**Comments/Status:**

Betsy VanWormer will also evaluate compliance with biosolids regulations and send a separate letter to the Village.

**Section I: Self-Monitoring Program**

**Flow Measurement:**

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):  
magmeter in effluent pipe  
(b) Flow meter calibrated annually ..... Y  
(Date of last calibration: 4/2013)  
(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:**

Additional magmeter in second effluent pipe when needed for peak storm flow rates. Flow rates are then added for total flow rate.

**Section I: Self-Monitoring Program (con't)**

**Sampling:**

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y  
 (see General Lab Criteria page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

**Comments/Status:**

(a) final effluent samples are taken after post air and prior to UV except for bacteria sample.

**Section I: Self-Monitoring Program (con't)**

**Laboratory:**

*General*

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... Y
- (b) Do SOP's include the following if applicable:
  - Title
  - Scope and Application
  - Summary
  - Sample Handling and Preservation
  - Interferences
  - Apparatus and Materials
  - Reagents
  - Procedure
  - Calculations
  - Quality Control
  - Maintenance
  - Corrective Action
  - Reference (Parent Method)

*Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. "Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.*

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (d) If alternate analytical procedures are used, proper approval has been obtained..... Y

- (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. Y  
(see score from General Lab Criteria pages )
- (h) Commercial laboratory used..... Y  
Parameters analyzed by commercial lab: all except pH, D.O., Temp.

Lab name: MASI , EnviroScience

*Discharge Monitoring Report Quality Assurance (DMRQA)*

- (a) Participation in latest USEPA quality assurance performance  
sampling..... Y  
Date: 8 /2012
- (b) Were any parameters "Unsatisfactory"..... Y
- (c) Reasons for "Unsatisfactory" parameters.....

Alloway's bioassay for minnows – control water issue;  
corrective measures taken.

**Comments/Status:**

Facility now uses EnviroScience for biomonitoring tests.

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

Outfall # 001

Outfall Description: Final effluent was satisfactory

Receiving Stream: Paint Creek

Receiving Stream Description: Satisfactory; no problems seen at outfall or immediately downstream.

**Comments/Status:**

**Section K: Multimedia Observations**

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N

Permit # : 1PD00022\*HD  
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- (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?

### Summary of Findings/Comments

The purpose of the inspection was to conduct a pre-permit site inspection for renewal of the NPDES permit and to evaluate compliance with the NPDES permit for the review period of May 2012 – April 2013. Mary Osika of the Division of Surface Water (DSW), Southwest District Office and Betsy VanWormer of DSW, Central Office will be working on the renewal of the NPDES Permit this summer.

The Village of Greenfield's WWTP is designed for 1.6 MGD. The average flow rate during the review period was 0.67 MGD. The maximum flow rate during this period was 2.54 MGD.

During the compliance review period of May 2012 – April 2013, the facility experienced three effluent limit violations. The causes were attributed to plant construction issues, operator error and industrial wastewater slug load. Due to these violations, the effluent evaluation during the review period was rated as Marginal. The Notice of Violation is incorporated within the report on page 2.

During the site inspection, the lab area and sampling stations were evaluated using the attached General Lab Criteria which reflects the standard method requirements for wastewater analysis. The following items were noted during review of the General Lab Criteria and must be corrected:

1. Refrigerator thermometers must be calibrated annually with NIST traceable thermometers with correction factors posted. In lieu of that, the facility may purchase new thermometers annually if the calibration costs are a factor.
2. For daily temperature recording of refrigerators, a log book (bound) should be maintained instead of note cards.
3. A SOP for sampling equipment maintenance should be implemented and a log book provided to document those maintenance activities.

# Greenfield General Lab Criteria Review 5/22/2013

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>pH Meter</b>				
<ul style="list-style-type: none"> <li>• Calibration Frequency / Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• 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></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>
		<ul style="list-style-type: none"> <li>• Logbook maintained<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	
<ul style="list-style-type: none"> <li>• Minimum of 2 point calibration</li> </ul>	<ul style="list-style-type: none"> <li>• Calibration per manufacturer specification and calibration buffers must bracket anticipated result<sup>7</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>• Slope Documentation / Acceptability</li> </ul>	<ul style="list-style-type: none"> <li>• Slope acceptable range indicated on benchsheet<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>• Buffer Expiration Date</li> </ul>	<ul style="list-style-type: none"> <li>• Buffers must not be expired</li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Instrument manual available</li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
		<ul style="list-style-type: none"> <li>• Teflon covered magnetic stirrer or equivalent for mixing<sup>8</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	
Comments: :       				
<b>Dissolved Oxygen Meter</b>				
<ul style="list-style-type: none"> <li>• Calibration Method</li> </ul>	<ul style="list-style-type: none"> <li>• Air or known DO calibration method<sup>10</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>
		<ul style="list-style-type: none"> <li>• Calibration per manufacturer specification<sup>10</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	
<ul style="list-style-type: none"> <li>• Calibration Frequency / Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Logbook maintained<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
		<ul style="list-style-type: none"> <li>• Calibration verification required at least once each day the meter is used.<sup>3</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	
<ul style="list-style-type: none"> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil)<sup>11</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
		<ul style="list-style-type: none"> <li>• Instrument manual available</li> </ul>	<input checked="" type="checkbox"/> Yes	
Comments:  <i>Operator uses a YSI multi-probe and performs daily ambient calibrations per manufacturer's instructions.</i>				

# Greenfield General Lab Criteria Review 5/22/2013

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Refrigerator</b>				
• Temperature Recordkeeping	• Temperature Log (thermometer accurate to 0.5 Celsius). <sup>5</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>M</b>
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Other	• Thermometer held in water bath. <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Refrigerator temperature $\leq 6^{\circ}$ 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:  <i>Discussed issue regarding calibration of thermometers with operator.</i>				

# Greenfield General Lab Criteria Review 5/22/2013

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Sample Collection/Handling</b>				
<ul style="list-style-type: none"> <li>• Sample Labeling</li> <li>• Chain of Custody</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Samples container labeled (description, date, time, preservative added, initialed).<sup>19</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>M</b>
	<ul style="list-style-type: none"> <li>• Chain of custody (description, date, time, signature).<sup>19</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>• Composite samples refrigerated during sample collection<sup>14</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>• Equipment blanks utilized<sup>14</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>• SOP for cleaning of sampling equipment</li> </ul>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>• Logbook being maintained<sup>2</sup></li> </ul>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
<p>Comments:</p> <p><i>Discussed with Operator the requirement for SOP and Logbook for documentation of sample equipment cleaning and maintenance issues.</i></p>				
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	
<p>Comments:</p>				

# Greenfield General Lab Criteria Review 5/22/2013

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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>M</b>
	<ul style="list-style-type: none"> <li>• Thermometer scaled to 0.1° Celsius and accurate to 0.5° 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Comments:  <i>Operator uses a YSI multi-probe for temperature reading. NIST annual calibration and log book needed for documenting annual calibration and maintenance activities regarding the probe.</i>			
<b>Number of Criteria Rated:</b>		Acceptable	3
		Marginal	3
		Unacceptable	
		<b>Total Number of Areas Rated</b>	<b>6</b>
<b>Acceptable Ratings</b> – 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).			
<b>Marginal Ratings</b> – 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).			
<b>Unsatisfactory Rating</b> - 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:	<ul style="list-style-type: none"> <li>&gt;60% of ratings are Marginal</li> <li>&gt;45% of ratings are a combination of Marginal or Unacceptable</li> <li>&gt;30% of ratings are Unacceptable</li> </ul>		

### Notation of Referenced Method

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

# Greenfield General Lab Criteria Review 5/22/2013

Equipment Logbook Content - all maintenance performed on a piece of equipment should be documented in the logbook. This should include parts replacement and routine maintenance activities. Entries should include date, maintenance performed and initials of person making entry.

Preservation and Holding Times						
Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	6h	48h
TSS	P, G	200	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d
pH	P, G	50	G	Analyze immediately	0.25h	0.25 h
NH <sub>3</sub> -N	P, G	500	G, C	Analyze as soon as possible or add H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO <sub>3</sub> to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH<2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

Approved Standard Methods	
CBOD / BOD 5 Day	Std Methods 5210-B
Ammonia, Selective Electrode Method	Std Methods 4500-NH <sub>3</sub> 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