



**Environmental
Protection Agency**

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

Re: Richland County
Village of Lexington
NPDES Permit

May 30, 2012

Mr. Randy Pore, Administrator
Village of Lexington
44 West Main Street
Lexington, Ohio 44904

Dear Mr. Pore:

On May 11, 2012, an inspection was conducted of the wastewater treatment facilities serving the Village of Lexington located at 205 South Mill Street. Mr. Mike Lifer, the treatment plant operator of record, was present to provide a tour of the facilities and answer questions.

The treatment plant was in excellent condition at the time of the inspection. All processes were operating normally and a clear effluent was being discharged. One of the aeration blowers was out for maintenance. Mr. Lifer indicated that the blower had suffered a catastrophic failure in the beginning of April and has been sent to the manufacturer for replacement. The other two aeration blowers have already been replaced by the manufacturer for previous problems.

Mr. Lifer indicated that the product representative for the aeration basin air diffuser assemblies was recently onsite and commented on some of the uneven distribution of air from several of the assemblies. The product representative told Mr. Lifer that he would send someone to inspect these diffusers next time they are in the area. It is common that aeration diffusers require maintenance to repair worn assemblies and headers. We recommend the Village begin researching companies that may be able to perform this task on a regular maintenance schedule to assure for optimal operation of the aeration system.

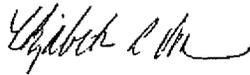
A review of the discharge monitoring reports submitted to our office for the months of June 2011 through April 2012 revealed several **violations** of the limits contained in your National Pollutant Discharge Elimination System (NPDES) permit. A printout of these **violations** has been enclosed for your review. Previous correspondence was received from the wastewater treatment plant (WWTP) staff regarding the cause of these violations. No further action regarding the violations is needed at this time.

Mr. Randy Pore
May 30, 2012
Page Two

An inspection of the onsite laboratory was also performed. Please refer to the enclosed General Lab Criteria checklist for areas identified during the inspection that need to be addressed. Out of seven areas evaluated, five areas were adequate and two were marginal. The majority of the deficiencies identified during our previous inspection have been corrected. The areas identified as marginal need to be addressed. Specific concerns centered on slope calculation records for the pH meter, equations for calculating CBOD, and sample preparation and analysis of the CBOD bottles. These items need to be addressed within the next six months. Our office will follow up to assure that these issues are corrected.

Our completed inspection report is enclosed for your review. If you have any questions, please call Walter Ariss at 419-373-3070.

Sincerely,



Elizabeth A. Wick, P.E.
Environmental Engineer/Section Manager
Division of Surface Water

WA/jlm

Enclosures

pc: Craig Roberts, Village of Lexington

ec: Inspection Tracking

Get New Data

Lexington WWTP NPDES permit limit violations June 2011 through April 2012

Permit No	Reporting Period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
2PB00019*JD	June 2011	001	00610	Nitrogen, Ammonia (NH3)	7D Conc	1.5	2.86	6/1/2011
2PB00019*JD	September 2011	001	00610	Nitrogen, Ammonia (NH3)	30D Conc	1.0	4.29692	9/1/2011
2PB00019*JD	September 2011	001	00610	Nitrogen, Ammonia (NH3)	30D Qty	5.7	6.57223	9/1/2011
2PB00019*JD	September 2011	001	00610	Nitrogen, Ammonia (NH3)	7D Conc	1.5	3.91333	9/8/2011
2PB00019*JD	September 2011	001	00610	Nitrogen, Ammonia (NH3)	7D Conc	1.5	5.46333	9/15/2011
2PB00019*JD	September 2011	001	00610	Nitrogen, Ammonia (NH3)	7D Conc	1.5	6.06	9/22/2011
2PB00019*JD	September 2011	001	00610	Nitrogen, Ammonia (NH3)	7D Qty	8.5	9.43064	9/22/2011
2PB00019*JD	October 2011	001	00610	Nitrogen, Ammonia (NH3)	30D Conc	1.0	1.04083	10/1/2011
2PB00019*JD	October 2011	001	00610	Nitrogen, Ammonia (NH3)	7D Conc	1.5	3.57667	10/1/2011

Lexington WWTP 5-11-12

Form Approved
OMB No. 158-R0035

F. GUIDE - VISUAL OBSERVATION - UNIT PROCESS

RATING CODES: S = Satisfactory; U = Unsatisfactory; M = Marginal; IN = In Operation; OUT = Out of Operation; N/E = Not Evaluated

CONDITION OR APPEARANCE		RATING	COMMENTS
General	Grounds	S	
	Buildings	S	
	Potable Water Supply Protection	N/E	
	Safety Features	S	
	Bypass to EQ	OUT	
	Stormwater Overflows		
	Alternate Power Source	OUT	Have a generator at both the influent pumping and at the treatment plant
Preliminary	Maintenance of Collection Systems	S	
	Pump Station	IN	3 influent pumps. Only one in use.
	Ventilation	S	
	Rotary Drum Screen	IN	Manual bar screen as backup
	Disposal of Screenings	S	Landfill -- emptying approximately 1/month
	EQ Basin	OUT	At dry weather level.
Primary			
Secondary-Tertiary	Aeration Tank	IN	One earthen basin, some individual aerators appear to need adjusted
	Blowers	IN	Three blowers, one in use. One blower out for repair
	Secondary Clarifiers	IN	Two tanks, both in use
	RAS/WAS pumps	IN	Have three pumps, one RAS, one WAS, and one can alternate.
Other	Flow Meter and Recorder	IN	Magmeter on influent station, ultrasonic on effluent, meters need calibrated
	Records	S	
	Lab Controls	S	See attached lab evaluation form
	Chemical Treatment	OUT	Have ferric tank, it is set up and ready to use if needed.
Sludge Disposal	Sludge holding Lagoons	IN	1 lagoon
	Disposal of Sludge	S	Have an approved land application plan
	Sludge blowers	IN	2 blowers, only use one, do not aerate all the time, run enough to prevent odors
Disinfection	Effluent	S	Very good clarity
	UV Disinfection System	IN	
	Post Aeration	IN	One blower next to tank.



State of Ohio Environmental Protection Agency
Northwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
2PB00019	OH0020257	5/11/2012	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Village of Lexington WWTP 205 South Mill Street Lexington, OH 44904	12:30 PM	6/1/2010
	Exit Time	Permit Expiration Date
	3:00 PM	1/31/2015
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Mike Lifer- Operator of Record	419-884-2630	
Name, Address and Title of Responsible Official	Phone Number	
Randy Pore - Village Administrator	419-884-0765	

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	M	Laboratory	N	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	M	Self-Monitoring Program
S	Facility Site Review	S	Sludge Storage/Disposal	N	Other
S	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)	
See attached inspection letter.	
Inspector	Reviewer
 Date: 5/11/12 Walter Ariss, P.E. Environmental Specialist II Division of Surface Water Northwest District Office	 Date: 5/21/12 Thomas Poffenbarger, P.E. Water Quality Engineer / Unit Supervisor Division of Surface Water Northwest 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) Correct name and location of receiving waters..... Y
- (c) Product(s) and production rates conform with permit application (Industries)..... N/A
- (d) Flows and loadings conform with NPDES permit..... Y
- (e) Treatment processes are as described in permit application... Y
- (f) New treatment process(es) added since last inspection..... N
- (g) Notification given to State of new, different or increased discharges..... N/A
- (h) All discharges are permitted..... Y
- (i) Number and location of discharge points are as described in permit..... Y

Comments/Status:

Section F: Compliance Schedules/Violations

- (a) Any significant violations since the last inspection..... N
- (b) Permittee is taking actions to resolve violations..... N/A
- (c) Permittee has a compliance schedule..... N
- (d) Compliance schedule contained in
- (e) Permittee is meeting compliance schedule..... N/A

Comments/Status:

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

- (a) Standby power available....generator or dual feed Y
- (b) Adequate alarm system available for power or equipment failures.. Y
- (c) All treatment units in service other than backup units..... Y
- (d) Wastewater Treatment Works classification (OAC 3745-7)..... III
- (e) Operator of Record holds unexpired license of class required by permit..... Y
 Class: III
- (f) Copy of certificate of Operator of Record displayed on-site..... Y
- (g) Minimum operator staffing requirements fulfilled (OAC 3745-7)... Y
- (h) Routine and preventative maintenance scheduled/performed... Y
- (i) Any major equipment breakdown since last inspection..... Y
- (j) Operation and maintenance manual provided and maintained..... Y
- (k) Any plant bypasses since last inspection..... N
- (l) Regulatory agency notified of bypasses..... N/A
 On MORs and/or Spill Hotline (1-800-282-9378)
- (m) Any hydraulic and/or organic overloads since last inspection..... N

Record Keeping:

- (a) Log book provided..... Y
- (b) Format of log book (i.e. computer log, hard bound book)

Employee time cards kept at Village Hall.
- (c) Log book(s) kept onsite (in an area protected from weather)..... Y
- (d) 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 operation and maintenance activities (including preventative maintenance, repairs and request for repairs)..... Y
 - IV. Laboratory results (unless documented on bench sheets)... Y
 - V. Identification of person making log entries..... Y
- (d) Has the operator of record submitted written notification 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/A

Section G: Operation & Maintenance (con't)

Collection System:

- (a) Percent combined system: 0%
- (b) Any collection system overflows since last inspection..... N
(CSO and/or SSO)
- (c) Regulatory agency notified of overflows (SSOs)..... N/A
- (d) CSO O&M plan provided and implemented..... N/A
- (e) CSOs monitored and reported in accordance with permit..... N/A
- (f) Portable pumps used to relieve system..... N
- (g) Lift station alarms provided and maintained..... Y
- (h) Are lift stations equipped with permanent standby power
or equivalent..... Y
- (i) Is there an inflow/infiltration problem (separate sewer system),
or were there any major repairs to collection system since
last inspection..... Y
- (j) Any complaints received since last inspection of basement flooding N
- (k) Are any portions of the sewer system at or near capacity..... N

Comments/Status:

Treatment Works:

- i) one of the aeration blowers is currently out for service
- g) staffed eight hours during week, three hours on weekends

Collection System:

- g) both headworks liftstation and Route 546 have telemetry
- h) have a portable generator to run 546 station.

Section H: Sludge Management

- (a) Sludge management plan (SMP)
Submitted date: 4/15/2008 Approval #: 03-452-PW Not submitted N/A
- (b) Sludge management plan current..... Y
- (c) Sludge adequately disposed..... Y
(Method:land application)
- (d) If sludge is incinerated, where is ash disposed of
- (e) Is sludge disposal contracted..... Y
(Name:to be determined)
- (f) Has amount of sludge generated changed significantly since
last inspection..... N
- (g) Adequate sludge storage provided at plant.....Y
- (h) Land application sites monitored and inspected per SMP..... Y
- (i) Records kept in accordance with State and Federal law..... Y
- (j) Any complaints received in last year regarding sludge..... N
- (k) Is sludge adequately processed (digestion, pathogen control)..... Y

Comments/Status:

wasting ~ twice per week for about an hour

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary flow measuring device operated and maintained..... Y
Type of device: Ultrasonic & Parshall flume Ultrasonic & Weir Weir
Calculated from influent Other (Specify:magmeter)
- (b) Calibration frequency adequate N
(Date of last calibration: 2010)
- (c) Secondary instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range
of flows..... Y
- (e) Actual flow discharged is measured..... Y
- (f) Flow measuring equipment inspection frequency
Daily Weekly monthly other

Comments/Status:

Flow Measurement:
b) Ultrasonic has not been calibrated since it went online in 2010. This need to be done annually

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
- (d) Sample collection procedures are adequate..... Y
 - (i) Samples refrigerated during compositing..... Y
 - (ii) Proper preservation techniques used..... Y
 - (iii) Containers and sample holding times prior to analysis conform with 40 CFR 136.3..... Y
- (e) 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
- (f) Adequate records maintained of sampling date, time, location, etc.. Y

Laboratory:

General

- (a) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (b) If alternate analytical procedures are used, proper approval has been obtained..... N/A
- (c) Analyses being performed more frequently than required by permit. N
- (d) If (c) is yes, are results in permittee's self-monitoring report..... N/A
- (e) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: Ammonia, O&G, Metals, Fecal

Lab name: Alloway

Quality Control/Quality Assurance

- (f) Quality assurance manual provided and maintained..... Y
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y
- (h) Adequate records maintained..... Y
- (i) Results of latest USEPA quality assurance performance sampling program:
 Satisfactory Marginal Unsatisfactory

Date: 4/1/2011

Comments/Status:

Sampling:
a) upstream sample collected at S.R. 97 Bridge, Downstream collected at Kochheiser Road

Section J: Effluent/Receiving Water Observations

Outfall Number	Oil sheen	Grease	Turbidity	Visible Foam	Visible Floating Solids	Color	Other
001	none	none	none	none	none	none	

Comments/Status:

Section K: Multimedia Observations

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

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

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

Comments/Status:

Lexington WWTP 5/11/2012 General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Balance				
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights ^{1,2}	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
• 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained ⁶	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Calibrated and serviced in August 2011, will be done annually. Now keeping log. Need to add information in log to when balance is calibrated against know weights and not just zeroed out. This should be done at a minimum once/week. Check balance manual for recommendations.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Drying Oven (Suspended Solids)				
• Temperature Recordkeeping	• Temperature recorded with each use ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
	• 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Thermometer temperature in 0.1° C increments ⁵	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° F ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Now recording temp in log book during days when used. Purchased traceable thermometer.

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	M
	• 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 type="checkbox"/> Yes	<input checked="" 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 ⁸	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Not keeping a record of pH slope calculations. Refer to owners manual for slope calculation frequency.

Lexington WWTP 5/11/2012 General Lab Criteria

Criteria	Standard Methods Requirement		Rating	
Dissolved Oxygen Meter		Acceptable?		
• Calibration Method	• Air or known DO calibration method ¹⁰	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A	
	• Calibration per manufacturer specification ¹⁰	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
• Calibration Frequency / Documentation	• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
	• Calibration verification required at least once each day the meter is used. ³	<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) ¹¹	<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		Rating
Incubator (CBOD/ E-Coli)		Acceptable?	
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use ¹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A
	• Acceptable temperature range (CBOD) is 20° C ±1.0° ¹²	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35° C ±0.5° ²²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1, 2}	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature correction information posted on incubator ¹	<input checked="" 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	• E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) ²³	<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). ⁵	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: Incubator temp should be checked every day it is used, not just on days when samples are added or removed. For CBOD this would be every day during the 5-day incubation.			

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

Lexington WWTP 5/11/2012 General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Chlorine Meter				
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV ¹⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) ³	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Method	• Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters or calibration per manufacturer specification ¹⁶	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Calibration curve (acceptable slope)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained. ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Ammonia Meter				
• Calibration Frequency / Documentation	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) ³	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope acceptability	• Verify calibration slope is acceptable (per mfg. spec.).	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Method	• Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec. ¹⁷	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ¹⁸	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Lexington WWTP 5/11/2012 General Lab Criteria

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

Criteria	Standard Methods Requirement	Acceptable?		Rating
Desiccator				
• General criteria	• Properly working seals.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
	• Desiccant fresh (blue color)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Documentation	• Log book being maintained ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: Now keeping log of desiccant change dates				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Bench sheets				
• General criteria	• Date(s) ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	M
	• Analyst initials ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Blue or black ink pen ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Calibration information ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equations, calculations, units for all measurements, notations, and results present ²	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Corrections, single line through, initialed and dated ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: CBOD equations not correct. TSS measurements need to include units				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Hot Water Bath (Fecal Coliform/E. Coli)				
• Temperature Recordkeeping	• Temperature Log (thermometer reads 0.2° C) ²¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Incubator temperature 44.5° C ± 0.2° ^{21/24}			
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Water Level	• Thermometer total immersion or partial (line on thermometer to ID immersion depth) ^{1,5}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Lexington WWTP 5/11/2012 General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Autoclaves/Steam Sterilizers				
• All apparatus utilized is adequately sterilized before use	• Sterilizing temperature 121° C ²⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• 10 to 30 minutes time based on material being sterilized ²⁶	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Documentation	• Verify the autoclave temperature weekly by using a maximum registering thermometer (MRT) to confirm that 121°C has been reached as measured in the exhaust. ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Performance Checks	• Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Number of Criteria Rated:	Acceptable	5
	Marginal	2
	Unacceptable	
Total Number of Areas Rated		7

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
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Lexington WWTP 5/11/2012 General Lab Criteria

Notation of Referenced Method

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

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

Preservation and Holding Times						
Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	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 pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO_3 to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H_2SO_4 to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

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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