



Environmental
Protection Agency

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korleski, Director



1PE0000720110711

CLARK

SPRINGFIELD WWTP

REYNOLDS, JOSEP | 2011/07/11



Environmental
Protection Agency

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

July 11, 2011

Mayor and Council
City of Springfield
76 East High Street
Springfield, Ohio 45506

RE: City of Springfield WWTP Compliance Evaluation Inspection / Notice of Violation.

Dear Mayor and Council:

On June 30, 2011, Joe Reynolds conducted a Compliance Evaluation Inspection at the City of Springfield waste water treatment plant. The inspection was conducted as part of a compliance review for the plant with respect to the terms and conditions of the National Pollutant Discharge Elimination System (NPDES) permit issued to the city.

The findings from the inspection are included in the attached report. The report contains six items that require a response. Please provide a written response by the dates noted.

If you have any questions regarding the report, you may contact Joe Reynolds at (937) 285-6097.

Sincerely,

Debora Roth
Division of Surface Water

Enclosure

cc: Tim Weaver, Operations Engineer
Bill Young, Plant Superintendent





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
1PE00007*ND	OH0027481	6/30/2011	C	S	1

Section B: Facility Data			
Name and Location of Facility Inspected		Entry Time	Permit Effective Date
City of Springfield WWTP 965 Dayton Avenue Springfield, Ohio 45506		9:00 AM	4/1/2011
		Exit Time	Permit Expiration Date
		1:40 PM	12/31/2011
Name(s) and Title(s) of On-Site Representatives		Phone Number(s)	
Bill Young, Plant Superintendent Mike Boggs, Senior lab Tech.		(937) 324 - 7626	
Name, Address and Title of Responsible Official		Phone Number	
Mayor and Council, City of Springfield 76 East High Street Springfield, Ohio 45506		(937) 324 - 7300	

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

Section D: Summary of Findings (Attach additional sheets if necessary)			
See attached report.			
Inspector		Reviewer	
<i>Joe Reynolds</i>		<i>Martyn Burt</i>	
7/11/2011		7/11/2011	
Date		Date	
Joe Reynolds 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:

Section F: Compliance

- (a) Any significant violations since the last inspection..... N
- (b) Appropriate Non-compliance notification of violations..... N/A
- (c) Permittee is taking actions to resolve violations..... N/A
- (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:

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

- (a) Standby power availablegenerator or dual feed Y
- i. What does the back-up power source operate.....
- Runs entire plant
- ii. How often is the generator tested under load.....
- NA
- (b) Which components have an alarm system available for power or equipment failures.....
- Entire system has SCADA monitoring. Alarmed to operator station at plant. The system also calls operator cell phones.
- (c) All treatment units in service other than backup units..... Y
- (d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....
- Use spread sheets with work orders.
- (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..... Y
- (h) Any plant upsets since last inspection..... N

Comments/Status:

The lower bearings on the secondary screw pumps were replaced as a maintenance activity. The plant influent is throttled during certain storm events, bypassing excess storm flows to the Mad River.

Section G: Operation & Maintenance con't

Record Keeping/Operator of Record:

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

The city has a lot of information in electronic log. They do not have a formal log established yet.
- (i) Log book kept onsite (in an area protected from weather)..... N
- (j) Log book contains the following:
 - I. Identification of treatment works..... N/E
 - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... N/E
 - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... N/E
 - iv. Laboratory results (unless documented on bench sheets)... N/E
 - v. Identification of person making entries..... N/E
- (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:

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.....2
 - ii. How many pump stations have telemetered alarms.....2
 - iii. How many pump stations have operable alarms.....2

- (b) Any chronic collection system overflows since last inspection..... Y
- (c) Regulatory agency notified of all overflows..... Y
- (d) Are there CSOs in the collection system..... Y
if so, what is the LTCP status.....

The LTCP was submitted in 2004.

- (e) How are CSOs monitored (chalk, block, level sensor, etc.).....

The city rotates CSO sampling 5 / event. All CSO are sampled at least once per year.

- (f) Portable pumps available for collection system maintenance..... Y
- (g) RDII Program established and active..... Y
- (h) Any WIB complaint received since last inspection..... N
- (i) Is there a WIB response plan..... Y
- (j) Is any portion of the collection system at or near dry weather capacity..... N

Comments/Status:

The city operates and maintains nine additional lift station. The city has three pumps and three back-up generators available for emergency operation of the stations.

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 A - Exception Quality Sewage Sludge (monitoring station 584)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options							
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized Solids	Option 8 - >75% Percent Solids with Unstabilized Solids
Alternative 1 - Time and Temperature Regime (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - High pH and High Temperature (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Other Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 4 - Unknown Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Composting (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Drying (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Treatment (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Thermophilic Aerobic Digestion (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Beta Ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Gamma ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Pasteurization (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 6 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Class B Sewage Sludge (monitoring station 581)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options									
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized	Option 8 - >75% Percent Solids with Unstabilized	Option 9 - Land Injection	Option 10 - Immediate Incorporation
Alternative 1 - Geometric Mean of Seven Fecal Samples (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Aerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Air Drying (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Anaerobic Digestion (46396)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Composting (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Lime Treatment (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (b) Has amount of sludge generated changed significantly since the last inspection..... N
- (c) How much sludge storage is provided at the plant.....
- (d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y
- (e) Any complaints received in last year regarding sludge..... N
- (f) 5/8" screen at headworks for facilities that land apply sludge..... N
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... Y
- (h) Is a contractor used for sludge disposal..... Y
 If so, what is the name of the contractor.....

Comments/Status:

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):
- (b) Flow meter calibrated annually Y
(Date of last calibration:)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... Y
- (e) All discharged flow is measured..... Y

Comments/Status:

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 GLC 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:

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..... N
 - 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. Y
- (f) If (e) is yes, are results in permittee's self-monitoring report..... Y
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y
(see score from GLC page)
- (h) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: Trace mercury, belt press fecals, belt press PCB's

Lab name: Ginosko Labs

Discharge Monitoring Report Quality Assurance (DMRQA)

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

Comments/Status:

Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: The effluent was clear minor white foam.

Receiving Stream: Mad River

Receiving Stream Description: The stream was moderately turbid, minor foam, no solids.

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:

Inspection Findings

National Pollutant Discharge Elimination System (NPDES) permit number 1PE00007*ND was issued to the City of Springfield on December 8, 2010. This permit expires on December 31, 2011. A renewal application was submitted on May 9, 2011.

The city's NPDES permit has a compliance schedule for implementation of Long Term Control Plan (LTCP) phase one sewer and waste water treatment projects. The city is working on an addendum to the plan. The addendum is due by January 15, 2012.

Phase one upgrades will include: a new high rate clarifier for the plant bypass, a new final clarifier and splitter box, a new plant generator, and upgrades to the sludge pumping system (new screw pumps). The following items were removed from the phase one project list in order to save cost: a gravity thickener, new digester, expansion of the sludge storage volume, and the addition of a new belt press.

WETCO has installed a scale model of the high rate clarification system they hope to install at the plant. The city is working with WETCO to test various operating scenarios with the unit. With continuous feed the system has provided organic removal. Nutrient removal would require chemical feed. When installed, the system also will provide storage. This may help eliminate several bypass events.

Earlier this year the Ohio EPA received a report of possible illnesses involving kayakers on Buck Creek. A new kayak course was installed on Buck Creek last year. In follow-up the agency asked the city to look at a notification system for kayakers. At a minimum signs at the inlet and outlet points on the course should be posted, with notification of possible combined sewer overflows in the area.

The city is currently working on obtaining easements to extend sewer service to Springfield Beckley Airport. Once this sewer is extended the airport treatment plant will be eliminated. The city hopes to go to bid by the end of the year.

Inspection Findings (cont.)

The property across the street from the plant was recently purchased. This area could serve as sludge storage, or access to a storage tunnel. Due to the wet spring 300 tons of sludge had to be landfilled (fields were not accessible for land application). The city hopes to have access to wheat fields in early August. At that time the city hopes to clean the sludge storage building out completely.

The treatment train consist of influent screens, grit removal, primary clarification, trickling filters, complete mix activated sludge, secondary clarification, chlorination / dechlorination, post aeration, sludge dewatering, and anaerobic sludge digestion.

Currently back-up power is provided by a dual feed power source. Both lines originate from the same sub. station. Several brown outs have occurred. As part of the treatment upgrades the city is looking at adding two methane and one natural gas back-up generators.

The operators log is currently being kept on the computer. Daily operation and maintenance activities are stored on the computer, as are lab results. Arrival and departure times are recorded on time cards.

The city currently produces a Class B bio solid. All of the bio solids are being land applied by Synagro (contract operator). The treatment plant has 54 days of bio solids storage. With the addition of the high rate clarification system solids generation at the plant is expected to increase.

The draft final outfall signage is acceptable. The sign should be at least 2' x 2'. The sign should be 3' above the ground. The lettering must be at least 2" high.

Between June, 2009 and June, 2011 the city reported the following final effluent numeric violations: (2) chlorine residual, and (2) suspended solids.

Facility Inspection

The septage dump station ties into the system ahead of the plant bypass screen. The station shuts down during bypass events. As part of the upgrade the station will be plumbed to a separate sewer line.

The plant bypass screen (horizontal screen) was operating at the time of the inspection. The city has experienced problems acquiring repair parts. The screen will be replaced as part of the plant upgrade.

The influent sampler is located ahead of the preliminary treatment system. Samples are flow paced composites. The sampler was at 6 degrees Celsius.

The preliminary treatment system includes three automatic bar screens and two grit tanks (one grit tank is run at a time to maintain velocity). Screenings are currently incinerated. As part of the plant upgrade the incinerator will be eliminated.

A flow splitter box is used to divide flow between the three primaries. Waste Activated Sludge is returned to the splitter box. All three primary clarifiers were on-line at the time of the inspection. The effluent was greyish brown in color. There were minor grease particles on the surface behind the scum baffle.

The flow meter pit follows the primaries. After the metering pit flow enters the primary effluent pumping station. There are four primary effluent pumps. One of the pumps was out of service (motor rebuild).

There are two trickling filters. Both filters were on-line. The filters have a combined hydraulic capacity of 50 MGD. The drive units on both filters were replaced with Wes Tech units. The old mercury seals have been eliminated. Both filters had a uniform green biomass attached.

Facility Inspection (cont.)

Effluent from the trickling filters is pumped (three screw pumps) to the Complete Mix Activated Sludge (CMAS) treatment system. Each of the screw pumps is rated at 30 MGD. Only one screw pump is used at a time. The bottom bearings in all three pumps were replaced with grease free roller bearings.

Five aeration system blowers are available for use with the CMAS system. Only one blower is used at a time. Soft starts were added to the blowers to reduce the initial power surge. The blowers are rotated on a weekly basis.

All four CMAS basins were in service at the time of the inspection. Uniform mixing was occurring. The mixed liquor was chocolate brown.

Both secondary clarifiers were on line. The center drive in both clarifiers has been replaced. The effluent was clear. Minor pin floc solids were rising in the tanks. Strands of algae were noted on the effluent weir and trough. As part of the plant expansion a third clarifier will be built west of the existing two.

Due to clogging issues with the chlorine injection system, the chlorine feed was moved to the diversion chamber prior to the chlorine contact tank. This is a direct liquid feed using two chlorine pumps. The chlorine basin was a greenish brown tint. The new plant effluent pumps (three total) are located in the tank. Each pump is run once a month. After activation the drain back water stirred up solids in the bottom of the chlorine tank. This action reportedly has reduced the amount of solids that settle in the tank and also the chlorine demand.

Sodium bisulfate is fed at the beginning of the post aeration system. Fine solids were noted in the tank. The effluent appeared clear. White foam was forming. There are three post aeration blowers. Only one blower is run at a time. Variable Frequency Drive (VFD) motors were added to the blowers last year to allow for positive control over aeration rates.

Facility Inspection (cont.)

Waste solids from the treatment system are anaerobically digested in a two stage process. There are three primaries and one secondary digester. Digester gas is used in the boiler system to heat the digesters.

The city has two belt presses. Normally only one is used at a time. The city is looking at reconfiguring the digester plumbing to allow both presses to be used at the same time. The presses are run 5 days per week. Digested solids are sent directly to the belt press building. The city has been able to produce pressed solids in the 30% range.

The sludge storage building was filled out the door. The wet spring limited field access. One Hundred tons of bio solids were landfilled as a result.

The final effluent was clear. Minor white foam was noted.

Items requiring a response

1. Upon shut down of the final effluent pumps (located in the chlorine contact tank) a large amount of solids from the bottom of the tank were stirred up. An evaluation into effluent impacts from these solids and ways to minimize this impact should be performed. A written summary of the findings and recommendations of this evaluation must be submitted by no later than September 30, 2011.
2. The sludge storage building was filled at the time of the inspection. A determination as to the storage capacity needed to get through extended periods of inclement weather will need to be performed. This evaluation should include storage volumes needed to address additional solids generation from the new high rate clarification system. A brief summary of these findings should be provided no later than September 30, 2011.
3. An operator's log, either computerized log or a hard bound book, must be established for the plant. The log must include the information as defined in OAC 3745-7-09. Written verification must be provided by no later than August 15, 2011.

Items requiring a response

4. The General Lab Criteria was used to review the labs CBOD5 test method. There are areas rated as marginal due to calibration and log book issues. Written verification detailing the actions taken to correct these issues must be provided by no later August 15, 2011.
5. The city needs to develop a CSO notification system (at a minimum signs) at the inlet and outlet points for kayakers on Buck Creek. A written description of the proposed notification system must be provided by no later than August 15, 2011.

General Lab Criteria

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

Comments: :

Criteria	Standard Methods Requirement	Acceptable?		Rating
Drying Oven (Suspended Solids)				NR
• Temperature Recordkeeping	• Temperature recorded with each use ⁴	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained ²	<input 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 type="checkbox"/> No	
• Other	• Thermometer temperature accurate to 0.5° Celsius ⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° C ⁴	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: :

General Lab Criteria

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 type="checkbox"/> Yes	<input type="checkbox"/> No	NR
	• Logbook maintained ²	<input 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 type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Buffer Expiration Date	• Buffers must not be expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ⁸	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: :

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	M
	• Calibration per manufacturer specification ¹⁰	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Logbook maintained ²	<input type="checkbox"/> Yes	<input checked="" 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:

General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Incubator (CBOD/ E-Coli)	Acceptable?		
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use ¹ (E-Coli)	<input type="checkbox"/> Yes <input type="checkbox"/> No	M
	• Temperature checked / recorded daily ² (CBOD)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• 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 ²	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature Log (thermometer accurate to 0.5 Celsius). ¹	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: The city uses electronic read out thermometers contained in water baths. Electronic records are kept. A formal log needs to be established. Annual thermometer calibration, using an NIST traceable thermometer, should be performed.

Criteria	Standard Methods Requirement		Rating
Refrigerator	Acceptable?		
• Temperature Recordkeeping	• Temperature Log (thermometer accurate to 0.5 Celsius). ⁵	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	M
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	• Thermometer held in water bath. ¹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Refrigerator temperature ≤6° Celsius. ¹³	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Do not store volatile solvents, food, or beverages. ¹⁴	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Annual thermometer calibration, using an NIST traceable thermometer, should be performed.

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Chlorine Meter		<input type="checkbox"/> Yes	<input type="checkbox"/> No	NR
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV ¹⁵ • 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 • 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. ²	<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		<input type="checkbox"/> Yes	<input type="checkbox"/> No	NR
• 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 • Log book being maintained ²	<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 • Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: :				

General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Sample Collection/Handling	Acceptable?		NR
• 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 ²		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement		Rating
Desiccator	Acceptable?		NR
• General criteria	• Properly working seals.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Desiccant fresh (blue color)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Documentation	• Log book being maintained ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement		Rating
Bench sheets	Acceptable?		NR
• General criteria	• Date(s) ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Analyst initials ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Blue or black ink pen ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Calibration information ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Equations, calculations, units for all measurements, notations, and results present ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Corrections, single line through, initialed and dated ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Hot Water Bath (Fecal Coliform/E. coli)			Acceptable?
• Temperature Recordkeeping	• Temperature Log (thermometer accurate to 0.2° C) ²¹	<input type="checkbox"/> Yes <input type="checkbox"/> No	NR
	• 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 ²	<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:

Criteria	Standard Methods Requirement		Rating
Autoclaves/Steam Sterilizers			Acceptable?
• All apparatus utilized is adequately sterilized before use	• Sterilizing temperature 121° C ²⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No	NR
	• 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 ²	<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:

General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Final Effluent Temperature Monitoring	Acceptable?		
• General Criteria	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes <input type="checkbox"/> No	NR
	• Thermometer accurate to 0.1° Celsius ⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Log book being maintained ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments:			
Number of Criteria Rated:			
			Acceptable
			Marginal
			Unacceptable
			Total Number of Areas Rated
<p>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).</p>			
<p>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).</p>			
<p>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).</p>			
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		

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 |

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.

General Lab Criteria

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 ₃ -N	P, G	500	G, C	Analyze as soon as possible or add H ₂ SO ₄ to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add 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 ₂ SO ₄ 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 ₃ 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