Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

Re: City of Lima WWTP
Inspection
NPDES-Biosolids
Allen County
2PE00000

December 29, 2017

Mr. David Schnipke
Environmental Compliance Manager
Lima WWTP
50 Town Square
Lima, Ohio 45801-4900

Dear Mr. Schnipke:

On December 5, 2017, Ohio EPA representatives Mr. Andrew Gall and Ms. Peggy Christie, conducted an inspection of the City of Lima wastewater treatment plant (WWTP). As part of the inspection, Mr. Gall evaluated the City of Lima WWTP's compliance with Ohio's Sewage Sludge Rules, Chapter 3745-40 of the Ohio Administrative Code (OAC). You and Mr. Eric Markley were present and provided information on sludge treatment operations and record keeping. The inspection included a walk through the plant and completion of the enclosed checklist.

Sewage sludge at the Lima WWTP is treated in anaerobic digesters. As part of recent plant upgrades, both primary digesters were taken out of service for cleaning and inspection prior to the installation of the new mixing system. The methane gas produced during the digestion process is used to power two micro-turbines, which generate electric power and heat for the plant. The digested sludge is dewatered with belt filter presses and then mixed with lime and fly ash using the N-Viro Process. The temperature and pH of the blended material is monitored over a 72-hour period to ensure that the final treated material meets the EQ biosolids treatment requirements for pathogen reduction and vector attraction reduction. The EQ biosolids are stored in both a building and on a concrete storage pad at the WWTP before being released to Lima Compost/Wright Mulch for management and distribution, which handles the biosolids using two different methods.

Under method one; the EQ biosolids are stored at the Lima Compost Facility. There is no further treatment or blending of the biosolids with other materials. The EQ biosolids are hauled for beneficial use on agricultural farm fields. Mr. Markley has developed a tracking sheet that each farmer must fill out that documents the amount of EQ biosolids that are beneficially used on each field. The farmers also receive copies of the biosolids monitoring results for metals and nutrients. The City should continue to obtain copies of the biosolids end user reports from Lima Compost so that there are accurate records at the WWTP showing where the EQ biosolids are beneficially used.

Under method two; Lima Compost blends the biosolids with finished compost, wood chips and dirt to create a top soil blend. The blended material is sold as topsoil to landscapers and residential customers. The blending operation is regulated by Ohio EPA under sludge management plan (SMP)

No. 2MP00014. The SMP requires Lima Compost to monitor the newly created top soil blend after the biosolids, leaves, grass and woodchips are blended to ensure that it still meets the EQ biosolids criteria.

Overall, at the time of the inspection, the City was meeting the applicable requirements of Ohio's Sewage Sludge Rules. A copy of our completed inspection form is enclosed with this letter. If you have any questions regarding the inspection, please contact Mr. Andrew Gall at (419) 373-3003 or via email at andrew.gall@epa.ohio.gov.

Sincerely,

Alex A. Smaili, P.E.
Water Quality Engineer II/Unit Supervisor
Division of Surface Water

AG/jlm

Enclosure

ec: Andrew Gall, NWDO-DSW
Peggy Christie, NWDO-DSW
Eric Markley, City of Lima
Tracking

Ohio | Environmental Protection Agency

Inspector: Andrew Gall
Date of Inspection: 12/5/2017

BIOSOLIDS GENERATOR INSPECTION

1. Contact Information

Treatment Works		Contractor
Generator: Lima WWTP		Name: Lima Compost/ Wright Mulch
Name: Mr. Eric Markley		Contact: Aaron Wright
Title: Supervisor WWTP		Title: Owner
Phone: 419-221-5191		Phone: 419-227-4240
Email: eric.markley@cityhall.lima.oh.us		Email:
Mailing Address: 50 Town Square Lima, OH 45801-4900		Mailing Address:

List Additional Persons Present:
Peggy Christie – Ohio EPA
Dave Schnipke – City of Lima

2. Inspection Letter Notification

Mailing Address (1)	Mailing Address (2)
Name: Dave Schnipke	Name:
Title: Environmental Compliance Manager	Title:
Mailing Address: 50 Town Square Lima, OH 45801	Mailing Address:

3. Facility Information

Average Daily Flow (MGD)	18.5 MGD	
Design Treatment Capacity (MGD)	Max Flow 45 MGD	
Biosolids Storage Capacity (Days)	Approx. 5 months of storage at plant	
Contracted Alternative / Contingency Disposal	586 Station and 588 Station in NPDES permit	
Headworks Screening	Screen Size:	Automatic Bar Screen
	Alternative:	

Plans for Upgrades: Headworks upgrade has been completed and new primary clarifiers. Primary digesters have been cleaned out and new mixers installed, new heat exchangers for digesters are planned. Still planning on installing a third micro-turbine in the future to utilize more digester gas.

Recent Maintenance Issues/Equipment Failures:		
NPDES Permit Verification	Station 581: Class B Biosolids	x
	Station 584: Exceptional Quality Biosolids	x
	Station 586: Landfill	X
	Station 588: Transfer to NPDES Permittee	X
	Station 589: PPG Lime Lakes	☐
	SMP less than 5 years old	☐

4. Sewage Sludge Treatment

Treatment Units	Quantity	Comments (Online/Offline and Capacity/Dimensions)
Aerobic Digesters		
Anaerobic Digesters	3	Two Primary digesters and One Secondary Digester New linear motion mixers installed.
Belt Filter Press	3	2 Presses run 5 days/week, 8hrs/day, presses rotated in and out of service
Holding Tanks	2	2 Holding tanks with 1 MG capacity
Gravity Thickener	2	2 Thickeners – 1 used as a thickener for Lima WWTP produced solids and 1 used to as a receiving tank for Allen County Sludge
Drying Beds		
Storage Pad	1	Storage Pad and Building for EQ Lim-a-Soil
Centrifuge		
Dryer		
Other – NVIRO Process	1	Cementec system to add lime and fly ash
Comments: Gas from Digester used to run micro-turbines. Evaluating economics for installation of a third micro-turbine.		

5. Biosolids Treatment Train Flow Chart (Primary and Secondary)

G. Thickener	Digester	Hold Tanks	NVIRO	Storage	Land App or Lima Compost

6. Operational Questions

Digester Operational Temperature	Digester Environment:	Temperature:
	Aerobic	
	Anaerobic	
Dewatering Efficiency	Sample Location:	Average % Solids:
	Prior to Dewatering	3-4%
	After Dewatering	30%+

7. Beneficial Use or Disposal

X	Beneficial Use	Class B X Exceptional Quality
X	Transfer to Another NPDES Permittee	Name of Permittee: Lima Compost
X	Landfill	Name of Landfill:
☐	Incineration	

Comments:
EQ Biosolids are managed by Wright Mulch. Farmers land apply some directly as fertilizer and Wright also blends some EQ into their compost operation. Wright needs to provide City with records indicating who received the biosolids that were land applied and the amounts that were land applied.

When digesters were cleaned out for installation of the new mixers the solids were dewatered hauled to the landfill for disposal.

8. Pathogen Reduction Alternative

X	P-9	High pH and High Temperature	The pH of the sewage sludge is ≥12 for at least 72 hours. The sewage sludge temperature is ≥52°C (125.6°F) for ≥12 hours during the period that the pH is ≥12. At the end of the 72 hours period the sewage sludge is ≥ 50% solids.
			Analytical results for density of fecal coliform (mpn/g) or the density of Salmonella sp. bacteria expressed as mpn/4g.
			Records of pH at: i. Start up; ii. 24 hours; iii. 48 hours; and iv. 72 hours
			The hourly biosolids temperature for the required 12 hours. Minimum temperature: Average temperature:

	☐	The % solids after air drying. Minimum % solids: Average % solids:
		Records of the amount (dry tons) of alkaline material added.
		A narrative description of how pH and temperature are maintained throughout all of the biosolids.
Comments:		

9. Vector Attraction Reduction Option

	Vector Attraction Reduction Option		Requirements	
	VAR-1	38% Volatile Solids Reduction	X	Average volatile solids concentration of: i. The raw sewage sludge: ii. The final sewage sludge:
			X	The average volatile solids reduction: %VSR = VSin – VSout x 100 VSin – (VSin x VSout)
X	VAR-6	Alkaline Treatment	The pH shall be ≥12 by alkaline addition and, without the addition of more alkali, shall remain ≥12 for 2 hours and then remain ≥11.5 for an additional 22 hours.	
			X	A narrative description of how the pH was monitored throughout the material for the applicable time period.
			X X	Records indicating the pH was maintained: i. ≥12 for 2 hours; and ii. ≥11.5 for 24 hours.
			X	Records of the amount (dry tons) of alkaline material added.

10. Monitoring Information

Where does biosolids sample collection occur?	Describe: Sludge Storage Pad			
Who collects the biosolids samples?	WWTP Operators and Lab Techs			
What are the biosolids sample preservation/shipping procedures?	Describe: Metals and nutrients samples are sent to Alloway in containers provided by lab. Fecal coliform samples are run in house by WWTP lab.			
Is a chain of custody utilized?	Yes			
At what frequencies are biosolids samples collected?	☐	Annually	☐	Semi-Annually
		Quarterly	X	Monthly
	☐	Other:		
Comments:				

11. Analytical Information

If the generator is performing fecal coliform monitoring, are fecal coliform samples analyzed within eight hours of collection?	X	Yes
	☐	No
	If no, describe current process:	
Does the generator perform in-house analyses?	X	Yes
	☐	No
	If yes, list in-house analyses performed: Fecal, pH	
Does the generator utilize a contracted laboratory to perform analyses?	X	Yes
	☐	No
	If yes, list contracted analyses performed: Nutrients, metals	
Provide the contracted laboratory information:	Lab Name:	**Alloway Labs**
	Contact:	
	Address:	**1101 N. Cole St.** **Lima, OH 45805**
	Phone:	**419- 419-223-1362**
	Email:	

12. Methods Verification

Fecal Coliform - Is Standard Methods 9221E or	X	Yes

9222D utilized?	☐	No
	If no, describe current method:	
Enteric Viruses - Is ASTM D 4994-89 utilized?	☐	Yes
	X	No
	If no, describe current method: N/A	
Helminth ova - Is Yanko, W.A. "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges" utilized?	☐	Yes
	X	No
	If no, describe current method: N/A	
Salmonella sp. Bacteria - Is Standard Methods 960D or Kenner, B.A and H.P Clark "Detection and Enumeration of Salmonella and Pseudomonas aeruginosa" utilized?	☐	Yes
	X	No
	If no, describe current method: N/A	
Inorganic Metals - Is SW-846 utilized?	X	Yes
	☐	No
	If no, describe current method:	
Specific Oxygen Uptake Rate - Is Standard Methods 2710B utilized?	☐	Yes
	X	No
	If no, describe current method: N/A	
Total, Fixed and Volatile Solids - Is Standard Methods 2540G utilized?	**X**	Yes
	☐	No