



State of Ohio Environmental Protection Agency

Northeast District Office

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

February 11, 2008

RE: CITY OF SALEM
COMPLIANCE EVALUATION INSPECTION
NPDES PERMIT NO. 3PD00027

NOTICE OF VIOLATION

Mayor and Council
City of Salem
231 South Broadway Avenue
Salem, OH 44460

Dear Ladies and Gentlemen:

On January 31, 2008, this writer conducted an inspection of the Salem wastewater treatment plant located at 1600 Pennsylvania Avenue. John Kwolek of this office was present at that time. Mr. Jeff Zimmerman, operator was present for the City. This inspection was to evaluate operation and maintenance at the plant and to evaluate compliance with its National Pollutant Discharge Elimination System (NPDES) permit (3PD00027). Based on the inspection and a review of monthly operating reports, the City of Salem is considered to be in significant noncompliance.

The following is a summary of Agency observations and permit issues:

Wastewater treatment plant inspection

The treatment system includes processes for grit removal, primary settling, roughing filtration, conventional activated sludge treatment, secondary clarification, and chlorination/dechlorination. An off-line equalization basin is used to divert and store excess wastewater during rain events. Primary sludge is diverted to a two stage anaerobic digestion process and secondary sludge is diverted to a two stage aerobic digestion process. Both primary and secondary sludge is stored in a common sludge holding tank to land application through the approved sludge rules.

During the inspection it was noted that two primary clarifiers on the north side of the administration building were off-line. These are currently redundant units. All remaining units appeared to be in operation.

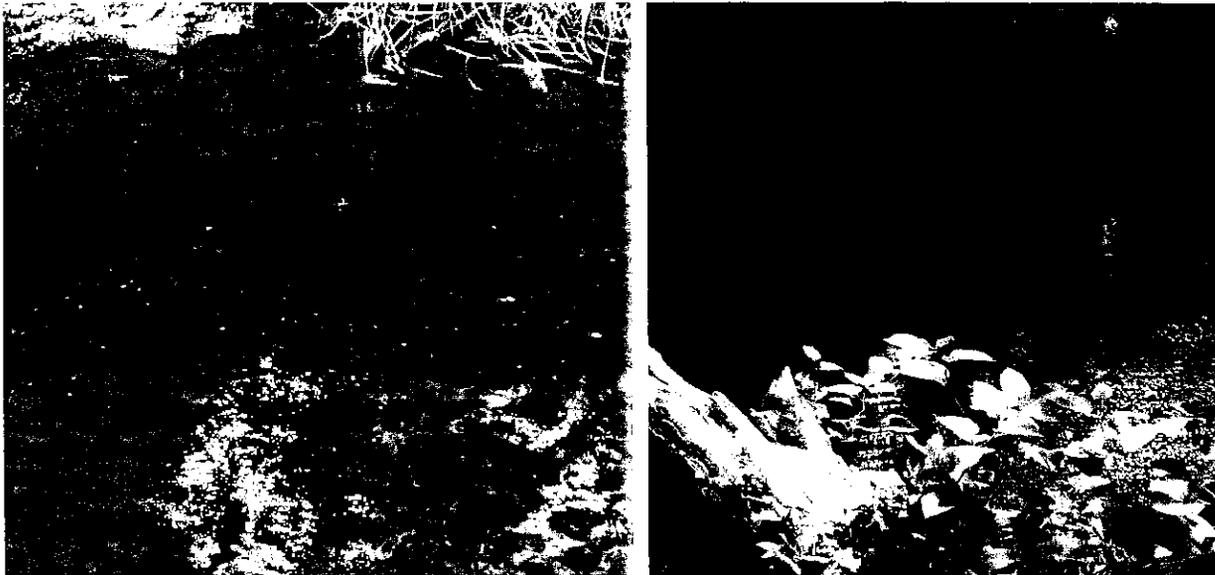
At the time of the inspection the final clarifiers had some minor pin floc that was going over the weirs to the stream. The pin floc was not as bad as the last inspection. The effluent entering the stream appeared typical of a secondary plant.

Phosphorus Removal System

The installation of the phosphorus removal system has not been completed. The City of Salem still has not installed a polymer tank or feed pumps. No polymer to aid the removal of phosphorus has ever been added to the wastewater treatment plant. The City is currently feeding a small amount of alum for no apparent purpose. Plant personnel confirmed the current

feed rate of alum will not be nearly sufficient to comply with the discharge limit. The City is not supplying the necessary chemicals or equipment it felt would be necessary to comply with the phosphorus limit, therefore, this office can only conclude the City is still recalcitrant in this limit required by Ohio EPA and U.S. EPA.

During the inspection with the City it was documented that the ongoing algae problems in stream are still present. The stream had signs of dormant algae downstream of where the effluent pipe enters the stream. The alga in the stream (as shown in the pictures below from previous inspections) is indicative of the pass through of phosphorus being created by FreshMark. This company is the major contributor of phosphorus in the collection system with more than fifty percent of the phosphorus loading at the head of the plant. This pass through is creating a nuisance in the stream. This is a violation of Part III, 2, A & E, of the city's NPDES permit. The permit requires that at all times the effluent shall be free of: substances that will adversely affect aquatic life or water fowl, and substances in amounts that are conducive to the growth of aquatic weeds or algae to the extent that such growths become inimical to more desirable forms of aquatic life, or create conditions that are unsightly, or constitute a nuisance in any other fashion. The City must address this problem through the pretreatment program immediately.



Downstream in mix zone from wastewater treatment plant has algae growth.

Salem is in significant noncompliance with the schedule to attain compliance with final effluent limits. This facility has been in significant noncompliance with its final phosphorus limit since **July 1, 2005**. Correspondence submitted by the City of Salem on December 10, 2007, to Ohio EPA states that the City appealed this limit, however, the courts have granted no relief from compliance with this parameter. This office considers the City in violation since the above referenced date, and the City has not even made a good faith effort to comply with the limit. The renewal limit in the City's next NPDES permit will be in accordance with the "Total

Maximum Daily Loads for the Little Beaver Creek Watershed" (approved by U.S. EPA), and reduce this limit even lower (approximately 0.5 mg/l). The TMDLs are established in streams that are not complying with water quality standards. All wastewater treatment plants in this watershed are receiving the appropriate phosphorus limit and several are already complying with the requirements. This office would recommend you conduct the necessary engineering to comply with the limit to mitigate more than two years of effluent violations. More than likely the treatment plant will need tertiary filters to comply with its current and future phosphorus limit.

Therefore, the City of Salem is in violation of Phosphorus for pass through from FreshMark and the general effluent limitations of its NPDES permit. This violation was not appealed and ongoing. Furthermore the City is in violation of the phosphorus limit included in the NPDES permit that the courts have provided no relief for.

Pump Station and Collection System overflows

During the inspection we met with Mr. Larry Altenhoff to discuss pump station overflows within the collection system. The Pearce Circle station only overflows when there is a power outage. This pump station is in the process of being relocated and updated. Please be aware a permit-to-install will be required prior to construction. The Snyder Road pump station which serves FreshMark has operational problems with grease and solid being discharged from the company. The station has a small wet well that has the pumps turning on and off frequently. This requires numerous motor changes at this location. There have been recent overflows from these pump stations which are unauthorized discharges to waters of the state of Ohio. Just as the wastewater treatment plant itself, these discharges must be reported to the spills hotline and sampled. A review of the hotline database revealed only three spills phoned in for the City of Salem treatment plant and sewer system in the last six years. Discussion with Mr. Altenhoff indicates there may have been others which were not reported, and none have been sampled in accordance with Part III, 12, A-C, of the City's NPDES permit. The City must address these violations by reevaluating the design of the pump stations throughout the City. Pump stations that are properly designed will handle peak flows, power outages, and mechanical failures. A pump station meeting the Agency's design criteria will virtually never overflow with telemetry and stand-by power. While the Pearce Circle pump station is being addressed, the Snyder Road pump station must be evaluated for its current and future use.

Be advised that all violations are subject to appropriate enforcement action per ORC 6111.99.

In addition to the above violations, a review of the monitoring records for the City between October 1, 2007, and December 31, 2007, was conducted. Identified violations for outfall 001 are listed in Attachment 1: City of Salem Violations 9/07-12/07.

201 Update

Item F of your schedule of compliance required that an evaluation of the City's current planning documents be completed and an updated Facilities Plan be submitted to this office by October 1, 2003. To date this document has not been submitted. The city of Salem is currently in significant noncompliance with failing to submit this document.

Plant staffing requirements

During this inspection it was noted that only one operator was present at the facility. The city's last response letter indicated that the staffing levels at the plant have been in place since 1985. The city will have to provide documentation as to how one person can run a four million gallon a day plant by him/her self. The district would like to reiterate the safety and liability issues with an operator maintaining the plant by him/her self. The age of the plant and equipment will require more man hours to maintain and there appears to be less staff available on a routine basis.

Action Items

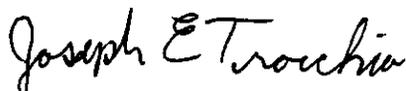
- 1) The City must take all necessary steps to prevent overflows and unauthorized discharges at the wastewater treatment plant and collection system. The last two inspections by this office have documented unauthorized discharges at the plant or in the collection system. Notification of each of these occurrences has been less than complete. The City must evaluate the need for an Infiltration and Inflow study in the collection system and all necessary plant improvements to prevent the overflows. The City of Salem has a separate sewer system, therefore, the plant is designed to handle peak flows and no overflows should be occurring. This also pertains to the pump stations throughout the collection system. By March 15, 2008, the City must submit written documentation that demonstrates how every pump station in the City complies with current criteria outlined in "Recommended Standards for Wastewater Facilities". This documentation must include a recommendation for an Infiltration and Inflow study or a valid reason the City believes it is not necessary. If collection system, pump station, or plant improvements are necessary then a schedule must be submitted to complete them. The City must have a plan in place for sampling and reporting these overflows at the plant and collection system in accordance with their NPDES permit. The sampling must be able to document compliance with, or lack thereof, the requirements outlined in the back of the permit.
- 2) An audit of the FreshMark facilities must be completed to determine how the solids and grease are passing through the industries treatment system and disrupting the pump stations operations. All changes required by the City at this industry to prevent damage to City facilities and overflows must be submitted in writing to this office. This audit must be completed by March 15, 2008.
- 3) A work plan of how the City intends to prevent the pass through of phosphorus at the wastewater treatment plant and prevent the ongoing NPDES permit violations must be submitted in writing to this office by March 15, 2008. The plan must include all necessary improvements at the industry and wastewater treatment plant necessary to halt the ongoing violation of Part III.2.A&E, of the City's NPDES permit. This would also include the City establishing a local limit for phosphorus in the local sewer use ordinance.

- 4) The City of Salem must comply with the phosphorus limit immediately as required by the final effluent limits outlined in its NPDES permit. Any necessary equipment or chemicals must be installed and implemented immediately. If the plant improvements the City committed to in their permit-to-install fail to meet the permit limits, then the City must make changes in the indirect discharge permits to the City's sewer system to lower the incoming phosphorus concentration. The discharge limits of the industrial users must be lowered sufficiently so that the City's wastewater treatment plant can comply with its NPDES permit limit. The City must also include a schedule for all necessary improvements to comply with the future phosphorus limit of the renewal permit. The improvements may require tertiary treatment and additional sludge handling facilities. The City needs to demonstrate compliance with state design requirements (Recommended Standards for Wastewater Treatment Facilities) for sludge holding, sludge digestion, and all necessary improvements to comply with the NPDES permit.
- 5) An evaluation of the plant staffing levels in accordance with U.S. EPA guidance documents must be completed. This evaluation must demonstrate how the current staffing levels comply with the City of Salem approved operation and maintenance plan as well as the U.S. EPA guidance. This information must be submitted in writing by March 15, 2008.

You are requested to respond in writing by February 20, 2008, explaining the circumstances of the violations, and what actions and time lines the city is taking to achieve compliance. Noncompliance with NPDES permit requirements is subject to further enforcement action.

Should you have any comments or questions, feel free to contact me at (330) 963-1193.

Respectfully,



Joseph E. Trocchio
Environmental Engineer
Division of Surface Water

JET/mt

cc: Don Weingart, Utilities Superintendent
Jon A. Pukalski, Plant Manager
Ronald A. Bell, Enforcement Coordinator, Ohio EPA, DSW, NEDO

File: Public/Permit Compliance/City of Salem

CITY OF SALEM EFFLUENT VIOLATIONS: OCTOBER - DECEMBER 2007

Permit No	Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
3PD00027*JD	October 2007	Phosphorus, Total (P)	30D Conc	1.0	14.9	10/1/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Conc	1.5	17.	10/1/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	30D Qty	15	143.153	10/1/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Qty	23	145.162	10/1/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Conc	1.5	17.	10/8/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Qty	23	138.856	10/8/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Conc	1.5	13.5	10/15/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Qty	23	115.633	10/15/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Conc	1.5	13.2	10/22/2007
3PD00027*JD	October 2007	Phosphorus, Total (P)	7D Qty	23	195.301	10/22/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	30D Conc	1.0	9.975	11/1/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Conc	1.5	13.8	11/1/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	30D Qty	15	107.259	11/1/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Qty	23	121.859	11/1/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Conc	1.5	6.	11/8/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Qty	23	73.1716	11/8/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Conc	1.5	12.8	11/15/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Qty	23	118.067	11/15/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Conc	1.5	7.3	11/22/2007
3PD00027*JD	November 2007	Phosphorus, Total (P)	7D Qty	23	115.937	11/22/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	30D Conc	1.0	8.1	12/1/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Conc	1.5	9.8	12/1/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	30D Qty	15	117.608	12/1/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Qty	23	131.605	12/1/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Conc	1.5	9.8	12/8/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Qty	23	150.263	12/8/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Conc	1.5	7.3	12/15/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Qty	23	111.185	12/15/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Conc	1.5	5.5	12/22/2007
3PD00027*JD	December 2007	Phosphorus, Total (P)	7D Qty	23	77.3786	12/22/2007