



State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

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

January 15, 2008

RE: BELOIT WWTP
NPDES PERMIT NO. 3PB00005
2008 CEI

Board of Public Affairs
Village of Beloit
P.O. Box 276
Beloit, OH 44609

Ladies and Gentlemen:

On January 8, 2008, this writer conducted a Compliance Evaluation Inspection (CEI) of the Beloit POTW. The intent of the inspection was to evaluate the condition of the treatment plant and to evaluate the compliance status of the plant relative to the NPDES Permit. Representing the village during the inspection was Terry Coburn.

The overall condition of the collection and treatment system was marginal at the time of the inspection. Following are observations made during the inspection.

1. An inspection of the raw wastewater lift station identified a significant amount of grease residue. In addition, a degreasing chemical was added to the south clarifier to dissolve accumulated grease. It appears that significant sources of grease, such as restaurants and grocery stores, discharge large amounts of grease to the Beloit collection system. The amount of grease entering the treatment system is causing the village to take unnecessary steps to control excessive build-up.
2. An oil sheen was apparent on the surface of the treated wastewater at the point of discharge. The oil sheen is the result of excessive grease discharged to the collection system.
3. All treatment processes were operational at the time of the inspection. One of the air blowers for the activated sludge system was out of service for routine maintenance. However, two additional blowers are available to provide air to the system. The new splitter trough for the activated sludge clarifiers was installed during this inspection. According to Mr. Coburn, the remote alarm system has been completed as required from previous inspections.
4. According to Mr. Coburn, the back-up generator is operational in the event of a power outage.
5. The weirs in the activated sludge system are bowed and corroded. The weirs are in need of replacement. Sludge and algal deposits were identified in the weir troughs. The weir plates had attached algae growths that could inhibit the weir overflow rate of the system. Mr. Coburn indicated that the weirs were cleaned on the previous Friday. It may be necessary for the village to increase the frequency of cleaning in order to keep the weirs properly maintained.

6. The air lift pump in the south clarifier of the activated sludge system had plugged on the day of the inspection. This prevented the removal of sludge from the clarifier. At the time of the inspection, the effluent was cloudy with solids. The clarifier was also covered with a heavy layer of scum. The condition of the clarifiers was unsatisfactory at the time of the inspection.
7. An inspection of the receiving stream identified sludge deposits and heavy growth of fungus and algae. Be advised that the presence of sludge in the receiving stream placed Beloit in violation of Ohio Administrative Code 3745-1-04(A) at the time of the inspection. The presence of algae in the stream constitutes a violation of OAC 3745-1-04(E). The condition of the receiving stream was unsatisfactory at the time of the inspection.
8. As stated previously, the receiving stream was choked with algae at the time of the inspection. In addition, a survey of the Mahoning River basin identified significant nutrient enrichment downstream of the Beloit POTW. The nutrient enrichment is associated with the discharge of phosphorus from the Beloit POTW. As a result, Beloit will be required to upgrade the wastewater treatment system to remove phosphorus limit. The upgrades will include tertiary filters and chemical addition. A final phosphorus limit will be provided to the village in the near future. The phosphorus limit will be at most 1 mg/l, but could be more stringent depending on a final analysis of the stream data.
9. Because of the problems observed at the POTW, Mr. Coburn was directed to start the composite sampler to collect a sample for analysis. The analytical results must be included in the Monthly Operating Report for January.
10. A review of the operating data for the POTW (Attachment 1) shows that flow continues to be highly effected by precipitation events in the village. This was previously addressed in the NPDES Permit by including a compliance schedule in Part I.C of the permit. The permit required that improvements be made to the collection system in order to reduce inflow and infiltration to the system.

Mr. Coburn indicated that smoke testing of the system to identify sources of inflow and infiltration is approximately 30% complete. Be advised that failure to complete the study and make proper repairs places the village in significant noncompliance with the permit schedule. This will be addressed in more detail below. The village must complete smoke testing of the collection system and remove excessive inflow and infiltration as soon as possible. Be advised that excessive inflow and infiltration to the treatment plant is causing operational problems and must be corrected.

11. In addition to large impacts due to inflow and infiltration, the treatment plant has exceeded its design life and is in need of upgrades. One example of needed upgrades is that the clarifier weirs are bowed and corroded. In addition, the configuration of the activated sludge system prevents isolating a portion of the system for maintenance. According to Mr. Coburn, any maintenance within the activated sludge system requires the entire system be taken off-line. This configuration is not conducive to proper

maintenance of the system. The wastewater treatment plant must be evaluated for necessary upgrades at the time treatment upgrades to remove phosphorus are considered.

12. Mr. Coburn stated during the inspection that surface water flows onto the plant property from property to the east of the plant. According to Mr. Coburn, the surface water floods the plant and at times, creates operational problems. Gravel washout was apparent in the ditch east of the plant indicating that significant runoff does occur. The village must improve the drainage around the plant so that storm water runoff is effectively directed away from the plant.

Compliance Review

The compliance data submitted by the village was reviewed for the period covering December 2006 through November 2007. Following are limit violations of the NPDES Permit identified for the review period.

Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
July 2007	001	pH	1-Day Conc.	9.0	9.5	7/19/2007
July 2007	001	pH	1-Day Conc.	9.0	9.4	7/23/2007

In addition to the limit violations, the following violations of the compliance schedule contained in Part 1.C of the NPDES Permit were identified.

Permit Effective Date	Permit Expiration Date	Schedule Milestone	Schedule Due Date
11/1/2005	10/31/2010	Smoke Test Collection System	3/1/2007
11/1/2005	10/31/2010	Submit Results of Smoke Test	5/1/2007
11/1/2005	10/31/2010	Eliminate Clean Water Connections	11/1/2007

Be advised that violations of the NPDES Permit are subject to enforcement action per Ohio Revised Code (ORC) 6111.

Necessary Action

Because of the condition of the treatment system and receiving stream, the village must take the following actions.

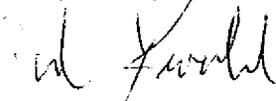
1. The current NPDES Permit required the village to complete smoke testing of the collection system no later than March 1, 2007 and complete elimination of clean water connects no later than November 1, 2007. Failure to comply with the permit has placed the village in Significant Noncompliance with the NPDES Permit.

The village must complete smoke testing no later than May 31, 2008 and submit the final report of findings to this office no later than June 30, 2008. The report must include a detailed schedule to remove identified clean water connections. The schedule shall not extend beyond October 2008. Failure to follow this schedule could result in this office referring the Village of Beloit for enforcement action.

2. The village must begin to plan for plant upgrades. The plant is aging and in need of upgrades. In addition, the plant will require upgrades to comply with the future phosphorus limit and possibly more stringent limits for CBOD₅, Total Suspended Solids (TSS) and ammonia. Plant upgrades will be addressed in the next permit; however, the village must begin now to prepare finances for future upgrades.
3. The village must inspect restaurants, convenient stores and grocery stores that prepare food for the discharge of grease. Each facility must discharge kitchen waste through grease separators. The grease separators must be periodically cleaned to maintain their effectiveness. The village must control the discharge of grease to the collection system. Use of a degreaser in the treatment plant is not a substitute for properly controlling grease at the source. The degreaser chemical simply pushes the grease through the system as was evident the day of the inspection.
4. The village must reconfigure the storm water diversion ditch on the east side of the property. The diversion ditch must be capable of conveying storm water around the plant and preventing the water from entering the plant property.
5. When the wastewater treatment plant is upset in any way, is discharging effluent that is sub-par, or is bypassing from the equalization tank, the village must collect composite samples to demonstrate effluent quality. Any time the plant is upset or bypassing, samples of the effluent must be collected to demonstrate impacts on the receiving stream.
6. This writer recommends that a meeting be scheduled with the Board of Public Affairs to discuss these issues. It is also recommended that quarterly meeting be held between this writer and the Board of Public Affairs to discuss progress on the required actions. Please contact this writer to schedule the first meeting.

You may contact this writer at (330) 963-1251 to discuss any questions you may have.

Respectfully,



John Kwolek
District Engineer
Division of Surface Water

cc: Terry Coburn, Earth Tech Operations Services