



State of Ohio Environmental Protection Agency

Northeast District Office

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Ted Strickland, Governor
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March 25, 2010

RE: TRUMBULL COUNTY
VERNON TOWNSHIP
JOSEPH BADGER LOCAL SCHOOL DISTRICT
CEI / PRE PERMIT INSPECTION
(NPDES PERMIT 3PT00122)

CERTIFIED MAIL

Dr. David Bair, Superintendent
Joseph Badger School District
7119 SR 7
Kinsman, OH 44428

Dear Dr. Bair:

On March 10, 2010, a Compliance Evaluation Inspection (CEI) was conducted at the Joseph Badger Local School wastewater treatment plant (WWTP), located at 7119 Youngstown-Conneaut Road, Kinsman, OH. Present during the inspection were Mr. Gary Shorts, representing the school system, and this writer, of the Ohio EPA.

The purpose of the visit was to evaluate the WWTP operation and maintenance, as well the facility's compliance with NPDES Permit effluent limits and conditions, prior to renewal of the facility's NPDES Permit.

At the time of the March 10th inspection the observations were made:

- 1) The 2670 gallon trash trap was in use and its contents were typical. The trash trap is usually pumped 1x/year.
- 2) The 14,800 gallon flow equalization (EQ) chamber was in use and was being well aerated. Contents of the EQ chamber were medium brown, and the pumps were operating properly.
- 3) The 25,000 gpd extended aeration tank contents were being well aerated, were medium to dark brown in color, and exhibited no surface foam. The return activated sludge (RAS) line was operational, returning medium brown sludge.
- 4) Contents of the settling tank were typical, and the skimmer was operating but was improperly adjusted, as it was above the water level and suctioning only air. There was a buildup of solids behind the settling tank influent baffle, and the effluent trough was clean. Effluent from the settling tank was clear and free of solids, and the effluent trough was clean with no solids or algae buildup.
- 5) Following the settling tank were upflow clarifiers, both of which were operating and apparently functioning properly.

- 6) Both pumps in the 1000 gallon surface sand filter dosing station were in the "AUTO" position, and were operational when manually tested, as was the high level alarm.
- 7) The 1002 ft² surface sand filters consisted of 2 cells, of which the south cell was in use at the time of the inspection. The north cell was not in use and was partially snow covered. Sand in both the north and south filter cells was free of solids, and was raked level.
- 8) Effluent disinfection is accomplished by Ultra Violet (UV) light. The UV unit was not in operation, as disinfection of the effluent is not required for the period of November 1st through April 30th. At the time of the inspection, all of the UV light tubes were removed for winter storage.
- 9) Treated effluent from the WWTP was clear and visually free of solids. Effluent is discharged to an unnamed tributary of Pymatuning Creek.
- 10) The 5200 gallon aerated sludge holding tank was approximately ½ full and being aerated, and contents were medium brown in color.

The following items were also discussed with Mr. Shorts during the March 10th inspection:

- 1) The current NPDES Permit to discharge issued to the School District for the WWTP will be expiring on July 31, 2010. The application for renewal was submitted to the Ohio EPA as required, six months prior to the permit expiration date. However, the forms were to have been signed by the Superintendent of Schools, not Mr. Shorts. During the inspection, your signature on the forms was obtained.
- 2) The below outlined list of NPDES Permit numeric effluent violations was discussed with Mr. Shorts. The majority of the violations (63%) are ammonia violations, which Mr. Shorts indicated he is having problems keeping under control. Mr. Shorts was informed that the Ohio EPA has a group in Columbus that visits problematic WWTPs in an effort to help the operator with such problems. Please have him contact Jon VanDommelen (614.644.2001), or Keith Kroeger (614.863.8778), in our Technical Group, for information on how to obtain their free assistance.
- 3) Mr. Shorts was informed of a change in bacterial monitoring coming up in the new NPDES Permit. The new permit will have a final effluent table requiring the WWTP meet limits for E Coli, instead of the current Fecal Coliform limits. A time period of 6 months minimum will be given, during which E Coli will first be monitored, then effluent numeric limits will be applied. When E Coli limits are implemented, the need to test for Fecal Coliform will be deleted.

- 4) Mr. Shorts also indicated that he is having problems with the UV lights and wiring physically burning out by the end of the disinfection season, and asked if this was a 'normal' situation. He was told that this was not normal, in fact abnormal, and someone should check for the cause of the problem.

Mr. Shorts did state that the burnout was usually later in the season, particularly when school is out, and there is little to no flow coming out of the WWTP. I indicated that possibly the bulbs may be overheating if not continuously covered with water, and then the wires physically burning up due to overheating. It is recommended that the UV manufacturer be contacted to determine the cause and correct the problem:

- 5) Problems have also been experienced with the flow meter which was installed to measure and record flows being discharged from the WWTP. As a result, the flow meter has been shut off, and flows are reported from daily water meter readings. The cause of the flow meter reading problems should be investigated and corrected.
- 6) The skimmer in the settling tank should be adjusted to approximately ¼ inch below the water surface level, and should not be above the water. The solids buildup behind the settling tank inlet baffle should be removed and disposed of properly.

A review of the electronic Discharge Monitoring Reports (eDMR's) submitted to the Ohio EPA for the WWTP, covering the period of November 1, 2008 through March 1, 2010, found the following effluent limit numeric violations for the facility:

**JOSEPH BADGER LOCAL SCHOOL DISTRICT
 FINAL EFFLUENT NUMERIC VIOLATIONS
 NPDES PERMIT NO. 3PT00122
 (November 1, 2008 through March 1, 2010)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
December 2008	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	10.21	12/1/2008
December 2008	Dissolved Oxygen	1D Conc	6.0	5.	12/1/2008
December 2008	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	19.9	12/15/2008
December 2008	Nitrogen, Ammonia (NH3-N)	7D Qty	0.426	.45193	12/15/2008
January 2009	Total Suspended Solids	7D Conc	18	22.	1/1/2009
January 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	16.965	1/1/2009
January 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	32.5	1/1/2009
January 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.284	.30753	1/1/2009
January 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.426	.61506	1/1/2009

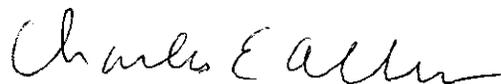
Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
January 2009	CBOD 5 day	30D Conc	10	17.6	1/1/2009
January 2009	CBOD 5 day	7D Conc	15	29.	1/1/2009
January 2009	CBOD 5 day	7D Conc	15	27.	1/8/2009
February 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	30.35	2/1/2009
February 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	50.4	2/1/2009
February 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.284	.47691	2/1/2009
February 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.426	.95382	2/1/2009
February 2009	CBOD 5 day	7D Conc	15	17.	2/1/2009
February 2009	Dissolved Oxygen	1D Conc	6.0	5.3	2/3/2009
February 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	10.3	2/15/2009
March 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	23.9	3/1/2009
March 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	11.1	3/1/2009
March 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.284	.61222	3/1/2009
March 2009	CBOD 5 day	30D Conc	10	11.55	3/1/2009
March 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	36.7	3/15/2009
March 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.426	.97237	3/15/2009
March 2009	CBOD 5 day	7D Conc	15	29.	3/15/2009
March 2009	Dissolved Oxygen	1D Conc	6.0	5.8	3/17/2009
April 2009	Total Suspended Solids	30D Conc	12	14.25	4/1/2009
April 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	4.79	4/1/2009
April 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	7.39	4/1/2009
April 2009	Total Suspended Solids	7D Conc	18	19.	4/15/2009
April 2009	Total Suspended Solids	7D Conc	18	31.	4/22/2009
April 2009	CBOD 5 day	7D Conc	15	22.	4/22/2009
April 2009	Dissolved Oxygen	1D Conc	6.0	4.4	4/23/2009
May 2009	Total Suspended Solids	30D Conc	12	20.75	5/1/2009
May 2009	Total Suspended Solids	7D Conc	18	60.	5/1/2009
May 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	1.0	50.15	5/1/2009
May 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	41.5	5/1/2009
May 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.0947	1.02763	5/1/2009
May 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.142	.94247	5/1/2009
May 2009	CBOD 5 day	30D Conc	10	14.6	5/1/2009
May 2009	CBOD 5 day	7D Conc	15	26.	5/1/2009
May 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	58.8	5/15/2009
May 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.142	1.11279	5/15/2009
May 2009	CBOD 5 day	7D Conc	15	23.	5/22/2009
September 2009	Total Suspended Solids	7D Conc	18	26.	9/1/2009
September 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	1.0	65.7	9/1/2009
September 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	114.	9/1/2009
September 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.0947	1.2763	9/1/2009
September 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.142	2.15745	9/1/2009
September 2009	CBOD 5 day	30D Conc	10	16.025	9/1/2009
September 2009	CBOD 5 day	7D Conc	15	36.	9/1/2009

Dr. David Bair
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Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
September 2009	CBOD 5 day	7D Conc	15	19.	9/8/2009
September 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	17.4	9/15/2009
September 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.142	.39515	9/15/2009
September 2009	Dissolved Oxygen	1D Conc	6.0	5.	9/15/2009
October 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	1.0	3.055	10/1/2009
October 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	1.96	10/1/2009
October 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	4.15	10/15/2009
November 2009	Dissolved Oxygen	1D Conc	6.0	5.8	11/3/2009
December 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	16.9	12/1/2009
December 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	12.5	12/1/2009
December 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.284	.35314	12/1/2009
December 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	21.3	12/15/2009
December 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.426	.56434	12/15/2009
December 2009	Dissolved Oxygen	1D Conc	6.0	5.4	12/22/2009
January 2010	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	10.755	1/1/2010
January 2010	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	6.51	1/1/2010
January 2010	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	15.	1/15/2010
February 2010	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	12.45	2/1/2010
February 2010	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	12.5	2/1/2010
February 2010	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	12.4	2/15/2010

Joseph Badger Local School District should continue with all efforts that will enable their WWTP to consistently meet its NPDES Permit limits. Particular attention should be paid to determination of the cause of the nitrogen ammonia effluent violations, and implementation of any necessary corrective actions. If there are any questions or comments regarding the contents of this letter, please contact this office.

Respectfully,



Charles E. Allen
 Environmental Engineer
 Division of Surface Water

CEA/mt

pc: Trumbull County Health Dept.

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<p>1. Article Addressed to:</p> <p style="font-size: 1.2em;"><i>David Bair</i></p> <p style="font-size: 1.2em;"><i>Joseph Badger School District</i></p> <p style="font-size: 1.2em;"><i>7119 SR 7</i></p> <p style="font-size: 1.2em;"><i>Kinsman OH 44438</i></p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>
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