



State of Ohio Environmental Protection Agency

Northeast District Office

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

March 3, 2010

**RE: Lorain County
Columbia Township
Columbia Schools WWTP Inspection
(3PT00087, OH0129143)**

Graig Bansek, Superintendent
Columbia Board of Education
25796 Royalton Road
Columbia Station, OH 44028

Dear Superintendent Bansek:

On February 17, 2010, a Compliance Evaluation Inspection (CEI) was conducted at the Columbia Schools wastewater treatment plant (WWTP), located at 25796 Royalton Road, Columbia Township. Present during the inspection were the maintenance person, Chuck, and Ms. Christina Douglas of Uni-Tech, representing the Columbia School system; Mr. John Sabo of the Lorain County Health Department; and this writer, of the Ohio EPA.

The purpose of the inspection was to evaluate the WWTP's operation and maintenance condition, as well as the facility's compliance with the terms and conditions of its National Pollutant Discharge Elimination System (NPDES) permit. The last CEI conducted at the Columbia Schools WWTP was on June 6, 2006. It is noted that since the last inspection, the entire WWTP has been upgraded with a new treatment system. The new WWTP was placed online approximately May 2007.

At the time of the February 17th inspection of the WWTP, the following observations were made:

- 1) The trash trap was in use, and its contents were typical. The trash trap was last pumped in August 2009 by Sanitary Septic.
- 2) The flow equalization tank was in use, and the pumps and high level alarm were operational when manually checked. The weir plates in the flow equalization tank were adjusted last year, to ensure proper flow distribution in the splitter box.
- 3) Extended aeration tank contents were light to medium brown, and return sludge lines were returning light brown sludge. Due to low use in the summer, only one half of the aeration tanks are used in the summer.
- 4) Contents of the settling tank were typical, the effluent trough was clean and free of solids, and effluent from the settling tank was clear. The skimmer line was operating and returning clear water to the aeration tank.

- 5) Pumps in the sand filter dosing station were set in the 'AUTO' position, and were operational when tested in the manual mode. The high water level alarm also operated properly when manually tested.
- 6) Totalizer readouts on the pumps in the pump station are used to estimate daily flows from the WWTP.
- 7) The surface sand filters are divided into a north and a south cell. The north cell was not in use, and the sand in the north cell was snow covered. The south cell was in use, and contained some ponded water.
- 8) Disinfection of the treated effluent from the WWTP is normally accomplished by Ultra Violet disinfection. At the time of the inspection, however, the UV system was not in operation. Disinfection of the effluent is only required from May 1st through October 31st.
- 9) The Aerated Sludge Holding tank (ASH) was in use and was approximately 1/4 full of medium brown sludge.

A review of effluent data reported to the Ohio EPA for the Columbia Schools WWTP, submitted in the electronic Discharge Monitoring Reports (eDMRs) during the period June 1, 2006 through February 1, 2010, found the following NPDES Permit numeric effluent violations:

COLUMBIA SCHOOLS
NPDES PERMIT NO. 3PT00087
NUMERIC EFFLUENT VIOLATIONS
(June 1, '06 – Feb. 1, '10)

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
August 2006	Total Suspended Solids	30D Conc	12	47.	8/1/2006
August 2006	Total Suspended Solids	30D Qty	1.36	5.33685	8/1/2006
August 2006	Dissolved Oxygen	1D Conc	6.0	4.1	8/31/2006
September 2006	Dissolved Oxygen	1D Conc	6.0	5.2	9/30/2006
October 2006	Dissolved Oxygen	1D Conc	6.0	5.1	10/6/2006
September 2008	Nitrogen, Ammonia (NH3-N)	30D Conc	2.0	8.625	9/1/2008
September 2008	Nitrogen, Ammonia (NH3-N)	7D Conc	3.0	6.1	9/1/2008
September 2008	Nitrogen, Ammonia (NH3-N)	7D Conc	3.0	7.9	9/8/2008
September 2008	Nitrogen, Ammonia (NH3-N)	7D Conc	3.0	20.25	9/22/2008
September 2008	Nitrogen, Ammonia (NH3-N)	7D Qty	0.34	.45988	9/22/2008
September 2008	Fecal Coliform	30D Conc	1000	1120.	9/1/2008
October 2008	Nitrogen, Ammonia (NH3-N)	30D Conc	2.0	9.446	10/1/2008
October 2008	Nitrogen, Ammonia (NH3-N)	7D Conc	3.0	26.3	10/1/2008

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
October 2008	Nitrogen, Ammonia (NH3-N)	7D Conc	3.0	13.	10/8/2008
October 2008	Nitrogen, Ammonia (NH3-N)	7D Conc	3.0	7.7	10/22/2008
October 2008	Nitrogen, Ammonia (NH3-N)	7D Qty	0.34	.48777	10/1/2008
November 2008	Total Suspended Solids	7D Conc	18	32.	11/1/2008
March 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	4.55	3/8/2009
April 2009	Total Suspended Solids	7D Conc	18	24.	4/15/2009
April 2009	Total Suspended Solids	30D Qty	1.3	103593.	4/1/2009
April 2009	Total Suspended Solids	7D Qty	2.04	89278.6	4/1/2009
April 2009	Total Suspended Solids	7D Qty	2.04	177319.	4/15/2009
April 2009	Total Suspended Solids	7D Qty	2.04	147773.	4/22/2009
April 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.34	2039.50	4/1/2009
April 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.51	2856.91	4/1/2009
April 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.51	2616.58	4/8/2009
April 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.51	960.481	4/15/2009
April 2009	Nitrogen, Ammonia (NH3-N)	7D Qty	0.51	1724.02	4/22/2009
April 2009	CBOD 5 day	30D Qty	1.4	56644.4	4/1/2009
April 2009	CBOD 5 day	7D Qty	1.7	53567.2	4/1/2009
April 2009	CBOD 5 day	7D Qty	1.7	76958.5	4/8/2009
April 2009	CBOD 5 day	7D Qty	1.7	22164.9	4/15/2009
April 2009	CBOD 5 day	7D Qty	1.7	73886.9	4/22/2009
December 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	4.425	12/1/2009
December 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	6.55	12/1/2009
December 2009	Nitrogen, Ammonia (NH3-N)	7D Conc	4.5	9.6	12/8/2009

Items also discussed during the February 17th inspection were the following:

- The current NPDES Permit (3PT0087*BD) expires October 31, 2011. A renewal application will need to be submitted six months prior to the permit expiration date.
- The above outlined eDMR violations were discussed. Particular attention should be directed to the April 2009 violations, which were reported in orders of magnitude higher than would be expected. One possible cause for the extremely high pollutant loadings may be an error in the use of flow in gpd units, instead of using the flow in MGD units, when calculating the loadings. Ms. Douglas should check into the reasons for the violations and report her findings to this office.
- There were also many eDMR reporting frequency violations discovered for chlorine residual. The cause for the chlorine residual reporting frequency violations is the fact that the WWTP no longer utilizes chlorine for disinfection, but uses UV, and therefore there is no need to test for chlorine residual. The School Board should submit a written request to the Ohio EPA, requesting a modification of its NPDES, to eliminate the need to sample and report for chlorine residual.

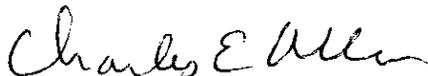
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- The WWTP experiences excessive inflow/infiltration (I/I) during high precipitation events. Excessive I/I can cause operational problems at the WWTP, and subsequently possible NPDES Permit violations. Consideration should be given to locating the sources of I/I into the collection system, and their minimization or elimination.
- North Coast Labs, of Streetsboro, conducts analysis on most of the required pollutants tested (suspended solids; CBOD; ammonia; fecal coliform). Bottles are prepared and given to Ms. Douglas by North Coast Labs, Ms. Douglas collects the samples, and North Coast Labs runs the analyses. A chain of custody form is used for the collected samples. Dissolved oxygen and pH samples are analyzed by Ms. Douglas on-site, with appropriate meters.

Proper operation and maintenance practices should continue to be implemented, which will enable the Columbia Schools WWTP to continuously meet its NPDES Permit effluent limits. A written letter should be forwarded to this office, within 14 days of the receipt of this correspondence, indicating the reason(s) for the above outlined NPDES Permit violations.

A copy of this inspection report is being forwarded to Uni-Tech and Mr. Sabo. If you have any comments or questions about this document, you may contact me at (330) 963-1110.

Respectfully,



Charles E. Allen
Environmental Engineer
Division of Surface Water

CEA:cl

pc: Christina Douglas, Uni-Tech
John Sabo, Lorain County Health Department

File: SP/Columbia/Columbia Schools