



**Environmental  
Protection Agency**

John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

August 13, 2012

RE: LORAIN COUNTY  
PLUM CREEK WWTP  
CEI / NOV  
NPDES NO. 3PG00052

**CERTIFIED MAIL**

Lorain County Commissioners  
Administration Building  
216 Middle Avenue  
Elyria, OH 44035

Dear Commissioners:

On July 12, 2012, a meeting was held at the Lorain County Engineer's Office, with Messrs. Jack Jannuzzi and Steve Hicks, of the Lorain County Engineer's Office; Mr. Richard Greenwood of KE McCartney & Associates; Mr. John Sabo, of the Lorain County Health Department; and this writer, of the Ohio EPA. The purpose of the meeting was to discuss the continuing non-compliance of the Plum Creek wastewater treatment plant (WWTP) with its National Pollutant Discharge Elimination System (NPDES) permit to discharge, as well as the other three Lorain County owned and operated WWTP's.

Items discussed with Messrs. Jannuzzi, Hicks, and Greenwood include the following:

- 1) A list of all numeric effluent violations for Plum Creek, and the three other Lorain County owned and operated WWTPs, was presented for discussion.
- 2) Discussed was the fact that the Plum Creek WWTP is subject to Inflow and/or Infiltration (I/I) during periods of heavy precipitation. The I/I to the WWTP is considered to be the major cause of the episodes of non-compliance with NPDES permit effluent limit violations.
- 3) Also discussed were the past improvements made at the Plum Creek WWTP, which were constructed to correct prior NPDES permit effluent violations.
- 4) In an attempt to reduce or eliminate the I/I to the Plum Creek WWTP, the County had the entire sanitary sewer collection system tributary to the Plum Creek WWTP relined by the Insituform Company. Manhole covers in the streets were also replaced with solid lids, if not already present.
- 5) Sanitary sewer laterals from the street to each individual home were not part of the sewer lining project. The County is now focusing its I/I reduction efforts on the sanitary laterals, and testing of the laterals to determine which, if any, are sources of I/I.

- 6) Smoke testing of the sanitary laterals has been conducted in the Plum Creek development. In March 2012, any residence in which smoke was observed to be coming from downspouts or yard drains was sent a letter by the County, requiring correction of the connection. The letter indicated the resident had until June 30, 2012, to correct the I/I problem found at their property.
- 7) Mr. Jannuzzi indicated that, for all four County owned WWTPs, a total of approximately 122 residences were sent the formal notices of required correction. Approximately 75% of all properties which were sent the letters in March 2012 have become compliant with the requested downspout removal or correction.
- 8) The County will continue to pursue correction of the remaining non-compliant properties found to have downspout problems.

Utilizing monthly operating data submitted for the Plum Creek WWTP, the facility has been determined to be in significant non-compliance (SNC) for total suspended solids and CBOD. The attached document details the parameters in SNC for the last six-month period (December 2011 through May 2012).

As a reminder, SNC is defined by the USEPA as a 40% exceedance of specific conventional pollutant limits (1.4 x parameter effluent limit), or a 20% exceedance of toxic pollutant limits (1.2 x parameter effluent limit), at a given discharge point for any two or more months, during any two consecutive quarter period reviewed.

Conventional pollutants include: BOD/CBOD; total suspended solids; nutrients such as nitrogen (ammonia) and phosphorus; and oil & grease. Toxic pollutants include: total chlorine residual; heavy metals; and cyanide.

As discussed in the July 12<sup>th</sup> meeting, the County has been diligently continuing its efforts to address the SNC violations at the Plum Creek WWTP. It was felt that locating, and correcting, sources of I/I tributary to the sanitary collection system would eliminate the cause SNC violations. Final results of the downspout I/I reduction program will be studied, and evaluated as to its effectiveness in the overall SNC reduction effort.

The County was asked during the meeting to submit an SNC Compliance Plan Report to the Ohio EPA, detailing their efforts in the removal of I/I from the collection system. The report should include such information as: the number of connections; length of sewer in the system; length of sewer relined; number of residences smoke tested; number of residences found to be in need of lateral repair or downspout disconnection; number of residential laterals repaired, and number still in need of repair; approximate amount of money spent on the itemized repairs and studies of the collection system.

A table of precipitation events, including dates and precipitation amounts, should be included in the report. It should also be determined if there is a correlation to the amount of rainfall received and for what duration, versus any NPDES permit excursions experienced.

The SNC Compliance Plan Report should also include further planned alternatives to correcting the non-compliance at the WWTP, and a tentative schedule for implementation of the alternatives.

Following the meeting, a Compliance Evaluation Inspection (CEI) was conducted on the Plum Creek Wastewater Treatment Plant (WWTP). Present during the Plum Creek WWTP inspection were Messers. Jannuzzi, Hicks, Greenwood, Sabo, and this writer.

The July 12<sup>th</sup> inspection was conducted to evaluate the present operation and maintenance conditions at the WWTP. The last compliance evaluation inspection conducted at the Plum Creek WWTP was on August 11, 2011.

At the time of the July 12<sup>th</sup> inspection, the following observations were made:

- 1) Flow equalization tank contents were turbid gray, and were being well aerated. Both pumps in the flow equalization tank were in the 'AUTO' mode, and were operational when manually tested.
- 2) Extended aeration tank contents were dark brown in color, and the return sludge line was operating and returning brown water. The suspended solids (MLSS) content appeared to be at a higher than normal operating concentration. According to Mr. Hicks, the 30-minute settling test for the aeration tank contents resulted in approximately 720 ml/1000 ml (72%).
- 3) Settling tank contents were slightly turbid, with an algae-green tint. The skimmer line was returning clear water to the aeration tank, and the mechanical scrapers were operating. There was some floating grease on the surface of the water.

At the time of the inspection there was no effluent being discharged from the settling tank, and the troughs were clean and free of solids or algae.

- 4) The upflow clarifiers were in use, and water above the plastic media was clear, with no solids deposition.
- 5) Both pumps in the surface sand filter dosing station were in the 'AUTO' position, and were operational when manually tested.
- 6) Both surface sand filters were in use, and the sand was free of vegetation and solids. The sand did need raking, and there were eroded 'channels' in the surface of the sand. The sand needs to be kept level to fully utilize the sand filters as designed.
- 7) Final effluent disinfection is accomplished with chlorine and dechlorination tablets. Both the chlorination and dechlorination units are four tube units, and both units contained only one tube. Each unit contained tablets.

According to Mr. Hicks, approximately 10 chlorine tablets, and five dechlorination tablets, are used per week.

- 8) At the time of the inspection, no effluent being discharged from the WWTP, as it was the low-flow time of the day.
- 9) The Aerated Sludge Holding tank was being aerated, contained dark brown sludge, and there was no odor present.

10) Flow measurement at the Plum Creek WWTP is obtained from a totalizer on the pump station at the WWTP.

A review of the electronic Discharge Monitoring Report (eDMR) data submitted for the Plum Creek WWTP has been conducted. A review of the data for the period of August 1, 2011, through August 1, 2012, found the following numeric effluent violations:

**PLUM CREEK WWTP  
NPDES PERMIT NO. 3PG00052  
EFFLUENT LIMIT VIOLATIONS  
(8/1/11 – 8/1/12)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
August 2011	Nitrogen, Ammonia (NH3-N)	30D Qty	0.3	1.45978	8/1/2011
August 2011	CBOD 5 day	30D Qty	1.5	2.10303	8/1/2011
August 2011	Total Suspended Solids	30D Conc	12	12.86	8/1/2011
August 2011	Total Suspended Solids	30D Qty	1.8	2.85869	8/1/2011
August 2011	Nitrogen, Ammonia (NH3-N)	30D Conc	2.0	5.875	8/1/2011
August 2011	CBOD 5 day	7D Qty	2.3	3.12263	8/15/2011
August 2011	Total Suspended Solids	7D Qty	2.7	3.12263	8/15/2011
August 2011	Nitrogen, Ammonia (NH3-N)	7D Conc	3.0	11.7	8/22/2011
August 2011	Nitrogen, Ammonia (NH3-N)	7D Qty	0.4	2.91392	8/22/2011
August 2011	CBOD 5 day	7D Qty	2.3	3.26259	8/22/2011
August 2011	Total Suspended Solids	7D Qty	2.7	2.8143	8/22/2011
October 2011	pH	1D Conc	6.5	6.49	10/5/2011
November 2011	Total Suspended Solids	30D Conc	12	17.72	11/1/2011
November 2011	Total Suspended Solids	30D Qty	1.8	1.91357	11/1/2011
November 2011	Nitrogen, Ammonia (NH3-N)	30D Conc	5.5	6.21	11/1/2011
November 2011	Nitrogen, Ammonia (NH3-N)	7D Conc	8.3	9.3	11/8/2011
November 2011	Total Suspended Solids	7D Conc	18	35.	11/15/2011
November 2011	Total Suspended Solids	7D Qty	2.7	4.25245	11/15/2011
November 2011	Total Suspended Solids	7D Qty	2.7	2.96623	11/22/2011
December 2011	Total Suspended Solids	30D Conc	12	35.575	12/1/2011
December 2011	Total Suspended Solids	7D Conc	18	65.7	12/1/2011
December 2011	Total Suspended Solids	30D Qty	1.8	6.90516	12/1/2011
December 2011	Total Suspended Solids	7D Qty	2.7	18.6257	12/1/2011
December 2011	CBOD 5 day	30D Conc	10	20.2	12/1/2011
December 2011	CBOD 5 day	7D Conc	15	31.	12/1/2011
December 2011	CBOD 5 day	30D Qty	1.5	3.71241	12/1/2011
December 2011	CBOD 5 day	7D Qty	2.3	8.78839	12/1/2011
December 2011	Total Suspended Solids	7D Conc	18	25.3	12/15/2011
December 2011	Total Suspended Solids	7D Qty	2.7	3.55271	12/15/2011
December 2011	CBOD 5 day	7D Conc	15	20.8	12/15/2011
December 2011	CBOD 5 day	7D Qty	2.3	2.92081	12/15/2011
December 2011	Total Suspended Solids	7D Conc	18	33.3	12/22/2011
December 2011	Total Suspended Solids	7D Qty	2.7	4.38621	12/22/2011
December 2011	CBOD 5 day	7D Conc	15	19.7	12/22/2011
December 2011	CBOD 5 day	7D Qty	2.3	2.59484	12/22/2011
January 2012	Total Suspended Solids	30D Conc	12	27.74	1/1/2012
January 2012	Total Suspended Solids	7D Conc	18	33.3	1/1/2012

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
January 2012	Total Suspended Solids	30D Qty	1.8	4.25375	1/1/2012
January 2012	CBOD 5 day	30D Conc	10	15.48	1/1/2012
January 2012	CBOD 5 day	7D Conc	15	24.2	1/1/2012
January 2012	CBOD 5 day	30D Qty	1.5	1.71371	1/1/2012
January 2012	Total Suspended Solids	7D Conc	18	36.	1/8/2012
January 2012	CBOD 5 day	7D Conc	15	29.6	1/8/2012
January 2012	Total Suspended Solids	7D Conc	18	59.	1/15/2012
January 2012	Total Suspended Solids	7D Qty	2.7	16.2126	1/15/2012
January 2012	CBOD 5 day	7D Conc	15	17.7	1/15/2012
January 2012	CBOD 5 day	7D Qty	2.3	4.8638	1/15/2012
May 2012	Total Suspended Solids	7D Conc	18	19.	5/8/2012

The Lorain County Sanitary Engineers should continue with their efforts in locating and correcting sources of I/I to the Plum Creek WWTP. The County should also operate and maintain the WWTP in such a manner as to consistently meet its NPDES permit limits.

The SNC Compliance Plan Report should be prepared and submitted to the Northeast District Office of the Ohio EPA no later than October 1, 2012.

If there are any comments or questions concerning this document, you may contact me at (330) 963-1110.

Respectfully,



Charles E. Allen  
Environmental Engineer  
Division of Surface Water

CEA/cs

Attachment

cc: Mr. Ken Carney, P.E., County Engineer, Lorain County Engineer's Office

File: MUNI/Lorain/Plum Creek P&C

**Plum Creek WWTP**  
**NPDES No. 3PG00052**  
**SNC Violations**  
**(12/11 – 5/12)**

Facility	Report Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
Plum Creek WWTP	Dec 2011	Total Suspended Solids	30D Conc	12	35.575	12/1/2011
Plum Creek WWTP	Dec 2011	Total Suspended Solids	7D Conc	18	65.7	12/1/2011
Plum Creek WWTP	Dec 2011	Total Suspended Solids	30D Qty	1.8	6.90516	12/1/2011
Plum Creek WWTP	Dec 2011	Total Suspended Solids	7D Qty	2.7	18.6257	12/1/2011
Plum Creek WWTP	Dec 2011	Total Suspended Solids	7D Conc	18	25.3	12/15/2011
Plum Creek WWTP	Dec 2011	Total Suspended Solids	7D Qty	2.7	3.55271	12/15/2011
Plum Creek WWTP	Dec 2011	Total Suspended Solids	7D Conc	18	33.3	12/22/2011
Plum Creek WWTP	Dec 2011	Total Suspended Solids	7D Qty	2.7	4.38621	12/22/2011
Plum Creek WWTP	Jan 2012	Total Suspended Solids	7D Conc	18	33.3	1/1/2012
Plum Creek WWTP	Jan 2012	Total Suspended Solids	30D Conc	12	27.74	1/1/2012
Plum Creek WWTP	Jan 2012	Total Suspended Solids	30D Qty	1.8	4.25375	1/1/2012
Plum Creek WWTP	Jan 2012	Total Suspended Solids	7D Conc	18	36.	1/8/2012
Plum Creek WWTP	Jan 2012	Total Suspended Solids	7D Qty	2.7	16.2126	1/15/2012
Plum Creek WWTP	Jan 2012	Total Suspended Solids	7D Conc	18	59.	1/15/2012
Plum Creek WWTP	May 2012	Total Suspended Solids	7D Conc	18	19.	5/8/2012
Plum Creek WWTP	Dec 2011	CBOD 5 day	30D Qty	1.5	3.71241	12/1/2011
Plum Creek WWTP	Dec 2011	CBOD 5 day	7D Qty	2.3	8.78839	12/1/2011
Plum Creek WWTP	Dec 2011	CBOD 5 day	7D Conc	15	31.	12/1/2011
Plum Creek WWTP	Dec 2011	CBOD 5 day	30D Conc	10	20.2	12/1/2011
Plum Creek WWTP	Dec 2011	CBOD 5 day	7D Conc	15	20.8	12/15/2011
Plum Creek WWTP	Dec 2011	CBOD 5 day	7D Qty	2.3	2.92081	12/15/2011
Plum Creek WWTP	Dec 2011	CBOD 5 day	7D Conc	15	19.7	12/22/2011
Plum Creek WWTP	Dec 2011	CBOD 5 day	7D Qty	2.3	2.59484	12/22/2011
Plum Creek WWTP	Jan 2012	CBOD 5 day	30D Conc	10	15.48	1/1/2012

Plum Creek WWTP	Jan 2012	CBOD 5 day	7D Conc	15	24.2	1/1/2012
Plum Creek WWTP	Jan 2012	CBOD 5 day	30D Qty	1.5	1.71371	1/1/2012
Plum Creek WWTP	Jan 2012	CBOD 5 day	7D Conc	15	29.6	1/8/2012
Plum Creek WWTP	Jan 2012	CBOD 5 day	7D Conc	15	17.7	1/15/2012
Plum Creek WWTP	Jan 2012	CBOD 5 day	7D Qty	2.3	4.8638	1/15/2012