

**Environmental
Protection Agency**

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

August 9, 2012

RE: LORAIN COUNTY
BRENTWOOD LAKE WWTP
CEI / NOV
NPDES NO. 3PH00024

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 Brentwood Lake 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 Brentwood Lake, and the three other Lorain County owned and operated WWTPs, was presented for discussion.
- 2) Discussed was the fact that the Brentwood Lake 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 Brentwood Lake WWTP, which were constructed to correct prior NPDES permit effluent violations.
- 4) In an attempt to reduce or eliminate the I/I to the Brentwood Lake WWTP, the County had the entire sanitary sewer collection system tributary to the Brentwood Lake 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 Brentwood Lake 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 Brentwood Lake WWTP, the facility has been determined to be in significant non-compliance (SNC) for total suspended solids. The attached document details the parameters in SNC for the last 6-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 12th meeting, the County has been diligently continuing its efforts to address the SNC violations at the Brentwood Lake 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 Brentwood Lake Wastewater Treatment Plant (WWTP). Present during the Brentwood Lake WWTP inspection were Messers. Jannuzzi, Hicks, Greenwood, Sabo, and this writer.

The July 12th inspection was conducted to evaluate the present operation and maintenance conditions at the WWTP. The last compliance evaluation inspection conducted at the Brentwood Lake WWTP was on August 11, 2011.

At the time of the July 12th inspection, the following observations were made:

- 1) The comminutor was in use and operating satisfactorily.
- 2) Contents of the extended aeration tank were medium brown in color, and the mixed liquor suspended solids (MLSS) content appeared to be in the higher end of the operating range. According to Mr. Hicks, the 30-minute settling test for the aeration tank contents resulted in approximately 550 ml/1000 ml (55%) for the north aeration tank, and 530 ml/1000 ml (53%) for the south aeration tank.
- 3) The return activated sludge line was returning medium brown sludge from the settling tank to the aeration tank. The settling tank skimmer line was returning clear water from the south tank, and slight watery brown from the north tank.
- 4) Contents of the settling tank were typical, and there was a slight floating scum on the surface of the south settling tank. Mechanical sludge scrapers in the settling tanks were operating.

The settling tank effluent troughs were clean and free of solids or algae, and effluent leaving the settling tank was clear and free of solids.

- 5) Both tertiary drum filters were operational and in the 'AUTO' mode at the time of the inspection.
- 6) Disinfection of the final effluent was being performed with chlorine gas. Dechlorination of the chlorinated effluent is performed with a 38% sodium bisulfite solution. Approximately five lbs/day of chlorine gas is used, and 55 gallons / two weeks of 38% (by weight) sodium bisulfite is used.
- 7) WWTP effluent was visually clear, colorless, and free of solids or foam. The effluent is post aerated prior to discharge.
- 8) Contents of the aerated sludge holding tank were medium brown in color, and the tank was approximately $\frac{3}{4}$ full. Disposal of sludge is by hauling to the French Creek WWTP.

- 9) The standby generator located on site is test run every Monday.
- 10) Flow measurement at the Brentwood Lake WWTP is obtained by ultrasonic flow meter, which is calibrated twice per year.
- 11) Effluent samples are collected by two operators at the Brentwood Lake WWTP, and are transported to the French Creek WWTP laboratory for analysis. Chain of Custody forms are utilized as a part of the sample collection/analysis procedure.

The parameters of pH, DO, and temperature are analyzed by Lorain County Engineers personnel at the WWTP. The remainder of required samples is analyzed by the French Creek WWTP lab.

A review of the electronic Discharge Monitoring Report (eDMR) data submitted for the Brentwood Lake wastewater treatment plant 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:

**BRENTWOOD LAKE WWTP
 NPDES PERMIT NO. 3PH00024
 EFFLUENT LIMIT VIOLATIONS
 (8/1/11 – 8/1/12)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
October 2011	Total Suspended Solids	30D Conc	12	13.0125	10/1/2011
October 2011	pH	1D Conc	6.5	6.39	10/3/2011
October 2011	pH	1D Conc	6.5	5.62	10/6/2011
October 2011	pH	1D Conc	6.5	5.71	10/7/2011
October 2011	pH	1D Conc	6.5	6.17	10/13/2011
October 2011	pH	1D Conc	6.5	6.03	10/14/2011
October 2011	pH	1D Conc	6.5	6.23	10/17/2011
November 2011	Total Suspended Solids	30D Conc	12	18.75	11/1/2011
November 2011	Total Suspended Solids	30D Qty	9.1	10.0009	11/1/2011
November 2011	Total Suspended Solids	7D Conc	18	20.05	11/15/2011
November 2011	Total Suspended Solids	7D Qty	13.6	19.5608	11/22/2011
December 2011	Total Suspended Solids	30D Conc	12	21.7111	12/1/2011
December 2011	Total Suspended Solids	7D Conc	18	40.35	12/1/2011
December 2011	Total Suspended Solids	30D Qty	9.1	14.0527	12/1/2011
December 2011	Total Suspended Solids	7D Qty	13.6	32.346	12/1/2011
December 2011	Total Suspended Solids	7D Conc	18	19.4	12/22/2011
December 2011	Total Suspended Solids	7D Qty	13.6	14.0496	12/22/2011
January 2012	Total Suspended Solids	30D Conc	12	13.3888	1/1/2012
January 2012	Total Suspended Solids	7D Conc	18	18.5	1/1/2012
January 2012	Total Suspended Solids	7D Conc	18	20.05	1/15/2012
January 2012	Total Suspended Solids	7D Qty	13.6	19.3088	1/15/2012
April 2012	Total Suspended Solids	30D Conc	12	12.3375	4/1/2012

BRENTWOOD LAKE WWTP
AUGUST 10, 2012
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The Lorain County Sanitary Engineers should continue with their efforts in locating and correcting sources of I/I to the Brentwood Lake 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/Brentwood Lake P&C

Brentwood Lake WWTP
NPDES No. 3PH00024
SNC Violations
(12/11 – 5/12)

Facility	Report Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
Brentwood Lake WWTP	Dec 2011	Total Suspended Solids	7D Qty	13.6	32.346	12/1/2011
Brentwood Lake WWTP	Dec 2011	Total Suspended Solids	7D Conc	18	40.35	12/1/2011
Brentwood Lake WWTP	Dec 2011	Total Suspended Solids	30D Conc	12	21.7111	12/1/2011
Brentwood Lake WWTP	Dec 2011	Total Suspended Solids	30D Qty	9.1	14.0527	12/1/2011
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Brentwood Lake WWTP	Jan 2012	Total Suspended Solids	7D Conc	18	18.5	1/1/2012
Brentwood Lake WWTP	Jan 2012	Total Suspended Solids	7D Conc	18	20.05	1/15/2012
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Brentwood Lake WWTP	Apr 2012	Total Suspended Solids	30D Conc	12	12.3375	4/1/2012

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