



**Environmental
Protection Agency**

John R. Kasich, Governor

Mary Taylor, Lt. Governor

Scott J. Nally, Director

April 20, 2012

RE: MEDINA COUNTY
HINCKLEY TOWNSHIP
MEDINA SD 300
(NPDES NO. 3PK00003)

Mr. David Bazilevich, Supt. of Treatment
Medina County Sanitary Engineers
791 West Smith Road
PO Box 542
Medina, OH 44258

Dear Mr. Bazilevich:

On March 27, 2012, a Compliance Evaluation Inspection (CEI) was conducted at the Medina SD 300 (Hinckley) wastewater treatment plant (WWTP). Present during the inspection were Messers. Dave Brandon (Superintendent) and Rob Elmerick (Asst. Superintendent), representing the Medina County Sanitary Engineers; and this writer, of the Ohio EPA. The SD 300 WWTP is located at 85 Ridge Road, in Hinckley, Ohio.

Evaluated during the inspection were the treatment plant processes, effluent discharge quality, and general compliance with the intent of the NPDES permit. The last CEI conducted at the Medina SD 300 WWTP was on August 6, 2009.

At the time of the March 27th inspection, the following observations were made, and information was obtained:

- 1) Raw flow enters the WWTP headworks through mechanical bar screens, followed by comminutors. One of the two comminutors (West Unit #2) was in operation at the time of the inspection. Screenings from the bar screens are collected in two CY dumpsters, and are disposed of weekly at the Allied Landfill in Lorain County.
- 2) Influent pumps in the headworks building pump the flow up to the three aeration tanks. There are three influent pumps, of which only one is used during periods of normal flow to the plant. The average flow to the WWTP during dry weather is in the 1.8 to 2.0m MGD range, but during precipitation events, influent flow rates can reach as high as 4 to 6 MGD. Flow rates during the inspection were in the normal operating range.
- 3) Two of three aeration tanks are used during normal flow days, with the third aeration tank being added when wastewater flows are high. The third aeration tank kept in standby mode is rotated on a weekly basis.

Contents of the two aeration tanks online were medium brown, with no foam or odor present. Mixed Liquor Suspended Solids (MLSS) concentrations were in the 1800 ppm range (~2200 ppm in the winter), with Dissolved Oxygen (DO) levels at approximately 2.5 mg/l.

- 4) There are seven blowers (five large and two small) available to provide air for the aeration tanks. Typically, only two large and one small blowers are operated during normal flow periods.
- 5) Following aeration, flow enters the clarifiers for solids settling. Two of four clarifiers were being used at the time of the inspection, and during normal summertime flows, only one clarifier is typically utilized.

Effluent troughs in the settling tanks were clean and free of solids or algae, and settled effluent was clear. The settling tanks are manually skimmed approximately once daily.

- 6) Ferrous chloride is used as an aid in removing phosphorus. The ferrous chloride is stored in two 8000-gallon underground fiberglass storage tanks, and is introduced with two chemical feed pumps used in tandem. The ferrous is fed into the aerated channel, downstream of the aeration tanks, prior to entering the clarifiers.
- 7) There are two return activated sludge (RAS), and two waste activated sludge (WAS) pumps used in the removal of solids in the system.
- 8) Following clarification, flow enters the 12 rotating biological contactor units (RBCs) for nitrogen removal. All 12 RBC units were being utilized (two trains of six units each), and biological growth on the units was the typical greenish/gray color.

Since the last inspection the # 11 RBC unit experienced shaft failure (March 2011), necessitating replacement; and the #7 RBC unit manufactured by Auto Troll was replaced (Feb. 2012) with an RBC unit manufactured by Walker Process.

- 9) After treatment by the RBCs the flow enters the sand filters. One of three traveling bridge sand filters was being operated at the time of the inspection. At approximately 3 MGD or greater, a second sand filter is added to the treatment process. Use of the single sand filter is alternated on a monthly basis. Media in the sand filters has never needed replacement.
- 10) During the disinfection season (May 1st through October 31st), the effluent is treated with chlorine gas, and dechlorinated with liquid sodium bisulfate. Chlorine gas is supplied in 1-Ton cylinders, and approximately 20 pounds per day of chlorine is utilized.

There are two chlorine contact tanks available in the treatment scheme, but only one is used during normal flow periods. At the time of the inspection, the south contact tank was in use.

- 11) Final effluent being discharged was visually clear, and free of solids and foam. Final effluent is sampled with an ISCO 4700 autosampler, and flow is measured by parshall flume and sonic meter. The collected sample in the autosampler was being kept at 4° C.
- 12) Sludge generated at the Medina SD 300 WWTP is classified as Class B sludge. Solids generated during the treatment process are digested in aerobic digesters. There are four digesters, which at the time of the inspection: one digester was full; one was empty; one digester was ready to be processed; and one was being emptied of sludge.
- 13) Upon leaving the aerobic digesters, polymer is added to the sludge, then dewatered by a 2-meter Ashbrook sludge press. Filter cake from the sludge press is run through an auger, blended with quicklime, and sent via conveyor to a storage building. Sludge going to the filter press is approximately 1 to 3% solids, and coming off the press is 20+ % solids. The sludge press is operated once or twice weekly, approximately 24 hours per day.
- 14) The pressed sludge is kept in the storage building for approximately one week (less in the summer), after which it is hauled and land applied, by Agri-Sludge, on farms in Medina County.
- 15) Dissolved Oxygen, temperature, and pH measurements are conducted by SD 300 plant personnel. All other samples are collected by SD 300 personnel, then sent to the Medina SD 500 WWTP lab for analysis. Samples collected for mercury analysis are collected directly by SD 500 personnel.
- 16) Sample bottles are prepared by SD 300 personnel, with the exception of bottles used for collection of cyanide, and oil & grease, which are given to SD 300 already prepared by the SD 500 lab.

A chain of custody form is employed when samples are collected and transported.
- 17) There are 17 full time employees at the Medina SD 300 WWTP, and coverage is provided 24/7.
- 18) Mr. Brandon became SD 300 Superintendent in May 2011, with Mr. Elmerick becoming the Assistant Superintendent.
- 19) The SD 300 WWTP does not accept septage for disposal at their plant.

- 20) There are no Industrial Users (IU) tributary to the collection system served by the SD 300 WWTP. There are some light commercial businesses utilizing the system, and total flow from these businesses comprises approximately three (+/-) % of the incoming flow.
- 21) There are four pump stations throughout the Medina SD 300 service area. The service area includes a small portion of Broadview Heights, North Royalton, Strongsville, Brunswick, and two Ohio Turnpike plazas. The population served is approximately 34,000 to 35,000 persons.
- 22) There have been no WWTP, pump station, or sanitary sewer bypasses since the last inspection.
- 23) Since the last inspection, the NPDES Permit-required outfall identification sign has been posted where the outfall pipe discharges to the receiving stream.
- 24) A revised Operator of Record (ORC) Notification Form needs to be submitted to Ohio EPA, with Mr. Brandon indicated as the operator of responsible charge for the SD 300 WWTP.
- 25) Mr. Brandon was reminded of the NPDES Permit-required submittal due for the annual Mercury Pollutant Minimization Program (PMP) Report, and the SSO Annual Report. He indicated the reports were to have been/be handled by the County Sanitary Engineer's Office.

A review of the electronic Discharge Monitoring Reports (eDMR's) submitted for the Medina SD 300 WWTP for the period of August 1, 2009, through March 1, 2012, found the following final effluent limit numeric violations:

**Medina SD 300
 Numeric Effluent Violations
 NPDES Permit No. 3PK00003
 (August 1, 2009 - March 1, 2012)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
February 2011	Total Suspended Solids	7D Qty	221	274.296	2/22/2011
March 2011	Nitrogen, Ammonia (NH3-N)	30D Conc	1.0	1.135	3/1/2011
March 2011	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	1.59	3/8/2011
March 2011	Nitrogen, Ammonia (NH3-N)	7D Conc	1.5	1.55333	3/15/2011

** NOTE: No Reporting Code or Frequency Violations

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Medina County should continue current operation and maintenance practices, which allow the SD 300 WWTP to consistently meet its NPDES Permit limits.

If you have any comments or questions regarding this correspondence, you may contact me at (330) 963-1110.

Respectfully,

A handwritten signature in cursive script that reads "Charles E. Allen".

Charles E. Allen
Environmental Engineer
Division of Surface Water

CEA/cs

File: Public/MedinaCounty SD 300/P&C