



State of Ohio Environmental Protection Agency

Northeast District Office

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

March 25, 2010

RE: GEAUGA COUNTY
NPDES PERMIT
COMPLIANCE INSPECTIONS

CERTIFIED MAIL

Geauga County Board of Commissioners
470 Center Street, Building #3
Chardon, OH 44024

Dear Commissioners,

On February 23, 2010, inspections were conducted at 6 Wastewater Treatment Plants operated and maintained by Geauga County. This writer, Rich Blasick and John Schmidt of this office met with Jim Reider of Geauga County Water Resources. Jim Reider was present at all inspections. The intent of the inspections was to gather information for the renewal of the National Pollutant Discharge Elimination System (NPDES) permits for Troy Oaks, Parkman, Infirmary, Wintergreen, Opalocka and Metzenbaum. Discharge monitoring reports from January 1, 2008 through March 1, 2010 were reviewed for compliance with the current NPDES permits.

The inspections revealed that all 6 facilities are in operation and most are in need of additional maintenance, repairs or upgrades. The following is a summary of the inspections conducted at each facility:

TROY OAKS NPDES #3PG00079

The wastewater treatment plant is a steel sewage plant. The wastewater treatment plant has an average design flow of 60,000 gpd. According to discharge monitoring report data, the flow to the wastewater plant over the past two years averaged 55,000 gpd. At the time of the inspection, all processes were in operation. The rapid sand filter was taken down for repairs just before the inspection. It is understood the filters were plugged from the heavy Inflow and Infiltration (I/I) coming to the plant. The steel tanks are in unsatisfactory condition and in need of repair or replacement. The tanks have deteriorated to the point that the structural integrity of the tanks is questionable. There were holes in the sidewalls which divide the two digester tanks. The condition of the tanks was discussed during the inspection. It is understood the County has been actively working to tie in this facility to Auburn Corners. It is understood Auburn Corners would need to be expanded in order to accept the discharge from Troy Oaks. In addition, it is understood the County will need an easement from the Ohio Department of Transportation for crossing US422.

The trash trap is cleaned approximately every 2 months. Ferric is fed at the head of the plant for phosphorus removal. Great Lakes Cheese is one of the larger industrial dischargers to the plant and they have their own wastewater pretreatment plant onsite to handle the organic loading from the facility. It is understood that when a slug load from

Great Lakes Cheese occurs, Troy Oaks has difficulty keeping up with the ferric feed, which results in phosphorus violations. The violation summary for Troy Oaks is attached to this letter. The numerous phosphorus violations are a concern and it is recommended the ferric feed be evaluated to ensure proper dosage. It is also recommended that the County continue to work with Great Lakes Cheese on providing a quick notification whenever a slug load may occur.

At the time of the inspection, the aeration tank was provided with adequate air supply and the contents of the tank were a chocolate brown color. Foam was present at the time of the inspection. The clarifier appeared to be in satisfactory condition with minimal solids accumulation on the weir, effluent trough and skimmer. It is understood sludge is wasted two times a week and the influent baffle is cleaned whenever sludge is hauled from the system. The UV disinfection tank has been upgraded and was in satisfactory condition at the time of the inspection.

The final effluent from the plant appeared to be in satisfactory condition. The wastewater treatment plant discharges to LaDue Reservoir. Sludge is removed from the facility and hauled to McFarland wastewater treatment plant for ultimate disposal to a landfill. Sludge is removed from the facility approximately every 3 months.

PARKMAN NPDES #3PG00160

The Parkman wastewater treatment plant was in good operation and maintenance condition at the time of the inspection. The Ohio EPA issued a Permit to Install (PTI) for the wastewater treatment plant which was installed in 2007. The capacity of the wastewater treatment plant is 200,000 gpd. According to discharge monitoring report data, the flow to the wastewater plant over the past two years averaged 12,000 gpd. The wastewater treatment plant is currently classified as a Class II wastewater treatment facility. Due to the reduced flow to the wastewater plant, the County has expressed an interest in lowering the wastewater treatment plant classification to Class I. The plant classification will be evaluated in the renewal draft permit.

Mr. Reider indicated the blowers installed at the plant are oversized for the existing plant due to a reduction in flow rate from what was originally designed for the wastewater system. It is understood the County is interested in replacing the larger blowers with smaller units. Any replacement or upgrade that is not a like replacement will require the submittal of a PTI. More information regarding the submittal of a PTI can be found at <http://www.epa.ohio.gov/dsw/pti/index.aspx>.

The plant is subject to groundwater inflow which fills unused tanks through a release valve into the system. During the inspection it was indicated that occasionally groundwater inflow has discolored the effluent orange due to high iron content. During the inspection, a slight orange discoloration was noted in the receiving stream. This office recommends the County investigate other options for the disposal of this groundwater.

The wastewater system is a vacuum system with a constant vacuum maintained in the collection system. Individual collector units are located at every two to three homes in the system. A large vacuum pump station located near the wastewater treatment plant controls the discharge to plant.

INFIRMARY CREEK NPDES #3PG00103

The wastewater treatment plant has an average design flow of 80,000 gpd. According to discharge monitoring report data, the flow to the wastewater plant over the past two years averaged 90,000 gpd. An upgrade for the wastewater treatment plant is planned and the final plans have been submitted and are under review at the Northeast District Office. The upgrades to the facility include increasing the capacity to 149,000 gpd. The wastewater treatment plant service area includes the County Jail and Geauga Hospital. It is understood the hospital accounts for nearly 65% of the capacity of the wastewater treatment plant. Smoke testing was conducted in the collection system and sump pumps were discovered at the hospital. Sump pumps are typically clean water connections that must be removed from the sanitary system.

At the time of the inspection, the treatment plant units were in poor operating condition. The aeration tank contained a mixed liquor that was a dark gray color and the tube settlers in the clarifier were bypassed. It is understood the tube settlers have been bypassed due to the failure to operate effectively. The surface sand filters were covered with solids and some flooding was occurring. The surface sand filters are plugged due to the heavy solids passing through the plant during heavy rain events. The sludge holding tank at the existing plant has been converted into a makeshift clarifier to assist in the settling of solids. It is understood solids are removed directly from the aeration tank. Any solids and sand removed from the surface sand filters is hauled to McFarland for disposal at a landfill. The UV unit has been added since the previous inspection. The UV unit was installed in a new tank with the previous chlorination tank being converted into post aeration. The flow meter is located at the head works of the plant. All effluent samples are currently collected in a series of 3 grab samples. The upgraded wastewater treatment plant will include composite samplers.

The final effluent was clear and free of solids. Although the existing wastewater treatment plant is not satisfactory, this office takes into consideration the proposed upgrades when reviewing the condition of the wastewater treatment plant.

WINTERGREEN NPDES #3PG00055

The wastewater treatment plant was underloaded at the time of the inspection. The plant currently serves approximately 26 homes located in the subdivision and has an average daily design flow of 15,000gpd. According to discharge monitoring report data, the flow to the wastewater plant over the past two years averaged 13,000 gpd. It is understood the County has pursued a tie in to the City of Chardon wastewater treatment plant. However, the City of Chardon would be required to annex this service area in order to connect the

area to sewers. It is also understood the County has reviewed a possible upgrade to the facility which is dependent on site conditions. Since the last inspection, the County has installed a flow meter at the effluent.

The wastewater treatment plant is located on the edge of a hillside. The chlorine contact tank is located on the very edge of the hillside and is at risk of sliding down the steep slope.

At the time of the inspection, the treatment units were in unsatisfactory condition. The wastewater treatment plant contains no tertiary treatment with scum present in the clarifier and solids noticeable in the chlorine contact tank. The final effluent from the plant appeared clear. Previous NPDES permits issued by this office included compliance schedules for the upgrades to the wastewater treatment plant. A PTI was issued to the County for improvements to the wastewater treatment plant. The upgrades were never completed due to funding. Due to the condition of the wastewater treatment plant, this office is requesting the County evaluate the system and provide an update on upgrading the wastewater treatment plant or any potential abandonment to the City of Chardon.

OPALOCKA NPDES #3PH00000

The wastewater treatment plant has an average daily design flow of 160,000 gpd. According to discharge monitoring report data, the flow to the wastewater plant over the past two years averaged 110,000 gpd. The County is currently working with an engineer for the design of a wastewater treatment plant upgrade. The general design of the upgraded plant has been completed and submitted to this office for comment. The proposed upgraded wastewater treatment plant will include three new blowers, new tertiary filtration, conversion of the old aerobic digesters to a flow equalization tank, a new aerobic digester and a new building to house the blowers and tertiary filters.

The wastewater treatment plant serves a trailer park and the surrounding service area that includes restaurants, businesses and homes. At the time of the inspection, a fallen tree was sitting on the influent line from the trailer park. The fallen tree can cause stress on the pipe (which is suspended across a stream) and must be removed. It was indicated that the tree would be removed promptly.

At the time of the inspection, all treatment units were in operation except the rapid sand filters. It is understood the rapid sand filters were taken offline in late 2008 due to the filters not properly backwashing, the continued deterioration of the equipment and difficulty locating replacement equipment. The rapid sand filters are bypassed with the flow from the secondary clarifiers sent directly to the UV system. The filters are to be replaced during the proposed wastewater treatment plant upgrade. The wastewater plant operates in contact stabilization mode. The aeration tank and clarifier appeared to be in acceptable condition. The old chlorine contact tank has been converted to a post aeration tank. A minor amount of solids, grease and scum were floating on the surface of the post aeration tank. The UV system was not in operation but appeared to be in good condition.

METZENBAUM NPDES #3PG00076

At the time of the inspection, the treatment plant was operating satisfactorily. According to discharge monitoring report data, the flow to the wastewater plant over the past two years averaged between 4,000 gpd and 5,000 gpd. The treatment system was running full at the time of the inspection and the mixed liquor in the aeration tank was splashing out of the tank. During the previous inspection, the storm water drainage from the parking lot was noted as potentially impacting the treatment system. Please notify this office regarding storm water management around the site in addition to any potential I/I sources that may be present in the collection system. It was indicated the County will pursue the installation of an ultrasonic flow meter at the treatment plant in lieu of the time lapse meters on the dosing chamber. Please notify this office regarding the status of the flow measurement equipment at this facility.

SUMMARY

Geauga County must actively work to update or replace some of the above noted treatment systems. It should be noted that the County has submitted a PTI for the upgrades at Infirmary Creek and a proposal for the upgrade at Opalocka. For the wastewater plants that are outdated and reaching the end of their life, a plan is recommended for replacement or repair of these systems. Please prepare a schedule which outlines the County's plans for the treatment systems in the next 5-10 years. This schedule will be a useful tool for this office during subsequent inspections and meetings.

If you have any questions or comments regarding this letter, please contact this office at (330) 963-1299.

Respectfully,



Laura A. Weber, P.E.
Environmental Engineer
Division of Surface Water

LAW/mt

ec: Rich Blasick, Ohio EPA, DSW, NEDO

cc: Doug Bowen, Department of Water Resources
Jerry Morgan, Department of Water Resources
Jim Reider, Department of Water Resources
Geauga County Health Department

File: Public/Geauga County