



RICK SNYDER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



DAN WYANT  
DIRECTOR

June 29, 2011

Ms. Michelle Manke, Clerk  
Leoni Township  
913 Fifth Street  
Michigan Center, Michigan 49254

Dear Ms. Manke:

SUBJECT: Septage Receiving Facility Operating Plan Amendment  
Leoni Township Septage Receiving Facility

Review of the Leoni Township Septage Receiving Facility revised septage waste operating plan (operating plan) by the Department of Environmental Quality (DEQ) is complete. The operating plan is approved and meets the requirements outlined in Section 11715b of Part 117, Septage Waste Servicers, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

The receiving facility shall operate in accordance with the approved operating plan. If a change in operations or conditions is anticipated, please file an amendment to the operating plan at least thirty (30) days prior to the proposed date for implementation.

If you have any questions regarding this matter, please contact me at the telephone number below; [campbellm4@michigan.gov](mailto:campbellm4@michigan.gov); or DEQ, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Matthew Campbell  
Septage Waste Program Coordinator  
On-Site Wastewater Unit  
Solid Waste and Land Application Section  
Resource Management Division  
517-335-4178

cc: Mr. Steve Hall, Jackson County Health Department  
Mr. Jon Russell, DEQ-Jackson

# *Leoni Township Office*

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913 Fifth St. P.O. Box 375

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June 21, 2011

Mr. Matt Campbell  
Septage Waste Program Coordinator  
MDEQ – Water Bureau  
Constitution Hall, Second Floor – North  
P.O. Box 30273  
Lansing, MI 48909-7773

Re: Septage Receiving Operating Plan  
Leoni Township, Jackson County, Michigan

Dear Mr. Campbell:

Attached please find the revised Leoni Township Septage Receiving Facility Operating Plan. This plan has been revised to reflect changes that have occurred since the plan was approved on January 19, 2010. The revisions also reflect the comments and questions that were received for revisions that were submitted via Email from Thomas High on June 16, 2011.

**Service Area** – There has been no changes made to the service area for the Leoni Township Septage Receiving Station. Jackson County Ordinance No. 10 mandates that Leoni Township accept septage from the entirety of Jackson County. In addition, the Leoni Township Septage Receiving Station accepts septage from areas outside of Jackson County that are within a 15 mile radius of the septage receiving station. A map of the Leoni Township Septage Service area is included.

**Hours of Operation** – The hours of operation have been reduced from 7:00 am to 8:00 PM to 8:00 AM to 5:00 PM. This change is necessitated by budget issues facing the Township. Leoni Township has significantly reduced Department of Public Works (DPW) staff. As a result the second shift of DPW has been eliminated. The second shift at DPW allowed the extended hours for the Septage Receiving Station. Call-in service is available for septage haulers who must dump loads after normal operational hours.

**Fee Structure** – The fees for septage disposal have been raised from \$0.10 to \$0.15 per gallon. This increase is in line with a corresponding increase in the REU charge for other customers of the wastewater system. We believe that the increased charge for septage is in line with the sewer rate increases that have been applied to other wastewater system

customers. Wastewater system customers' rates have increased from \$9.50 in 2008 to \$21.52 in 2011. This is a 226% increase for residential, commercial and industrial customers. During the same period, the charges for the septic waste have been raised from \$0.07 per gallon to \$0.15 per gallon, a 214% increase.

**Definition of MBR** – MBR refers to Membrane Reactor. The new Leoni Township Wastewater Treatment Plant is a 3.0 MGD Activated Sludge system incorporating biological nutrient removal (BNR) and membranes for liquid/solids separation.

**Septage Analytical Data** – The selection of data to be used for organic loading analysis was limited to the 2006-2007 data because the data set for these years was significantly larger than the data collected during the years 2008 and 2009. A total of 60 samples were collected during the period 2006 to 2007. While only 16 samples were collected in 2008 through 2009. The 2006 and 2007 data was collected as a requirement of the Administrative Compliance Order and therefore comprised a much larger statistical sample size. However, during re-evaluation of the data used in the previous revision of the septage plan, it was discovered that a mathematical error had been made. The BOD value used for the organic loading calculation should have been 6672 mg/l rather than 4499 mg/l. The average septage BOD for the period 2006 to 2007 is 6009 mg/l. The BOD value for the period 2006 to 2009 is 6672 mg/l. We have revised the organic loading calculations to reflect the higher and thus more conservative value of 6672 mg/l based on data collected from 2006 through 2009.

We hope that this submission is acceptable. If there are any additional questions or comments, please contact Thomas High at (734) 904-0228.

Thanks you,

Michele Manke  
Leoni Township Clerk

**LEONI TOWNSHIP SEPTAGE RECEIVING FACILITY**  
**OPERATING PLAN**

**1.1 General Description of the System**

The septage receiving station is located at the site of the Leoni Township Wastewater Treatment Plant (WWTP), 8401 Page Avenue, Grass Lake, Michigan. Leoni Township currently receives septage waste at this site and will continue to receive septage waste at this site in accordance with this operating plan.

Septage received at the site is discharged from the haulers through the usage of an offloading pipe connected to a mechanical screening device. Septage haulers connect to the offloading pipe through the usage of a quick-connect fitting. Once connected to the offloading pipe the septage haulers may discharge into the septage receiving system. Flows from the haulers are recorded through the usage of a flow meter located prior to a mechanical screening device. The mechanical screen is designed for a flow rate of 400 gallons per minute which allow haulers to offload in 4-6 minutes depending on the size of the truck. Following screening, the septage flows into a pump station from which it is either blended into the WWTP influent wastewater or sent to a large holding tank for equalization and/or testing.

**1.2 Contact Information**

Operations of the Leoni Township WWTP are overseen by the contract operations firm Infrastructure Alternatives. Contact information for the plant superintendent is included below:

Tom High, Superintendent  
Leoni Township WWTP  
(517) 522-8445

**1.3 Service Area**

The mandated service area for the Leoni Township Septage Receiving Station is the entire County of Jackson. Jackson County Ordinance No. 10 – Septage Waste Disposal Ordinance states that all septage waste collected in Jackson County by a licensed septage waste servicer shall be disposed of at the Leoni Township Waste Treatment Facility or other public septage waste disposal facility located in Jackson County.

In addition to the mandated service area defined above, Leoni Township's service area includes any areas outside of Jackson County that are within 15 radial miles of the receiving facility in accordance with Part 117 of the Natural Resources and Environmental Protection Act, 1994 PA.

**1.4 Septage Categories**

There are three general categories of septage that receiving facilities may accept for treatment. Those categories can be described generally as follows:

1. Domestic Septage – the septage pumped from home septic tanks, recreational vehicles (RV), cesspool, portable toilet, type III marine sanitation device, or similar treatment works that receives only domestic sewage.
2. Domestic Treatment Plant Septage (solids) – means biosolids generated during treatment of domestic sewage in a treatment works and transported to a receiving facility or managed in accordance with a residuals management program approved by the Michigan Department of Environmental Quality.
3. Food Establishment Septage – material pumped from a grease interceptor, grease trap, or other appurtenance used to retain grease or other fatty substances contained in restaurant wastes and that is blended into a uniform mixture, consisting of not more than 1 part of that restaurant-derived material per 3 parts of domestic septage, prior to land application or disposed of at a receiving facility.

The Leoni Township facility only accepts domestic septage. Any load suspected of being another category shall be isolated in the sludge storage tank for testing. Loads found to be food establishment septage, domestic treatment plant septage, or containing any waste in violation of the sewer use ordinance shall be denied acceptance and the operator of the receiving station shall take necessary actions with the septage hauler responsible for the load to remove the waste and prevent further violations.

### **1.5 Hours of Operation**

Normal operating hours for the septage receiving station are 8:00 am to 5:00 pm on Monday thru Friday. Septage receiving station will be closed those holidays that are observed by Leoni Township DPW. At the discretion of Leoni Township, loads may also be received on holidays, weekends or after regular business hours on an on-call basis. Haulers are provided with a list of the on-call personnel phone numbers and the dates the employees cover.

### **1.6 Fee Structure**

The general fee structure for the septage receiving station is \$0.15 per gallon or \$150.00 per 1000 gallons. Additional fees apply for deliveries made after hours or on weekends. A \$30.00 per load fee is charged for after hours and Saturday deliveries, \$40.00 per load for Sunday deliveries, and \$40.00 per load for holiday deliveries. Billing for the loads is performed twice a month on the 1<sup>st</sup> and 16<sup>th</sup>.

### **1.7 Treatment of Septage**

Septage accepted at the receiving station is blended with the domestic wastewater and discharged to the Leoni Township Wastewater Treatment Plant. The WWTP is presently operating under a State of Michigan Department of Environmental Quality Surface Water Discharge Permit. This permit authorizes the discharge from the treatment facility to the surface waters of the state, provided that the permit effluent limitations, monitoring requirements and other conditions are complied with. The current permit expiration date is October 2012.

### **1.8 Hydraulic and Organic Loading Capacity**

The impact of the septage loading on the ability of the WWTP to meet the existing permit

conditions needs to be considered when accepting waste. A brief summary of this evaluation is included on the following page.

### **1.8.1 Hydraulic Loading**

The average septage discharge to the Leoni Township WWTP for the period 2002 through 2010 was approximately 12,400 gallons per day, or 0.012 million gallons per day (MGD). Leoni Township replaced the 2.6 MGD Lagoon System with a 3.0 MGD MBR WWTP. MBR refers to Membrane Reactor. The new Leoni Township Wastewater Treatment Plant is a 3.0 MGD Activated Sludge system incorporating biological nutrient removal (BNR) and membranes for liquid/solids separation. The new facility began accepting wastewater in June 2010 and as of January 2011 is accepting the entire wastewater flow from the Leoni Township collection system. The design hydraulic capacity for the Leoni Township WWTP is 3.0 MGD. Based on this information, average septage flows represent approximately 0.5% of the hydraulic capacity of the plant. The new plant has the capacity to accept daily peak flows of up to 4.8 MGD. As a result, hydraulic loading would not be a concern until the plant was near capacity.

Current influent flow measurements at the WWTP show that the average daily flow and peak monthly flow for 2010 to date are 1.88 MGD and 2.39 MGD, respectively. Based on evaluation of existing and projected flows, Leoni Township will be able to accommodate all expected hydraulic loading, including the septage flows, for the next five to ten years.

### **1.8.2. Organic Loading**

Based on extensive analysis of composite septage samples during 2006 and 2009, the BOD loading varies widely. However utilizing this data, the average BOD loading was calculated to be 6,672 mg/l. Using this information and the average septage flow of 12,400 gpd, the average daily organic loading was calculated to be approximately 689.9 lb/day. The MBR WWTP was designed to accept and average of 1,031 lbs of BOD per day from septage discharges. The design organic capacity for the Leoni Township WWTP is 8,081 lb/day. Based on this information, average septage flows represent approximately 10.3% of the organic capacity of the plant. The Leoni Township WWTP will be able to accept and treat the expected septage flow during the next five to ten years.

## **1.9 Septage Receiving Restrictions**

Based on the above analysis, the Leoni Township WWTP has been designed to accept septage waste from the identified service area. Evaluation of the impact of septage on the treatment process should be performed every five years. More frequent evaluation should be performed if any process problems develop or if the WWTP begins to experience NPDES violations.

# Leoni Township Septage Receiving Area

