



RICK SNYDER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



DAN WYANT  
DIRECTOR

February 21, 2013

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

Dear Ms. Manke:

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

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), is in receipt of the Leoni Township Septage Waste Receiving Facility Operating Plan Amendment. The amended plan will be posted on the Septage Waste Program website, as required under Section 11715b.(10)(a)(b) of Part 117, Septage Waste Servicers, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Be advised that the receiving facility must operate in accordance with the approved plan. If a change in operations or conditions is anticipated, please file an amendment to the plan at least thirty (30) days prior to the proposed date of implementation.

If you have any questions pertaining to this matter, please contact me at 517-335-4178; [campbellm4@michigan.gov](mailto:campbellm4@michigan.gov); or at DEQ, ODWMA, Environmental Health Section, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Matthew Campbell  
Environmental Quality Specialist  
Septage Waste Program  
Environmental Health Programs Unit  
Office of Drinking Water  
and Municipal Assistance

mc:cfl

cc: Mr. Steve Hall, Environmental Health Director, Jackson County Health Department  
Mr. Jeff Surfus, DEQ, Water Resources Division, Jackson District Office

# *Leoni Township Office*

*www.leonitownship.com*

913 Fifth St.

Michigan Center, Michigan 49254

PHONE: (517) 764-4694 – FAX: (517) 764-1106

December 19, 2012

Mr. Matt Campbell  
Septage Waste Program Coordinator  
MDEQ – Water Bureau  
Constitution Hall, Second Floor – North  
PO 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. The attached plan has been revised to reflect changes that have occurred since the plan was approved on June 29, 2011.

Service Area – There have been no changes made to the service area for the Leoni Township Septage Receiving Station.

Hours of Operation – The hours of operation remain unchanged from the previous Plan. The operating hours for the Leoni Township Septage Receiving Facility are 8:00 AM to 5:00 PM. 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 \$0.15 to \$0.21 per gallon. This increase is in line with a corresponding increase in the REU charge for other customers of the wastewater system. 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 \$21.52 in 2011 to \$30.15 in 2012. This is a 40.1% increase for residential, commercial and industrial customers. The charges for the septic waste have been raised from \$0.15 per gallon to \$0.21 per gallon, a 40% 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 data used to evaluate both the hydraulic and the organic loading of the septage on the Leoni Township WWTP was collected during the years 2011 and 2012. This data was also compared to the data collected from 2006 through 2012.

The average septic flow per day has declined slightly during this period. The decline in volume may be due to the earlier septic rate increases. Homeowners may be delaying septic tank cleaning due to higher disposal charges. The following Table shows the average septage volume per day received at the Leoni Township Septage Receiving Facility during the period 2006 through 2012.

Year	Average Daily Septage Volume (gal)
2006	13,019
2007	14,275
2008	14,127
2009	11,651
2010	9,613
2011	9,017
2012	9,544


As a result of the above, the hydraulic impact on the wastewater treatment plant was lowered from 12,400 gallons per day to 9,330 gallons per day.

The septage BOD value was increased from 6,672 mg/l to 9,820 mg/l based on the most recent sampling data. The organic loading increased from 690 pounds per day to 761 pounds per day. This value remains below the WWTP design loading for septage of 1,031 pounds per day.

Septage Receiving Facility Equipment – In 2012, Leoni Township replaced the mechanical screening device that had been used since the Septage Receiving Facility was installed. The mechanical screening device was replaced with a Muffin Monster septage receiving station. The new equipment went into operation on June 12, 2012 and has performed as expected with no down time to date.

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

Respectfully,



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 vehicle through the usage of an offloading pipe connected to a JWC Environmental Honey Monster system. Septage haulers connect to the offloading pipe through the usage of a quick-connect fitting. Once connected to the offloading pipe the septage haulers use a card reader to access the septage receiving system. Each hauler has a unique password so that accurate measurement and billing of haulers is assured. Once the password is entered into the card reader, the system valve is opened to allow haulers to unload at a rate of about 400 GPM. Septage waste passes through a rock trap designed to remove large rocks and similar items. This rock trap provides protection for the teeth in the Muffin Monster unit. Once rocks are removed in the rock trap, the septage passes through the Muffin Monster grinding unit to reduce the size of materials contained in the septage. After grinding, the septage passes through a flow meter and into a sump leading to the septage pumping station. The pump station pumps septage into the influent line leading to the MBR plant headworks or sent to a large holding tank for equalization and/or testing. The MBR plant headworks facility has grit removal and screening. The existing mechanical screen has been retained as a back-up septage receiving system.

### **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. There has been no change in the septage service area.

#### **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 \$0.21 per gallon or \$210.00 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>.

The fees for septage disposal have been raised from \$0.15 to \$0.21 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 \$21.52 in 2011 to \$30.15 in 2012. This is a 40.1%% increase for residential, commercial and industrial customers. During the same period, the charges for the septic waste have been raised from \$0.15 per gallon to \$0.21 per gallon, a 40.0% increase.

### **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. The application for NPDES Permit renewal was submitted to MDEQ in March 2012. The Township operating under the old permit until such time as MDEQ renews the existing permit.

### **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 2011 through 2012 was approximately 9,330 gallons per day or 0.009 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 old lagoon system has been decommissioned. These lagoons have been accepted as closed by MDEQ. The design hydraulic capacity for the Leoni Township WWTP is 3.0 MGD. Based on this information, average septage flow represents less 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 2012 to date are 1.94 MGD and 2.23 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 2012, the BOD loading varies widely. Using the most recent data (2011 and 2012), the average BOD loading was calculated to be 9,820 mg/l. Using this information and the average septage flow of 9,330 gpd, the average daily organic loading was calculated to be approximately 761 lb/day. The MBR WWTP was designed to accept an 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 9.4% 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.