

## NOTICE OF SPECIAL MEETING OF THE BOARD OF LEONI TOWNSHIP

Notice is given that a special meeting of the Township Board of Leoni Township will be held in the Township Hall at 8:00 AM, 913 Fifth Street, Michigan Center, MI 49254, Wednesday, February 27, 2019 for the purpose of discussing:

1. Notice(s) of violation concerning the Waste Water Treatment Plant (WWTP) issued by Michigan Department of Environmental Quality against Leoni Township.
2. Proposals from Fleis&Vanderbrink to professional services related to item #1, above.
3. Other collateral issues related to the WWTP.

The proposals and the DEQ notice are attached to this notice for members of the Township Board. Members of the public may obtain copies of the proposals and the DEQ notice from the Township Clerk's office. Although not anticipated at this time, it is possible that some portions of the meeting may adjourn to closed session as allowed by the Open Meetings Act.

February 25, 2019

  
Howard Linnabary, Supervisor of Leoni Township



February 20, 2019

Howard Linnabary, Township Supervisor  
Leoni Township  
913 Fifth Street  
Michigan Center, MI 49254

**RE: Leoni Township- WWTP Headworks Odor Evaluation  
Proposal for Professional Engineering Services**

Dear Mr. Linnabary:

We are pleased to offer the following proposal for Professional Services related to the Leoni Township Wastewater Treatment Plant's Headworks Odor Evaluation project.

**Background**

Leoni Township received a Violation Notice from the Michigan Department of Environmental Quality dated February 1, 2019 that identifies several items. The purpose of this proposal is to address the Headworks Building ventilation issues.

A biofilter was installed in 2012, consisting of a 3,100 cfm blower, two 21.5' x 24' biofilters with each having 3' of cedar bark media. When FVOP took over management of the facility, the Township had replaced the bearings of the blower. The repair lasted approximately one month before failure, and the system has not operated since. During that month of operation, odor complaints were received from residents near the plant.

The influent wastewater is conveyed to the WWTP through several miles of forcemain. Long transport times result in the formation of odorous hydrogen sulfide gas (H<sub>2</sub>S), which is released upon exposure to the atmosphere. The highest levels of H<sub>2</sub>S observed at the WWTP are at the Headworks Building.

Elevated levels of H<sub>2</sub>S continue to be prevalent in the Headworks Building, posing a health and safety concern for operational personnel, and accelerating corrosion of concrete and equipment in the building.

**Objectives**

Evaluate the WWTP Headworks Building ventilation system, physical damage to concrete caused by H<sub>2</sub>S, consider options to reliably treat odors and associated costs of repairs/improvements, and provide recommendations for next steps. This evaluation will be performed in conjunction with the forcemain evaluation work outlined in our proposal dated February 20, 2019.

**Scope of Evaluation**

The scope of this proposed Headworks Evaluation work includes the following:

1. Review available record drawings and basis of design for the headworks building, ventilation system, and biofilter.
2. Review available H<sub>2</sub>S data that has been recorded at the Headworks Building.

2960 Lucerne Drive SE  
Grand Rapids, MI 49546  
P: 616.977.1000  
F: 616.977.1005  
www.fveng.com

3. Place portable H<sub>2</sub>S monitoring and data logging equipment at key locations at the grit removal unit and within the Headworks Building.
4. Evaluate odor control technologies. Consider capital costs, operational and maintenance costs, and system performance.
5. Prepare a preliminary letter report, which summarizes alternatives and offers recommendations on next steps and conceptual schedule for design, permitting, and construction of necessary mitigation strategies.
6. Meet with Township officials and the Township Board to present findings of the evaluations and discuss next steps.
7. Incorporate Township comments and issue the final report.

**Schedule**

We propose to start these evaluations immediately upon authorization and expect to have a preliminary letter report submitted within 90 days after authorization.

**Engineering Fees**

For the scope of work described herein, we propose a lump sum fee in the amount of \$21,000.

We look forward to working with the Township on this important assignment. If there are any questions or comments, please do not hesitate to contact us.

Sincerely,

FLEIS & VANDENBRINK



H. Blair Selover, Sr. Associate  
Group Manager



Paul Galdes, PE  
President

**Authorized to Proceed:**

This work is authorized as additional services under our SAW professional services agreement dated October 3, 2018, based on the work scope outlined above.

**Leoni Township**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



February 20, 2019

Howard Linnabary, Township Supervisor  
Leoni Township  
913 Fifth Street  
Michigan Center, MI 49254

**RE: Leoni Township Sanitary Forcemain Evaluation  
Proposal for Professional Engineering Services**

Dear Mr. Linnabary:

We are pleased to offer the following proposal for Professional Services related to the Leoni Township Sanitary Forcemain Evaluation project.

**Background**

Leoni Township received a Violation Notice from the Michigan Department of Environmental Quality dated February 1, 2019 that identifies several items. The purpose of this proposal is to evaluate the hydrogen sulfide issues at the influent pump station the main forcemain integrity as it relates to historical failures. The sanitary forcemain crosses approximately 6 miles of the Township, transports the majority of collected sewage, and has experienced numerous failures throughout the years. The cause(s) of these failures has not been evaluated, but cumulative costs for response and repair have become excessive.

**Objectives**

Leoni Township is requesting a preliminary evaluation of its sanitary forcemain to identify potential causes of pipeline failure, and odor issues at the influent pump station. Based on the evaluation a range of potential mitigation options will be developed and recommendations made for next steps. This evaluation will be performed in conjunction with the Wastewater Treatment Plant Headworks Odor evaluation work outlined in our proposal dated February 20, 2019.

**Scope of Evaluation**

The scope of this proposed Forcemain Evaluation work includes the following:

1. Review record drawings for the existing sanitary forcemain to understand age of the existing infrastructure, pipe materials, and original design conditions.
2. Review record drawings and pumping equipment documents for the existing sanitary pump station to understand design flow rates, operating pressures, and control systems.
3. Review available records and resources on past forcemain failures to better understand potential patterns and common causes of failure.
4. Identify potential mitigation strategies to address forcemain failures.
5. Based on experience with similar projects and construction pricing, identify conceptual opinions of probable construction costs for the range of mitigation strategies.

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P: 616.977.1000  
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6. Prepare a preliminary letter report, which summarizes evaluations and offers recommendations on next steps for design, funding, permitting, and construction of necessary mitigation strategies.
7. Meeting with Township officials and the Township Board to present findings of the evaluations and discuss next steps.
8. Incorporate Township comments and issue the final letter report.

**Schedule**

We proposed to start these evaluations immediately upon authorization and expect to have a preliminary letter report submitted within 90 days after authorization.

**Engineering Fees**

For the scope of work described herein, we propose a lump sum fee in the amount of \$23,600.

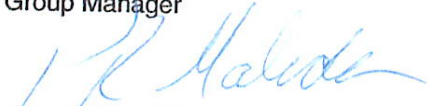
If there are any questions or comments, please do not hesitate to contact us.

Sincerely,

FLEIS & VANDENBRINK



H. Blair Selover, Sr. Associate  
Group Manager



Paul Galdes, PE  
President

**Authorized to Proceed:**

This work is authorized as additional services under our SAW professional services agreement dated October 3, 2018, based on the work scope outlined above.

**Leoni Township**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
JACKSON DISTRICT OFFICE



LIESL EICHLER CLARK  
DIRECTOR

February 1, 2019

Violation Notice No. VN-009267

CERTIFIED MAIL

Mr. Mark Carpenter, Leoni Township Clerk  
Leoni Township Hall  
913 Fifth Street  
Michigan Center, Michigan 49201

Dear Mr. Carpenter:

SUBJECT: Violation Notice  
Designated Name: Leoni Twp WWTP  
National Pollutant Discharge Elimination System (NPDES) Permit No.: MI0045942

On January 7 and January 9, 2019, staff of the Department of Environmental Quality (DEQ), Water Resources Division (WRD), conducted an NPDES Compliance Evaluation Inspection at the Leoni Township Wastewater Treatment Plant (WWTP) located at 8401 Page Avenue in Jackson, Michigan. The purpose of the inspection was to evaluate the facility's compliance with Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and NPDES Permit No. MI0045942 (copy enclosed).

Mr. James Green and Mr. Blair Selover with Fleis & Vandenbrink (F & V) Operations accompanied WRD staff, Mr. Ken Mroczkowski and me, during the inspection, which included a review of facility operations, NPDES related documents, and a visual observation of Monitoring Point 001A. WRD staff also reviewed storm water conveyances over the site. Leoni Township WWTP is authorized to discharge treated municipal wastewater from Monitoring Point 001A through Outfall 001, which discharges to an unnamed tributary to the Grand River. The WWTP discharges approximately 1.9 million gallons per day. Treatment consists of initial grit removal and screening, anoxic (pre-anoxic) basins, aeration basins, membrane bioreactor (MBR) filtration, ultraviolet disinfection, and cascade aeration.

The Leoni Township WWTP is required to have an operator who holds the Class B certification for treatment facilities serving or designated to serve a population between 10,000 and 50,000 persons. The WWTP serves approximately 27,000 persons. Currently, Mr. James Green with F & V Operations holds the Class B Certification.

**Site Inspection**

During the site inspection, the WWTP appeared to be operating normally and all treatment units were in service, except the MBR tank #2 was not in service due to a routine membrane cleaning. This appeared to be causing a brown foam to occur on top of the first anoxic basin. Confirmation via photograph was provided on January 18, 2019, that the brown foam had subsided once MBR tank #2 was back in service on January 14, 2019.

WRD staff observed issues with the general housekeeping and maintenance of the treatment works and surrounding area, including Monitoring Point 001A, are as follows:

*Housekeeping*

1. Totes and barrels containing unknown liquids and used oil were observed sitting outside the DPW garage area. Please move or cover the totes and barrels to prevent potentially contaminated storm water runoff.
2. Track out was observed from the Biosolids storage building. Track out must be cleaned up and controls must be put in place to prevent the recurrence of this condition.
3. An oil filter was observed sitting on the secondary containment area of the fueling tanks. Provide confirmation that the oil filter was removed.
4. Evidence of spillage from the ferric chloride fill port was observed due to rust staining on the concrete. A five-gallon bucket was placed underneath the fill port but was cracked and in need of additional controls. Provide a timeline of when containment will be placed at the ferric chloride fill port and implement immediate temporary containment to replace the five-gallon bucket.
5. Polymer spill was observed inside the treatment works building. Staff stated that the pump was recently changed and caused polymer to spill. The polymer material was covered with absorbent material during the site visit. This should be cleaned up as soon as possible.

*Maintenance*

1. The headworks building ventilation was not operational during the inspection. Staff stated this was due to corrosion from hydrogen sulfide gas. Damage was visible in the influent flow channel, within the headworks building, of corroded concrete. This space is considered a confined space due to the levels of hydrogen sulfide gas entering the building through the influent wastewater and is a concern to worker health and safety. In a letter dated April 13, 2016 in follow up to a site inspection, WRD staff, Mr. Jeff Surfus, stated that "the hydrogen sulfide gas continues to be a concern." Please submit a plan to address the hydrogen sulfide gas issues in the influent and collection system affecting the headworks building. This must include a timeline for repairs and continued maintenance of the headworks building and collection system. Note that any equipment additions or changes may require a Part 41 permit.
2. Two ferric chloride pumps were observed during the site inspection. A non-compliance notification letter was received on January 18, 2019 from F & V Operations due to a ferric chloride pump failure over the 2018 Christmas holiday that resulted in an effluent limit violation of Total Phosphorus. On December 25, 2018 the #2 ferric chloride pump developed a leak in the peristaltic pump tubing. A replacement tube was installed on the same day, returning the pump to service. On December 26, 2018, F & V staff observed that the ferric chloride pump #2 had stopped working due to a failure of the check valve. The check valve was repaired, and the pump was put back in service but was operating

at a slower than normal rate. F & V staff requested a work order to be generated and a spare pump tubing to be ordered. On December 30, 2018, a second failure of the ferric chloride pump tubing was observed. Spare parts arrived on January 3, 2019 and ferric chloride pumps were placed back in service. This details that inadequate spare parts were available to fix these critical pumps. Please provide a list of actions taken to prevent this from occurring and provide confirmation that adequate spare parts will be kept on site for critical equipment.

3. The walkway over the pre-anoxic basins was closed due to destabilized grates. This presents a safety hazard. Please clean and secure the grates to allow staff to cross the pre-anoxic tanks if needed.
4. Three (3) forwarding pumps which are used to move wastewater from the pre-anoxic basins to the aeration basins were not operating due to maintenance issues. Staff stated that pumps have been ordered and will be put in service when the new pumps are received. Please provide a timeline for the installation of the three (3) new pumps.
5. Final effluent troughs and aeration cascades at Monitoring Point 001A need to be cleaned of algae growth. Please provide a schedule that will be implemented for routine cleaning of the troughs.

### **Operation and Maintenance Manual**

The Operation and Maintenance (O & M) Manual includes an Analysis of Staffing Needs that was approved by WRD staff on April 24, 2006. The approved plan that was submitted on April 5, 2006 states that the Leoni Township WWTP should have five (5) staff under supervision of the Township Supervisor. F & V Operations staff stated that they are contracted to operate the wastewater treatment plant a minimum of 60 hours a week including 40 hours a week for a licensed operator. Additionally, there were two DPW staff that work for the township. Leoni Township staff stated that there is currently not a Township Supervisor or a DPW Supervisor. Current staffing levels do not meet the approved O & M Manual Analysis of Staffing Needs. Based on observations during the site inspection, staffing levels at Leoni Township WWTP are not adequate. Please provide a timeline for submitting an updated Analysis of Staffing Needs for the collection system and WWTP.

### **File Review**

Leoni Township WWTP participates in the EPA Discharge Monitoring Report (DMR)/Quality Assurance (QA) Program. WRD reviewed the most recent results, DMR QA Study #38. The analytical results were acceptable for all parameters studied, including pH, Total Suspended Solids, Ammonia Nitrogen, Total Phosphorus, CBOD<sub>5</sub>, and Fecal Coliform.

A review of the facility's bench sheets revealed that all parameters were correctly reported for data corresponding to February 10, 2017, May 3, 2018, October 25, 2018, and November 11, 2018. A review of Total Mercury effluent data indicates concentrations consistently below 5.0 ng/L. WRD staff appreciates the efforts to accurately enter discharge monitoring data into MiWaters.



WRD staff completed a review of submitted DMRs and Permit required reports via MiWaters and discovered the following violations:

- *Summary Report of the Annual Total Mercury Monitoring* was due on January 1, 2016 via MiWaters. This report was submitted late on March 9, 2016.
- *Total Phosphorus* final effluent exceedance occurred on August 31, 2016. The permittee stated that a voltage loss caused computer issues that caused the aeration set point to reset.
- *Total Phosphorus* final effluent exceedance occurred on November 1, 2016. The permittee stated that the exceedance was caused from a hydrophilic solution that was applied to an MBR tank to increase filter permeability.
- *Ammonia Nitrogen* final effluent exceedance occurred on May 1, 2018. The permittee stated that this was due to a Dissolved Oxygen probe failure that occurred in the treatment process.
- *Ammonia Nitrogen* final effluent exceedances occurred on May 3, 2018. The permittee stated that this was due to a Dissolved Oxygen probe failure that occurred in the treatment process.
- The *Asset Management Annual Report* was due on July 31, 2018. This report was submitted late on August 1, 2018.
- A *Maximum Monthly Average for Total Phosphorus* exceedance occurred in December 2018 due to a ferric chloride pump failure. The permittee stated that replacement parts were ordered and installed upon receipt.

An adequate response was received regarding these violations. Please ensure that all future reports are submitted on time via MiWaters. Additional information regarding MiWaters can be found at the following website: [https://www.michigan.gov/deq/0,4561,7-135-3313\\_72753---00.html](https://www.michigan.gov/deq/0,4561,7-135-3313_72753---00.html).

### **Analytical Methodology**

WRD staff reviewed analytical methods and Quality Assurance/Quality Control (QA/QC) of Leoni Township WWTP NPDES required parameters. During review of the QA/QC methods, it was discovered that the facility had not changed the desiccant used with the suspended solids analysis. Confirmation was provided on January 16, 2019 via email from F & V staff, that the desiccant was replaced in the lab.

Leoni Township WWTP utilizes Merit Laboratories and Paragon Laboratories to complete portions of the analysis pertaining to the NPDES Permit No. MI0045942. Merit Laboratories complete analysis of Total Selenium and Available Cyanide. Paragon Laboratories complete the analysis of Total Mercury and Whole Effluent Toxicity (WET). Leoni Township WWTP completes sampling and analysis of CBOD<sub>5</sub>, Total Suspended Solids, Ammonia Nitrogen, Total Phosphorus, Fecal Coliform Bacteria, pH, and Dissolved Oxygen on site. A review of analytical methodology was completed for all the NPDES required parameters and was acceptable.

### **Sampling Methods**

WRD staff reviewed the sampling methods of all required parameters in the NPDES Permit No. MI0045942. F & V Operations staff stated that the 24-hour composite sampler collects time-proportioned samples. Part II.A. of the NPDES Permit states that a 24-hour composite sample

is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period. A time-proportioned composite sample may be used upon approval of the Department, if the permittee demonstrates it is representative of the discharge. In a letter dated April 13, 2016 in follow up to a site inspection, WRD staff, Mr. Jeff Surfus, found that the composite sampler was time-proportioned and requested that Leoni Township demonstrate if this was representative. Request for approval has not been received by the District office. Please submit a request to justify that a time-proportioned composite sample is representative of the discharge. This justification must include assessments of variability in flow, variability in wastewater characteristics, and the aliquot frequency that Leoni Township WWTP intends to use.

### **Asset Management Program**

Leoni's permit includes an Asset Management Program requirement. The Asset Management Program requires that the permittee shall properly operate and maintain all facilities and control systems used to operate the sewer system and treatment works and to maintain compliance with the conditions listed in the permit. In a letter sent on July 31, 2018, Mr. Jerry Roe requested an extension of the Wastewater Collection System Map submission to be completed on August 1, 2019. WRD staff agreed to extend the deadline of submittal for the Wastewater Collection System Map. Please submit the collection map by August 1, 2019.

### **Sanitary Sewer Overflow (SSO) Reporting Requirements**

Please be reminded of the SSO Reporting Requirements in Part I.A.5. of the NPDES Permit No. MI0045942. If untreated sewage, including sanitary sewer overflows, or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into waters of the state, the responsible entity shall immediately, but not more than 24 hours after the discharge begins, notify, by telephone, the Jackson District office WRD staff. Please be reminded that written notification shall be submitted on the "Report of Discharge Form" available via the internet at: <http://www.deq.state.mi.us/csosso/>.

### **Conclusion**

Leoni Township WWTP is in violation of their NPDES Permit No. MI0045942, Part 31, Water Resources Protection, of the NREPA, and Part 41, Sewerage Systems, of the NREPA and the violations are ongoing. Leoni Township must take immediate action to achieve and maintain compliance with the terms and conditions of NPDES Permit No. MI0045942.

Leoni Township WWTP is required to submit a written response to this letter no later than **March 6, 2019**. At a minimum, the response shall include the following action items:

1. Please submit a plan to address the hydrogen sulfide gas issues in the influent and collection system affecting the headworks building. This must include a timeline for repairs and continued maintenance of the headworks building and collection system. Note that any equipment additions or changes may require a Part 41 permit.
2. Please provide a timeline for submitting an updated Analysis of Staffing Needs for the collection system and WWTP Operation and Maintenance Manual.
3. Please provide a list of actions taken to maintain critical equipment, including the ferric chloride pump, and provide confirmation that adequate spare parts will be kept on site.

4. A summary of all actions taken to reduce or eliminate identified housekeeping (#1-5) and maintenance issues (#1-5). Please provide documentation including pictures, work order, etc.
5. Please submit a request to justify that a time-proportioned composite sample is representative of the discharge. This justification must include assessments of variability in flow, wastewater characteristics, and the aliquot frequency that Leoni Township WWTP intends to use.

In addition to the items noted above, if Leoni Township WWTP has any information it would like the DEQ to consider regarding the violations identified in this Notice, please provide it with the written response.

The DEQ anticipates and appreciates the cooperation of Leoni Township WWTP in resolving this matter. Should you require further information regarding this Notice or to arrange a meeting to discuss it, please contact me at 517-281-8355; [DijakC@michigan.gov](mailto:DijakC@michigan.gov); or DEQ, WRD, Jackson District Office, 301 East Louis Glick Highway, Jackson, Michigan 49201-1556.

Sincerely,



Claire Dijak  
Environmental Quality Analyst  
Water Resources Division

Enclosure

cc: Mr. James Green, F & V Operations  
Mr. Blair Selover, F & V Operations