October 9, 2009

Township Supervisor
Attn: Frank Force
12050 Old Belding Road
Belding, MI 48809-9318

Grattan Township and Grattan/Vergennes Sewer Systems Monthly Report
September 2009

Dear Frank,

Attached please find the Grattan Township Wastewater Utilities Report and the Preventative/Corrective Maintenance Report for September 2009.

As always I would be happy to elaborate on any of the submitted information or provide any additional information that would assist the township board. If there are any questions or concerns please do not hesitate in contacting me.

Sincerely,

John Rydbeck
(616) 890-5768
Infrastructure Alternatives
Grattan Township Sewer System Operator

Attachments: September 2009 Preventative/Corrective Maintenance Report

Grattan Township Sewer System

Executive Summary:

A total of 5.742MG was discharged through the Grattan Township WWTF Irrigation system. This is 91% of the possible 6.29MG for the month of permitted irrigation (which includes the increase to 2.35"/week and Old Orchard Irrigation for 2009). Some down-time was experienced in the irrigations system due to six rains days throughout the month of September.

Weekly elevations obtained from the transfer structure between cells one and two and converted to lagoon volume based on the Prein & Newhof lagoon volume chart are shown. October's measurements will begin to include elevations in the discharge lagoons, Cells #3 and #4.

Two grab samples were collected from the discharge lagoon, monitoring samples were collected and analyzed for the quarterly parameters, and the annual soil samples were collected throughout the irrigation areas in the plant according to the requirements in the NPDES permit.

Date	Feet Below Grating on Transfer Structure 1-2	Elevation*	Cell 1 Volume*	Cell 2 Volume*	Cell #1 and #2 Total Volume**	Cell #1 and #2 Low Water Volume*
June 1, 2009	1.63'	903.9'	13.26 MG	6.79 MG	20.05 MG	3.75 MG
June 9, 2009	1.81'	903.7'	12.94 MG	6.62 MG	19.56 MG	3.75 MG
June 15, 2009	1.79'	903.7'	12.94 MG	6.62 MG	19.56 MG	3.75 MG
June 23, 2009	1.54'	904.0'	12.46 MG	6.88 MG	19.34 MG	3.75 MG
June 29, 2009	2.04'	903.5'	12.62 MG	6.45 MG	19.07 MG	3.75 MG
July 16, 2009	2.46'	903.0'	11.83 MG	6.03 MG	17.86 MG	3.75 MG
July 24, 2009	2.63'	902.9'	11.67 MG	5.94 MG	17.61 MG	3.75 MG
August 4, 2009	3.42'	902.1'	10.29 MG	5.21 MG	15.50 MG	3.75 MG
August 7, 2009	3.80'	901.5'	9.53 MG	4.80 MG	14.33 MG	3.75 MG
August 15, 2009	4.40'	901.1'	9.00 MG	4.40 MG	13.40 MG	3.75 MG
August 21, 2009	4.80'	900.7'	8.04 MG	4.03 MG	12.07 MG	3.75 MG
September 1, 2009	5.30'	900.2'	7.32 MG	3.66 MG	10.98 MG	3.75 MG
September 18, 2009	5.90'	899.6'	6.60 MG	3.28 MG	9.88 MG	3.75 MG
September 25, 2009	6.83'	898.7'	5.20 MG	2.57 MG	7.77 MG	3.75 MG

*Data obtained from Prein&Newhof Lagoon Volume Calculator.

**Does not include volumes from Discharge Cells #3 and #4 (Cell #3 and #4 data will be added in October 2009).

Emergency Call-Outs:

- Thursday September 3, 2009 @ 1:00 p.m. – 2:30 p.m. GRATTAN WWTF: High Pressure Alarm from plant telemetry system (Sensaphone). Operator arrived on-site and acknowledged the high level alarm. All irrigation Big Guns were checked and found to be operating normally. The high pressure alarm relay was slightly increased to avoid future false alarms.
- Thursday September 3, 2009 @ 8:00 p.m. – 9:30 p.m. BPI-PS #3a: Alarm light call from resident. Arrived on-site to find the station in normal condition. The alarm light was reset. During future draw-downs it was found that Pump #2 is performing well below its designed capacity. Controls

were set to have both pumps turn on every cycle to prevent future alarm call-outs. Pump #2 is scheduled to be re-built in November 2009.

- Saturday September 5, 2009 @ 12:00 p.m. – 1:00 p.m. GRATTAN WWTF: Low Water alarm call from plant telemetry system (Sensaphone). Operator arrived on-site and opened an additional valve to allow more water into the pumping structure. Alarm was reset and irrigation continued.

General Operation Information / Housekeeping:

- Rich Sadowski of the MDEQ inspected the Grattan Township WWTF on September 23, 2009. His discussion largely centered on duckweed control, budgeting for future sludge removal in the lagoons, and keeping expansion options available. He was very pleased with the overall operations of the facility.

Preventative Maintenance:

- The preventative maintenance tasks have been completed for September 2009 and summarized in the attached report.

Corrective Action / Significant Tasks Completed:

- Wednesday September 2, 2009 BPI-PS #4; BPI-PS #3a: Both stations were vactored to remove grease and sediment which could impair the float controls and also effect pump's operation.

Pending Projects:

- A new heater will be installed in October to replace the heater in the filter room which failed last winter.
- BPI-PS #3a Pump #2 will be re-built in October 2009 to achieve its rated capacity for the design capacity of the lift station.

Grattan/Vergennes Township Wastewater System

Executive Summary:

The Grattan/Vergennes WWTP discharged 7.542 MG for the month of September. Irrigation Zone 4 was isolated from the irrigation system due to a ruptured distribution header. During soil sampling, it was found that Irrigation Zone 5 was very dry. Further investigation revealed that the zone had been isolated at some time in the past. Irrigation Zone 5 was re-connected to the irrigation system in late September. Even without the wetted application area that both Zone 4 and Zone 5 contributed to the irrigation system, the land application was still within compliance (1.0"/day; 2.0"/week) for the entire 3rd Quarter of 2009. The discharge lagoon was also sampled twice during the month of September in addition to the quarterly sampling of the monitoring wells according to the requirements in the NPDES permit.

Emergency Call-Outs:

- Wednesday September 2, 2009 @ 7:45 a.m. – 8:45 p.m. ML-PS #13: High level alarm from ML-PS #13 telemetry system (Mission). Arrived on-site to find that the pump-on float was hung-up in the lateral. Re-positioned float to prevent future occurrences. No sewer back-ups or overflows were experienced before or during the repairs.
- Sunday September 6, 2009 @ 9:15 p.m. – 11:15 p.m. BCL-PS #14: High Level alarm from station telemetry system (Mission). Arrived on-site to find the station in normal condition. Verification of pumps operation revealed that Pump #2 had high amps, indicative of a partial plug. The pump was pulled on September 7, 2009 to remove the rags. New cutter blades have been ordered and scheduled for replacement in October 2009.
- Thursday September 10, 2009 @ 3:00 p.m. – 6:30 p.m. ML-PS #4: High level alarm from station from telemetry system (Sensaphone). Arrived on-site to find that the roto-phase motor (single phase to three phase power conversion) had a tripped breaker. Once reset the pumps began to pump down the station. Verfication of pumps revealed that Pump 1 had higher than normal amps. The pump was pulled and inspected and found to have excessively worn parts. The pump is being scheduled to be rebuilt in November 2009. In addition, a spare Rotophase motor will be inspected to insure that it can replace the existing motor in the event that the motor completely fails.
- Sunday September 20, 2009 ML-PS #11**:** High Level alarm call from station telemetry system (Mission). Monitored the alarm on-line and the station returned to normal level twenty minutes later. A 3HP pump is being rebuilt to replace the used 3HP currently in the station and hopefully increase the pumping capacity of the station. Currently, the existing pumps are already pumping greater than the designed capacity of the station.
- Monday September 28, 2009 @ 9:00 p.m. – 11:00 p.m. ML-PS #13: High level alarm from station telemetry system (Mission). Arrived on-site to find that the pump-on float was again snagged by sewer lateral. The float was completely re-positioned with other floats to prevent any future occurrences. No sewer back-up or overflow were experience before or during the repair.
- Wednesday September 30, 2009 @ 12:00 p.m. – 2:00 p.m. RL-PS #16; 5MILE-PS #15: High level alarms from both stations telemetry system. The root cause was a large water-slug flow entering RL-PS #16 which entered 5MILE-PS #15.

General Operation Information / Housekeeping:

- Rich Sadowski of the MDEQ inspected the Grattan/Vergennes WWTF on September 23, 2009. He discussed some options for emergency response cooperation with other local utilites and was made aware of the future expansion pending for the facility. Overall he was pleased with the plant's operations.

Preventative Maintenance:

- The preventative maintenance tasks have been completed for the month September 2009 and summarized in the attached report.

Corrective Action / Significant Tasks Completed:

- Tuesday September 1, 2009 5MILE-PS #2: Pump #2 was pulled and inspected from the lift station due to excessive vibration. The impeller was found to be imbalanced based on excessive wear, but overall pumping capacity was still found to be good. The pump was placed back into service and prioritized for future repair.
- Tuesday September 1, 2009 GRATTAN WWTF OLD ORCHARD: The old orchard distribution pipe was disconnected from the irrigation guns and flushed thoroughly to remove any potential sediment build-up which may be contributing to the recent high pressure alarms. No sediment or other blockage was observed.
- Wednesday September 2, 2009 ML-PS #9; ML-PS #10: Both stations were vactored to remove grease and sediment which could impair the float controls and effect pump operation.
- Tuesday September 8, 2009 ML-PS #5: Pump #2 was pulled and brought to FixAll Electric due to its poor performance based against the rated design of the pump in addition to its prioritization level based against the rated design of the station.
- Tuesday September 8, 2009 ML-PS #15: Pump #1 was pulled and brought to FixAll Electric due to its poor performance based against the rated design of the pump in addition to its prioritization level based against the rated design of the station.
- Wednesday September 30, 2009 BCL-PS #17; ML-PS #9: Grandtech reinforced the pump rail mounts per the request of the engineering inspection performed by Prein & Newhof.

Pending Projects:

- A new swing-check valve being re-built by Al Evink of Maintech for Irrigation Pump #2 at the Grattan/Vergennes Plant. The weighted portion of the swing check had fallen apart within the valve body periodically constricting flow from the irrigation pump.