

.....
July 9, 2009

Township Supervisor
12050 Old Belding Road
Belding, MI 48809-9318

***Grattan Township and Grattan/Vergennes Sewer Systems Monthly Report
June 2009***

Grattan Township Board,

Attached please find the Grattan Township Water and Wastewater Utilities Report for June 2009. The maintenance program data entry is still in process and will accompany the July 2009 report shortly followed by the 90 day system evaluation.

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: none

Grattan Township Sewer System

Executive Summary:

The irrigation system ran throughout the entire month of June with the exception of five days for crop planting and four rain days. A total of 3.382MG was discharged through the irrigation system. 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. Two grab samples were collected from the discharge lagoon, along with the quarterly samples from the monitoring wells according to the requirements in the NPDES permit.

	Feet Below Grating on Transfer Structure 1-2	Elevation*	Cell 1 Volume*	Cell 2 Volume*	Total Volume**
Monday, June 01, 2009	1.63	903.88	13.26	6.79	20.05
Tuesday, June 09, 2009	1.81	903.69	12.94	6.62	19.56
Monday, June 15, 2009	1.79	903.71	12.94	6.62	19.56
Tuesday, June 23, 2009	1.54	903.96	12.46	6.88	19.34
Monday, June 29, 2009	2.04	903.46	12.62	6.45	19.07

*Data obtained from Prein&Newhof Lagoon Volume Calculator

**Does not includes volume from Cells #3 and #4

Emergency Call-Outs:

- Wednesday June 3 @ 9:30 p.m. BPI-PS-3: High Level Alarm call-out (from resident due to alarm light) from PS-3. Arrived on-site to find that the level was normal. After resetting the alarm, the floats and pumps were tested and found to be in good working order. The station was then observed through a complete cycle without any irregularities.
- Sunday June 7 @ 10:00 p.m. BPI-PS-3: High Level Alarm call-out (from resident due to alarm light) from PS-3. Arrived on-site to once again find the basin in normal condition. The alarm was reset and the high level alarm float was increased to avoid additional false alarms while allowing the station to meet peak flow conditions. The current elevation of the high level float will still provide early warning to the operation staff before any back-up or overflow would occur. To date this has been an effective solution.

General Operation Information / Housekeeping:

- The irrigation times have been continually modified to optimize the daily irrigation volume based on wetted area. Overlap time (2 minutes) between irrigation guns have proven to be helpful in preventing the system from disabling due to high pressure from less than two guns operating while the irrigation pump is in service.

Preventative Maintenance:

- Problematic and critical lift stations are being identified and inspected on a weekly basis, with other stations being checked every other week. Grinder stations will be checked monthly. A complete lift station and plant equipment preventative maintenance program report will accompany the system evaluation (due within 90 days of project start).

Corrective Action / Significant Tasks Completed:

- Thursday June 18, 2009 BPI-PS-6: Due to Pump Run Time Variance Reports from the Mission Dialer, the pumps were assessed for proper operation. Pump run-times were calculated and found that Pump 2 was not pumping as much as Pump. Pump 2 was pulled and the discharge hose was found to be wrapped around the pump and kinked. The pump hose was unwrapped and secured to maximize pumping capability. The station was then scheduled for pump station rehabilitation (new pump mounts, isolation valves, and check valves) for July 8, 2009.
- Thursday June 25, 2009 12123 Woodland Park: Call from a resident at 12123 Woodland Park regarding a wet spot in their front yard (between the house and lake) which she suspected was the result of a sewer back-up or sewer overflow. Both the upstream and downstream manholes in regards to the homeowner's sewer lateral were located and verified to be flowing freely. Some sewer tracer dye was added to the upstream manhole and then observed in the downstream manhole which concluded that the gravity sewer system was operating correctly. A drain tile is suspected to be the cause of the wet spot.

Pending Projects:

- Work has begun in identifying the various components and associated costs associated with the recent approval of the temporary irrigation plan in the Old Orchard.
- A Mission dialer is being recommended for the Grattan Township plant due to the potential for a system disabling alarm preventing water from being irrigated and requiring manual operation.
- There are a few areas of erosion due to nuisance animals in the containment berms surrounding the lagoons that need to be reinforced. There is also, what appears to be, a muskrat tunnel between lagoon cell #1 and cell #2 which will need to be repaired.
- A scaled device will be constructed within both transfer structures to monitor all four lagoon levels year round to track their volume and consequential storage.

Grattan/Vergennes Township Wastewater System

Executive Summary:

The Grattan/Vergennes WWTP discharged 6.401MG for the month of June. The discharge lagoon was sampled twice during the month according to the requirements in the NPDES permit requirement along with the quarterly sampling of the monitoring wells.

Emergency Call-Outs:

- Monday June 8, 2009 @ 4:00 p.m. ML-PS-11: High level alarm call-out from PS-11. Arrived on-site to find that the high level alarm float had dropped into the basin. The float was re-secured at the proper level and the alarm was reset.
- Monday June 8, 2009 @ 8:00 p.m. ML-PS-11: High level alarm call-out from PS-11. Arrived on-site to find high levels of inflow due to the rain. The station was monitored to insure that there was no danger of sewer back-up or overflow. The high level alarm was then reset.

Emergency Call-Outs (continued):

- Tuesday June 9, 2009 @ 2:00 a.m. ML-PS-11: High level alarm call-out from PS-11. Arrived on-site to find that circuit breaker for Pump 1 was tripped and that the pump-off intrinsically safe relay (ISR) was malfunctioning. The pump-off ISR was replaced by an electrician through Grandtech Inc. on June 12, 2009 in addition to connecting the previously bypassed (not IAI) pump-on ISR. The pump was unable to be pulled without confined space entry due to tangled pump discharge hoses in the basin. The station was then given the highest priority for station rehabilitation to be completed shortly, as pump removal was already a part of the previously bid project scope.
- Sunday June 14, 2009 @ 8:00 a.m. POWER OUTAGE for ML-PS-8, ML-PS-8A, and ML-PS-9: Pulled two generators between the three stations until power was restored. Physically checked other nearby stations to verify normal operation. Power restored by 11:00 a.m. by Consumers Energy with no explanation (not storm related).
- Sunday June 28, 2009 @ 11:15 a.m. ML-PS-15: High level alarm call-out from PS-15. Arrived on-site to find higher than normal flows due to a church function. The station was briefly monitored to verify if it could handle this short term elevation in sewage flow without causing any sewer back-ups. The alarm was reset once the operator was insured that the station could handle the flows.

General Operation Information / Housekeeping:

- Crucial spare parts are being identified in response to recent emergency call-outs. Through Frank Force's networking skills, the township has been the recipient of many Myer's control panel spare parts (including one complete panel!) from Crystal Springs. The collection of the various control panel and pump spare parts are being organized and soon accounted for as part of the spare parts program.

Preventative Maintenance:

- Problematic and critical lift stations are being identified and inspected on a weekly basis, with other stations being checked every other week. Grinder stations will be checked monthly. A complete lift station and plant equipment preventative maintenance program report will accompany the system evaluation (due within 90 days of project start).

Corrective Action / Significant Tasks Completed:

- Friday June 5, 2009 ML-PS-4: Intermittent false alarm call-outs from the station puzzled IAI staff. All electronic controls including ISR's, floats, relays, starters, etc. have been verified to be in good operation. An electrician from Grandtech arrived on-site to professionally analyze the station to troubleshoot the false alarm. The electrician verified proper operation on all of the controls, but was unable to completely analyze the station without electronic schematics of the panel.
- Wednesday June 10, 2009 ML-PS-3: During Infrastructure's routine checks of the lift stations, Pump 2 of PS-3 was found to have tripped the motor starter overloads. The motor loads were unable to be reset, so a new overload was installed which immediately tripped as well. The 10HP ABS pump was pulled and found to have a break in the power cord near the pump. The pump and cord were dropped off at Fixall Electric for general inspection and a new cord.

Corrective Action / Significant Tasks Completed (continued):

- Friday June 12, 2009 ML-GPS-9: During Infrastructure's routine checks of the grinder stations the high level alarm did not actuate correctly when tested. The ISR's within the panel had been bypassed due to assumed failure. An electrician with Grandtech Inc. tested the station and concluded that the high level float was faulty and was replaced with an on-site spare float. The bypassed ISR's will be addressed in the system evaluation report.
- Friday June 12, 2009 ML-GPS-7: During Infrastructure's routine checks of the grinder stations the alarm light due to low level was observed. The inside of the control panel was extremely corroded due to vertical (not side) mounting of the alarm light (red globe). The electrical controls were tested by an electrician with Grandtech Inc. and found to be in good working order. The alarm light was sealed with silicone to help prevent future corrosion of the panels and electrical controls.
- Tuesday June 16, 2009 LAGOONS: The vegetation was trimmed around lagoons #3 and #4 to create an unappealing environment for burrowing animals that can destroy the berm's integrity.
- Monday June 22, 2009 GRATTAN/VERGENNES IRRIGATION PUMP #2: Al Evink of Maintech placed in-service the pump that he had been rehabilitating as part of their service contract. The pump bearings and lower motor bearings were replaced. The pump now discharges at ~600gpm from the lagoons to the irrigation zones.
- Wednesday June 24, 2009 GRATTAN/VERGENNES IRRIGATION: A resident observed water flowing within irrigation zone 4. Upon inspection, it was found that the end of the lateral for zone 4 had failed (possible due to the re-built pump that was placed in-service). The zone was isolated off to avoid contact with surface water through nearby drains while utilizing the remaining irrigation zones to discharge treated water.
- Wednesday June 24, 2009 ML-PS-2: During Infrastructure's routine checks of the lift stations the circuit breaker for Pump 2 had tripped, the high level float was found to be faulty, and the speaker on the alarm dialer was found to be bad. The pump was tested and found to have either a short in the cord or the motor. The pump was then pulled with a truck mounted crane and brought to FixAll Electric for repair. The dialer was replaced with a spare dialer from the plant (after identifying a false spare dialer) and a new high level float was installed. A spare 10HP ABS pump from the plant could not be used due the cord being too short. A previously repaired 10HP ABS pump was available and installed on July 3, 2009.
- Thursday June 25, 2009 ML-GPS-7: A follow-up inspection to this problematic grinder station has resulted in another low level alarm light. The pump-off float was tested and, although not faulty, was replaced with a more sensitive "avocado" style float with 15° actuation.
- Friday June 26, 2009 ML-PS-4: A routine inspection of the station proved to be insightful into the intermittent false low level alarms. The operator witnessed the pump continuing to operate past the pump-off float, which indicated a bad float or ISR. IAI replaced the pump-off float, but to date, this has not proven to be the answer to the false low level alarm problem. An electrician is being scheduled to prepare a wiring schematic and a more in-depth inspection.

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.