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September 9, 2009

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


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

Dear Frank,

Attached please find the Grattan Township Water and Wastewater Utilities Report for August 2009 and the Preventative/Corrective Maintenance Report for August 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: August 2009 Preventative/Corrective Maintenance Report

Grattan Township Sewer System

Executive Summary:

A total of 5.231MG was discharged through the Grattan Township WWTF Irrigation system. This is 89% of the possible 5.909MG 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 Old Orchard irrigation area due to a cracked section of the 6" PVC irrigation pipe.

The alarm dialer has worked well in quickly notifying the operator of any low or high pressure alarms. 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. Lagoon volume in Cells #1 & #2 on August 21, 2009 decreased to 12.07MG, which is lower than the 12.10MG lagoon volume recorded on November 28, 2008 in the same cells.

Two grab samples were collected from the discharge lagoon, and the under-drains were inspected according to the requirements in the NPDES permit.

Date	Feet Below Grating on Transfer Structure 1-2	Elevation*	Cell 1 Volume*	Cell 2 Volume*	Total Volume**	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

*Data obtained from Prein&Newhof Lagoon Volume Calculator.

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

Emergency Call-Outs:

- Saturday August 1, 2009 @ 5:00 p.m. – 6:00 p.m. BPI-PS #4: High level alarm call from dialer. Remotely monitored station using Mission dialer. Station returned to normal level in 15 minutes. The station simply had high flow from peak sewer use.
- Saturday August 8, 2009 @ 10:00 a.m. – 3:00 p.m. POWER OUTAGE at BPI-PS #1, #2, #3, #3A, and #4: Power outage on Big Pine Island Lake Pump Station #1, #2, #3, #3A, and #4. A portable generator was transported to each station to provide standby power for continued sewer service and prevention of any sewer back-ups and overflows.
- Sunday August 9, 2009 @ 12:30 a.m. – 2:30 a.m. BPI-PS #3A: High level alarm light call-out from resident. Arrived on-site to find the station in normal operation. A high “slug” flow was suspected to have entered the station from the earlier storm to briefly trigger the high level alarm.

The condition was not long enough to reach the three minute recognition time on the alarm telemetry system, but did engage the high level alarm light which was seen by the resident. One of the pumps in this station is scheduled for servicing which will increase the pumping capacity of the station to handle high slug flows.

- Saturday August 22, 2009 @ 9:30 a.m. – 10:45 a.m. BPI-PS #2: High level alarm call-out from dialer. Arrived on-site to find the pump-on float had hung up. The float was re-positioned and the station continued normal operation. No sewer back-up or overflow was experienced before or during the repair.
- Sunday August 30, 2009 @ 12:00 p.m. – 1:00 p.m. GRATTAN WWTF: High Pressure Alarm from Alarm Dialer. Operator arrived on-site and acknowledged the high level alarm. The cycle continued under normal pressure to the remaining Big Guns.
- Monday August 31, 2009 @ 12:00 p.m. – 2:30 p.m. GRATTAN WWTF: High Pressure Alarm from Alarm Dialer. Operator arrived on-site and acknowledged the high level alarm. All irrigation Big Guns were checked to find that the Old Orchard Big Guns were experiencing higher than normal operating pressure due to the repaired irrigation main. The high pressure alarm relay was increased to accommodate for this hydraulic change.

General Operation Information / Housekeeping:

- The irrigation Big Guns in the farm field operated well throughout the month. Historically problematic guns (from a plugged 1/16" orifice on the solenoid controllers) worked well with the larger 3/32" drilled orifices.

Preventative Maintenance:

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

Corrective Action / Significant Tasks Completed:

- All of the lagoon berms were brush-hogged to eliminate favorable environments for burrowing animals which could endanger the integrity of the lagoons. Some of the lagoons had 2-3 year brush growth.
- August 7, 2009 BPI-PS #4: Big Pine Island PS #4, Pump #2 was pulled and inspected after the motor starter overload had tripped. Nothing was observed to have caused this pump to draw excessive amps to trip the overloads. The pump and controls will continue to be monitored.
- August 17, 2009 GRATTAN WWTF: Excavation of a suspected leak in the 6" irrigation discharge pipe to Old Orchard resulted in finding a cracked tee in the manhole. After making the repair and pressure-testing, another crack was also found in the pipe as it exited the manhole. The concrete around the pipe in the manhole structure was chipped away and the entire length of pipe was replaced and properly coupled to the existing pipe. The pressure to the Old Orchard irrigation guns increased by 10psi after completion of both repairs.

Pending Projects:

- A scaled device will be constructed within the discharge structure at the Grattan WWTF at the end of the irrigation season. This will monitor the lagoon levels throughout the storage months (non-irrigation season) in relation to the two feet free-board and overflow elevations.

Grattan/Vergennes Township Wastewater System

Executive Summary:

The Grattan/Vergennes WWTP discharged 7.922 MG for the month of August. The discharge lagoon was sampled twice during the month according to the requirements in the NPDES permit. In addition, the under-drains were sampled and soil borings from the irrigation fields were collected and composited according to soil consistency.

Emergency Call-Outs:

- Saturday August 1, 2009 @ 6:30 p.m. – 8:00 p.m. ML-PS #13: Excessive pump starts (12-13/hour for each pump). Arrived on-site to find a large neighborhood party which accounted for the higher than normal flow. The station returned to normal operation within a few hours. Although the pumps were heavily worked, they were still able to keep up with the flow to prevent any sewer back-ups or overflows.
- Wednesday August 5, 2009 @ 10:30 a.m. – 12:30 p.m. ML-PS #4: Alarm Light Call from resident (via the Sheriff). Arrived on-site to find the station in normal operation. Intermittent alarm light calls are proving to be the result of faulty controls. Electrical Controls Replaced with Pressure Transducer on Motor Controller on August 21, 2009.
- Sunday August 9, 2009 @ 1:00 p.m. – 3:00 p.m. ML-PS #11: High level alarm call from dialer. Arrived on-site to find everything normal.
- Monday August 10, 2009 6:00 a.m. – 10:00 a.m. ML-PS #10 and ML-PS #5: Brief power outage around the lakes from the storms led to a query and/or visit of every station to ensure proper operation. ML-PS #5 was queried by phone to be in normal operation, but was later found to be without power. A portable generator was brought on-site, but already some sewage had entered Murray Lake via the storm drain. The Kent County Health Department, MDEQ, local media, and lake association were all immediately notified of the situation. E-Coli samples were collected from the point of entry which did not result in elevated levels. A full copy of the state-issued report can be made available upon request. A redundant high level float is being recommended for this station to provide contingency in the future.
- Wednesday August 12, 2009 @ 9:00 a.m. – 10:00 a.m. ML-PS #11: High level alarm call from dialer. Returned normal after 30 minutes. Station visited and everything normal.
- Thursday August 13, 2009 @ 8:00 a.m. – 10:00 a.m. ML-PS #11: High level alarm call from dialer. Arrived on-site to find everything normal. Control adjustments were made to allow for both pumps to turn on simultaneously to increase station pumping capacity.
- Friday, August 14, 2009 @ 7:00 a.m. – 8:00 a.m. ML-PS #11: High level alarm call from dialer. Arrived on-site to find everything normal.
- Friday August 14, 2009 @ 9:30 a.m. – 12:30 p.m. ML-GPS #14: Alarm Light Call from resident. Arrived on-site to find that the [mechanical switch] floats were not actuating the pump to turn on. Floats were replaced with mercury switch floats. No sewer overflow or back-up was experienced before or after the replacement of the faulty controls.
- Saturday August 15, 2009 @ 11:00 a.m. – 12:00 p.m. ML-PS #11: High level alarm call from the dialer. Remotely monitored the mission dialer. Station returned to normal within 15 minutes.
- Saturday August 15, 2009 @ 9:00 p.m. – 10:00 p.m. ML-PS #11: High level alarm call from the dialer. Remotely monitored the mission dialer. Station returned to normal within 30 minutes.

- Sunday August 16, 2009 @ 11:30 a.m. – 1:30 p.m. ML-PS #11: High level alarm call from dialer. Arrived on-site to find everything normal. Floats were adjusted to maximize the “buffering” capacity of the station without jeopardizing a sewer back-up in the lateral.
- Monday August 17, 2009 @ 3:30 a.m. – 4:30 a.m. ML-PS #11: High level alarm call from the dialer. Remotely monitored the mission dialer. Station returned to normal within 15 minutes.
- Monday August 17, 2009 @ 7:00 a.m. – 8:00 a.m. ML-PS #11: High level alarm call from the dialer. Remotely monitored the mission dialer. Station returned to normal within 15 minutes.
- Saturday August 22, 2009 @ 10:45 a.m. – 12:00 p.m. BCL-PS #14: High level alarm call from dialer. Arrived on-site to find that Pump #2 motor overloads was tripped. The pump was pulled on Monday rags were removed from around the impeller (causing the higher than normal amperage on the motor).

General Operation Information / Housekeeping:

- None

Preventative Maintenance:

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

Corrective Action / Significant Tasks Completed:

- Monday August 3, 2009 ML-PS #13: Grandtech Inc. rehabilitated Murray Lake Pump Station #13 to include the installation of guide rails, new plastic force-main to valve vault, new isolation valves, and new check valves.
- Tuesday August 4, 2009 RL-PS #16: Grandtech Inc. rehabilitated Ratigan Lake Pump Station #16 to include the installation of guide rails, new plastic force-main discharge from pumps, new isolation valves, new check valves, and replacement of approximately 50’ of galvanized force-main from the pump station/valve vault. Lillie Excavating also graded in a new driveway for portable generator and vector truck access to the pump station.
- Wednesday August 12, 2009 ML-PS #11: Transformer relay was replaced on Murray Lake Pump Station #11 from spare parts inventory due to loud buzzing sound (possibly failing coil).
- Tuesday August 18, 2009 ML-PS #11: Static and Dynamic pressure readings were obtained from Pump #1. Preliminary conclusions show the 653’ of 1-1/2” PVC force-main to be in good condition (i.e. not partially plugged).
- Wednesday August 19, 2009 BCL-PS #14: Circuit breaker for Pump #1 was tripped. Pump was pulled to find rags in the cutters. Rags were removed and the pump was reinstated.
- Thursday August 20, 2009 ML-PS #11: Pump #2 was pulled and replaced with a spare 3HP pump in an attempt to increase the pumping capacity from the station to avoid high level alarms.
- All of the lagoon berms were brush-hogged to eliminate favorable environments for burrowing animals which could endanger the integrity of the lagoons. Some of the lagoons had 2-3 year brush growth.

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.