

Natural Systems Utilities, MN
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To: Credit River Township Supervisors
Date: April 7th, 2014
Re: Stonebridge System Status

MPCA Permit Renewal

- A notice of violation was sent to the Credit River Township in October, 2013 due to violations of the 10 mg/L nitrate limit at the downgradient monitoring wells. NSU submitted a nitrogen mitigation plan to the MPCA as part of the corrective action, which was subsequently approved and implemented immediately.
- A progress report outlining the Stonebridge CSTS nitrogen treatment performance is due to the MPCA three years after permit reissuance (March, 2017), and if the compliance concerns continue then a schedule for modifications to the facility design must be submitted with the report. This would include adding a denitrification system to the treatment train.

2013 Alarms

- There were no STEP alarms that required onsite work.
- 4 alarms were attributed to the CSTS system.
 - 3 alarms were due to storms and/or snow melt that caused water levels to spike in the tanks and needed to be pumped down remotely.
 - 1 alarm was due to a broken drainfield dosing pump pipe that was repaired by NSU, and a union was added for easier pump disconnects in the future.

Compliance Summary

- Monitoring wells GW002 and GW003 exceeded the nitrate limit of 10 mg/L in 2013.
 - This is likely being caused by groundwater mounding in the disposal mounds closest to the monitoring wells. These disposal mounds have been shut down per the nitrogen mitigation plan and will remain off until the nitrate concentrations in the monitoring wells drop below the 10 mg/L limit.

Flow Monitoring

- The Stonebridge CSTS averaged 5,920 gpd and 204 gpd/home (Design Flow is 14,400 gpd).

Recommended Repairs in 2014

- Rodent control is needed to continue at the site. The MPCA requested the Township try to control rodents in and around the mounds. The Township has asked NSU to manage this issue.
- One or more of the pumps may need to be replaced in 2014.
- Unions will be installed on all recirculation and dosing pump piping assemblies in 2014 to allow for easier removal during maintenance.

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To: Credit River Township Supervisors

Date: April 7th, 2014

Re: Territory System Status

MPCA Permit Renewal

- Final monitoring limits at the Territory 8 CSTS go into effect in April, 2015. This will increase the influent and effluent sampling frequency to twice per month.

2013 Alarms

Territory I CSTS

- 2 high level alarms occurred that required the recirculation tank to be pumped down remotely due to a surge of incoming water during a storm (CSTS).

Territory VII CSTS

- 2 high level alarms occurred that required the recirculation tank to be pumped down remotely due to a surge of incoming water during a storm (CSTS).
- 1 alarm was due to a non functioning motor contactor, which was replaced by NSU (Home).
- 1 alarm was due to a frozen system that was not able to be thawed. This system also had a cracked check valve that was replaced (Home).

Territory VIII CSTS

- 2 high level alarms occurred that required the recirculation tank to be pumped down remotely due to a surge of incoming water during a storm (CSTS).
- 1 alarm occurred due to a pump fail, which was investigated and determined to be a temporary glitch in the panel (CSTS).
- 1 alarm was due to a basement backup that resulted from a clog in the gravity pipe between the house and the STEP system (Home).

Compliance Summary

- The Territory CSTS was awarded a Minnesota Wastewater Treatment Facility Operational Award for outstanding operation, maintenance, and management in 2013.

Flow Monitoring

- Territory I – averaged 7,058 gpd and 208 gpd/home (Design Flow is 13,500 gpd).
- Territory VII – averaged 6,630 gpd and 207 gpd/home (Design Flow is 15,300 gpd).
- Territory VIII – averaged 7,424 gpd and 232 gpd/home (Design Flow is 15,300 gpd).

Recommended Repairs in 2014

- Rodent control is needed to continue at the site. The MPCA requested the Township try to control rodents in and around the mounds. The Township has asked NSU to manage this issue.
- A survey of the pump/impellor shaft teeth for each pump should be completed to assess wear patterns and determine a pump replacement schedule.
- The damaged pipe going from the recirculation tank to the south AdvanTex pod at Territory 8 will be repaired in 2014.
- A leak was recently discovered in one of the Territory 7 mounds. The drainfield was shut down and the leak will be repaired in early 2014.

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To: Credit River Township Supervisors

Date: April 7th, 2014

Re: Monterey Heights/South Passage System Status

MPCA Permit Renewal

- Final monitoring limits go into effect in April, 2014. This will increase the influent sampling frequency at both sites from once to twice per month.
- An updated Nitrogen Mitigation Plan is also due to the MPCA in April, 2014.

2013 Alarms

- 5 alarms were attributed to the STEP systems
 - 1 alarm was due to excessive water use from infiltration into their STEP system lift station. The repair for this issue was coordinated by the homeowner and completed by a sewer repair contractor.
 - 2 systems had freezing issues which were resolved by thawing the system with a light.
 - 1 system had an electrical issue in the STEP panel, which was repaired by NSU.
 - 1 system had a failed STEP panel circuit board, which was replaced by NSU.
- 8 alarms were attributed to the CSTS systems
 - 5 alarms were due to storms that caused water levels to spike in the tanks and needed to be remotely pumped down.
 - 1 alarm was due to a broken pipe for a recirculation pump at the South Passage CSTS, which was repaired by NSU.
 - 1 alarm was due to a plugged recirculation splitter that was cleared out by Mike's Septic Service.
 - 1 alarm was due to a drainfield dosing pump with a stripped shaft. A new pump was ordered and will be replaced in 2014.

Compliance Summary

- Both systems maintained compliance with monitoring well sampling limits.
- The daily maximum flow was exceeded on July 13th, which prevented the site from receiving an operations award (4.30" of precipitation, www.climate.umn.edu).

Flow Monitoring

- South Passage - averaged 5,508 gpd and 275 gpd/home (Design Flow is 9,000 gpd).
- Monterey Heights - averaged 7,097 gpd and 245 gpd/home (Design Flow 14,400 gpd).

Recommended Repairs in 2014

- Surfacing of effluent in the sand filter at South Passage is still in its initial stages. We do not anticipate rock replacement to occur in 2014, but may be needed in the next two to three years.
- One or more of the CSTS pumps may need to be replaced in 2014 due to aging. An analysis of wear to the pump and impeller shaft teeth will be conducted in 2014.