

Town of Hillsborough

ANNUAL WASTEWATER QUALITY REPORT

Fiscal Year 2010 (July 2009-June 2010)

Released August 2010

Wastewater Treatment Plant Upgrade & Expansion

The Clean Water Management Trust Fund grant was released and a final design has been completed which divides the Wastewater Treatment Plant Upgrade/Expansion into two phases. The two construction phases are mostly due to the inability of our current customer base to absorb the costs of a single project in the near future. Construction for phase one is scheduled to begin September 2011 and is expected to be finished September 2013. The start of phase two construction will depend upon funds available and the increase in the flow rate at the wastewater treatment plant. It is estimated to begin 5-6 years after the completion of phase one.

Phase One of the expansion/upgrade construction will include the following:

- A new filtering system to the flow right before the chlorination treatment;
- A new grit and grease removal system at the beginning of the treatment process;
- Installation of new clarifiers (settling basins);
- Upgrade existing aeration basins (reactor basins) with jet air versus surface mixing;
- Upgrading to Grade A Bio-Solids (sludge) treatment, allowing land application closer to sensitive areas; and the
- Installation of an Odor Control System that will either clean or filter the air in the more odorous areas of the plant.

Phase Two of the expansion/upgrade construction will include the following:

- An upgrade to the influent pump station that receives the wastewater stream;
- Installation of new aeration basins (reactor basins) with old basins to be used as flow equalization basins during large rain events; and
- The installation of UV light treatment, replacing the chlorination process.

We need to continue moving forward with the project. While the WWTP is operating exceptionally well currently, it is very close to exceeding the capacity of its final clarifiers on a maximum month flow basis. Slight flow increases over the next few years will make it very difficult to remain in compliance with our discharge permit. The staff is doing an awesome job of making do with what they have, but even if we move forward with Phase 1 construction as quickly as possible, it will be about 3 years minimum from now until new facilities are in operation. Unless the economy stays stagnant for 3 more years, we will certainly see increasing flows over this time period, which will likely lead to violations.

How to Prevent Fats, Oils and Grease from Damaging Your Home and the Environment

Too often, grease is washed into the plumbing system, usually through the kitchen sink. Grease sticks to the insides of sewer pipes (both on your property and in the streets). Over time, the grease can build up and block the entire pipe.

Home garbage disposals add grease to the plumbing system. These units shred solid material into smaller pieces, and cause grease to go down the drain.

Commercial additives, including detergents, that claim to dissolve grease may pass grease down the line and cause problems in other areas.

The results can be:

- Raw sewage overflowing in your home or your neighbor's home
- An expensive and unpleasant cleanup that often must be paid by **you, the homeowner**
- Raw sewage overflowing into parks, yards and street
- Potential human contact with disease-causing organisms
- An increase in operation and maintenance costs for local sewer departments, which causes **higher sewer bills** for customers

What we can do to help

The easiest way to solve the grease problem and help prevent overflows of raw sewage is to keep this material out of the sewer system in the first place.

There are several ways to do this.

- Never pour grease down sink drains or into toilets.
- Scrape grease and food scraps from trays, pots, pans, utensils, grills and cooking surfaces into a can or the trash for disposal (or recycling where available).
- Do not put grease down garbage disposals. Put baskets/strainers in sink drains to catch food scraps and other solids, and empty the drain baskets/strainers into the trash for disposal.

Speak with your friends and neighbors about the problem of grease in the sewer system and how to keep it out. Call your local sewer system authority if you have any questions.

Who Runs Your Wastewater Utility?

The Town of Hillsborough owns and operates a wastewater treatment plant at 355 Elizabeth Brady Road. The plant is permitted to process up to 3 million gallons of wastewater per day. The average flow through the plant during FY10 was 0.888 million gallons per day. The Operator in Responsible Charge is Jeff Mahagan, and his backup is David Lee and Shawn Maines. The phone number at the plant is 919-732-2681. The Town of Hillsborough Wastewater Treatment Plant operates under Discharge Permit No. NC0026433, issued by the state. The Hillsborough Collection System operates under Permit No. WQCS00077.

SYSTEM PERFORMANCE VIOLATIONS/NONCOMPLIANCES

It was almost a perfect year for the Wastewater Treatment Plant and the Sewer Collection System in respect to their permits and staying in compliance. The above average year of rainfall was both a blessing and a curse. It forced us to keep ahead of our maintenance schedule and helped us identify problem areas that need quick attention.

The Wastewater Treatment Plant only had one month of elevated sample results. During February 2010 the plant had elevated Ammonia Nitrogen Results. The monthly limit is 2.0 mg/l and the results were 2.05 mg/l. The elevated results were caused by the wet weather conditions that stopped the land application of Bio-Solids. The Town rented a dewatering trailer for the Bio-Solids and had them hauled to a landfill to keep the ammonia nitrogen levels under the permitted limit until it dried out enough to begin land applying bio-solids again.

The low level of the non-compliant result coupled with the above average flow in the river ensured that the wildlife and the river incurred little to no environmental impact.

All the hard work on the Sewer Collection System paid off. There were no sanitary sewer spills that were over 1,000 gallons during this fiscal year. The extra cleaning and inspections throughout the year increased its handling capacity and the system was able to handle the extra flow during the many rain events. The wet weather also helped us identify problem areas of inflow and infiltration that is scheduled to be fixed during the next fiscal year.

Wastewater Treatment Process

The town currently has 25 pump stations pumping to the Wastewater Treatment Plant through the collection system. The flow passes through a grinder and then is pumped to the grit basin before it enters the primary aeration basin. The aeration basin mixes the wastewater and allows the bacteria to break down and consume the waste. The town's system is aerobic, meaning the bacteria need oxygen to survive and to stabilize the waste. The mixed waste goes into the primary clarifier, where sludge settles to the bottom and water is skimmed off. The sludge is pumped out and re-circulated to the primary aerator to be processed again. The water goes into the secondary aeration basin, where more bacteria continues to break down the waste. The particles in the water are settled out again in the secondary clarifiers. Once the wastewater has been through both aeration basins and clarifiers, it is pumped through a filtering process. It then is put in a chlorine contact chamber, where chlorine is added to the water for a minimum of 30 minutes. The chlorine is then removed from the water, and the water is discharged into the Eno River. After recirculation, the sludge collected from the waste is passed through the sludge thickener, stored in one of three digesters and treated with lime. It then is removed with a tanker truck to be spread on permitted agricultural lands as fertilizer.

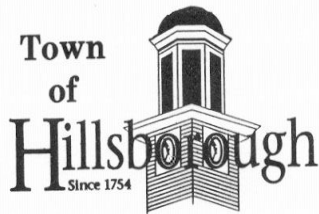
Availability & Certification

This report is available to customers at Town Hall and the Town Hall Annex. Customers were notified of this report in the two local papers, *The News of Orange County* and *The Chapel Hill Herald*. Users also may obtain a copy of the report from the town's Web site at www.ci.hillsborough.nc.us.

Certification:

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.

Julie Lindley, Utilities Analyst — August 2010



2009 Annual Wastewater Report
PO Box 429
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Hillsborough, NC 27278

Update on Sewer Pump Stations

Elizabeth Brady Road

Town funds will be used to design and upgrade the pump station on Elizabeth Brady Road. Design for the upgrade is expected to begin next year.

Cates Creek

The pump station on Pointe Place will no longer be necessary once Phase II of Cates Creek Outfall is installed and operational. The generator formerly located at the Old Mill pump station will be relocated to another active pump station, now that this pump station has been abandoned during Phase I.

Phoebe Drive

The Waterstone development will upgrade an existing pump station on Phoebe Drive to serve the development's southeastern corner. The upgrade will include the installation of a larger wet well, along with a permanent generator.

Orange High School

The new Corbinton Commons pump station will replace Orange High pump station once it is put in operation.

Generators

Due to budget constraints, the town was not able to purchase permanent generators for pump stations without them. Of the 25 pump stations, 9 currently have permanent generators, 3 have scheduled upgrades that include installation of a permanent generator and the remaining 13 rely on the Town's portable generators. The installation of generators at every pump station is a high priority of the Town and once funds are available the project will be completed.

