

**Monthly Operating Report  
February, 2012  
Concord Wastewater Treatment Plant  
Operated by Woodard & Curran**

**Date:** March 16, 2012

**To:** Alan Cathcart, Concord Water & Sewer Superintendent  
**cc:** Chris Whelan, Town Manager  
Richard Reine, Director Concord Public Works

**From:** Michael Thompson and Staff

*Key Activities This Month/Capital Program*

During February all treatment processes were either operational or in ready standby. Flow through the facility in February averaged 1.02 million gallons per day (MGD) and the permit critical 12-month average flow held at 1.3 (1.26) MGD. The permit upper limit for the 12-month average flow is 1.2 MGD. This is the second month in a row that the 12-month average flow has been exceeded. Much of this permit exceedence has roots in the very high flow that occurred in the extraordinarily wet/saturated ground month of March 2011. Chances are good that the facility will return to compliance for this permit limit with the dropping of March 2011 from next months 12-month flow calculation.

More notable events or tasks accomplished in February include:

1.) In February plant staff worked to improve the performance of the rotary drum sludge thickener. This equipment filters free-water from solids collected in the secondary clarifiers and CoMag process. A water/sludge slurry flows into the drum where water filters out to a drain. The solids remain captured by the screen until they are rotated off the end of the screen and into a sludge holding tank. Plant maintenance staff replaced six worn 8-inch diameter plastic wheels upon which the drum rotates. Additionally, staff began the process of replacing 25 spray nozzles that keep the screen clear of solids and readily able to drain water.



*A large hydraulic jack is placed under the rotary drum allowing for the replacement of the blue plastic drum wheels.*

## February '12 WWTP MOR

2.) Maintenance Foreman Rich Dolata returned to work on Monday February 6 following an extended medical leave. In late November 2011 Rich underwent cardiac bypass surgery that required roughly eight weeks of recovery. During Rich's absence, W&C expanded the onsite assignments for Kevin Fitzgerald and Matt Clooney, two former CPW/W&C interns, who are attending local colleges. Kevin and Matt continue to work part-time at the plant while Rich settles back into regular duty and while W&C looks to re-align facility staff this spring.

### Maintenance Management

Following is a brief list of a portion of maintenance items completed in February:

- Installed new drum support wheels on the rotary drum sludge thickener.
- Concord Public Works excavated and removed a failing 3-inch diameter yard hydrant adjacent the septage receiving tanks and installed a new larger bore hydrant in its place.
- A W&C SCADA system technician assisted plant staff with troubleshooting and ultimately replacing a communication cable to restore internet access at the facility's including operator offsite viewing of SCADA.
- Dismantled, cleaned, and inspected the mix chamber polymer injection poppet valve on the RDT polymer solution makeup unit then reinstalled and returned to normal duty.
- Drained and installed new oil on two gear boxes of the #2 primary clarifier drive.

### Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.3 MGD (12month avg)	1.2 MGD	Feb. avg. = 1.02 MGD Max. Daily Flow = 1.18 MG on Mon. 2/6/12
BOD5 (mg/l)	4 mg/l	30 mg/l	98% average BOD removal in February
TSS (mg/l)	8 mg/l	30 mg/l	95% average TSS removal in February
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	Max daily f-coliform count of 3/100 ml occurred on 2/29/12
Phosphorus	0.79 mg/l	1.0 mg/l Nov '11- Mar '12	1.26 mg/l daily max. occurred on Thu. 2/23
Total Ammonia Nitrogen	1.54 mg/l	Report Only	2.07 mg/l daily max. on Thu. 2/9

\*cfu = coliform forming unit or colony.

The 12-month rolling average effluent flow, including February 2012, reached 1.26 MGD. This flow subsequently rounds up to 1.3 MGD for entry onto the DMR as that document specifies flow to one position to the right of the decimal point. This reported flow of 1.3 MGD exceeds the facility's permit of 1.2 MGD as a 12-month running average.

Additionally, throughout February the Concord WWTF performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the two secondary clarifiers, while second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in February is 0.79mg/l, thereby meeting the CWWTf's winter permit limit not to exceed 1.0 mg/l TP as a monthly average.

Finally, during February all effluent disinfection was performed using ultra violet light.

### Alarm Activity

This section provides the Town information on events that activate the facility's alarm response system. These events occur while the plant is unmanned and while both the plant's SCADA system and *Lexington Alarm* are monitoring the facility's alarm system. This report identifies alarm activity from the start of the calendar year to the present.

Concord WWTP Off-Hours Alarm Log

Date	Time	Alarm Source	Observations/Corrective Action/Comments
Jan. '12	Various	Intrusion	South Clarifier Rm. single door triggered several nuisance intrusion alarms in January. Plant personnel replaced wiring to the magnetic pickup on the door and slightly adjusted the position of the pickup- so far so good.
Feb. '12	3:28 AM	Numerous	A very brief loss of utility power lead to a number of motor faults that required reset by an onsite operator as the SCADA system was inaccessible too.

## February '12 WWTP MOR

### Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 34,000 gallons of septage was received at the Concord WWTP in February.

	2012	2011	2010
January	56,000	44,050	32,500
February	34,000	31,750	25,750
March		102,950	171,750
April		139,750	211,500
May		113,500	125,950
June		130,000	184,950
July		73,750	90,800
August		69,500	173,250
September		98,750	182,250
October		82,250	210,250
November		90,250	194,100
December		117,250	132,750
Annual Totals:	90,000	1,093,500	1,735,800

### Sludge Production

During February, 62,183 gallons of liquid sludge, equivalent to 11.1 dry tons, was transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

	2012	2011	2010
January	112,896/17.12	98,309/16.78	89,000/15.61
February	62,183/11.1	72,916/13.5	90,000/16.81
March		72,617/13.89	90,000/15.65
April		81,000/14.90	135,000/23.57
May		108,000/27.85	97,980/15.76
June		108,000/19.67	99,000/18.28
July		106,060/17.69	99,000/16.81
August		135,224/18.83	108,000/18.61
September		108,008/15.10	106,160/17.88
October		141,003/23.05	107,558/17.31
November		114,905/20.28	142,500/21.18
December		105,573/18.56	134,750/21.73
Annual Totals:	175,079/28.22	1,251,615/205.18	1,298,945/219.20