Monthly Operating Report
February, 2010
Concord Wastewater Treatment Plant
Operated by Woodard &Curran

Date: March 11, 2010

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 1.12 million gallons per day (MGD) and the permit critical 12-month average flow held steady from January at 1.00 MGD. The 12-month average daily flow permit limit is 1.2 MGD. This period of 1.00 MGD 12-month rolling average flow is the lowest since July 2008. Unusually heavy rain and snowmelt over the last week of February sent the average daily flow climbing to more than twice the flow rates seen earlier in the month. At press time, daily average flow rates where retuning to close to normal although a two week period of rather high flow rates from late February into early March, will ultimately drive up the next reported 12-month average daily flow. As a rule of thumb, when the river is out of its banks the WWTF will be experiencing unusually high flow rates.

More notable events or tasks accomplished in February include:

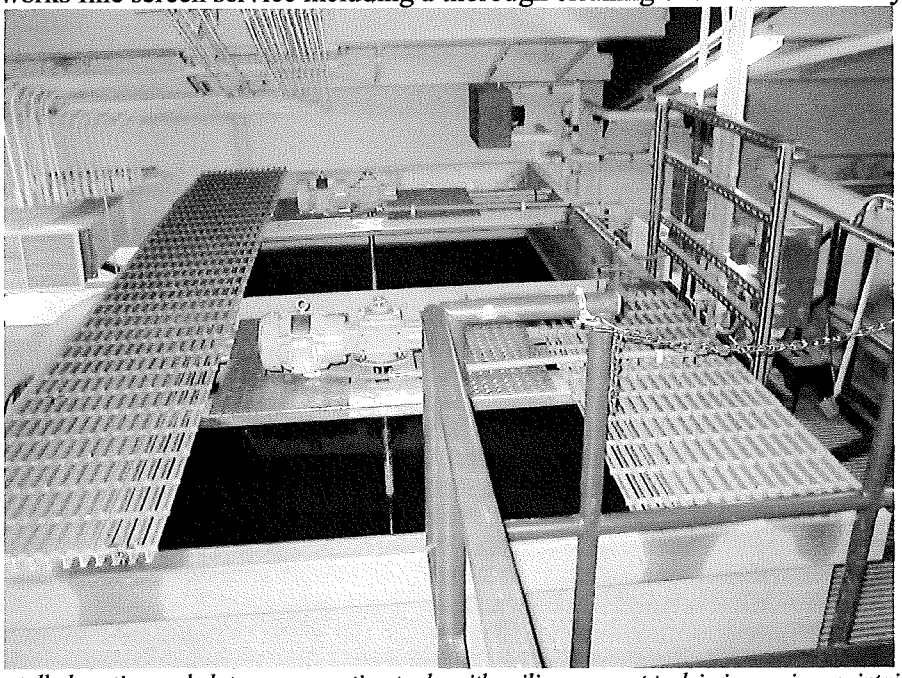
1) Effective February 1, the WWTF began receiving full-time labor assistance from Concord Public Works Water and Sewer Division. This arrangement came into practice following lengthy discussions between W&C and the Town on how best to meet the increased workload brought about by the 2007 facility upgrade. For roughly a year, W&C relied on the services of an additional person employed through a temp agency. This person, Reginald Fennell, worked out well at the WWTF, but as a temp agency employee, he was without benefits and thus at risk of leaving the position to find a full time position *with* benefits. In February, Reggie became a fulltime employee of CPW and moved out of the WWTF position. As a solution to the labor void resulting from this move, CPW agreed to rotate a group of their personnel on one-month assignments to the WWTF. CPWs Ken Sherman worked well at the WWTF for the month of February. Ken required a bit of training to become familiar with the layout of the plant and the function of various equipment and processes, but he adapted well to the new work demands and readily accepted assignments that contributed to our maintenance and operations goals.

2) On February 12, the 2009 Annual Sludge Report mailed to regulators (and the Town) according to the conditions set in the WWTF NPDES permit. During 2009, 223 total dry tons of sludge were hauled off site to the Upper Blackstone Water Pollution Abatement District, i.e. the Worcester regional WWTF located in Millbury, MA, where it underwent incineration. In fact, this sludge was hauled from the CWWTF as a liquid sludge and dewatered in Millbury prior to incineration. The CWWTF uses a rotary drum thickener to thicken liquid sludge up to about 4 to 4.5 % solids before loading onto tank trailers. This thickening is critical to keeping the cost of sludge disposal down. W&C is currently investigating ways to process sludge through CoMag and the RDT in a way that increases the solids content up closer to 5% vs current 4%. Once we have settled on steps and methods to reliably thickened sludge we will put in place written Standard Operating Procedures. At this point, it looks as though this SOP will require modifications to the current SCADA control of the CoMag process, but this change should be well worth the effort.

Maintenance Management

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

a) complete installation of plates and grates over the CoMag reaction tanks to provide a working surface for personnel to perform tank mixer maintenance.
b) replace CoMag magnetite recovery drum wash water solenoid with a properly configured unit.
c) contractor on site to perform factory recall repairs on Square D switch gear installed as part of the 2007 facility upgrade.
d) rewire the effluent pH meter power supply so that it no longer will be shut off by upstream wall receptacle GFI faults.
e) perform headworks fine screen service including a thorough cleaning of the wash-water system.



Recently installed grating and plates over reaction tanks with railings as next task in improving maintainer safety.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.00 MGD (12month avg)	1.2 MGD	Feb. avg. =1.12 MGD
BOD5 (mg/l)	5 mg/l	30 mg/l	98% average BOD removal in Feb.
TSS (mg/l)	9 mg/l	30 mg/l	96 % average TSS removal in Feb.
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	Daily max. of 2 cfu/100ml on Wed. 2/24
Phosphorus	0.96 mg/l	1.0 mg/l Nov.'09 – Mar. '10	1.02 mg/l daily max. on Fri. 2/19
Total Ammonia Nitrogen	.71 mg/l	Report Only	.76 mg/l daily max. on Fri. 2/19

**cfu =coliform forming unit or colony.*

During February, the Concord WWTP performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the secondary clarifiers and second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in February is 0.96 mg/l, thereby meeting the CWWTP's winter permit limit not to exceed 1.0 mg/l TP.

Additionally, 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
01/18/10	12:50 pm	Power Failure	Brief power bump resulted in a handful of drive and panel faults. The on call operator responded on site and reset equipment without incident.
2/10	NA	None	NA

Septage Receiving

WWTP Septage Receipts in gallons

	2010	2009	2008
January	32,500	10,500	22,750
February	25,750	41,250	60,300
March		83,250	55,550
April		168,250	152,300
May		150,900	135,150
June		151,450	126,450
July		138,500	117,000
August		137,750	142,400
September		203,750	219,950
October		172,400	262,900
November		155,400	165,300
December		109,600	104,050
Annual Totals:	58,250	1,523,000	1,636,000

Sludge Production

During February, 90,000 gallons of liquid sludge, equivalent to 16.81 dry tons, was transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

WWTP Sludge Production in gallons /dry tons

	2010	2009	2008
January	89,000/15.61	107,500/16.71	112,227/20.15
February	90,000/16.81	86,000/14.13	107,124/18.35
March		99,000/17.56	98,500/17.97
April		153,000/23.94	90,000/17.98
May		170,670/24.27	107,000/19.74
June		153,000/20.83	98,500/17.76
July		126,000/20.57	117,000/20.98
August		76,376/11.81	99,000/16.51
September		126,000/21.65	98,000/16.82
October		99,000/16.03	108,000/18.54
November		99,000/16.51	80,500/12.62
December		117,000/17.79	126,000/18.46
Annual Totals:	179,000/32.42	1,421,546/223.58	1,241,851/215.88