

**Monthly Operating Report
July, 2011
Concord Wastewater Treatment Plant
Operated by Woodard & Curran**

Date: August 19, 2011

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 July all treatment processes were either operational or in ready standby expect for the #1 trickling filter and #1 secondary clarifier which were off line for a period of time in July in for scheduled maintenance. Flow through the facility in July averaged .98 million gallons per day (MGD) and the permit critical 12-month average flow settled at 1.08 MGD. The permit upper limit for the 12-month average flow is 1.2 MGD.

More notable events or tasks accomplished in July include:

1.) In mid-July painting and rigging contractors arrived to begin the project to sand blast and paint the steel components of the #1 trickling filter and the #1 secondary clarifier. This work also includes the replacement of worn bearings and seals on both pieces of equipment. The trickling filter received primary focus due to it's more critical impact on overall plant performance. The trickling filter painting and bearing replacement was completed on July 29 and we resumed normal flow to this trickling filter that same day. Biological treatment within the filter resumed quickly as indicated by process turbidity monitors and subsequent BOD testing. The clarifier work will continue into August, but relatively low summer flows through the facility lead us to be very confident that overall plant performance will not be adversely impacted by this prolonged equipment downtime.



Lydon Millwrights personnel removing the trickling filter center column.

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2.) CPW Water & Sewer personnel met with the WWTF Chief Operator and personnel from Cambridge Water Technology to discuss strategies to explore the treatment capabilities of the CoMag process in meeting expected new permit limits for aluminum and copper. Plans were drafted for proceeding with both bench scale and full scale dose response testing in August.

Maintenance Management

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

- a) Installed new lip seal on the #1 aerated sludge tank blower.
- b) Installed new impeller on the biological odor control condensate sump pump.
- c) Contractors rehabbed the #1 trickling filter by sandblasting and painting all metal components and replacing the distributor center column bearings and seals.
- e) Contractors began the rehab of the #1 secondary clarifier by dismantling the drive, bridge and sludge flights for replacement and/or sandblasting and painting.
- f) Plant staff cleaned and installed new bearings and seals on the #1 secondary clarifier drive.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.08 MGD (12month avg)	1.2 MGD	avg. = 0.98 MGD Max. Daily Flow = 1.095MG
BOD5 (mg/l)	3 mg/l	30 mg/l	99% average BOD removal in July
TSS (mg/l)	1 mg/l	30 mg/l	99% average TSS removal in July
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	All daily f-coliform counts were actually 0 colonies/100 throughout July.
Phosphorus	0.18 mg/l	0.2 mg/l Apr '11– Oct. '11	0.26 mg/l daily max. occurred on Thu. 7/21
Total Ammonia Nitrogen	2.2 mg/l	Report Only	6.04 mg/l daily max. on Tue. 6/26

*cfu = coliform forming unit or colony.

During July, the Concord WWTP performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the #2 secondary clarifier and second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in July is 0.18 mg/l, thereby meeting the CWWTP's summer permit limit not to exceed 0.2 mg/l TP.

Finally, during July 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. '11	NA	NA	
Feb. '11	3:00 am	Hi-Effluent turbidity	Links in process monitoring data/trends reveal an inaccurate caustic feed to CoMag effluent. Operations staff ultimately performs hotwater flush of the caustic feed system to remove solidified caustic and restore accurate caustic pumping.
Mar. '11	NA	NA	
Apr. '11	NA	NA	
May '11	NA	NA	
June 26-Sunday	9:30 am	Intrusion	South Clarifier Rm. dbl. door not fully engaged in closed position – wind rocked door.
July '11	NA	NA	

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Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 73,750 gallons of septage was received at the Concord WWTP in July.

WWTP Septage Receipts in gallons

	2011	2010	2009
January	44,050	32,500	10,500
February	31,750	25,750	41,250
March	102,950	171,750	83,250
April	139,750	211,500	168,250
May	113,500	125,950	150,900
June	130,000	184,950	151,450
July	73,750	90,800	138,500
August		173,250	137,750
September		182,250	203,750
October		210,250	172,400
November		194,100	155,400
December		132,750	109,600
Annual Totals:	635,500	1,735,800	1,523,000

Sludge Production

During July, 106,060 gallons of liquid sludge, equivalent to 17.69 dry tons, was transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

WWTP Sludge Production in gallons /dry tons

	2011	2010	2009
January	98,309/16.78	89,000/15.61	107,500/16.71
February	72,916/13.5	90,000/16.81	86,000/14.13
March	72,617/13.89	90,000/15.65	99,000/17.56
April	81,000/14.90	135,000/23.57	153,000/23.94
May	108,000/27.85	97,980/15.76	170,670/24.27
June	108,000/19.67	99,000/18.28	153,000/20.83
July	106,060/17.69	99,000/16.81	126,000/20.57
August		108,000/18.61	76,376/11.81
September		106,160/17.88	126,000/21.65
October		107,558/17.31	99,000/16.03
November		142,500/21.18	99,000/16.51
December		134,750/21.73	117,000/17.79
Annual Totals:	646,902/109.36	1,298,945/219.20	1,421,546/223.58