

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

Date: September 20, 2010

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

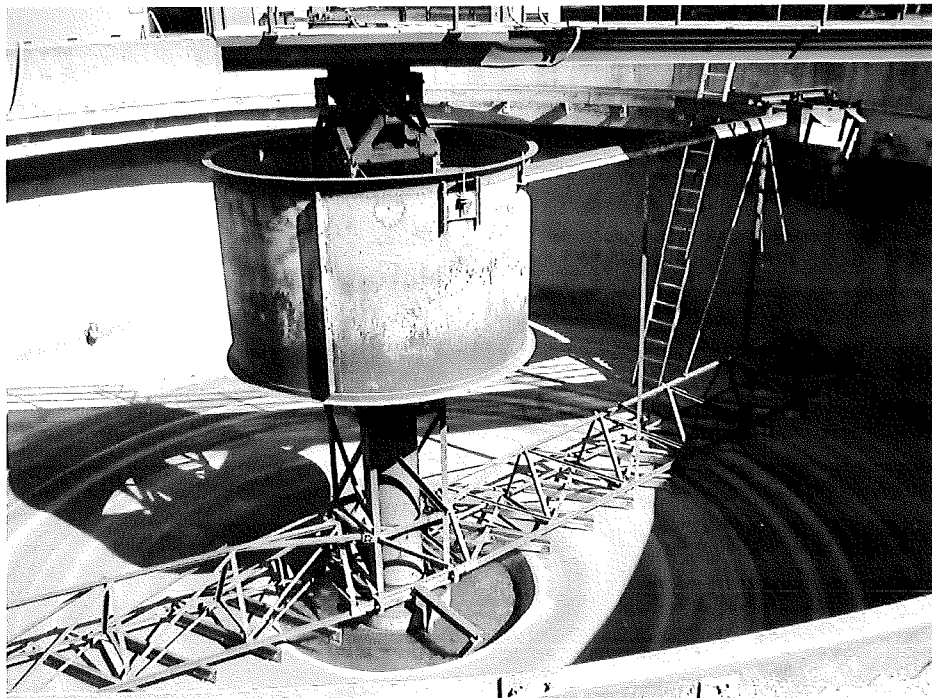
From: Michael Thompson and Staff

Key Activities This Month/Capital Program

During August all treatment processes were either operational or in ready standby except for the #2 secondary clarifier that was offline for inspection and preventive maintenance during August. Flow through the facility in August averaged 0.80 million gallons per day (MGD) and the permit critical 12-month average flow declined to 1.12 MGD. The 12-month average flow permit upper limit is 1.2 MGD. This 0.80 MGD average daily flow in August is the second lowest average monthly flow in the last twelve months with July having the lowest flow. These low flow months are typical of late summer when we experience dry weather and declining groundwater levels.

More notable events or tasks accomplished in August include:

- 1.) The #2 secondary clarifier was taken offline, drained, and cleaned during August. This was undertaken as an annual preventive maintenance inspection. Overall the concrete tank and submerged metal sludge collector mechanism is in very good shape and the cold tar epoxy coating applied to steel components in 2002 is holding up well. Plant staff replaced the scum skimmer blade, performed minor adjustments on flygt clearances, and exercised groundwater flapper valves. The #1 secondary clarifier easily handled all plant flow during this maintenance.



View of the recently emptied and cleaned #2 secondary clarifier.

Key Activities This Month/Capital Program

2.) During August, I worked with Town W&S Division staff to finalize the application to renew the WWTP NPDES (National Pollution Discharge Elimination System) permit. This application is due to the EPA and Mass DEP every five years and includes a significant amount of information regarding plant performance over the previous five years. Both EPA and DEP will now review this information and make a determination whether the existing permit is good as structured or in need of alteration. Ultimately, EPA's goal is to finalize a new permit before the existing permit expires at the end of February 2011. To meet this goal, EPA and DEP must work to issue a draft permit to the Town later this fall (November timeframe) so there will sufficient time for the Town to review and respond before the permit goes final.

Maintenance Management

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

- a) performed slow drain, clean, and preventive maintenance inspection of the #2 secondary clarifier.
- b) performed troubleshooting and ultimate repair of the facility's SCADA voice card that provides one means of notifying plant personnel of plant alarms.
- c) removed submersible pump with deteriorated impeller from the odor control scrubber condensate sump and installed replacement unit.
- d) replaced apparently lightning damaged transducer on the effluent flow meter.
- e) installed a new mechanical seal on the CoMag waste sludge high shear mixer.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.12 MGD (12month avg)	1.2 MGD	August avg. = 0.80 MGD
BOD5 (mg/l)	3 mg/l	30 mg/l	99% average BOD removal in August
TSS (mg/l)	3 mg/l	30 mg/l	99 % average TSS removal in August
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	3 separate tests produced 2 cfu/100ml
Phosphorus	0.19 mg/l	0.2 mg/l Apr.– Oct. '10	0.30 mg/l daily max. on Tue. 8/3
Total Ammonia Nitrogen	0.98 mg/l	Report Only	1.48 mg/l daily max. on Thu. 8/19

*cfu = coliform forming unit or colony.

During August, 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 August is 0.19 mg/l, thereby meeting the CWWTP's summer permit limit not to exceed 0.20 mg/l TP.

Additionally, during August 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
3/10	NA	None	NA
4/10	NA	None	NA
5/15/10	8:45am	Intrusion	An internal motion detector went off on this quiet Saturday morning but follow-up onsite inspection by both plant staff and police found no signs of a problem- i.e. false alarm.
6/10	NA	NA	NA
7/10/10	8:35am	Intrusion	An internal motion detector went off on this quiet Saturday morning but follow-up onsite inspection by both plant staff and police found no signs of a problem- i.e. false alarm. Suspect some sort of equipment operation may have triggered this alarm- investigating.
8/23/10	1:55am	Power Failure	5 minute outage/generator run required remote SCADA access reset of numerous pieces of equipment.
8/24-8/25/10	11:50pm-3:30am	Power Failure	Roughly 4 hour outage/generator run required onsite response to deal with equipment faults and resets.
8/25	9:05am	Power Failure	10 minute outage/generator run was handled by onsite personnel.

Septage Receiving

The Concord WWTF receives septage only from in-Town sources. A total of 173,250 gallons of septage was received at the Concord WWTF in August.

WWTP Septage Receipts in gallons

	2010	2009	2008
January	32,500	10,500	22,750
February	25,750	41,250	60,300
March	171,750	83,250	55,550
April	211,500	168,250	152,300
May	125,950	150,900	135,150
June	184,950	151,450	126,450
July	90,800	138,500	117,000
August	173,250	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:	1,016,450	1,523,000	1,636,000

Sludge Production

During August, 108,000 gallons of liquid sludge, equivalent to 18.61 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	90,000/15.65	99,000/17.56	98,500/17.97
April	135,000/23.57	153,000/23.94	90,000/17.98
May	97,980/15.76	170,670/24.27	107,000/19.74
June	99,000/18.28	153,000/20.83	98,500/17.76
July	99,000/16.81	126,000/20.57	117,000/20.98
August	108,000/18.61	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:	807,980/141.10	1,421,546/223.58	1,241,851/215.88