

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

Date: August 10, 2010

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

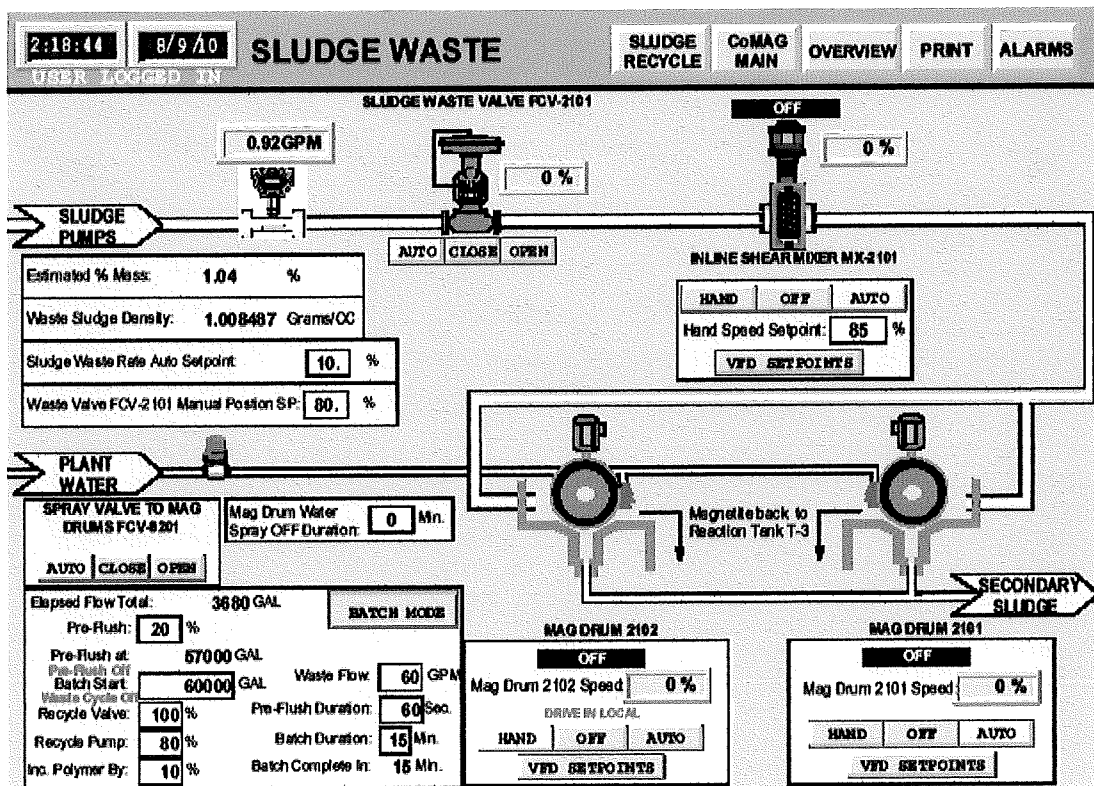
From: Michael Thompson and Staff

Key Activities This Month/Capital Program

During July all treatment processes were either operational or in ready standby. Flow through the facility in July averaged 0.67 million gallons per day (MGD) and the permit critical 12-month average flow declined to 1.13 MGD. The 12-month average flow permit upper limit is 1.2 MGD. This 0.67 MGD average daily flow in July is the lowest average monthly flow since October 2002 when flow averaged 0.63 MGD. This low flow is primarily attributed to a decline in groundwater level due to an extended period of dry weather.

More notable events or tasks accomplished in July include:

- 1.) Plant staff worked with Woodard & Curran systems engineers to complete the installation of control logic identified as cost saving/efficiency improvements for CoMag sludge thickening and CoMag chemical (alum and ploymer) feed. These program changes now operate as quick select options on CoMag SCADA view pages (see sample page below). Operators can easily select and modify these new controls, while still maintaining the option to select the original CoMag control settings. Plant staff will be monitoring these new operating modes to ensure their performance and to document the ultimate benefit gained in the areas reduced sludge disposal costs and improved chemical performance.



Lower left portion of screen shows newly installed *Batch Mode* that should reduce sludge costs at the Plant.

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Key Activities This Month/Capital Program

2.) The bulb wiping mechanism on Bank A of the ultraviolet (UV) disinfection system underwent close inspection/dismantling to determine the extent of trouble with this automatic cleaning device. Plant staff identified a list of components that appear in need of replacement. This wiping system is a delicate air driven shuttle that appears to have suffered limited damage from moisture and debris exposure. UV Banks B and C have remained operational during this investigation into the replacement part needs for Bank A and how best to prevent further trouble with all wiper operation due to existing environmental conditions.

Maintenance Management

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

- a) performed semi-annual drive equipment preventive maintenance inspection on both secondary clarifiers including seasonal gear box oil change.
- b) performed semi-annual preventive maintenance service on both trickling filters center grease seal and also performed cleaning of distributors, nozzles, and media surface.
- c) power washed channel bottlenecks and weirs ahead of detritor to remove grit accumulations.
- d) completed installation of splash guard in outside sump to lessen impact of falling/splashing water on well ultrasonic level indicator.
- e) replaced failed motor on ground-level air conditioning unit.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.13 MGD (12month avg)	1.2 MGD	July avg. = 0.67 MGD
BOD5 (mg/l)	3 mg/l	30 mg/l	99% average BOD removal in July
TSS (mg/l)	2 mg/l	30 mg/l	99 % average TSS removal in July
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	All plate counts were zero in July
Phosphorus	0.16 mg/l	0.2 mg/l Apr. – Oct. '10	0.27 mg/l daily max. on Thu. 7/8
Total Ammonia Nitrogen	0.75 mg/l	Report Only	0.92 mg/l daily max. on Wed. 7/14

*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 secondary clarifiers and second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in July is 0.16 mg/l, thereby meeting the CWWTP's summer permit limit not to exceed 0.20 mg/l TP.

Additionally, during June all effluent disinfection was performed using ultra violet light.

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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	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	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.

Septage Receiving

The Concord WWTF receives septage only from in-Town sources. A total of 90,800 gallons of septage was received at the Concord WWTF in July.

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		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:	843,200	1,523,000	1,636,000

Sludge Production

During July, 99,000 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	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		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:	699,980/122.49	1,421,546/223.58	1,241,851/215.88