

**Monthly Operating Report
October, 2012
Concord Wastewater Treatment Facility
Operated by Woodard & Curran**

Date: November 13, 2012

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

From: John Parkhurst and Staff

Key Activities This Month/Capital Program:

During October all treatment processes were either operational or in ready standby. Flow through the facility in October averaged 0.85 million gallons per day (MGD) and the permit critical 12-month average flow dropped slightly to 1.01 MGD. This is the 8th consecutive month that the 12-month average flow dropped and moved further from the 1.20 MGD limit for 12-month average flow.

Events that are more notable or tasks accomplished in October include:

October 30th, 2012: Schnieder Electric technician onsite to assist plant staff with generator transfer switch. Issue was resolved the following day with the replacement of an electrical component.



PLC for generator transfer switch.

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Health and Safety Activities or Training:

During October, all plant staff participated in a 30 minute on site safety-training session on "Hearing Conservation".

Maintenance Management

The following is a brief list of a portion of maintenance items completed in October:

October 2nd, 2012: Calibrated inline process pH probes.

October 9th, 2012: Staff installed new flange and pump in odor control wet well.

October 10th, 2012: Staff replaced spent U.V. bulbs in bank B and changed the lead bank from bank C to bank B.

October 10th, 2012: Staff replaced pH probe in lab.

October 12th, 2012 Staff cleaned RDT nozzles and fabric.

October 17th, 2012: Staff began draining primary clari-thickener #2 for annual service/ inspection.

October 18th, 2012: ELO2 technician onsite to complete annual underground oil storage tank service/ inspection.

October 19th, 2012: Staff cleaned out debris, rocks, and grit from septage receiving manual bar screen.

October 22nd, 2012: 45 foot construction trailer owned by Siemens was removed from site and parked in public works staging area for future offsite removal.

October 23rd, 2012: Staff removed debris, rags, etc. from primary clari-thickener #2 for annual service and inspection.

October 23rd, 2012: Staff changed oil in secondary tank #2 collection arm gearbox.

October 24th, 2012: Staff replaced secondary effluent in line process pH probe.

October 24th, 2012: Staff power steam cleaned RDT drum.

October 25th, 2012 Magnetic drum #1 keeps over-flowing due to leaves and debris building up on screen. Staff continuous to monitor and clean up mess left behind.

October 25th, 2012: Staff cleaned CoMag® settling tanks.

October 26th, 2012: Staff cleaned magnetic drum area due to over flowing.

October 29th, 2012: Tested generator, prepared for Hurricane Sandy. 5:45 PM Concord WWTF lost power. Several tries to get the transfer switch to switch to generator power finally transferred. Staff cleared multiple alarms due to VFD faults from the power failure. A large tree came down blocking access from Bedford Street. Staff was onsite monitoring the generator and additional staff was called in to assist with the tree removal. A VFD in the RDT PLC was damaged from the power outage and replaced the following day.

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Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.0 MGD (12-month avg.)	1.2 MGD	October avg. = 0.85 MGD Max. Daily Flow = 1.06 MG on Tue. 10/30
BOD5 (mg/l)	4 mg/l	30 mg/l	98% average BOD removal in October
TSS (mg/l)	4 mg/l	30 mg/l	98% average TSS removal in October
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	5 f-coliform counts daily max on Fri. 10/12
Phosphorus	0.1 mg/l	0.2 mg/l Apr '12– Oct '12	0.26 mg/l daily max. occurred on Tue. 10/30
Total Ammonia Nitrogen	0.34 mg/l	Report Only	0.60 mg/l daily max. on Mon. 10/01

*cfu = coliform forming unit or colony.

During October, 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 October is 0.1mg/l, thereby meeting the CWWTP's summer permit limit not to exceed 0.2 mg/l TP as a monthly average.

Additionally, during October 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. The events occur while the plant is unmanned and while both the plant's SCADA system and The *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 WWTF 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. 11, 2012	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.
Mar. '12	NA	NA	No off hours alarms in March.
Apr. 29, '12	10:30 am	Numerous	A very brief loss of utility power lead to a number of motor faults that required reset by an onsite operator who was performing weekend (Sat.) rounds.
May '12	NA	NA	No off hours alarms in May.
Jun. 17, '12	8:30 PM	Numerous	Plant water alarm came in. Plant staff cleaned intake screens and reset system. (All OK)
Jul. 28, '12	8:00 AM	Numerous	A very brief loss of utility power lead to a number of motor faults that required reset by an onsite operator who was performing weekend (Sat.) rounds.
Aug. 5, '12	8:00 AM	Numerous	Corridor motion detectors triggered nuisance alarms. Staff reset alarm - so far so good.
Sept. 9, '12	8:00 AM	Numerous	Intrusion alarm clarifier room south motion sensor- no apparent reason other than windy outside.
Oct. 29, '12	5:45 PM	Numerous	A loss of utility power lead to a number of motor faults that required reset by an onsite operator who was performing Hurricane Sandy coverage.

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Septage Receiving

The Concord WWTF receives septage only from in-Town sources. A total of 124,150 gallons of septage received at the Concord WWTF in October.

WWTF Septage Receipts in gallons:

	2012	2011	2010
January	56,000	44,050	32,500
February	34,000	31,750	25,750
March	83,000	102,950	171,750
April	111,500	139,750	211,500
May	110,250	113,500	125,950
June	112,750	130,000	184,950
July	137,750	73,750	90,800
August	71,000	69,500	173,250
September	84,250	98,750	182,250
October	124,150	82,250	210,250
November		90,250	194,100
December		117,250	132,750
Annual Totals:	924,650	1,093,500	1,735,800

Sludge Production

During October, 123,425 gallons of liquid sludge, equivalent to 20.70 dry tons, transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

	WWTF Sludge Production in gallons /dry tons		
	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	99,452/13.71	72,617/13.89	90,000/15.65
April	97,796/11.75	81,000/14.90	135,000/23.57
May	107,500/16.66	108,000/27.85	97,980/15.76
June	116,530/18.53	108,000/19.67	99,000/18.28
July	116,141/22.36	106,060/17.69	99,000/16.81
August	113,340/18.71	135,224/18.83	108,000/18.61
September	104,302/18.64	108,008/15.10	106,160/17.88
October	123,425/20.70	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:	1,052,565/169.32	1,251,615/205.18	1,298,945/219.20