

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

**Date:** May 18, 2012

**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 April all treatment processes were either operational or in ready standby. Flow through the facility in April averaged 0.95 million gallons per day (MGD) and the permit critical 12-month average flow dropped slightly to 1.15 MGD. This is the second consecutive month that the 12-month average flow dropped and moved further from the 1.20 MGD limit for 12-month average flow.

More notable events or tasks accomplished in April include:

1.) In April, a Town hired contractor performed repairs of numerous cracks that had developed in the WWTF loop and parking lot. The driveway and lot were reconfigured and paved at the conclusion of the facility upgrade back in May 2008. Since then cracks have slowly developed at pavement match lines and around storm grates and manhole covers.



*The WWTF driveway underwent crack repair on April 10<sup>th</sup> – above are typical before and after pictures.*

2.) In early to mid-April, the WWTF biological odor control unit was re-configured to the full “warm weather” mode of operation. This included reconnecting water feed to both the first and second stages, adding an essential nutrients solution to stage one, and starting up the first stage water recirc pump and pH monitoring. Additionally, the sheet metal inlet air plenum was taken to a local welding shop to repair and reinforce failing seam welds.

## May '12 WWTF MOR

### Maintenance Management

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

- a) Removed, repaired and re-installed the odor control system inlet air plenum that had failed Seams.
- b) A contractor filled numerous cracks in the plant loop drive and parking lot.
- c) Performed semi-annual preventive maintenance on both grit pumps including lubrication checks, packing adjustment, and cleaning seal water system and drains.
- d) Replaced six bulbs on UV bank C before returning that unit to the lead, on line bank.
- e) Installed and calibrated a new influent flow meter transducer and transmitter.
- f) Installed new pH probe and pH signal pre-amp on the odor control first stage recirc water line.

### Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.2 MGD (12-month avg.)	1.2 MGD	April avg. = 0.95 MGD Max. Daily Flow = 1.13 MG on Mon. 4/23/12
BOD5 (mg/l)	3 mg/l	30 mg/l	99% average BOD removal in April
TSS (mg/l)	3 mg/l	30 mg/l	99% average TSS removal in April
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	All daily f-coliform counts resulted in zero colonies/100 ml.
Phosphorus	0.2 mg/l	0.2 mg/l Apr '12– Oct '12	0.41 mg/l daily max. occurred on Tue. 4/3
Total Ammonia Nitrogen	0.71 mg/l	Report Only	0.85 mg/l daily max. on Tue. 4/10

\*cfu = coliform forming unit or colony.

Throughout April, the Concord WWTF performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the two secondary clarifiers, while second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in April is 0.2 mg/l, thereby meeting the CWWTF's winter permit limit not to exceed 0.2 mg/l TP as a monthly average.

Also during April, 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 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.

## April '12 WWTF MOR

### Septage Receiving

The Concord WWTF receives septage only from in-Town sources. A total of 111,500 gallons of septage was received at the Concord WWTF in April.

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		113,500	125,950
June		130,000	184,950
July		73,750	90,800
August		69,500	173,250
September		98,750	182,250
October		82,250	210,250
November		90,250	194,100
December		117,250	132,750
Annual Totals:	284,500	1,093,500	1,735,800

### Sludge Production

During April, 97,796 gallons of liquid sludge, equivalent to 11.75 dry tons, was 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		108,000/27.85	97,980/15.76
June		108,000/19.67	99,000/18.28
July		106,060/17.69	99,000/16.81
August		135,224/18.83	108,000/18.61
September		108,008/15.10	106,160/17.88
October		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:	372,327/53.68	1,251,615/205.18	1,298,945/219.20