

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

Date: January 15, 2013

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

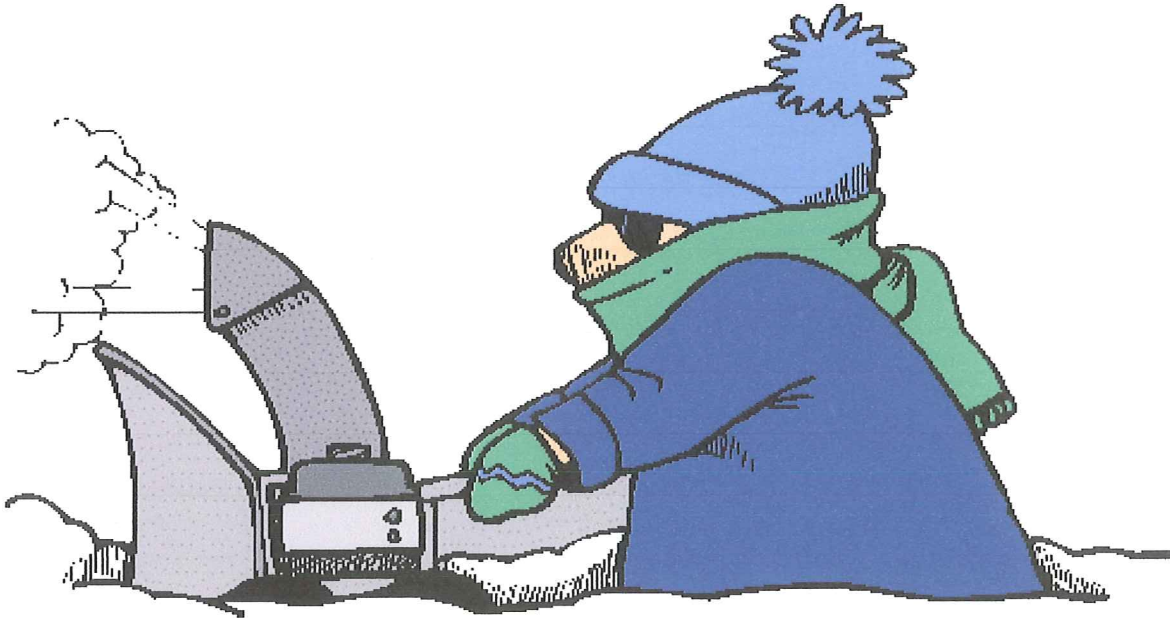
From: John Parkhurst and Staff

Key Activities This Month/Capital Program:

During December all treatment processes were either operational or in ready standby. Flow through the facility in December averaged 0.95 million gallons per day (MGD) and the permit critical 12-month average flow dropped slightly to 0.94 MGD. This is the 10th 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 December include:

December 17th, 2012: Plant staff completed snow removal process following storm.



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Health and Safety Activities or Training:

During December, all plant staff participated in a 30 minute on site safety training meeting on "Snow Removal Safety".

Maintenance Management

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

December 3rd, 2012: Received 300 gallons of fuel for the underground storage tank.

December 3rd, 2012: Plant staff replaced defective coupling on CoMag recycle pump #1. Pump is now back on-line.

December 4th, 2012: Plant staff replaced bad mixing valve motor on boiler #1.

December 5th, 2012: Plant staff power washing inside of the trickling filter walls.

December 7th, 2012: Plant staff repaired leak on air compressor.

December 7th, 2012: Plant staff installed a new operator's computer in lab.

December 10th, 2012: Plant staff re-opened inlet gates for primary tank #2.

December 10th, 2012: Plant staff installed a new pH probe for CoMag tank T-2.

December 17th, 2012: Plant staff completed snow removal process following storm.

December 19th, 2012: Plant staff calibrated in-line pH probes.

December 30th, 2012: Plant staff completed snow removal process following storm.

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Environmental Compliance

| Parameter | Monthly Avg. | Permit Limit | Notes |
|----------------------------|--------------------------|---------------------------|--|
| Flow, MGD | 0.94 MGD (12-month avg.) | 1.2 MGD | December avg. = 0.95 MGD Max. Daily Flow = 1.20 MG on Thu. 12/27 |
| BOD5 (mg/l) | 4 mg/l | 30 mg/l | 99% average BOD removal in December |
| TSS (mg/l) | 7 mg/l | 30 mg/l | 97% average TSS removal in December |
| Coliform, Geo.Mean #/100ml | 4 cfu*/100ml | 200 cfu/100ml | 28 f-coliform counts daily max on Thur. 12/27 |
| Phosphorus | 0.4 mg/l | 1.0 mg/l Nov '12– Mar '13 | 0.50 mg/l daily max. occurred on Mon. 12/17 |
| Total Ammonia Nitrogen | 1.90 mg/l | Report Only | 2.0 mg/l daily max. on Mon. 12/03 |

*cfu = coliform forming unit or colony.

During December, 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 December is 0.4mg/l, thereby meeting the CWWTTP's winter permit limit not to exceed 1.0 mg/l TP as a monthly average.

Over the week of December 9th, the Concord WWTF conducted the 2012, fourth-quarter Whole Effluent Toxicity (WET) sampling event. The 48-hour LC50, a.k.a. acute toxicity test, for *Ceriodaphnia* was >100% and permit complying. The 7-day NOEC, a.k.a. chronic toxicity test, was 100%. Monitoring of chronic toxicity is a permit requirement; however, there are currently no chronic toxicity limitations. A copy of the complete WET test report prepared by our contracted lab enclosed for your review.

Additionally, during December 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. |

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|--------------|---------|----------|---|
| 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. |
| Nov '12 | NA | NA | No off hours alarms in November. |
| Dec '12 | NA | NA | No off hours alarms in December. |

Septage Receiving

The Concord WWTF receives septage only from in-Town sources. A total of 93,500 gallons of septage received at the Concord WWTF in December.

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 | 111,700 | 90,250 | 194,100 |
| December | 93,500 | 117,250 | 132,750 |
| Annual Totals: | 1,129,850 | 1,093,500 | 1,735,800 |

Sludge Production

During December, 80,804 gallons of liquid sludge, equivalent to 16.58 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 | 80,786/14.44 | 114,905/20.28 | 142,500/21.18 |
| December | 80,804/16.58 | 105,573/18.56 | 134,750/21.73 |
| Annual Totals: | 1,214,155/200.34 | 1,251,615/205.18 | 1,298,945/219.20 |