Deer Island Treatment Plant Performance
March 2001

Wastewater effluent quality is monitored by MWRA to assess compliance with water quality standards and the pollutant limits set forth in the NPDES permit issued by EPA and DEP to MWRA. The graphs below display the levels of pollutants measured compared with the NPDES permit limits.

**Influent Flow**

There is no influent flow limit. The graph depicts the total monthly flow from the combined north and south system. The 3-year average represents FY-98, FY-99, and FY-00. Heavy rainfall and snowmelt during March produced record flow to Deer Island.

**Dry Day Flow**

The dry day flow is calculated by averaging influent flow over the previous 365 days during dry weather. The March dry day flow therefore is the average of all dry day flows for the period April 00 to March 01.

**Total Suspended Solids (TSS)**

Total Suspended Solids in the effluent is a measure of the amount of solids that remain suspended after treatment. In March, both the weekly and monthly concentrations were below permit limits. The TSS removal rate was 85.2%.

**Fecal Coliform by Week**

Fecal coliform is an indicator of the presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating many forms of disease-causing microorganisms. There are four conditions in the permit including daily geomean, a weekly geomean, 10% of all samples, and three consecutive samples not to exceed 14000 col/100mL. In March, all of these conditions were met.

**Chemical Oxygen Demand (cBOD)**

The cBOD is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in effluent. In March, both the weekly and monthly concentrations were well below permit limits. The 5-day cBOD removal rate for March was 83.2%.

**pH**

pH is a measure of the alkalinity or acidity of the effluent. Fluctuations in pH do not have an adverse effect on marine environments. Because of the pure oxygen used in the activated sludge reactor, the effluent pH tend to be at the lower pH range. In March, all pH measurements were within the permit limit range.

**TSS**

**cBOD**

**pH**

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Daily pH
- Maximum Daily Limit (<9.0)
- Minimum Daily Limit (>6.0)

- North System
- South System
- 3-Yr Average

- Monthly Flow
- Avg. Monthly Limit

- Weekly Flow
- Avg Weekly Limit (£=30 mg/L)
- Avg Weekly Limit (£=45 mg/L)

- Monthly TSS
- Avg Monthly Limit (£=30 mg/L)

- Weekly TSS
- Avg Weekly Limit (£=45 mg/L)

- Monthly pH
- Maximum Daily Limit (<9.0)
- Minimum Daily Limit (>6.0)

- Weekly pH
- Avg Weekly Limit (£=9.0)

- Average Value
- Maximum Value
- Minimum Value

- Colonies / 100 mL
- Weekly Fecal Coliform
- Avg Weekly Limit (£=14000 col/100 mL)

- Flow (mgd)
- Dry Day Flow
- Monthly Flow
- Avg. Monthly Limit

- TSS (mg/L)
- Monthly TSS
- Avg Monthly Limit (£=30 mg/L)

- cBOD (mg/L)
- Monthly cBOD
- Weekly cBOD

- pH
- Daily pH
- Maximum Daily Limit (<9.0)
- Minimum Daily Limit (>6.0)