

## **Mogden Sewage Treatment Works**

Aeration Odour Investigation Programme  
November 30<sup>th</sup> 2010.

### **1. Introduction:**

An odour study was carried out by Entec as part of a planning obligation of the current extensions to Mogden STW. The project was managed by a joint committee of London Borough of Hounslow (LBH) and Thames Water. The results were presented to a public meeting on 3<sup>rd</sup> November 2010. The final report is due for publication on 30<sup>th</sup> November 2010.

The study identified the first quarter of Battery A & B aeration lanes as the main odour source from the site. At the meeting Richard Aylard agreed to publish Thames Water's programme and timetable of the investigation by the next residents meeting (in effect by 3<sup>rd</sup> December 2010).

### **2. Programme Objective Summary:**

The objectives of the programme are to identify the cause of unusually high odour levels measured in the first sections of Batteries A and B activated sludge lanes and to identify appropriate measures to reduce the odour to acceptable levels or if no longer present to prevent them re-occurring.

The cause of the high odours, whether developing in the aeration lanes or previous stages, will be established by site survey measurements and process investigations between January and August 2011 (to cover seasonal variations) together with a review of operating records.

An initial review of results would be carried out in April 2011.

Solutions to reduce the odours levels would be established with the results of the initial investigations. Obvious process problems would be remediated as

soon as identified and if necessary may be included within the odour management plan for the site. Additional measures, if required, would be reviewed for testing in the next phase of the programme.

An interim report would be produced by the end of April 2011 and final report by September 2011. The final report would include results of re-measurement of odour emissions by Entec.

### **3. Timetable**

#### **1-31 December 2010:**

- Confirm configuration of activated sludge plant during Entec survey measurements in 2010:
- Desk study of site records to identify East and West side operational conditions during each day of Entec's measurements
- Initial site measurements before the end December 2010 when replacement of diffusers should be completed. Measurements to include spot measurements of dissolved oxygen and sulphide concentration.
- Order new equipment for accurate Off Gas testing of H<sub>2</sub>S levels and multi-channel measurement of Dissolved Oxygen across the aeration lanes

#### **Mid-January to 30 March 2011:**

Carry out initial site survey work when equipment delivered:

- Collate data on flows, storm tank returns (amount and proportion of sewage flow), sludge blanket levels, BOD, MLSS, pH value, temperature and other process parameters throughout the survey period.
- Dissolved oxygen profile along a representative lane of Aeration Batteries A - B
- Spot measurements of hydrogen sulphide in off-gas using hoods to collect off-gas

- Olfactometry sampling and measurements by specialist supplier of off-gas for odour and also simultaneous emissions measurements. Results to be compared with DO measurements.
- Diurnal profiles of hydrogen sulphide monitoring in off-gas from one aeration lane selected as representative from Battery A or B.
- Spot measurements of hydrogen sulphide and dissolved oxygen levels at inlet works, primary tanks, settled sewage and along aeration lanes
- Analyse all collected data and identify probable cause of odour
- Identify potential solutions as required

**1- 30 April 2011:**

- Interim report identifying causes of odours (winter/spring conditions)
- Review of potential solutions
- Action appropriate identified solutions.

**1 May to 30 August 2011:**

Spring and summer survey work including review of impact of potential remedial measures:

- Collate data as per initial survey.
- Monitoring and spot measurements as per initial survey.
- Evaluation of any actioned remedial measures as determined in April.
- Identify and action further remediation as required

**30 August – 30 September 2011:**

- Re-measurement of odour emissions by Entec
- Review the effectiveness of solutions and remediation.
- Update operating systems and procedures to reflect any changes to ensure sustainability of remediation.
- Final report identifying causes of odours (winter/spring/summer conditions).