London Borough of Hounslow

**Mogden Sewage Treatment Works**

**TW Site Inspection**

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| **Date of inspection:** 10th May 2018 | |
| **Attendees:** Mr Steven Maunders (London Borough of Hounslow) and Mr Manzoor Hussain (Thames Water) | |
| **LB Hounslow Observation** | **Thames Water Action / Response** |
| **<u>Storm Water Storage Tanks (SWST)</u>**<br><br>**Tank 1A** – Tank empty and flushed - approximately 25% of tank covered by dried grit and sludge – requires further flushing. Hoppers 1, 2 & 3 drained down to bottom level.<br><br>**Tank 1B** – Tank empty and flushed clean - approximately 10% of tank covered by dried grit and sludge – requires further flushing. Hoppers 1, 2 & 3 drained down to bottom level.<br><br>**Tank 2A** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level.<br><br>**Tank 2B** – Tank empty and flushed - approximately 25% of tank covered by dried grit and sludge – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level.<br><br>**Tank 3A** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level.<br><br>**Tank 3B** – Tank empty and flushed - approximately 10% of tank covered by grit – requires further flushing – Hoppers 1, 2 & 3 drained | |

down to bottom level.

**Tanks 4A, 4B, 5A & 5B** which are covered and odour controlled were all empty - unable to gauge condition as lighting system still not working.

**Tank 6A** – Tank empty and flushed - approximately 5% of tank covered by dried grit and sludge – requires further flushing. Hoppers 1, 2 & 3 drained down to bottom level.

**Tank 6B** – Tank empty and flushed - approximately 20% of tank covered by dried grit and sludge – requires further flushing. Hoppers 1, 2 & 3 drained down to bottom level

**Tank 7A** – Tank empty and flushed clean. Hoppers 1, 2 & 3 full (with water leaking back to tank) issue with faulty subterranean non-return valve allowing back-filling of hoppers – requires repair/replacement.

**Tank 7B** – Tank empty and flushed clean – approximately 15% of tank covered by dried grit and sludge – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom.

**Tank 8A** – Tank empty and flushed clean. Hoppers 1, 2 & 3 full of effluent water – surface of green algae.

**Tank 8B** – Tank empty and flushed - approximately 5% of tank covered by dried grit and sludge – requires further flushing. Hoppers 1, 2 & 3 drained down to bottom level.

**Feed Channel** - The level of effluent in both feed channels was low – approximately 5-10% - almost bottomed out in places – some grit and sludge – no local odour.

**Complaints**

**The Council directly received no complaints by telephone in the preceding week.**

**The Council directly received no complaints by email in the**

**preceding week.**

**The Council received no complaints by email from MRAG.**

**Thames Water controller advised that they had received no direct complaints in the preceding week.**

**Odour Monitors**

The odour readouts ($H_2S$) for all of the monitors, which were providing data at time of inspection:

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| Monitor 1 | 0.005 | ppm | 15:30 |
| Monitor 2 | 0.004 | ppm | 15:30 |
| Monitor 3 | 0.000 | ppm | 15:30 |
| Monitor 4 | Empty Value | ppm | 15:30 |
| Monitor 5 | 0.006 | ppm | 15:30 |
| Monitor 6 | 0.005 | ppm | 15:30 |
| Monitor 7 | 0.007 | ppm | 15:30 |
| Monitor 8 | 0.006 | ppm | 15:30 |
| Monitor 9 | 0.006 | ppm | 15:30 |
| Monitor 10 | 0.000 | ppm | 15:30 |
| Monitor 11 | 0.007 | ppm | 15:30 |
| Monitor 12 | 0.005 | ppm | 15:30 |
| Monitor 13 | 0.005 | ppm | 15:30 |
| Wind Speed | 6 | mph | |
| Wind Direction | 270° | | |

**Odour Log (Thames) - Photocopies of log entries taken:**

**Thursday 3rd May 2018:**

**AM** – Warm with Sun and light cloud.
All OMU's in use.
**Observations:** "OM9 0.018 14:00-14:15 (15 mins). No other issues."

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| **Actions:** None noted.<br>**PM** – None noted.<br>**No OMU data noted.**<br>**Observations:** "No odour spikes. No odour issues."<br>**Actions:** None noted.<br><br>**Friday 4th May 2018:**<br>**AM** – Hot with Sun and light cloud.<br>All OMU's in use.<br>**Observations:** "OM9 0.016 16:31-16:42 (under 15 mins). No other issues."<br>**Actions**: None noted.<br>**PM** – Warm with Sun and light cloud.<br>OMU 11 out of use.<br>**Observations:** "Odour monitor 9 – 18:46/19:01 (0.021ppm) spike investigated. No odour identified."<br>**Actions:** None noted.<br><br>**Saturday 5th May 2018:**<br>**AM** – Hot with Sun and partial cloud.<br>All OMU's in use.<br>**Observations:** "No odour spikes. No other issues."<br>**Actions**: None noted.<br>**PM** – Warm with Sun and heavy cloud.<br>All OMU's in use.<br>**Observations:** "No odour issues on site. No spikes on Trends."<br>**Actions:** None noted.<br><br>**Sunday 6th May 2018:**<br>**AM** – Clear Sun.<br>All OMU's in use.<br>**Observations:** "No odour spikes. No other issues."<br>**Actions:** None noted.<br>**PM** – Warm with Sun and light cloud,<br>All OMU's in use.<br>**Observations:** "Monitor 9 – one spike peaked @ 0.021ppm 03:31-03:47. No odour identified." | |

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| **Actions:** None noted.<br><br>**Monday 7th May 2018:**<br><br>**AM** – Hot with clear Sun.<br>OMU - All OMU's in use.<br>**Observations:** "No odour issues found or reported, no spikes on Trends."<br>**Actions:** None noted.<br>**PM** – Cool with partial Sun and heavy cloud.<br>All OMU's in use.<br>**Observations:** "Monitor5 one spike 0.030ppm 03:07/04:07. Odour investigation carried out."<br>**Actions:** None noted.<br><br>**Tuesday 8th May 2018:**<br><br>**AM** – Hot with clear Sun.<br>All OMU's in use.<br>**Observations:** "No odour issues reported or found."<br>**Actions:** None noted.<br>**PM** – Sun with light cloud.<br>All OMU's in use.<br>**Observations:** "OM8 0.018 21:44-21:51 (7 mins.). No other issues."<br>**Actions:** None noted.<br><br>**Wednesday 9th May 2018:**<br><br>**AM** – No observations noted.<br>No OMU data noted.<br>**Observations:** "No odour spikes. No issues."<br>**Actions:** None noted.<br>**PM** – Cool with partial Sun, heavy cloud and rain.<br>All OMU's in use.<br>**Observations: "**No odour spikes. No other issues"<br>**Actions:** None noted. | |

**Sludge Dip Records**

| Date | West PSTs 1 | West PSTs 2 | West PSTs 3 | West Total | East PSTs | Grand Total |
|---|---|---|---|---|---|---|
| | All units in $m^3$ | | | | | |
| OMP limit | **500** | | | | | |
| 04/05/18 | 59 | 1903 | 783 | 2745 | 8590 | 11335 |
| 08/05/18 | 0 | 2072 | 450 | 2522 | 8259 | 10779 |
| 09/05/18 | 304 | 1383 | 450 | 2137 | 7591 | 9728 |

The sludge stock levels for the West side circular primary settlement tank 1 were **compliant** with the OMP trigger level (500$m^3$) for all of the dates for which data has been provided.

There are no limits for the East side primary settlement tanks as these are covered and odour controlled. Thames is required by the terms of the abatement notice agreed in 2005 to notify LBH on the next working day of any such exceedance and notify LBH within three working days of any appropriate remedial measure taken within three days.

**Digesters**

**Digesters 1-4** – Out of use (permanent) – noticeable quantity of water accumulated to the brim of these tanks which is thick with algae – requires draining.

**Digester 5** - in use – seal level approx. 4ft below coping stones – seal weak and bubbling.

**Digester 6** - in use – seal level approx. 4ft below coping stones – seal weak and bubbling – evidence of dried spill requiring clean-up.

**Digester 7** - in use – seal level approx. 4ft below coping stones – seal weak and bubbling vigorously – ongoing spill from tank requiring clean-up – Bell height high – requires draw down of biogas.

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| **Digester 8** – in use – seal level approx. 4ft below coping stones – seal weak and bubbling.<br><br>**Digester 9** - in use – seal level approx. 1ft below coping stones – seal weak and bubbling.<br><br>**Digester 10** – in use – seal level approx. 3ft below coping stones – seal weak and bubbling.<br><br>**Digester 11** - in use – seal level approx. 4ft below coping stones – seal weak and bubbling vigorously – evidence of dried spill from tank requiring clean-up.<br><br>**Digester 12** - in use – seal level approx. 2ft below coping stones – seal weak and bubbling.<br><br>**Digester 13** - out of use – empty and clean – contractor on site undertaking maintenance.<br><br>**Digester 14** - out of use – empty and clean – contractor on site undertaking maintenance.<br><br>**Digester 15** - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – evidence of dried spill from tank requiring clean-up.<br><br>**Digester 16** - out of use – empty and clean – contractor on site undertaking maintenance.<br><br>**Digester 17** - in use – seal level approx. 2ft below coping stones – good seal – stones in use.<br><br>**Digester 18** - in use – seal level approx. 2ft below coping stones – good seal – stones in use.<br><br>**Digester 19** - in use – seal level approx. 2ft below coping stones – seal weak and bubbling.<br><br>**Digester 20** - in use – seal level approx. 2ft below coping stones - seal weak and bubbling. | |

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| There was evidence of anti-foaming agent in use and TW advised that this is applied daily to all of the digesters that are operational.<br><br>3x full, 1x partially filled & 5x empty tanks of anti-foaming agent seen positioned throughout area. Installation of "auto-dosing" for anti-foam agent to all digesters operational – currently using 2-3 tanks weekly. | |
| **GENERAL**<br><br>**Sludge Screening House**<br><br>Shutter doors closed at time of inspection. No local odours.<br><br>**Imported Sludge**<br><br>Four imports of 35m³ daily for preceding seven days.<br><br>**Final Settlement Tanks East Side of Works**<br><br>The 8 circular tanks previously used as PSTs are now being used as final tanks (71-78). Tank 71 drained down and out of service.<br><br>**Skips**<br><br>2x open skips in use for transfer materials from mobile screening plant positioned in service road by FST's 71-78 (quantity of spilt sludge all along gulley alongside screener stretching all the way to SWT's – requires hosing down).<br><br>1x large open general waste skip as above.<br><br>1x empty small grit skips. – Ongoing spill from plant above – with ponded sludge/grit and rag hanging from plant – requires removal.<br><br>2x open skip in use for transfer materials from mobile screening plant | |

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| located by Pasteurisation Plant.<br><br>**East Side Screen House**<br><br>All doors closed.<br><br>**Pasteurisation Plant**<br><br>The pasteurisation plant is in service and fully operational.<br><br>**West side primary settlement tanks (PST)**<br><br>Rectangular PSTs – no issues<br><br>Circular PST's 9, 10, 11 & 12 all in use.<br><br>**West Side Aeration Lanes (Old)**<br><br>Battery C aeration feed channel approximately 60% obstructed in one channel – requires jetting.<br><br>**New Works (West Side)**<br><br>Feed Channel for Aeration Lanes 23-25 totally obstructed and Aeration Lane 21 approximately 75% obstructed – requires jetting.<br><br>Approximately 100% of tanks have again developed "fluffy" coverage across surface – worsened since previous inspection. Quantity of physical detritus in tank that has bypassed screener has decreased significantly. | |
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**Odour Control Unit (OCU) performance monitoring – (07/05/18)**

| Plant | Reading (ppm) | Action Level (ppm) | Compliant |
|---|---|---|---|
| Main pumping station inlet | No data | Unknown | Unknown |
| Main pumping station outlet | 0.00<br>0.00<br>0.00 | 0.2 | Yes |
| East OCU | 0.00<br>0.00<br>0.00 | 0.05 | Yes |
| West inlet OCU | 0.00<br>0.00<br>0.00 | 0.05 | Yes |
| Sludge reception inlet | No Data | Unknown | Unknown |
| Sludge reception outlet | 0.01<br>0,00<br>0.00 | 0.8 | Yes |
| Thickening plant inlet | No data | Unknown | Unknown |
| Thickening plant outlet | 0.00<br>0.10<br>0.10 | 0.6 | Yes |
| Transfer PS inlet | No Data | Unknown | Unknown |
| Transfer PS outlet | 0.00<br>0.00<br>0.00 | 0.6 | Yes |
| New West inlet (OCU 11) | 0.00<br>0.20<br>0.10 | 0.5 | Yes |
| OCU 12 (Pasteurisation Plant) | 0.10<br>0.10<br>0.00 | 0.5 | Yes |