



London Borough of Hounslow

Mogden Sewage Treatment Works

TW Site Inspection

| Date of inspection: 21 st February 2019 | |
|--|---------------------------------------|
| Attendees: Mr Steven Maunders and Mr Manzoor Hussein (Thames Water) | |
| LB Hounslow Observation | Thames Water Action / Response |
| <p><u>Storm Water Storage Tanks (SWST)</u></p> <p>Tank 1A – Tank empty and flushed – recently returned - approximately 40% of tank covered by grit and sludge – requires further flushing - Hopper 1 approx. 60% full - Hoppers 2 & 3 approx. 80% full requires draining/over-pumping.</p> <p>Tank 1B – Tank empty and flushed - approximately 10% of tank covered by grit – requires further flushing – Hoppers 1, 2 & 3 full to brim - requires draining/over-pumping.</p> <p>Tank 2A – Tank empty and flushed clean – Hoppers 1, 2 & 3, approx. 25% full - requires draining/over-pumping.</p> <p>Tank 2B – Tank recently returned – approx. 10% of tank covered by grit and sludge – requires further flushing - Hoppers 1, 2 & 3 approximately 50% full - requires draining/over-pumping.</p> <p>Tank 3A – Tank empty and flushed clean – Hopper 1 approx. 25% full – requires draining/over-pumping. Hoppers 2 & 3 drained down to bottom level.</p> | |

Tank 3B – Tank recently returned – approx. 75% of tank covered by grit and sludge – 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 approx. 25: full – in process of being returned – all Amajets in operation.

Tank 6B – Tank empty and flushed - approximately 20% of tank covered by grit and sludge – requires further flushing. – Hoppers 1, 2 & 3 full to brim - requires draining/over-pumping.

Tank 7A – Tank recently returned – approx. 75% of tank covered by grit and sludge – requires further flushing – Hoppers 1, 2 & 3 full – requires draining/over-pumping.

Tank 7B – Tank recently returned – approx. 60% of tank covered by grit and sludge – requires further flushing – Hoppers 1, 2 & 3 full – requires draining/over-pumping.

Tank 8A – Tank approx. 25% full – awaiting return.

Tank 8B – Tank approx. 25% full – awaiting return.

Feed Channel - The level of effluent in both feed channels was low – almost bottomed out – no local odours.

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 (although this contradicts Odour Log).

Odour Monitors

The odour readouts (H₂S) for all of the monitors, which were providing data at time of inspection:

| | | | |
|----------------|-------|-----|-------|
| Monitor 1 | 0.008 | ppm | 13:16 |
| Monitor 2 | 0.007 | ppm | 13:16 |
| Monitor 3 | 0.000 | ppm | 13:16 |
| Monitor 4 | 0.006 | ppm | 13:16 |
| Monitor 5 | 0.006 | ppm | 13:16 |
| Monitor 6 | 0.000 | ppm | 13:16 |
| Monitor 7 | 0.007 | ppm | 13:16 |
| Monitor 8 | 0.008 | ppm | 13:16 |
| Monitor 9 | 0.005 | ppm | 13:16 |
| Monitor 10 | 0.007 | ppm | 13:16 |
| Monitor 11 | 0.008 | ppm | 13:16 |
| Monitor 12 | 0.005 | ppm | 13:16 |
| Monitor 13 | 0.010 | ppm | 13:16 |
| Wind Speed | 3.5 | mph | 13:16 |
| Wind Direction | 210° | | 13:16 |

Odour Log (Thames) - Photocopies of log entries taken

Thursday 14th February 2019

AM – Cool – Sunny.

All OMU's in use.

Observations/Complaints: "OMS 3 Showing odours at end of shift."
Operational Issues/Causes: "Area checked no odours found. "None noted.

Actions: None noted.

PM – Freezing – Clear Night.

All OMU's in use.

Observations/Complaints: "OM3 spiking through the night."

Operational Issues/Causes: "No obvious odours."

Actions: None noted.

Friday 15th February 2019

AM – Warm - Sunny.

All OMU's in use.

Observations/Complaints: "OM3 showing odours 08:30-12:30."

Operational Issues/Causes: "Area checked."

Actions: None noted.

PM – Cold – Clear Night.

All OMU's in use.

Observations/Complaints: "OM1 0.024 @ 19:35-20:04, OM5 0.023 @ 22:36-22:51, OM3 0.035 @22:54-end of shift, OM5 0.025 @ 03:51-04:06, OM1 0.02 @ 00:44-01:01, OM8 0.019 @ 22:03-22:56, OM9 0.015 @ 00:11-01:07."

Operational Issues/Causes: "Area checked."

Actions: None noted.

Saturday 16th February 2019

AM – Cool – Cloudy.

All OMU's in use.

Observations/Complaints: "No obvious odours."

Operational Issues/Causes: "OCU 11."

Actions: None noted.

PM – Cold – Clear Night.

All OMU's in use.

Observations/Complaints: "OMS 3 showing odours at end of shift."

Operational Issues/Causes: None noted.

Actions: None noted.

Sunday 17th February 2019

AM – Warm - Sunny.

All OMU's in use.

Observations/Complaints: "Spike on OM 5."

Operational Issues/Causes: "PAS smelling."

Actions: "Area around PAS checked and hose in drain."

PM – Cold – Clear Night.

All OMU's in use.

Observations/Complaints: "OM 5 = 0.016 @ 21:52 – 22:52, OM 3 = 0.033 @ 04:10- end of shift."

Operational Issues/Causes: "PAS smelling – bottom road."

Actions: None noted.

Monday 18th February 2019

AM – Cool – Rain w/Sunny spells.

All OMU's in use.

Observations/Complaints: "No odour issue."

Operational Issues/Causes: None noted.

Actions: None noted.

PM – Cold – Clear Night.

All OMU's in use.

Observations/Complaints: "OM 5 Spiking often. OM 3 = 0.021 @ 04:10 – end of shift. OM 7 = 0.015 @ 22:50 – 23:48."

Operational Issues/Causes: "OM 5 is picking up odours from PAS stream. OM 3 picking up odours from West Inlet. Aram investigated area – no odour detected."

Actions: None noted.

Tuesday 19^h February 2019

AM – Cool – Sunny w/patchy clouds

All OMU's in use.

Observations/Complaints: "OM3 0.022ppm spiking throughout the whole shift."

Operational Issues/Causes: "No odour detected."

Actions: None noted.

PM – Cool – Clear night.

All OMU's in use.

Observations/Complaints: "Mon No.3 spiked 04:10 – now max

0.034ppm. OM No.2 spiked multiple times between 21:00-23:00 max 0.024ppm and 02:17 – 12:30 but 15 mins duration max 0.024ppm.”

Operational Issues/Causes: “No odour issues found or reported.”

Actions: None noted.

Wednesday 20th February 2019

AM – Cool – Sunny w/patchy Clouds.

All OMU’s in use.

Observations/Complaints: “OM 5 one spike 0.015ppm < 15 minutes.”

Operational Issues/Causes: “No odour issues on site.”

Actions: None noted.

PM – Cool – Overcast Night.

All OMU’s in use.

Observations/Complaints: “Mon No.3 spiked at 01:20 and 04:10 – now max 0.032ppm. Monitor No.5 multiple spikes throughout shift.”

Operational Issues/Causes: “Thickening sludge odour in the air.”

Actions: “PAS tech 1 checking around PAS plant etc.”

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 | | | | | |
| 14/02/19 | 0 | 1781 | 61 | 1842 | 3891 | 5733 |
| 15/02/19 | 0 | 1842 | 61 | 1903 | 5160 | 7063 |
| 18/02/19 | 640 * | 2216 | 679 | 3535 | 4564 | 8099 |
| 20/02/19 (1) | 223 | 3548 | 661 | 4432 | 7729 | 12161 |
| 20/02/19 (2) | 0 | 3233 | 328 | 3561 | 4378 | 7939 |

*There is an apparent exceedance of OMP levels as detailed above for 18/02/19 and for which notification was provided by TW(email 20/02/19) – however it has subsequently been determined that this is an error and the anomaly occurred as a consequence of “operator error” when the measurements were being undertaken by a new member of staff:

“The issue with the sludge stocks was that we noted higher than average readings on a couple of days and could not understand why we had any sludge levels in the round PST tanks when it’s almost always zero due to the constant attention given to these tanks. So we had a second lot of sludge dips done on the same day. It transpired that there was an error in the readings which we put down to new staff who had recently started. Clearly a training issue which we identified before further dips are taken. In conclusion there was no sludge in the round PST tanks known as West PSTs1 in the paperwork I sent off to you.”

Two further records were supplied for 20/02/19 and these are detailed in the table above.

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. Long term project currently initiated to bring these units back into service – will require significant investment.

Digester 5 - in use – seal level approx. 1ft below coping stones - seal weak and bubbling – evidence of recent spill – requires anti-foam and clean-up.

Digester 6 - in use – seal level approx. 2ft below coping stones – seal weak and bubbling – evidence of recent spill – requires anti-foam and clean-up.

Digester 7 - in use – seal level approx. 2ft below coping stones – seal weak and bubbling - Ongoing spitting/spill – requires anti-foam and clean-up – Bell height high – requires draw down of biogas.

Digester 8 – in use – seal level approx. 3ft below coping stones – seal weak and bubbling – evidence of recent spill – requires anti-foam and clean-up.

Digester 9 - in use – seal level approx. 1ft below surface of coping stones – seal weak and bubbling.

Digester 10 – in use – seal level approx. 2ft below surface of coping stones – seal weak and bubbling.

Digester 11 - in use – seal level approx. 2ft below surface of coping stones – seal weak and bubbling – evidence of recent spill accumulated under adjacent cabling ducting – requires anti-foam and clean-up.

Digester 12 - in use – seal level approx. 2ft below coping stones – seal weak and bubbling.

Digester 13 - in use – seal level approx. 7th below coping stones - tank bubbling vigorously - being “seeded” following recent maintenance.

Digester 14 - out of use – empty and clean – contractor on site undertaking maintenance.

Digester 15 - out of use – empty and clean – contractor on site undertaking maintenance

Digester 16 - out of use – empty and clean – contractor on site undertaking maintenance.

Digester 17 - in use – seal level approx. 3ft below coping stones – seal weak and bubbling.

Digester 18 - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – evidence of recent spill accumulated under adjacent cabling ducting – requires anti-foam and clean-up.

Digester 19 - in use – seal level approx. 2ft below coping stones – good seal.

Digester 20 - in use – seal level approx. 2ft below coping stones – seal weak and bubbling.

GENERAL

Sludge Screening House

All doors closed at time of inspection.

Imported Sludge

Estimated average of eight imports daily for preceding seven days.

Final Settlement Tanks East Side of Works

The 8 circular tanks previously used as PSTs are now being used as final tanks (71-78). Green Algae on 100% of surface of Tanks 73 & 74.

Skips

1x large enclosed skip and 1x 20 yard open skip & 2x (8 yard) open general waste skips located in Service Road by Storm Water Tanks.
1x partially filled small grit slips by Sludge Screening House.
1x open skip in use for transfer materials from mobile screening plant located by Pasteurisation Plant.
1x large enclosed grit/rag skips located by PST's 9-12 – elevated at one end to drain liquid from within as exceed safe carriage weight for vehicles – advised that management of fluids draining from within requires improvement as currently ponding within areas of broken hard-standing where currently located.

Pasteurisation Plant

Pasteurisation plant 4/7/9 currently out of service - All remaining pasteurisation plant in service and fully operational.

East Side Raw Sludge Screen House

Doors closed at time of inspection.

West side primary settlement tanks (PST)

Rectangular PSTs – no issues

Circular PST's 9, 10, 11 & 12 all in use.

West Side Aeration Lanes (Old)

Battery C aeration feed channel approximately 25% obstructed in one channel – requires jetting.

New Works (West Side)

Feed Channel for Aeration Lanes 21-24 clear and unobstructed –

jetting crew just finished working on area.

“Fluffy” coverage across surface returned across 100% of tank – thickened up so as to obscure internal dividing walls within tank.

Odour Control Unit (OCU) performance monitoring – (18/02/19)

| Plant | Reading (ppm) | Action Level (ppm) | Compliant |
|-------------------------------|----------------------|---------------------------|------------------|
| Main pumping station inlet | 0.03 0.02 0.02 | Unknown | Unknown |
| Main pumping station outlet | 0.00 0.00 0.00 | 0.2 | Yes |
| East OCU | 0.00 0.00 0.00 | 0.05 | Yes |
| West inlet OCU | 0.00 0.00 0.00 | 0.05 | Yes |
| Sludge reception inlet | No data | Unknown | Unknown |
| Sludge reception outlet | No data | 0.8 | Yes |
| Thickening plant inlet | No data | Unknown | Unknown |
| Thickening plant outlet | 0.00 0.00 0.00 | 0.6 | Yes |
| Transfer PS inlet | No Data | Unknown | Unknown |
| Transfer PS outlet | 0.00 0.01 0.00 | 0.6 | Yes |
| New West inlet (OCU 11) | 0.00 0.00 0.00 | 0.5 | Yes |
| OCU 12 (Pasteurisation Plant) | 0.00 0.00 0.00 | 0.5 | Yes |

