



Mogden Sewage Treatment Works

TW Site Inspection

Date of inspection: 27 th September 2018	
Attendees: Mr Steven Maunders (London Borough of Hounslow) and Mr Manzoor Hussain (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 - approximately 40% of tank covered by dried grit and sludge – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level.</p> <p>Tank 1B – Tank empty and flushed clean. Hoppers 1, 2 & 3 90% full – require draining/over-pumping.</p> <p>Tank 2A – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom.</p> <p>Tank 2B – Tank recently returned – whole tank covered by grit and sludge – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom.</p> <p>Tank 3A – Tank empty and flushed clean -- Hoppers 1, 2 & 3 drained down to 50% from bottom level (effluent water).</p>	

Tank 3B – Tank recently returned – whole tank covered by grit and sludge – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom.

Tanks 4A, 4B, 5A & 5B which are covered and odour controlled were all empty - unable to gauge condition as lighting system still not working. Window hatch removed to enable access for over-pumping – requires replacement.

Tank 6A – Tank empty and flushed - Hoppers 1, 2 & 3 drained down to bottom level.

Tank 6B – Tank empty and flushed - approximately 15% of tank covered by dried grit and sludge – requires further flushing. – Hoppers 1, 2 & 3 drained down to 40% - requires draining/over-pumping.

Tank 7A – Tank empty and flushed clean - approximately 30% of tank covered by dried grit and sludge – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level – some sludge remaining that requires flushing.

Tank 7B – Tank recently returned – whole tank covered by grit and sludge – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level.

Tank 8A – Tank empty and flushed clean. Hopper 1, 2 & 3 full of effluent water.

Tank 8B – Tank empty and flushed - approximately 10% of tank covered by dried grit and sludge – requires further flushing. Hoppers 2 & 3 empty. Hopper 1 & 90% full of effluent water.

Feed Channel - The level of effluent in both feed channels was low – approximately 10-15% - some grit and sludge – 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	0.009	ppm	10:58
Monitor 2	0.005	ppm	10:58
Monitor 3	0.003	ppm	10:58
Monitor 4	0.005	ppm	10:58
Monitor 5	0.006	ppm	10:58
Monitor 6	0.005	ppm	10:58
Monitor 7	0.006	ppm	10:58
Monitor 8	0.005	ppm	10:58
Monitor 9	0.007	ppm	10:58
Monitor 10	0.005	ppm	10:58
Monitor 11	0.000	ppm	10:58
Monitor 12	0.000	ppm	10:58
Monitor 13	0.000	ppm	10:58
Wind Speed	5	mph	
Wind Direction	222°		

Odour Log (Thames) - Photocopies of log entries taken

Thursday 20th September 2018

AM – Warm – Rain with Sunny Spells

All OMU's in use.

Observations: "No odour issues."

Actions: None noted.

PM – Warm - Rain with Sunny Spells.

All OMU's in use.

Observations: "No odour issues."

Actions: "East Inlet Area – Tankers offloading sludge imports throughout the night."

Friday 21st September 2018

AM – Cool – Rain with Sunny Spells.

All OMU's in use.

Observations: "Monitor 3 - Two spikes (16.08-16.23 0.018ppm) (16.54 - 17.08 0.035ppm)."

Actions: "Investigated area. PST'24/25 refilling. Roof repairs required to seal tank properly. OCU 11 running but chemical dosing is out of range."

PM – Cool – Overcast Night.

All OMU's in use.

Observations: "O/M3 Two spikes 21:06-21:20 0.036ppm 23:06-23:23 0.024ppm."

Causes: "PST 24&25 filling after being drained after being O.O.S. Holes in roof of tank."

Actions: None noted.

Saturday 22nd September 2018

AM – Cool - Rain.

All OMU's in use.

Observations: "OM3 Spiked 4 times during shift: 1105-1133 Max 0.023 ppm, 1150-1218 Max 0.032 ppm, 1320-1333 Max 0.033 ppm but < 15 mins duration, 1703-1720 Max >0.045 ppm."

Causes: "PST's 21-25 roofing requires repairs after high winds. OCU No.11 oxidation reduction potential (ORP) and Ph out of range-low."

Actions: "Reported to management via handover sheets."

PM – Cool – Rain.

All OMU's in use.

Observations: "om 3 - above trigger level for most of the night."

Causes: "OCU 11 - is outputting 29.2 ppb. Which is the most likely cause as it has no chemical treatment working. No other problems spotted. Also high flows due to storm conditions."

Actions: None noted.

Sunday 23rd September 2018

AM – Cool – Rain.

All OMU's in use.

Observations: "OM 3 spiking at start of shift 0600-0730 max 0.033 ppm, OM3 spiked 0830-0842 max 0.023 ppm."

Causes: "OCU 11 not performing."

Actions: "Asked day-works to check chemical dosing probes and calibrate, at end of shift 1800 now back in range and output from stack is improving."

PM – Cold – Clear Night.

All OMU's in use.

Observations: "om 8 = .02 @ 23.41 - 00.54."

Causes: "Digesters foaming"

Actions: "Anti-foamed."

Monday 24th September 2018

AM – Warm – Sunny with patch clouds.

OMU - All OMU's in use.

Observations: "OM9 0.018 9:00-9:13."

Causes: "13 mins duration."

Actions: None noted.

PM – Cool – Clear night.

All OMU's in use.

Observations: "OM5 21:30-22:49 0.024ppm OM9 21:03-21:16 0.017ppm."

Causes: "Area check around main drive no obvious odours found."

Actions: None noted.

Tuesday 25th September 2018

AM – Warm – Sunny.

All OMU's in use.

Observations: None noted.

Causes: "No odour issues."

Actions: None noted.

PM – Cold – Clear night.

All OMU's in use.

Observations: "OM 5 (21.18-22.18 0.015ppm)."

Causes: "Investigated area around monitor 5/main drive. No odour detected."

Actions: None noted.

Wednesday 26th September 2018:

AM – Warm - Sunny.

All OMU's in use.

Observations: None noted.

Causes: "No odour issues."

Actions: None noted.

PM – Cool – Clear Night.

All OMU's in use.

Observations: "OM 5 (19.33-19.48 0.015ppm) (20.03-20.18 0.016ppm) OM3 (04.07-04.22 0.021ppm)."

Causes: "Investigated area around monitor 5 no odour identified. OCU11 chemical dosing (ORP and PH) not in range."

Actions: "Defect raised for day ops to address chemical dosing issue."

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					
21/09/18	0	1176	0	1176	1416	2592
25/09/18	0	61	0	61	2418	2479
26/09/18	0	183	0	183	2081	2264

The sludge stock levels for the West side circular primary settlement tank 1 were **compliant** with the OMP trigger level (500m³) 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.

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. 3t below coping stones – seal weak and bubbling

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

Digester 7 - in use – seal level approx. 4ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas.

Digester 8 – in use – seal level approx. 4ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas.

Digester 9 - in use – seal level approx. 1ft below coping stones – seal weak and bubbling – Evidence of previous spill now dried requiring clean-up.

Digester 10 – in use – seal level approx. 1ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas.

Digester 11 - in use – seal level approx. 1ft below coping stones – seal weak and bubbling.

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

Digester 13 - out of use – empty and clean – contractor on site undertaking maintenance.

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

Digester 15 - in use – seal level approx. 1ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas.

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

Digester 17 - in use – seal level approx. 4ft below coping stones – good seal.

Digester 18 -- in use – seal level approx. 2ft below coping stones – good seal.

Digester 19 - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas.

Digester 20 - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas.

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.

3x full, 5x partially filled & 4x 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

Sludge Screening House

Shutter doors all closed at time of inspection.

Imported Sludge

Estimated average of twelve 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 empty open large skip, 1x empty large enclosed skip and 1x large open empty general waste skip covered with blue tarpaulin containing rag and grit positioned in service road by FST's 71-78.

1x large enclosed skip containing waste metals and 1x large open general waste skip located in Service Road by Storm Water Tanks.

1x enclosed general waste skip in Service Road by Power House

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.

3x 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.

West side primary settlement tanks (PST)

Rectangular PSTs – no issues

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

East Side Raw Sludge Screen House

Doors closed at time of inspection.

Pasteurisation Plant

Plant 2, 9 and 11 currently out of service. All remaining pasteurisation plant in service and fully operational.

West Side Aeration Lanes (Old)

Battery C aeration feed channel approximately 50% obstructed in one channel – requires jetting. Dried ponded sludge accumulated along kerbside of adjacent Service Road – requires clean-up.

New Works (West Side)

Feed Channel for Aeration Lanes 21-25 totally obstructed – requires

jetting. Contractor on site to commence jetting at time of inspection.

Condition of Tanks static since last inspection - “fluffy” coverage across surface remains across approximately 40% of surface area of tanks. Some quantity of physical detritus in tank still bypassing screener.

Odour Control Unit (OCU) performance monitoring – (24/09/18)

Plant	Reading (ppm)	Action Level (ppm)	Compliant
Main pumping station inlet	0.000 0.000 0.000	Unknown	Unknown
Main pumping station outlet	0.000 0.000 0.000	0.2	Yes
East OCU	0.000 0.000 0.000	0.05	Yes
West inlet OCU	0.000 0.000 0.000	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	0.000 0.000 0.000	0.6	Yes
Transfer PS inlet	No Data	Unknown	Unknown
Transfer PS outlet	0.000 0.000 0.000	0.6	Yes
New West inlet (OCU 11)	0.000 0.000 0.000	0.5	Yes

OCU 12 (Pasteurisation Plant)	0.000 0.000 0.000	0.5	Yes	
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