London Borough of Hounslow

Mogden Sewage Treatment Works

TW Site Inspection

Date of inspection: 22nd December 2016	
Attendees: Mr Steven Maunders (London Borough of Hounslow and Mr Dimitrios Kalmantis (Thames Water)	
LB Hounslow Observation	**Thames Water Action / Response**
<u>Storm Water Storage Tanks (SWST)</u> **Tank 1A** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 1B** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 2A** – Tank empty and flushed clean – approximately 10% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 2B** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 3A** – Tank empty and flushed clean - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 3B** – Tank empty and flushed clean – 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 clean – approximately 10% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 6B** – Tank empty and flushed clean – approximately 20% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Tank 7A** - Tank empty and flushed clean – approximately 10% of tank covered by grit – requires further flushing - Hoppers 1 & 2 full - require over-pumping– Hopper 3 drained down to bottom level. **Tank 7B** – Tank has recently been returned – whole tank requires further flushing as completely covered with grit/sludge – Hoppers 1, 2 & 3 drained down to bottom level. **Tank 8A** – Tank empty and flushed clean – approximately 15% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 full and required over-pumping. **Tank 8B** – Tank empty and flushed clean – approximately 10% of tank covered by grit – requires further flushing - Hoppers 1, 2 & 3 drained down to bottom level. **Feed Channel** - The level of effluent in both feed channels was very low – almost bottomed out – remaining sludge requires flushing – no local odour.	

Odour Monitors

The odour readouts (H_2S) for all of the monitors, which were providing data at time of inspection (approx. 13:30):

Monitor 1	0.007	ppm
Monitor 2	0.005	ppm
Monitor 3	0.000*	ppm
Monitor 4	0.000	ppm
Monitor 5	0.014	ppm
Monitor 6	0.003	ppm
Monitor 7	0.003	ppm
Monitor 8	0.004	ppm
Monitor 9	0.005	ppm
Monitor 10	0.005	ppm
Monitor 11	0.006	ppm
Monitor 12	0.006	ppm
Monitor 13	0.104*	ppm
Wind Speed	5	mph
Wind Direction	202°	

time log displaying 05:39 – OMU's faulty – require repair/replacement.

Complaints

The Council directly received two complaints by telephone in the preceding week.

On 15th December at 15.26 a complaint was received from a resident of Worton Road, Isleworth located to the north west of the site and closest to the area where the works had been extended and the resident advised that they had been unable to open their windows due to the odour from Mogden. The duty Officer called the resident back who advised that a visit was unnecessary at the odour has dissipated. The

Officer advised them that he had been earlier in the day and undertook a full inspection of the site and while on site took live readings from the on-site odour monitors at 13:35 and observed no excessive odour. There was a faint odour across the site and the air was foggy and still. None of the storm tanks were in use on this day though the hoppers to uncovered tanks 1a, 2b,3a, 6b,7a,7b,8a and 8b needed over pumping. One of the digesters was gassing at the time of the inspection. The odour log for that day showed that on the AM shift it was cool and all monitors were in use. Monitor 5(located in the centre of the works) showed three spikes under 15 mins and upon investigation it was found that a manhole venting on main drive was likely to be the reason for the spikes. Given the distance to the receptor it is more likely that any off site odour was due to the cumulative effect of numerous low level odour sources combined with very low winds speed and high humidity / ground fog it has not been possible on this occasion to identify the source of odour complained of by the resident. On 15th December a complaint was received from a resident of Ellerdine Road(approximately 350 metres West of the Works) at 17.24 complaining of a very strong smell from Mogden. The duty Officer called the resident and discussed the matter with them though no visit was made. The Officer advised them that a full inspection of the site was undertaken earlier that day and while on site took live readings from the on-site odour monitors at 13:35 and observed no excessive odour. There was a faint odour across the site and the air was foggy and still. None of the storm tanks were in use on this day though the hoppers to uncovered tanks 1a, 2b,3a, 6b,7a,7b,8a and 8b needed over pumping. One of the digesters was gassing at the time of the inspection. The odour log for that day showed that on the AM shift it was cool and all monitors were in use. Monitor 5(located in the centre of the works) showed three spikes under 15 mins and upon investigation it was found that a manhole venting on main drive was likely to be the reason for the spikes. Given the distance to the receptor it is more likely that any off site odour was due to the cumulative effect of numerous low level odour sources combined with very low winds speed and high humidity / ground fog and it has not been possible on this occasion to identify the source of odour complained of by the resident.	

The Council received no complaints by email from MRAG. Thames Water controller advised that they had received no direct complaints in the previous week. **Odour Log (Thames) - Photocopies of log entries taken:** **Thursday 15th December 2016:** **AM** – Cool. All OMU's in use. **Observations:** "Monitor 5 – three spikes under 15 mins, Manhole venting on Main Drive." **Actions:** None noted. **PM** – No weather observations noted. All OMU's in use. **Observations:** "Odour monitor No.5 spiked once. Vent on Main Drive smelly." **Actions:** None noted**.** **Friday 16th December 2016:** **AM** – Heavy cloud. All OMU's in use. **Observations:** "No odour issues. Nothing of note on trends. 13 o/m u/s	

0.104." **Actions:** None noted. **PM** – Cold. All OMU's in use. **Observations:** "No odour detected on trends, No odour detected whilst out around site. OM13 – stuck reading 0.104 ppm." **Actions:** None noted. **Saturday 17h November 2016:** **AM** – Cool with heavy cloud. All OMU's in use. **Observations:** "O/M 5 spiked 3 times during day but all less than 15 mins." **Actions:** None noted. **PM** – Cold. All OMU's in use. **Observations:** "No odour issues. No spikes on trends." **Actions:** None noted. **Sunday 18th November 2016:** **AM** – Cool.	

All OMU's in use. **Observations:** "Monitor 5 – one spike less than 15 mins. 0.016 ppm. Monitor 8 – one spike less than 15 mins. Max 0.016 ppm." **Actions:** None noted. **PM** – Cool with heavy cloud. All OMU's in use. **Observations:** "Monitor 5 – one spike under 15 mins. Max 0.016 ppm. No other odour issues." **Actions:** None noted. **Monday 19th December 2016:** **AM** – Cold with sun and heavy cloud. OMU 12 offline - All other OMU's in use. **Observations:** "No odour issues, No.12 monitor flat-lining." **Actions:** "Reported." **PM** – Cold. All OMU's in use. **Observations:** "o odour spikes on trends. No odours detected whilst out on site." **Actions:** None noted. **Tuesday 20th December 2016:**	

AM – Cool with sun and heavy cloud. All OMU's in use. **Observations:** "No odour issues on trends. Nothing found whilst around site." **Actions:** None noted. **PM** – No weather observations made. All OMU's in use. **Observations:** "No odours spikes." **Actions:** None noted. **<u>Wednesday 21st December 2016:</u>** **AM** – Cool with sun and heavy cloud. All OMU's in use. **Observations:** "No odour spikes." **Actions:** None noted. **PM** – Cool with sun and heavy cloud. All OMU's in use. **Observations:** "No odour spikes." **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**					
16/12/16	0	1449	0	1449	4088	5537
19/12/16	**0**	2446	0	3142	0	3142
21/12/16	0	1261	0	1261	5091	6352

The sludge stock levels for the West side circular primary settlement tank 1 were **compliant** with the OMP trigger level (500m^3) for 16/12/16 and 21/12/16 – however from the data provided this was breached on 19/12/16. 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.

Sludge Screening House

Shutter doors closed at time of inspection – no local odours – additionally one mobile screeners in use (located on road between Digesters and Sludge Screening House) transferring existing stocks between tanks – odour suppression unit in use alongside screener – no noticeable localised odour.

Imported Sludge

Date	No. (35 m^3)
15/12/16	14
16/12/16	12
17/12/16	0
18/12/16	7

19/12/16	15
20/12/16	22
21/12/16	15

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. 1ft below coping stones – seal weak and bubbling – dried spill around tank requires cleaning.

Digester 6 - in use – seal level approx. 3ft below coping stones – seal weak and bubbling – dried spill around tank and ongoing spill requires cleaning.

Digester 7 - in use – seal level approx. 3ft below coping stones – seal weak and bubbling - spitting vigorously – Bell height high – requires draw down of biogas.

Digester 8 - in use – seal level approx. 3ft below coping stone – seal weak and bubbling – Bell height high – requires draw down of biogas.

Digester 9 - in use – seal level approx. 3ft below coping stones – seal weak and bubbling - spitting vigorously – Bell height high – requires draw down of biogas.

Digester 10 - in use – seal level approx. 2ft below coping stones – seal weak & bubbling – Bell height high – requires draw down of biogas.

Digester 11 - in use – seal level approx. 1ft below coping stones – seal weak and bubbling – dried spill around tank requires cleaning.

Digester 12 - in use – seal level approx. 2ft below coping stones – seal weak and bubbling – evidence of recent wet spill requires cleaning.

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

Digester 14 - in use – seal level approx. 4ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas. **Digester 15** - in use – seal level approx. 1ft below coping stones – seal weak and bubbling – Bell height high – requires draw down of biogas - dried spill around tank requires cleaning. **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. 3ft below coping stones – seal weak and bubbling. **Digester 19** - out of use – empty and clean – contractor on site undertaking maintenance. **Digester 20** - in use – seal level approx. 3ft below coping stones – seal weak and bubbling. 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. 7x full, 2x partially filled & 5 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 **Final Settlement Tanks East Side of Works** The 8 circular tanks previously used as PSTs are now being used as final tanks (71-78) all are back in service following maintenance works to scrapers.	

East Side Screen House 1x large doors open – contractors on site working on screen (no curtain door in use) – All other doors closed. 1x odour suppression unit located outside screen house – not in use at this time. 2x tankers on site pumping out. 3x large open skip skips by FST's 71-78 – 2 empty (brand new) 1x containing grit & covered by covered with "heavy duty" yellow tarpaulin. **Other Skips** Ix full small grit skip on North/East of site by grit house – covered with "heavy duty" yellow tarpaulin and 1x partially filled – large ongoing spill – with ponded sludge/grit and rag hanging from plant above – requires immediate clean-up (action taken by TW whilst on site). On the West side there were no skips. **Pasteurisation Plant** The pasteurisation plant is in service and fully operational. **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 50% obstructed –	

requires jetting.

New Works (West Side)

Feed Channel for Aeration Lanes 20 - 25 approximately 50% obstructed – requires jetting.

Whole of tanks have “fluffy” coverage across 100% of tanks and spilling onto top of retaining walls (reduced since last inspection but still significant) – with some areas developing a thick crust – Sprinklers in use are not breaking surface. Large quantity of physical detritus in tank that has bypassed screener.

Section 106 agreement

There have been no breaches of the s106 agreement in the last week.

Odour Control Unit (OCU) performance monitoring – (21/12/16)

Plant	Reading (ppm)	Action Level (ppm)	Compliant
Main pumping station outlet	0.1(av)	0.2	Yes
East OCU	0.009(av)	0.05	Yes
West inlet OCU	0.000(av	0.05	Yes
Sludge reception outlet	0,01(av)	0.8	Yes
Thickening plant outlet	0.02(av)	0.6	Yes
Transfer PS outlet	0.000(av	0.6	Yes
New West inlet (OCU 11)	0.000(av	0.5	Yes
OCU 12 (Pasteurisation Plant)	0.0002(a	0.5	Yes