

Stratfield Mortimer Parish Council

Full Council 10/10/2024

Foudry Brook

Background and Responses from Thames Water

BACKGROUND

Discharges into Foudry Brook from Mortimer Sewage Works were last discussed by the Council at the meeting on 13th June 2024 (Agenda item 24/03/09). The paper for that meeting gave the history and correspondence up to 6th June. At that time the Council was awaiting a response from Thames Water to its EIR of 15th April 2024. Thames Water had deemed the request to be complex and claimed another 20 days to respond and their response was due by 12th June. It arrived late that evening. Cllr Dennett verbally outlined the response to the Council on 13th June and stated it was completely inadequate. It was agreed that the response to Thames Water be delegated to Cllr Dennett and the Clerk.

That reply was sent to Thames Water on 29th July as an email stating

“Stratfield Mortimer Parish Council is dissatisfied with your response and therefore requests an internal review. The attached document states our reasons to each of your responses and highlights the information we require.”

The attached document was ‘ **Thames Water Internal Request 29-07-2024**’ and accompanies this paper. The document took the Thames Water responses to our EIR request (our initial requests in bold black text and their responses in plain black text) and added in red text the reasons we were dissatisfied with their responses. The assistance of Mr Stewart Child in preparing this response was much appreciated.

Thames Water replied the same day stating:

Dear Ms Hannawin

Thank you for your e-mail in which you requested an internal review of our response to your recent request for information.

The Head of Data Rights will be reviewing your request.

Under the regulations we have 40 working days to finalise this review and provide you with the outcome and we will provide a response no later than 24 September 2024.

If you have any questions or concerns in the meantime, please don't hesitate to get in contact with us.

Thames Water's reply from Emma Young (Head of Data Rights) was received on 24th September and is given below under the heading “**The Review by Thames Water**”.

Part of our requests were for a visit to the Sewage works and for a representative to attend a Parish Council meeting. This was handled separately from the EIR request and this was reported at the September Full Council meeting. Minute 24/062 states:

“The response from Thames Water to the most recent Environmental Information Regulation (EIR) Request is due back on the 24 September. In the meantime, Thames Water’s Healthy Rivers Community Manager, Paul Hampton, has arranged for a site visit for the Council to Mortimer Sewage Treatment Works, along with members of their operations team, at 2:30 on 20 May 2024 to see the upgraded works. In addition, Mr Hampton has agreed to attend the Council meeting on 14 November 2024. Councillor questions should be sent to the office in order that these may be submitted to Thames Water ahead of the meeting. The Clerk shall request details of the upgrade from Mr Hampton.”

THE REVIEW BY THAMES WATER

Our Ref: EIR-24-25-050

Environmental Information Regulation (EIR) Request – Internal Review

Dear Ms Lynn Hannawin,

I am writing to you in response to your request for an internal review along with a set of new questions of EIR-24-25-050 received on 29 July 2024.

Just for clarity, the EIR process is as follows: Thames Water receives a request for environmental information, and we provide a response. If the requestor is not satisfied that we have provided the requested information they have the option of requesting an internal review. If they are still unsatisfied, they can approach the ICO for an independent view.

For this reason, I have split out your “new” questions into a separate EIR response. If I dealt with this within the internal review process, then this would take away your right to an internal review on those questions.

There were an extensive number of new questions in your last communication and I’m hoping to get the response to these by the end of the week.

I hope that is acceptable to you and my sincere apologies for the delay – the information you have requested is complex, has included a number of technical experts and I want to ensure it’s right before sending it out. *(Note added by MD: this was received on 30th September and is below under the heading Further Response from Thames Water).*

I have also confirmed with my colleague Paul Hampton that a council meeting and site visit next year has been arranged.

Internal Review

1. Why have discharges occurred in 2021, 2022 (and probably in 2023) when FFT has not been reached?

We do not hold records for individual spill events, however Stratfield Mortimer has been identified as one of our priority sites after an investigation into potential site performance concerns. The root cause analysis identified design limitations as a potential cause, however there will be multiple reasons which contribute to discharges.

2. Can you explain the decreases in mean daily flow in 2021 and 2022 compared to earlier years?

There were some significant data gaps in the 2021 data due to a telemetry issue. (Where it has been recorded as 0 litres/second, these represent periods of missing data). 2022 was a drought year and which will affect the daily flow.

We believe that these account for your findings.

3. What is the full scope of the upgrades you are conducting at this site? You have not provided more details as requested.

We initially provided the details of the upgrades relating to storm discharge as that was the focus of your request. The details of the other improvements are below:

The following scope items will be completed as part of the 2024 upgrade:

- Replace the duty/standby storm return pumps with variable speed driven pumps sized for a flowrate range of 6 - 14 l/s. The existing storm return pumps are reported to be oversized resulting in recirculating of storm returns back to the storm tank.
- Provide a new PLC/HMI based control system for control of the storm return pumps.
- Modify the interstage PS pump control to reduce the normal maximum pump rate to 47.4 l/s with a view to ensuring the PST weir is not drowned and water level in the PST is below the level of the scum boards. This can be achieved by running the pumps at an appropriate frequency. To facilitate short term peaks in flow from the roughing filters (e.g. when the High Level PS runs) pumped flow should then increase to the maximum the pumps can achieve (circa 60 l/s) when a new Max Pump Output level setpoint in the wet well is exceeded.
- Replace the duty/standby Low Level Return Pumps with Fixed Speed pumps sized for a flowrate of 12.4l/s. The sources of liquor are humus tank de-sludge (from 2 no. HSTs), sludge holding tank decant and site drainage from the chemical delivery banded area.
- Re-instate the High Level Pump Station and confirm whether the rising main has been re-routed to downstream of the flow to treatment flume or whether it is still returned to just upstream of the inlet screen which is upstream of storm separation. Some record drawings indicate that this re-routing has been carried out but the pipework was not visible on site. The pump is not currently operational so it has not been possible to confirm. If the High Level Pumping Station is still returned upstream of storm separation re-route the pipework so that it is returned to the same location as the Low Level Pumping Station.
- Install a new duty only PST Scum Pump to transfer scum from the PST to the sludge holding tank via the existing PST de-sludge pump delivery line.
- Install a new Low Level & Storm MCC to replace the existing "Main MCC" (housed in the Low Level PS kiosk) and Storm MCC. The new MCC shall be housed in a new kiosk

located next to the existing Storm MCC kiosk. This kiosk shall also house the new PLC/HMI control system for the storm return pumps.

The work required for the site to hit all government targets by 2030 has not yet been fully detailed.

4. We fail to understand why you are unable to provide an estimate of the perceived benefits of the proposed upgrades. We would have thought that the justification for the upgrades would be based on a quantification of the upgrade benefits. We have reiterated what we would like clarified below.

The upgrades for 2024 will improve the number of storm discharge events and enhance flow control before spills occur.

In addition to the above, one of the benefits will include the ability to empty storm tanks more quickly which will ensure the storm tank capacity is available sooner.

At this stage we do not have calculations regarding the percentage decrease that is expected as there are a number of improvements taking place onsite at the same time and the outcomes will be affected by the weather conditions.

5. There is no comment on ‘the ability to treat volumes of incoming sewage.’ Neither is there any comment on targets. Therefore, would you please clarify whether the work to be done in 2024 will meet the targets for 2030 or whether the 2024 work is an interim measure with more work to be done later.

The current work is not linked to the Storm overflow reduction plan targets of 2030.

It is currently intended that this site will meet government targets for 2030 however the full scope and details will not be finalised until we receive the final determination from OFWAT.

More information can be found here:

<https://www.thameswater.co.uk/about-us/performance/river-health/investing-in-river-health>

This concludes our response to your EIR-24-25-050.

If you are dissatisfied with the outcome of the internal review, you can complain to the Information Commissioner’s Office (ICO).

Yours sincerely,

Emma Young
Head of Data Rights

FURTHER RESPONSE FROM THAMES WATER

A further response from Emma Young was received on 30th September. The text is below. There were two documents attached:

Mortimer TDV MCERT CERTIFICATE and **New configuration at the inlet works of Mortimer September 2024**

30 September 2024

Our Ref: EIR-24-25-342

Environmental Information Regulation (EIR) Request

Dear Mr Hannawin

Please see our response below to your request. As explained previously, I do apologise for the delay in responding to this request. Your questions were extensive, and it took us some time to gather all the information. I'm aware your councillors will be looking at this in their own time so I hope our delay has not put them to additional trouble.

The technical teams I spoke to thought you would benefit greatly from the meetings and site visits which have been arranged as its often easier to see these things working rather than being described.

Your Request & Our responses:

Thames Water have considered your request under the Environmental Information Regulations (2004) (EIR).

- 1. It is our understanding that Water Companies are required to be able to treat flows up to a minimum of 3 Dry Weather Flow DWF. Is the treatment works at Mortimer capable of doing this as it would appear, possibly not?**

3DWF (or 3 x DWF) is not a requirement for the flow to treatment that a works has to treat. The current design requirements are (for sites with storm storage tanks) for $3PG+3E+I_{max}$ to be treated (where P = domestic population, G = per capita flow, E = trade effluent flow & I_{max} = maximum level of infiltration flows into the network).

While this is colloquially known as 3DWF, it is not actually the same as the infiltration component doesn't have the 3 x multiplier assigned.

The permitted flow to full treatment that Mortimer should treat is 35 l/sec, and this would have been established and set in the permit when the works was last upgraded, based on the above $3PG+3E+I_{max}$ formula.

- 2. What do Thames Water consider to be the current estimate of DWF?**

Currently the 10th percentile is used to assess Dry weather flow. This was recorded as 774.9m³ between September 23 to August 2024 against a consent of 1904m³.

Our last submission to the Environment Agency showed the tenth percentile of 996m³ from January 2023 to December 2023.

- 3. How much storage (volume) is available to hold back untreated effluent when the FFT has been exceeded?**

The permit requires minimum of 364m³. A 2022 survey using models (drawings & on site measurement) indicated a storm tank volume of 384m³.

- 4. How are discharges of treated effluent currently measured?**

Treated effluent is recorded by the MCERTS monitor installed after the humus tank. This data produces the TDV (Total daily volume) records for the site.

For clarity, we note above that you mention “discharges” of treated effluent. These are not considered discharges as treated effluent is continuously discharged from all Sewage treatment works.

Please see some further information below about treated effluent which you may find useful:

Treated effluent is the resultant water discharged from a STW following the full sewage treatment process. The treated effluent from any STW has to meet composition standards defined within the given STW’s Treated Effluent Discharge Permit. The treated effluent from any STW has to meet strict quality and volume limits which are set by the Environment Agency and defined within the given STW’s Treated Effluent Discharge Permit. These conditions are set to ensure that there is no adverse effect on the river quality.

Differently, however, storm discharges are a separate type of discharge and only occur when a STW receives more sewage than it is able to treat and store. Not all STWs have storm discharges. Storm discharges do not pass through the whole treatment process (unlike treated effluent) and are not continuous like treated effluent is.

Further information on storm discharges can be found at <https://www.thameswater.co.uk/about-us/performance/river-health/storm-discharge-and-event-duration-monitoring>

This video is also helpful in explaining the process:

<https://www.thameswater.co.uk/about-us/community/education/the-sewage-treatment-process>

5. When was the last MCERTS inspection and what were the main conclusions.

The TDV monitor was recently recertified as part of 5-year programme on 11 June 2024. Please find attached the MCERT inspection certificate.

6. Would you please be more specific and provide drawings and/or schematic diagrams to explain how the works are configured?

We do not hold a diagram which reflects the current set-up of the site however one is being drawn up to reflect the improvements which have been made on site. I have advised Paul Hampton that you would be interested in viewing these once they are complete.

7. In addition, the next column ‘High Spill Frequency Action Taken’ in 2021 reported ‘Under Investigation’ and in 2022 and 2023 reported ‘Scheduled’. Would you please clarify when this work is likely to be completed?

A review of the overall system was undertaken, including equipment Process, Mechanical, Electrical, Instrumentation, Control and Automation (MEICA), and Civil capacities checks. The current work being undertaken is as a result of the investigations which took place. It is expected to be completed in October/November 2024 subject to no delays occurring.

As previously mentioned, further scoping work is required to meet the 2030 government targets and will be finalised

8. Is the function of the pump to transfer untreated effluent from overspill tank to treatment?

Yes

9. Would you please explain how the hydraulic controls are configured.

The current hydraulic controls are set out below and will be subject to change as the project is delivered.

Storm flows from the Inlet Works gravitates to 1 x circular Storm Tank. This Tank has a Mixer installed that operates when the level in the Tank drops. The Mixer consists of a Hydrostal pump that draws sewage from the base of the Storm Tank and pumps it back into the base of the tank again via a “y” shaped pipework to aid in the removal of Solids from the Storm Tank by the Storm Return pumps.

The Storm Return Pumping Station has 2 x Hydrostal pumps that pump the sewage from the Storm Tank back up to the Inlet Works for treatment when conditions allow.

Note: Our teams also added that this may be easier to see this operating during a site visit once the site upgrades have been completed.

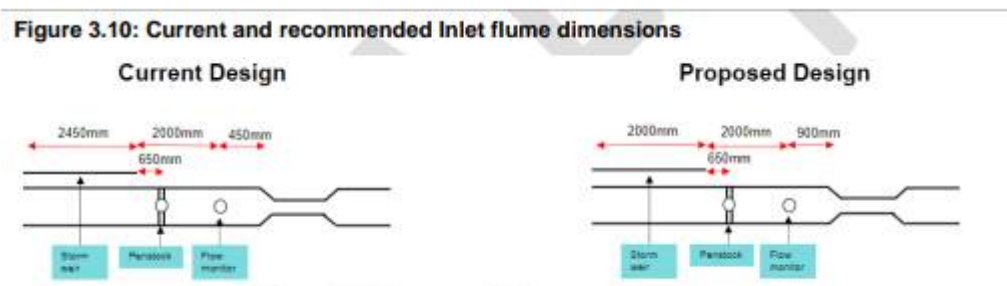
10. Pumps are mentioned here but earlier you say they do not have them. Are these pumps to pump from overspill storage back to treatment? Are they currently functioning?

See the above answer.

11. Where is the current EDM monitor located? What sort of sensor is it (make and model). Where are the data logged?

A Technolog Cello IS unit level recorder (ultrasonic) is mounted on the storm tank. The device logs the data and sends data via 2G to regional SCADA system (TW telemetry infrastructure that monitors, reports and controls industrial processes from around the business, including works sites) either on change of state or every 24 hours if no activations recorded.

12. Please provide us with drawings of flumes, both current and proposed.



Where will the MCERTS level sensor be installed and does this replace any current sensor?

Part of the scope of the analysis is to install a new MCERT flow measurement flume and MCERT compliant level sensor for FFT flow recording and reporting back to telemetry. This includes modifying the existing flume approach channel length to meet the necessary MCERT requirements.

It was found that the ultrasonic flow sensor would need to be 900mm upstream of the flume and a distance of 2000mm would be required between the flow sensor and the penstock controlling the flow through the flume. This length is required to ensure flow measurements are accurate. To meet these requirements the flow sensor and penstock would need to be moved 450mm upstream, and the storm weir before the penstock would need to be shortened from 2450mm to 2000mm. These dimensions were computed using BS ISO 4359:2013 Flow measurement structures – *Rectangular, trapezoidal and U-shaped flumes* British Standards.

No modifications to the actual flume itself were found to be required. During the site visit the flume appeared to be in reasonable condition. However, it is recommended that the dimensions of the flume should be confirmed during the site works, and if it is found to not be of the stated dimensions, some minor repairs may be necessary to restore the required dimensions.

14. Is your answer of capacity at current FFT Value relevant to that upgrade? Or is a simple statement that that is what FFT should be?

Once the upgrades are complete, we will have sufficient capacity

This concludes our response to your request.

We do our best to provide you with the information you have requested. If you feel we have omitted any data or misunderstood your request in any way, then please let us know. If you expand your request this will be dealt with as a new enquiry.

Email from Emma Young 3rd October.2024

This helpfully sent a further document: **Mortimer MCERTS TDV REPORT**

MDD 3rd October 2024