

# Thames Water made at least 8,499 illegal sewage discharges between 2021 and 2025

Peter Hammond, Vaughan Lewis, Ashley Smith, Geoff Tombs

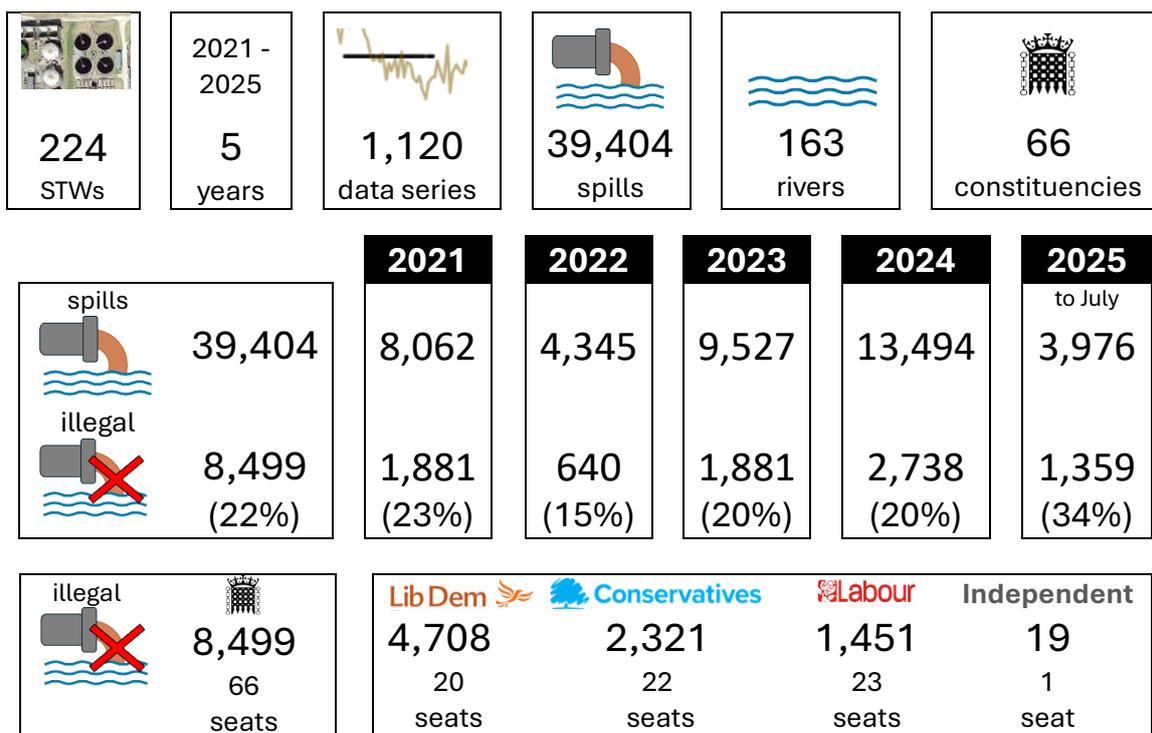
WASP (Windrush Against Sewage Pollution) February 22<sup>nd</sup> 2026

## SUMMARY

Potential lenders providing a lifeline to ailing water company Thames Water have demanded that the company be **spared prosecution for illegal sewage spills** in order to ensure future funding. The **4-year** investigation of all water companies by the EA is yet to report despite a focus on **2020** alone.

WASP's illegality analyses have previously been acknowledged in the Environmental Audit Committee's Report "**Water Quality in Rivers**" of 2022 and by Ofwat in its 2025 enforcement actions against **Anglian, South-West, Thames, Yorkshire** and **Wessex** Water. In 2023, WASP gave evidence to the Welsh Affairs Committee about **Welsh Water**.

WASP's latest analysis looks at illegal spills at 224<sup>1</sup> of Thames Water's STWs between 2021 and 2025.



THE TEN MOST						
OFFENDING STWs		VICTIMISED RIVERS		VICTIMISED CONSTITUENCIES		
Name	Illegal spills	*chalk stream Watercourse	Illegal spills	Constituency	Illegal spills	Party
South Moreton	287	Pang*	383	Witney	1231	Lib Dem
Faringdon	271	Mill Brook	287	Reading West & Mid Berks	669	Labour
Hampstead Norreys	261	Faringdon Stream	271	Didcot and Wantage	546	Lib Dem
Appleton	249	Bourne	252	Henley and Thame	515	Lib Dem
Markyate	237	Marcham Brook	249	South Cotswolds	468	Lib Dem
Chertsey	224	Trib Of Cherwell	241	Bicester and Woodstock	444	Lib Dem
Winterbourne	178	Windrush	239	Harpenden & Berkhamsted	364	Lib Dem
Oxford	167	Ver*	237	Newbury	323	Lib Dem
Fairford	165	Mole	230	East Wiltshire	296	Conservative
Kingsclere	165	Kennet*	227	Banbury	288	Labour

In May 2025, when questioned by MPs<sup>2</sup>, Sir Adrian Montague, Chair of Thames Water, **admitted** that £1.1 billion allocated for more than 100 improvement projects were used to plug cash-flow shortfalls

<sup>1</sup> Thames Water has about 250 STWs with statutory requirements governing permitted storm sewage discharges.

for day-to-day company operation and that the upgrades had been postponed, many for at least 5 years. Indeed, Thames Water’s continuing insolvency issues and the illegality findings here are strong grounds for 2 of the 4 possible criteria for invoking a **Special Administration Regime (SAR)**.

WASP concludes that over the past 5 years at these 224 STWs, Thames Water has

- made 40 thousand sewage spills with an annual illegality rate of between 15% and 34% (mean 22%)
- increased sewage flow at some STWs to reduce spill frequency – potentially lowering treatment quality
- deferred STW upgrades to benefit shareholders and service debt, and so guaranteeing future illegal spills
- exaggerated upgrade costs for STWs without Ofwat’s detailed scrutiny
- submitted shoddy data to the EA that undermine regulatory enforcement

Moreover, the EA has underperformed in its acquisition and analysis of regulatory data; Ofwat’s annual environmental performance assessment is often based on incomplete/inaccurate spill data; and, DEFRA is mistaken in using spill frequency as a metric of reduced sewage pollution of watercourses.

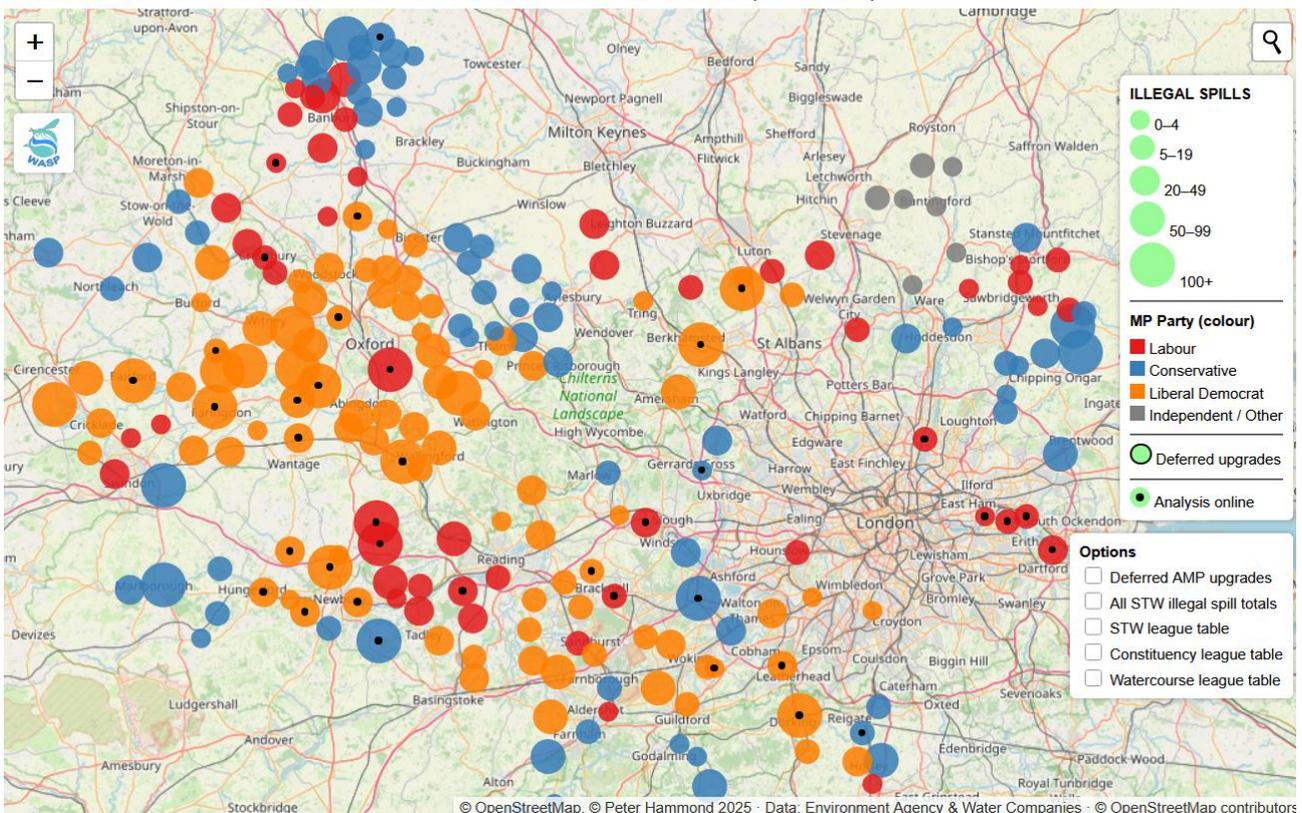
**WASP’S ILLEGAL SEWAGE DISCHARGE MAP**

The map below offers online access to WASP’s findings. The size of a marker reflects the total number of illegal sewage spills by a STW as detected by reliable evidence.

Marker colour reflects party affiliation of constituencies where STW outfalls are located –may be different from location of STW e.g Oxford STW is in Didcot and Wantage but outfall is in Oxford East.

A “black” spot indicates online availability of more detailed analysis. A “black” outline highlights those STWs included in Thames Water’s £1.1 Billion of deferred upgrade projects if the option is selected.

**ILLEGAL SEWAGE SPILLS AT THAMES WATER SEWAGE WORKS (2021-2025)**



**Figure 1:** WASP’s analysis map of illegal sewage spills at 224 Thames Water STWs from 2021 to July 2025

URL: <https://www.peter-hammond.com/TWMAP.html>

# CONTENTS

- **HOW TO USE WASP'S ILLEGAL SEWAGE SPILL MAP**
- **DATA AND METHODOLOGY**
- **MAIN FINDINGS**
  - Illegal sewage discharges by Thames Water
  - STWs with most illegal spilling
  - Westminster Parties & Constituencies most exposed to illegal spilling
  - Watercourses/chalk streams most exposed to illegal sewage spills

## EXAMPLES OF DETAILED ANALYSIS (as of February 15<sup>th</sup> 2026)

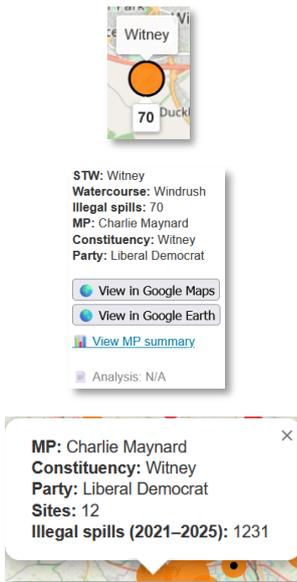
- **10 MOST PROLIFIC ILLEGAL SPILLERS**
  - South Moreton
  - Faringdon
  - Hampstead Norreys
  - Appleton
  - Markyate
  - Chertsey
  - Winterbourne
  - Oxford
  - Fairford
  - Kingsclere
- **EXAMPLES OF GOOD AND POOR DATA QUALITY**
  - Beckton (poor)
  - Crossness (poor)
  - Long Reach (poor)
  - Riverside (poor/unreliable)
  - Deephams (mixed)
  - Hook Norton (poor)
  - Wantage (poor)
  - Heyford (good)
  - Slough (good)
- **STWS WITH ILLEGAL SPILLS TO CHALK STREAMS**
  - Compton (River Pang)
  - East Shefford (River Lambourn)
  - Gerrards Cross (River Misbourne)
  - Hampstead Norreys (River Pang)
  - Hungerford (River Kennet)
  - Markyate (River Ver)
  - Newbury (River Kennet)
  - Wantage (Letcombe Brook)
- **STWS WITH INFLATED SEWAGE THROUGHPUT/POOR EFFLUENT**
  - Byfield
  - Carterton
  - Cassington
- **INCOMPLETE OR UNRELIABLE DATA UNDERMINING INVESTIGATION**
  - Bracknell
  - Gerrards Cross
  - Reigate
  - Ripley
  - Ascot
  - Charlbury
  - Burghfield
  - Leatherhead
  - Hamstead Marshall
  - Hook Norton
- **STWS WITH AMP7 UPGRADES DEFERRED UNTIL 2025-30**
  - Berkhamsted
  - Dorking
  - Fairford
  - Faringdon
  - Heyford
  - Kingston Bagpuize
  - Oxford
  - Ripley
  - South Moreton

## DETAILED ANALYSIS

left click STW name

[Appleton](#)  
[Ascot](#)  
[Beckton](#)  
[Berkhamsted](#)  
[Bracknell](#)  
[Burghfield](#)  
[Byfield](#)  
[Carterton](#)  
[Cassington](#)  
[Charlbury](#)  
[Chertsey](#)  
[Compton](#)  
[Crossness](#)  
[Deephams](#)  
[Dorking](#)  
[East Shefford](#)  
[Fairford](#)  
[Faringdon](#)  
[Gerrards Cross](#)  
[Hampstead Norreys](#)  
[Hamstead Marshall](#)  
[Heyford](#)  
[Hook Norton](#)  
[Hungerford](#)  
[Kingsclere](#)  
[Kingston Bagpuize](#)  
[Leatherhead](#)  
[Long Reach](#)  
[Markyate](#)  
[Newbury](#)  
[Oxford](#)  
[Reigate](#)  
[Ripley](#)  
[Riverside](#)  
[Slough](#)  
[South Moreton](#)  
[Wantage](#)  
[Winterbourne](#)

**HOW TO USE WASP'S ILLEGAL SEWAGE SPILL MAP**



Hover cursor over disk for STW name and number of illegal sewage spills between Jan 2021 and Jul 2025.

Optional black border around disk for STW with agreed/financed upgrades deferred up to 5 yrs to AMP8 (Asset Management Plan)

Left-click for summary information:

Google Maps for aerial view of STW & location of outfall (see below)  
 Google Earth for STW with option for historic images (see below)

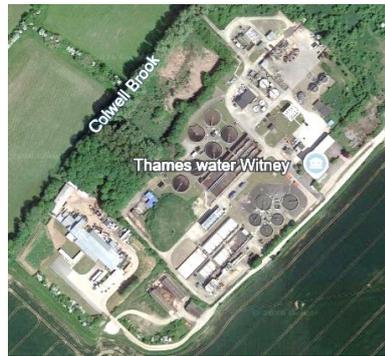
MP summary shows illegal sewage spills in constituency (see below)

Analysis links to detailed report on STW when available online

MP summary shows local MP name, constituency name, party affiliation, number of STW sites in constituency and the total number of illegal sewage spills at those sites between 2021 and 2025



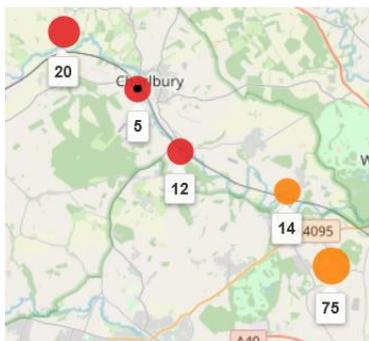
Google Earth 2004



Google Earth 2021



Google Maps 2025



"All STW illegal spill totals"

STW	Illegal	MP	Constituency	Party
South Moreton	287	Olly Glover	Didcot and Wantage	Liberal Democrat
Faringdon	271	Charlie Maynard	Witney	Liberal Democrat
Hampstead Norreys	261	Olivia Bailey	Reading West and Mid Berkshire	Labour
Appleton	249	Charlie Maynard	Witney	Liberal Democrat
Markyate	237	Victoria Collins	Harpden and Berkhamsted	Liberal Democrat
Chertsey	224	Ben Spencer	Runnymede and Weybridge	Conservative
Winterbourne	178	Lee Dillon	Newbury	Liberal Democrat
Oxford	167	Anneliese Dodds	Oxford East	Labour/Co-operative
Fairford	165	Roz Savage	South Cotswolds	Liberal Democrat
Kingsclere	165	Kit Malthouse	North West Hampshire	Conservative
Cirencester	164	Roz Savage	South Cotswolds	Liberal Democrat
South Leigh	158	Calum Miller	Bicester and Woodstock	Liberal Democrat
Clanfield	153	Charlie Maynard	Witney	Liberal Democrat
Marborough	145	Danny Kruger	East Wiltshire	Conservative

Optional STW League Table

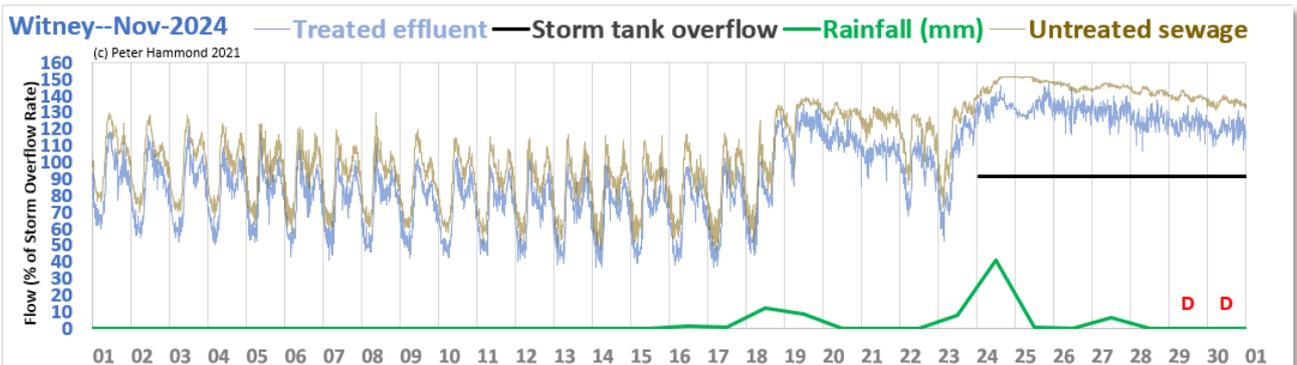
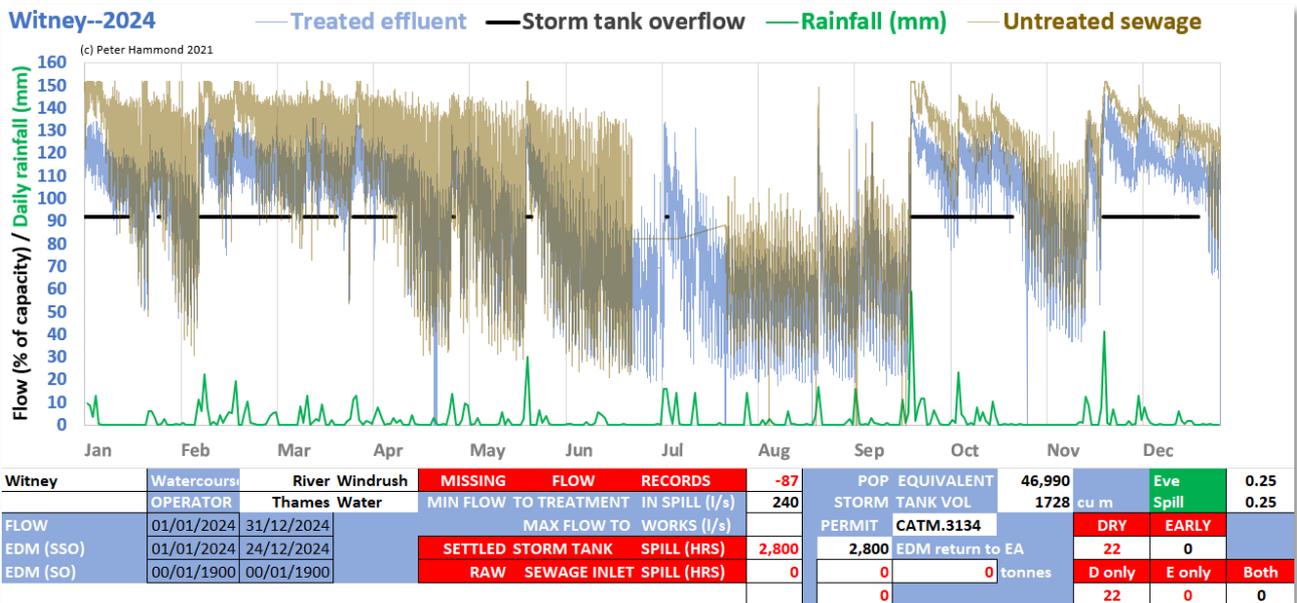
Constituency	Illegal	MP	Party
Witney	1231	Charlie Maynard	Liberal Democrat
Reading West and Mid Berkshire	669	Olivia Bailey	Labour
Didcot and Wantage	546	Olly Glover	Liberal Democrat
Henley and Thame	515	Freddie Van Mierlo	Liberal Democrat
South Cotswolds	468	Roz Savage	Liberal Democrat
Bicester and Woodstock	444	Calum Miller	Liberal Democrat
Harpden and Berkhamsted	364	Victoria Collins	Liberal Democrat
Newbury	323	Lee Dillon	Liberal Democrat
East Wiltshire	296	Danny Kruger	Conservative
Banbury	288	Sean Woodcock	Labour
Daventry	282	Stuart Andrew	Conservative
Runnymede and Weybridge	271	Ben Spencer	Conservative
North East Hampshire	266	Alex Brewer	Liberal Democrat

Watercourse	Illegal
Pang	383
Mill Brook	287
Faringdon Stream	271
Bourne	252
Marcham Brook	249
Trib Of Cherwell	241
Windrush	239
Ver	237
Mole	230
Kennet	227
Coln	189
Winterbourne Stream	178

Optional Constituency and Watercourse League Tables

**DATA AND METHODOLOGY**

- Sewage treatment and STW spill data for 2021-22 were provided by the EA for all water companies.
- Individual spill data for 2021-25 for all Thames Water STWs were obtained via EIR request.
- Sewage treatment data for 2023-2025 were obtained from Thames Water by EIR request.
- Rainfall data were purchased from [www.visualcrossing.com](http://www.visualcrossing.com).
- STW permit requirements were downloaded from or requested via the EA’s **Public Register**.
- The 224 Thames Water STWs reviewed serve a population equivalent of about 17.5 million.
- The review excludes spills from Thames Water’s sewage pumping stations and network overflows.
- **1,120 annual data series** (“a millenium”) were reviewed (one for each STW and each year): 941 (84%) were considered reliable, 135 (12%) were rejected as unreliable and 44 (4%) were not provided.
- **40 million data points** were included in the analysis
- An untreated sewage discharge or spill is unpermitted and hence illegal if it is:
  - “early” - treatment capacity is not reached before or maintained throughout a spill, or
  - “dry” - not due to rainfall (< 0.25 mm rainfall on previous day and day of spill) or snow melt
- For transparency, analysis was undertaken in simple spreadsheets with automated visualisation (Fig. 2). The study reviewed more than **14,500 annual and monthly visualisations**.



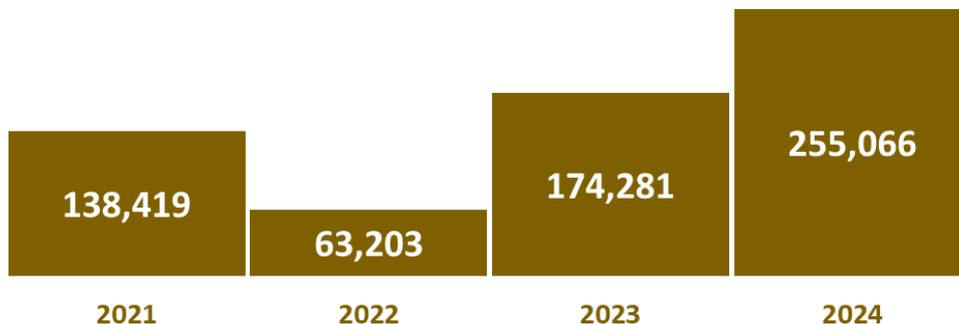
**Figure 2:** Witney STW: untreated sewage flow in, treated effluent flow out, untreated sewage spills, rainfall. 2024 annual overview and November 2024 monthly charts

**MAIN FINDINGS FOR ILLEGAL SPILLS BY Thames Water**

Thames Water made more than 39,404 untreated sewage spills at 224 STWs in this study of 1,120 annual data series from 2021 to 2025 with an average illegality of 22% – “a millenium of malpractice”.

**Illegal sewage discharges**

The annual spill discharge hours reported to the EA for storm overflows for England and Wales have been hugely variable, largely due to rainfall patterns. This can be seen in Fig. 3 which shows the annual spill hours for the 224 Thames Water STWs studied in this review.



**Figure 3:** annual spilling hours for 2021 to 2024 for the 224 Thames Water STWs reviewed

2022 was a much drier year than 2021, 2023 and 2024 which is reflected in the annual sewage spill hours. 2025 experienced contrasting wet and dry periods, with a very wet start leading to high river flows, but then a drier spring and summer with significant summer droughts and a pickup in rainfall in late 2025 (November). 2025 is not included in Fig. 3 given that data availability was limited to about 7 months and 194 of the 224 STWs.

The primary purpose of this study was to determine which of the sewage spills breached EA permit conditions and hence were illegal. The main headline result of the analysis is that

**224 sewage treatment works made at least 8,499 illegal spills between 2021 and 2025 polluting 163 watercourses in 66 Westminster constituencies**

The evidence varied across the STWs as follows:

**201 STWs** (89.7 %) had reliable evidence of at least 1 illegal sewage discharge or spill

7 STWs had reliable data and no illegal spills

- Aldershot
- Crawley
- Greatworth
- Rye Meads
- Shamley Green
- Sonning Common
- Standon

7 STWs (3.1 %) had no reliable data for any year

- Cuddington
- Epping
- Gerrards Cross
- Hatfield Heath
- Highworth
- North Weald
- Shabbington

The proportion of sewage spills that were considered illegal each year was as follows:

Illegal % of spills	2021	2022	2023	2024	2025 to July
	23%	15%	20%	20%	34%

The % of illegal spills that were “dry” only, “early only” or both “dry” and “early” are shown below:

	2021	2022	2023	2024	2025 to July
“dry” only	46%	29%	47%	60%	75%
“early” only	40%	59%	46%	32%	14%
“dry” & “early”	12%	12%	7%	8%	11%

## Thames Water STWs with most illegal sewage spills

The 20 most misbehaving Thames Water STWs are shown in TABLE 1 which also identifies the Westminster constituency hosting the illegally spilling STW overflow (not necessarily the STW).

**TABLE 1: 20 worst hit STWs with reliable evidence of illegal sewage spills** (\* chalkstream)

STW/Overflow	Illegal spills	Watercourse	Constituency	MP	Party
South Moreton	287	Mill Brook	Didcot and Wantage	Olly Glover	Lib Dem
Faringdon	271	Faringdon Stream	Witney	Charlie Maynard	Lib Dem
Hampstead Norreys	261	Pang*	Reading West and Mid Berks	Olivia Bailey	Labour
Appleton	249	Marcham Brook	Witney	Charlie Maynard	Lib Dem
Markyate	237	Ver*	Harpenden and Berkhamsted	Victoria Collins	Lib Dem
Chertsey	224	Bourne	Runnymede and Weybridge	Ben Spencer	Conservative
Winterbourne	178	Winterbourne Stream	Newbury	Lee Dillon	Lib Dem
Oxford	167	Pottery Stream	Oxford East	Anneliese Dodds	Labour/Co-op
Fairford	165	Coln	South Cotswolds	Roz Savage	Lib Dem
Kingsclere	165	Kingsclere Brook	North West Hampshire	Kit Malthouse	Conservative
Cirencester	164	Shorncote Ditch	South Cotswolds	Roz Savage	Lib Dem
South Leigh	158	Limb Brook	Bicester and Woodstock	Calum Miller	Lib Dem
Clanfield	153	Halfacre Brook	Witney	Charlie Maynard	Lib Dem
Marlborough	145	Kennet*	East Wiltshire	Danny Kruger	Conservative
Boddington	134	Boddington Canal Feeder	Daventry	Stuart Andrew	Conservative
Compton	122	Pang*	Reading West and Mid Berks	Olivia Bailey	Labour
Standlake	119	Windrush	Witney	Charlie Maynard	Lib Dem
Bampton	119	Shill Brook	Witney	Charlie Maynard	Lib Dem
Willingale	118	Trib Of Cherwell	Brentwood and Ongar	Alex Burghart	Conservative
Berkhamsted	118	Grand Union Canal	Harpenden and Berkhamsted	Victoria Collins	Lib Dem

## Westminster Parties and Constituencies most exposed to illegal spilling

The Thames Water STWs covered in this report discharge to at least 66 Westminster constituencies.

**TABLE 2: Westminster parties and constituencies exposed to Thames Water illegal spills**

Party	Constituencies	STWs	Illegal spills	Illegal spills per STW
Liberal Democrat	20	94	4,708	50.1
Conservative	22	72	2,321	32.2
Labour & Labour Co-operative	23	51	1,451	28.5
Independent	1	7	19	2.7

**TABLE 3: 20 constituencies with worst exposure to illegal spills by Thames Water STWs**

Constituency	MP	Party	Illegal spills
Witney	Charlie Maynard	Liberal Democrat	1231
Reading West and Mid Berkshire	Olivia Bailey	Labour	669
Didcot and Wantage	Olly Glover	Liberal Democrat	546
Henley and Thame	Freddie Van Mierlo	Liberal Democrat	515
South Cotswolds	Roz Savage	Liberal Democrat	468
Bicester and Woodstock	Calum Miller	Liberal Democrat	444
Harpenden and Berkhamsted	Victoria Collins	Liberal Democrat	364
Newbury	Lee Dillon	Liberal Democrat	323
East Wiltshire	Danny Kruger	Conservative	296
Banbury	Sean Woodcock	Labour	288
Daventry	Stuart Andrew	Conservative	282
Runnymede and Weybridge	Ben Spencer	Conservative	271
North East Hampshire	Alex Brewer	Liberal Democrat	266
Brentwood and Ongar	Alex Burghart	Conservative	251
Mid Buckinghamshire	Greg Smith	Conservative	216
North West Hampshire	Kit Malthouse	Conservative	182
Oxford East	Anneliese Dodds	Labour/Co-operative	167
Dorking and Horley	Chris Coghlan	Liberal Democrat	163
Kenilworth and Southam	Jeremy Wright	Conservative	122
East Hampshire	Damian Hinds	Conservative	104

Clearly, Liberal Democrat constituencies are the most exposed to illegal sewage spills by Thames Water.

### Watercourses/chalk streams most exposed to Thames Water’s illegal sewage spills

TABLE 4 lists the 20 watercourses with the worst exposure from Thames Water’s illegal sewage spills. TABLE 5 lists the illegal spills to the 9 chalk streams in the Thames Water catchment – more than 1,000 illegal sewage spills over 5 years. Three of the chalk streams are in the top 20 of watercourses most exposed to Thames Water’s illegal sewage spills: Rivers Pang, Ver and Kennet.

**TABLE 4: 20 worst hit rivers**

<b>Watercourse</b>	<b>Illegal Spills</b>
* chalkstream	
Pang*	383
Mill Brook	287
Faringdon stream	271
Bourne	252
Marcham Brook	249
Trib Of Cherwell	241
Windrush	239
Ver*	237
Mole	230
Kennet*	227
Coln	189
Winterbourne Stream	178
Pottery Stream	167
Kingsclere Brook	165
Shorncote Ditch	164
Limb Brook	158
Halfacre Brook	153
Wey	147
Boddington Canal	134
Shill Brook	134

**TABLE 5: Chalk streams polluted by illegal spilling**

<b>Chalk stream</b>	<b>STW</b>	<b>Illegal Spills</b>	<b>MP</b>	<b>Party</b>
Chess	Chesham	69	Sarah Green	Lib Dem
Horsenden Stream	Princes Risborough	38	Greg Smith	Cons
Kennet	Fyfield	25	Danny Kruger	Cons
Kennet	Hungerford	20	Lee Dillon	Lib Dem
Kennet	Marlborough	145	Danny Kruger	Cons
Kennet	Newbury	29	Lee Dillon	Lib Dem
Kennet	Ramsbury	8	Danny Kruger	Cons
Lambourn	East Shefford	46	Lee Dillon	Lib Dem
Letcombe Brook	Wantage	31	Olly Glover	Lib Dem
Mimram	Whitwell	29	Alistair Strathern	Lab
Misbourne	Gerrards Cross	?	Joy Morrissey	Cons
Pang	Compton	122	Olivia Bailey	Lab
Pang	Hampstead Norreys	261	Olivia Bailey	Lab
Ver	Markyate	237	Victoria Collins	Lib Dem

Although the illegal spills entry for Gerrards Cross STW is 0, it is very likely to have made illegal sewage spills but the data for each of the 5 years was not sufficiently reliable to determine permit breaches with confidence. The reasons for this are described in a separate section of the report.

Clearly, the Rivers Pang (MP Olivia Bailey), Ver (MP Victoria Collins) and Kennet (MPs Lee Dillon and Danny Kruger) bear the brunt of the chalk stream exposure to illegal sewage spills with 383, 237 and 227 respectively over the 5-year period. The River Lambourn is also a designated SAC and SSSI.

## 10 MOST PROLIFIC ILLEGAL SPILLERS

This section of the report provides detailed analysis of the performance of the 10 most prolific illegal spillers of the 224 Thames Water STWs reviewed in this study:

<b>STW</b>	<b>Illegal ▼</b>	<b>MP</b>	<b>Constituency</b>	<b>Party</b>
South Moreton	287	Olly Glover	Didcot and Wantage	Liberal Democrat
Faringdon	271	Charlie Maynard	Witney	Liberal Democrat
Hampstead Norreys	261	Olivia Bailey	Reading West and Mid Berkshire	Labour
Appleton	249	Charlie Maynard	Witney	Liberal Democrat
Markyate	237	Victoria Collins	Harpden and Berkhamsted	Liberal Democrat
Chertsey	224	Ben Spencer	Runnymede and Weybridge	Conservative
Winterbourne	178	Lee Dillon	Newbury	Liberal Democrat
Oxford	167	Anneliese Dodds	Oxford East	Labour/Co-operative
Fairford	165	Roz Savage	South Cotswolds	Liberal Democrat
Kingsclere	165	Kit Malthouse	North West Hampshire	Conservative

# South\_Moreton\_Analysis

**MOST PROLIFIC illegal spiller with annual illegality rate between 34% and 64%**

**South Moreton STW**



	2021	2022	2023	2024	2025
<b>Spill hours</b>	2,142	54	2,568	5,353	2,700
<b>Spill frequency</b>	146	11	145	254	130
<b>Illegal spills</b>	59	7	49	93	79
<b>% illegal</b>	40%	64%	34%	37%	61%
<b>Constituency</b>	Olly Glover				
<b>MP</b>	Didcot and Wantage				
<b>Party</b>	Liberal Democrat				

South Moreton STW discharges to the Mill Brook and serves a population equivalent of about 1,250. Its untreated sewage discharges have been featured in the media since 2022<sup>3</sup>. WASP accompanied a Daily Mail reporter and photographer to South Moreton STW prior to an [article](#) appearing on 2<sup>nd</sup> April 2024 (Fig. 4). A week later, on 9<sup>th</sup> April 2024, an EA team visited the works

*“for information on the detailed treatment infrastructure. During that inspection high flows were entering the site causing flooding of some of the infrastructure”.*

The EA reports from that visit (CARs S/0753926 and S/0505265) are not available on the EA’s public register. The quote above from the EA is taken from a report that is available (TH\_CSSC.2367\_SI\_S-556710\_20250507.pdf) and covers a follow up, unannounced visit by the EA on 7<sup>th</sup> May 2025.



**a) Daily Mail 02/04/2024; b) EA report showing reed bed with only 25% coverage**

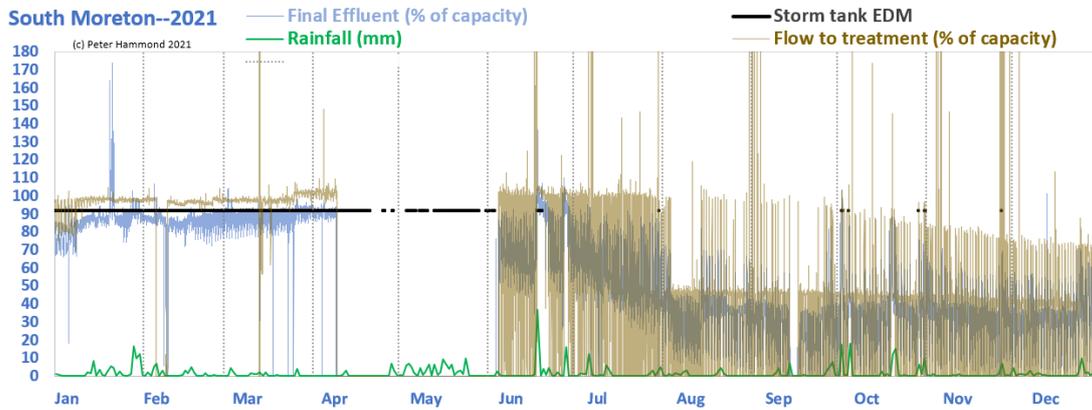
**Figure 4 : South Moreton STW:**

South Moreton STW has been included in both EA Enforcement considerations and Ofwat’s recently announced fines for illegal discharges of untreated sewage.

## 2021

In the first half of 2021, the works discharged untreated sewage almost continuously for 5 months.

<sup>3</sup> <https://www.bbc.co.uk/news/articles/cqjd2enzl0yo>

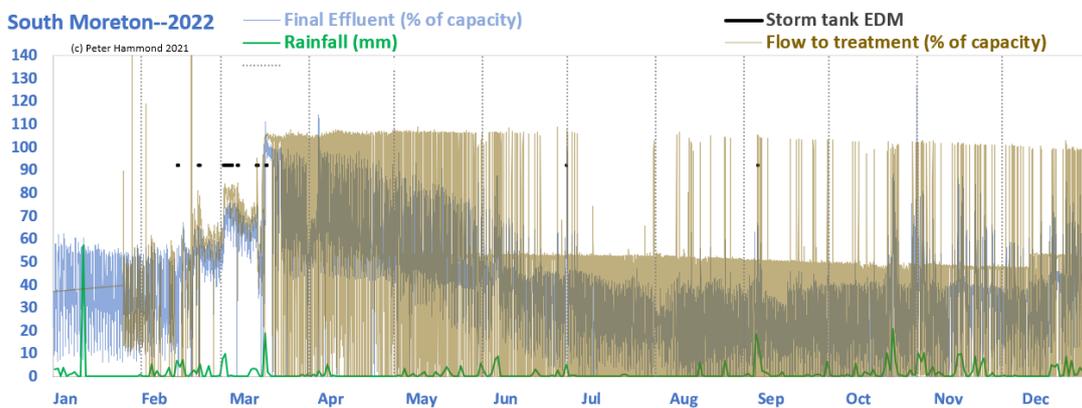


**Figure 5:** 2021 annual overview for South Moreton STW showing extensive sewage spilling for over 5 months as well as 2 months’ missing flow data (itself a permit breach)

The flow to full treatment was above the required permit minimum when spilling apart from 10 days when there were illegal “early” discharges of untreated sewage. The loss of flow to full treatment data in April and May inhibits further compliance checking of early spilling. Throughout that 5-month period, there were illegal “dry” spills of untreated sewage on more than 50 occasions.

**2022**

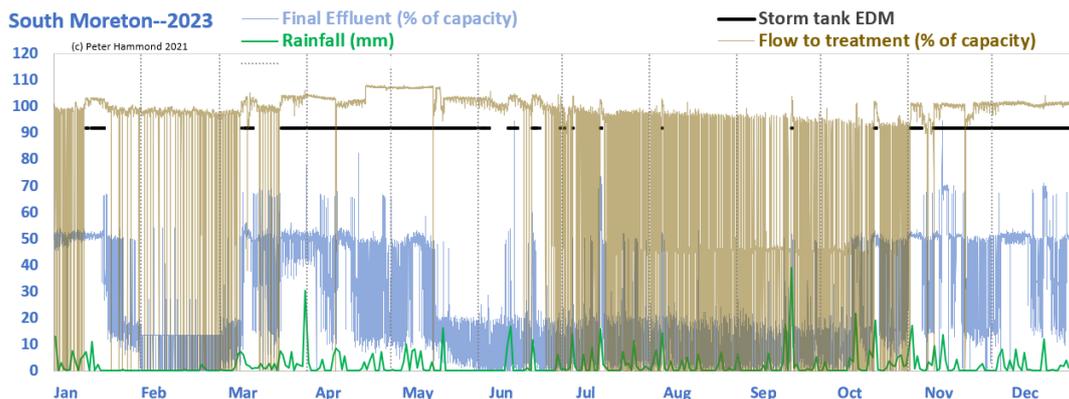
The low rainfall in 2022 and the significantly reduced spill frequency at South Moreton STW confirms that groundwater infiltration through leaky sewer pipes is a big issue. The annual overview in Fig. 6 shows serious inconsistency between flow to full treatment and final effluent.



**Figure 6:** 2022 annual overview for South Moreton STW with all Feb/March spills being “early” and hence illegal

**2023**

The 2023 annual overview chart (Fig. 7) clearly shows a major discrepancy between flow to full treatment and final effluent flow data with the latter looking less consistent with spill and rainfall data.



**Figure 7:** 2023 annual overview for South Moreton STW

At the end of January 2026, in response to an EIR, Thames Water provided a large amount of “continuous” monitoring results for levels of Ammonia in the final effluent at South Moreton STW. It is interesting to compare the “private” continuous monitoring data which is not submitted to the EA with the monthly sampling result that is submitted to the EA as part of Operator Self Monitoring (Fig. 8)



Figure 8: comparison of continuous Ammonia monitoring with SPOT sample for South Moreton STW

South Moreton’s permitted ammonia level of 7 mg/l (which can only be exceeded twice in a series of 12 consecutive monthly SPOT testing results) is exceeded by the continuous monitoring data for 2 days while the SPOT test records a value of 2.64 mg/l – well within the permitted level.

**2024**

The untreated sewage spilling of 2023 continued into 2024 with a vengeance. The spill that started in late September 2023 continued with only tiny breaks until the end of May 2024.

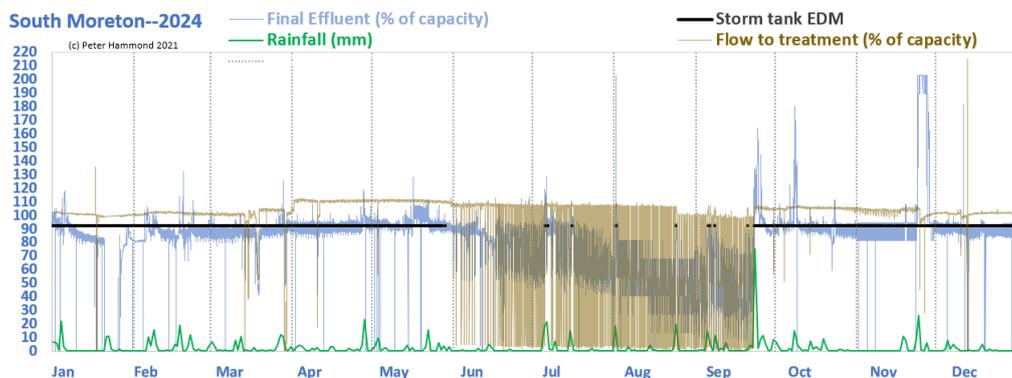


Figure 9: 2024 annual overview for South Moreton STW

Of the 254 days with sewage spills, 87 were “dry” and 6 were “early” – a 37% illegality rate overall.

The EA report mentions that an Operator Self Monitoring (OSM) sample collected on 25/11/2024, when tested, had a suspended solids value of 25.8 mg/l which exceeded the permitted level of 20 mg/l. WASP is very concerned that OSM data available on the DEFRA WIMS archive has no record of a sample result for any day in November 2024 but 2 for December 2024. Moreover, all 12 monthly samples are reported as having a Suspended Solids value “< 3.7”. The flow data (Fig. 10) clearly shows something unusual took place. But did Thames Water submit false OSM data to DEFRA?

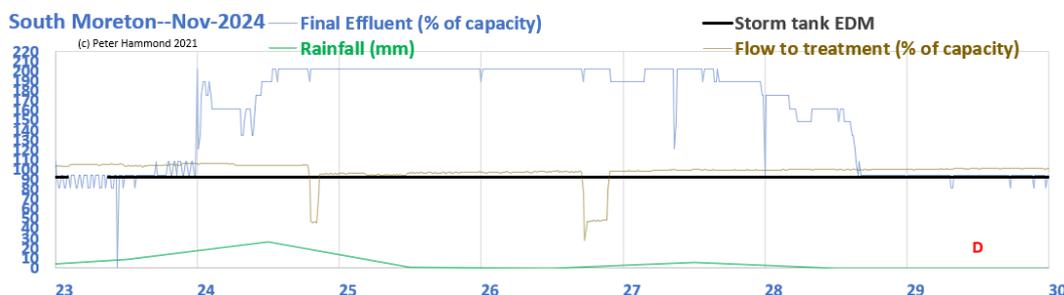


Figure 10: November 2024 flow and spill data clearly showing anomalous behaviour 23<sup>rd</sup> to 29<sup>th</sup>

### 2025

Unfortunately, 2025 started identically to 2024 with 2,700 hours of sewage spills by early May. Once again, there was a large number of days with illegal “dry” spills with an spill illegality rate up to end of August of 61%.

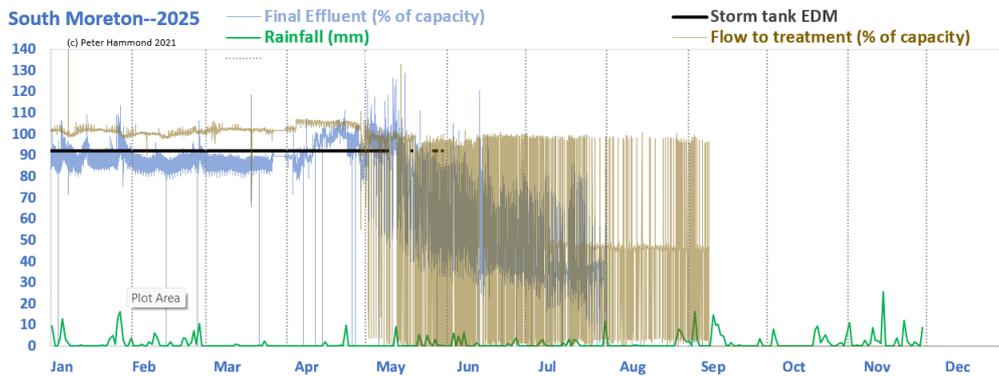


Figure 11: 2025 annual overview for South Moreton STW

Just over a year ago, in December 2024, Thames Water published a [“Ground Water Impacted System management Plan”](#) for South Moreton STW. Thames Water admit that groundwater ingress is the problem but there is no sign of a timeline to complete the investigations and fix leaky pipes.

# Faringdon\_Analysis

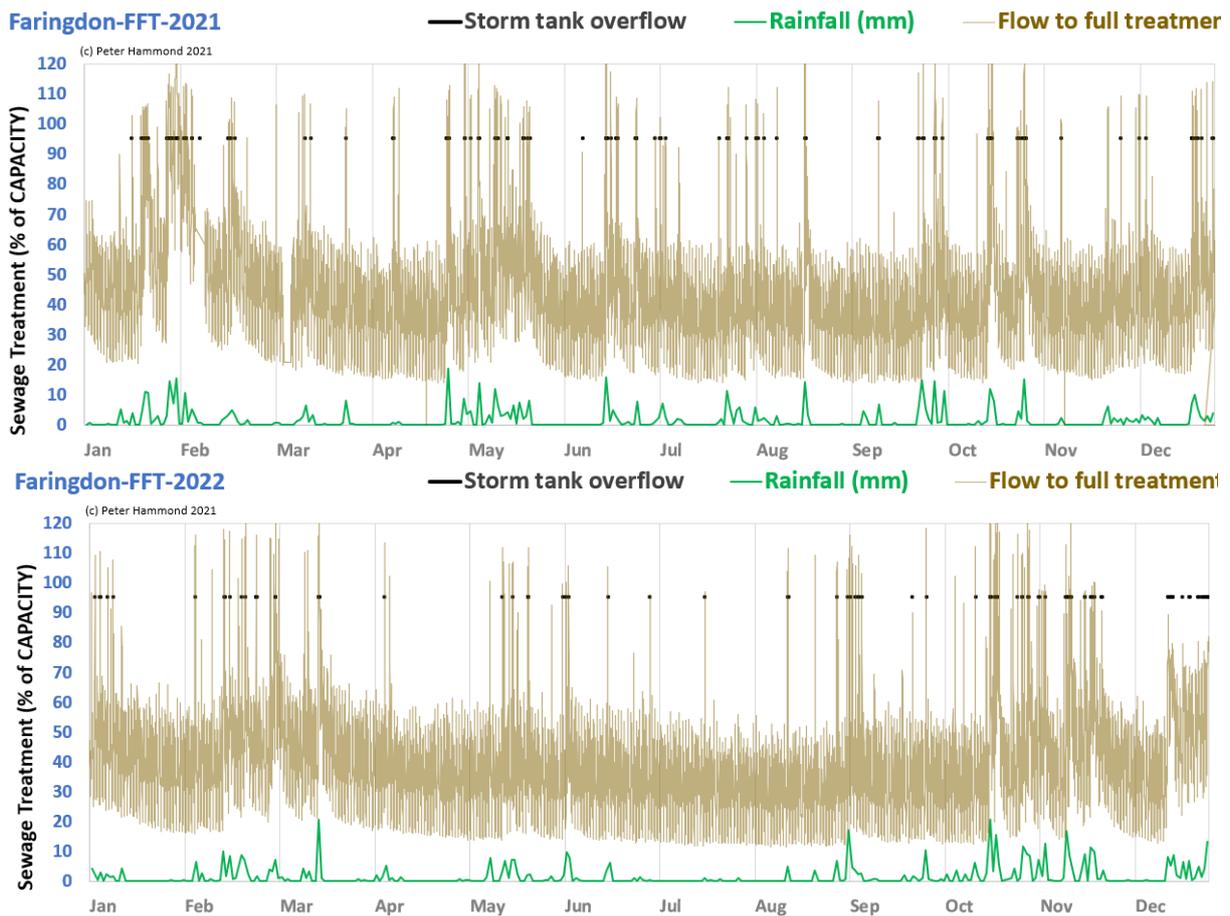
**2<sup>nd</sup> MOST PROLIFIC illegal spiller with annual illegality rate of 92-100% in last 3 years**

**Faringdon STW**



	2021	2022	2023	2024	2025
<b>Spill hours</b>	132	89	527	790	121
<b>Spill frequency</b>	70	57	107	134	30
<b>Illegal spills</b>	0	9	98	134	30
<b>% illegal</b>	0%	16%	92%	100%	100%
<b>Constituency</b>	Witney				
<b>MP</b>	Charlie Maynard				
<b>Party</b>	Liberal Democrat				

Faringdon STW serves a population of 14,783 and discharges to the Faringdon Stream. Thames Water has postponed upgrades until AMP 8 (2025-2030). Faringdon STW is odd in that sewage spill data in 2021 and 2022 are immaculate with no illegal spilling until the end of December 2022. Thereafter, almost every spill is illegal.



**Figure 12: 2021 & 2022 annual overviews for Faringdon STW showing all spills to be legal until Dec 2022**

The EA has not commented on the illegal spilling between 2022 and 2024. Indeed, the 5 EA reports on its public register focus on illegal spilling in a 3-month period of 2025:

EA CAR report ID	category	breach
I/562072-16/06/2025	C3	2.3.2 (a) – flow passed forward to full treatment
I/563193-25/06/2025	C3	2.3.2 (a)
I/565313-04/07/2025	-	-
I/578575-11/09/2025	C3	2.3.2 (a)
I/581071-26/09/2025	C2	2.3.2 (a)

The first report concerns a self-reported incident by Thames Water on 23/04/25 where grit build-up

*“led to the site spilling to storm early on multiple occasions. TWUL’s environmental contractors reported that the site was discharging yellowish water but with no sewage related visuals.”*

and similar grit related sewage spills on 12/05/2025 and 21/05/2025.

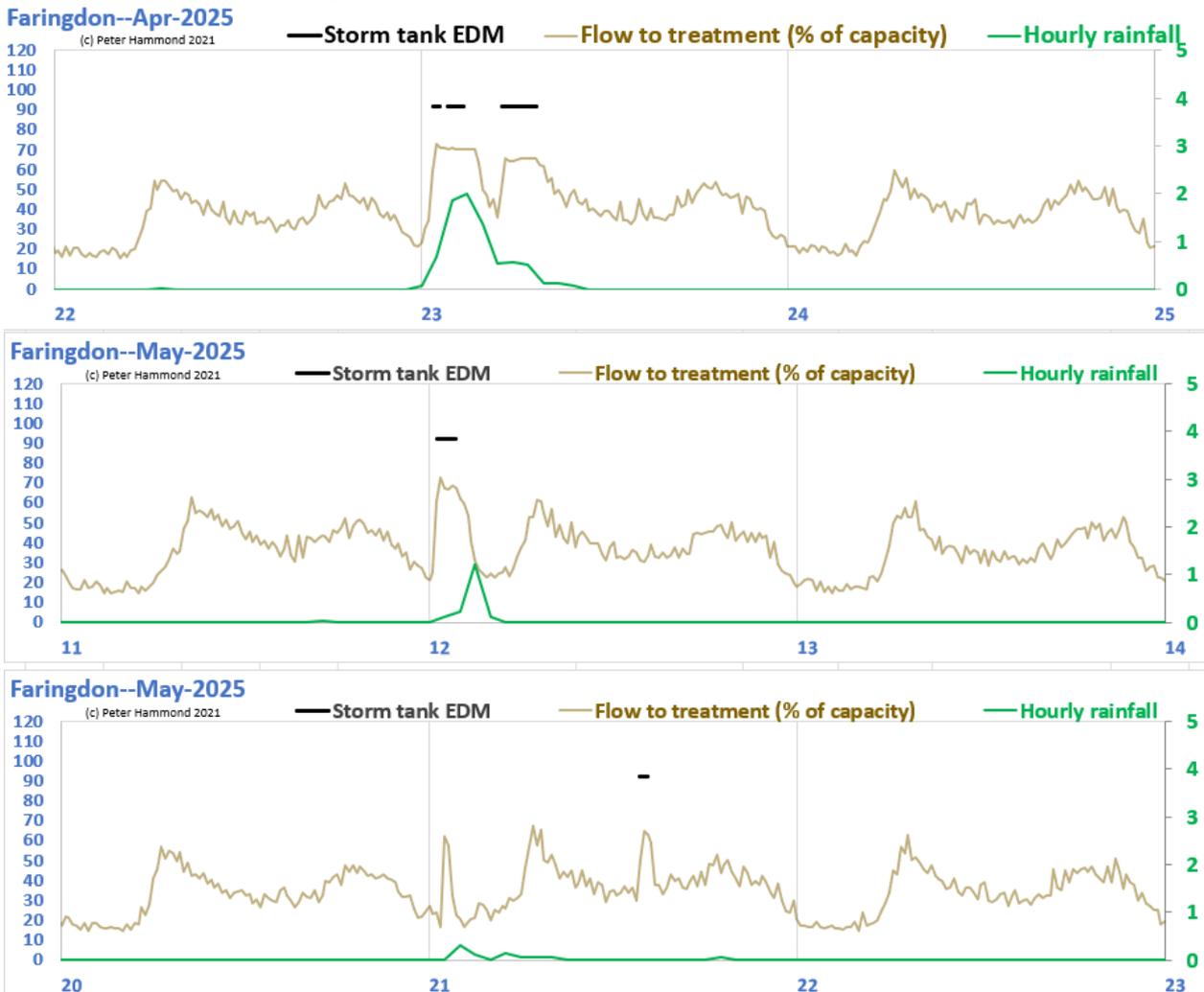
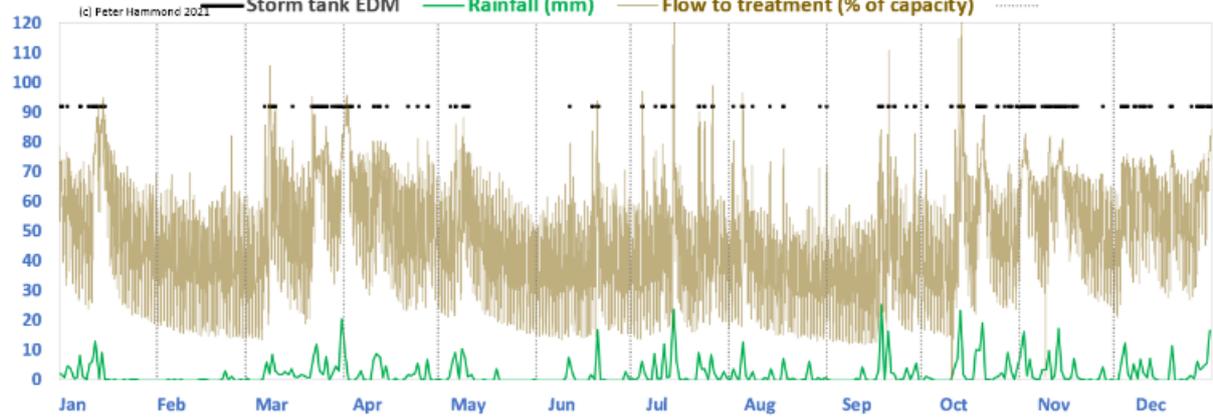


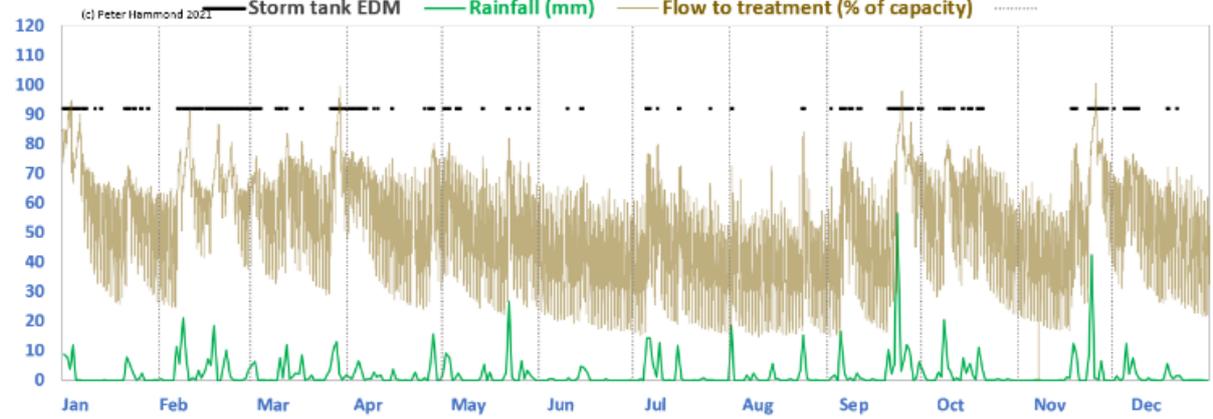
Figure 13: 3 days with illegal spills at Faringdon STW self-reported to the EA by Thames Water

Clearly, the spills on April 23<sup>rd</sup> and May 12<sup>th</sup> 2025 are related to hourly rainfall . But the spill on May 21<sup>st</sup> does not appear to be associated with heavy rainfall despite that claim being made by Thames Water. During 2023 to 2025 all spills are “early” and hence illegal (Fig. 14),

Faringdon--2023



Faringdon--2024



Faringdon--2025

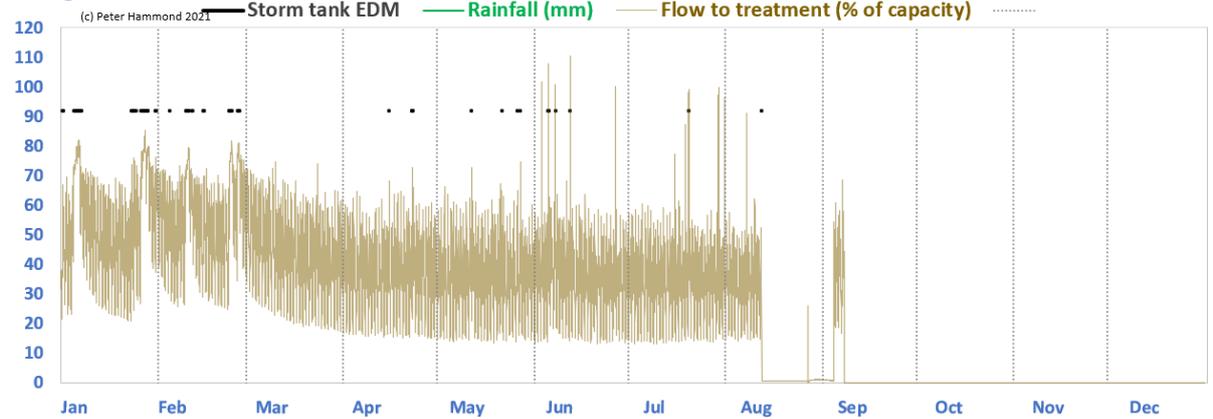


Figure 14: 262 days with illegal sewage spills at Faringdon STW between 2023 and 2025

# Hampstead\_Norreys\_Analysis

**3<sup>rd</sup> MOST PROLIFIC illegal polluter with an annual illegality rate as high as 92%**

Hampstead Norreys STW discharges to the River Pang, a chalk stream in West Berkshire and serves a population equivalent of about 800. The discharges of untreated sewage from Hampstead Norreys and the distress caused to local people are well documented.

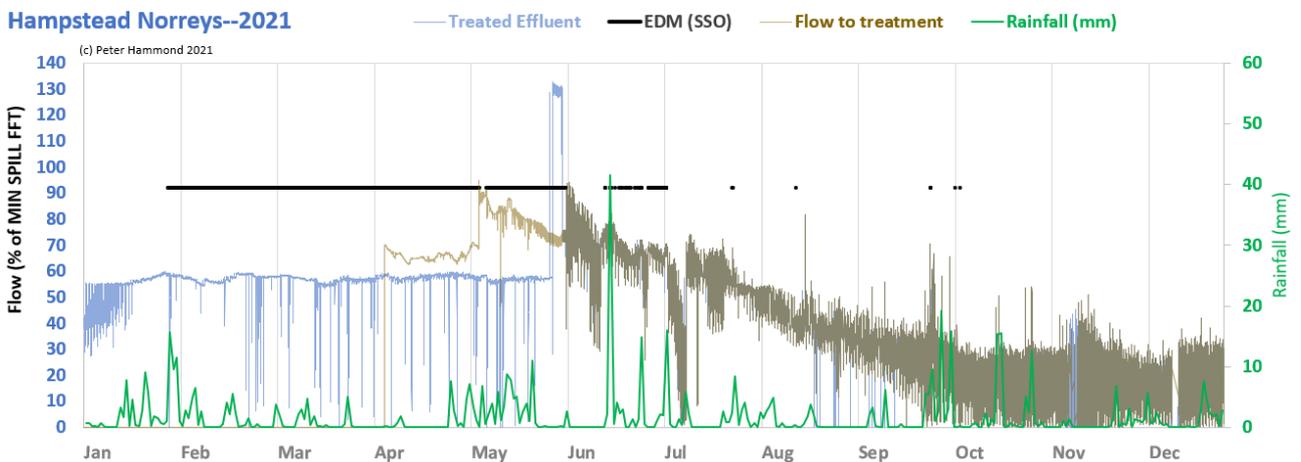
**Hampstead Norreys**



	2021	2022	2023	2024	2025
<b>Spill hours</b>	2622	0	1,296	597	629
<b>Spill frequency</b>	152	0	83	58	33
<b>Illegal spills</b>	140	0	70	29	22
<b>% illegal</b>	92%	0%	84%	50%	67%
<b>Constituency</b>	Reading West and Mid Berkshire				
<b>MP</b>	Olivia Bailey				
<b>Party</b>	Labour				

In 2021, the residents of Hampstead Norreys, Berkshire, experienced significant sewage flooding due to rising groundwater levels infiltrating the sewer system, leading to untreated sewage discharging into streets and properties, with reports of toilet paper and other sewage matter surfacing from manholes. Thames Water has acknowledged the groundwater infiltration issues and is undertaking upgrades to the works.

The 2021 overview of sewage flow, EDM and rainfall data clearly demonstrates the gross extent of these illegal “early” when spills occur with treatment flow below the required permit level of 92% of works capacity (the EA allows a flow meter error of 8%).



**Figure 15: 2021 annual overview for Hampstead Norreys STW**

Examples of individual days with “dry day” spills re shown for April and May. In all, in 2021, at least 140 days included illegal “early” discharges of untreated sewage to a chalk stream during 2,622 hours of spilling.

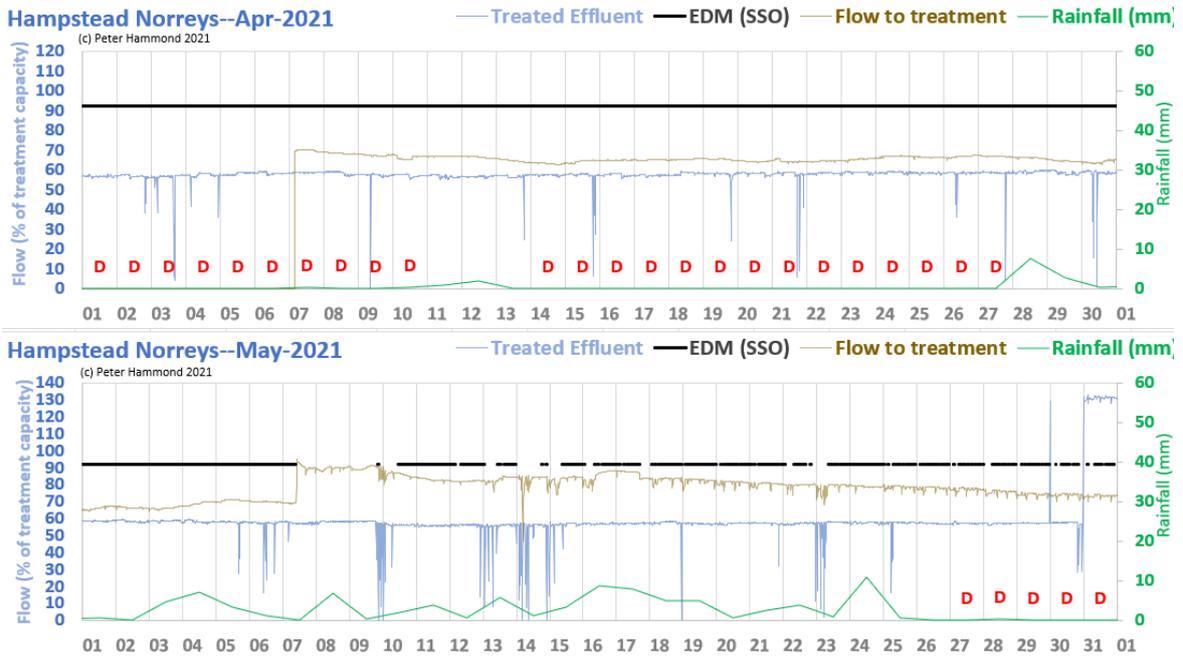


Figure 16: April & May 2021 monthly charts for Hampstead Norreys STW showing illegal “dry” spills

2022 was a much drier year than 2021 and the 2022 overview below reflects that Thames Water reported no sewage spills at all. Indeed, even during short bursts of heavy rainfall, the works managed to avoid discharging untreated sewage via its storm tank.

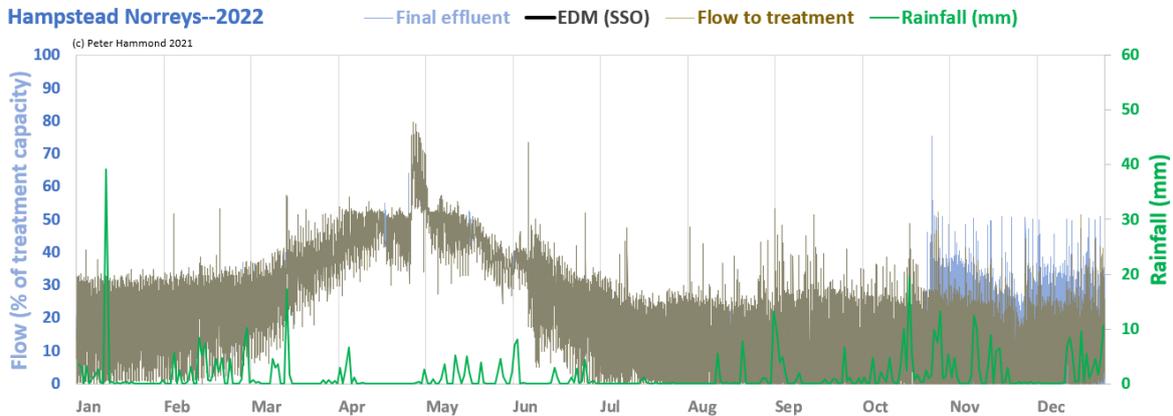


Figure 17: 2022 annual overview for Hampstead Norreys STW with no reported untreated sewage spills

However, 2023 was a much wetter year than 2022 resulting in 1,295.75 hours of spilling. The 2023 annual overview (Fig. 18) clearly shows that all of the discharges of untreated sewage in March, April and May were illegal – at least 70 days with illegal “early” discharges of untreated sewage.

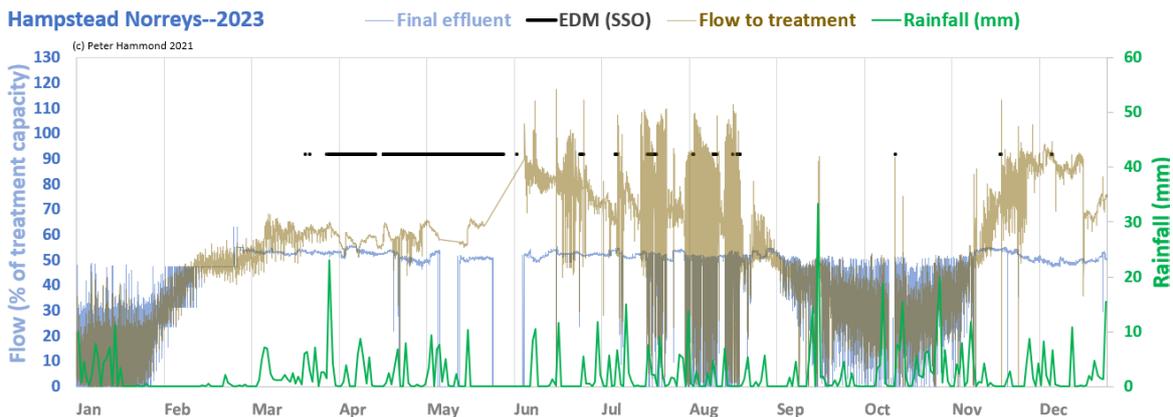


Figure 18: 2023 annual overview for Hampstead Norreys STW

WASP has yet to receive the complete sewage treatment flow data for Hamstead Norreys for 2024 and 2025, but the annual spilling amount was 597 and 629 hours respectively with included at least 29 and 22 days respectively with illegal spills of untreated sewage (Fig. 19).

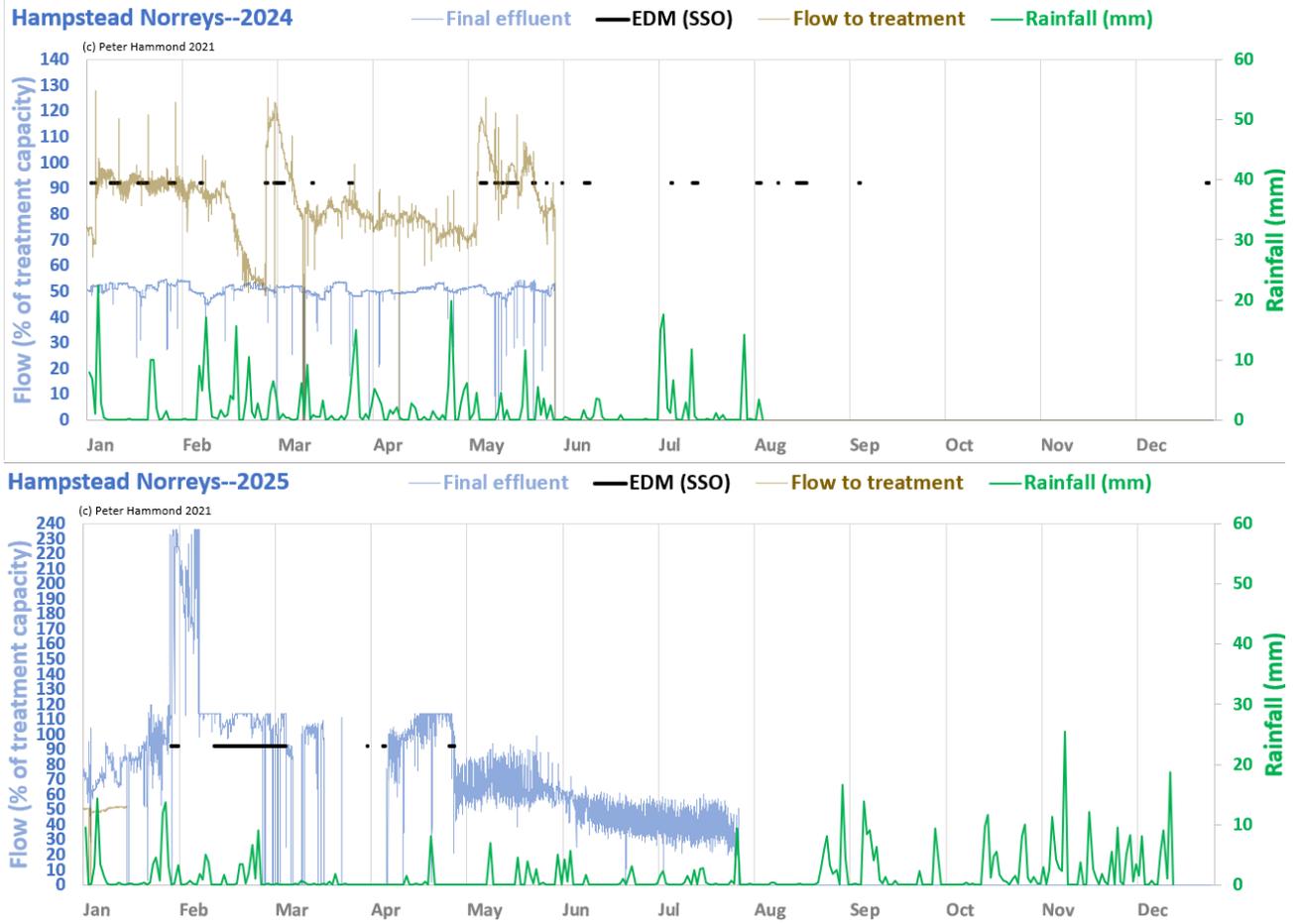


Figure 19: 2024 annual overview for Hampstead Norreys STW

# Appleton\_Analysis

**4th MOST PROLIFIC illegal spiller with annual illegality rate as high as 86%**

**Appleton STW**

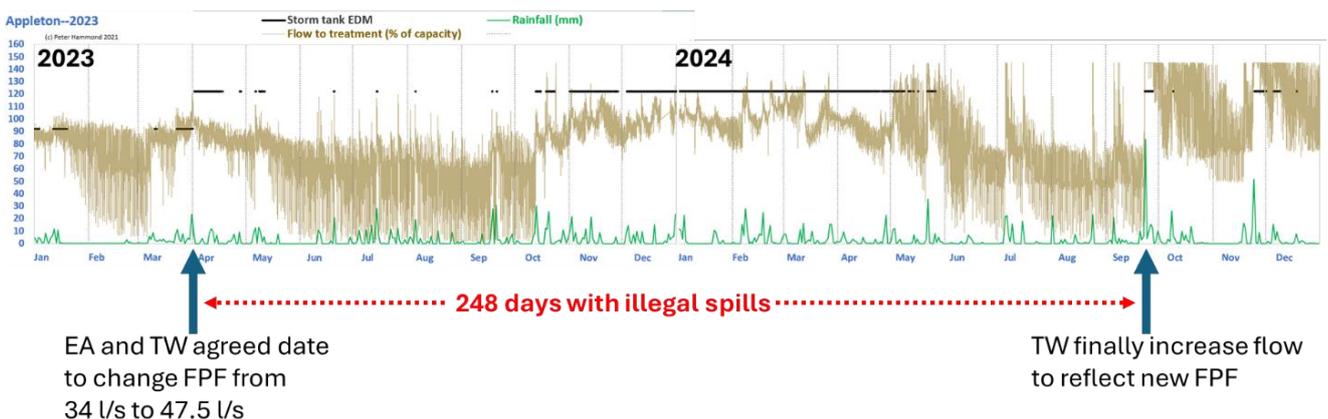


	2021	2022	2023	2024	2025
<b>Spill hours</b>	1,270	73	1,734	2,622	132
<b>Spill frequency</b>	90	20	111	148	13
<b>Illegal spills</b>	35	4	88	122	0
<b>% illegal</b>	39%	20%	79%	86%	0%
<b>Constituency</b>	Witney				
<b>MP</b>	Charlie Maynard				
<b>Party</b>	Liberal Democrat				

Appleton STW serves a population equivalent of 6,026 and discharges to the Marcham Brook. In recent years, there has been a significant amount of development in the local area with a predicted 9% PE increase between 2021 and 2030.

The large number of illegal spills in 2023 and 2024 is primarily due to a change in permitted capacity/flow to full treatment from 34 l/s, in place from 2018 to May 25<sup>th</sup> 2023, to 47.5 l/s thereafter. But it is clear, from the data provided by Thames Water, that the weir setting on the storm overflow was not altered for about 12 months after the new permit came into play, despite an agreed deadline of 31<sup>st</sup> March 2023 for the new rate for flow passed forward to treatment (FPF) given in permit COPA/2453.

**APPLETON STW 2023 - 2024**



**Figure 20: Appleton STW flow, rainfall and spill data for 2023 to 2024**

## 2021

The 2021 annual overview for Appleton STW is shown in Fig. 21.

Appleton--2021

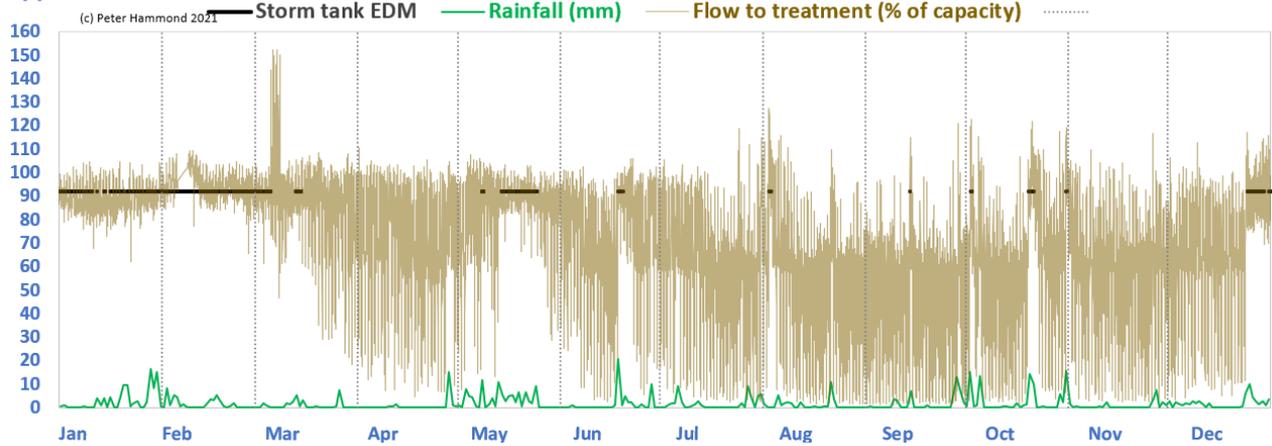
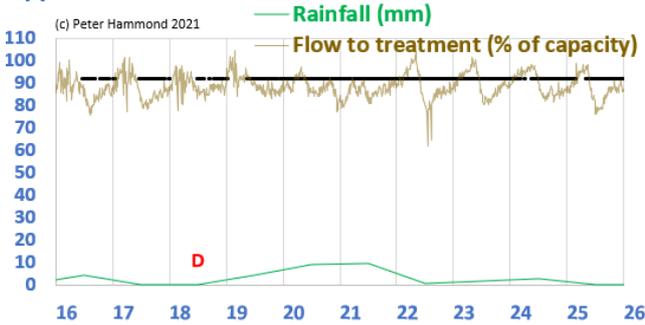


Figure 21: 2021 annual overview for Appleton STW

Examples of illegal “early” and “dry” spills in 2021 are shown in Fig. 22.

Appleton--Jan-2021



Appleton--Feb-2021

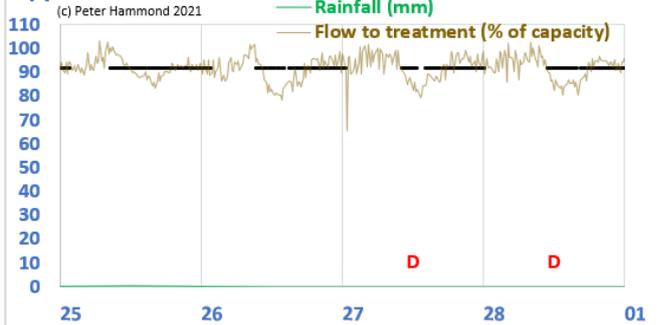


Figure 22: 14 days with illegal “early” spills at Appleton STW including 3 which are also “early”

2022

The rainfall was much reduced in 2022 and so also was the number of spills. Fig. 23 shows the annual overview for 2022 at Appleton STW.

Appleton--2022

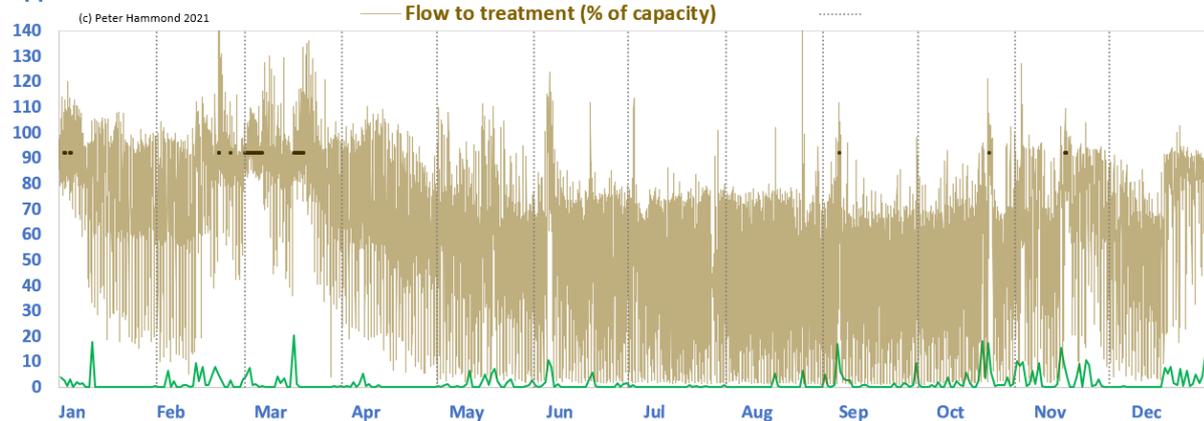


Figure 23: 2022 annual overview for Appleton STW

Even with the reduced sewage spilling, there were still some illegal “early” spills (Fig. 24).

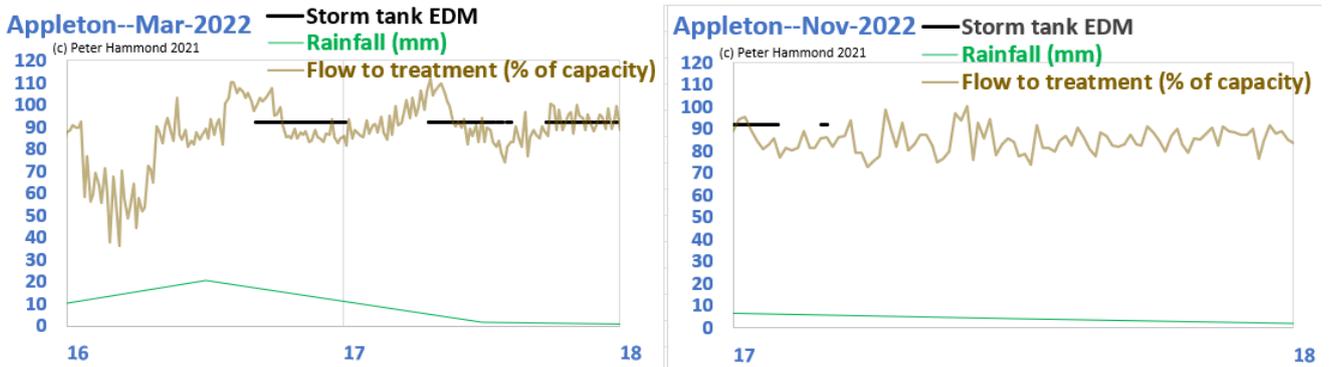


Figure 24: examples of days with illegal “early” spills

2023

The annual overview for 2023 for Appleton STW is shown in 2 parts: the first part up to end of May 2023 scales the flow to full treatment against a permitted capacity of 34 l/s whereas the second part from June 1<sup>st</sup> 2023 to the end of the years scales flow according to a capacity rate of 47.5 l/s.

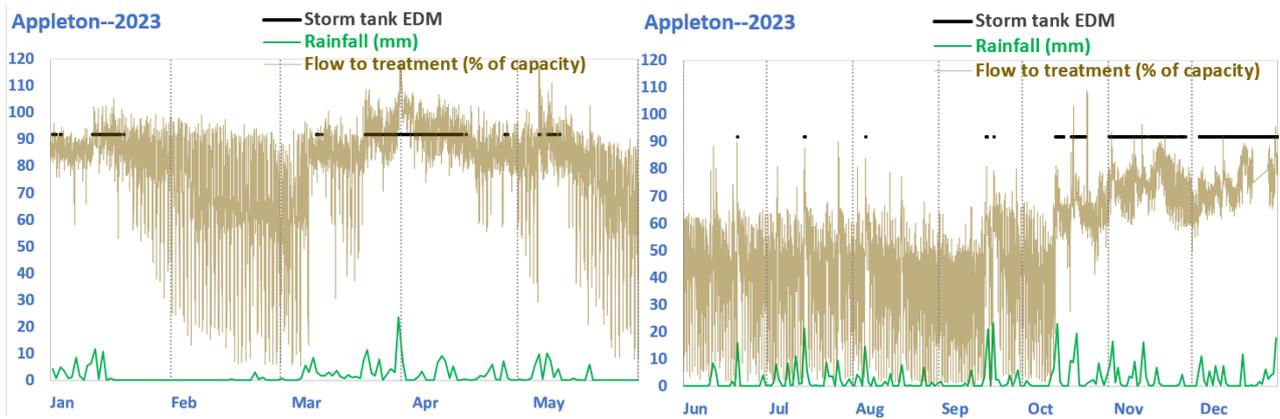


Figure 25: two part 2023 annual overview for Appleton STW reflecting the permitted overflow rate change

Fig. 26 includes examples of illegal “early” spills in the first part of 2023 for an overflow rating of 34 l/s.

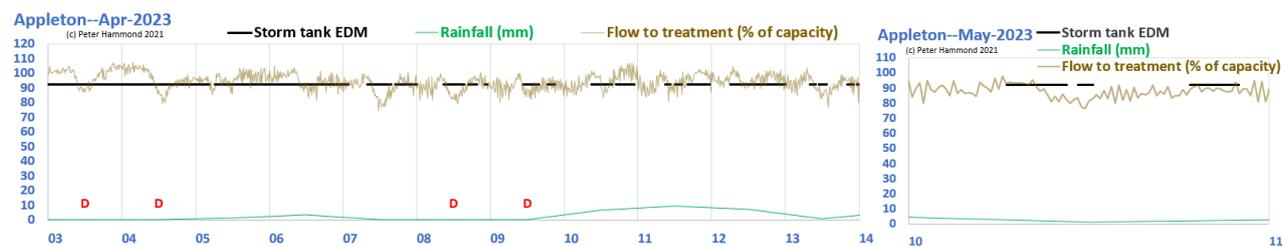


Figure 26: 16 days with illegal “early” spills in first part of 2023 at Appleton STW

In the second part of 2023, all spills are “early”.

2024

Throughout 2024 the permitted overflow rate was 47.5 l/s but it is clear from the data that Thames Water provided that it did not adjust the setting at the storm tank weir. Hence almost every spill between January and May is “early” and hence illegal. There is a dramatic change in managing the sewage flow in September 2024 when the flow to full treatment is allowed to rise to 51.77 l/s before excess sewage is diverted to the storm tanks and from there overflow to the watercourse.

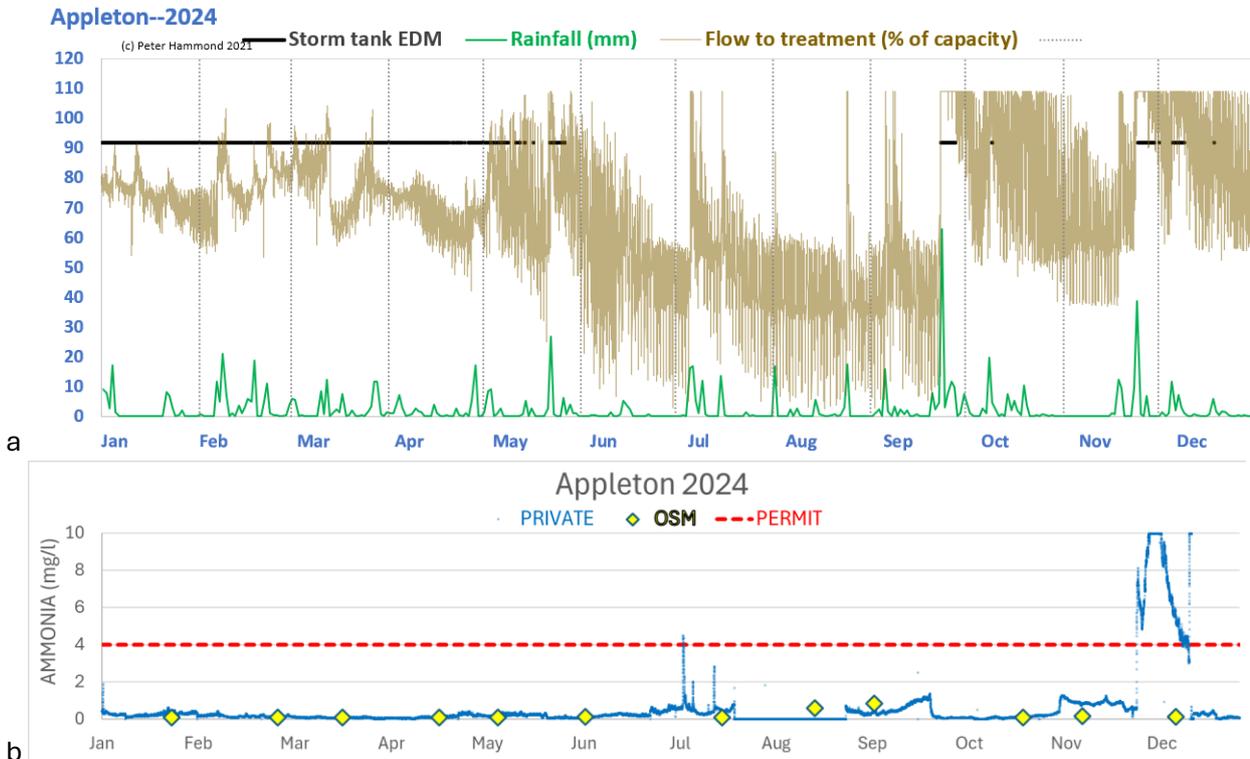


Figure 27: a) 2024 annual overview for Appleton STW; b) Ammonia levels in final effluent

None of the spilling in the last 4 months of 2024 is “early” but there are a few “dry” spilling days. Of course, pushing the flow to treatment rate to 110% of the capacity might have an adverse effect on the quality of the final effluent being discharge to the watercourse. The “private” Ammonia data that Thames Water provided to WASP (Fig. 27b) certainly suggests exceedance of the permitted 4 mg/l in July and Nov/Dec.

**2025**

As with 2024, none of the sewage spills in 2025 are “early”. But the same criticism can be applied to significantly increased flow to full treatment to avoid spills while risking adverse effects on the quality of the final effluent.

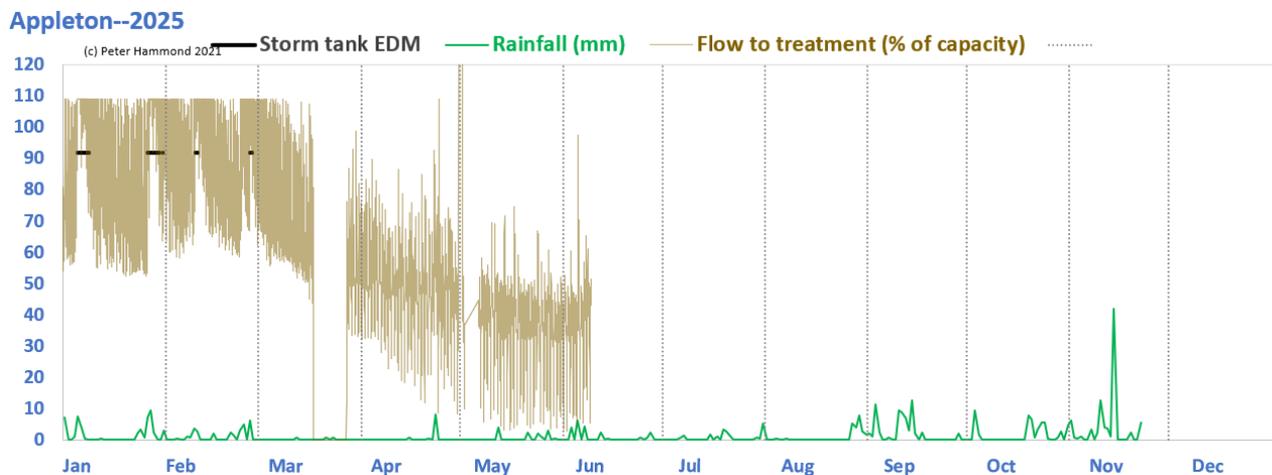


Figure 28: 2025 annual overview for Appleton STW

Unfortunately, Thames Water’s 2025 “private” Ammonia data series for final effluent was provided with the first 5 months missing!

# Markyate\_Analysis

**5<sup>th</sup> MOST PROLIFIC illegal spiller with an annual illegality rate as high as 67%**

**Markyate STW**



	2021	2022	2023	2024	2025
<b>Spill hours</b>	2,642	9	10	3,383	3,516
<b>Spill frequency</b>	143	6	4	189	151
<b>Illegal spills</b>	57	4	0	86	90
<b>% illegal</b>	40%	67%	0%	46%	60%
<b>Constituency</b>	Harpenden and Berkhamsted				
<b>MP</b>	Victoria Collins				
<b>Party</b>	Liberal Democrat				

Markyate STW serves a population equivalent of 5,808 and discharges to the River Ver, a chalkstream that rises upstream of Redbourn and eventually joins the River Colne.

The sewage pollution from Markyate STW and the use of tankers have featured in the news regularly over the past 5 years. Thames Water admits that Markyate STW is overwhelmed by groundwater ingress but appears to have done little to address the problem in the past 2 years. Thames Water has an online [document](#) that supposedly summarises plans and activities to find and implement remedial action. The last update, for 2023-2024, records 2 manholes as being sealed in 2021/22 and less than 300m of sewer pipe surveyed in 2022/23 – nothing else since.

### Remediation Works Undertaken this Hydrological Year

Table 9 below provides a summary of the investigations and remediation works undertaken or planned within the Markyate catchment in the 2023-24 Hydrological Year, as well as works undertaken in the previous two hydrological years.

Table 9 – Works Undertaken in the 2023/2024, 2022/23 & 2021/22 Hydrological Year

Investigation/ remediation type	Number/ length undertaken 2021/22	Number/ length undertaken 2022/23	Number/ length undertaken 2023/24
CCTV survey	N/A	294 metres	N/A
Look and lift survey	N/A	N/A	N/A
Sewer lining	N/A	N/A	N/A
Patch lining	N/A	N/A	N/A
Manhole sealing	2 manholes	N/A	N/A
Manhole sealing plates	N/A	N/A	N/A
Manhole covers and frames replaced	N/A	N/A	N/A

**Figure 29: Thames Water’s online groundwater infiltration update for Markyate STW**

Markyate STW has discharged untreated sewage to a precious chalk stream repeatedly and for extensive periods with no or small breaks; for example,

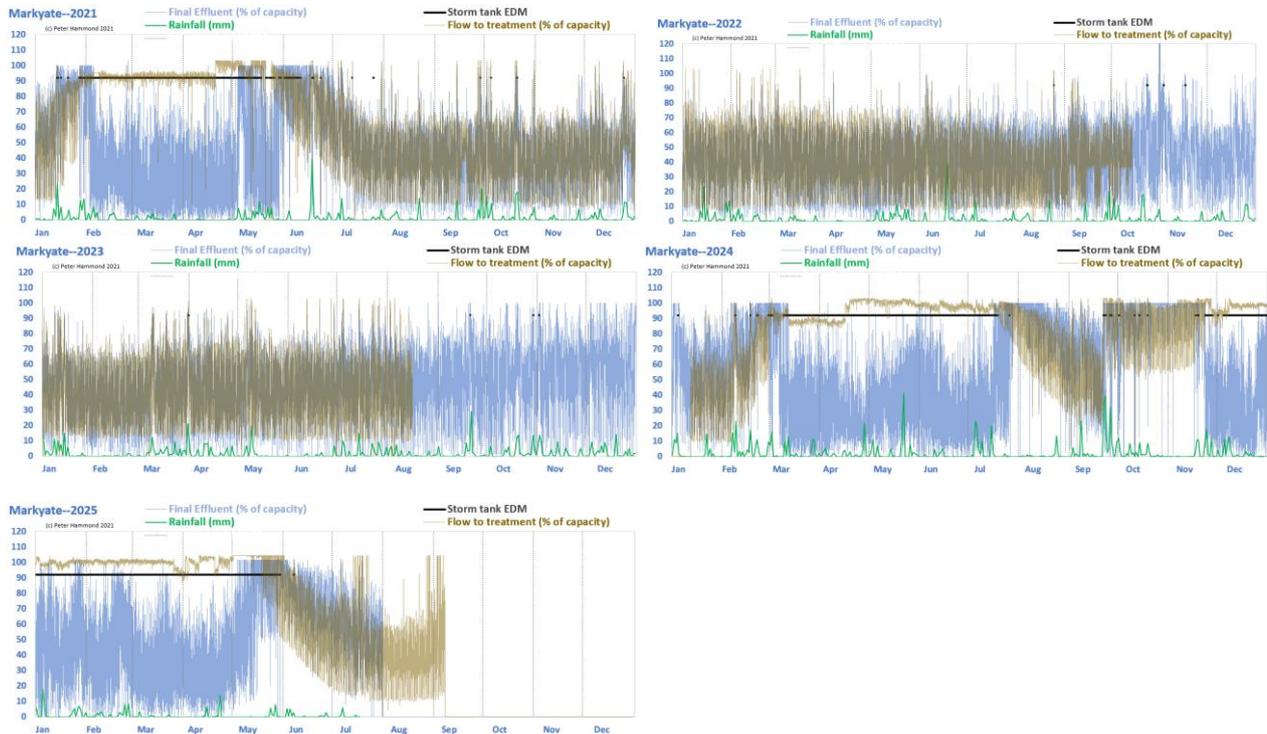
- 1,740 hours with 2 short breaks of 69 mins and 9 mins in April-May 2021
- 1,880 hours with no break in March-June 2024
- 3,668 hours with no break in December 2024 – June 2025

The EA's public register has 3 reports documenting a total of 10 permit breaches on 13/05/2024 and 21/01/2025 with dreadful images of the state of the works and the river:



**Figure 30: images from the EA's report on its visit to Markyate STW in May 2025: unemptied storm tanks (a & b); bursting "septic" copasacs (b)**

The annual overviews for Markyate STW are given in Fig. 31



**Figure 31: annual overview charts for Markyate STW for 2021 to 2025**

When Markyate STW is not spilling, the flow to full treatment and final effluent flows are very closely correlated. But during spills, the flow that Thames Water has labelled as final effluent is not at all consistent with flow to full treatment. WASP would welcome an explanation of this odd behaviour.

# Chertsey\_Analysis

**6<sup>th</sup> MOST PROLIFIC illegal spiller with an annual illegality rate between 30% and 100%**

## Chertsey STW



	2021	2022	2023	2024	2025
Spill hours	654	279	1,142	1,914	654
Spill frequency	54	16	68	100	25
Illegal spills	16	15	68	100	25
% illegal	30%	94%	100%	100%	100%
Constituency	Runneymede and Weybridge				
MP	Ben Spencer				
Party	Conservative				

Chertsey STW serves a population equivalent of 109,000 and discharges to The Bourne via an overflow 400m or so away, close to the junction of the M25 and M3 motorways. The Bourne has ‘Poor’ ecological status with phosphate levels also classified as ‘Poor’, both attributed to point source continuous sewage discharges and sewage spills. In addition, the continuous discharges are said to be stopping macrophytes and phytobenthos achieving ‘Good’ status.

Chertsey STW recently increased its storage capacity with [a new storm](#) tank costing £17M:

*This project has increased the capacity of the storm tanks and improved its ability to treat the volumes of incoming sewage. This will reduce the need for untreated sewage discharges during storm conditions. The scheme completed in March 2025. [Investment plans for storm discharge sites](#) May’25.*

Google Earth’s aerial views (**Fig 32a & b**) of 16<sup>th</sup> Aug 2023 and 14<sup>th</sup> June 2025 show the location of the new storm tank before (yellow dotted circle) and after construction. The tank, 30m in diameter and 7m high (**Fig 32 c**), increases the current storm capacity of 3,661 m<sup>3</sup> by a further 5,000 m<sup>3</sup>.



**Figure 32 a) & b) Google Earth views of Chertsey STW in 2023 & 2025 identifying the location of a new storm tank; c) images of the storm tank under construction by Shay Murtagh**

After a visit to Chertsey STW in 2022, local MP Dr Ben Spencer tweeted:

*The Chertsey site is huge – one of the larger Thames Water treatment sites – serving many thousands of constituents in the local area. Not only does it take raw sewage through the sewers, but also takes sewage in via truck from cesspits in the surrounding area. One of the challenges that it faces is that sewage coming in from several local built-up areas moves in slowly, leading the sewage to be very acidic by the time it gets to the plant. This leads to corrosion of the concrete ironwork, a large improvement program is underway to make the plant more resistant to ‘acid sewage’. <https://www.drben Spencer.org.uk/news/working-tackle-sewage-and-pollution-issues-chertsey-and-weybridge>*

Chertsey STW’s 94% to 100% illegality rates, almost entirely of illegal “early” sewage spills, for the past 4 years are an enigma to WASP, as is explained below.

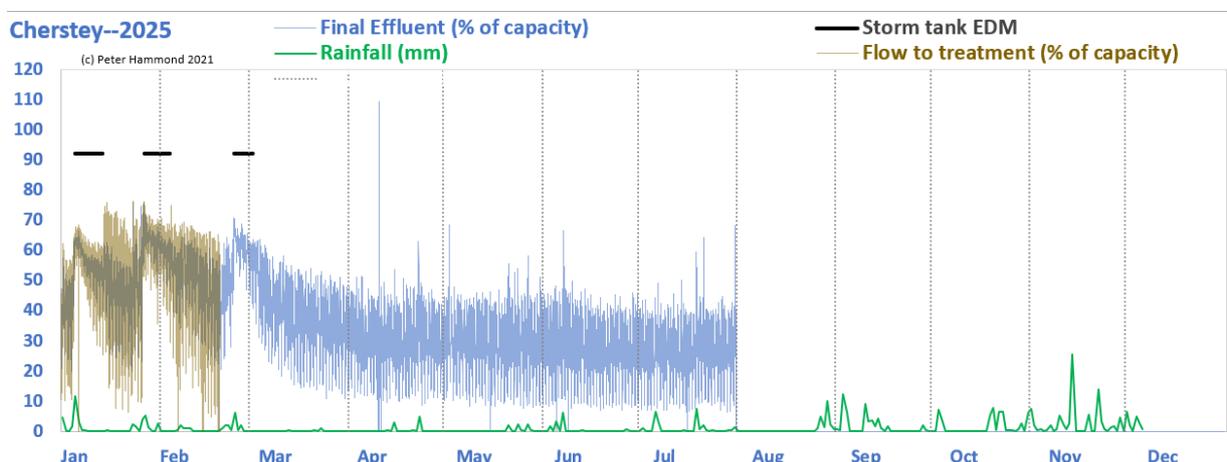
The only permit for Chertsey STW available on the EA’s Public Register, dated 2018, is for treated effluent and does not list the minimum flow to treatment during sewage spills. CTCR.1977 is named on several online sources as the ID for Chertsey STW’s storm discharge permit. The EA’s public register says it has been in place since 1983 without being revoked and so is over 40 years old. WASP finds it difficult to believe that such a large and complex STW has not had its storm overflow/flow to full treatment level amended to reflect population increases in the area.

Data provided directly to WASP by the EA more than 5 years ago, for all water company STWs with a storm overflow, included a capacity/flow to full treatment rate of 917 l/s for Chertsey STW. This is the figure that WASP and other campaign groups (such as ORIC) have used in analysis. Furthermore, when WASP submitted its EIR to Thames Water to supply sewage treatment flow data, the wording was crafted carefully and asked for data to be clearly labelled as flow to full treatment or final effluent with an indication of the certification status of the meter used to record the data.

Another source of comment is to be found in Ofwat’s 2025 **Notice of Ofwat’s decision to issue an enforcement order and impose a financial penalty**. A table entitled **Top 50 highest ranked sites in terms of overall risk** includes a reference to Thames Water’s description of Chertsey STW’s flow to full treatment performance as inconsistent.

With the data provided by the EA and Thames Water, WASP has no choice but to highlight these untreated sewage discharges as potentially illegal. More detailed analysis is given below.

The 2025 annual overview for Chertsey STW is shown in **Fig. 33**



**Figure 33: 2025 overview for Chertsey STW: each spill is “early” and hence illegal**

The flow to full treatment and final effluent data appear consistent with each other and with the rainfall data. Therefore, WASP concludes that all of the spills are “early” and hence illegal.

The annual overview charts for Chertsey STW for the years 2021 to 2024 offer similar evidence of consistent illegal “early” spilling. Unless the EA or Thames Water provide alternative datasets this must remain WASP’s conclusion.

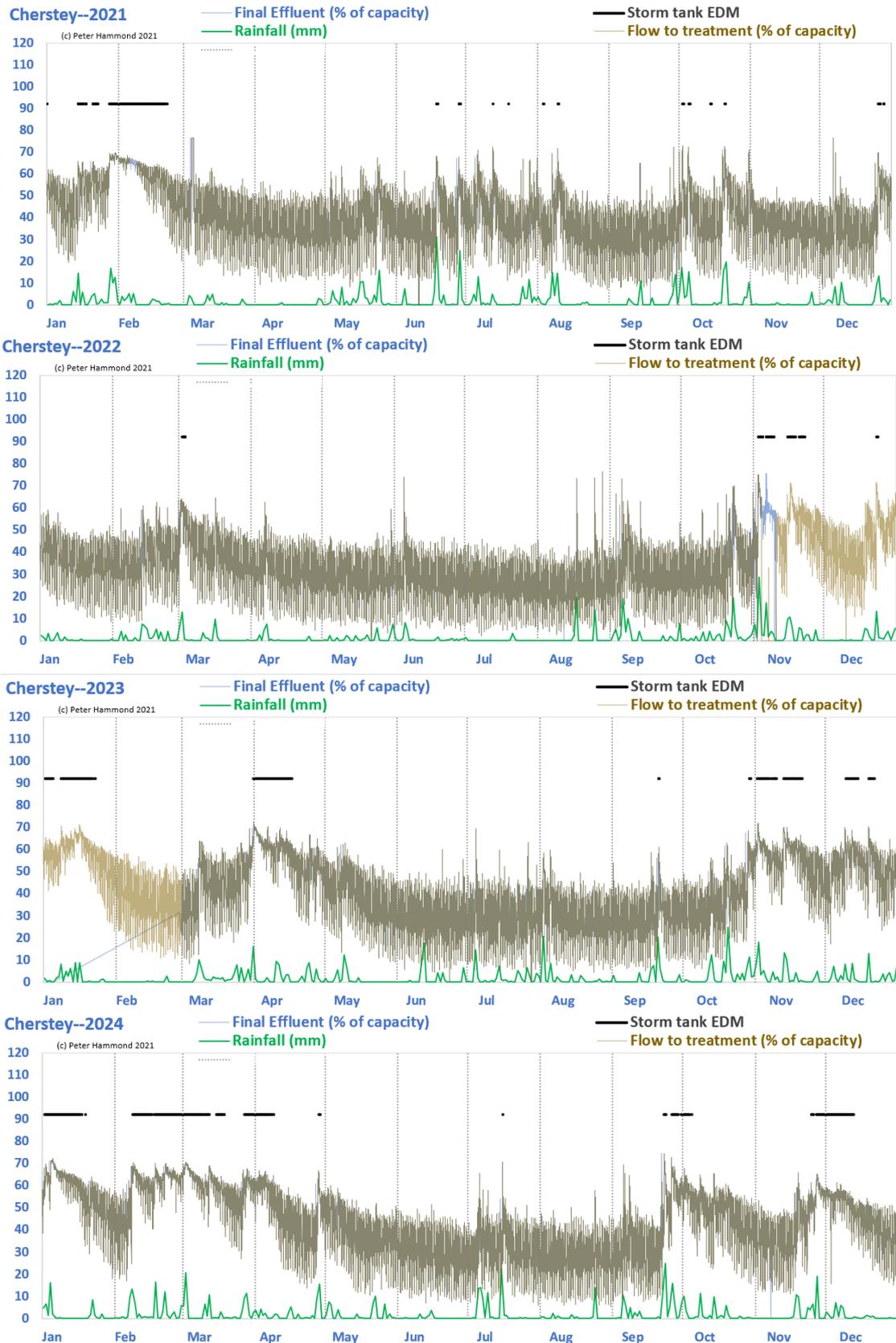


Figure 34: annual overview charts for Chertsey STW for 2021-2024 with all untreated sewage spills illegal unless the EA or Thames Water provide contradictory capacity or sewage treatment flow data

# Winterbourne\_Analysis

**7<sup>th</sup> MOST PROLIFIC illegal spiller with an annual illegality rate as high as 60%**

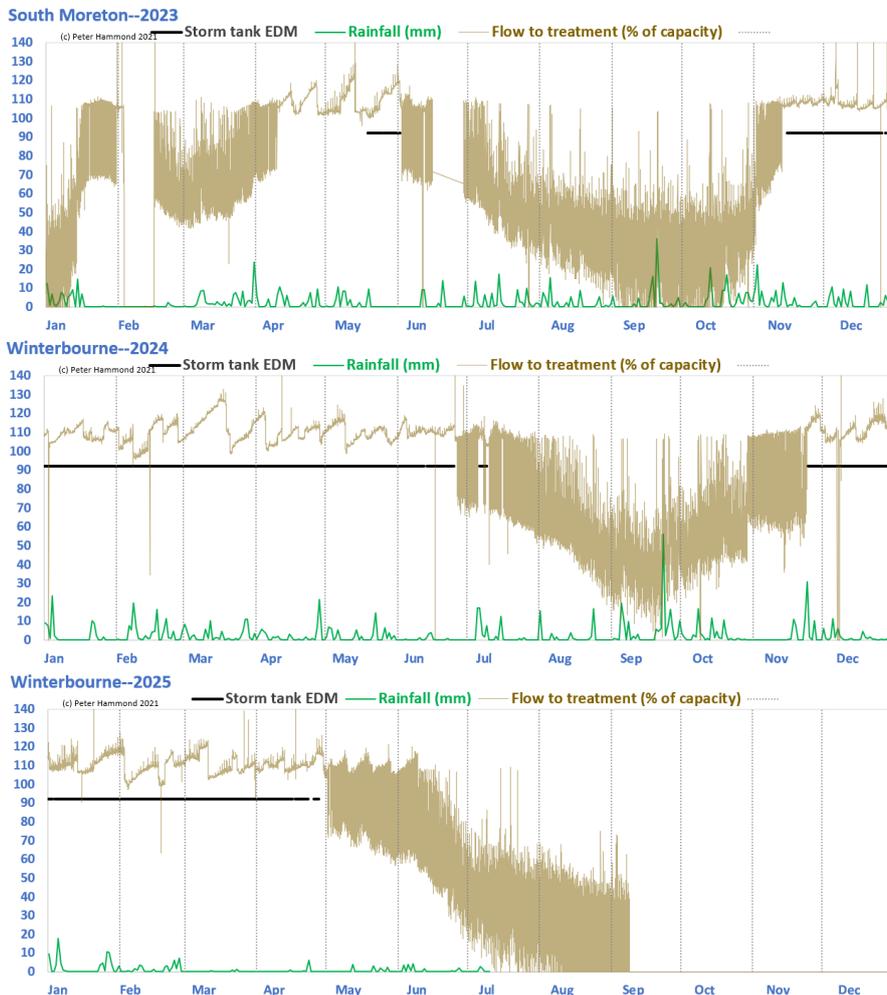
## Winterbourne STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	168	4	1,287	5,062	2,635
<b>Spill frequency</b>	44	1	59	219	116
<b>Illegal spills</b>	16	0	28	65	69
<b>% illegal</b>	36%	0%	47%	30%	60%
<b>Constituency</b>	Newbury				
<b>MP</b>	Lee Dillon				
<b>Party</b>	Liberal Democrat				

Winterbourne STW serves a small population equivalent of 93 and discharges to the Winterbourne Stream which subsequently flows into a chalk stream, the River Lambourn. True to its name, it is dry during summer months and typically only flows in the winter. It is well established that this works is overwhelmed by groundwater infiltration through leaky sewer pipes.

The 2021 sewage flow data was not provided so the 16 illegal “dry” spills are based only on EDM spill and rainfall data. In 2022, the low rainfall resulted in just 1 sewage spill. All but 3 of the 162 illegal sewage spills between 2023 and 2025 are “dry”, as is reflected in the annual overviews below.



**Figure 35 annual overview charts for 2023, 2024 and 2025 for Winterbourne STW**

# Oxford\_Analysis

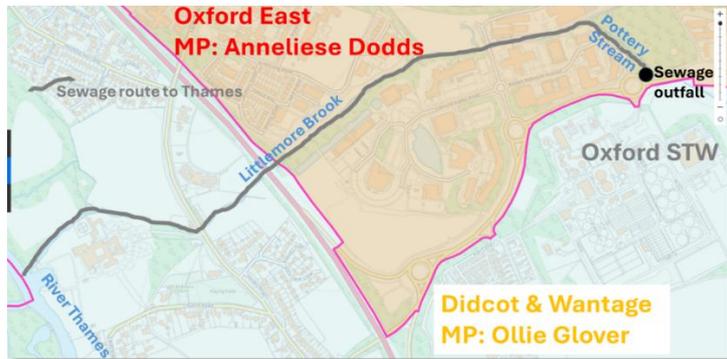
**8<sup>th</sup> MOST PROLIFIC illegal spiller with an annual illegality rate between 27% and 55%**

**Oxford STW**



	2021	2022	2023	2024	2025
<b>Spill hours</b>	892	164	2,096	3,198	348
<b>Spill frequency</b>	58	20	135	166	26
<b>Illegal spills</b>	32	10	71	45	9
<b>% illegal</b>	55%	50%	53%	27%	35%
<b>Constituency</b>	Oxford East				
<b>MP</b>	Anneliese Dodds				
<b>Party</b>	Labour/Co-operative				

Oxford STW serves a population equivalent of about 250,000 and discharges to the Pottery Stream which flows into the Littlemore Brook and in turn to the River Thames near Sandford-on-Thames. Oxford STW is located in the Didcot & Wantage constituency of Ollie Glover (Lib Dem ) whereas the outfall is in the Oxford East constituency of Anneliese Dodds (Labour/Co-op).



Source: <https://www.ordnancesurvey.co.uk/election-maps/gb/index.html>

## Oxford STW’s discharge permits

Oxford STW had a “temporary” storm discharge permit for more than a decade. When asked for information about storm overflow rates and storm tank sizes for all STWs in England, the EA provided a table for Thames Water with an entry for Oxford STW (20/05/20):

STW NAME	FINAL EFFLUENT PERMIT NO.	Settled Storm (Storm Tank) Permitted Pass Forward Flow Rate / Overflow Setting (L/S)	STORM TANK PERMITTED VOLUME (m3)	Storm tank capacity required to meet 68 l/h (at permitted DWF) (Based on Thames Water PE Methodology re Separate Sewers)	Current Actual Storm Tank Volume m3
OXFORD STW		1,040	9,093	9607	9,093

In 2021, in response a WASP EIR request about the permit, the EA said:

*“This permit does not specify an exact amount of sewage that must be passed forward prior to making a storm sewage discharge. However, if a discharge from storm tanks occurred at a time when flow to full treatment / specified design capacity was not being met (e.g. due to an inlet pumping failure, diversion of flow or any other issues that were not rainfall or snowmelt) this would be deemed a breach of condition 1.1 even if there was also rainfall / snowmelt simultaneously present.”*

EA THM208600 24/03/21

and about the values in the table above:

*This is not yet confirmed and is still being reviewed, but it is what we anticipate.*

EA THM208600 24/03/2021

In response to another WASP EIR request, Thames Water refused to provide a copy of the site operating manual and its design capacity on the grounds that it was not environmental data but did offer the following comment on design capacity:

*In AMP 2 (1995-2000) Oxford STW was designed to treat flows of no more than 1040 l/sec (in line with its previous 90,000m<sup>3</sup>/d maximum permitted discharge limit in the consent). This limitation has not changed since.* Thames Water EIR-21-22-042 24/05/2021

### Reports of EA visits to Oxford STW

WASP has been pointing out illegal discharges of untreated sewage from Oxford STW to the EA and Ofwat since 2019. As a result of pressure from WASP, the Angling Trust and other campaign groups such as ORIC, the EA made a specific inspection of Oxford STW on June 30<sup>th</sup> 2021<sup>10</sup>.

*The main purpose of the visit was threefold:*

- (i) to conduct a routine regulatory visit;*
- (ii) to inspect storm overflow infrastructure following concerns in relation to the operation of the storm overflow and*
- (iii) to inspect storm separation and flow to full treatment (FtFT) control following concerns relating to FtFT compliance including concerns raised by third parties such as members of the public, the Angling Trust and Windrush Against Sewage Pollution; and in response to an incident on 19 April 2021 (NIRS 01924826) where sludge from the AD process spilled into the watercourse.*

More recently, on 12<sup>th</sup> May 2025, the EA undertook a routine site inspection of Oxford STW to “ascertain the progress for the site’s delayed Water Industry National Environment Programme (WINEP) scheme” as part of AMP7 (2020-2025). This visit is recorded in 2 reports, one focusing on the site’s compliance with its storm discharge permit ([EPR CAR S/560269](#)) and the other on the deferred improvements ([EPR CAR S/560271](#)).

Oxford STW has 4 storm tanks connected in series. EA report [EPR CAR S/560269](#) relates an unpleasant fact:

*When the storm tanks are full, they spill into an underground pipe which feeds a concrete chamber. This then spills into a separate chamber and pipe to join with the final effluent prior to discharge to the environment. TWUL were informed in CAR S-0745272 that **this pipe and chamber holds effluent which cannot be returned to the works and thus has the potential to release septic sewage to the environment during a first flush period ..** TWUL staff informed the Officers on site that **there are no plans yet in place to resolve this issue.** This pipe presents an unacceptable risk to the environment and as such will need urgent attention to rectify the issue.*  
[EPR CAR S/560269](#)

The EA recorded this as a Category 2 permit breach but surely it is more serious in that the pipe and chamber have likely been in place for decades, polluting watercourses, damaging wildlife and risking public health.

The second EA report ([EPR CAR S/560271](#)), focussing on delayed upgrades, confirms WASP’s concerns about the quality of treated effluent leaving Oxford STW. The EA’s concern is the potential for permit breaches until the planned works are completed:

*We understand the AMP7 WINEP scheme in question is now delayed until 2030 having missed the original due date of 31st March 2025. The scheme is now late. Delays to WINEP schemes are unacceptable. Delaying such schemes will in turn delay environmental improvements and risk failure of statutory requirements. Such **delays also risk failure to comply with permit conditions, which is a legal obligation.***

*As set out by Principal Regulatory Officers during our inspection of Oxford WwTW, we are extremely concerned by the situation at Oxford WwTW from a regulatory and environmental risk point of view and it is **the Environment***

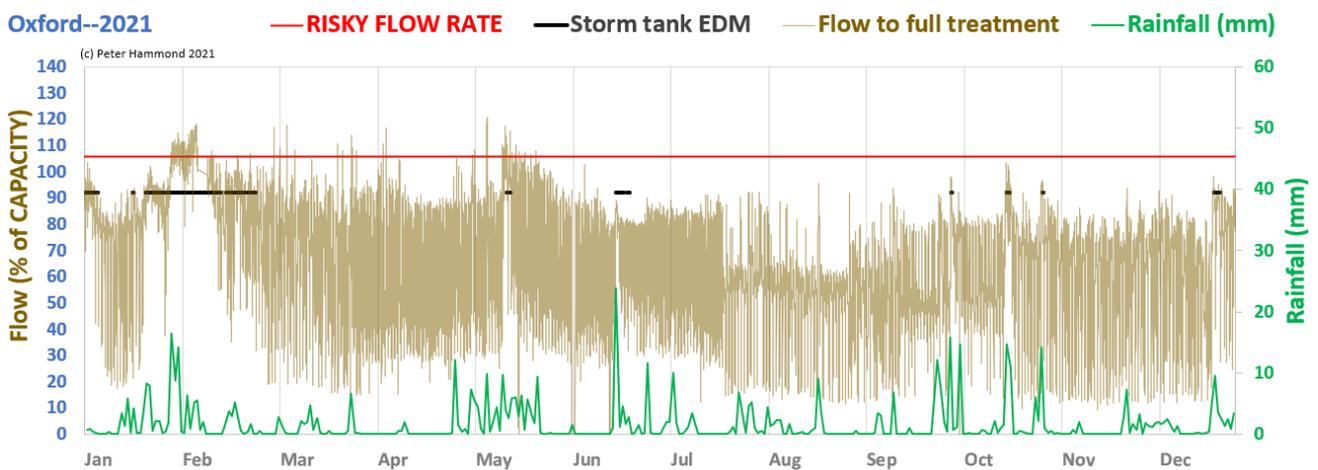
**Agency’s intention to issue the new permit for Oxford WwTW imminently and regulate against that permit from the day it is issued.** This will include investigating any permit breaches as they arise and considering these in accordance with our Enforcement and Sanctions Policy. [EPR CAR S/560271](#)

**Upgrades to Oxford STW**

Between now and end of 2030, Thames Water are to increase the capacity flow from its current rate of 1,040 l/s to 1,434 l/s via an intended interim rate of 1,283 l/s by end of Summer 2025. The EA reported

*TWUL staff confirmed that the **site can currently only reliably pass forward around 1,100l/s without risking the effluent treatment process** (e.g. flooding or loss of solids in final settlement tanks) [EPR CAR S/560271](#)*

**Figure 36** shows the 2021 annual chart for Oxford STW including flow to full treatment (measured at 15-min intervals), local rainfall and spill intervals (black horizontal segments) shown at a level of 92% of capacity (i.e. 92% of 1,040 l/s) accounting for the 8% error the EA allows on certified flow meters. The red horizontal line is drawn at 1,100 l/s, the throughput above which Thames Water staff were concerned about final treated effluent quality. So, during a spill, the flow to full treatment needs to be above the black segments and at any time in order to avoid risking poor quality effluent it should be below the red line.



**Figure 36: annual overview chart for 2021 for Thames Water’s Oxford STW**

The spills at the end of January/early Feb clearly involve flow above the “risky level” and the spill in June is clearly “early” i.e., the treatment flow is never above the works capacity and hence is illegal. A total of 30 days in 2025 involve illegal “early” spills, 7 “dry” and 5 both “dry” and “early” – 32 in all.

More recently, illegal spills from Oxford STW were a primary cause for West Oxfordshire District Council to place Grampian Conditions on a planned development that would have placed the works under additional pressure. In March 2024, the Environment Agency said it had

*“significant concerns about the performance of Oxford STW [Sewage Treatment Works]... we suspect it does not have any more capacity for new connections”*

A development beyond the Oxford ring road was given planning permission – but houses were not to be occupied until Oxford’s sewage infrastructure was upgraded.

WASP has also brought attention to thw exaggerated costs of upgrades to Oxford STW as well as the recent deferment of improvements for more than 5 years. The cost of upgrading Oxford STW has reportedly risen more than five-fold from £64 million in the June 2023 PR24 submission to £435 million according to Thames Water and £275.6 million according to Ofwat (18/02/2026 in EIR response to WASP’s Geoff Tombs).

WASP has completed the analysis of Oxford STW using the specified design capacity to guide a storm overflow setting of 1040 l/s. Examples from each year are provided below

2021

In 2021, the evidence suggests that Oxford STW made more than 32 illegal “early” discharges of untreated sewage in 2021. Some are shown below in Fig. 37.

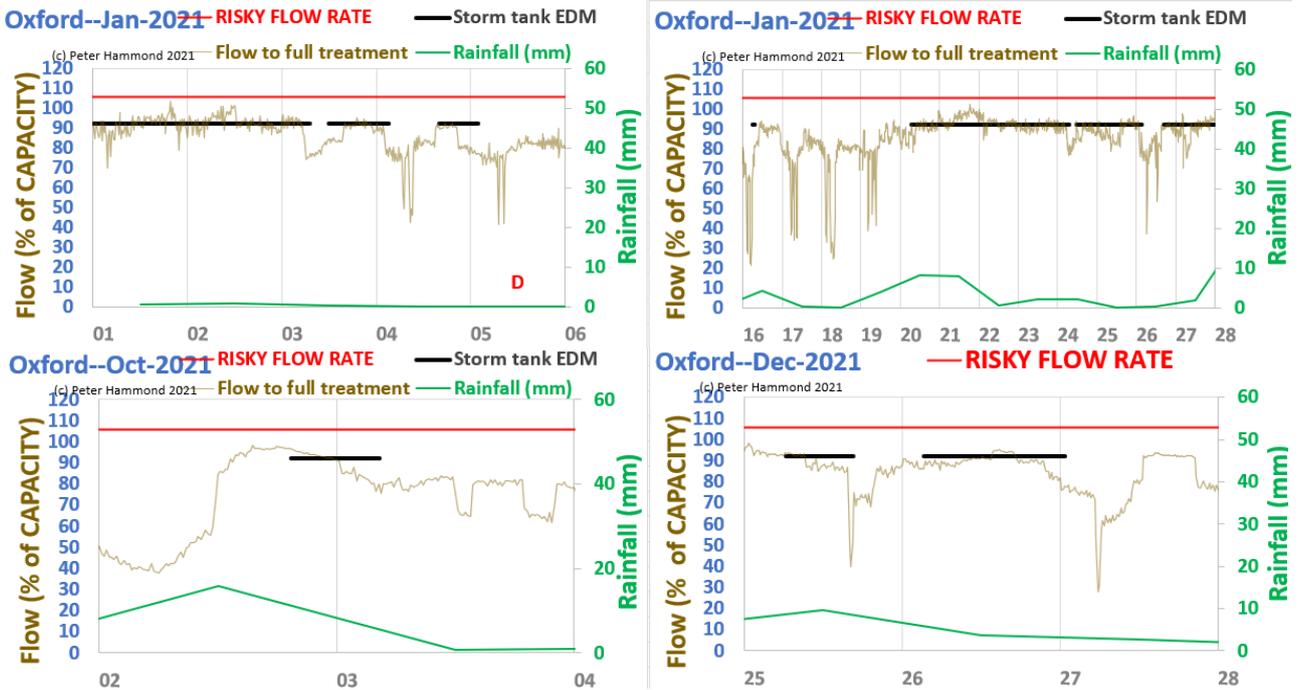


Figure 37: 11 days with illegal “early” spills at Oxford STW, one of which is also “dry”

2022

Even with the reduced rainfall of 2022, Oxford STW manages to make at least 9 illegal “early” spills.

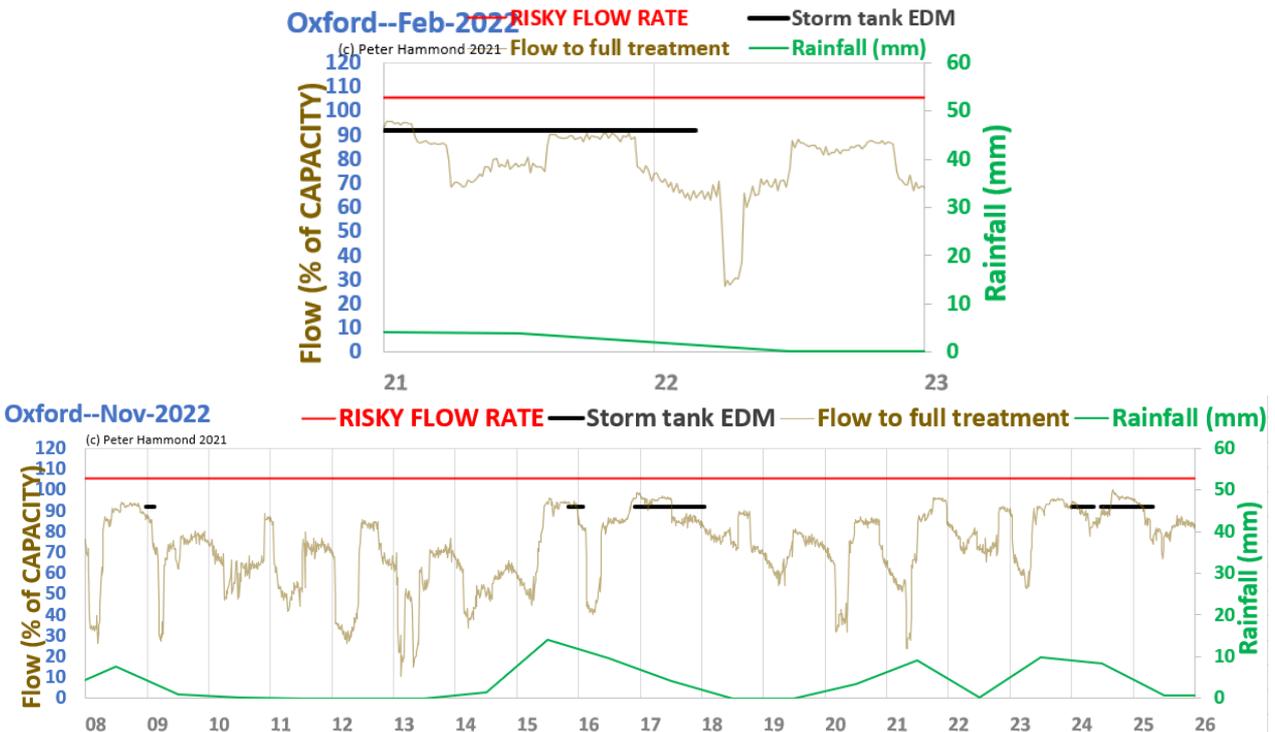
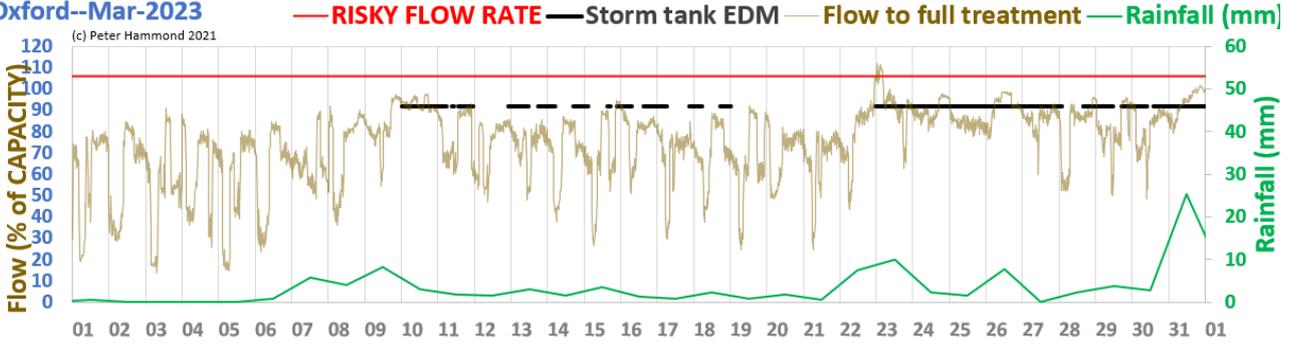


Figure 38: 7 days with illegal “early” spills at Oxford STW

For 2023-2025, the illegal spilling at Oxford STW continues unabated, with at least 125 days with illegal spills (Figs. 39-41).

2023

Oxford--Mar-2023



Oxford--Apr-2023

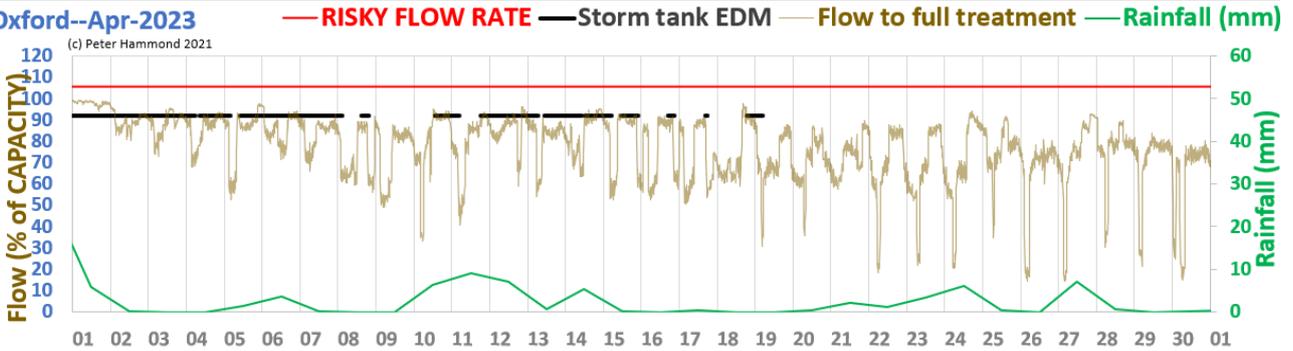


Figure 39: 31 days with illegal “early” spills at Oxford STW

2024

Oxford--Jan-2024

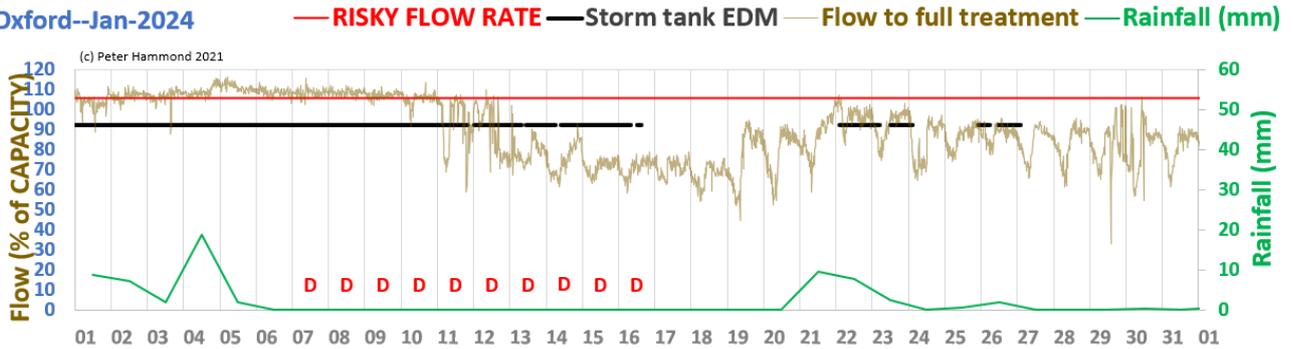


Figure 40: 8 days with illegal “early” spills, 10 “dry” and 6 both “dry” and “early” at Oxford STW

2025

Oxford--Jan-2025

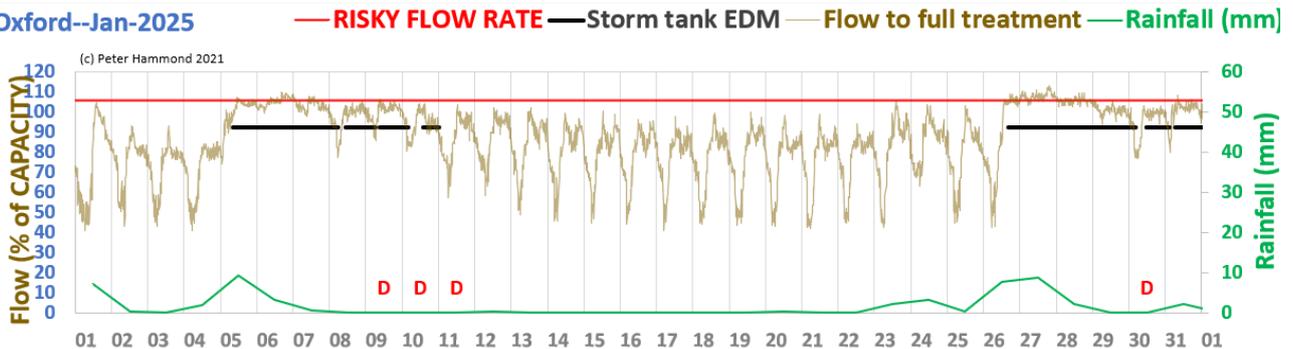


Figure 41: 4 days with illegal “dry” spills at Oxford STW

# Fairford\_Analysis

**9<sup>th</sup> MOST PROLIFIC illegal spiller with an annual illegality rate between 13% and 55%**

**Fairford STW**

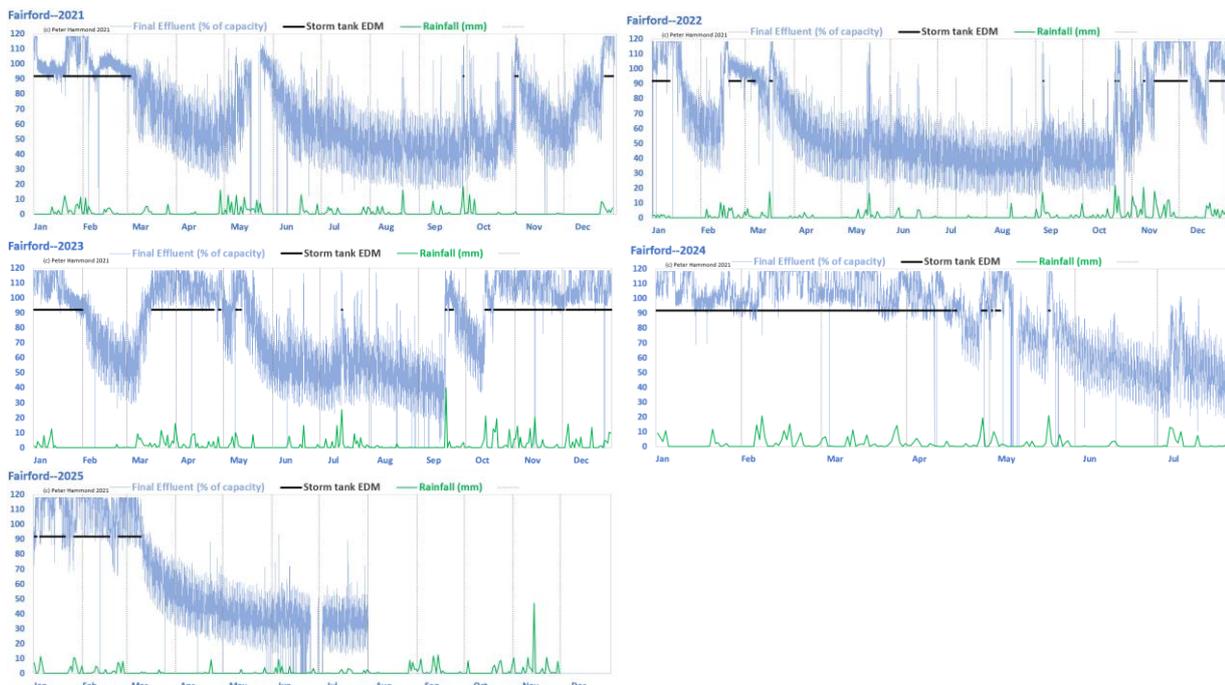


	2021	2022	2023	2024	2025
<b>Spill hours</b>	1,221	1,024	3,391	4,332	1,094
<b>Spill frequency</b>	64	63	157	199	56
<b>Illegal spills</b>	21	8	42	63	31
<b>% illegal</b>	33%	13%	27%	32%	55%
<b>Constituency</b>	South Cotswolds				
<b>MP</b>	Roz Savage				
<b>Party</b>	Liberal Democrat				

Fairford STW serves a population equivalent of nearly 5,000 and discharges to the River Coln.

WASP first published analysis of Fairford STW’s illegal spilling in 2021. In 2025, the EA issued 3 Compliance Assessment Reports (CARs) for Fairford STW addressing permit breaches in relation to dry weather flow, incomplete flow data provision and groundwater infiltration. All of the sewage spills from Fairford STW are due to groundwater ingress but unfortunately Thames Water has decided to defer upgrades to the works until AMP8 which could mean the illegal spilling could continue for another 5 years.

The final effluent data for Fairford STW for 2021 to 2025 are shown in the annual overview charts below. Notice that the maximum flow rate is always clipped to the same % of capacity. WASP believes this occurs when the effluent flow is greater than the maximum rate the meter can record.



**Figure 42 annual overview charts for Fairford STW for 2021 to 2025**

Clearly, Fairford STW is treating sewage at a rate that is considerably greater than its current permitted capacity – so high that the meter can’t even give a reading. WASP is concerned about the effect this might be having on the quality of the treated effluent. Unfortunately, Thames Water did not provide any of its “private” Ammonia sonde data for Fairford STW.

# Kingsclere\_Analysis

**10<sup>th</sup> MOST PROLIFIC illegal spiller with an annual illegality rate between 13% and 50%**

**Kingsclere STW**

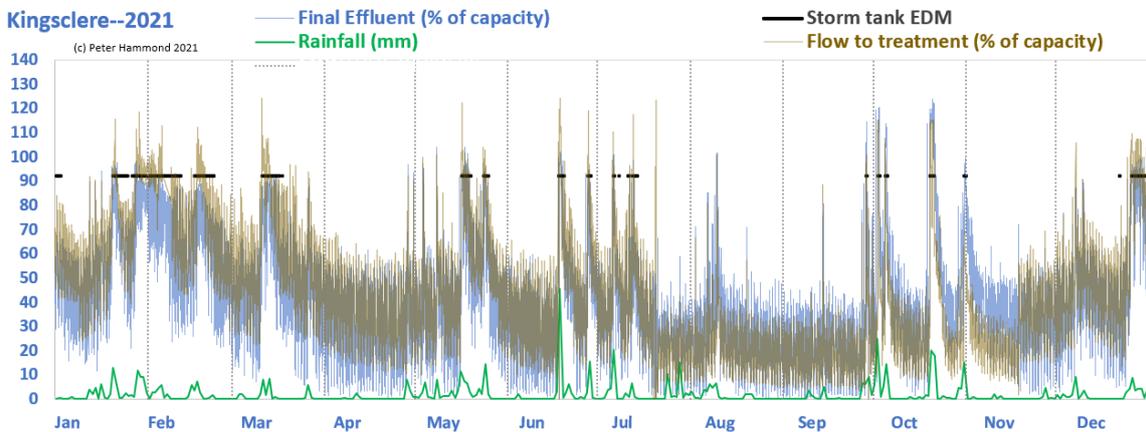


	2021	2022	2023	2024	2025
<b>Spill hours</b>	1,095	1,112	2,562	2,271	1,095
<b>Spill frequency</b>	74	69	133	117	121
<b>Illegal spills</b>	37	13	51	48	16
<b>% illegal</b>	50%	19%	38%	41%	13%
<b>Constituency</b>	North West Hampshire				
<b>MP</b>	Kit Malthouse				
<b>Party</b>	Conservative				

The vast majority of 165 illegal sewage spills at Kingsclere STW between 2021 and 2025 were “early” with 10 “dry” only, 116 “early” only and 39 both “dry” and “early”.

## 2021

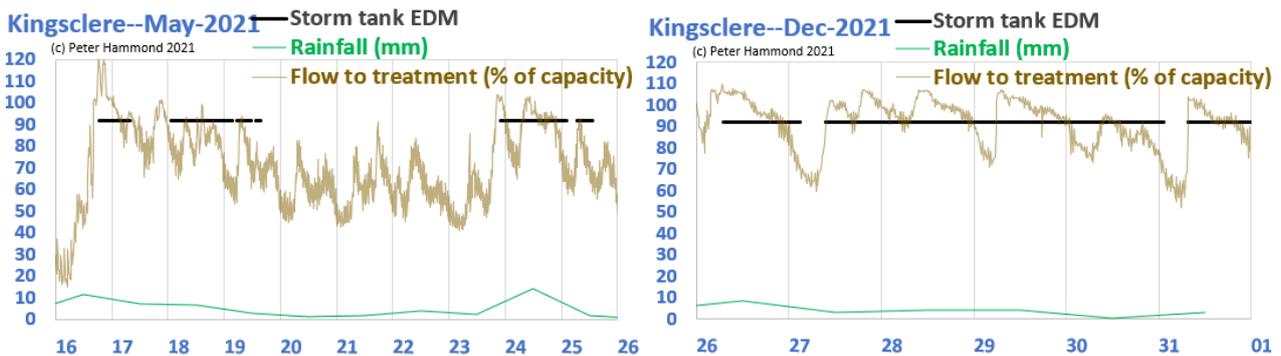
The 2021 annual overview for Kingsclere STW is shown in **Fig. 43**



**Figure 43 annual overview for 2021 for Kingsclere STW**

Many of the spill intervals are correctly clipped and consistent with sewage treatment flow and rainfall. But others, especially early in 2021, are longer than is suggested by the drop in sewage treatment which appears no longer to be diverted to the works storm tank.

Examples of illegal spills are shown below in **Fig. 44**.



**Figure 44 examples of illegal “early” sewage spills at Kingsclere STW (May 18,19,24,25; Dec 29,30)**

### 2022

The 2022 annual overview for Kingsclere STW is shown in Fig. 45

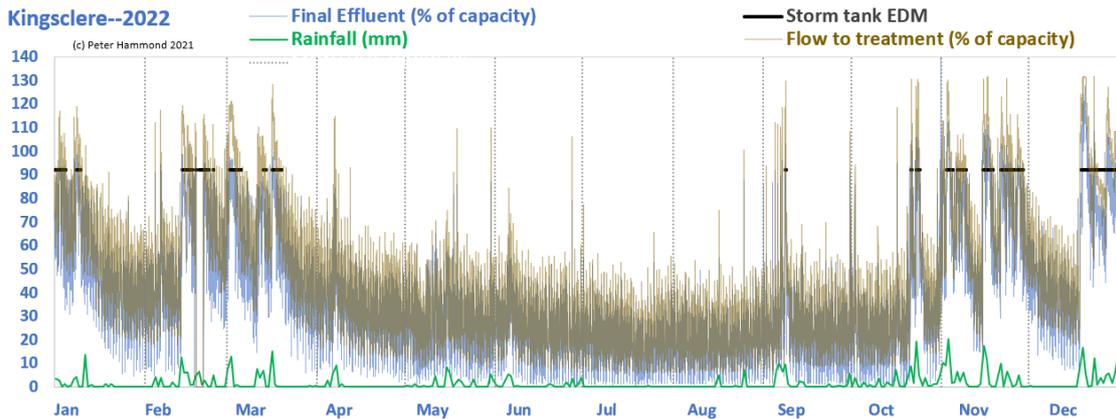


Figure 45 annual overview for 2022 for Kingsclere STW

Examples of illegal spills are shown below in Fig. 46

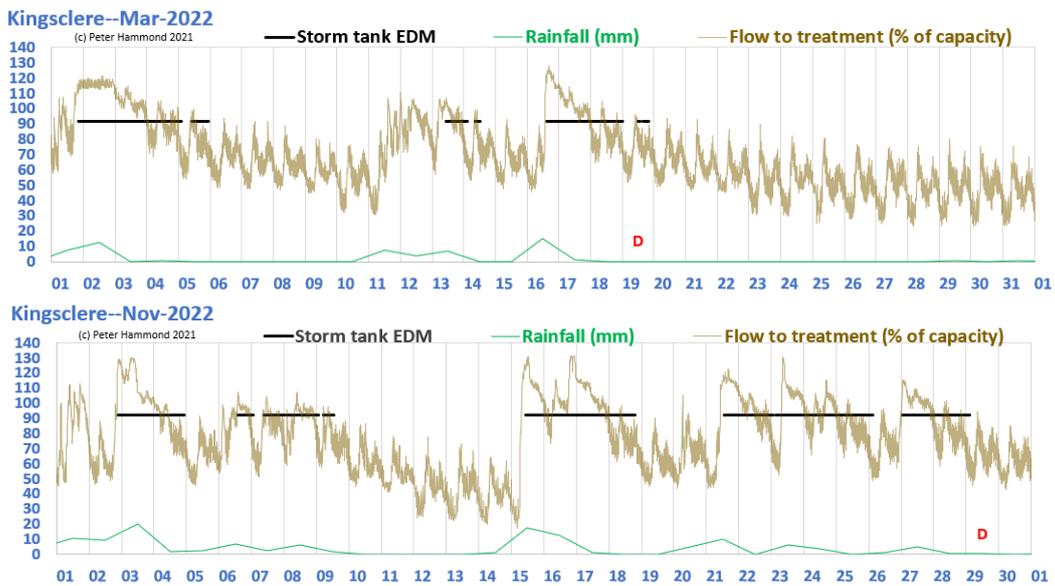


Figure 46 examples of illegal sewage spills at Kingsclere STW (Mar 4,5,18,19; Nov 4,18,23,28,29)

### 2023

The 2023 annual overview for Kingsclere STW is shown in Fig. 47

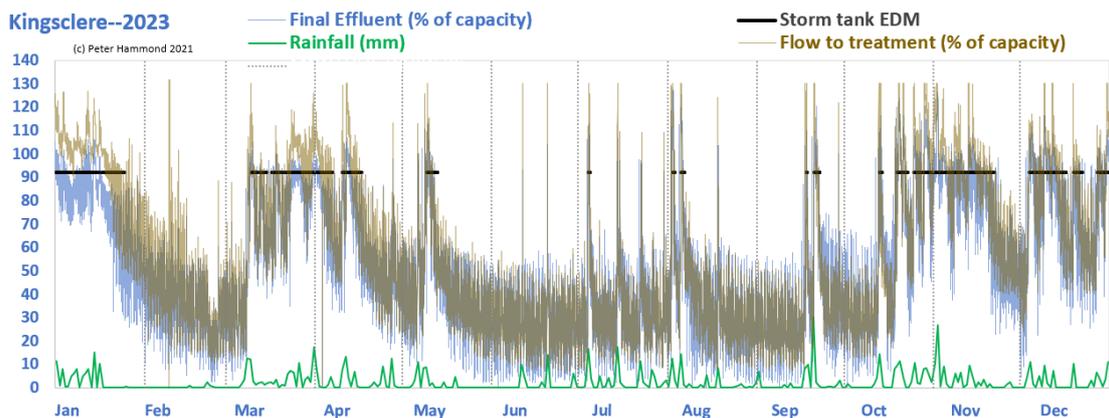
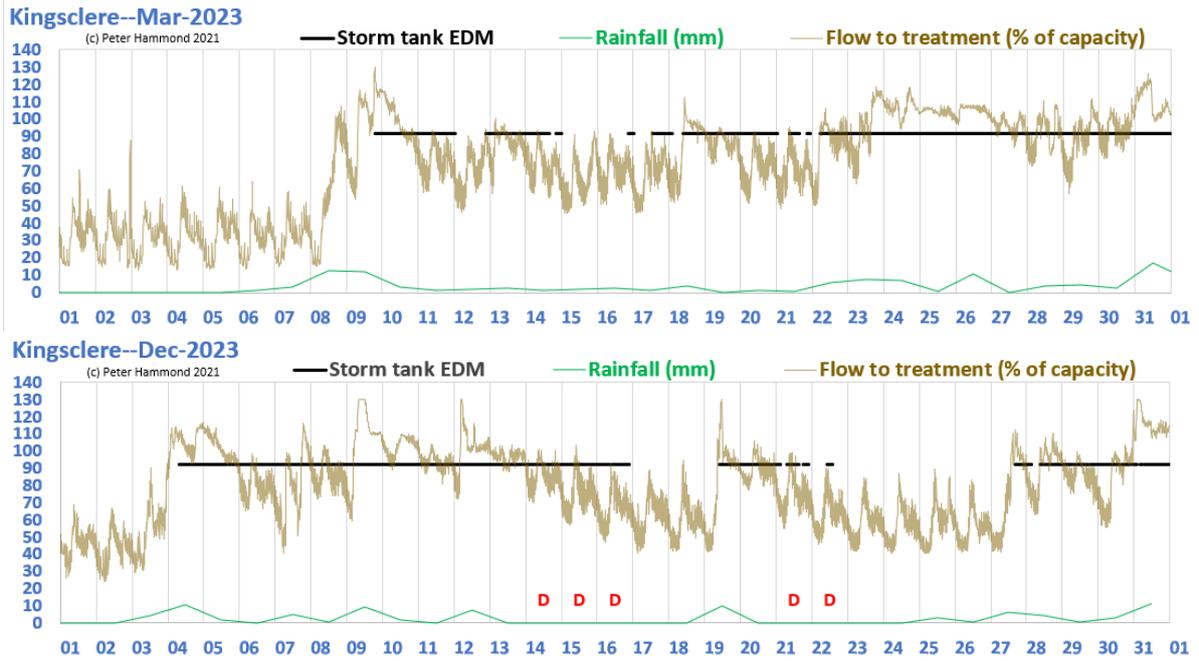


Figure 47 annual overview for 2023 for Kingsclere STW

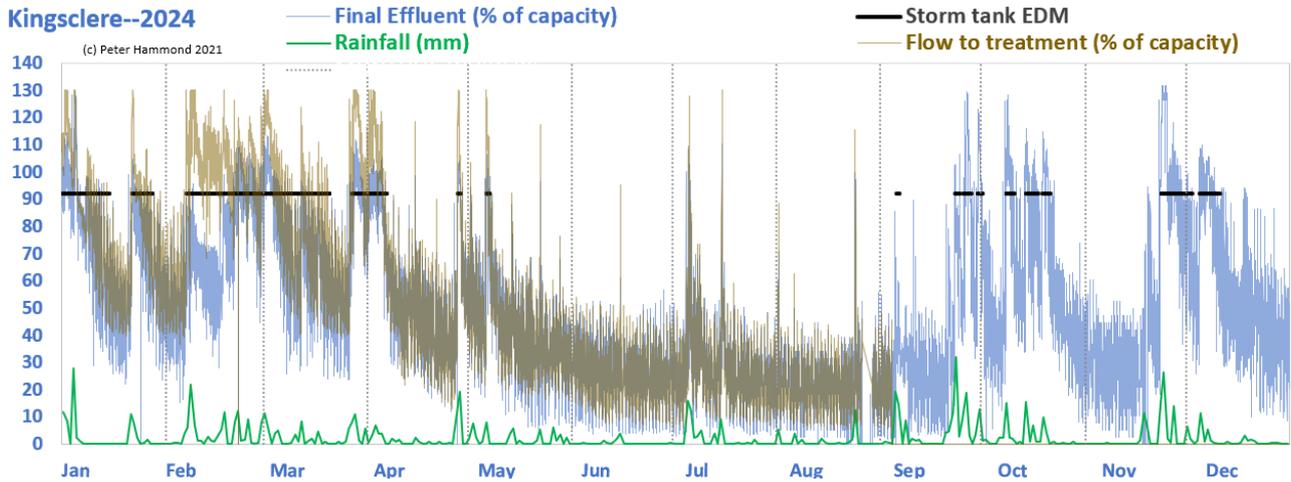
Examples of illegal spills are shown below in Fig. 48



**Figure 48: examples of illegal sewage spills at Kingsclere STW**  
(Mar 11,14,20,21,23,29;Dec 6-9,14-16,20-22,30)

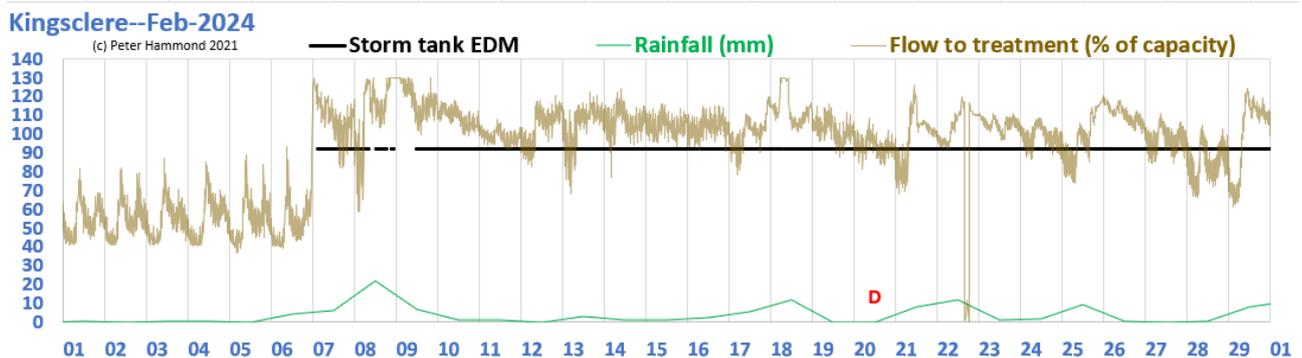
**2024**

The 2024 annual overview for Kingsclere STW is shown in Fig. 49



**Figure 49 annual overview for 2024 for Kingsclere STW**

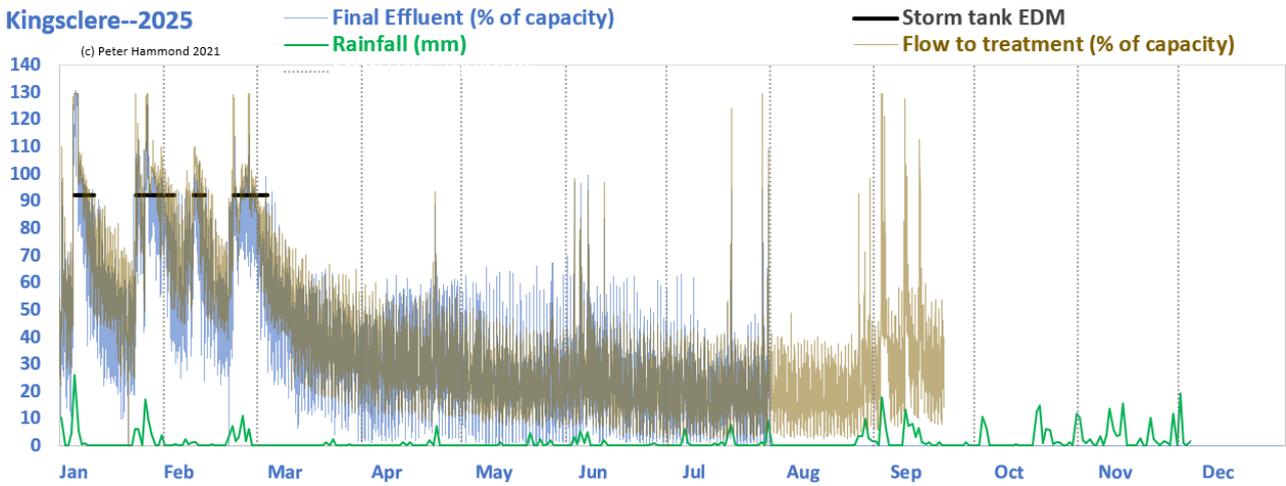
Examples of illegal spills are shown below in Fig. 50



**Figure 50 examples of illegal sewage spills at Kingsclere STW (Feb 20,21,28,29)**

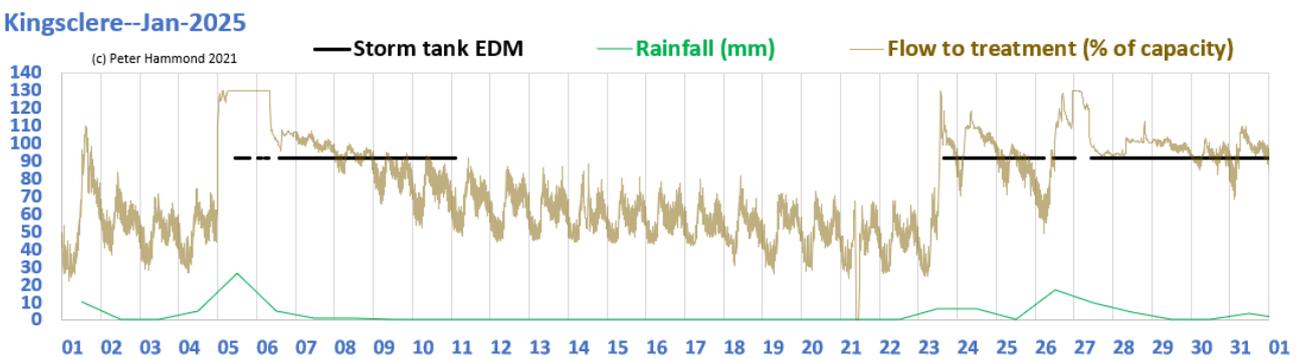
### 2025

The 2025 annual overview for Kingsclere STW is shown in **Fig. 51**



**Figure 51 annual overview for 2021 for Kingsclere STW**

Examples of illegal spills are shown below in **Fig. 52**



**Figure 52: examples of illegal sewage spills at Kingsclere STW (Jan 9-11,24,30)**

## EXAMPLES OF GOOD AND POOR DATA QUALITY

The examples begin with a quartet of Thames Water’s largest STWs serving a population equivalent of over 7.8 million, each with poor quality data (**Fig. 64**): Beckton, Crossness, Long Reach and Riverside.

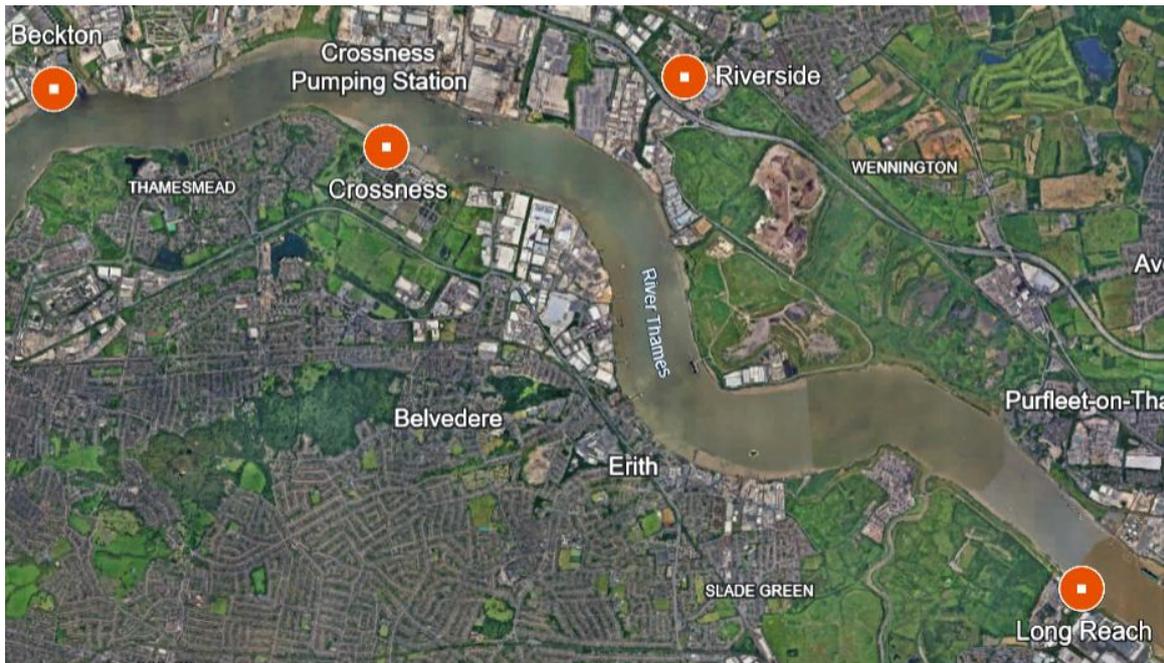


Figure 53: location of 4 of Thames Water’s largest STWs serving a total population equivalent of 7.8 million

# Beckton\_Analysis

## - missing data & illegal “early” sewage spills at “Europe’s largest STW”

Beckton STW serves a population equivalent of 4.26 million and used to discharge to the tidal River Thames. It is now linked to the Tideway Tunnel. Beckton STW rarely spills untreated sewage, as its 5-year overview below suggests, but the spills are not always compliant with its permit:

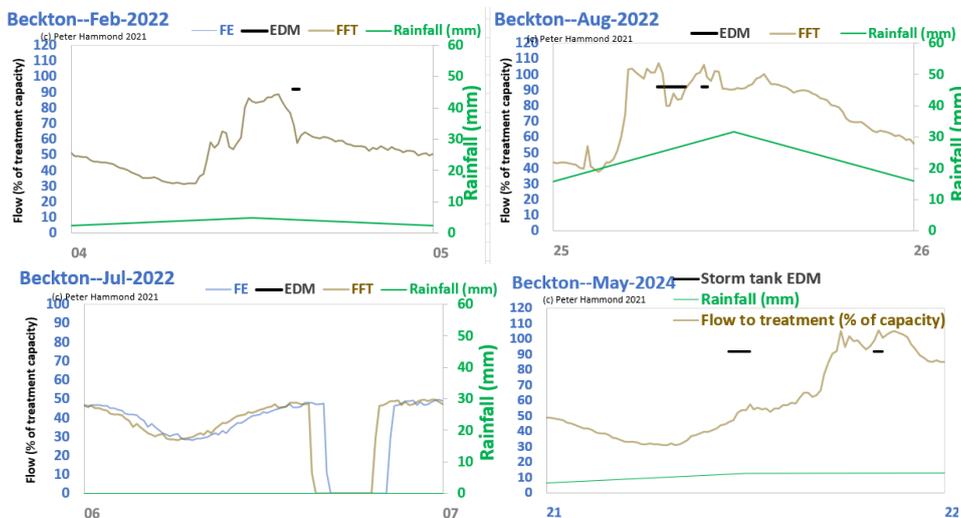


	2021	2022	2023	2024	2025
<b>Spill hours</b>	26.6	3.9	2.8	23.8	0
<b>Spill frequency</b>	13	6	6	6	1
<b>Illegal spills</b>	4	2	0	1	0
<b>% illegal</b>	31%	33%	0%	17%	0%
<b>Constituency</b>	West Ham and Beckton				
<b>MP</b>	James Asser				
<b>Party</b>	Labour				

Given its claim as the largest STW in Europe (disputed by Paris) and its 1864 establishment by none other than Joseph Bazalgette<sup>4</sup>, it is surprising that its sewage treatment flow data is not exemplary but has many gaps or “zero flows” as WASP calls them. WASP’s analysis of 2021 and 2022 data has established “zero flows” as well as a few illegal “early” spills of untreated.

As far back as 2020, WASP showed that “zero flows”, often explained by Thames Water – and even the EA –as due to flow meter error, can turn out to mask untreated sewage spills, often unpermitted and so illegal. See, for example, WASP’s 2019 analysis<sup>5</sup> of a 7-hour “zero flow” at **Burford STW** or WASP’s 2020 analysis<sup>6</sup> of a 3.5 month “zero flow” at Thames Water’s **Northleach STW**. Both were later admitted by Thames Water as being illegal sewage spills.

**Figs. 54a&b** show Beckton STW’s “zero” flows and illegal “early” spills in 2021 and 2022.



**Figure 54a:** Beckton STW has “zero flows” needing investigation (2022:Jul 6) and some illegal “early” untreated sewage spills (2022:Feb 4; Aug 25; 2024:May 21)

<sup>4</sup> [https://en.wikipedia.org/wiki/Beckton\\_Sewage\\_Treatment\\_Works](https://en.wikipedia.org/wiki/Beckton_Sewage_Treatment_Works)

<sup>5</sup> <https://drive.google.com/file/d/1jv9bupBAFcGCGpKNUkZNayWq7LTUmxY6/view?usp=sharing>

<sup>6</sup> <https://drive.google.com/file/d/1zrzmpgb3yokKwT9mchQc0NIRXVlcFGD-/view>

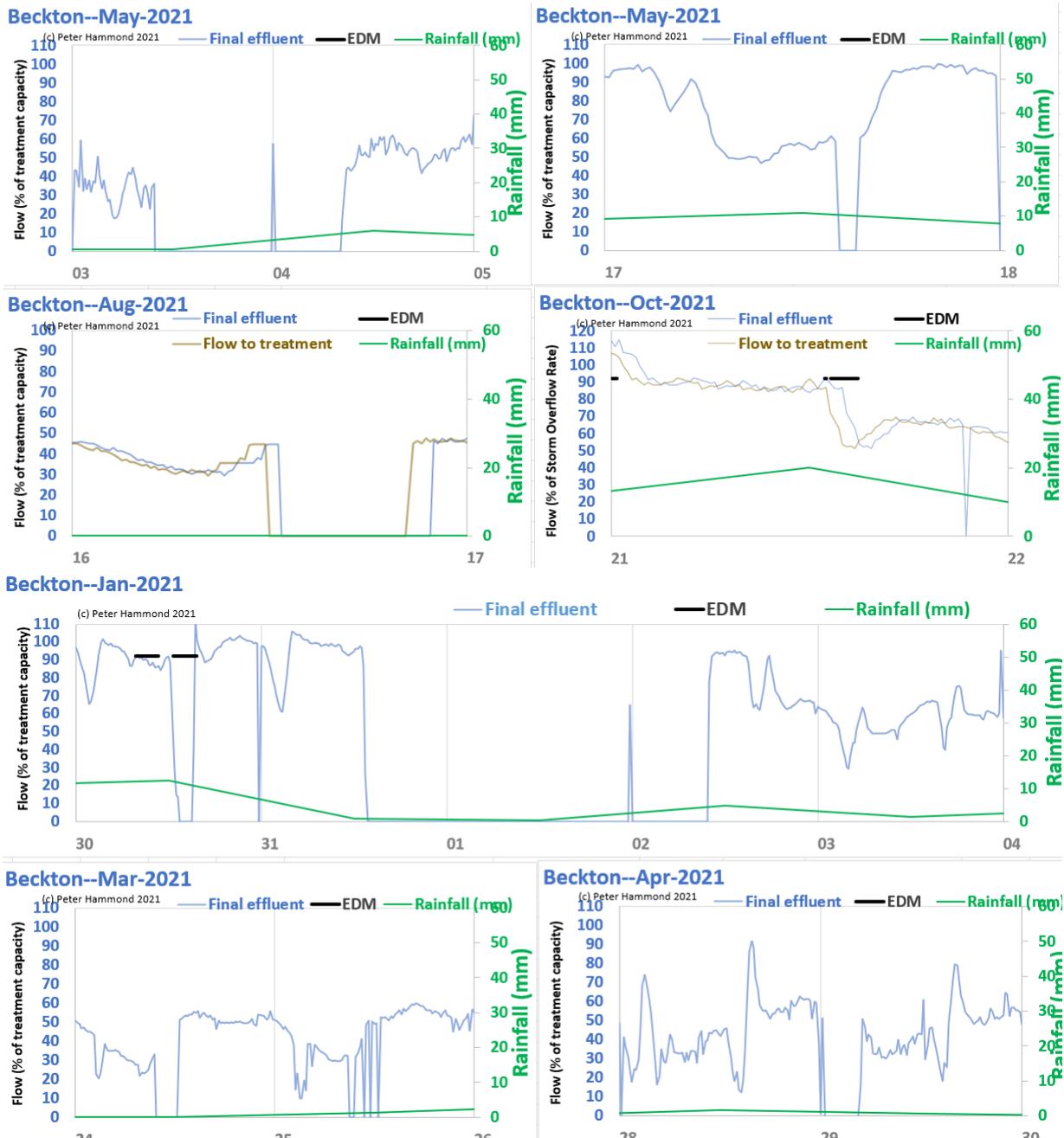
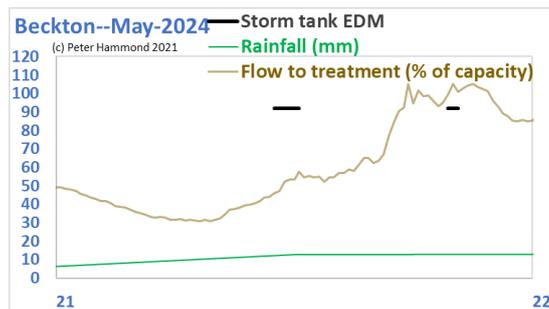


Figure 54b: Beckton STW has “zero flows” needing investigation (2021:Jan 30-Feb 2;Mar 24;Apr 28-29;May 3,17;Aug 16) and some illegal “early” untreated sewage spills (2021:Jan 30;Oct 21)

Beckton STW behaves well for the next 3 years apart from 1 “early” spill in May 2024.



# Crossness\_Analysis

– missing and inconsistent data at “Europe’s 2<sup>nd</sup> largest STW”

**Crossness STW**



	2021	2022	2023	2024	2025
<b>Spill hours</b>	384	55	232	233	52
<b>Spill frequency</b>	37	6	28	37	9
<b>Illegal spills</b>	2	4	0	0	0
<b>% illegal</b>	5.5%	66.7%	0	0	0
<b>Constituency</b>	Erith and Thamesmead				
<b>MP</b>	Abena Oppong-Asare				
<b>Party</b>	Labour				

Crossness STW serves a population equivalent of over 2.2 M and discharges to the tidal River Thames.

The data provided for Crossness STW suggests it was well behaved in October 2021 with good spill interval separation and consistency between sewage treatment, spill and rainfall data:

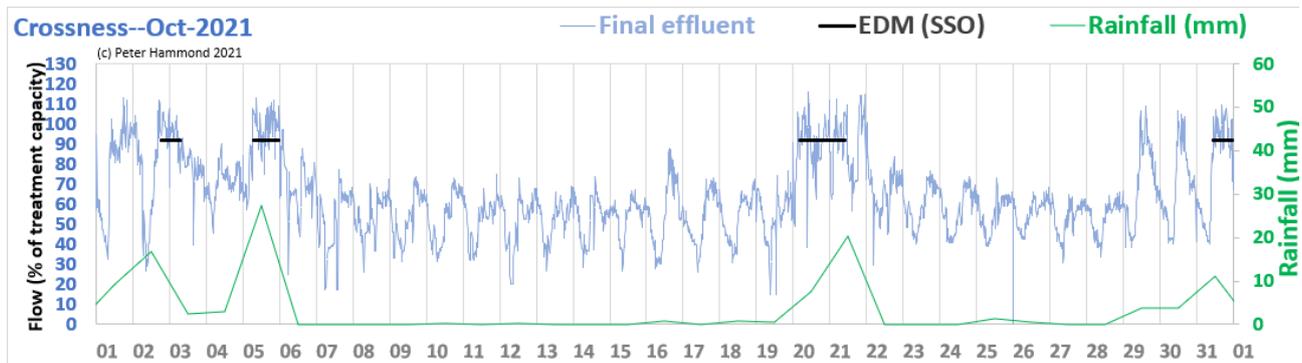


Figure 55: October 2021 chart for Crossness STW gives the appearance of well-behaved data

but consider the 2021 annual overview:

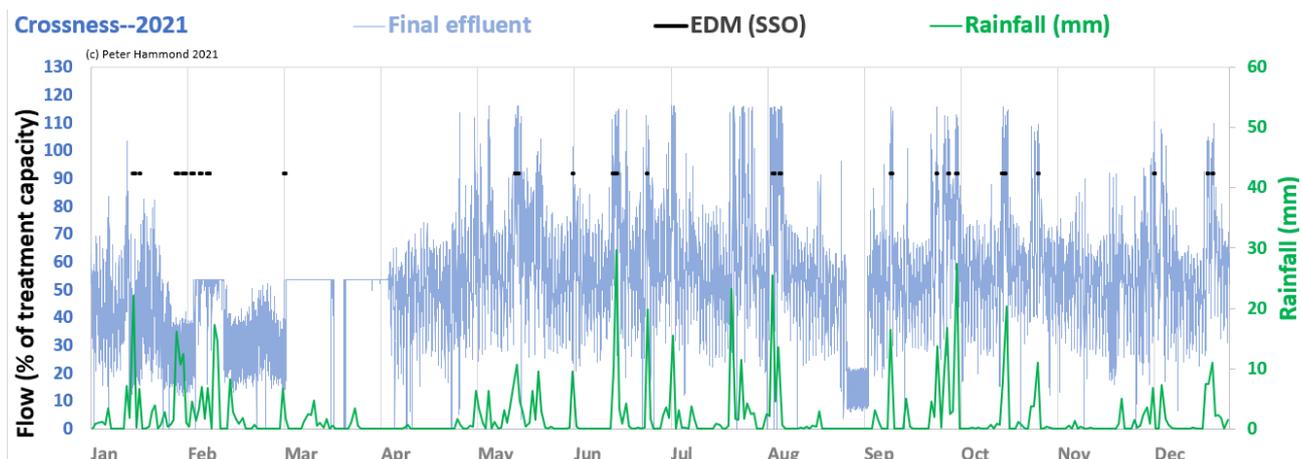


Figure 56: 2021 overview for Crossness STW shows sudden flow losses and increases in final effluent

Were the spills in Jan-Feb 2021 “early” - given a final effluent flow as low as 25%-35% of treatment capacity? What about the data constancy and hiatus in Mar/Apr? Itself, a permit breach? And, why the dramatic fall and rise in sewage flow data in Aug/Sept?

Finally, with the addition of flow to full treatment data provided by Thames Water to the EA (and thence to WASP), observe the dramatic difference in scaling as well as further data gaps lasting months.

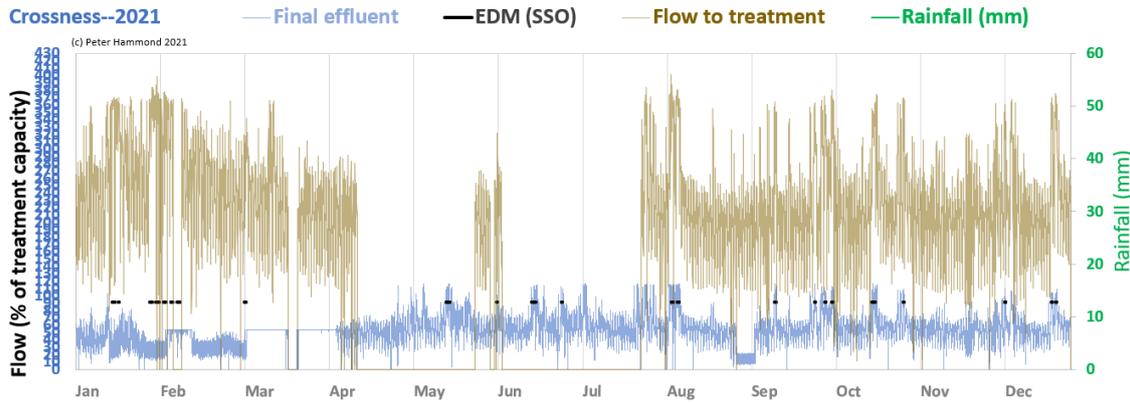


Figure 57: 2021 overview for Crossness STW with gaps and drops/rises in final effluent and flow to treatment

There clearly is some sort of scaling issue. Indeed, WASP scaled the flow to full treatment to exactly 0.25 of the original and the behaviour is remarkably what might be expected. But rather than speculate on that issue, WASP decided to ignore the flow to full treatment data altogether.

The 2022 data is not much better with a large hole in the final effluent data during heavy rainfall where no spills are recorded and potential illegality of spills cannot be investigated.

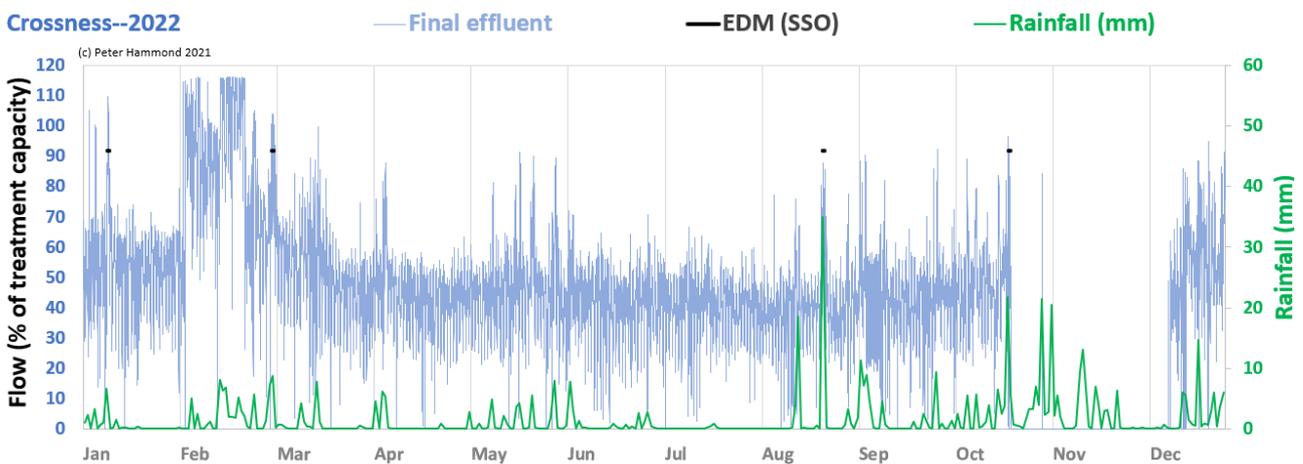


Figure 58: 2022 overview for Crossness STW with gaps in final effluent during heavy rainfall

The 2023 final effluent data for Crossness STW has “zero flows” such as 16/01/2023:

Crossness--Jan-2023

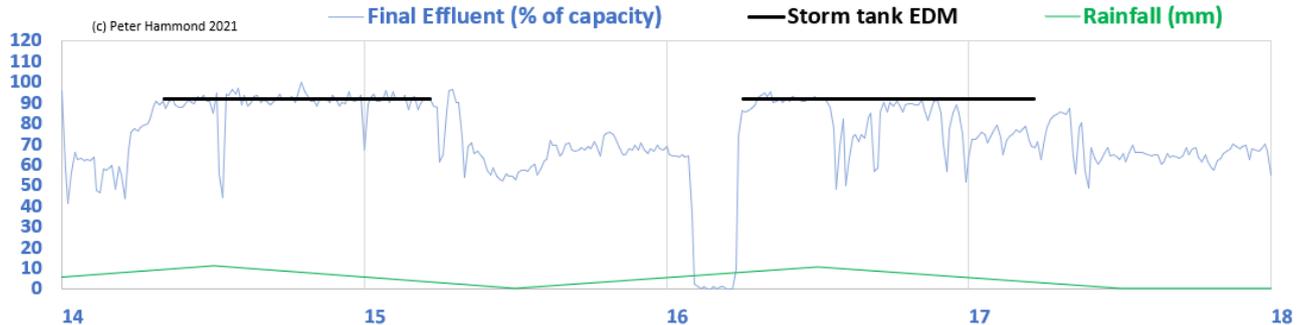
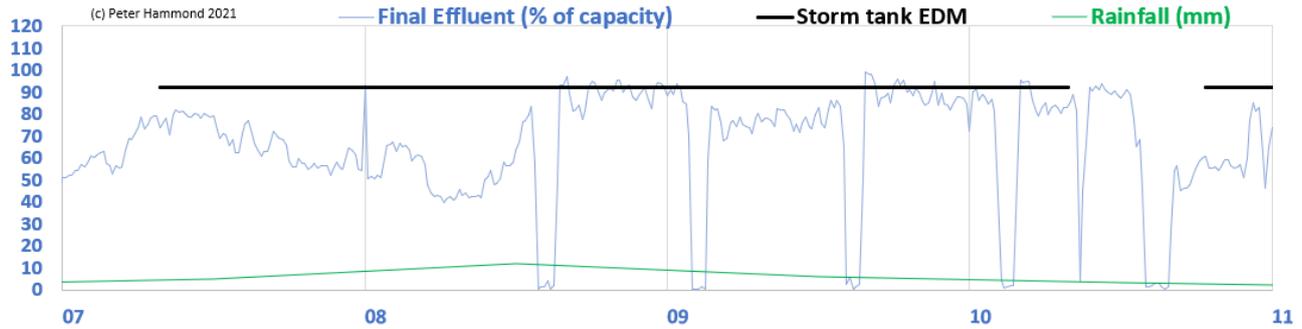


Figure 59: “zero” flows at Crossness STW in Jan 2023

and 8-11/3/2023 where there are also potentially illegal “early” spills:

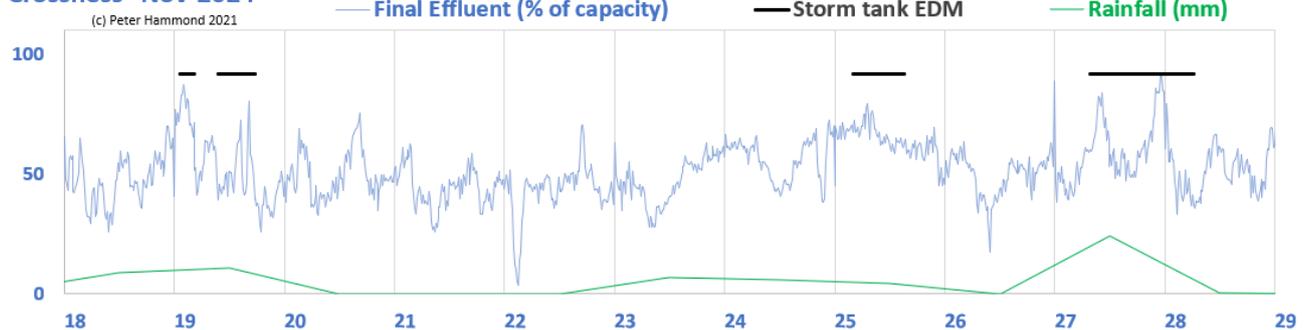
**Crossness--Mar-2023**



**Figure 60: “zero” flows at Crossness STW in Mar 2023**

2024 offers much more reliable data but there are still examples of questionable “early” spilling such as the 40% final effluent flow during spills on Nov 19 and 28 as well as a dramatic loss of final effluent on Nov 22.

**Crossness--Nov-2024**



**Figure 61: illegal “early” spills at Crossness STW in Nov 2024**

Finally, 2025 is especially interesting because the EA’s Public Register lists 2 Compliance Assessment Reports (TH\_CSSA.0362\_PR\_I-542120\_20250218 and TH\_CSSA.0362\_PR\_I-574363\_20250127) which record 2 illegal spills in January 2025 self-reported by Thames Water. The reports were not issued until August 2025 and WASP only noticed them some time afterwards so it is unclear when they were uploaded to the Public Register.

The EA report on the first self-reported spill contains the following:

*Thames Water Utilities Limited (TWUL) self-reported incident reference NIRS 02340013 on 05/01/2025 at 14:49 hours: 'We have had a storm discharge today with out being able to treat full flow to treatment (FFT). We have found a pumping issue and these have been reset now, however they take sometime to come back on after each failure.'*  
*Data provided by TWUL under a Section 108(4)(k) request covered Crossness EDM (Event Duration Monitor) data, storm tank discharge times and flow to treatment information for the period 05/01/2025 to 07/01/2025.*  
*Analysis showed that for the period 05/01/2025 to 07/01/2025:*  
*Spills occurred when flow rates were at least 50% of the permitted Pass Forward Rate.*

The flow and spill data corresponding to this period are shown below:

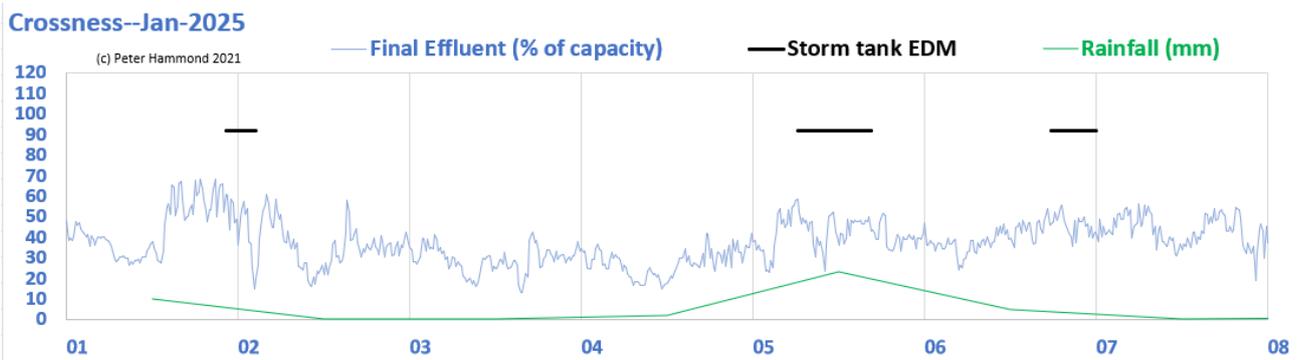


Figure 62: flow and illegal “early” spills around Jan 5<sup>th</sup> 2025 self-reported permit breach by Thames Water

WASP cannot confirm that the flow to full treatment was below or above capacity but certainly the final effluent level is 40% or so of capacity during the spills on Jan 5<sup>th</sup> and Jan 7<sup>th</sup>. This is also true of the spill Jan 1<sup>st</sup>/2<sup>nd</sup> when the final effluent is as low as 15% of capacity and yet that spill was not reported as illegal by Thames Water.

The EA report on the second spill includes the following:

*Thames Water Utilities Limited (TWUL) self-reported incident reference NIRS 02353104 on 27 January 2025 at 20:14 hours: "We had a storm discharge on 27/01/2025 at 04:15am without being able to treat full flow to treatment due to plant issues on-site. At 08:01 this morning, site confirmed that it was treating full flow to treatment". The closure report was received on 29 January 2025 at 18:26 hours: "Site confirmed we are no longer storm discharging".*

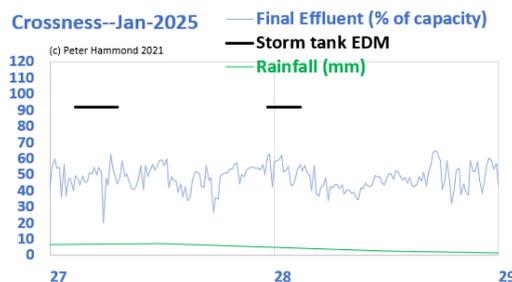


Figure 63: flow and illegal “early” spills around Jan 7<sup>th</sup> 2025 self-reported permit breach by Thames Water

WASP is unable to confirm when the flow to full treatment was below or above capacity during the spill. Although Thames Water told the EA that the spill started at 04:15 am, the EDM spill data says it started at 02:45 am. The EA classed the spill as Category 3 but there is no record in the report of a visit by EA staff or evidence collected by Thames Water or one of its agents. A similar spill occurred later that day but was not mentioned in the EA report.

WASP’s response to findings for Crossness STW is this question:

How can it possibly be acceptable that data of such poor quality and reliability, essential to checking permit compliance of **Europe’s 2<sup>nd</sup> largest STW**, be submitted to a national regulator by a major utility company?

# Long\_Reach\_Analysis

– gross data gap, inconsistent data and illegal spills of untreated sewage

## Long Reach STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	419	58	408	332	78
<b>Spill frequency</b>	46	8	50	40	10
<b>Illegal spills</b>	10	7	12	8	1
<b>% illegal</b>	21%	87.5%	24%	20%	10%
<b>Constituency</b>	Dartford				
<b>MP</b>	Jim Dickson				
<b>Party</b>	Labour				

Long Reach STW serves a population equivalent of 940,000 and discharges to the tidal River Thames.

### 2021

The annual overview for 2021 for Long Reach STW (Fig. 64) has a short sewage treatment data gap in January and a gross gap between July and October.

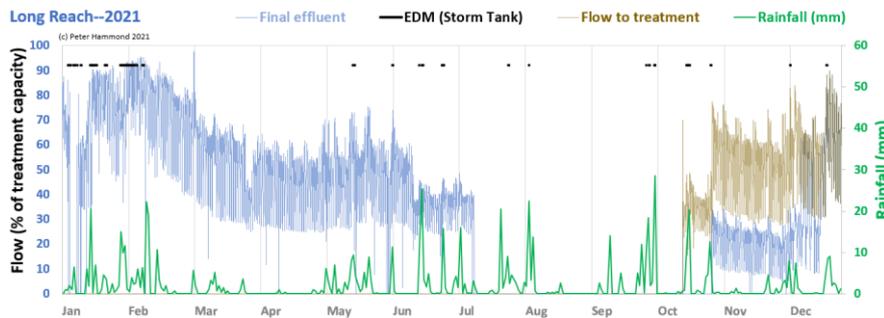


Figure 64: annual overview for 2021 for Long Reach STW showing months of missing sewage treatment data.

Besides gaps in treatment data, there is a significant difference between final effluent and flow to treatment apparent in Nov 2021 after which the two series coalesce in mid-Dec 2021 (Fig. 65).

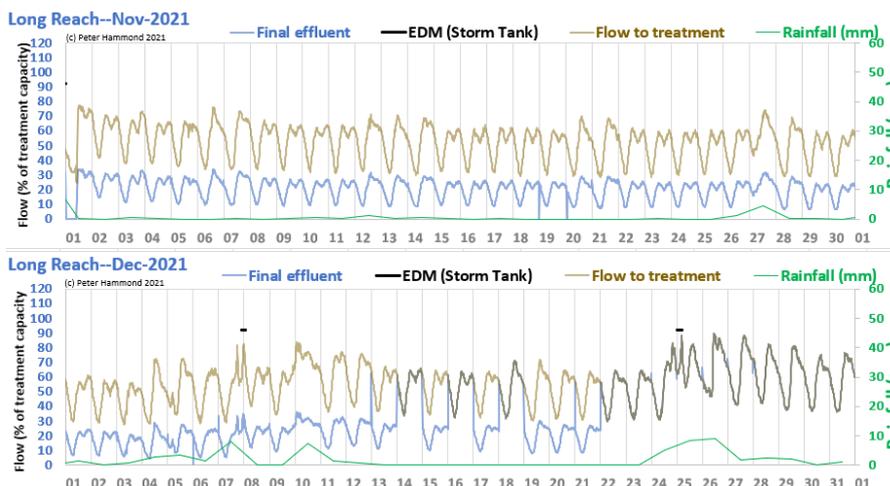


Figure 65: annual overview for 2021 for Long Reach STW showing months of missing sewage treatment data.

Finally, there appear to be several illegal “early” spills of untreated sewage (Fig. 66). The letter “D” is used to label days where the spill is on a “dry day” where rainfall on the day and eve of the spill was less than 0.25 mm. “Dry day” spills may be illegal but here the focus is on illegal “early” spills.

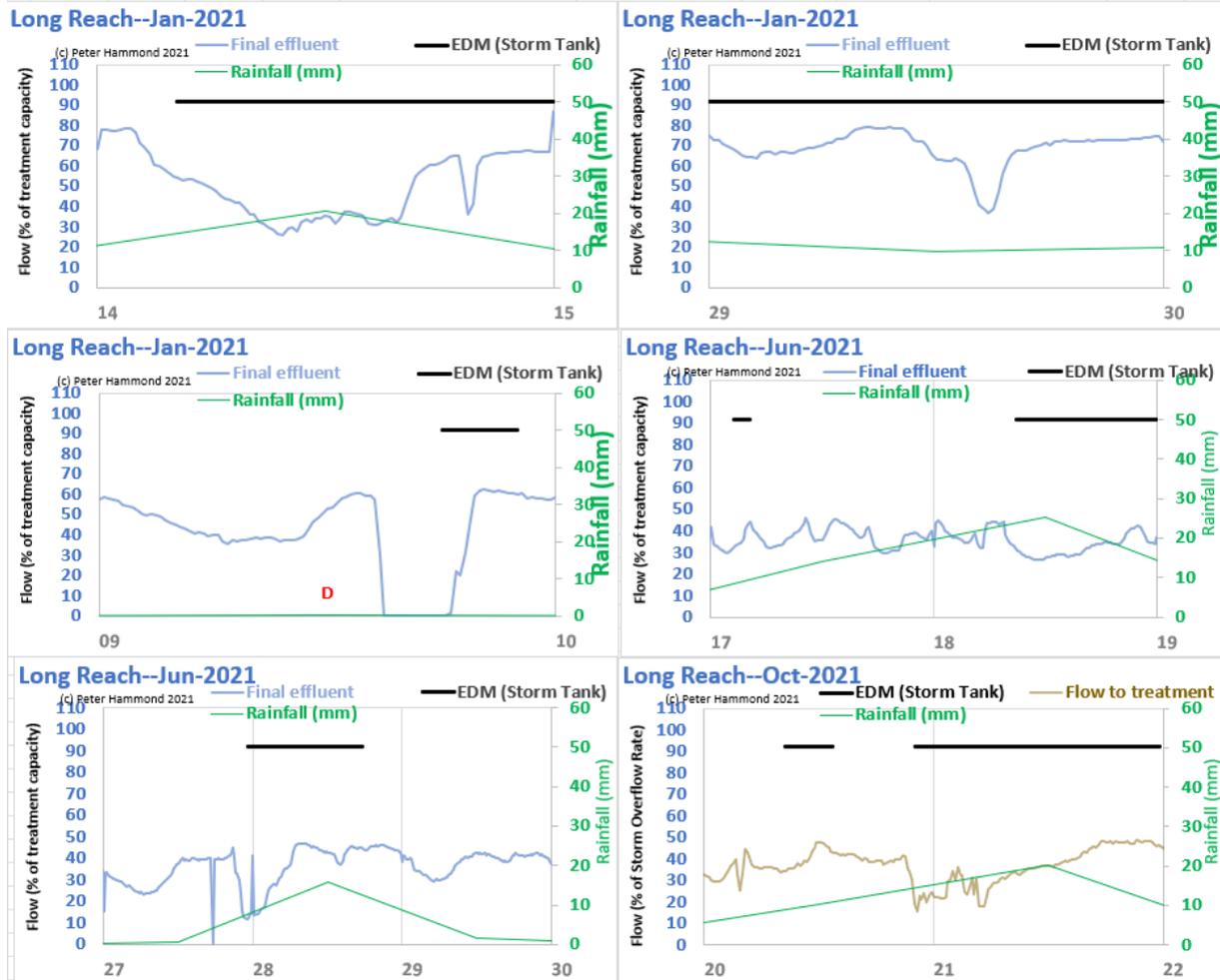


Figure 66: potential illegal spills of untreated sewage at Long Reach STW in 2021 (Jan 9,14,29; Jun 17-18,27-28; Oct 20,21)

2022

WASP’s analysis suggests there were at least 7 “early” and 6 “dry” illegal spills at Long Reach STW in 2022.

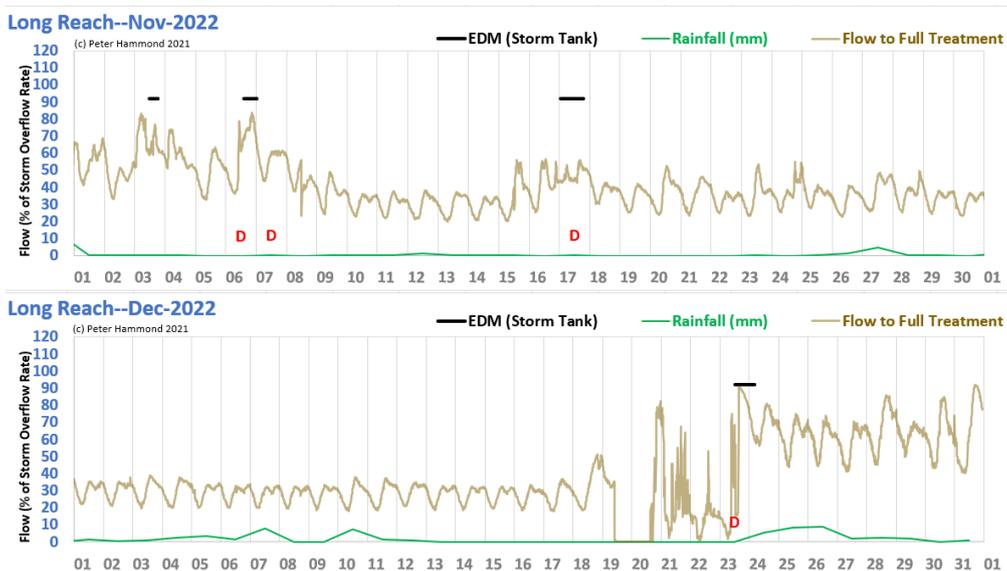
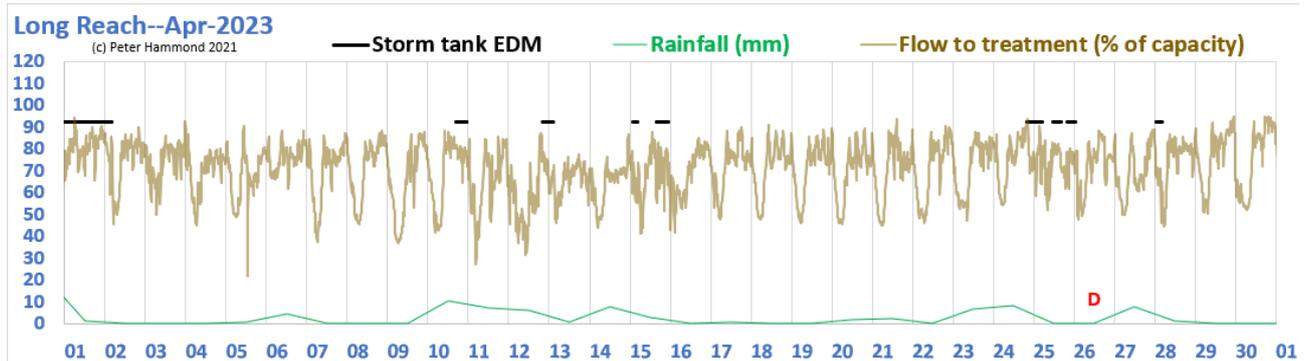


Figure 67: “dry” and “early” spills at Long Reach STW in 2022

**2023**

WASP’s analysis suggests there were at least 10 “illegal” early spills at Long Reach STW in 2023. Some examples are provided below for April 2023. These should be compared to a self-reported spill discussed later under **2025**.



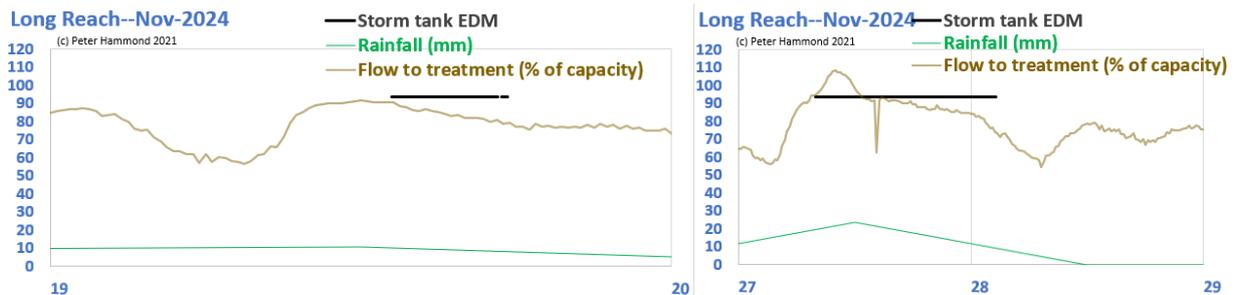
**Figure 68: 9 days with “early” spills and 1 with a “dry” spill at Long Reach STW in 2023**

**2024**

An EA CAR report (I/543162) of Jan 20th 2025, describes Thames Water’s self-reported illegal “early” spill at Long Reach STW on November 19<sup>th</sup> 2024 recorded on the NIRS database (NIRS 2323619):

*Thames Water Utilities Limited (TWUL) self-reported NIRS 2323619 to the Environment Agency on 19 November 2024 at 20:01 hours. This notification was that the site discharged between 13:20 and 16:20 hours during heavy rainfall whilst not taking full flow to treatment (FFT).*

The EDM data received from Thames Water by WASP suggests the spill was actually 2 spills: 13:20 to 17:18 and 17:26 to 17:40. But there was another illegal “early” spill a week or so later and at least 6 others earlier in the year – so 8 illegal “early” spills in all.



**Figure 69: examples of days with “early” spills at Long Reach STW in 2024**

**2025**

Given the illegal “early” spill self-reported for November 2024 and the EA’s CAR report of that incident was completed at the end of April 2025, it is surprising that the EA did not then retrospectively look for other similar illegal spills.

WASP identified at least 1 illegal “early” spill in January 2025 and possibly others if the stricter criteria of 6.16% MECERTS meter error is applied as the EA did in its CAR report of the November 2024 incident.

# Riverside\_Analysis

– unreliable data or incompetent EDM maintenance, which is it?

## Riverside STW

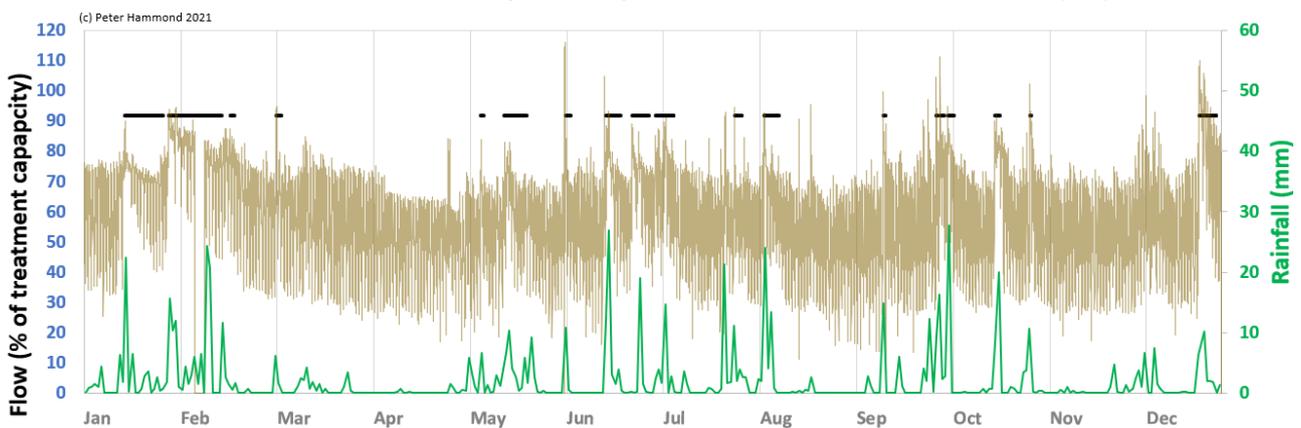


	2021	2022	2023	2024	2025
<b>Spill hours</b>	1733	81	75	105.3	1733
<b>Spill frequency</b>	100	12	17	14	1
<b>Illegal spills</b>	8	0	0	0	0
<b>% illegal</b>	8%	0%	0%	0%	0%
<b>Constituency</b>	Dagenham and Rainham				
<b>MP</b>	Margaret Mullane				
<b>Party</b>	Labour				

Riverside STW serves a population equivalent of about 440,000 and discharges to the Rainham Creek which becomes the River Ingrebourne before joining the tidal River Thames.

The two annual overviews below for 2021 and 2022 show quite contrasting behaviour.

### Riverside-FE & FFT-2021



### Riverside--2022

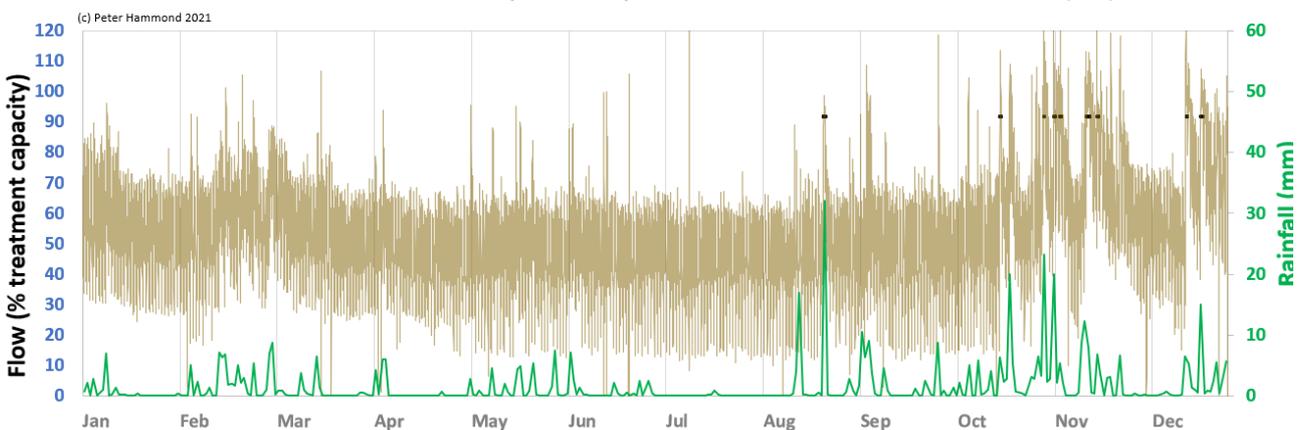
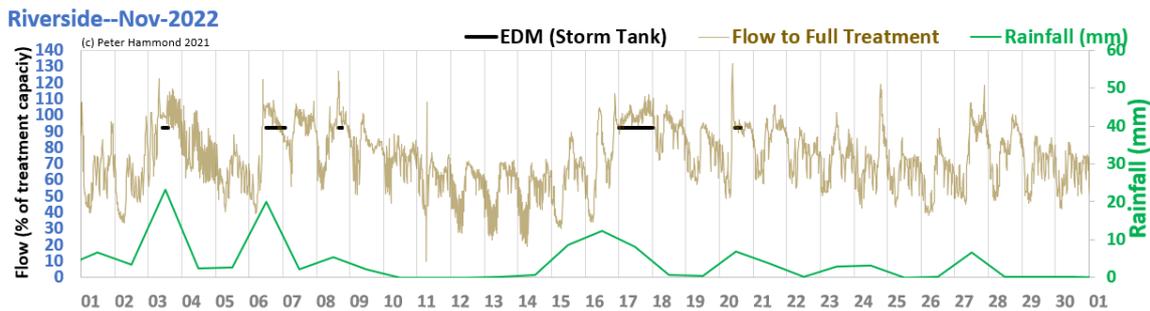


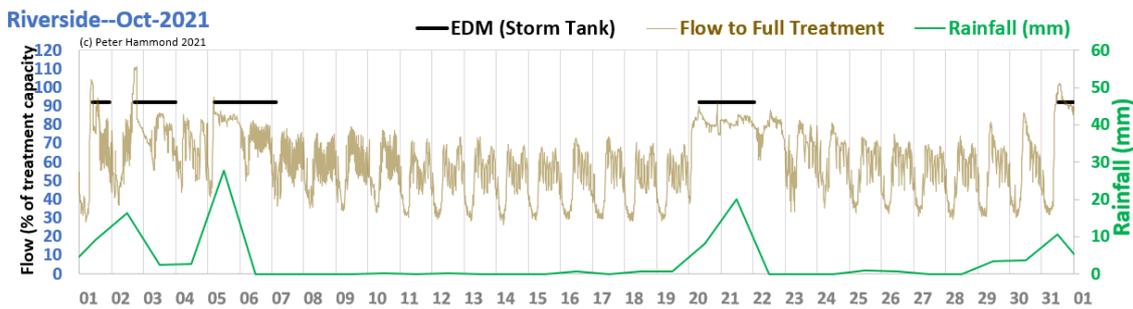
Figure 70: annual overviews for Riverside STW for 2021 and 2022: spills in 2022 are all within permit whereas at least 8 days in 2021 involve illegal “early” spills; it could be as many as 80 days have illegal “early” spills but WASP has generously assumed some of the EDM data are unreliable

The spills in 2022 all appear to occur when sewage flow to treatment is above the works treatment capacity of 2,384 l/s (taking the 8% EA error allowance into account). In contrast, in 2021, many of the spills occur when the sewage flow to treatment is well below the required level and so the spills are unpermitted and hence illegal. For example, **Fig. 71** shows the November 2022 data series with clean separation between spills and consistency with flow and rainfall data.



**Figure 71:** Nov’2022 chart at Riverside STW with clean permitted spill data consistent with rainfall & sewage flow

Compare this with the October 2021 monthly series (**Fig. 72**) where the last spill occurs with the flow to treatment above the required permit level unlike the earlier spills.



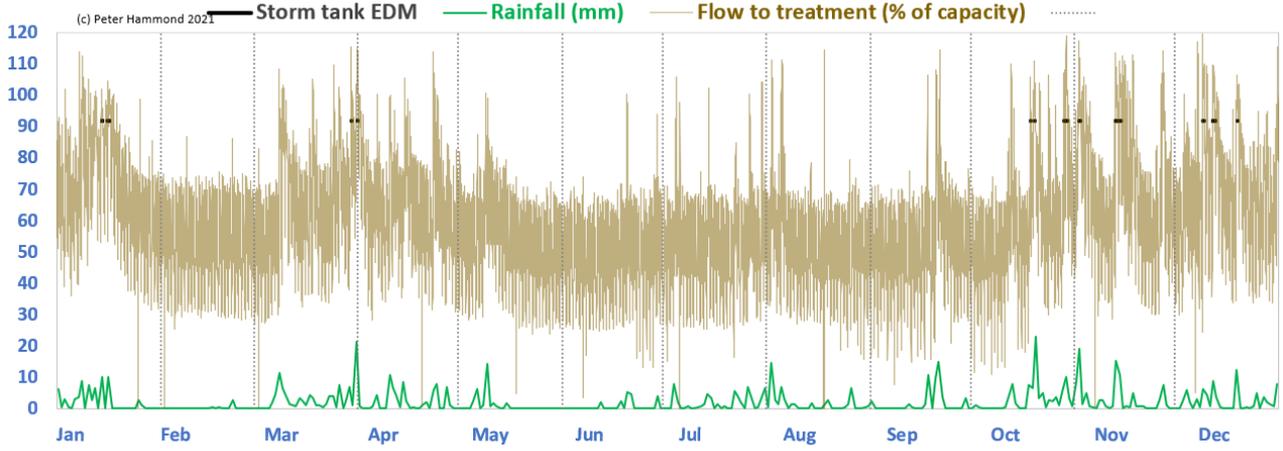
**Figure 72:** Oct’2021 chart at Riverside STW with apparently non-compliant spills

An alternative interpretation is that these earlier spills identified in Oct’2021 are extended beyond consistency with sewage treatment and rainfall data. In that case, the data would be considered unreliable.

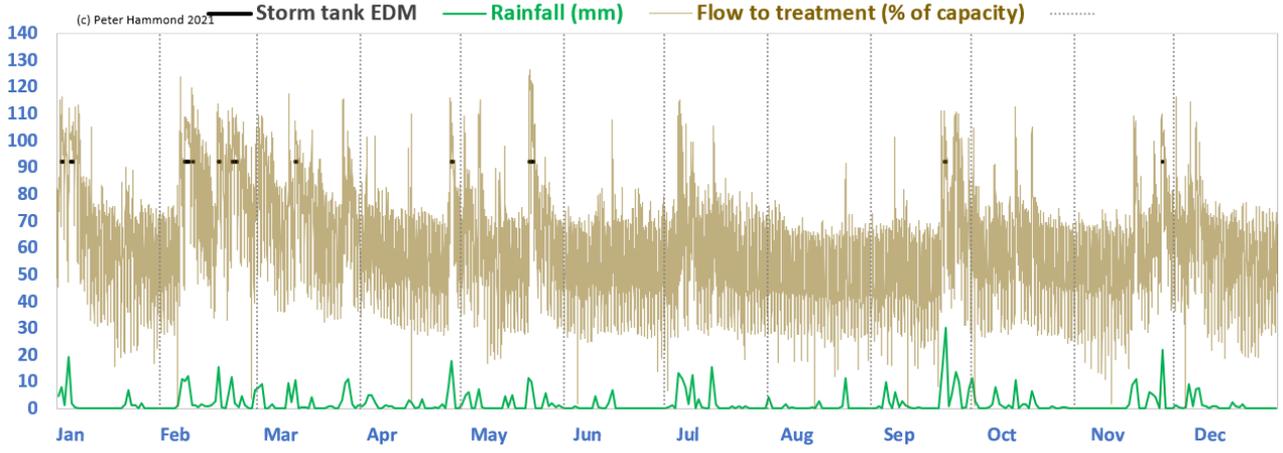
So either the 2021 data are reliable and there are more than 80 days with illegal “early” spills or the data are unreliable because the EDM device has not been installed correctly or has been poorly maintained. The choice is illegality or incompetence, which is it?

WASP has taken the generous interpretation that the data are unreliable and Thames Water are guilty of incompetence rather than illegal “early” spilling in this instance. The spill, sewage flow and rainfall data suggest there were no illegal spills in 2023, 2024 and 2025.

### Riverside--2023



### Riverside--2024



### Riverside--2025

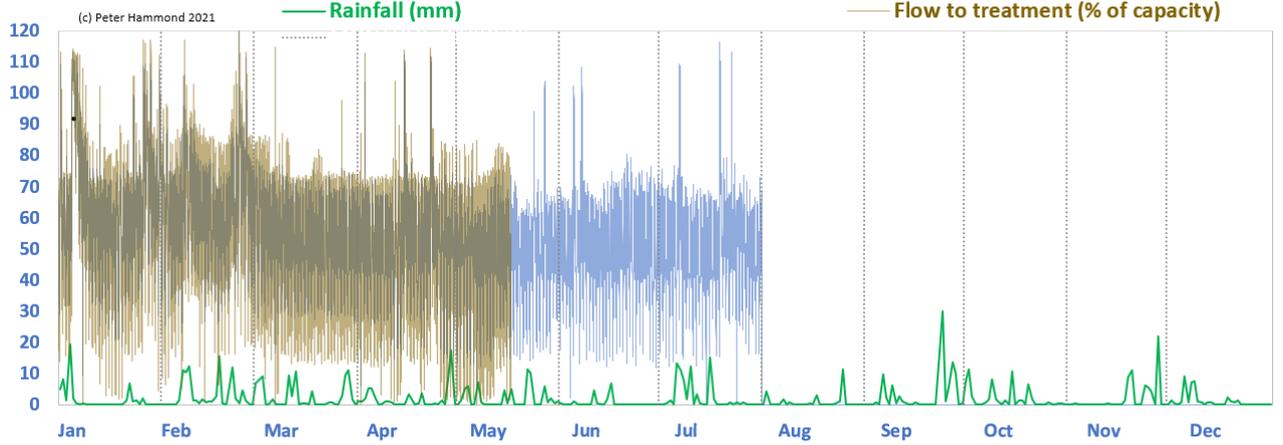


Figure 73: compliant spilling Riverside STW in 2023 to 2025

# Deephams\_Analysis

**mixed data quality with some illegal “early” sewage spills**



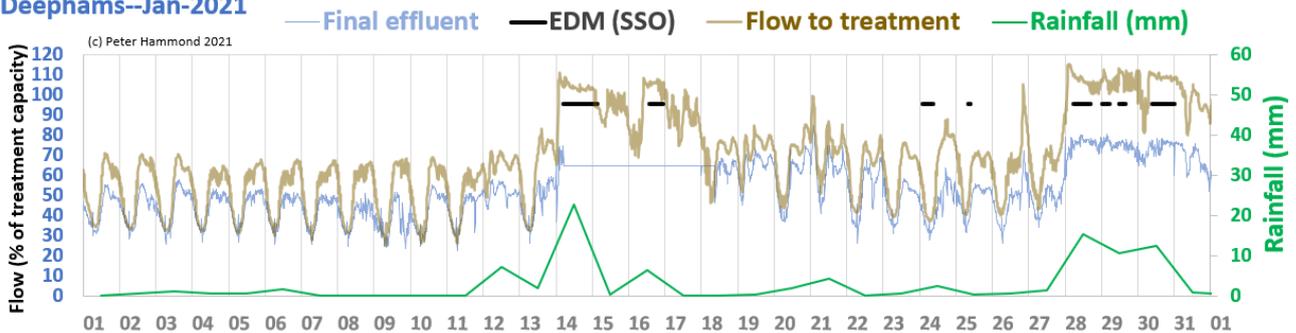
Deephams STW

	2021	2022	2023	2024	2025
<b>Spill hours</b>	184	121	111	231	48
<b>Spill frequency</b>	32	15	18	28	4
<b>Illegal spills</b>	7	4	0	0	0
<b>% illegal</b>	22%	27%	0%	0%	0%
<b>Constituency</b>	Edmonton and Winchmore Hill				
<b>MP</b>	Kate Osamor				
<b>Party</b>	Labour/Co-operative				

Deephams STW is located in Edmonton, North London. It serves a population equivalent of over 1 million and discharges to the Salmon’s Brook which eventually joins the River Lea.

Deephams STW generally has good data with clean separation of spill intervals and consistency between spill, treatment and rainfall data as in Fig. 74a. However, the data also suggest illegal "early" discharges of untreated sewage in 2021 on Jan 24<sup>rd</sup>, 25<sup>th</sup> and Aug 17-18<sup>th</sup> and 25<sup>th</sup> in 2022.

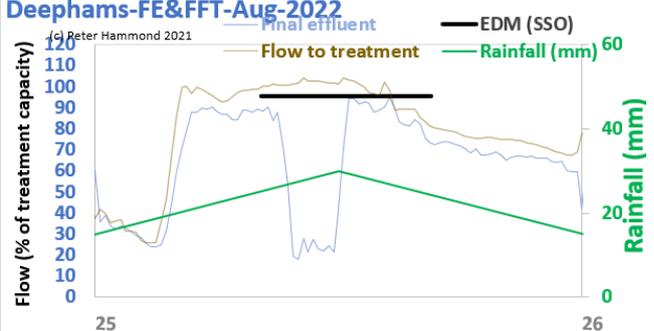
Deephams--Jan-2021



Deephams-FE&FFT-Aug-2022



Deephams-FE&FFT-Aug-2022

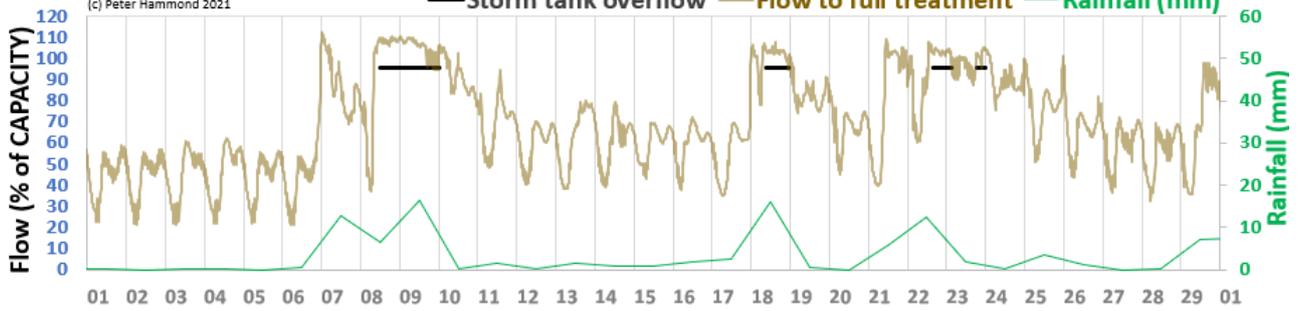


**Figure 74:** a) Jan’2021 chart for Deephams STW with well separated spill intervals consistent with flow and rainfall plus 2 “early” spills o Jan 24 & 25; b) Aug’ 22 examples of illegal “early” spills

No sewage treatment flow data was provided for Deephams for 2023 and only flow to full treatment for 2024. For 2024, the data provided are consistent with EDM spill interval and rainfall data and also are complete - see February 2024. Unfortunately, the flow to full treatment and final effluent data provided

for Deephams STW for 2025 start the year consistent then there are 2 drops in final effluent but not in flow to full treatment and from mid-March they do not show sufficient consistency.

### Deephams--Feb-2024



### Deephams--2025

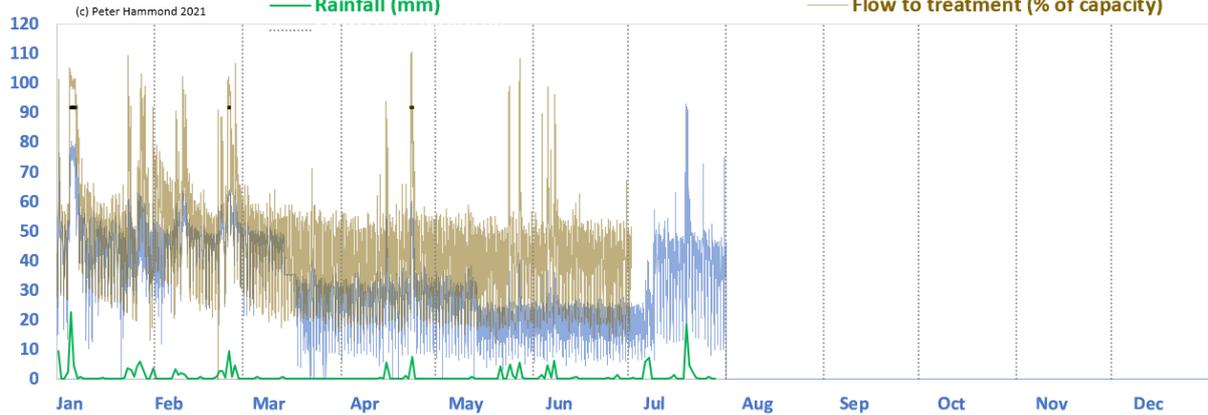


Figure 75: excellent separation of permitted spill intervals in Feb 2024 and early 2025 but then inconsistency between flow to full treatment and final effluent

# Hook\_Norton\_Analysis

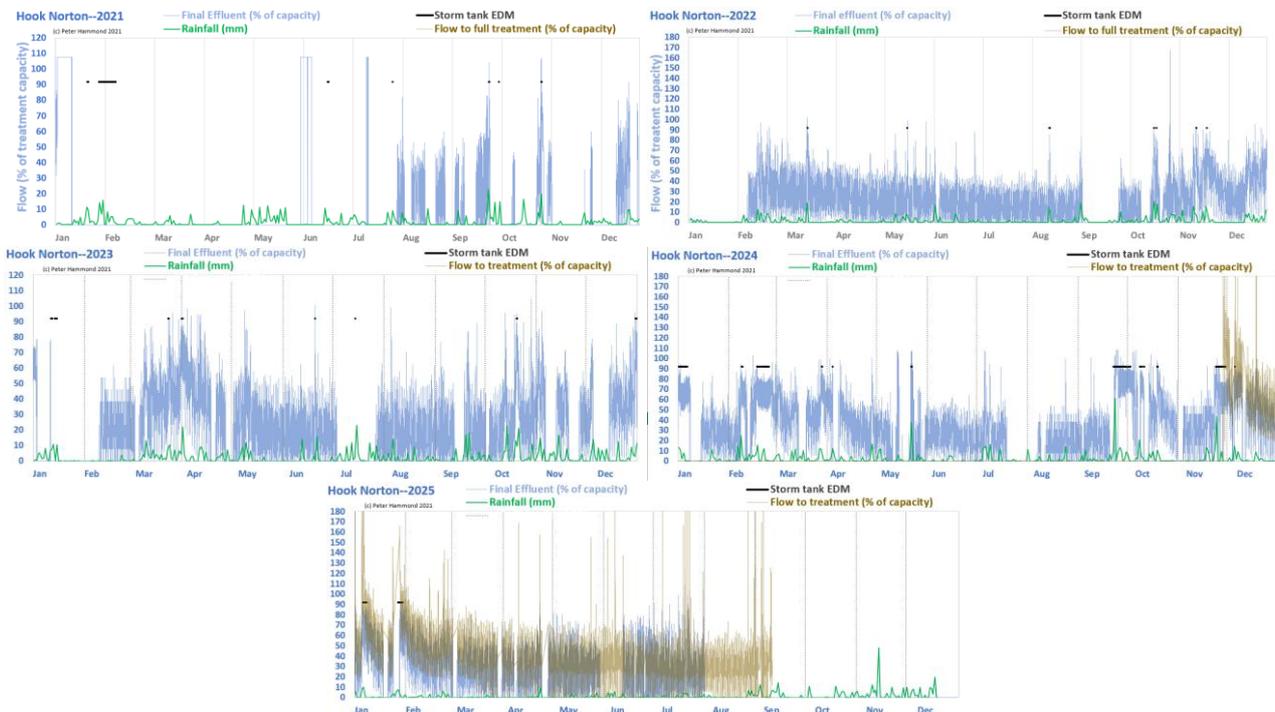
**gross loss of flow data obstructing compliance checking and non-compliance even after an £8 million upgrade completed in 2025**

Hook Norton STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	181	13	59	560	181
<b>Spill frequency</b>	19	7	12	39	7
<b>Illegal spills</b>	-	-	0	1	3
<b>% illegal</b>	-	-	0%	2.5%	43%
<b>Constituency</b>	Banbury				
<b>MP</b>	Sean Woodcock				
<b>Party</b>	Labour				

The 2021 to 2025 annual overview charts Hook Norton (Fig. 76) demonstrate a gross loss of flow data that means compliance checking often is out of the question.



**Figure 76: 2021 to 2025 overview charts for Hook Norton STW showing frequent gaps in sewage flow data**

Clearly, Thames Water has delivered shoddy sewage treatment data to the EA for at least the past 5 years and yet there is only one report (CAR: R/567252) on the EA’s Public Register, dated 10/07/2025, that challenges Thames Water about any data hiatus, issuing a category 3 non-compliance for 2024:

*For Hook Norton WwTW flow records were classed as “suspect” or “missing” for a total of 73 days. On one occasion data was classed as “suspect” or “missing” for more than 14 days consecutively. The maximum number of consecutive days with “missing” or “suspect” data was 20 days. EA CAR: R/567252*

The EA is woefully behind on checking Hook Norton’s operational performance and even though Ofwat cited Hook Norton STW in its recent compliance action announcement it was for 2021. Meanwhile, on Thames Water’s website there is a catalogue of planned and completed asset improvements which for Hook Norton STW had the following entry on 08/02/2026:

*Hook Norton STW has been upgraded at a cost of over £8 million. This project will ensure a higher quality of treated effluent, reducing phosphorus levels entering the river to below an average level of 0.4mg/l\*. We will also increase the capacity of the storm tanks. This will reduce the need for untreated sewage discharges during storm conditions. The scheme completed in 2025.*  
**Thames Water**

Physical evidence of upgrade activity at Hook Norton STW can be seen by comparing Google Earth aerial views from April 2021 and June 2024:



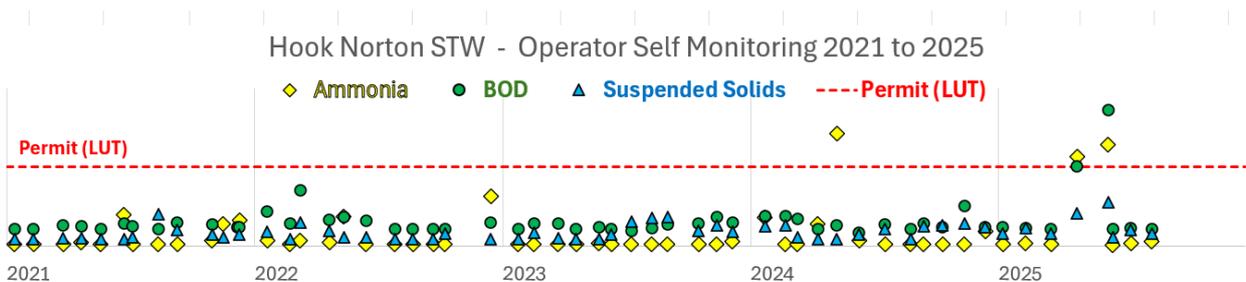
22/04/2021

20/06/2024

**Figure 77: comparison of Google Earth images of Hook Norton STW in 2021 and 2024**

Has the promised *higher quality of treatment* resulted from the £8 million pound upgrade?

Consider, for example, Thames Water’s own OSM sampling data for testing the quality of treated effluent and retrieved from the DEFRA WIMS data archive:



**Figure 78: Operator Self-Monitoring data for 2021 to 2025 for Hook Norton STW**

The figure above shows OSM monthly test results scaled relative to the “look up table” (LUT) of limits specified in the EA permit. Clearly, the Ammonia and BOD (Biological Oxygen Demand) levels in the

final effluent at Hook Norton STW exceeded permitted levels 3 and 2 times respectively in 2024-2025. Therefore, Hook Norton breached its permit conditions for effluent quality.

The upgrade does not appear to have been effective.

# Heyford\_Analysis

good quality data at a small STW with PE of 3,000 and annual rate of illegal spilling of 13% to 45%.

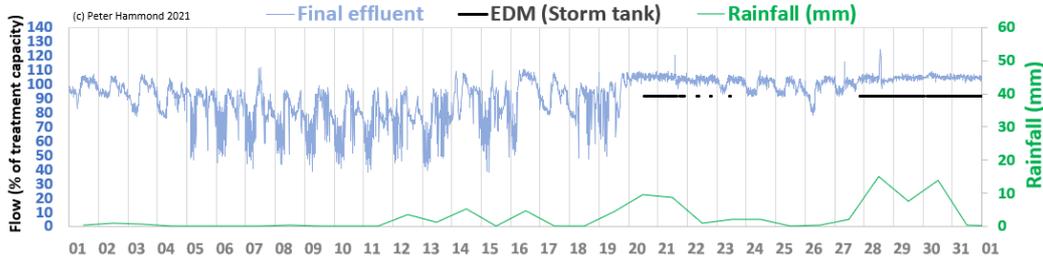
Heyford STW



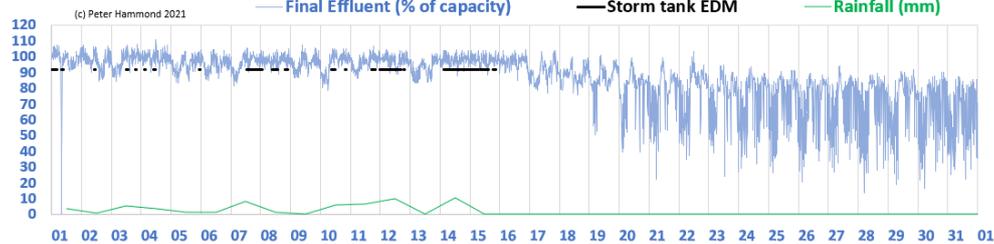
	2021	2022	2023	2024	2025
Spill hours	267	57	272	1,264	267
Spill frequency	27	10	37	102	11
Illegal spills	0	0	13	13	5
% illegal	0	0	32%	13%	45%
Constituency	Bicester and Woodstock				
MP	Calum Miller				
Party	Liberal Democrat				

There is a clear demarcation of spill intervals (black horizontal segments) showing consistency with sewage flow leaving works (final effluent) and daily rainfall.

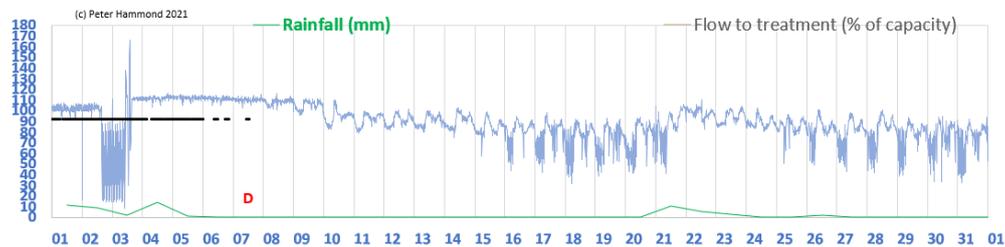
Heyford--Jan-2021



Heyford--Jan-2023



Heyford--Jan-2024



Heyford--Jan-2025



Figure 72: Heyford STW's data series generally show clear demarcation of spills and

consistency of spill, sewage treatment and rainfall data – but also some illegal “dry” and “early” spills. Even though the data completeness and quality is good at Heyford STW, there has been an unfortunate retention of untreated sewage in the storm tanks, possibly for weeks or even months.

This was discovered by an unplanned visit by the EA on August 14<sup>th</sup> 2025 (CAR S/574281) by which time the sewage had become septic and if not cleared would have had a seriously damaging effect on the River Cherwell.

**Photograph 2 - storm tank containing septic sewage**



The report also highlighted Thames Water’s decision to delay a planned upgrade until AMP8 (2025-2030):

*The site was due to increase the volume of flow receiving full treatment under Water Industry National Environment Programme (WINEP) driver U\_IMP5. The deadline for completion of this improvement was 31 March 2025. Works for the delivery of the scheme have not started. **Delays to improvement schemes are unacceptable as they will delay environmental improvement and risk failure of statutory requirements.** Delays also risk failure to comply with permit conditions, which is a legal obligation. Environment Agency site visit August 14<sup>th</sup> 2025 (CAR S/574281)*

# Slough\_Analysis

clean, consistent data with some illegal “early” spills of untreated sewage



	2021	2022	2023	2024	2025
Spill hours	173	64	364	1,221	246
Spill frequency	15	9	30	73	16
Illegal spills	0	0	7	28	8
% illegal	0%	0%	23%	38%	50%
Constituency	Slough				
MP	Tan Dhesi				
Party	Labour				

Generally speaking, Slough STW has clean, well separated spill intervals (Fig. 79).

Slough-FE & FFT-Jan-2023

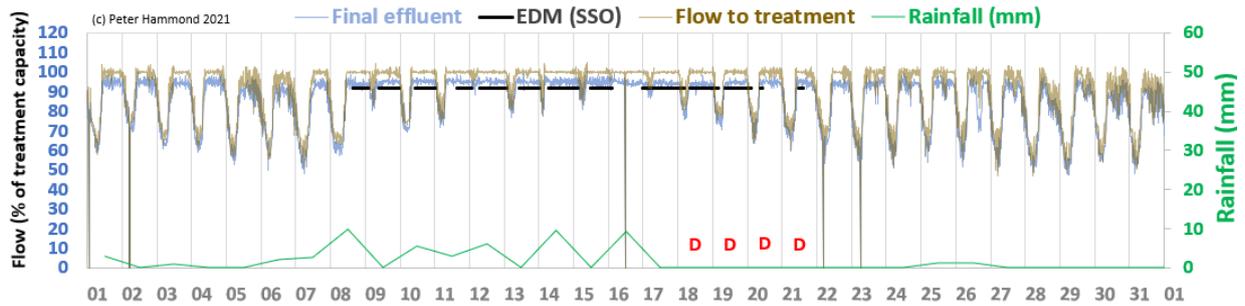
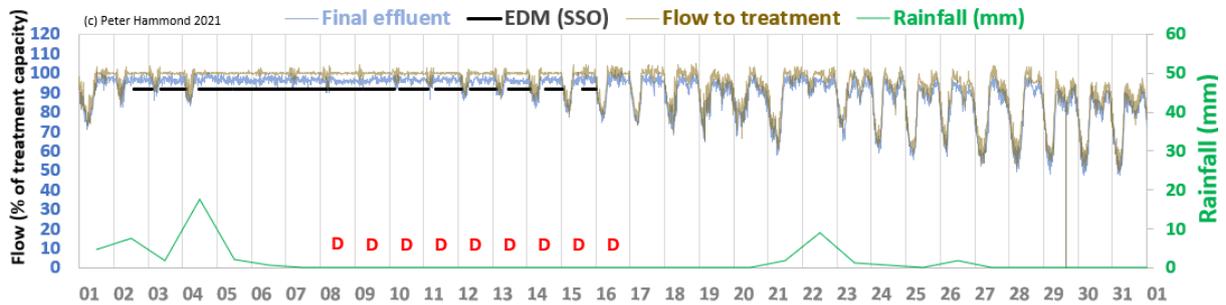


Figure 79: Jan’23 monthly chart for Slough STW with clean, well demarcated spill intervals mostly consistent with treatment and rainfall data but also showing “dry day” spills

The evidence for other years is similar as can be seen for January and March 2024 (Fig. 80). However, there are illegal “dry” and “early” spills in March.

Slough-FE & FFT-Jan-2024



Slough-FE & FFT-Mar-2024

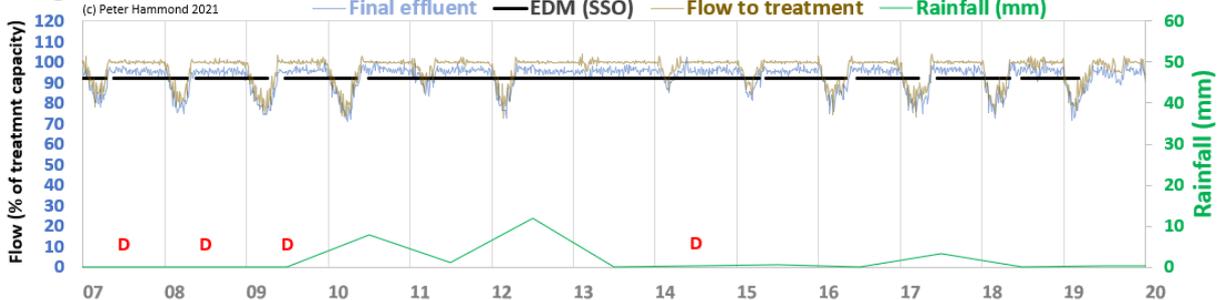


Figure 80: Jan & Mar 2024 data series for Slough STW with days with illegal “early” spills (Mar 7-12,14-19)

## STWS WITH ILLEGAL SPILLS TO CHALK STREAMS

There are 9 watercourses that are wholly or partly designated as chalk streams that receive illegal sewage spills from one or more of 14 Thames Water STWs.

Chalk stream	STW	Illegal Spills	MP	Party
Chess	Chesham	69	Sarah Green	Lib Dem
Horsenden Stream	Princes Risborough	38	Greg Smith	Cons
Kennet	Fyfield	25	Danny Kruger	Cons
Kennet	<a href="#">Hungerford</a>	20	Lee Dillon	Lib Dem
Kennet	Marlborough	145	Danny Kruger	Cons
Kennet	<a href="#">Newbury</a>	29	Lee Dillon	Lib Dem
Kennet	Ramsbury	8	Danny Kruger	Cons
Lambourn	<a href="#">East Shefford</a>	46	Lee Dillon	Lib Dem
Letcombe Brook	<a href="#">Wantage</a>	31	Olly Glover	Lib Dem
Mimram	Whitwell	29	Alistair Strathern	Lab
Misbourne	<a href="#">Gerrards Cross</a>	?	Joy Morrissey	Cons
Pang	<a href="#">Compton</a>	122	Olivia Bailey	Lab
Pang	<a href="#">Hampstead Norreys</a>	261	Olivia Bailey	Lab
Ver	<a href="#">Markyate</a>	237	Victoria Collins	Lib Dem

Detailed analysis is provided for 8 of the Thames Water STWs spilling illegally to chalk streams:

[Compton](#)  
[East Shefford](#)  
[Gerrards Cross](#)  
[Hampstead Norreys](#)  
[Hungerford](#)  
[Markyate](#)  
[Newbury](#)  
[Wantage](#).

# Compton\_Analysis

## illegal untreated sewage discharges to a chalk stream

Compton STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	1,110	0	0	0	1,283
<b>Spill frequency</b>	60	0	0	54	65
<b>Illegal spills</b>	57	0	0	22	43
<b>% illegal</b>	95%	0%	0%	41%	66%
<b>Constituency</b>	Compton				
<b>MP</b>	Olivia Bailey				
<b>Party</b>	Labour				

Compton STW serves a small population of about 1,800 and discharges to the River Pang, a chalk stream in the Berkshire Downs.

The 2021 annual overview below shows an unusual sewage flow pattern from Feb to March inclusive.

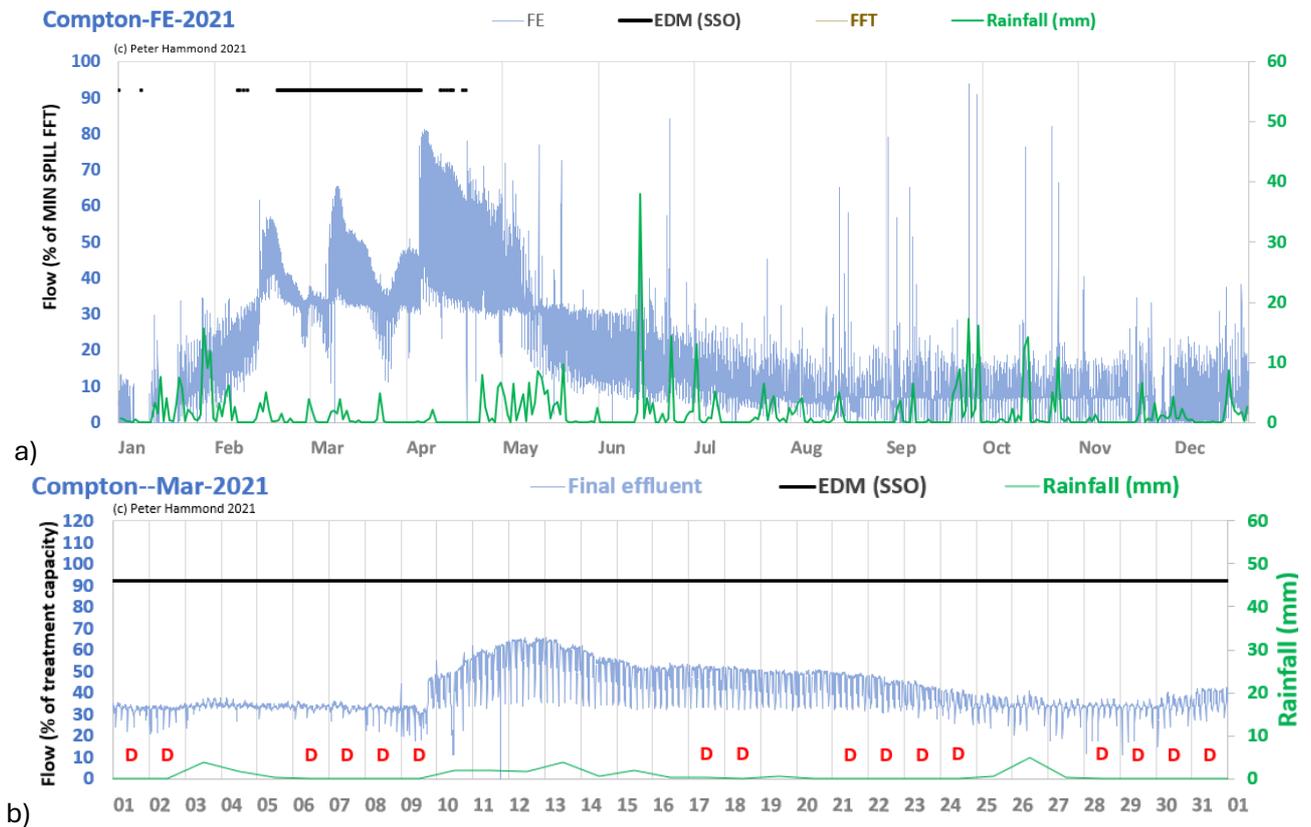


Figure 81: a) 2021 annual overview for Compton STW b) March 2021 chart

The March data series (Fig 90b) shows uninterrupted spilling often when the sewage treatment rate is as low as 30% of the STW’s treatment capacity and hence “early”. Many are also on “dry days”. The evidence suggests there were at least 39 illegal “early” untreated sewage discharges in 2021.

Comparison with the annual overview charts for 2022-2025 emphasises just how unusual the 2021 data were. In March 2021, Thames Water initiated its Groundwater Impacted System Management Plan (GISMP) for Compton STW with an online document which has been updated in October of each subsequent year. Thames Water admits that groundwater ingress through leaky pipes is a continuing issue but also that surface water runoff is an additional problem.

The latest version of Compton STW’s GISIMP includes a final table of actions that have been completed

Investigation / remediation type	2020/21	2021/22	2022/23	2023/24	2024/25
CCTV surveys	-	-	-	-	577m
Look and lift surveys	-	-	-	2	-
Sewer lining	-	425m	-	-	-
Patch lining	-	-	-	-	-
Manhole sealing / plates / covers and frames replaced	-	18	18	-	-
ATAC unit deployment	-	-	-	-	-

Sewer lining was undertaken in 2022 and is “planned” for AMP8 (2025 to 2030). Given that the River Pang is a precious chalk stream, this plan does not show sufficient urgency.

The overview charts for 2022 and 2023 may reflect the sewer lining and lower rainfall.

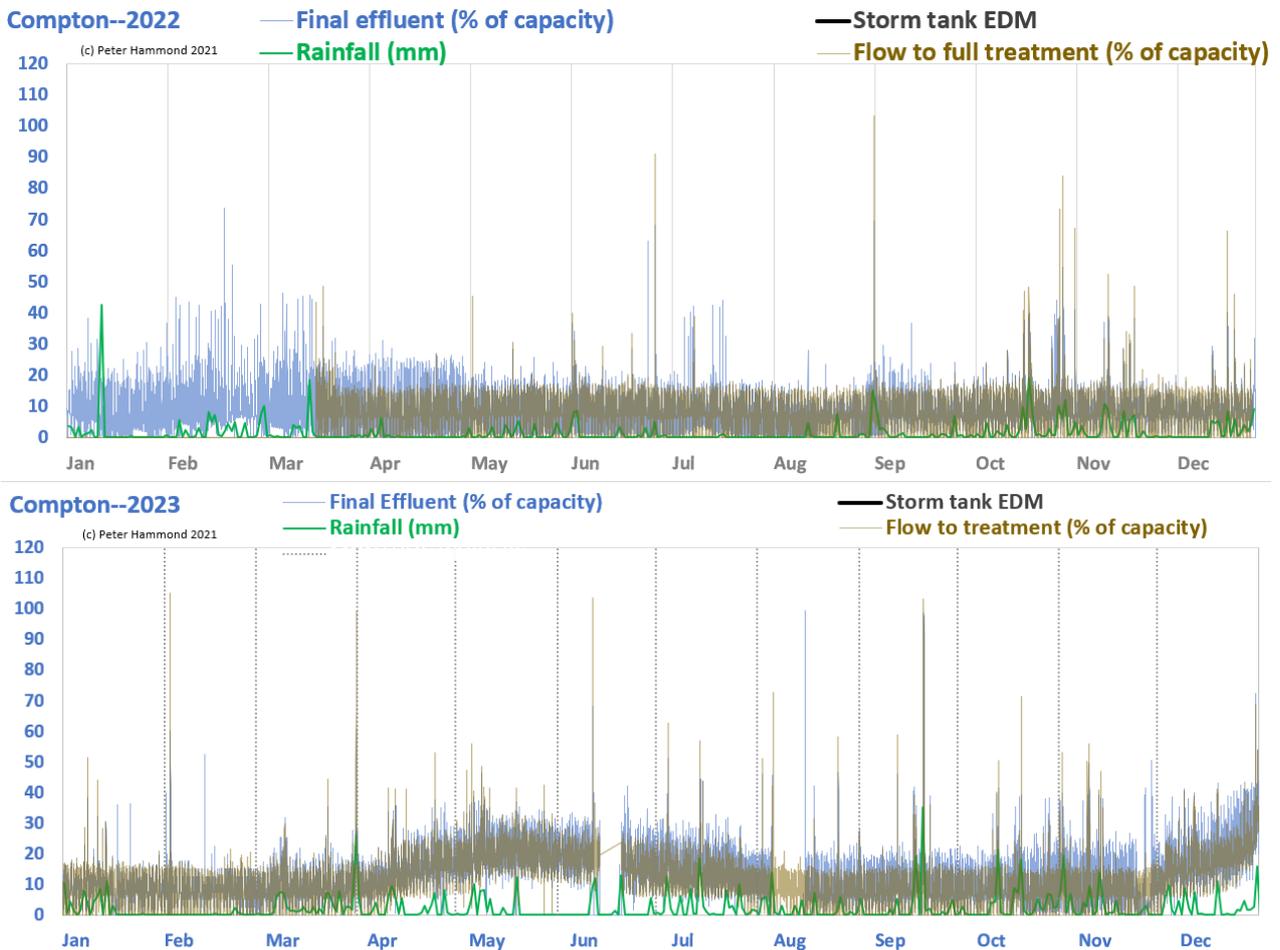


Figure 82: overview charts for 2022 and 2023 for Compton STW

The heavier rainfall for 2024 and 2025 clearly emphasises that much more sewer lining is required if the winter/spring spilling is to be curtailed.

All of the spilling in 2024 and 2025 occurs with flow to full treatment above capacity but on 65 there were illegal “dry” spills.

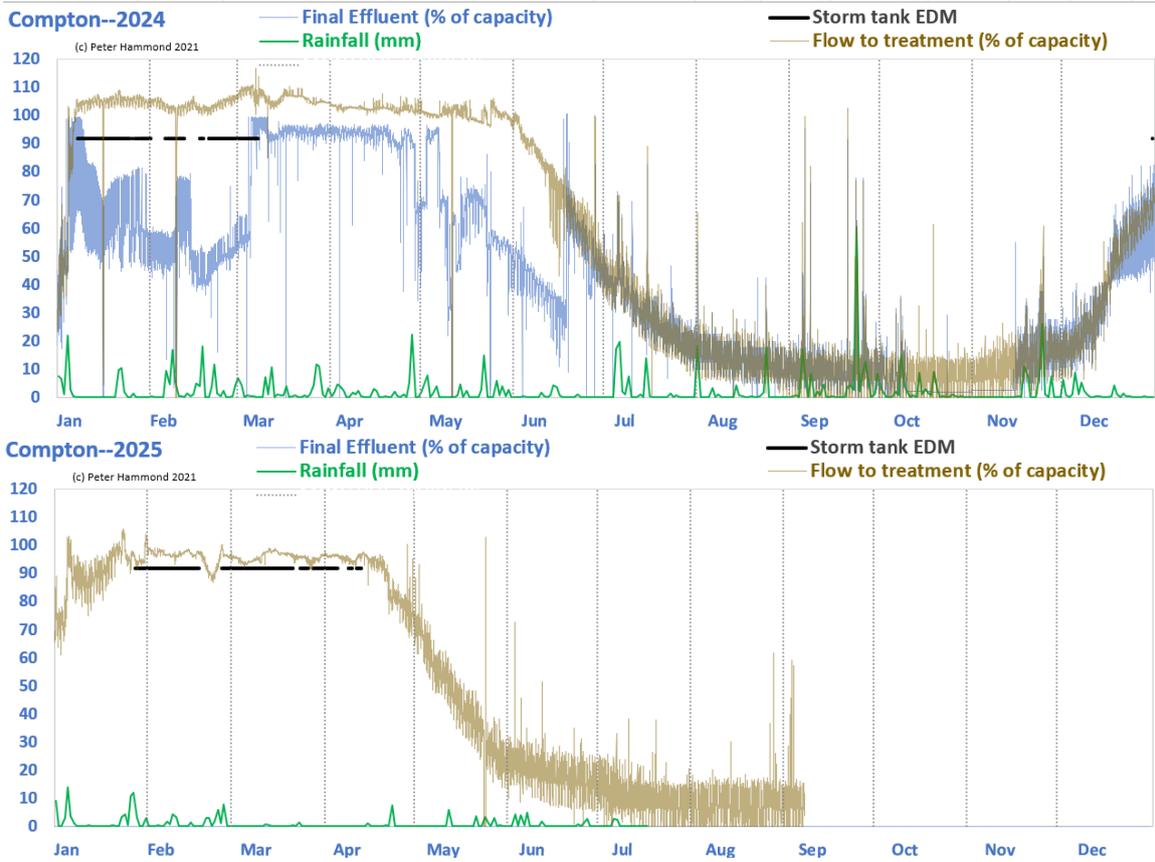


Figure 83: overview charts for 2024 and 2025 for Compton STW

# East\_Shefford\_Analysis

at least 46 days with illegal sewage discharges to a chalk stream designated as an SAC and SSSI

East Shefford STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	1424	0	3	541	2207
<b>Spill frequency</b>	66	0	1	34	98
<b>Illegal spills</b>	46	0	0	0	0
<b>% illegal</b>	70%	0%	0%	0%	0%
<b>Constituency</b>	Newbury				
<b>MP</b>	Lee Dillon				
<b>Party</b>	Liberal Democrat				

East Shefford STW serves a population equivalent of about 5,400. It discharges to the River Lambourn, a classic lowland chalk stream in West Berkshire which has been designated a Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI). The Lambourn Valley Flood Forum has a wonderful online [dashboard](#) with near real-time weather and sewage spill data.

Although East Shefford STW is meeting its current phosphorus consent, phosphorus concentrations from all sources are high in many stretches. A recent upgrade to East Shefford STW costing £14 million is designed to reduce the final effluent phosphorous level below 0.25 mg/l as Total P (annual average) with “**a target of 0.1 mg/l for the 2031 design horizon**”.



Figure 84: Actiflo phosphorous reduction installation at Thames Water’s East Shefford STW

## 2021

The 2021 annual overview below shows over 1400 hours of spills that include 3 individual discharges as long as 14, 11 and 18 days each.

East Shefford-FFT&FE-2021

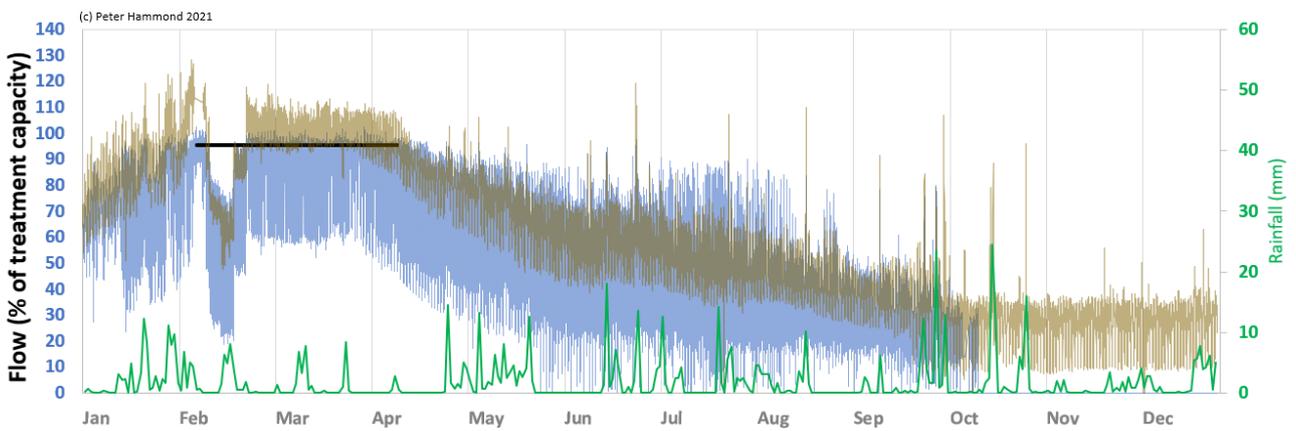


Figure 85: 2021 annual overview for East Shefford STW

A long spill in February included 14 days with “early” spills and one in March involved many “dry” spills.

East Shefford--Feb-2021

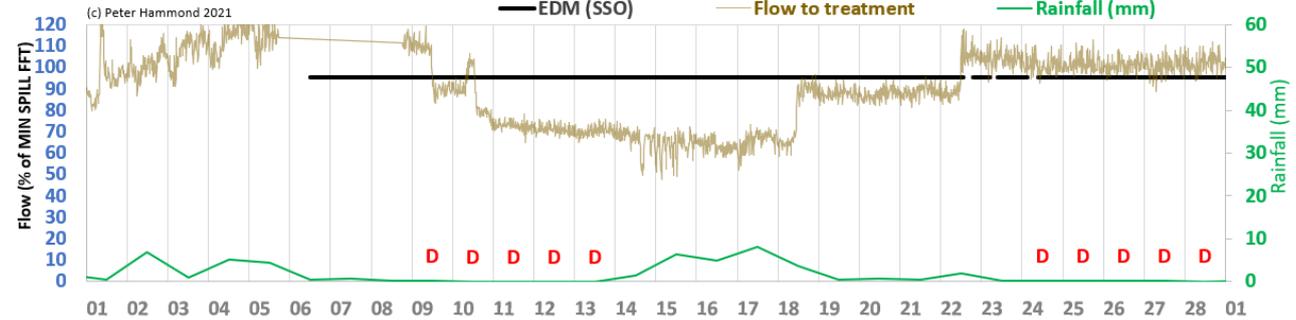


Figure 86: Feb'21 chart for East Shefford STW shows multiple “early” spills and 10 days with “dry” spills

In all, there were at least 19 days in 2021 with “early” discharges of untreated sewage to this chalk stream as well as 27 “dry” only spill days.

2022

2022 was a much drier year than 2021 and Thames Water reported no untreated sewage spills at East Shefford STW. However, the 2022 overview chart demonstrates a frequent problem with Thames Water’s STWs, that of gross losses of data which prevent compliance checking and which themselves constitute a permit breach.

East Shefford-FFT&FE-2022

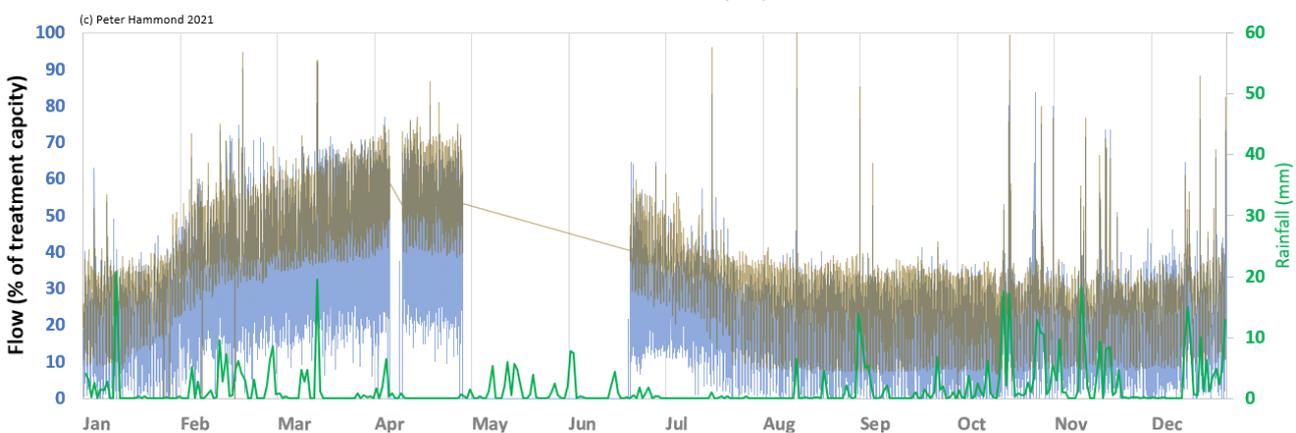
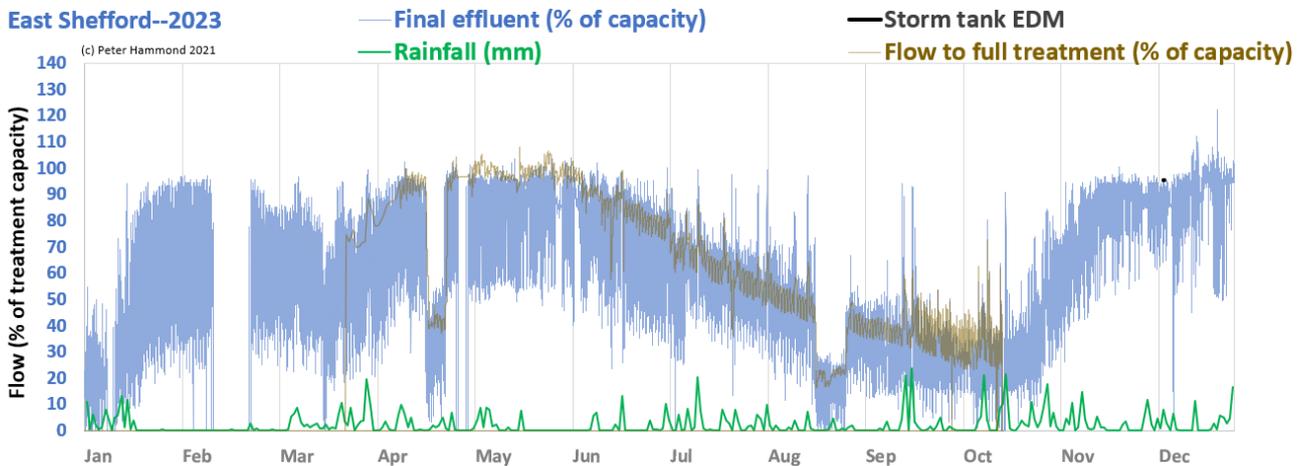


Figure 87: 2022 annual overview for East Shefford STW showing gross loss of sewage treatment data

Despite the lighter rainfall, an Operator Self Monitoring (OSM) sample for January 24<sup>th</sup> 2022 included an Ammonia level of 3.99 which exceeded the permitted LUT (Look Up Table) limit of 3 mg/l. Only two such exceedances are permitted in a series of 12 consecutive OSM samples.

**2023**

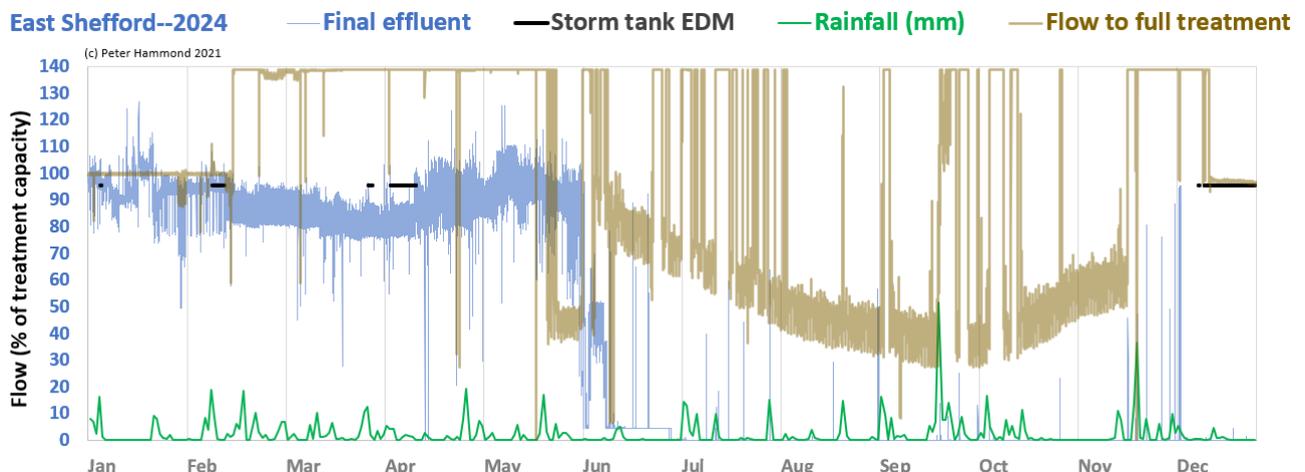
2023 was a much wetter year than 2022 which is reflected in the annual overview chart for East Shefford STW (Fig. 88). It includes a major loss of flow data in February, itself a permit breach, and 3 periods with complete loss of or sudden drop in flow level in April and August. WASP cannot find an explanation for any of these unacceptable anomalies. Only one short spill was recorded in 2023.



**Figure 88:** 2023 annual overview for East Shefford STW showing gross loss of sewage treatment data

**2024**

In 2024, the heavy rainfall appears to have severely disrupted the sewage flow and/or its recording as is demonstrated by the confused and sometimes chaotic flow patterns in the figure below. In addition, from February 2024 onwards, there appears to be a throughput of flow to full treatment close to 140% of capacity whenever there is substantial daily rainfall. WASP is concerned about the effect of such high throughput on the quality of the final treated effluent discharge to the River Lambourn.



**Figure 89:** 2024 annual overview for East Shefford STW showing disrupted flow to full treatment

The 2024 annual overview chart above shows obvious discrepancies between final effluent and flow to full treatment, an almost complete loss of the former from June and a rigid upper limit of the latter, presumably above which the meter is unable to record. If the flow to treatment data are assumed to be valid then the spills occur when the rate is above capacity. However, there also are 7 days with illegal “dry” spills.

Tankers and an ATAC biofilter filter unit had to be introduced during the winter of 2023/24. The latter is often used by Thames Water in situations where untreated sewage discharges cannot be avoided and the filter is used in an attempt to reduce the polluting effects in the receiving watercourse.

Thames Water also employs a “sonde” in the final effluent leaving East Shefford STW. This monitors several parameters including Ammonia levels which are limited at this works to 3 mg/l (for which 2 excesses per 12 months is permitted) and to an upper limit (14 mg/l; 20 mg/l) depending on the time of year (May-Oct; Nov-April). Following an EIR request, Thames Water provided WASP with this final effluent sonde data which, by the way, is not submitted to or requested by the EA. In 2024, the Ammonia levels, according to Thames Water’s data were as follows:

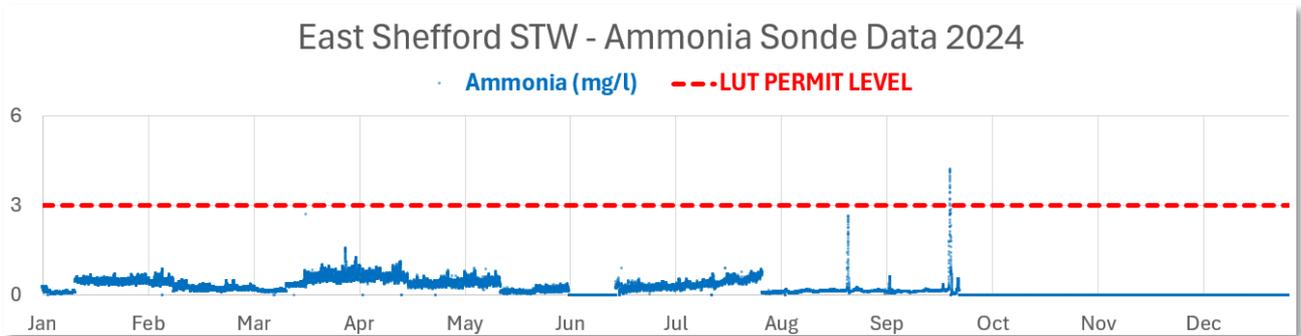


Figure 90: “Private” Ammonia sonde data for 2024 for East Shefford STW

On August 24<sup>th</sup>, the Ammonia level was close to the 3 mg/l limit and on September 23<sup>rd</sup> it was above. The two high Ammonia levels correspond to high daily rainfall and flow to full treatment levels of 140%. Thereafter, the Ammonia level provided is zero or alternatively the data were unrecorded or deleted.

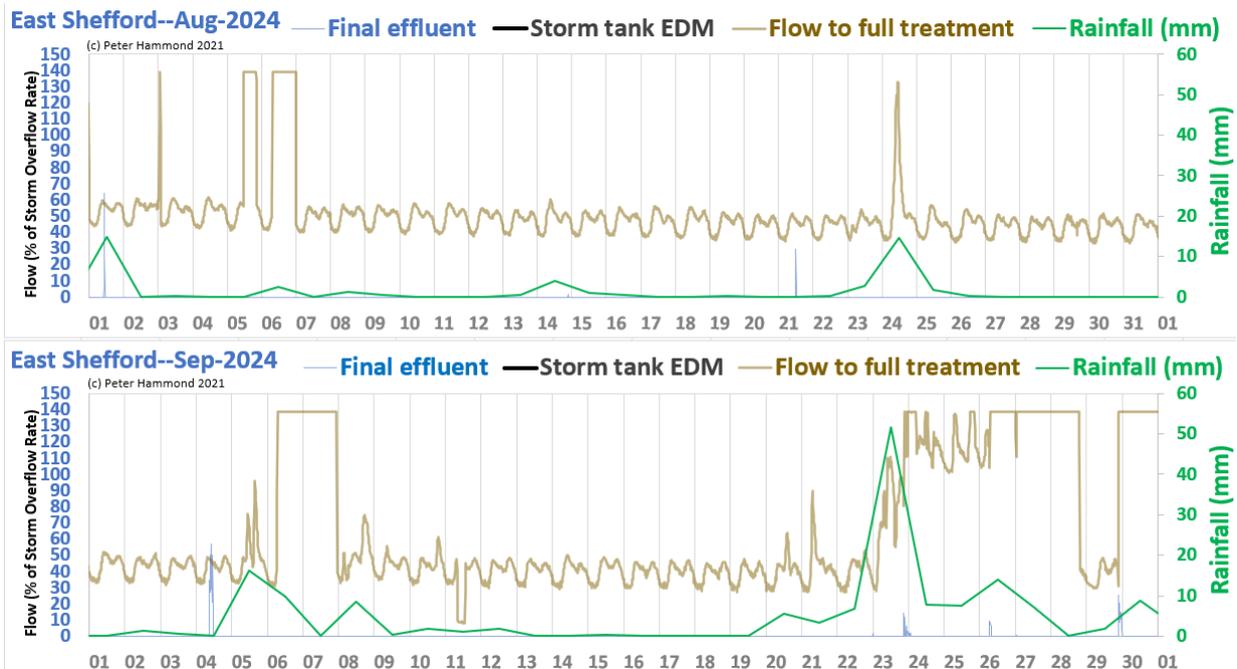


Figure 91: August and September 2024 monthly charts for East Shefford STW

Unfortunately, for Thames Water, this sudden loss of Ammonia effluent levels immediately following an exceedance of the permitted level looks suspicious and should be investigated by the EA.

**2025**

Thames Water’s online **GISMP** (Groundwater Impacted System Management Plan) for East Shefford includes the following table of investigations and remedial interventions carried out in 2020-2025.

Investigation / remediation type	2020/21	2021/22	2022/23	2023/24	2024/25
CCTV surveys	-	595 m	277 m	800 m	1.8 km
Look and lift surveys	-	-	7 surveys	30 surveys	-
Sewer lining	144 m	340 m	916 m	-	1.6 km
Patch lining	-	-	1	-	-
Manhole sealing / plates / covers and frames replaced	1	30	2	-	39
ATAC unit deployment	1	-	-	2	2
Misconnection – removal of surface water from foul system	-	1	-	-	-

Table 11: Works Undertaken in the 2024/25, 2023/24, 2022/23, 2021/22 & 2020/21 Hydrological Year

The lining undertaken during 2024/25 involved the longest stretch of sewer, 1.6 km. But is unclear what effect this had on the groundwater infiltration because the final effluent data provided by Thames Water continued to be missing until May 2025 and thereafter appears quite inconsistent with the flow to full treatment which is almost constant at about 140% of capacity. When the final effluent flow reappears, it is often as high as 260% of the works capacity.

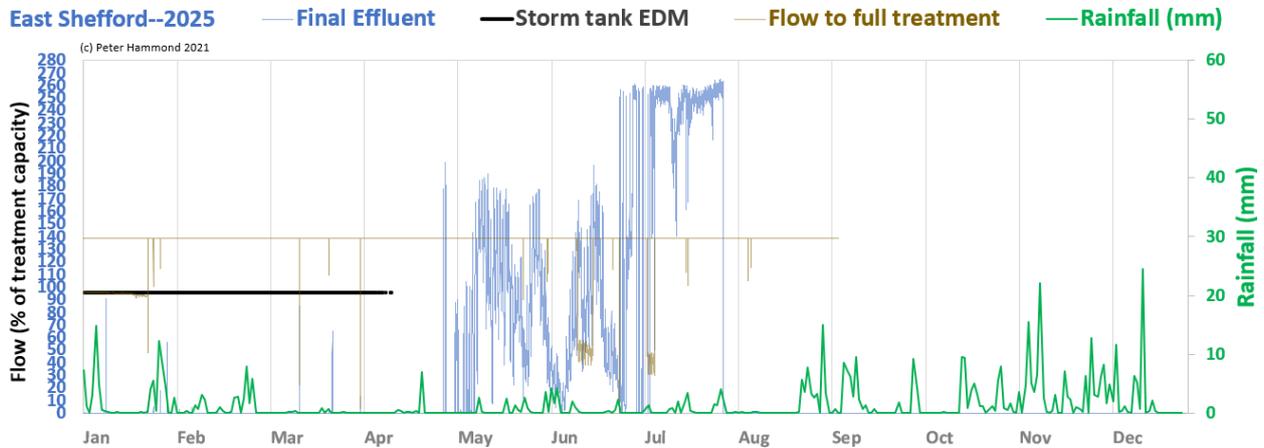


Figure 92: 2025 annual overview chart for East Shefford STW

The three and a half months of almost continuous spilling at the beginning of 2025 includes 57 days with illegal “dry” spills. The “private” sonde data for Ammonia levels was zero until late May/early June. It remains well below the permit level of 3 mg/l until mid-December when there is no available sewage flow data. Ince again, WASP is concerned about the coincidence of loss of final effluent monitoring data during a period of major spilling of untreated sewage.

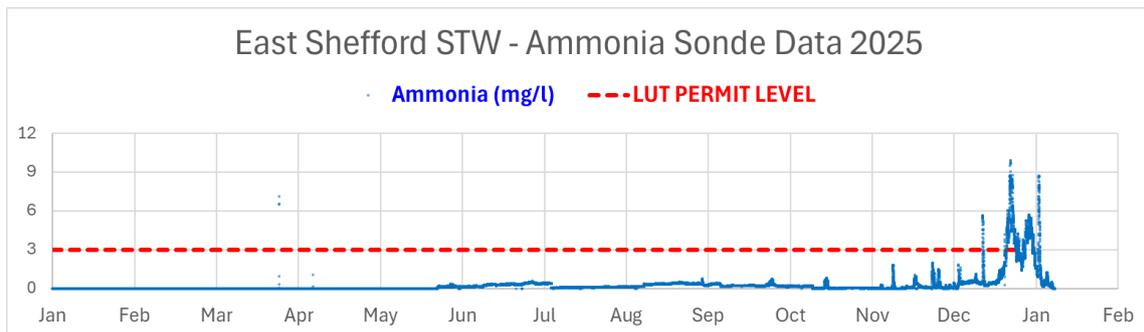


Figure 93: 2025 “Private” Ammonia sonde data for East Shefford STW

# Hungerford\_Analysis

## unpermitted “early” untreated sewage discharges to a chalk stream and the “HELMET” incident

### Hungerford STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	28	56	25	205	-
<b>Spill frequency</b>	8	11	7	16	-
<b>Illegal spills</b>	4	6	0	10	-
<b>% illegal</b>	50%	55%	0%	63%	-
<b>Constituency</b>	Newbury				
<b>MP</b>	Lee Dillon				
<b>Party</b>	Liberal Democrat				

Hungerford STW serves a population equivalent of over 7,000 and discharges to the River Kennet, a chalk stream that flows through Berkshire and Wiltshire. Following the closure of a small STW at Chilton Foliat during 2023 to 2024, Hungerford STW has been receiving its flow via a new sewer pipe.

### 2021

The 2021 annual overview for Hungerford STW suggests that it copes with heavy rainfall without spilling apart from September/October.

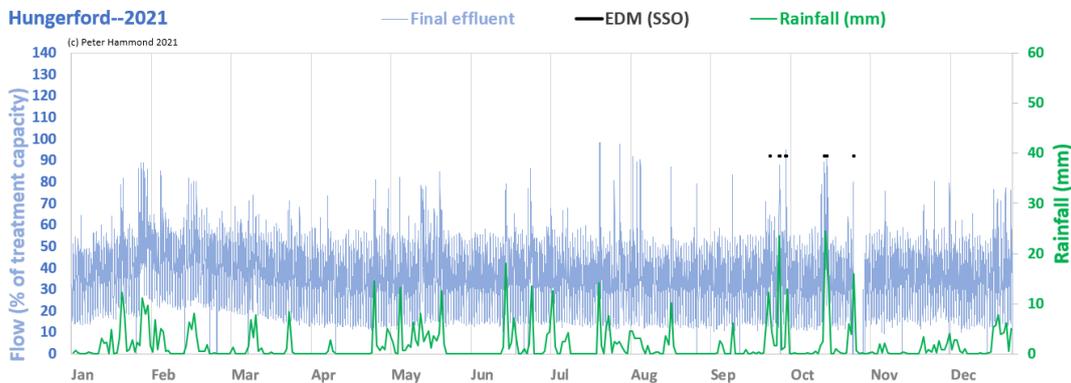
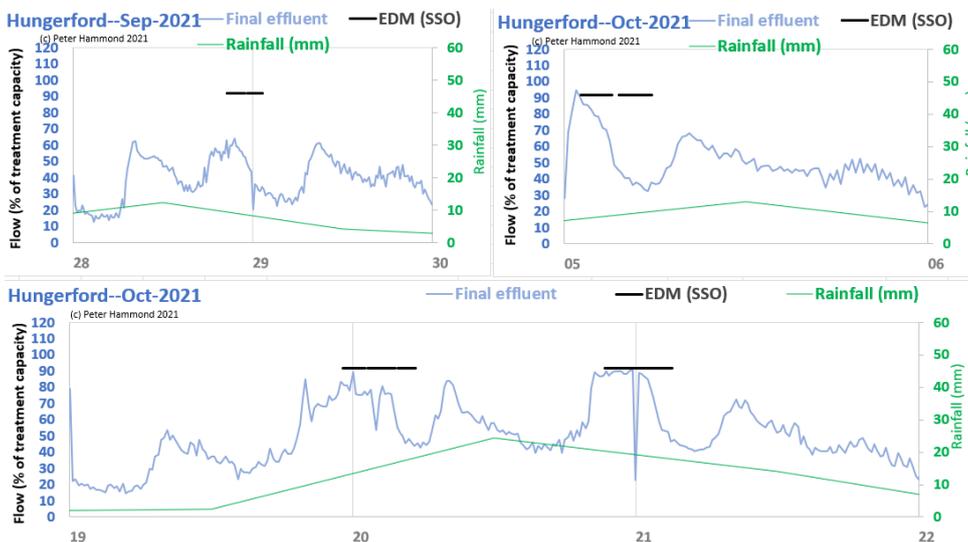


Figure 94: 2021 annual overview for Hungerford STW

On at least 4 days, the sewage flow is as low as 20 to 40 per cent of the works treatment capacity of 42 U/s when untreated sewage is discharged via the storm tanks.

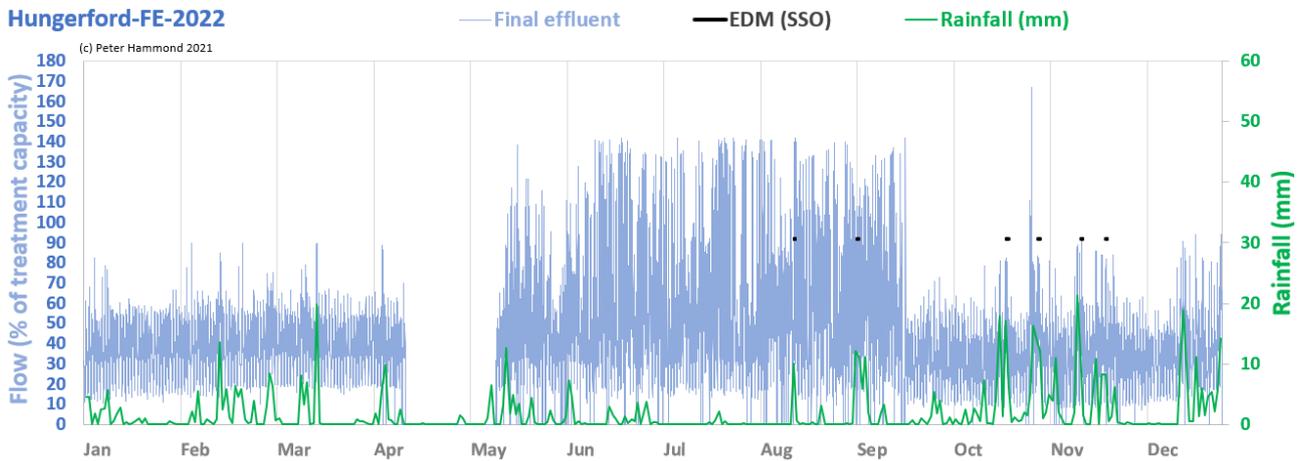


**Figure 95:** 4 potential illegal “early” spills at Hungerford STW (Sep 28-29; Oct 5, 20-21)

**2022**

In 2022, the annual data overview suggests there was a dramatic change at the works resulting in a non-compliant sewage flow gap of four weeks or so followed by a significant change in flow profile from May to September.

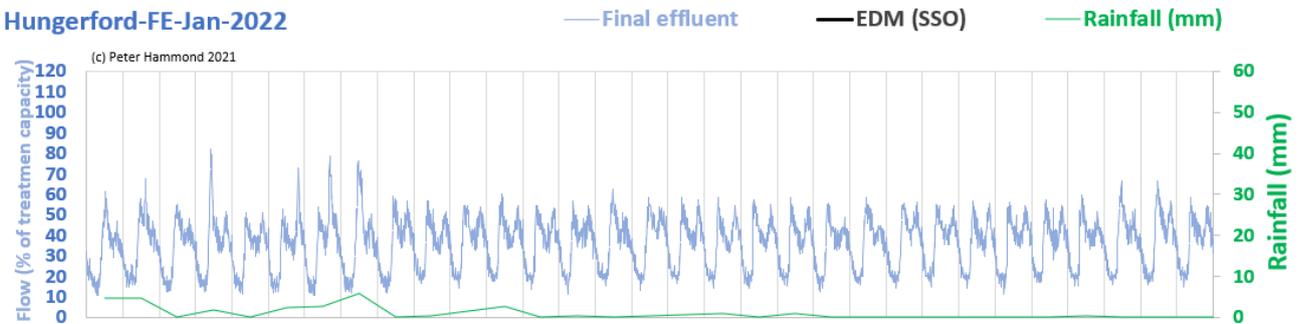
**Hungerford-FE-2022**



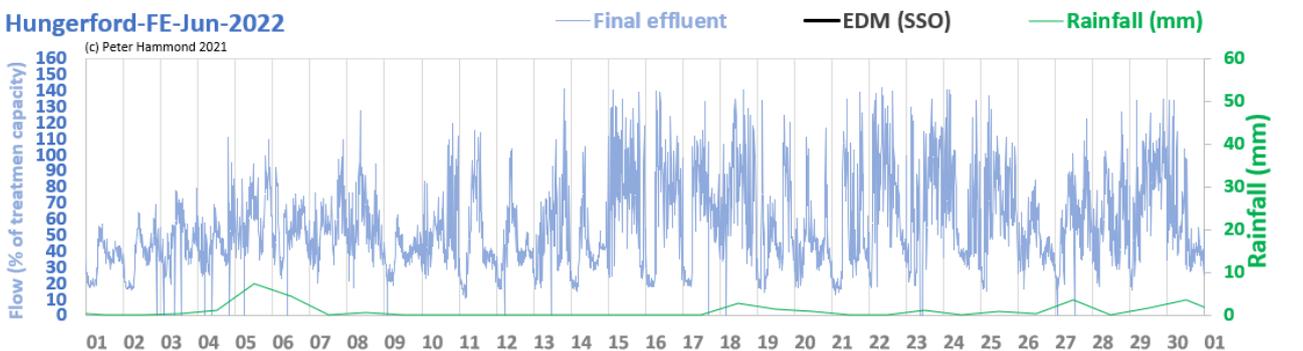
**Figure 96:** 2022 annual overview for Hungerford STW

A comparison of January and June demonstrates this very clearly. What caused this behaviour? It seems to be too early to be explained by the diversion of flow from Chilton Foliat STW.

**Hungerford-FE-Jan-2022**



**Hungerford-FE-Jun-2022**



**Figure 97:** extreme contrast in final effluent flow “noise” in Jan and Jun 2022 at Hungerford STW

Thereafter, there are a number of unpermitted discharges of untreated sewage on at least 6 days which coincide with sewage flows well below 40% of treatment capacity.

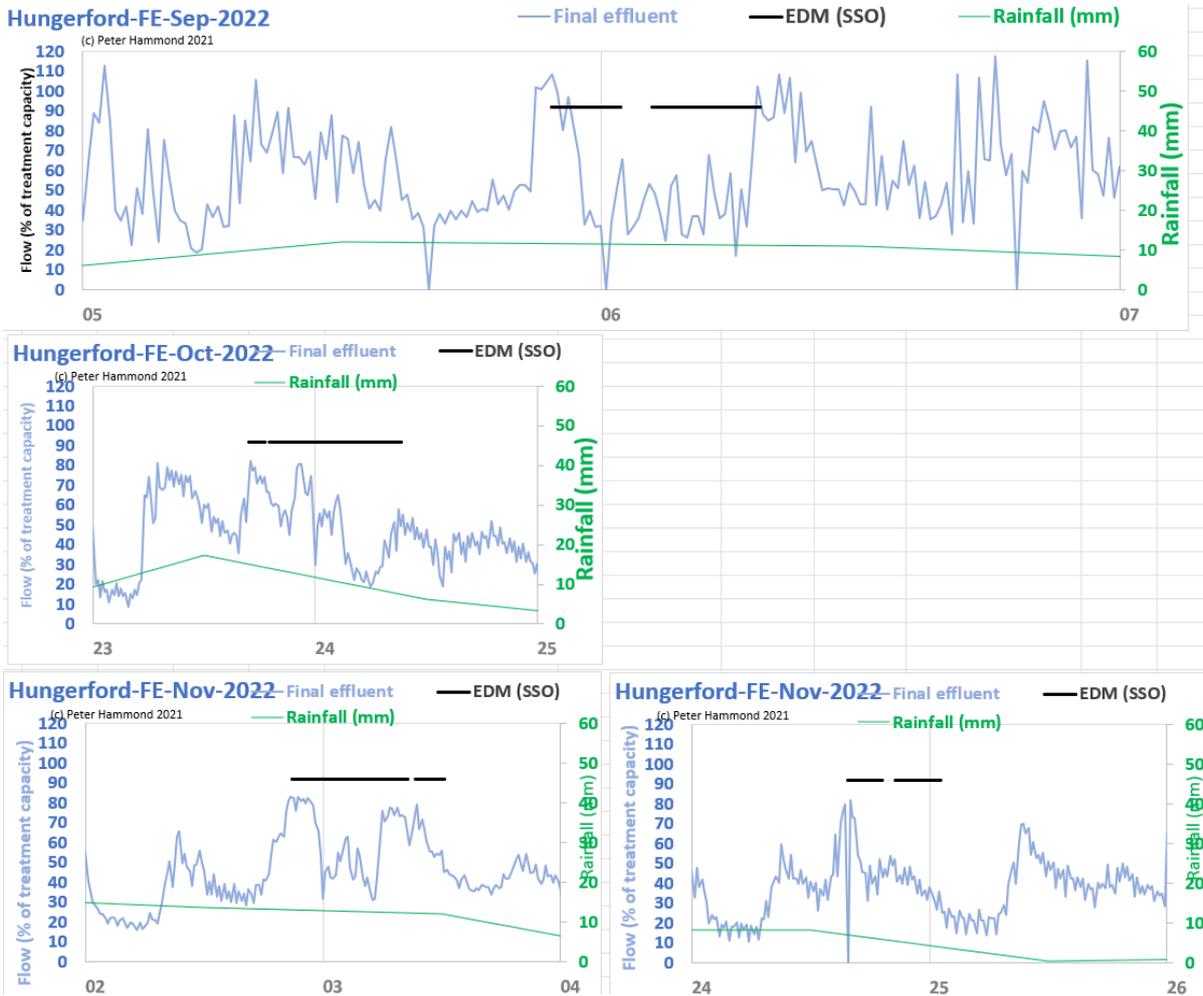


Figure 98: examples of “early” spills with extremely low final effluent at Hungerford STW

2023

The 2023 annual overflow chart shows the small number of spills recorded at Hungerford STW, none of which believes were non-compliant.

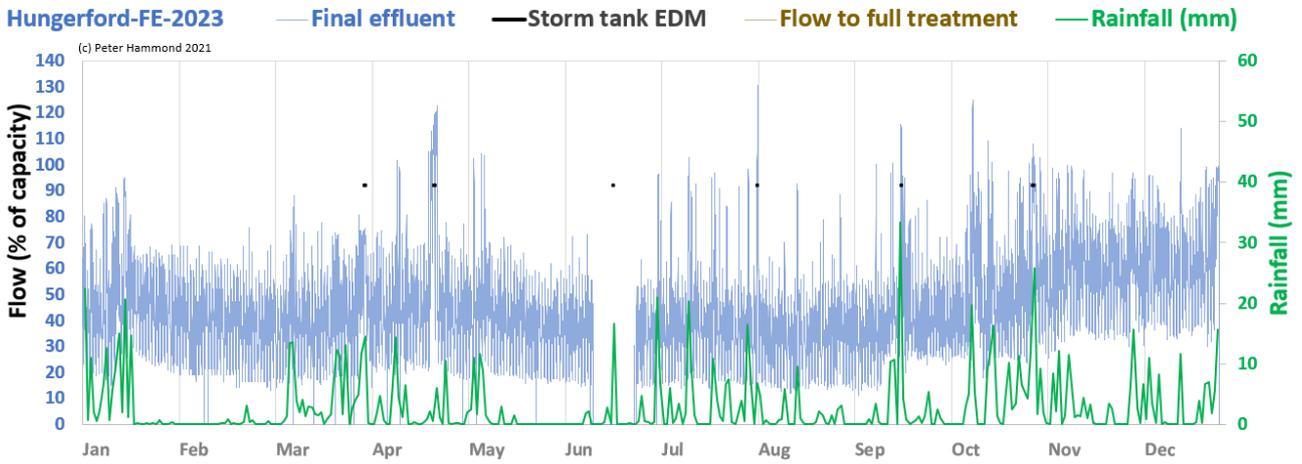


Figure 99: 2023 annual overflow chart for Hungerford STW

## 2024

In November 2024, Thames Water reported an incident to the EA about a spill from Hungerford STW on “26/11/2024” caused by a “helmet” accidentally dropped into the inlet channel and blocking incoming sewage flow. In EA CAR Report I/537476 of 12/09/2025, 10 months later, the incident was described as having

*... caused flows in the inlet channel to back up and rise. The ultrasonic detector of the inlet flow measurement system will have detected this as if the inlet level was rising due to high incoming flows from precipitation in the catchment. This will have resulted in the inlet penstock lowering to restrict incoming flows, causing them to back up in the inlet channel and overtop the storm weir. This caused the storm tanks to fill and discharge to the receiving watercourse approximately between Saturday the 23rd of November 2024 and 11:30 on Tuesday the 26th of November 2024 when the helmet was removed from the v-notch weir. This duration was provided in an email update from TWUL on 30/11/2024. EA CAR Report I/537476 (12/09/2025)*

Unfortunately, no photographic evidence of the “helmet” incident appears to have been recorded by Thames Water. The incident’s effect on sewage flow through the works can be seen in the figure below.

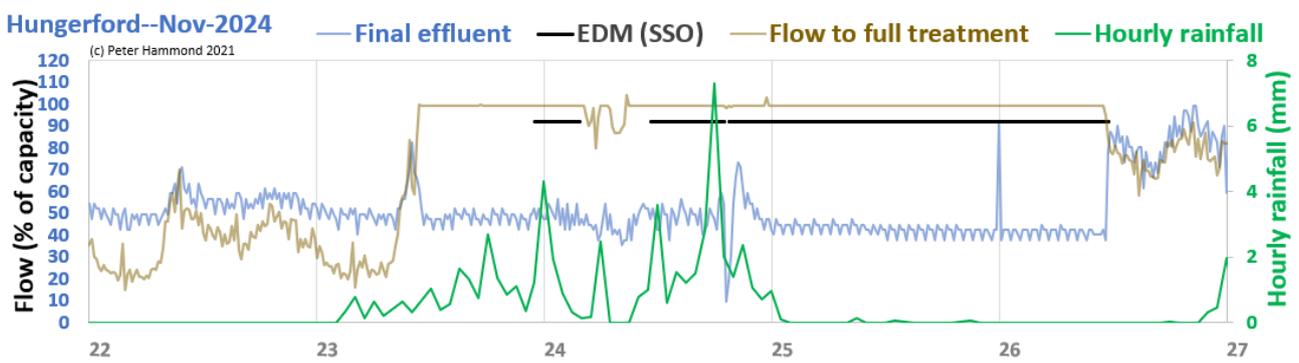


Figure 100: November 2024 monthly chart for Hungerford STW

There appear to be 3 separate spills connected to the incident: the first starting at 23:00 pm on Nov 23<sup>rd</sup> lasting 4.75 hours; a second starting at 11:15 am on Nov 24<sup>th</sup> lasting 7.75 hours; and, a third starting at 19:30 pm on Nov 24<sup>th</sup> lasting 40 hours. The hourly rainfall appears to be consistent with the flow to full treatment until Nov 25<sup>th</sup> whereafter groundwater ingress is probably the cause of continued spilling.

Clearly, there are discrepancies between the final effluent and flow to full treatment – for example, the flow to full treatment on Nov 22 and 23 would typically be greater than the final effluent.

A second EA report (S/542989) of a visit on Feb 21<sup>st</sup> 2025 describes how the final effluent meter lacks an MCERTS certificate whereas the flow to full treatment meter is confirmed as having one. In fact, the flow to full treatment data provided by Thames Water began on March 20<sup>th</sup> 2024 which presumably is shortly after the meter was installed.

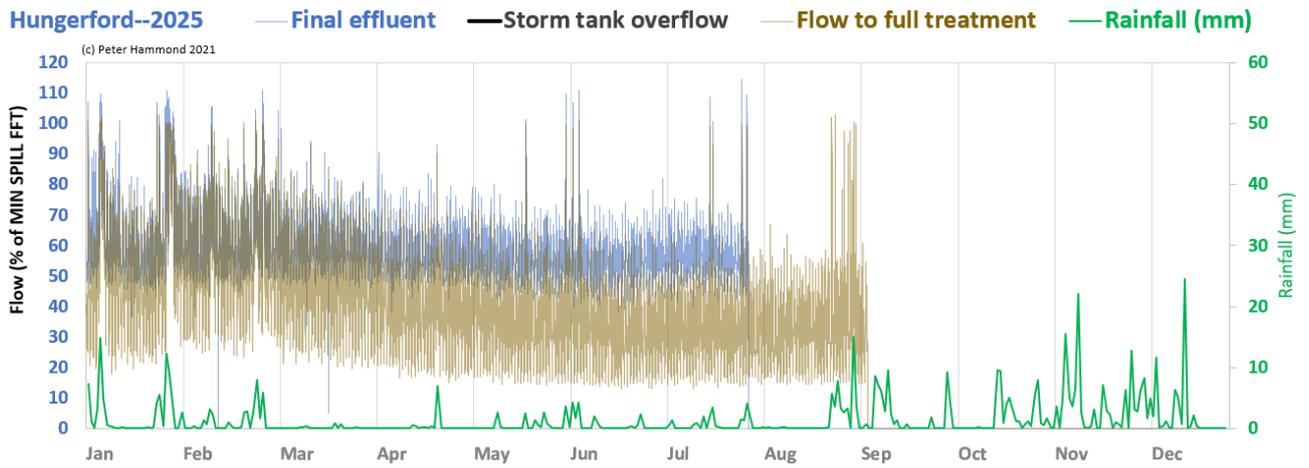
A third EA report (R/579350) of a visit on Sept 17<sup>th</sup> 2025 documents an issue with the scaling of the final effluent meter discovered in Nov 2024 but not addressed by the EA until almost a year later.

WASP believes that this “helmet” spill incident has not been investigated thoroughly enough and needs more detailed attention to specific questions such as

- 1 Why did the original wearer of the helmet not notice it had been dropped on site and endeavour to retrieve it?
- 2 Why did it take more than 2 days for Thames Water staff to notice a helmet blocking the inlet stream given that untreated sewage was spilled for more than 52 hours to a chalk stream?
- 3 How confident can we be that the data provided by Thames Water is reliable?

### 2025

The 2025 annual overview chart for Hungerford STW is shown below



**Figure 101:** 2025 annual overview chart for Hungerford STW

There are no spills in the time period for which WASP has flow and EDM data.

# Newbury\_Analysis

at least 24 days with illegal “early” spills to a chalk stream 2021-25

## Newbury STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	251	65	582	1,251	330
<b>Spill frequency</b>	24	15	56	85	21
<b>Illegal spills</b>	8	0	3	15	3
<b>% illegal</b>	33%	0%	5%	18%	14%
<b>Constituency</b>	Newbury				
<b>MP</b>	Lee Dillon				
<b>Party</b>	Liberal Democrat				

Newbury STW serves a population equivalent of over 95,000 and discharges to the River Kennet, a much valued chalk stream that flows through Berkshire and Wiltshire.

### 2021

In 2021, the evidence suggests that there were at least 8 days with unpermitted “early” sewage discharges from Newbury STW.

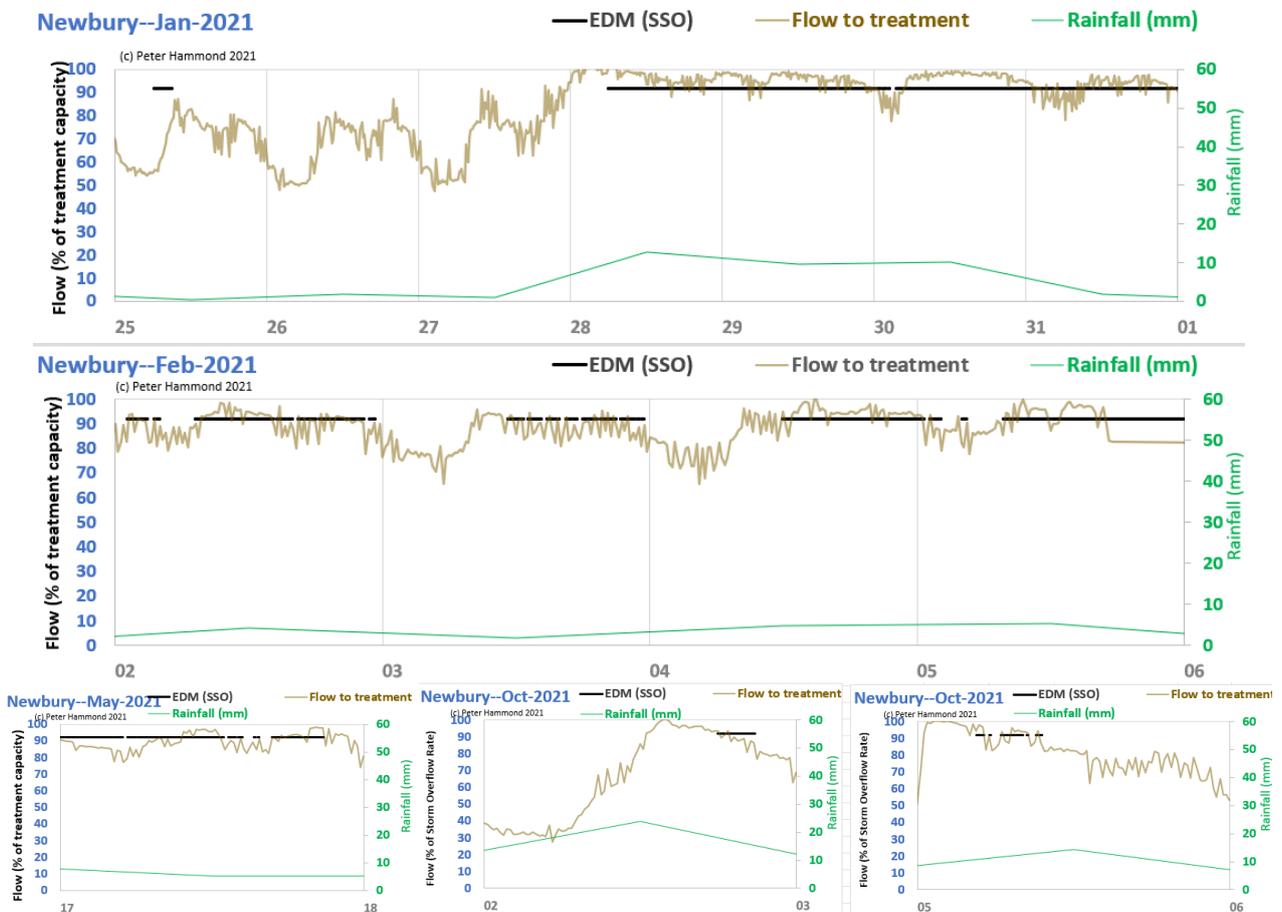


Figure 102: 9 days with unpermitted “early” untreated sewage discharges from Newbury STW (Jan 25,30,31; Feb 2,3,5; May 17; Oct 2,5)

2022

The relatively low rainfall in 2022 resulted in only 65 hours of sewage spills, none of which appear to WASP to have been in breach of permit conditions. Indeed, the data from December 2022 shows very cleanly defined spills with consistent sewage flow and rainfall data.

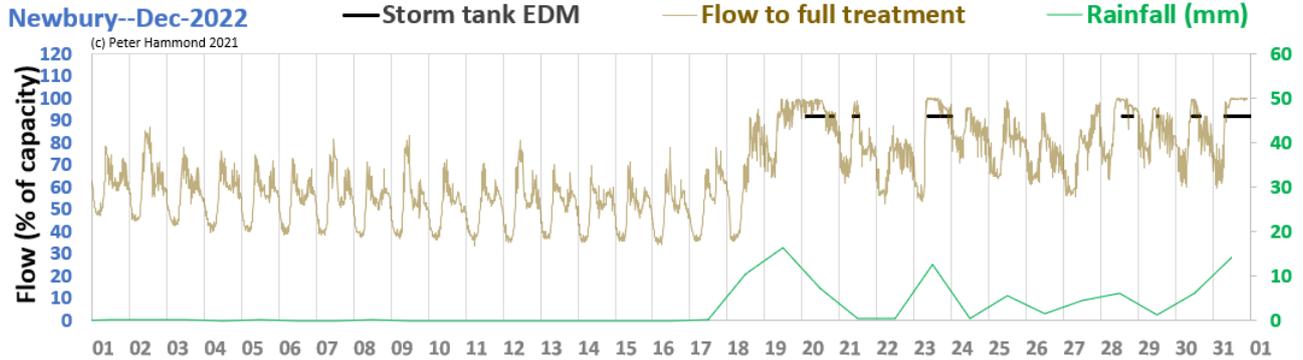


Figure 103: December 2022 monthly chart for Hungerford STW

That said, it is interesting that the “private” sonde data provided to WASP by Thames Water shows only one exceedance of the permitted LUT Ammonia level (2 mg/l) and that happens to coincide with a loss of flow to treatment – see the figure below:

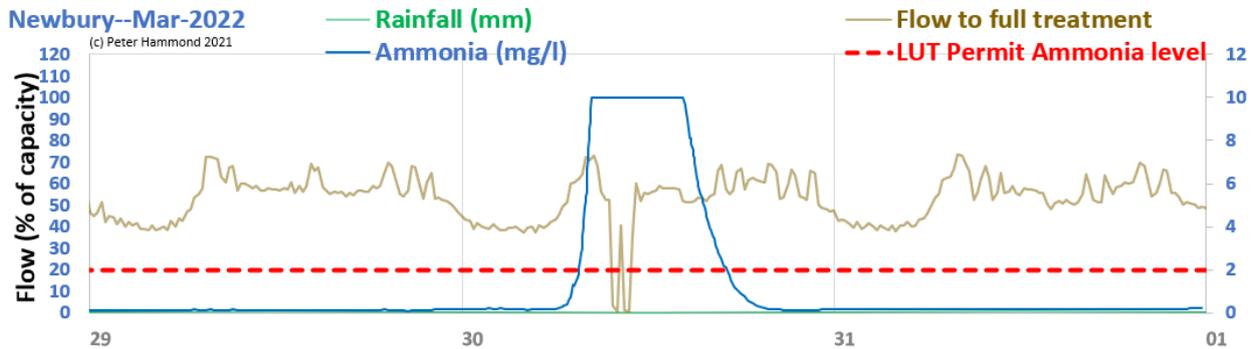


Figure 104: March 29-31 2022 chart for Hungerford STW with Ammonia Sonde overlay

As has been pointed out earlier in this report, sudden gaps in flow data (“zero” flows) have often been found by WASP to coincide with equipment failure and illegal sewage spills. WASP believes that this “incident” on March 30<sup>th</sup> 2022 might be worth further investigation.

2023

As with 2022, the data quality is high even though the amount of sewage spilling is an order of magnitude greater. The monthly chart below illustrates the clean separation of spill intervals and consistency with flow and rainfall data. Three of the days involve illegal “dry” spills.

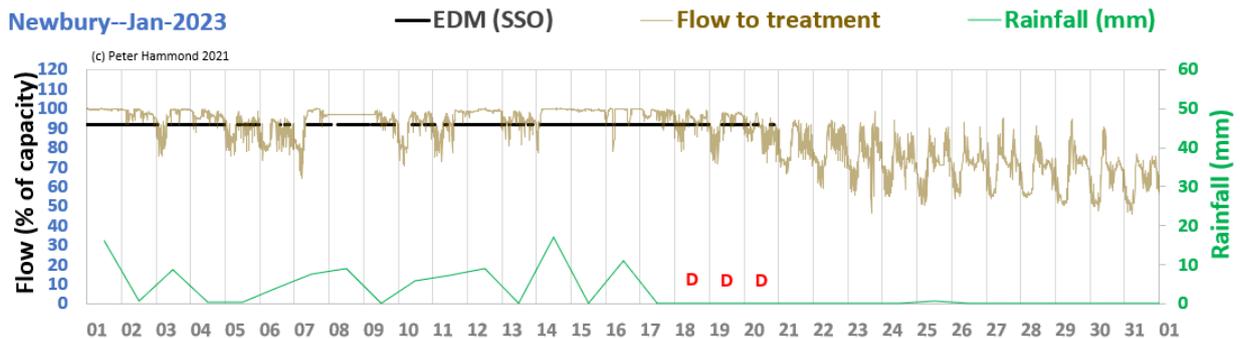
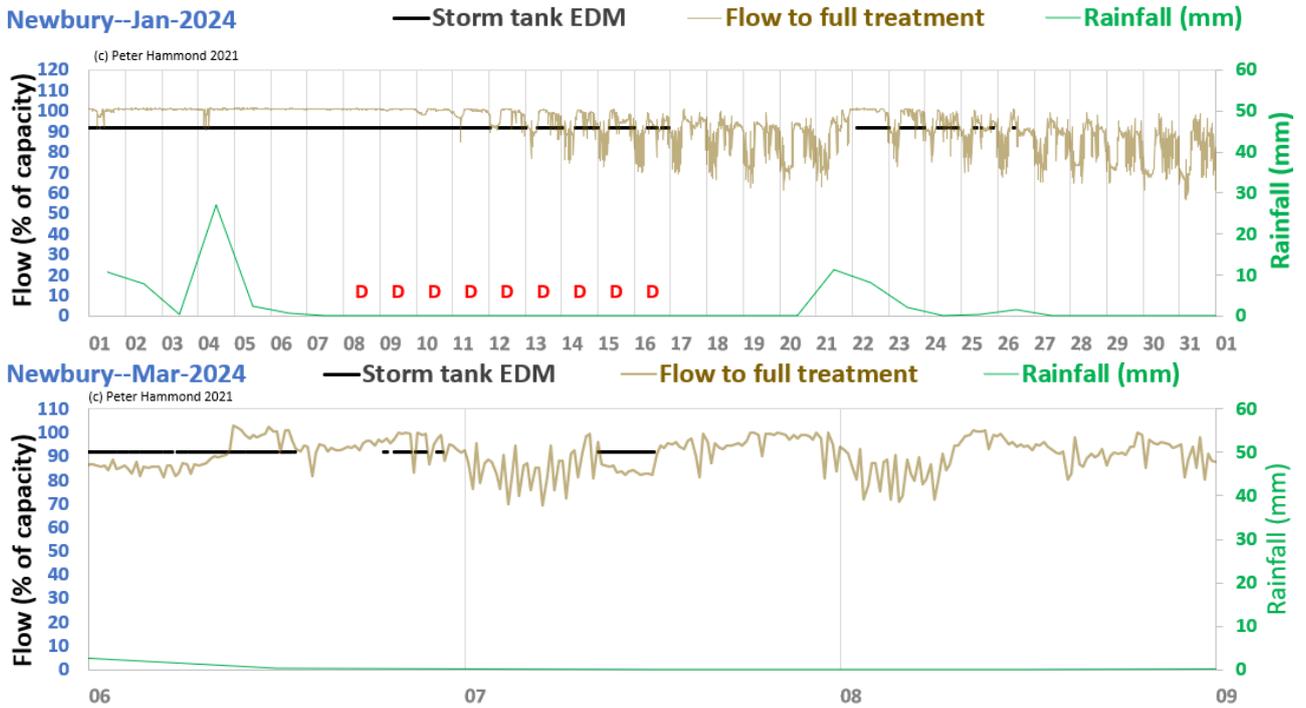


Figure 105: January 2023 monthly chart for Hungerford STW with clean separation of spill intervals

**2024**

The much higher rainfall in 2024 results in 1251 spill hours in total. Nevertheless, the spill intervals remain crisply defined and the separate data series show great consistency. Once more, there are a few illegal “dry” and “early” spills as shown in the examples below:



**Figure 106:** Examples of “early” and “dry” spills at Hungerford STW in 2024

**2025**

WASP did not find any examples of illegal spills in the 2025 data.

# Wantage\_Analysis

at least 14 days with illegal discharges to a chalk stream 2021-25 – some poor data quality

Wantage STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	155	54	533	650	131
<b>Spill frequency</b>	27	14	68	90	21
<b>Illegal spills</b>	0	0	11	14	6
<b>% illegal</b>	0	0	16%	16%	29%
<b>Constituency</b>	Didcot and Wantage				
<b>MP</b>	Olly Glover				
<b>Party</b>	Liberal Democrat				

Wantage STW treats the sewage of a population equivalent of over 32,000 and discharges to the Letcombe Brook, a chalk stream in the Vale of the White Horse in Oxfordshire.

On October 10<sup>th</sup> 2025, the EA published a report on Wantage STW and severely admonished Thames Water for exceeding its Dry Weather flow permitted limit (basically pushing high volumes of sewage through the treatment process too quickly) in 2020, 2021, 2023 and 2024. Indeed, the EA recorded this as a category 2 breach of its permit and demanded that Thames Water submit an application to update its permit.

What the EA did not do was investigate the effect of this excessive throughput on illegality or on effluent quality. But WASP has looked into these aspects more closely.

## 2021 and 2022

There is no evidence of illegal untreated sewage discharge for Wantage STW in 2021. But there clearly is excessive throughput at 160%+ of capacity during spills in Jan and Feb. Could this be affecting effluent quality?

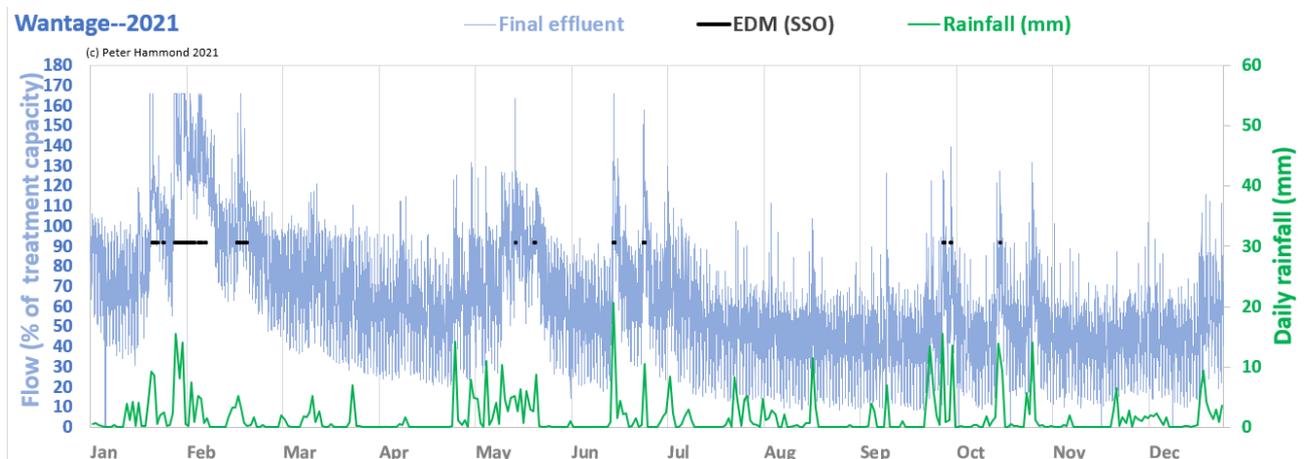


Figure 107: 2021 annual overview for Wantage STW

As seen in the annual overview below, the sewage flow data for Wantage STW in 2022 is chaotic with sudden jumps, gaps and changes of scale. The data is totally unreliable for checking spill compliance.

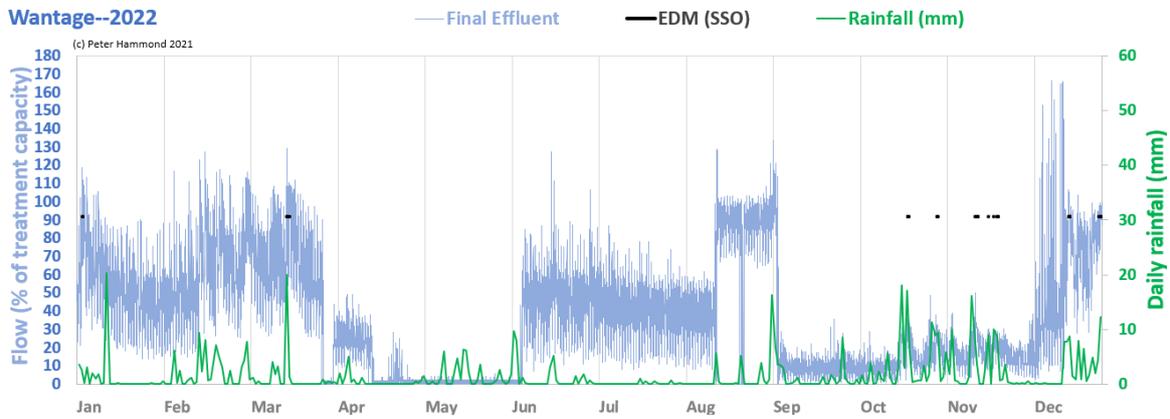


Figure 108: 2022 annual overview for Wantage STW with gross losses and drops/leaps in treatment data

Thames Water’s “private” sonde data for Ammonia suggest that there were occasions where permit limits may have been breached. Notice that the monthly spot tests for OSM were typically undertaken between 7 am and 2:30 pm as is the case for almost all OSM tests across the water industry.

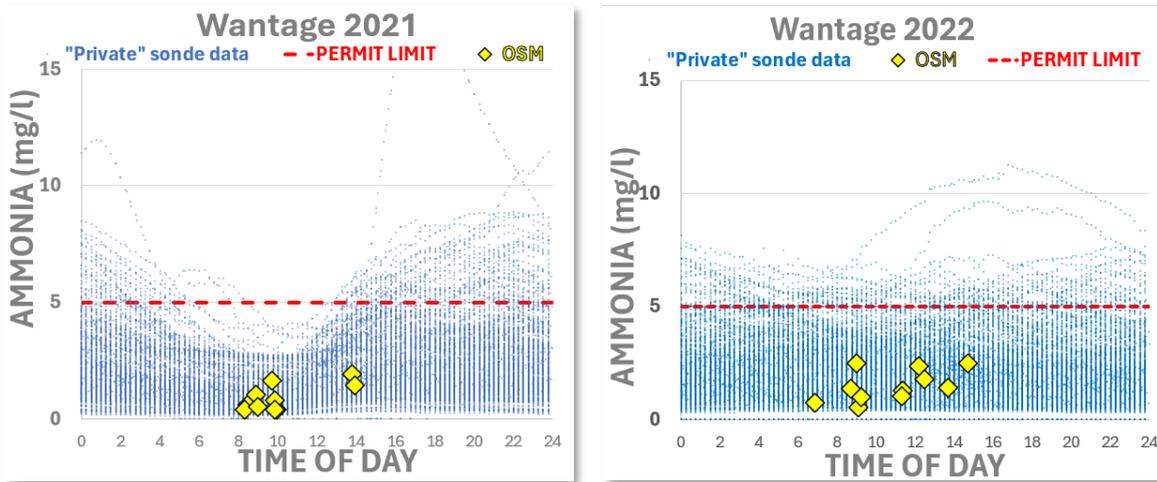


Figure 109: 2021/2022 “private” Ammonia data at Wantage STW showing exceedances of permit level

**2023**

The 2023 annual overview chart below confirms high throughput for the first half of the year. The cutoff of about 165% of capacity is probably the maximum the meter can record, so flows could be even higher.

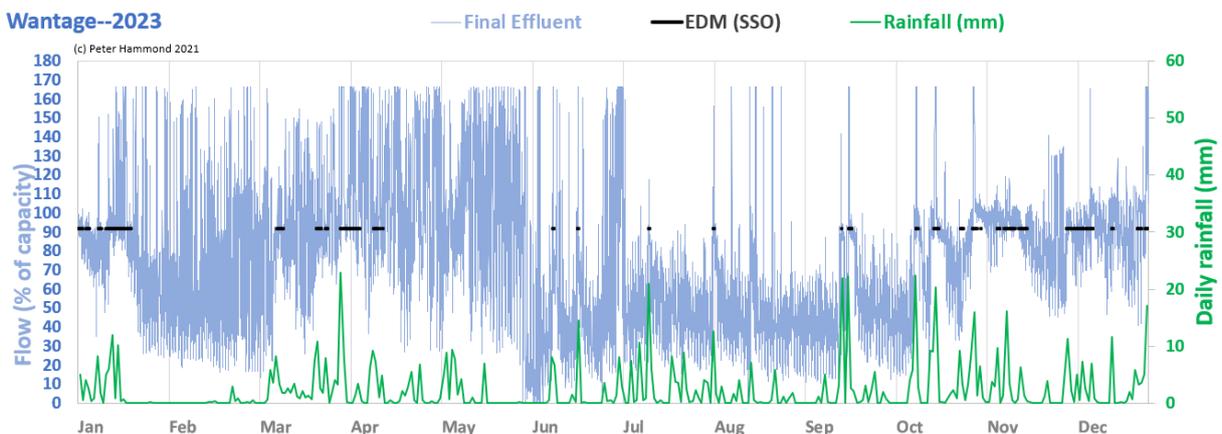


Figure 110: 2023 annual overview chart for Wantage STW

The 533 annual spill hours total include at least 3 days with “dry” spills and 8 with “early” spills.

### 2024

The heavy rainfall in 2024 results in a total of 650 hours for the annual spill total.

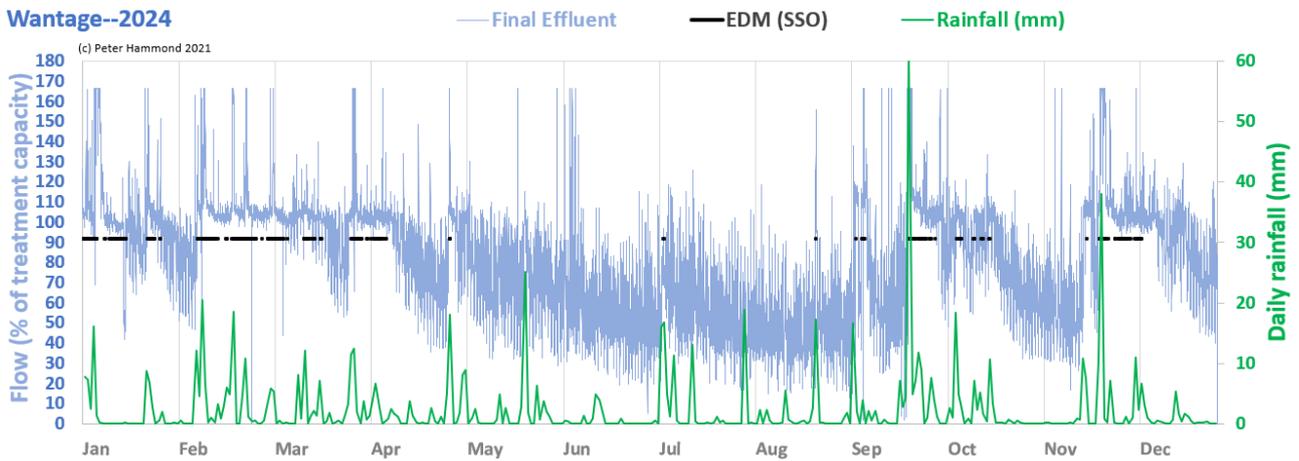


Figure 111: 2024 annual overview chart for Wantage STW

WASP’s analysis suggests there were at least 12 days with “dry” only spills, 1 “early” only spill and 1 both “dry” and “early”. Examples of both “dry” and “early” illegal spills occur in January 2024:

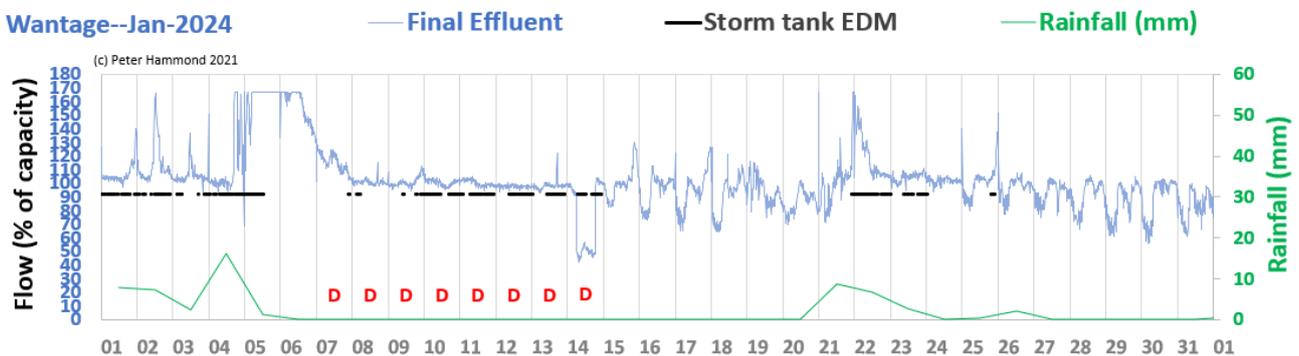


Figure 112: examples of illegal spills in 2024 at Wantage STW

### 2025

The 2025 annual overview chart shows much the same high throughput at 160% of capacity and above. There appear to be 6 days with illegal “dry” spills.

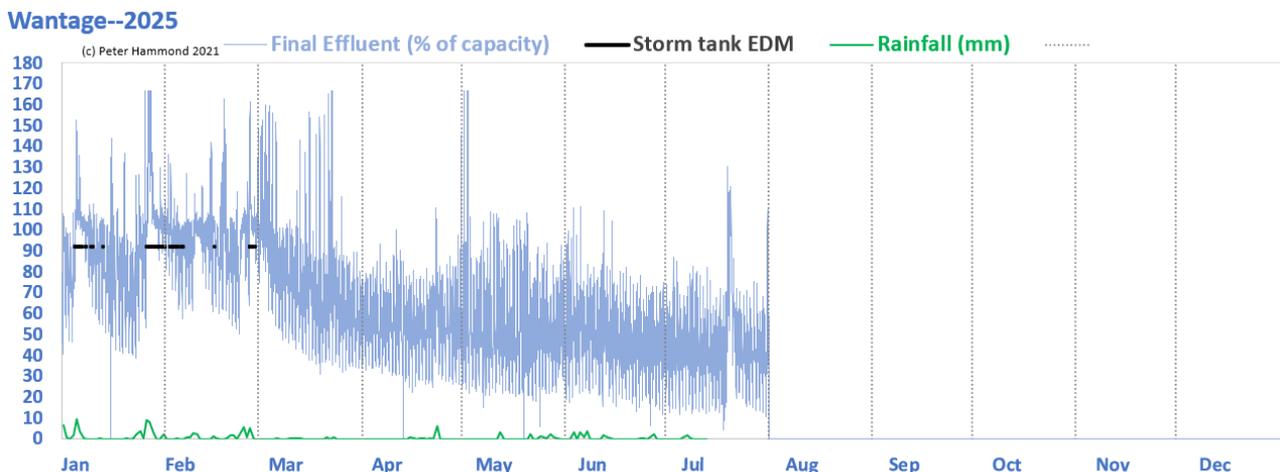


Figure 113: 2025 annual overview chart for Wantage STW

## STWS WITH INFLATED SEWAGE THROUGHPUT/POOR EFFLUENT

This section of the report provides detailed analysis of the performance of some of the Thames Water STW which appear to have dramatically increased the sewage treatment throughput, possibly to decrease the frequency or duration of spills or avoid illegal “early” spills.

What effect might such rapid and inflated treatment have on the treatment process and the quality of the resulting treated effluent leaving the sewage works 24/7.

<b>STW</b>	<b>Illegal</b>	<b>MP</b>	<b>Constituency</b>	<b>Party</b>
Byfield	27	Stuart Andrew	Daventry	Conservative
Carterton	15	Charlie Maynard	Witney	Liberal Democrat
Cassington	18	Calum Miller	Bicester and Woodstock	Liberal Democrat

# Byfield\_Analysis

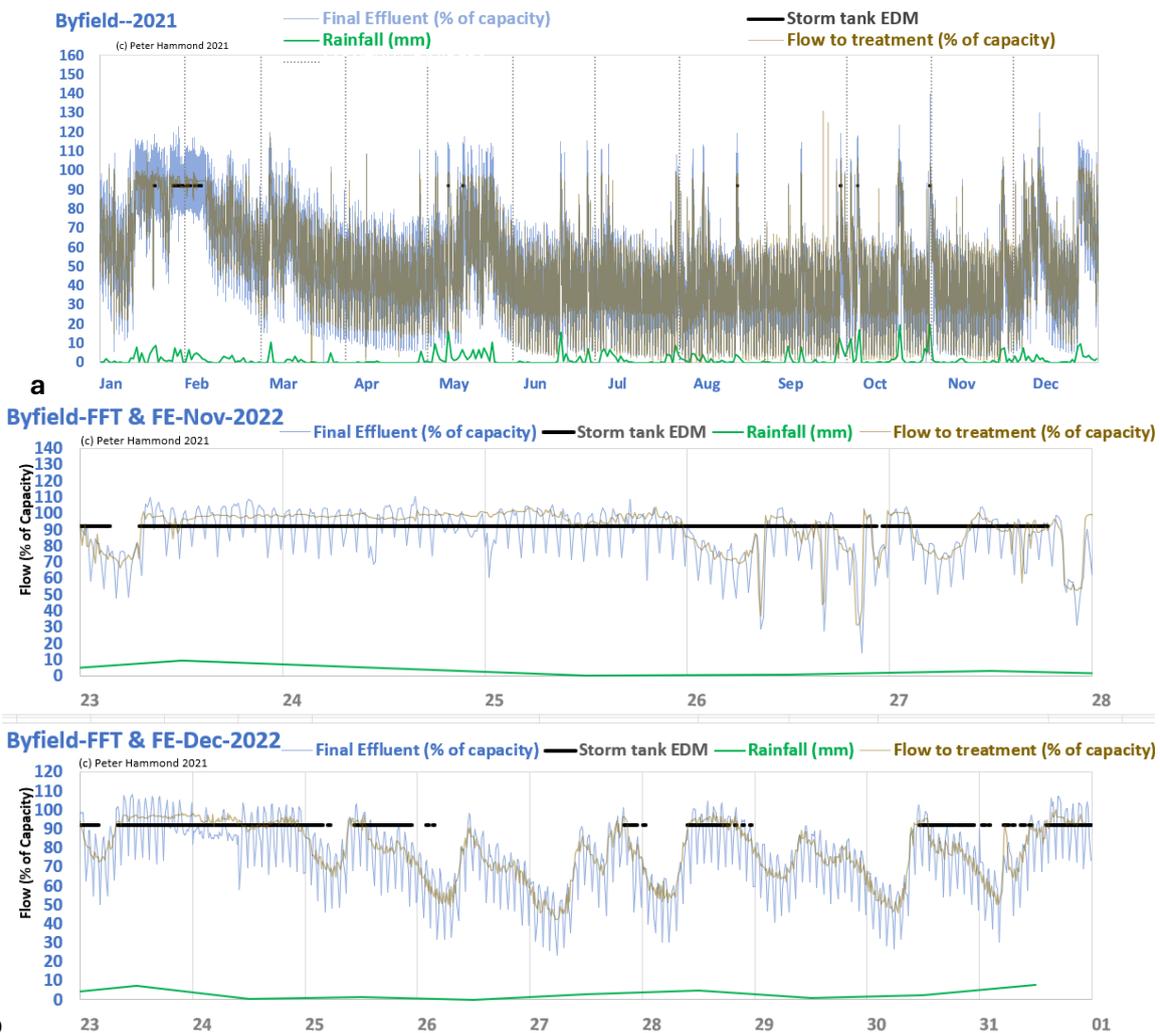
## INFLATED SEWAGE THROUGHPUT COINCIDING WITH REDUCED SPILL FREQUENCY & ILLEGALITY

### Byfield STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	76	289	591	558	207
<b>Spill frequency</b>	19	25	52	31	18
<b>Illegal spills</b>	0	10	11	3	3
<b>% illegal</b>	0%	40%	20%	10%	16%
<b>Constituency</b>	Daventry				
<b>MP</b>	Stuart Andrew				
<b>Party</b>	Conservative				

Byfield STW discharges to the Byfield Brook and serves a population equivalent of almost 6,000. The 2021 annual overview for Byfield STW is shown in Fig. 114a. The 19 days with spills are all within permit as they are due to rainfall and the flow to treatment remains at around 92% of the works capacity throughout (92% allows for 8% meter error accepted by EA). By late 2022, 40% of the spilling is “early” (Fig. 114b) and hence illegal as the flow to full treatment drops below capacity during spills.



**Figure 114:** a) 2021 annual overview for Byfield STW of sewage flow (untreated & treated), spill data and rainfall  
 b) Nov and Dec 2022 charts for Byfield STW showing 10 days with illegal “early” spills

This illegal “early” spilling continues in Jan 2022 but by Mar 2023 there is a significant increase in flow to full treatment during spilling - as high as 140% of capacity and the illegal spill rate is 20% (Fig. 115)

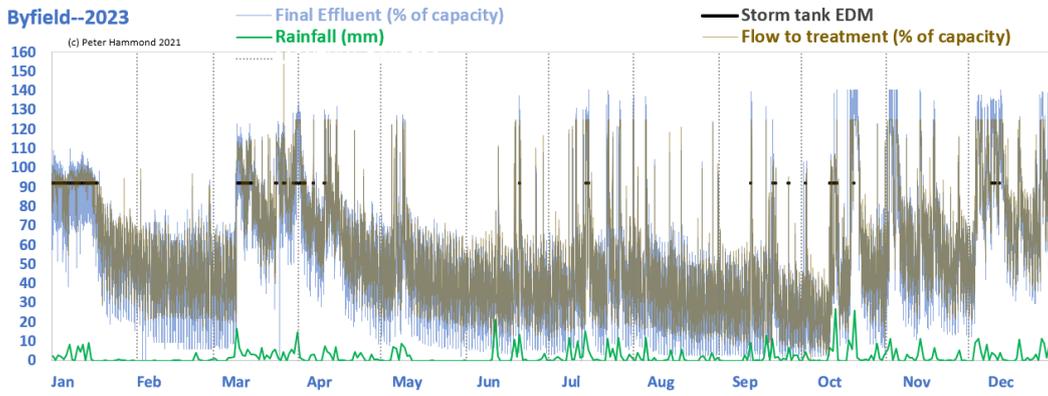


Figure 115: 2023 annual overview of sewage flow, spill and rainfall data for Byfield STW

A similar level (140% of capacity) of flow to full treatment occurs in 2024 and illegality drops to 10%.

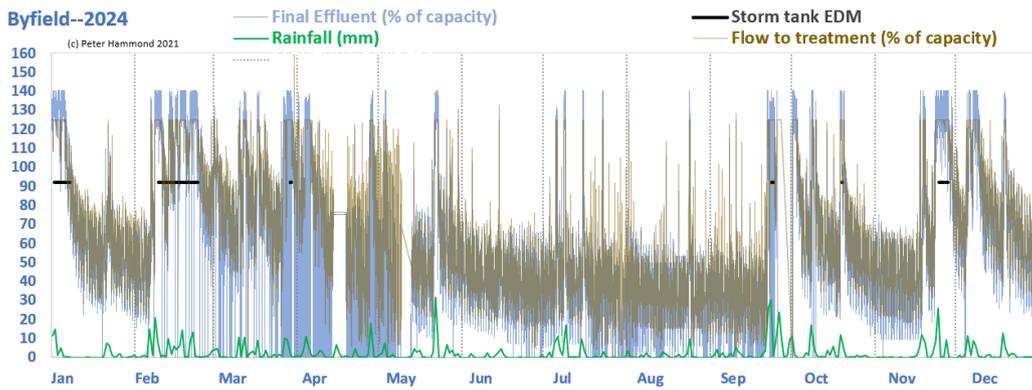


Figure 116: 2024 annual overview of sewage flow, spill and rainfall data for Byfield STW

This high throughput appears not to have been noticed by the EA until Jan'25 when it issued Thames Water with a category 2 permit breach claiming exceedance of its permitted "dry weather" flow (see EPR Compliance Assessment Report /535803). In Jan-Feb '25, there is a dramatic reduction of flow to treatment during spilling to the permitted levels. There is no "early" spilling but 3 days with "dry" spills.

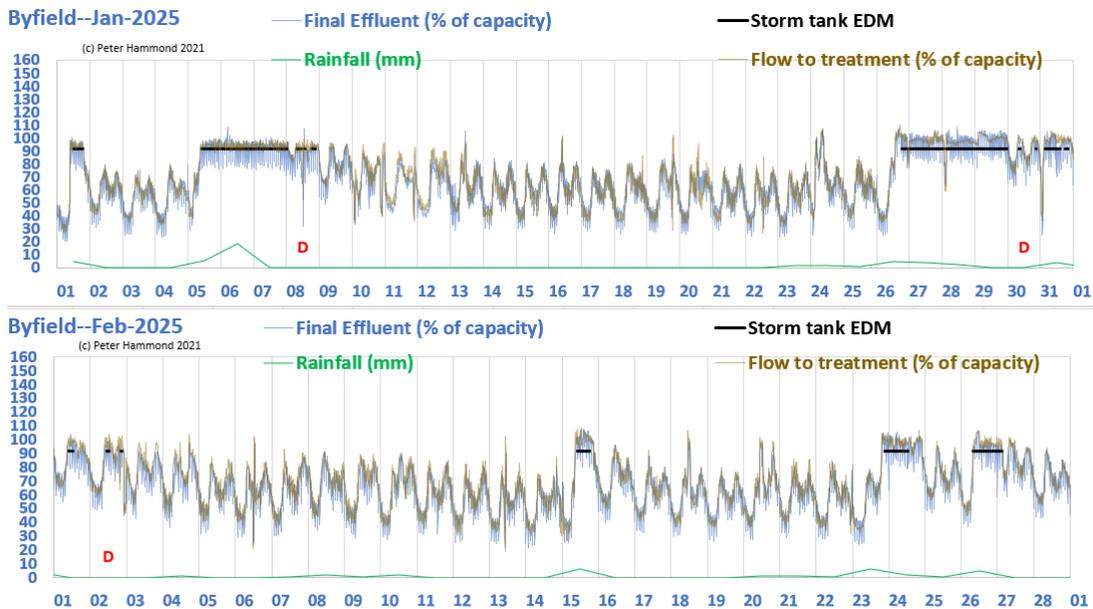


Figure 117: Jan and Feb monthly data for Byfield STW

Why did Thames Water increase its sewage throughput at Byfield STW so dramatically and incur the EA's wrath by breaching its dry weather flow limit? Was it to reduce the frequency or duration of untreated sewage spills? Or even the illegality rate?

# Carterton\_Analysis



	2021	2022	2023	2024	2025
<b>Spill hours</b>	418	435	1046	1058	99
<b>Spill frequency</b>	26	31	58	57	6
<b>Illegal spills</b>	1	0	7	6	1
<b>% illegal</b>	4%	0%	12%	11%	17%
<b>Constituency</b>	Witney				
<b>MP</b>	Charlie Maynard				
<b>Party</b>	Liberal Democrat				

Carterton STW serves a population equivalent of about 18,000 and discharges to the Shill Brook.

Between 2021 and July 2025, Carterton STW made relatively few illegal spills (about 8% of all spills) despite the dramatic increase in annual spill hours in 2023-2024. In the previous 5 years, there was more frequent illegal spilling. So, what has improved the situation? WASP believes that the sewage throughput at the works has increased significantly since spill monitoring was introduced in late 2019. More rapid sewage flow may reduce spill duration and even avoid spills altogether, but at the risk of poorer treatment quality. Inadequately treated sewage released 24/7 can be just as polluting as occasional spills of untreated sewage.

### Has sewage throughput increased at Carterton STW since the introduction of spill monitoring?

The chart below shows the total daily volume (TDV) of treated effluent leaving Carterton STW over the past 10 years.

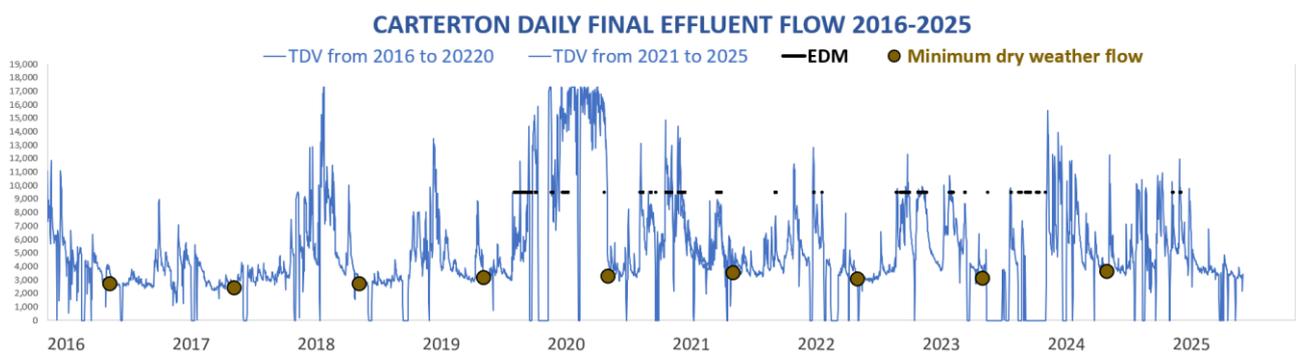


Figure 118: treated daily effluent volume at Carterton STW between 2016 and 2025

The large gaps in TDV, almost every year, has made accurate analysis difficult. Between 2016 and 2025, the minimum dry weather TDV has increased by about 30% whereas in the same period the local population has increased by about 12%. Has the increased throughput affected the quality of the treatment process and polluted the receiving watercourse, the Shill Brook?

### Is Shill Brook being damaged by both untreated sewage spills and inadequately treated sewage?

A click on the first image in Fig. 119 initiates an online video captured by Ash Smith, WASP’s founder, of an untreated sewage spill from the storm tanks at Carterton STW into the Shill Brook. The second image is from another video made by Ash Smith showing clean gravel on the bed of the Shill Brook tens

of metres upstream of the outfall. Clicking on the still initiates an online video of the comparison of the bed of the Shill Brook from tens of metres upstream to a similar distance downstream of the STW outfall.



**Figure 119:** a) sewage spill from outfall b) bed of Shill Brook upstream/downstream of outfall

The bed of the brook and river plants are covered in algal growth and the water is much more turbid.

**Are the storm tanks at Carterton STW cleaned out promptly and thoroughly after a spill?**

Sometimes, if a storm tank has not been emptied following a previous spill there can be a serious toxic shock arising from septic sewage which get flushed out at the beginning of a spill. During a visit to Carterton STW, in March 2022, WASP recorded the video ([click to view](#)) below some days after there had been rainfall and the storm tank clearly was part full of untreated sewage left after a previous spill. On November 5<sup>th</sup> 2025, the EA made a routine inspection of Carterton STW. One of the findings was that neither of the 2 storm tanks had been full emptied and had solid waste material and plant growth.



2022 (video from WASP visit)



Storm tank with debris



2025 (photos from report of EA visit)

**Figure 120: videos of Carterton STW's storm tanks during site visits**

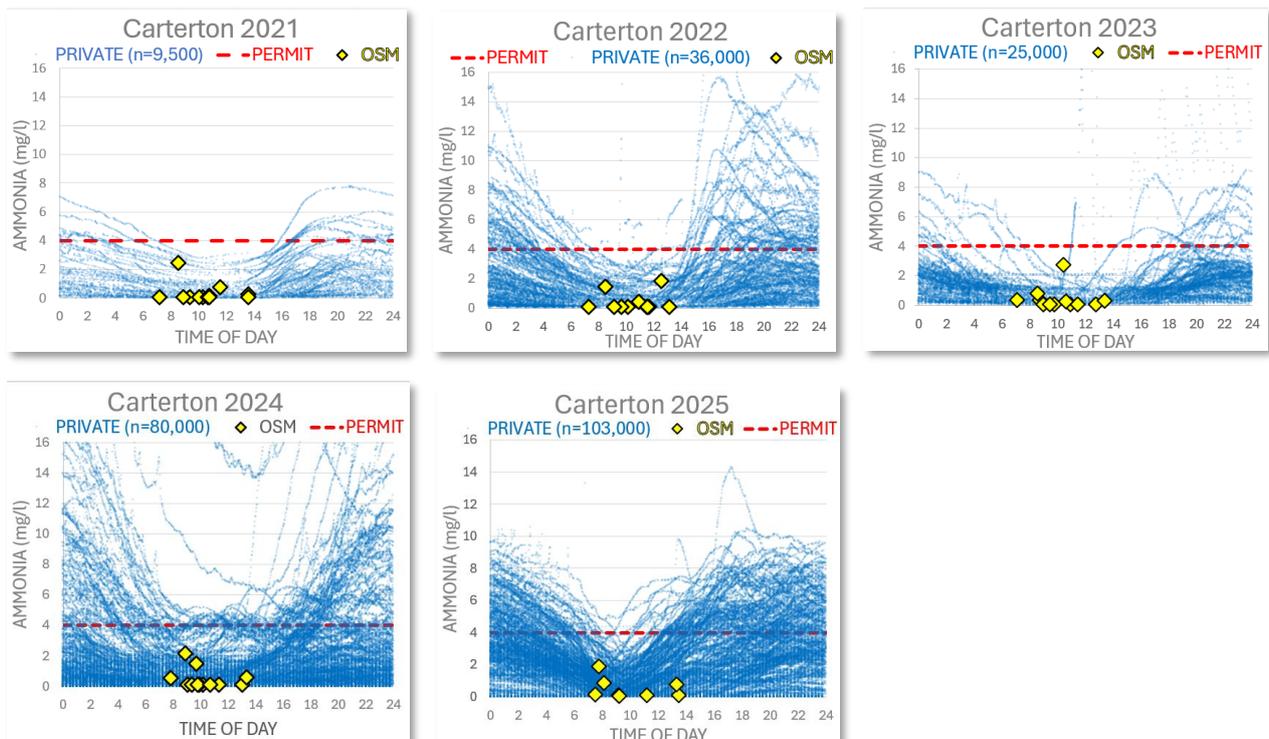
It appears, then, that the storm tanks at Carterton STW are not always emptied as promptly as they should following a diversion of untreated sewage to, or spill from, the tanks.

### Is the treated sewage at Carterton STW meeting quality standards?

Since 2009/2010, when operator self-monitoring (OSM) was introduced, water companies have been obliged to undertake regular sampling of the final treated effluent leaving a sewage works. This typically involves taking a monthly “SPOT” sample of the final effluent close to the STW outfall. EA permits to discharge typically contain upper limits on several parameters e.g., concentrations of Ammonia, levels of suspended solids and phosphate. Water companies have a statutory obligation to submit the results to the EA. Until the end of 2025, OSM test results were available online on the DEFRA website and WASP published studies of effluent quality in **2023** and **2024**. A major surprise was that samples were typically collected between 7 am and 4 pm and almost never outside those times.

Another discovery that WASP made was that in addition to the statutory OSM SPOT monthly testing of treated effluent, most water companies undertake “private” treated effluent monitoring using “sonde” devices that can sample a variety of parameters every 15-mins or even more frequently. There is no statutory obligation to submit this “private” data to the EA. WASP used EIR requests to Thames Water and other companies to obtain this “private” final effluent monitoring data.

The charts below (**Fig. 121**) show OSM monthly and PRIVATE “continuous” monitoring results for AMMONIA in the final effluent at Carterton STW. The horizontal axis records time of day and the OSM and PRIVATE data are set against the permitted AMMONIA concentration (4 mg/l), so-called lower tier limit, which can only be exceeded twice in a series of 12 consecutive OSM samples. Furthermore, a single exceedance of an AMMONIA level of 16 mg/l is a permit breach. Notice that the OSM SPOT samples are never collected earlier than 7 am nor later than 2 pm and also that over the 5 years the granularity of the continuous sonde data has increased by an order of magnitude which presumably reflects Thames Water’s investment in such devices.



**Figure 121: Effluent quality by OSM sampling and continuous monitoring 2021 to 2025**

The OSM SPOT test results are always below the lower tier limit of 4 l/s. In comparison, the continuous monitoring suggests that ammonia levels may breach the permit limit frequently.

Although the OSM Ammonia results never exceed the “4 mg/l” permit level, in contrast, many of the “PRIVATE” continuous Ammonia results do.

Ammonia levels measured by continuous sonde devices have a reputation for drifting upwards. WASP has tried to remove such patches of AMMONIA drift.

# Cassington\_Analysis

## INFLATED SEWAGE THROUGHPUT AND FINAL EFFLUENT THAT LOOKS EXTREMELY UNPLEASANT

**Cassington STW**



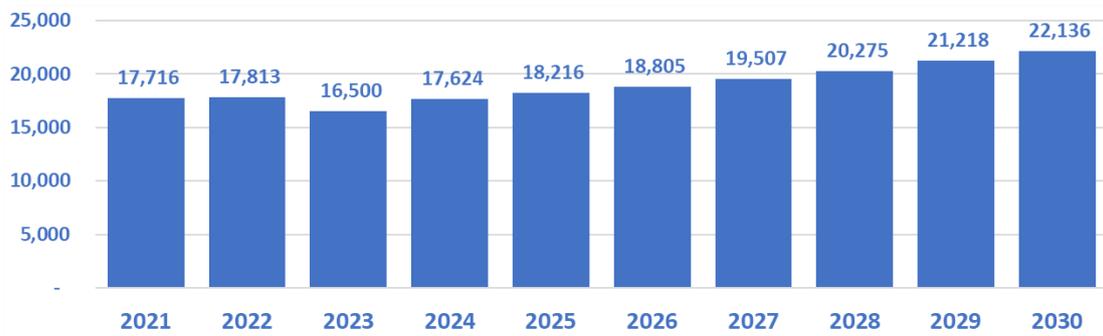
	2021	2022	2023	2024	2025
<b>Spill hours</b>	935	719	2,207	2,800	460
<b>Spill frequency</b>	28	0	2	22	0
<b>Illegal spills</b>	17	-	1	0	-
<b>% illegal</b>	61%	-	50%	0%	-
<b>Constituency</b>	Witney				
<b>MP</b>	Charlie Maynard				
<b>Party</b>	Liberal Democrat				

Cassington STW has just one outlet for both spilled, untreated sewage and treated effluent located 2 km south where it enters the River Thames.



**Figure 122: Cassington STW (extreme left) and its sewage outlet (yellow star) to the River Thames 2 km from works**

The population equivalent served was 17,716 in 2021 and is predicted to grow to 22,136 in 2030 (Fig 123). Despite this growth, its treated sewage permit has been amended only twice in the past 20 years and Thames Water has decided to defer planned upgrades that had already been financed for the Asset Management Period 2020-2025 (AMP7) to AMP8 (2025-2030).



**Figure 123: Thames Water's SOLAR modeled Population Equivalent for Cassington STW**

The outlet is 3.5 km upstream of a river bathing area at Wolvercote Mill Stream which gained bathing quality status in April 2022. Four years on, it has yet to be declared safe for bathing. The monitoring data on the [Oxford Rivers Portal](#) illustrate the problem during every summer bathing season when e-coli and enterococci

concentrations rise persistently. The EA does not monitor outside the official bathing season when untreated sewage spills are at their worst levels. Despite potential health hazards, local people use the site year round.

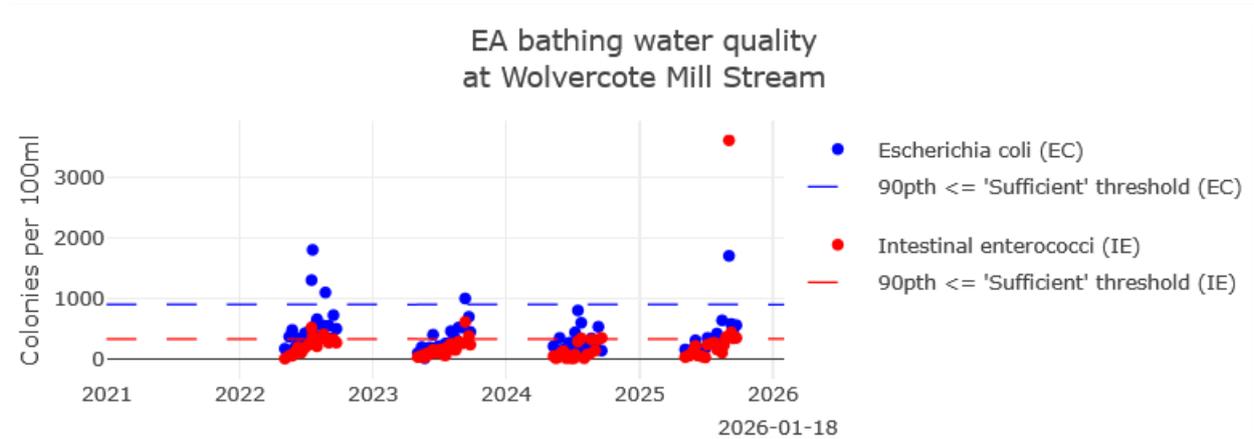


Figure 124: [Oxford Rivers Portal](#) monitoring data at Wolvercote Mill Stream 2021 to 2026

There is no storm discharge permit for Cassington STW on the EA’s public register. In response to an EIR (THM160685) requesting flow to full treatment capacity and storm tank sizes for all STWs in England, the EA did provide a table which included entries for Cassington STW (Fig. 125). Interestingly, the suggested storm tank volume (1112 cu m) was more than 50% greater than that required to hold diverted untreated sewage flow for 2 hours at the rate of 98 l/s (705.6 cu m) as is normally required by the EA.

STW NAME	FINAL EFFLUENT PERMIT NO.	SETTLED STORM (Storm Tank) PERMITTED PASS FORWARD FLOW RATE / OVERFLOW SETTING (l/s)	STORM TANK PERMITTED VOLUME (m3)	Storm tank capacity required to meet 68 l/h (at permitted DWF) (Based on Thames Water PE Methodology re Separate Sewers)	Current Actual Storm Tank Volume m3
CASSINGTON STW	CTCR.1749	98	1112	437	1112

Figure 125: storm discharge related parameters provided by the Environment Agency for Cassington STW

The current EA permit covers effluent flow with no mention of storm discharge. Indeed, in contrast to the historical overflow setting of 3 times DWF (dry weather flow), the suggested rate of 98 litres/sec is only 2.1 times the equivalent DWF defined in the permit. This would allow spills to occur at lower treatment flows, and hence more frequently, than would have been permitted in the past.

**AMP7 (2020-2025) upgrades at Cassington STW deferred until AMP 8 (2025-2030)**

In October 2025, during an unscheduled visit to Cassington STW, EA officers were informed about ongoing and planned developments (EPR Compliance Assessment Report CAR: S/58427):

- The storm project is partially completed: new inlet screens have been installed, a new inlet balancing tank is under construction, and a second pump will be installed in the return liquors well. This project should be complete before the end of 2025.
- A UV treatment plant will be installed on the final effluent line, as part of a trial to improve effluent quality because the site is upstream of a designated bathing water. This should be up and running by Easter 2026. No work has yet been started onsite.
- There is also a growth project in the planning stages, which is targeted for completion at the end of Asset Management Program 8 (AMP8 = 2030).

A cost of £5.2M has previously been given for these upgrades. Using the WASP illegal sewage spill map, Google Earth aerial views of the STW in 2006 and 2025 show small differences above ground.



Figure 126: aerial views of Cassington STW in 2006 and 2025 showing little change above ground in 20 years

It is not clear which of the upgrades have been completed and which have been deferred until AMP8 with completion by 2030.

### Illegal sewage spills at Cassington STW 2021 to 2025

According to data supplied by Thames Water to the EA, Cassington STW spilled untreated sewage for only a few hours from Mar 8<sup>th</sup> 2021 to Jan 1<sup>st</sup> 2024. Despite periods of rainfall higher than early 2021, when sewage spills did occur, the autumn of 2022 and both the spring and end of 2023 are remarkably free of sewage spills (Fig 127).

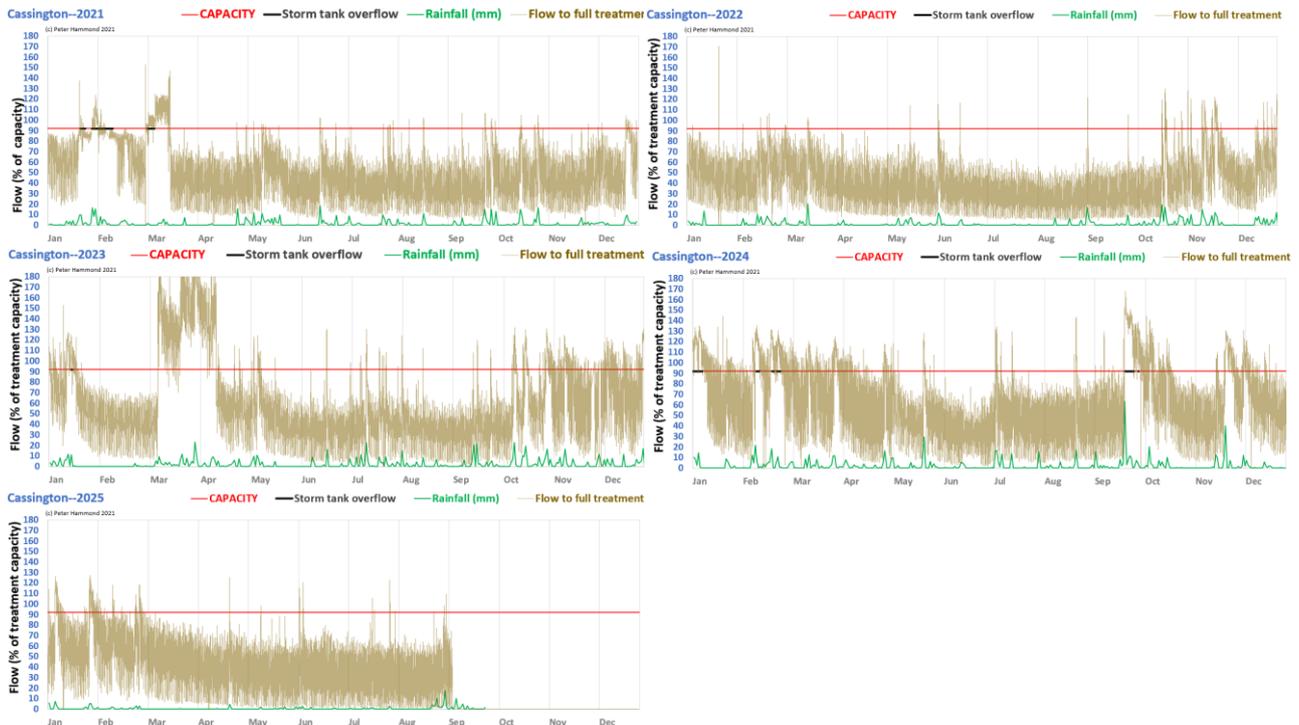


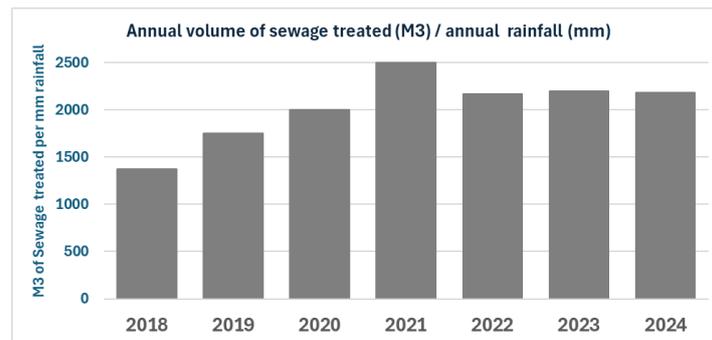
Figure 127: annual overview charts for Cassington STW 2021 to 2025

What is noticeable about the annual overview charts in Fig. 127 is the considerable increase in the sewage passing through the works, even when spilling. In the case of March/April 2023, the flow to full

treatment is as high as 240% of the storm overflow or capacity rate when sewage is permitted to be diverted to a storm tank and overflow from the tanks when full.

This sudden and huge increase in sewage inflow may also be explained by the well documented and photographed flow management in the Cassington network. Hundreds of tankers were tipping into the main SPS at Eynsham and to a lesser extent into a manhole at Langford Locks in Kidlington. None of these activities could be included on conventional tanker logs as the tipping points were not official loggers which are only found in sludge treatment centres and record a variety of imports. WASP wonders whether such use excessive use of tankers could itself be illegal.

Even if a sewage works does not spill, the sewage treated will be inflated by high rainfall. So, simply using annual sewage treatment totals, for example, to demonstrate the increased throughput is misleading. A simple-minded statistic reflecting rainfall is the ratio of the annual volume of sewage treated (M3) to the annual rainfall (mm) (**Fig. 128**)



**Figure 128: Ratio of annual volume of treated sewage to annual rainfall at Cassington STW**

Now it is clear that Thames Water has dramatically increased sewage throughput regardless of the rainfall. This statistic also reflects the extra volume arriving by tanker in early 2021.

Perhaps, Thames Water needs to be challenged by the EA to decide if this has been a ploy to reduce the length of the spill intervals and/or to ensure spills are not “early” and hence illegal?

Over and above the illegality aspects of spilling, WASP is concerned about the effect of such high, rapid throughput on the quality of the sewage treatment process. Monthly OSM spot testing results at Cassington STW do increase when the flow to full treatment is very high, but not enough to breach permitted values (which have been generous and unchanged for decades).

WASP captured GoPro videos and photos of treated effluent leaving the outlet pipe in the River Thames and in the final settlement tanks during a visit to the works. Thames Water staff hosting WASP’s visit did not object to videos being made of the flow in the final settlement tanks just before it enters the outlet pipe. Even at times when there is no spill happening, these show significant suspended solids in the settlement tanks and sometimes undigested food such as sweetcorn and even the occasional condom exiting the pipe to the Thames.

In June 2022, WASP recorded a video at the end of the outfall pipe in the River Thames. Click the frame below to see the video (click [here](#) or the still below to see the video).



**Figure 129: undigested sweetcorn leaving the sewage outfall at Cassington STW**

On 31<sup>st</sup> January 2022, WASP made a video of flow within and leaving the final settlement tanks at Cassington STW. Here are 2 extracted sections:

<http://www.peter-hammond.com/STWS/THAMES/Cassington/Cassington 31 Jan Fst-Part1.webm>

<http://www.peter-hammond.com/STWS/THAMES/Cassington/Cassington 31 Jan Fst-Part2.webm>

In response to WASP's videos and media coverage, Thames Water undertook their own study of the Cassington outfall pipe. The associated report can be viewed at:

[http://www.peter-hammond.com/STWS/THAMES/Cassington/Cassington\\_Report\\_23\\_March\\_2022.pdf](http://www.peter-hammond.com/STWS/THAMES/Cassington/Cassington_Report_23_March_2022.pdf)

Thames Water has pushed back on WASP's video evidence and in its report says that

*“Our biologists have carefully examined the material using microscopy, and the suspended material is neither faecal matter nor fragments of toilet paper. It is simply accumulated lumps of natural biological organisms, including fungi, algae, protozoa etc., and are primarily those that treat sewage by consuming the organic matter in order to grow”*

and that

*“The apparently high quantities of suspended matter as reported from camera footage would seem to be an artefact of both the visual phenomenon of the camera, and the natural flocculation (clumping) of smaller, less visible particles into larger ones.”*

## INCOMPLETE OR UNRELIABLE DATA UNDERMINING INVESTIGATION

A notable secondary finding was the inconsistent completeness and reliability of Thames Water’s annual data series. Even data for Beckton and Crossness, Europe’s largest STWs, were of insufficient quality to support full analysis. This echoes WASP’s previous revelations of poor data quality:

- a **report in 2021** to the Environment Audit Committee’s inquiry “Water quality in rivers”
- 2024 reports on **Severn Trent Water** and **United Utilities** where many annual data series were unreliable
- 2024 warning to the EA that **Anglian Water**’s 2021 sewage treatment data were riddled with date errors
- **Welsh Water**’s resubmission of 2024 sewage spill data after WASP and the Welsh Rivers Trust found inconsistencies in the data first published on Ofwat’s website in March 2025.

Of 1,120 annual data series analysed, WASP identified 134 (12%) as containing such unreliable data that it was not possible to check illegality confidently against the EA permit criteria. Incomplete data provision can itself be a permit breach, something the EA has addressed more thoroughly in 2025.

WASP has not catalogued such data absences comprehensively but has provided some illustrative examples. Importantly, analysis of the unreliable data series suggests that some spills are

- false positives - reported but unlikely judging by sewage treatment and rainfall data
- false negatives – unreported but likely according to sewage treatment and rainfall data
- extended – with a tail longer than is suggested by the sewage treatment and rainfall data
- combined - due to erroneous fusing together of contiguous shorter, and possibly genuine, spills

The fusion of shorter, genuine spills into an erroneous long spill has 2 effects for an individual overflow

- it increases the annual spill hours total to be higher than it should be
- it reduces the annual number of spills to be lower than it should be.

The second of these effects is **extremely serious** since a current DEFRA target is to reduce the average number of yearly spills per overflow. These EDM malfunctions, therefore, would erroneously reduce the average number of spills and falsely appear to achieve the target.

**TABLE 6 STWs with unreliable annual data series** (those in bold are discussed in more detail)

STW	2021	2022	2023	2024	2025	STW	2021	2022	2023	2024	2025
Cuddington	U	U	U	U	U	Waddesdon	U	U			
Epping	U	U	U	U	U	Wokingham	U	U			
<b>Gerrard’s Cross</b>	U	U	U	U	U	<b>Ascot</b>	U				
Hatfield Heath	U	U	U	U	U	Aston Le Walls	U				
Highworth	U	U	U	U	U	Bentley	U				
North Weald	U	U	U	U	U	Berkhamsted					U
Shabbington	U	U	U	U	U	Bishops Stortford		U			
Bletchinghamdon		U	U	U	U	Bordon			U		
Cottered	U	U		U	U	Buntingford					U
Haslemere	U	U	U	U		Caddington				U	
Kintbury	U	U	U	U		<b>Charlbury</b>	U				
<b>Ripley</b>	U	U	U	U		Chobham				U	
Shutford	U	U	U	U		Compton			U		
Stewkley		U	U	U	U	Cranleigh				U	
Barkway	U	U	U			Fleet					U
<b>Burghfield</b>	U	U	U			Haddenham	U				
Drayton	U	U	U			<b>Hamstead Marshall</b>		U			
Merstham	U	U			U	Hook Norton	U				
Selborne	U	U		U		Little Hallingbury	U				
Stone	U	U	U			Little Milton		U			
Theydon Bois			U	U	U	Maidenhead	U				
<b>Bracknell</b>	U	U				Middleton Cheney	U				
Combe			U	U		<b>Reigate</b>	U				
Dagnall				U	U	Shrivenham	U				
East Shefford				U	U	Silchester			U		
Horton-Cum-Studley	U	U				Tetsworth		U			
<b>Leatherhead</b>	U	U				Therfield		U			
Moreton Pinkney	U	U				Wantage		U			
Princes Risborough		U			U	White Roding				U	

Takeley	U	U			
---------	---	---	--	--	--

Windsor				U	
---------	--	--	--	---	--

# Bracknell\_Analysis

## inconsistencies between sewage treatment, spill and rainfall data

### Bracknell STW

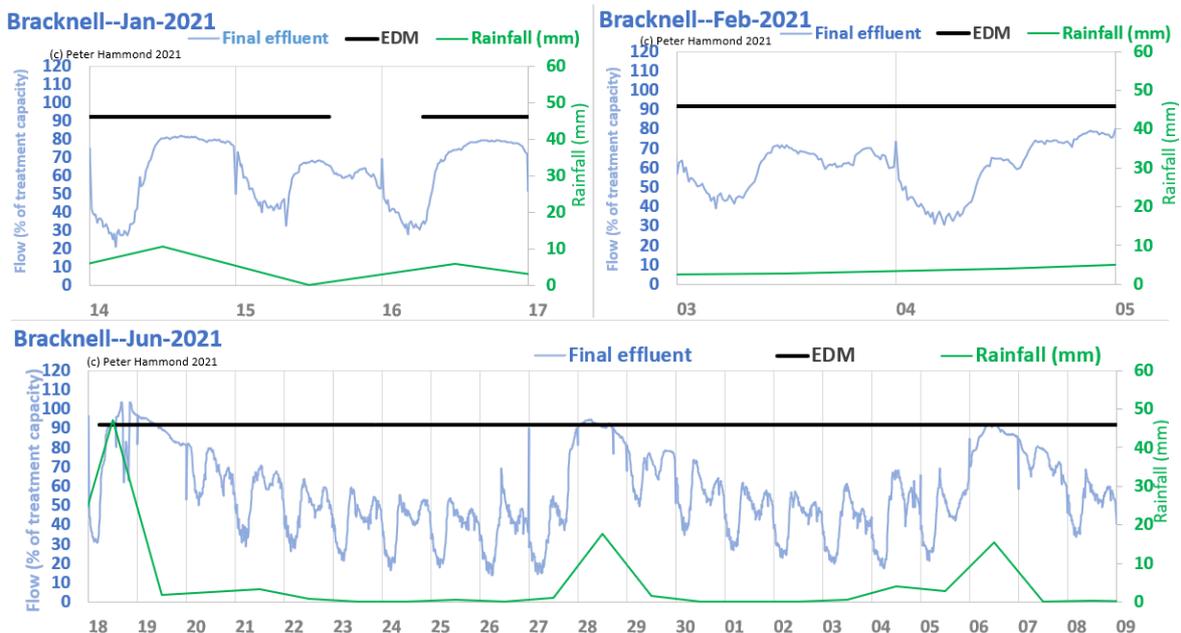


	2021	2022	2023	2024	2025
<b>Spill hours</b>	1,124	464	610	615	200
<b>Spill frequency</b>	70	44	53	50	19
<b>Illegal spills</b>	0	0	3	3	1
<b>% illegal</b>	0%	0%	6%	6%	5%

**Constituency** Maidenhead  
**MP** Joshua Reynolds  
**Party** Liberal Democrat

Bracknell STW discharges to The Cut and serves a population equivalent of about 84,000.

In 2021, there is significant inconsistency between EDM spill, sewage treatment and rainfall data. During many spills the treated effluent leaving the works is often between 15% and 30% of its treatment capacity of 580 l/s. Examples below are for January, February and June/July 2021.



**Figure 130** examples of overextended and amalgamated individual spill intervals at Bracknell STW in 2021

In June/July 2021, the EDM data suggests a continuous spill of more than 20 days often when there is no or very little rainfall. But another interpretation is that separate individual spills have been amalgamated into one by a faulty EDM device. If these data are correct, then the evidence suggests there were many non-compliant, i.e., illegal, discharges of untreated sewage. Or, alternatively, the data are not reliable.

2022 is no better, with examples of unreliable data (February) and missing sewage flow data (March).

So, which is it: illegal spilling or unreliable data? The former indicates criminal behaviour and the latter incompetence in installing and maintaining monitoring equipment.

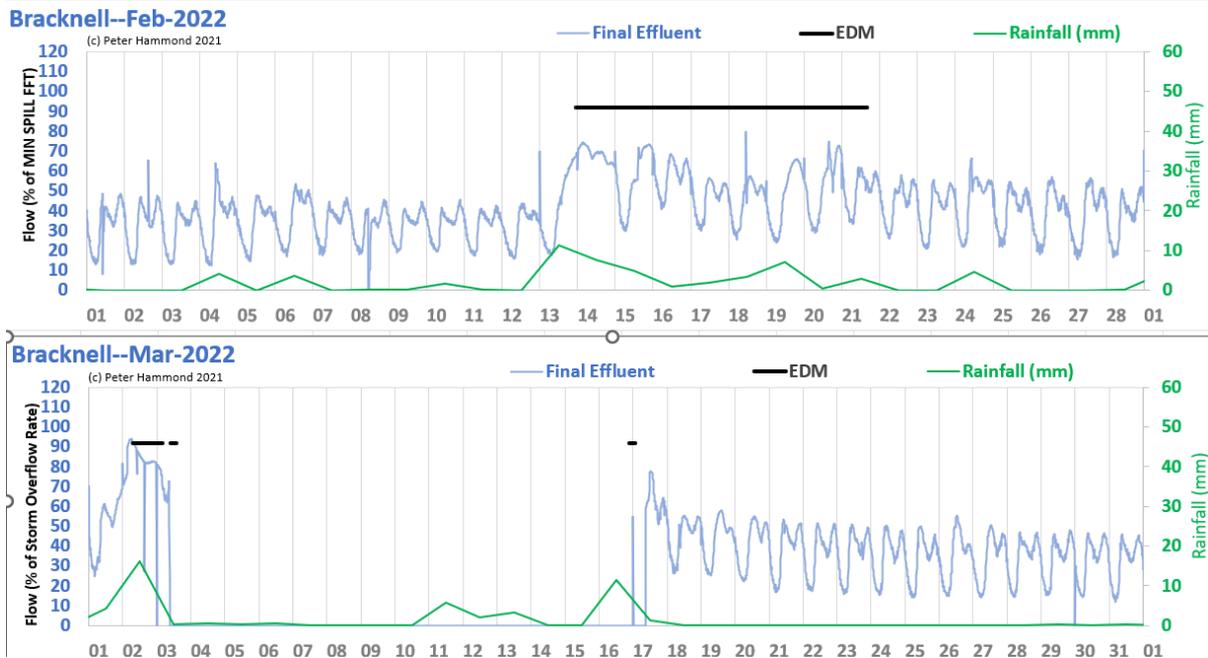
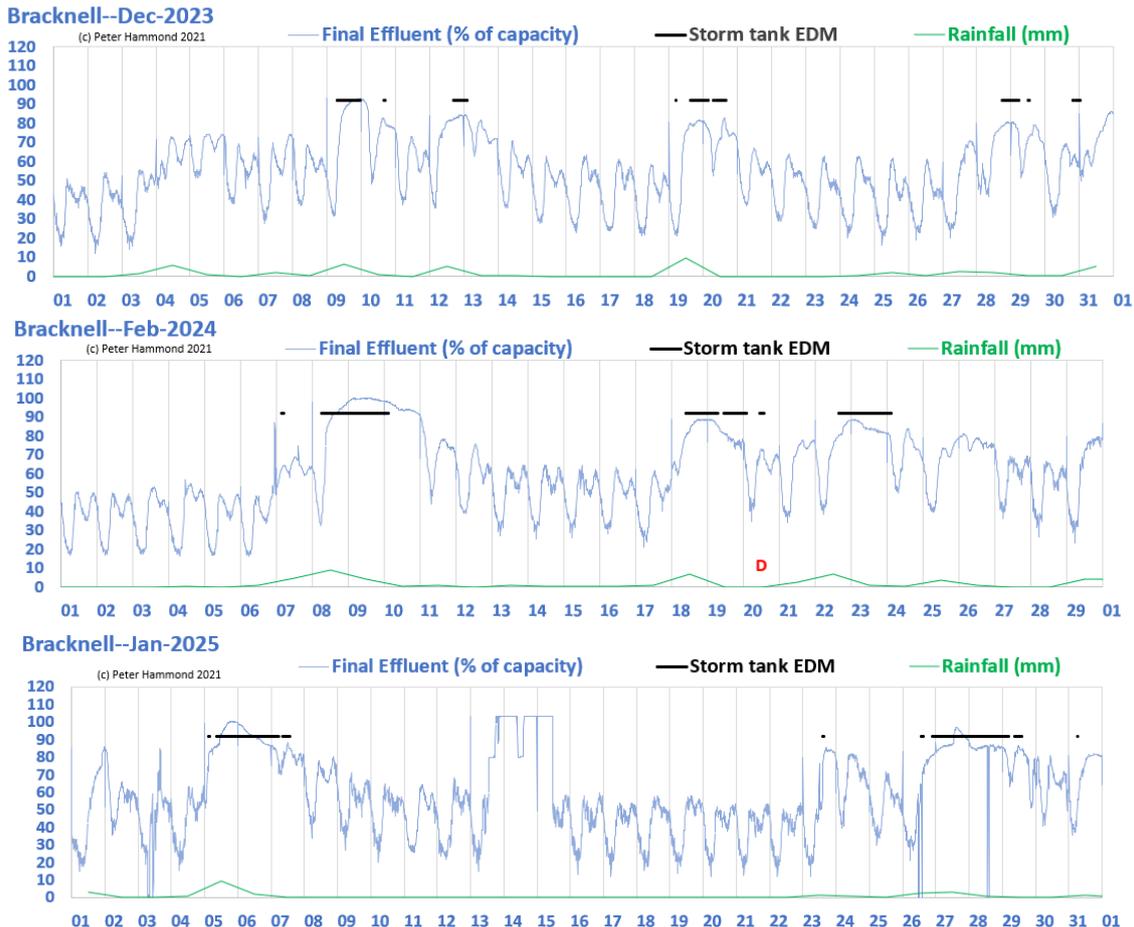


Figure 131: examples of extended spill (Feb) and missing sewage flow data (Mar) at Bracknell STW in 2022

There is an improvement in data quality from 2023 onwards. Examples are given below:

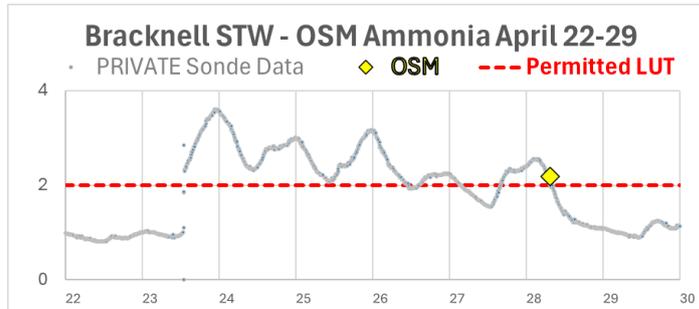


**Figure 132:** examples of improved data quality at Bracknell STW 2023-2025

Thames Water reported an incident to the EA on 11<sup>th</sup> February 2025 as follows:

*The incident is described as a discharge partially treated sewage from the Primary Settlement Tanks (PST) and the discharge of containing raised ammonia levels from the Final Effluent (FE) outfall causing an ammonia exceedance. Environment Agency CAR I/569249*

The EA classified the incident as a non-compliance category 2. WASP is aware that OSM Ammonia levels have occasionally been close to the permitted level of 2 mg/l on other occasions. For example, the OSM Ammonia test result of 2.19 on April 28<sup>th</sup> 2024 exceeded the permitted level. The chart below shows that result set against Thames Water’s “private” sonde data which agrees with the OSM result but also suggests that the Ammonia permit level was exceeded on the previous 5 days.



**Figure 133:** “private” Ammonia sonde and OSM data at Bracknell STW for April 22-29 2024

# Gerrards\_Cross\_Analysis

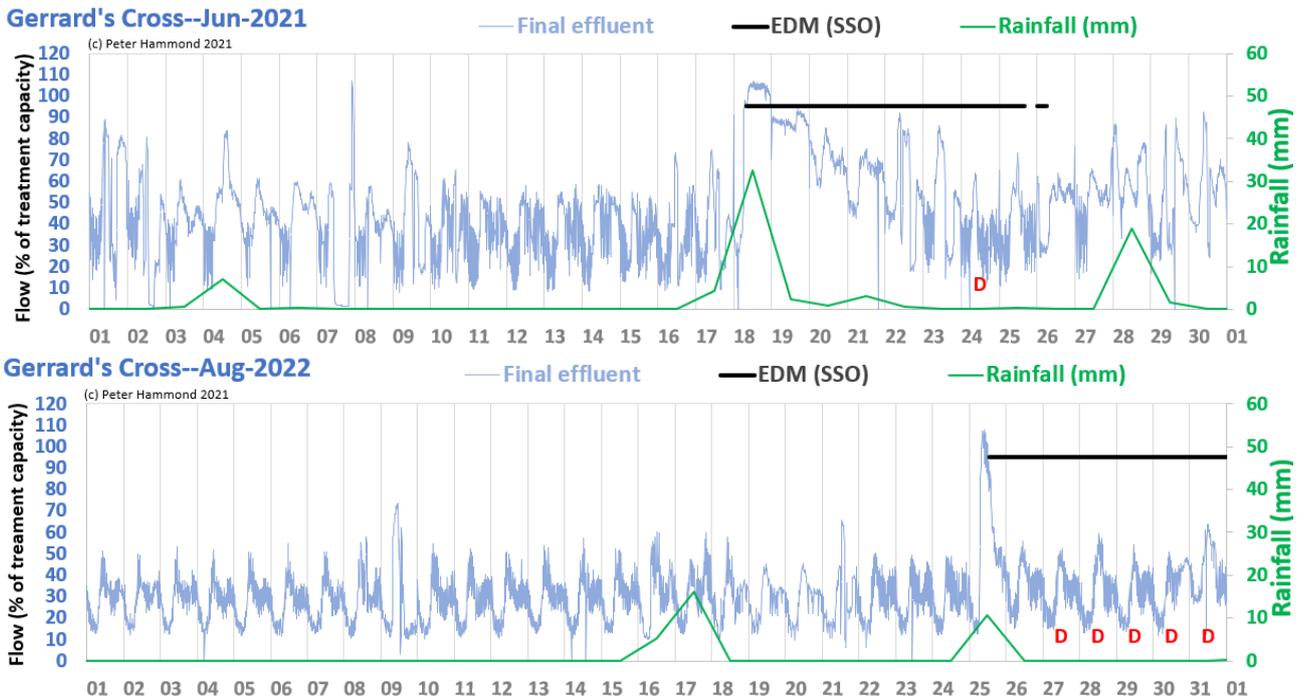
## unreliable spill detection at an STW discharging to a chalk stream

### Bracknell STW



	2021	2022	2023	2024	2025
Spill hours	1,172	1,206	2,305	2,838	1,329
Spill frequency	75	64	125	144	68
Illegal spills	-	-	-	-	-
% illegal	-	-	-	-	-
Constituency	Beaconsfield				
MP	Joy Morrissey				
Party	Conservative				

Gerrard’s Cross serves a population equivalent of about 9,000 and discharges to the River Misbourne, a chalk stream in Buckinghamshire. In both 2021 and 2022, there is extensive inconsistency between spill interval, sewage treatment and rainfall data. This unreliability can be seen in Fig. 134 below which contains monthly charts for June 2021 and August 2022.



**Figure 134:** monthly flow charts for June'21 & Aug'22 with unreliable spill intervals at Gerrard’s Cross STW

If the long spill in June 2021 were valid, then given the final effluent flow rate is often as low as 20%, it would surely be illegal and “early” on several days.

Similarly, the long spill in August 2022 occurs with sewage treatment and rainfall data that are totally consistent with dry weather flow and so it is likely that the spill monitor has extended a valid spill on August 25<sup>th</sup> to 5 or 6 more days.

So, if WASP assumes the spill detection is correct then these spills are illegal. Alternatively, the monitor has not been properly set up or maintained and the spills are likely overextended or false positives and must be discounted. WASP has assumed the second interpretation.

The unreliability of the data for Gerrard's Cross continued for each year thereafter. Examples below:

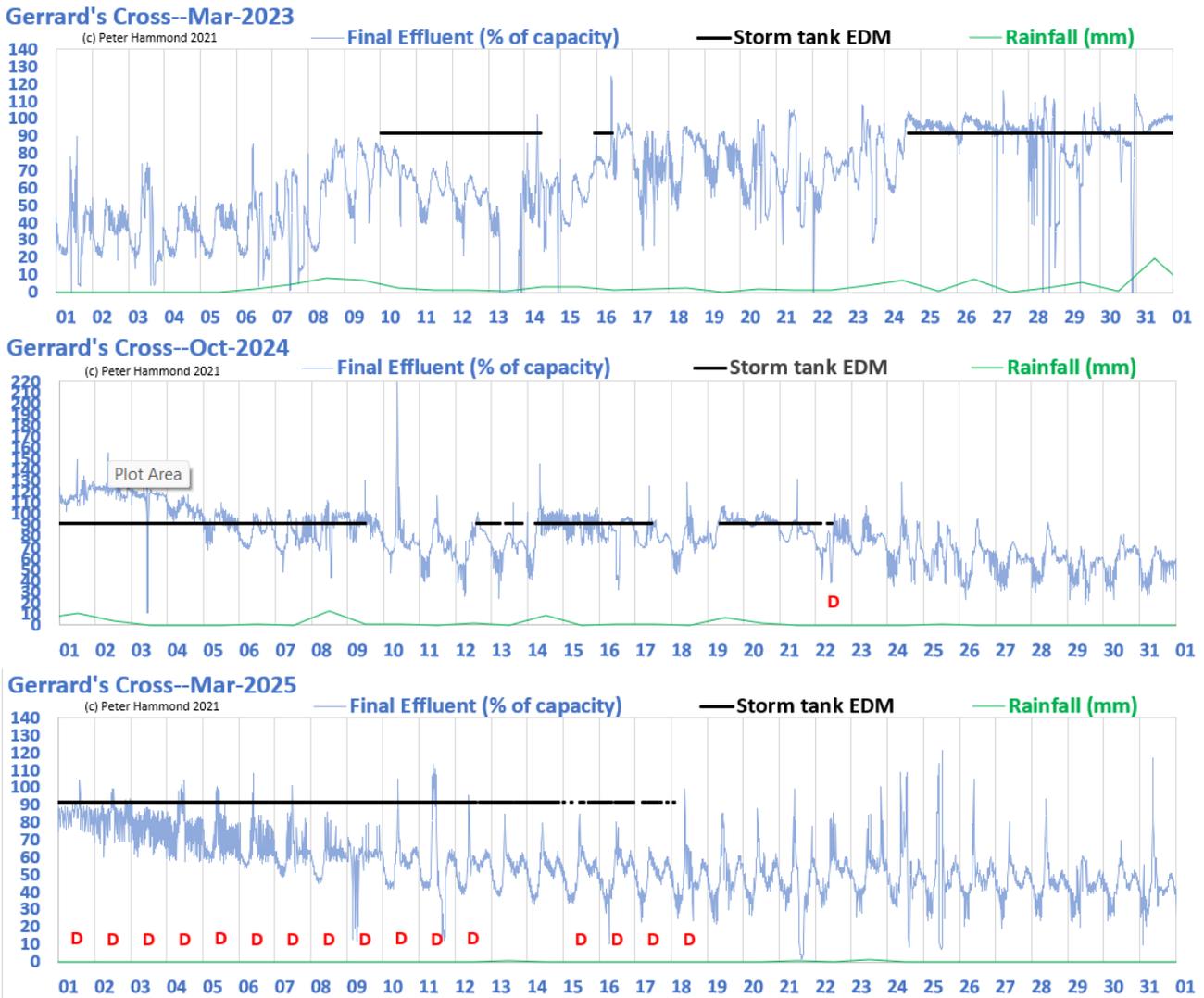


Figure 135: more unreliable spill data at Gerrard's Cross STW2023 to 2025

Some component of each of the spills indicated is a permitted discharge but most are either extended beyond regions where sewage treatment and rainfall data are consistent or they are amalgamations of shorter permitted spills into erroneously long ones.

# Reigate\_Analysis

**small amount of illegal spilling but regular permit exceedances/breaches of Ammonia and BOD in final effluent**

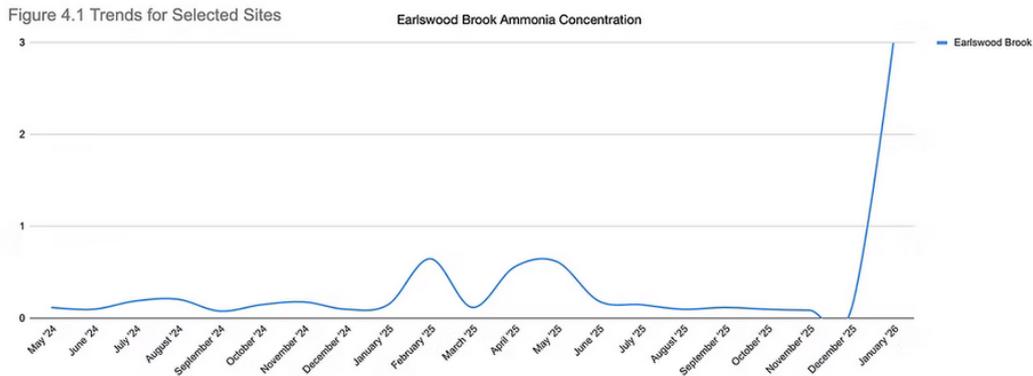
Reigate STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	1,778	625	986	1,077	289
<b>Spill frequency</b>	102	50	83	85	26
<b>Illegal spills</b>	U	10	5	2	0
<b>% illegal</b>	-	29%	6%	24%	0%
U=unreliable					
<b>Constituency</b>	Reigate				
<b>MP</b>	Rebecca Paul				
<b>Party</b>	Conservative				

Reigate STW serves a population equivalent of over 70,000 and discharges to the Earlswood Brook. As recently as January 2026, local campaigners have found large increases in Ammonia levels in the Earlswood Brook downstream of the Reigate/Earlswood STW. Below is an extract of the campaign’s excellent [website](#):

Ammonia showed the most striking change this month. Compared with January 2025, ammonia increased sharply **only in streams with sewage treatment works upstream.**



The largest spikes were recorded in **Earlswood Brook (3ppm)**, downstream of **Earlswood (Reigate) STW**, with further elevated results in **Redhill Brook** and **Salfords Stream**,

**Figure 136: extract from Rivermolewatch website**

It is no surprise to WASP that Reigate STW has difficulty in its treatment process as the analysis below demonstrates multiple exceedances for Ammonia and BOD as well as several effluent quality breaches.

## 2021

The 2021 annual overview for Reigate STW clearly has 2 substantial data gaps in May and November. A casual glance might suggest that the spills of untreated sewage are reasonably well behaved.

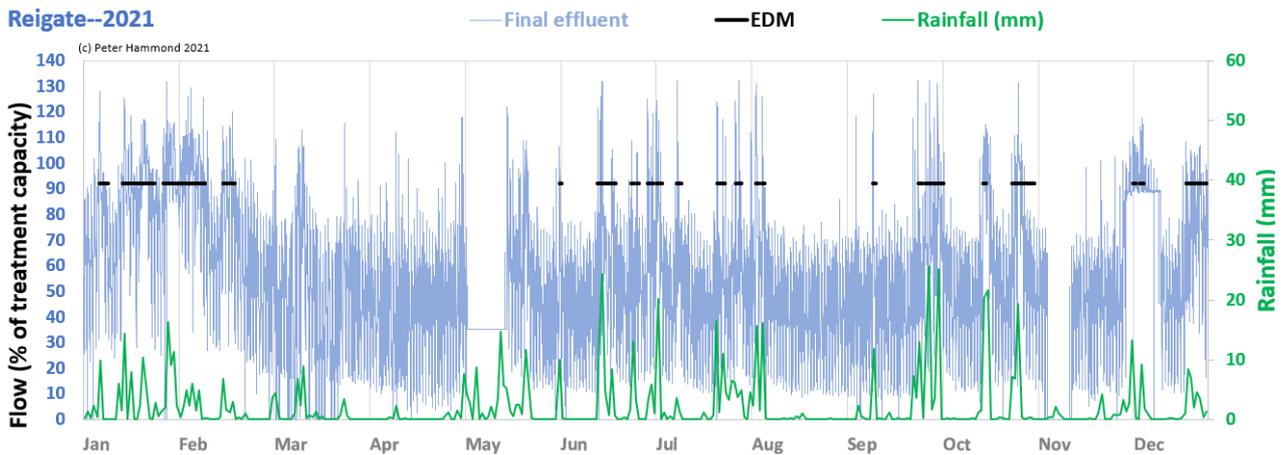


Figure 137: 2021 annual overview for Reigate STW showing 2 large data gaps in May and November

Closer inspection of monthly data series reveals highly inconsistent spill interval, sewage treatment and rainfall data. Some individual spills appear to extended and include sewage treatment where the flow rate is as low as 20% of treatment capacity and hence “early”. Others appear to be long individual spills, e.g., June 16 to 23) covering what might have been acceptable shorter spills, once again when treatment flow as low as 20% of treatment capacity. So, if the data is correct then these spills are illegal. WASP believes that the EDM spill detection was in error and the spills must be discounted.

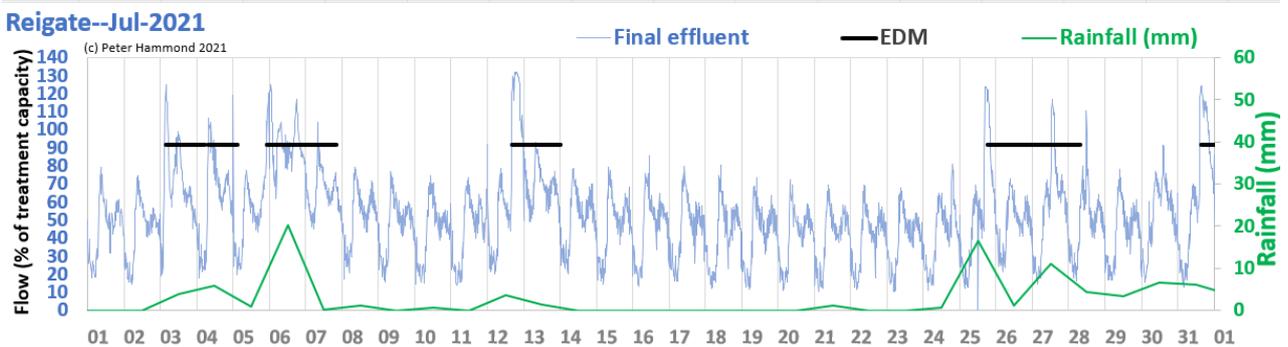
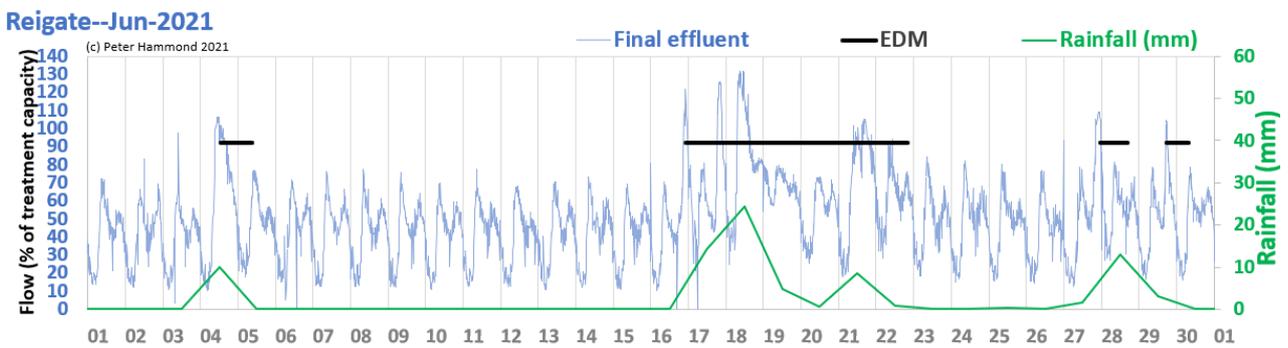


Figure 138: June and July monthly charts for Reigate STW showing extended individual spills (June 4-5, 28,29-30) and potentially amalgamated individuals spills (June 16-22; July 25-28)

The OSM Ammonia and BOD levels are shown in the figure below scaled according to the permitted level allowing 2 exceedances per 12 months. Had the tighter permit levels been introduced earlier than 1/10/2021 (indicated by dotted vertical in chart) then there would have been 3 further exceedances which would have meant a double permit breach.

### Reigate STW 2021

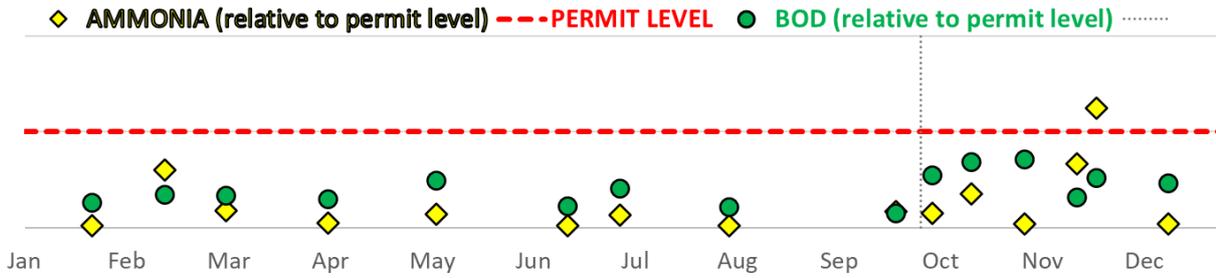


Figure 139: 2021 OSM data Reigate STW showing Ammonia and BOD sample test results

### 2022

As with 2021, 2022 includes examples of unreliable spill data at the beginning of the year, see February (Fig. 140) for example.

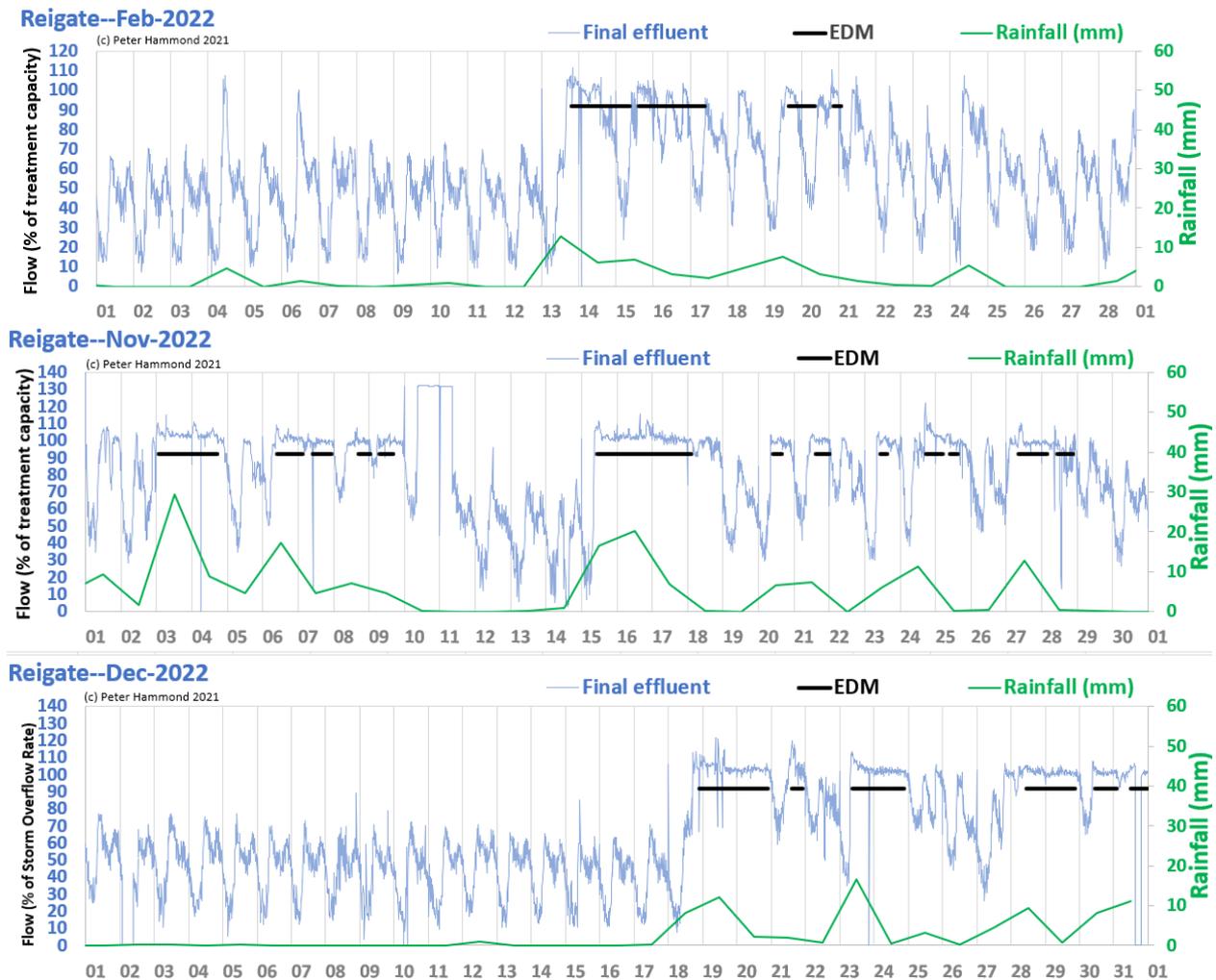


Figure 140: February 2022 chart for Reigate STW shows similar unreliable data as in 2021; but November and December 2022 monthly charts show clear separation between individual spills consistent with the treatment and rainfall data

Towards the end of 2022, it appears that the EDM monitor produced much more reliable spill data with intervals cleanly separated and agreeing with the underlying flow and rainfall data. The spills are no longer extended or fused into longer spills.

As with 2021, there are final effluent exceedances for Ammonia and BOD. The Ammonia level is actually 4 times the permitted level of 2 mg/l and there are 2 BOD exceedances (so a permit breach).

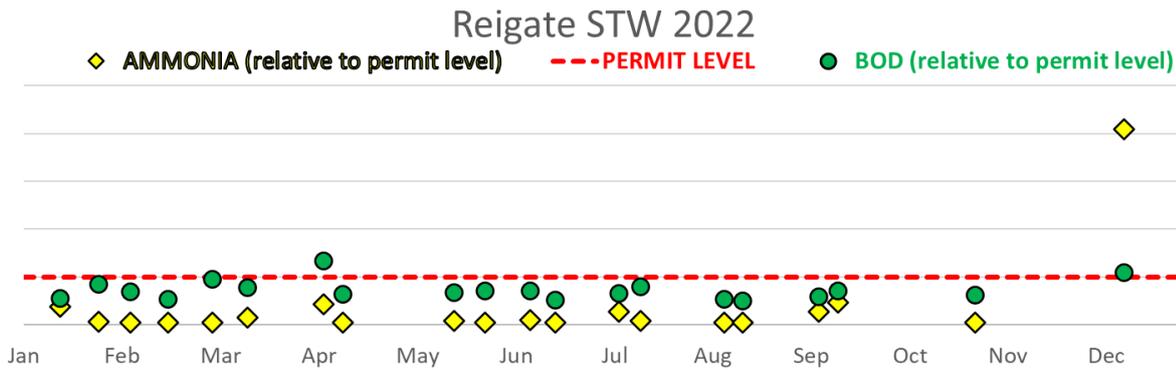


Figure 141: 2022 OSM data Reigate STW showing Ammonia and BOD sample test results

**2023**

The annual overview chart for 2023 is shown below

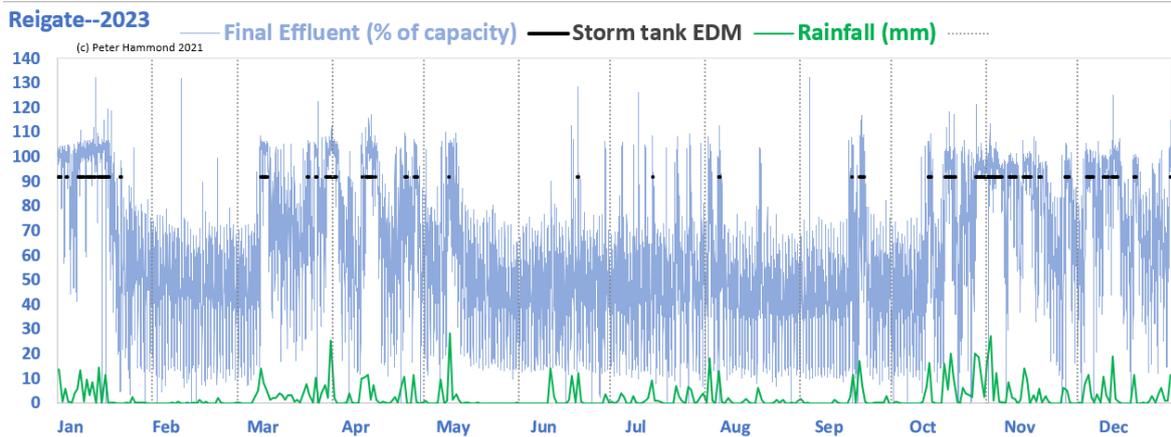


Figure 142: 2023 annual overview for Reigate STW

The spill intervals are well separated and there appear to be just 1 “dry” spill and 5 “early spills, one of which is also “dry”.

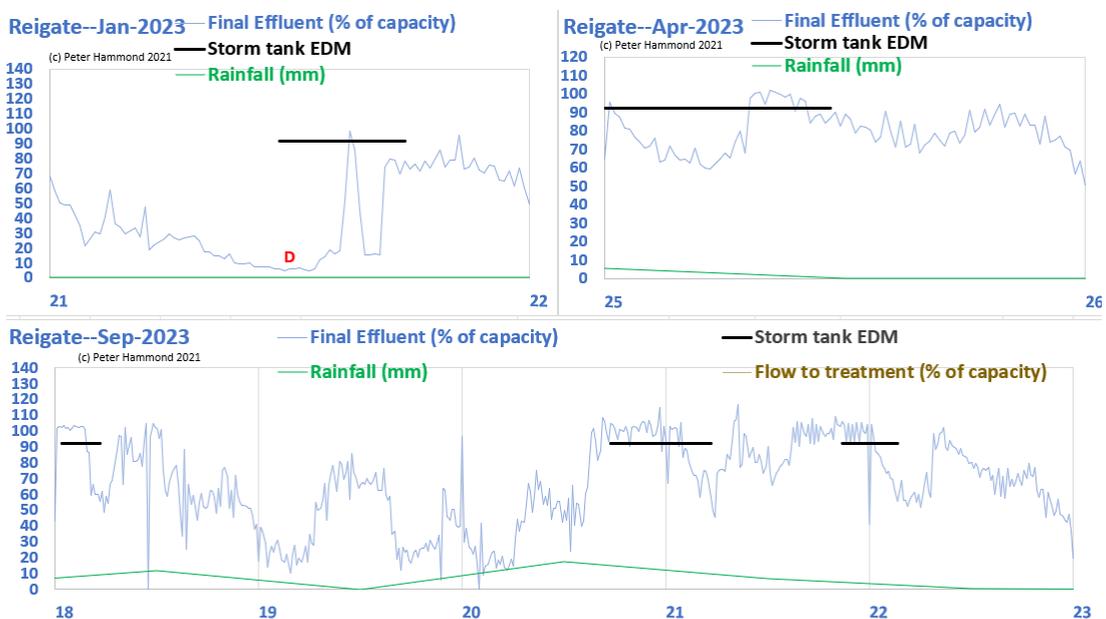


Figure 143: examples of illegal spills in 2023 at Reigate STW

The final effluent quality at Reigate STW continues to be a problem in 2023 with 2 further BOD exceedances in May and August.

**2024**

The 2024 annual overview chart shows impeccable spill interval separation and consistent flow and rainfall data. However,

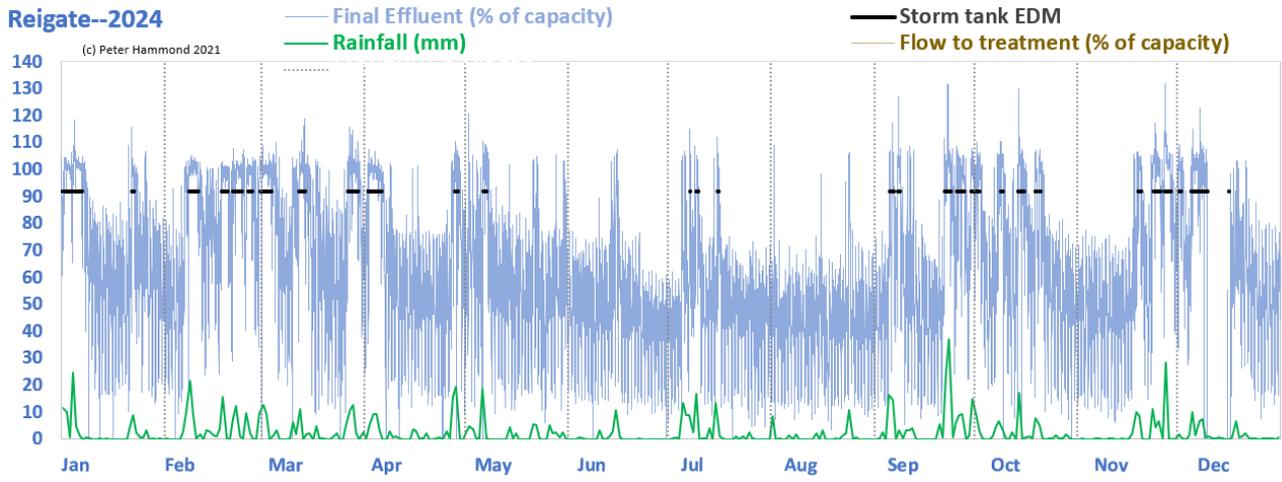


Figure 144: annual overview chart for 2024 at Reigate STW

Despite the well-behaved flow and spill data and a small number of illegal spills, there is yet another final effluent exceedance for BOD in July.

**2025**

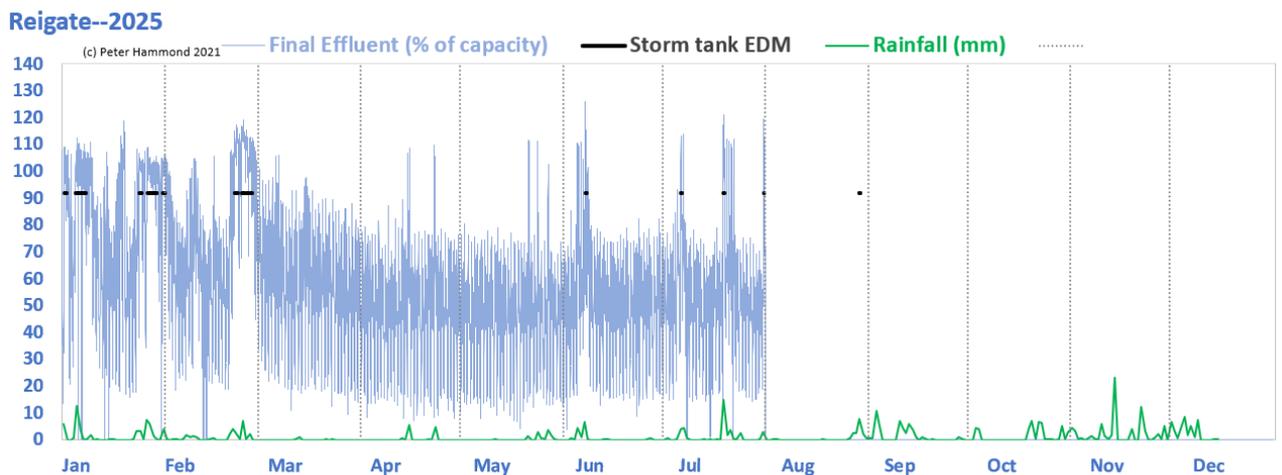


Figure 145: annual overview chart for 2025 at Reigate STW

For the 2025 data that were available, there appear to be no illegal spills and no effluent quality permit exceedances.

# Ripley\_Analysis

## Ripley STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	156	82	160	381	160
<b>Spill frequency</b>	23	14	21	42	13
<b>Illegal spills</b>	0	0	0	0	1
<b>% illegal</b>	0%	0%	0%	0%	8%
<b>Constituency</b>	Guildford				
<b>MP</b>	Zoe Franklin				
<b>Party</b>	Liberal Democrat				

Ripley STW treats sewage for a population equivalent of 21,567 and discharges to the River Wey.

The EA has recently published 2 reports about Ripley STW that suggest it is poorly managed.

The first report of 28/09/2025 ([TH\\_CTCR.2150\\_RD\\_R-581274\\_20250928.pdf](#)) documents serious issues with certification of flow meters and discrepancies in flow data with various warnings and requests going unheeded by Thames Water over several years.

The second report of 01/11/2025 ([TH\\_CTCR.2150\\_10\\_SI\\_C0002124\\_20251101.pdf](#)) records a sewage spill self-reported by Thames Water in the early hours of Nov 1<sup>st</sup> 2025 that required tankering to reduce the polluting effects to the River Wey.

In 2021, the final treated effluent flow data behaved extremely erratically with instantaneous increases and decreases, often when high rainfall occurs as in March, May/June and August. The online EA permit states that the treatment capacity for Ripley STW is 92 l/s but data provided by senior EA staff working at a National level gave the treatment capacity as 150 l/s. Such regulatory contradiction and unlikely sewage flow behaviour means that it is not possible to judge whether the spills of untreated sewage are compliant with permit conditions:

*At 11.52 hrs on 01 November 2025 a Senior Environment Officer ((S)EO) carried out a watercourse assessment, noting that, at that time, **there was evidence of floating solids at final effluent outfall / point of ingress to the river**, with a minor impact at the point of ingress only. The river itself appeared to have high flows resulting from earlier rain.*

*The (S)EO observed the aeration lane and noted that one of the site's two horizontal aerators was out of service. There was a crust of bacteria foam / risen solids evident on the aeration lane. TWUL staff present advised that **issues with the aerators had caused elevated ammonia, below the site's effluent of concern, in the preceding days**. The (S)EO observed 4 x temporary pontoon style aerators in operation. The (S)EO observed **a tree growing in the aeration lane** and there was also vegetation growing on one of the temporary surface aerators.*

Environment Agency TH\_CTCR.2150\_10\_SI\_C0002124\_20251101.pdf

N.B. WASP was provided with a .csv file by Thames Water supposedly containing the "private" sonde data recording Ammonia levels in the final effluent. Unfortunately, on inspection, this file was empty.

The tree that was noted growing in an aeration lane appears in historical Google Earth views of the STW going back as far as 2017. The AMP7 upgrade plans for Ripley STW are deferred until 2030



Figure 146: Tree growing in an aeration lane at Ripley STW a) Google Earth 2017; b) EA report Nov 2025

The annual overview charts below demonstrate the unreliability and inconsistency of the data for Ripley STW that means compliance checking of spills and sewage flow is not possible.

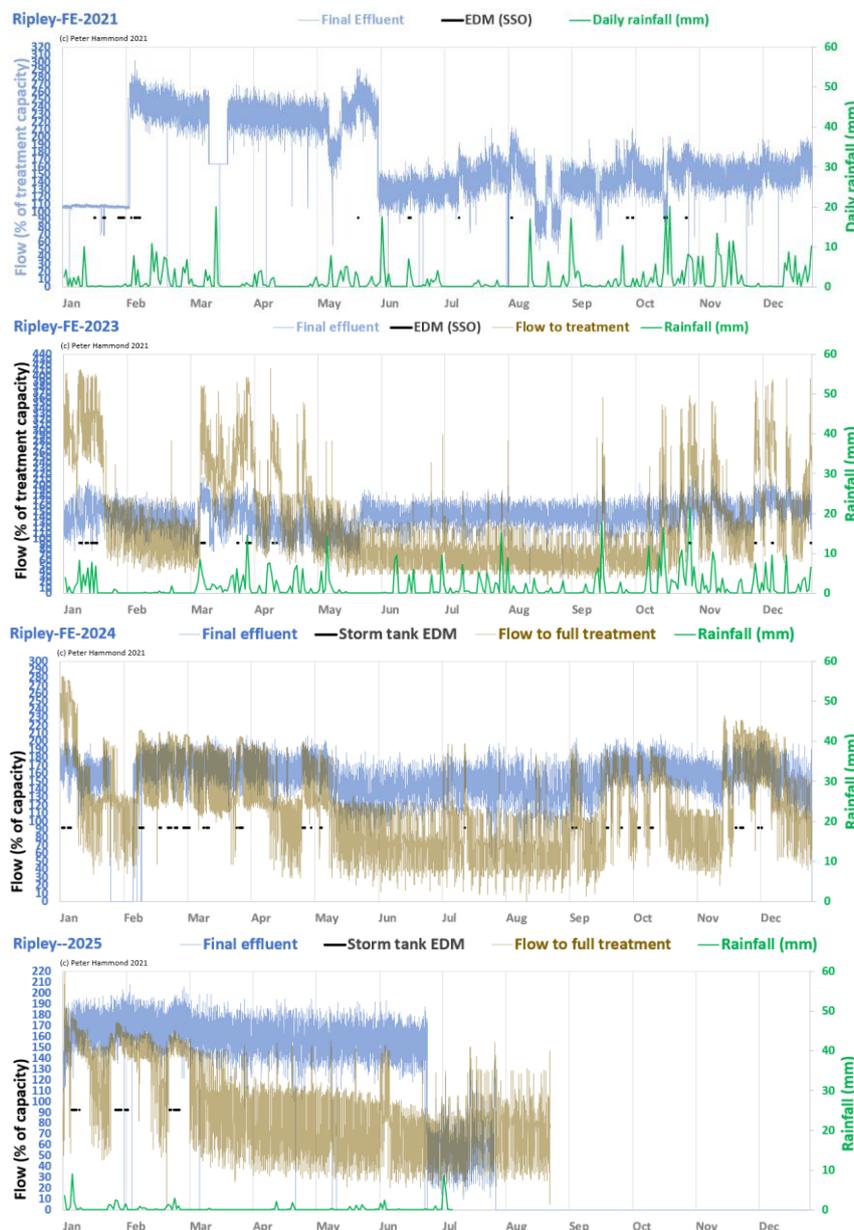


Figure 147: annual charts demonstrating the unreliability and inconsistency of data for Ripley STW

# Ascot\_Analysis

large data gaps in sewage treatment data obstructing compliance checking; some effluent quality parameter exceedances.

Ascot STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	170	33	144	199	104
<b>Spill frequency</b>	25	7	18	20	8
<b>Illegal spills</b>	0	0	4	2	0
<b>% illegal</b>	0%	0%	22%	10%	0%
<b>Constituency</b>	Bracknell				
<b>MP</b>	Peter Swallow				
<b>Party</b>	Labour				

Ascot STW, based in Bracknell’s Bog Lane, serves a population equivalent of about 35,000 and discharges to a tributary of the Bull Brook in the Lower Thames catchment. Ascot STW underwent an £11 million upgrade during 2022-2023 increasing the capacity of the works.

## 2021

The 2021 annual overview below shows large gaps in the flow to full treatment, often coinciding with EDM detected spills. During such gaps it is not possible to determine if the spill actually occurred and if it did whether it was compliant or not.

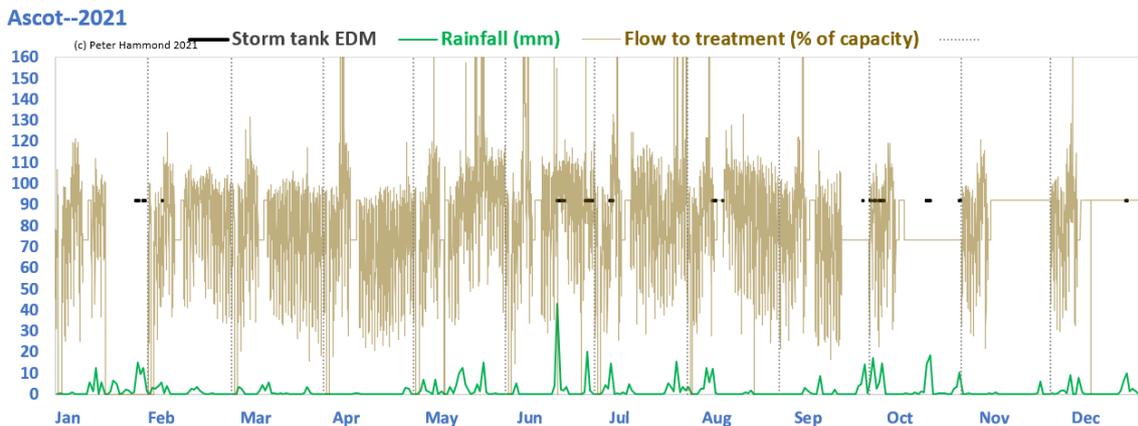


Figure 148: 2021 annual overview for Ascot STW showing frequent gaps in sewage treatment data

The OSM data for Ascot STW confirms that both the permitted Ammonia of 5 mg/l and the BOD of 10 mg/l were exceeded on February 8<sup>th</sup> 2021 to almost double their levels. According to the flow data provided by Thames Water, there was actually no effluent flow that day so ordinarily a sample would not have been possible. There was flow to treatment so presumably there was an effluent meter error.

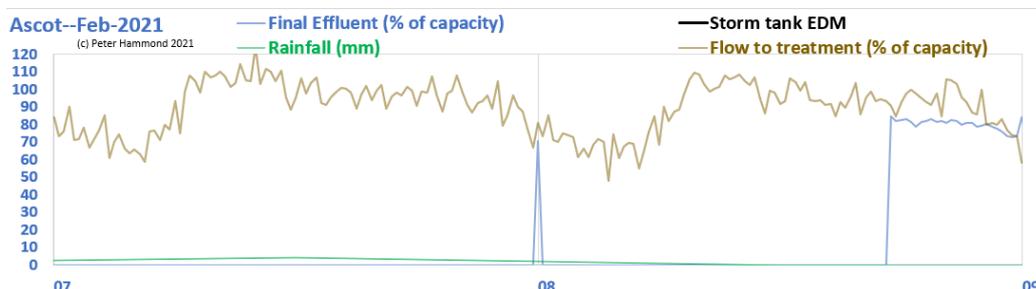


Figure 149: lack of effluent flow Feb 7-8 2021 at Ascot STW despite flow to full treatment

### 2022

The final effluent and flow to full treatment continued to be inconsistent but illegal sewage spills were detected.

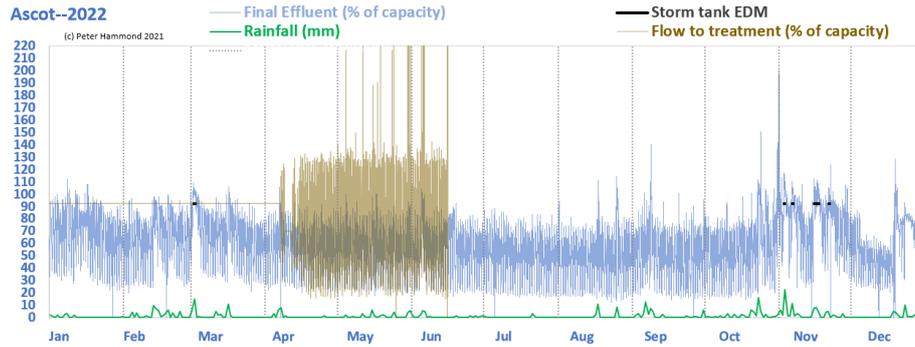


Figure 150: 2022 annual overview chart for Ascot STW

### 2023

The final effluent and flow to full treatment were inconsistent with gaps. Four illegal sewage spills were detected.

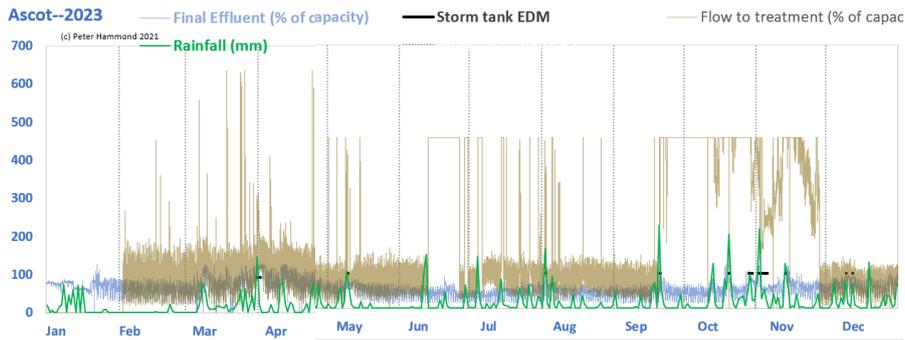


Figure 151: 2023 annual overview chart for Ascot STW

On 21<sup>st</sup> June 2023, the Ammonia level was 11.5 which is 2.29 times the permitted LUT level.

### 2024

The flow to full treatment was better behaved but had a large gap. Two illegal “early” spills were detected.

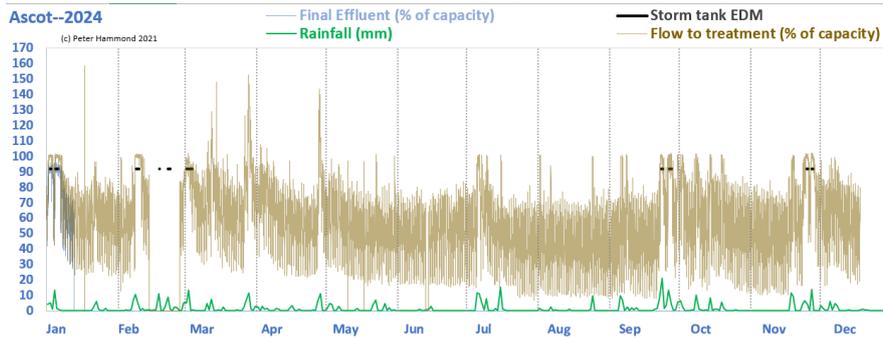


Figure 152: 2024 annual overview chart for Ascot STW

### 2025

Finally, Ascot STW produced coherent, consistent and compliant data with no illegal spills.

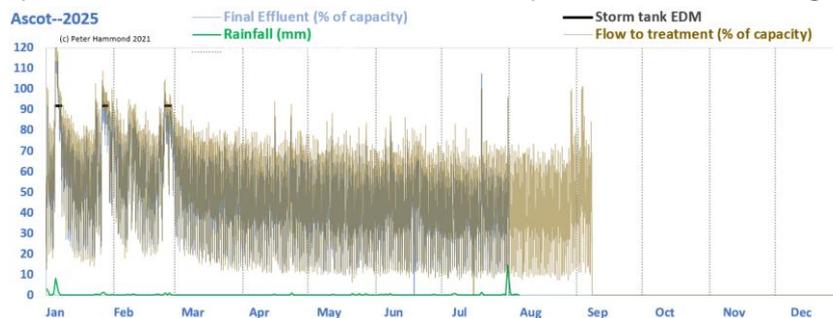


Figure 153: 2025 annual overview chart for Ascot STW

# Charlbury\_Analysis

Charlbury STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	186	15	35	197	7
<b>Spill frequency</b>	20	5	-	24	2
<b>Illegal spills</b>	U	0	-	5	0
<b>% illegal</b>	-	0%	-	20%	0%
<b>Constituency</b>	Banbury				
<b>MP</b>	Sean Woodcock				
<b>Party</b>	Labour				

Charlbury STW serves a population equivalent of about 3,072 and discharges to the Warpsgrave Ditch.

Thames Water’s website has an online [list of planned upgrades](#) to its assets on which it says: *An upgrade is planned for Charlbury STW. This will improve its ability to treat the volumes of incoming sewage, reducing the need for untreated discharges in wet weather. The scheme is due to complete in **summer 2026.***

In contrast, during a site visit by the EA to Charlbury STW on July, Thames Water referred to *an upgrade project for Charlbury STW, which will include a new inlet works with screens, replacing the old inlet with a pumping station, potentially bringing the second filter bed back into service, replacing the land treatment area (LTA) with tertiary disc filters, and constructing a new final effluent (FE) sample point. ... The project is in the planning stages and is scheduled to be completed by the **end of Asset Management Program 8 (2030).*** [Environment Agency CAR S/566152](#)

Operators of Charlbury STW use a shovel for regular manual removal of grit from the inlet channel. The inlet includes two macerators used to chop up sanitary products, wet wipes, cotton buds, condoms etc. The EA inspectors noticed there was rag and debris caught in the grilles covering the inlet (see photos below from EA report). The 2 storm tanks had not been fully emptied after the most recent spill which occurred almost 6 months before. Rapid recycling of storm tank contents is a permit requisite.

Photograph 1 – Inlet channel with macerator bypass (left) and storm water returns (right)



**Figure 154: a)** inlet channel with grille catching solid objects; **b)** storm tanks with retained material from last spill 6 months before [Environment Agency CAR S/566152](#)

Charlbury’s permit to discharge, issued by the EA in 2018 includes the following table which instructs Thames Water to produce a plan to remove the macerators by 31/03/2023 – this has still not been provided.

Table S1.2 Improvement programme requirements		
Reference	Requirement	Date
IP1	The operator shall notify the Environment Agency in writing of the likely date the inlet macerator is due to be replaced.	12 months of the date of issue of this permit
IP2	The operator shall submit a written feasibility report to the Environment Agency, for approval, summarising improvement options to remove maceration from the inlet works upstream of the settled storm sewage overflow. In the report, the operator shall identify a favoured option, if any is considered feasible, and provide timescales for completion of these works. Timescales shall be based on likely asset renewal date and funding availability during AMP7 & AMP8.	At least 4 months prior to asset renewal date of the inlet macerator notified in IP1 or 31/03/2023 whichever is the sooner
IP3	Following approval from the Environment Agency the operator shall implement the approved option identified in the report required by IP2.	Completion date identified in IP2 or date otherwise agreed with the Environment Agency

2021

The monthly data series for January and February 2021 show a number of features that makes the data unreliable and unsuitable to investigation of permit compliance.

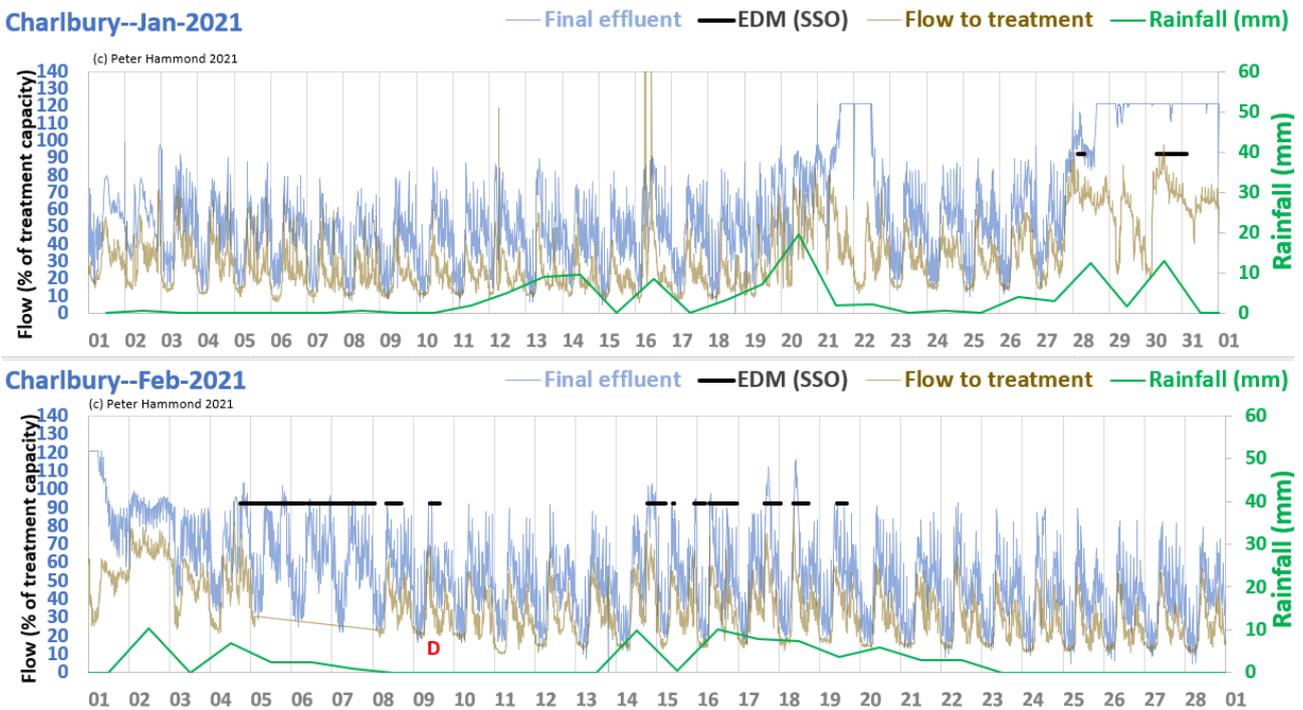


Figure 155: Jan and Feb 2021 data series for Charlbury STW

Jan and Feb 2021 data series show inconsistencies between final effluent and flow to treatment data series (Jan’21) as well as spill intervals that are either unnaturally extended (Feb 14-19) or conjoined to form an erroneously long spill (Feb 4-8) because of inconsistency with the underlying sewage treatment and rainfall data. Of course, if it were argued that the EDM detected intervals are correct then the spills would be “early” and illegal. So, the choice is unreliability or illegality.

The 2021 OSM final effluent quality test results include an exceedance of Suspended Solids that is 5 times the permitted LUT level which can only be exceeded twice in 12 months.

### 2022

The lower rainfall in 2022 resulted in only a few spills with no evidence of their being illegal.

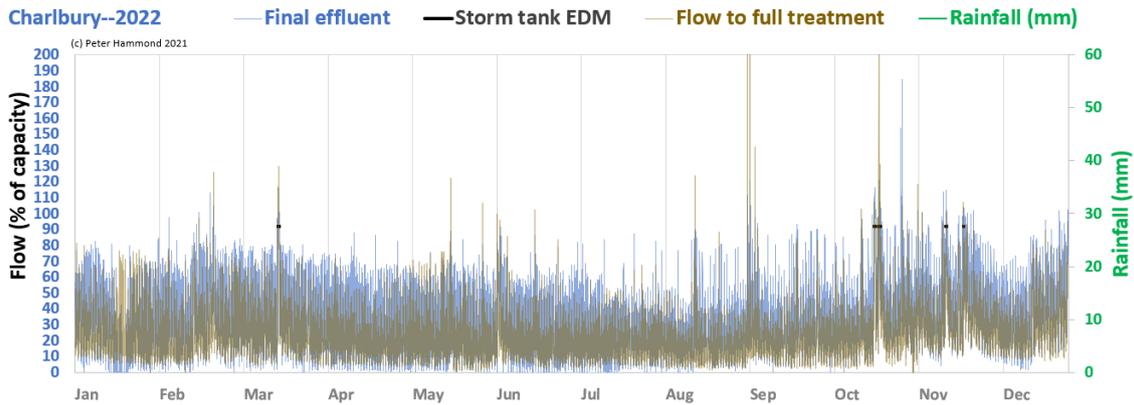


Figure 156: 2022 annual overview chart for Charlbury STW

### 2023

No flow data was provided for 2023

### 2024

No flow to full treatment (FFT) data was provided for 2024. The final effluent flow data provided behaves very much like FFT would be expected. There were a small number of “early” spills.

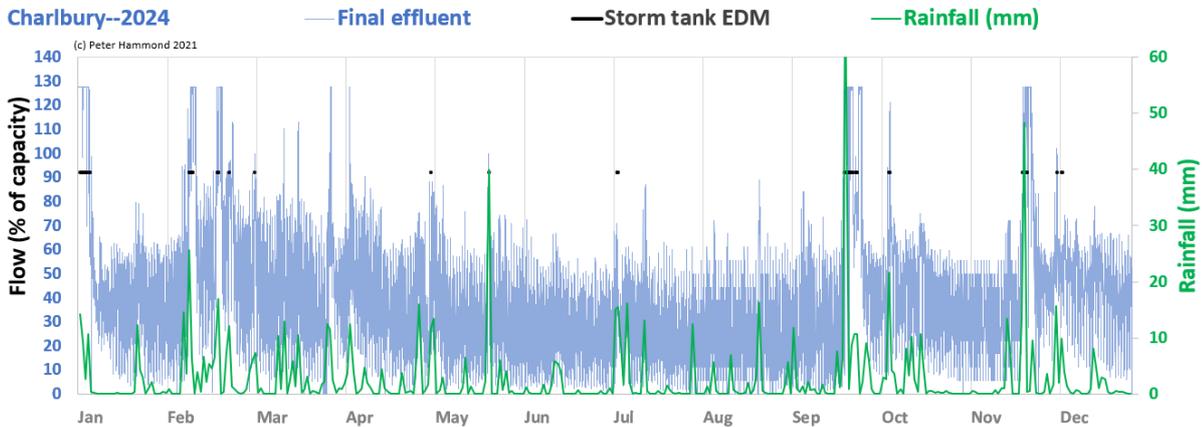


Figure 157: 2024 annual overview chart for Charlbury STW

### 2025

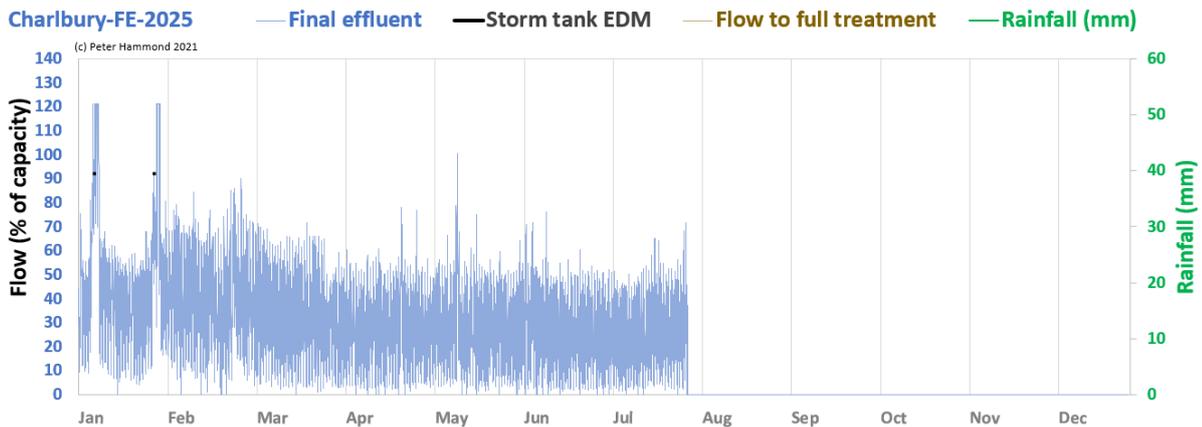


Figure 158: 2025 annual overview chart for Charlbury STW

# Burghfield\_Analysis

Burghfield STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	2,398	1,131	2,861	1,639	2,397
<b>Spill frequency</b>	119	59	133	94	31
<b>Illegal spills</b>	U	U	U	24	15
<b>% illegal</b>	-	-	-	26%	50%
U=unreliable					
<b>Constituency</b>	Reading West and Mid Berkshire				
<b>MP</b>	Olivia Bailey				
<b>Party</b>	Labour				

Burghfield STW serves a population equivalent of about 7,000 and discharges to the Clay Hill Brook in the Labour Constituency of Reading West and Mid Berkshire.

The 2021 annual overview below shows examples of longer spills, erroneously fused from shorter ones that themselves are consistent with the sewage treatment and rainfall data.

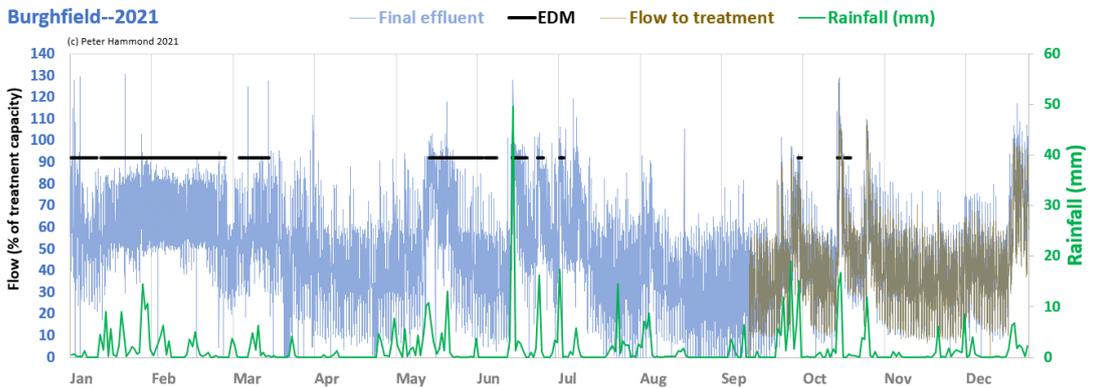


Figure 159: 2021 annual data series for Burghfield STW

These are better viewed at a monthly resolution. For example, May and June show long spills where the sewage treatment and rainfall data are not consistent with a spill for the entire spill (May 17-June 6).

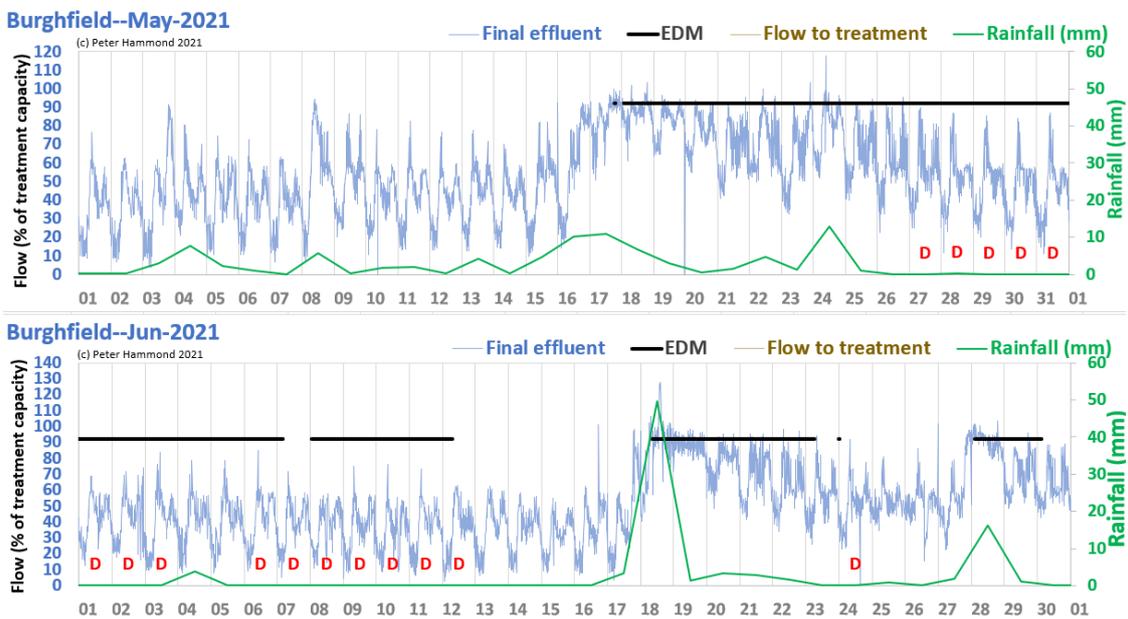
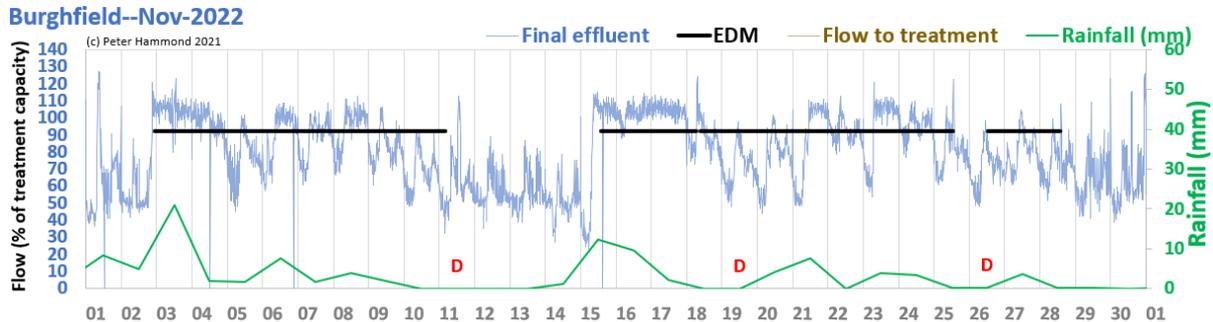


Figure 160: May and June 2021 data series for Burghfield STW

The spilling at the beginning of June 2021 occurred with little or no rainfall in a 12-day period. Either the EDM data is reliable and the spills are on “dry days” and by occurring at 20% of treatment capacity are “early” and illegal. Or, the data should be considered as unreliable.

**2022**

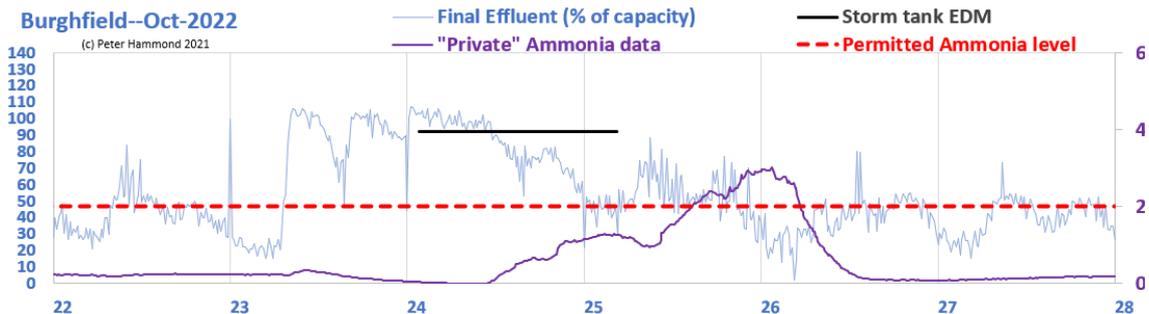
The data for 2022 show similar unreliability as can be seen in the Nove monthly data series below.



**Figure 161: November 2022 data series for Burghfield STW**

For example, the EDM detected spilling Nov 3-4 and Nov 15-17, 21 and 23 look reasonable but much of the intervening parts of the long spills do not look consistent with treatment flow and rainfall and so WASP interprets these as erroneous amalgamations of the shorter valid spills.

The Kennet Catchment Partnership documented a **sewage spill** on 25<sup>th</sup> October 2022 that caused elevated ammonia levels in treated effluent discharged to the Clay Hill Brook. WASP obtained “private” effluent ammonia sonde data from Thames Water for Burghfield STW which appears to confirm with this:

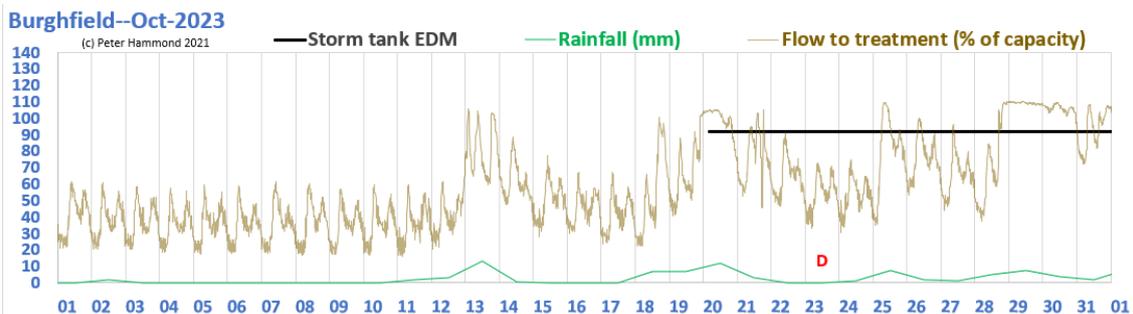


**Figure 162: October 22-27 2022 data series for Burghfield STW with overlay of Ammonia sonde data**

The spill appears to have lasted about 24 hours from the early hours of October 24<sup>th</sup> and the 2 mg/l LUT permitted Ammonia level was exceeded for about 18 hours from about 2:45 on October 25<sup>th</sup>.

**2023**

The unreliability of the EDM data continues into 2023:



**Figure 163: 2023 annual data series for Burghfield STW**

2024

At last, in 2024, Burghfield STW produces reliable data that is worthy of analysis.

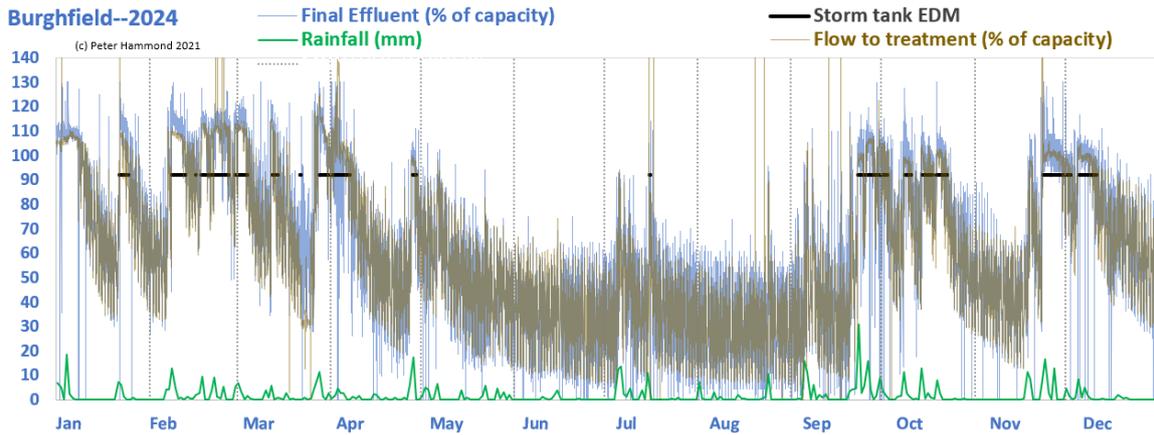


Figure 164: 2024 annual data series for Burghfield STW

The figure below is an example of the improved spill interval separation.

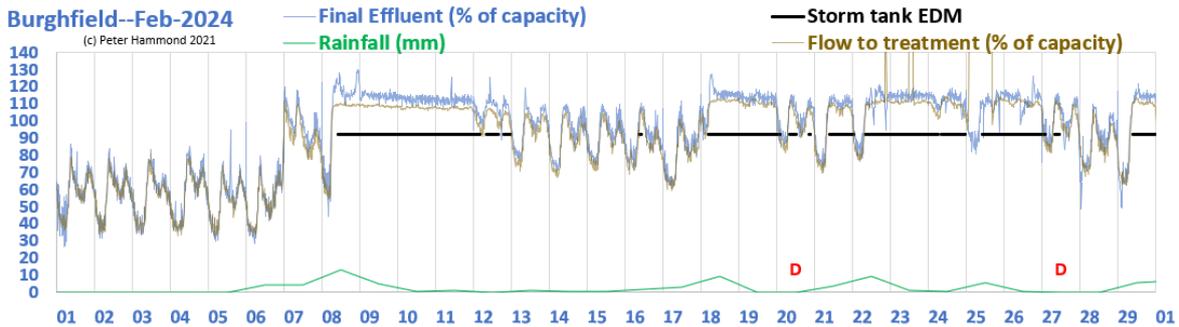


Figure 165: February 2024 monthly data series for Burghfield STW

The February monthly chart above shows crisper separation of spill intervals consistent with sewage flow and rainfall data. But there are also isolated “early” and “dry” spills as seen below

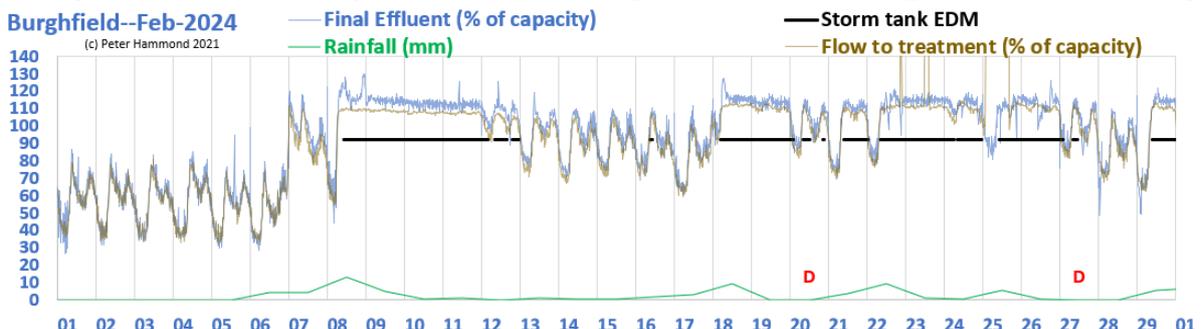
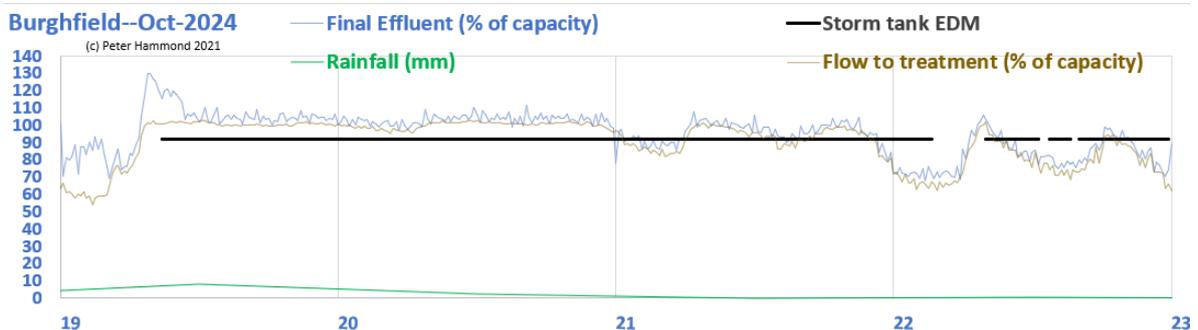
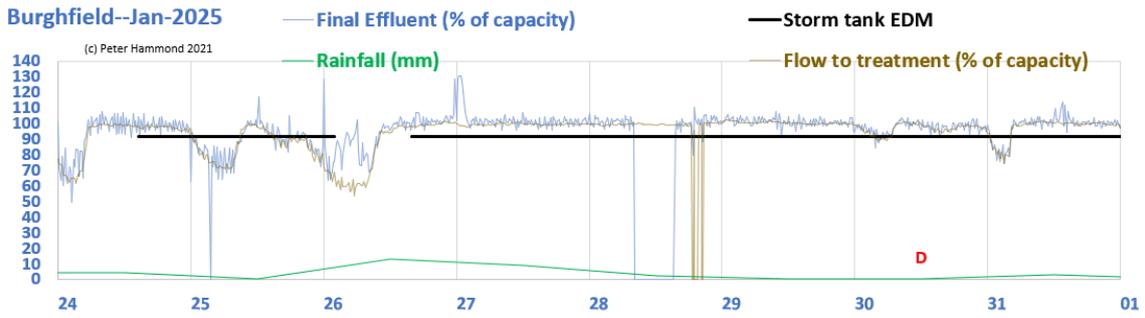


Figure 166: examples of illegal spills in 2024 at Burghfield STW

**2025**

The improvement in EDM data continues in 2025 but there are still some “early” and “dry” spills.



**Figure 167: examples of illegal spills in 2025 at Burghfield STW**

# Leatherhead\_Analysis

## Leatherhead STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	796	712	968	1,243	479
<b>Spill frequency</b>	64	50	62	85	29
<b>Illegal spills</b>	U	U	15	23	5
<b>% illegal</b>	-	-	24%	27%	17%
U=unreliable					
<b>Constituency</b>	Epsom and Ewell				
<b>MP</b>	Helen Maguire				
<b>Party</b>	Liberal Democrat				

Leatherhead STW serves a population equivalent of 50,000 and discharges to the River Mole in Surrey.

### 2021

Some of the EDM data for Leather head STW is completely convincing in its consistency with sewage treatment and rainfall data. For example, consider the October 2021 data series:

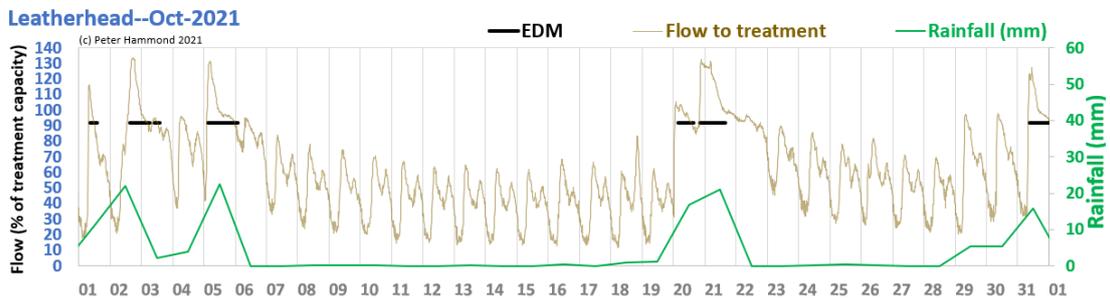


Figure 168: October 2021 data series for Leatherhead STW

Each spill interval is well demarcated and doesn't "leak" into the other adjacent spills – even on Oct 20 and 21. But compare this with the data series for July 2021 and August 2022.

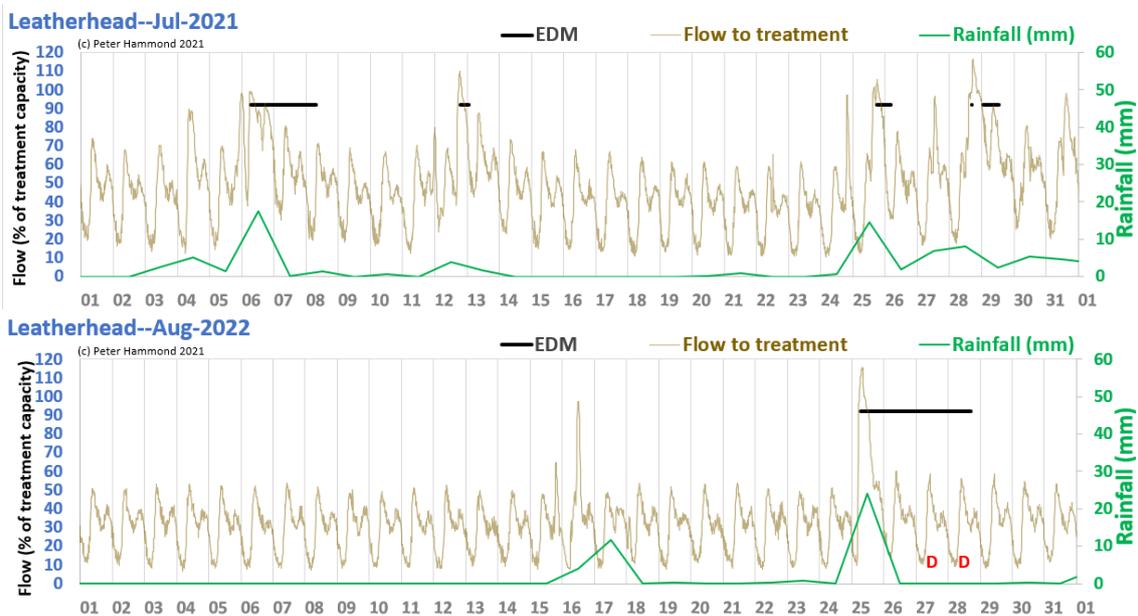
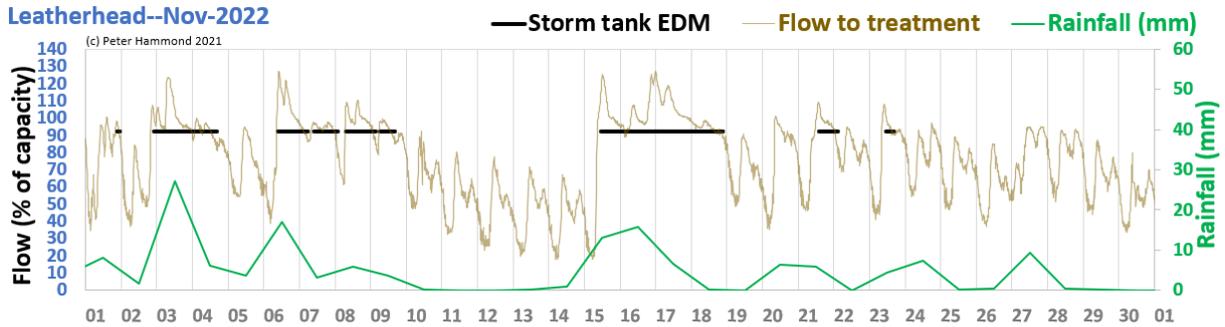


Figure 169: July 2021 and August 2022 data series for Leatherhead STW

If these EDM detected intervals were accepted as correct then the spills would be illegal “early”.

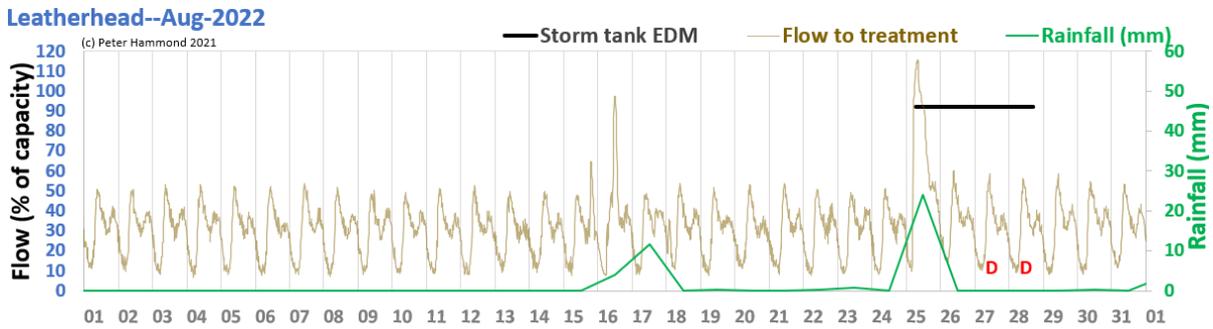
**2022**

Some of the EDM data defines well separated spill intervals consistent with sewage flow and rainfall data as below:



**Figure 170:** well separated spill intervals in November 2022 at Leatherhead STW

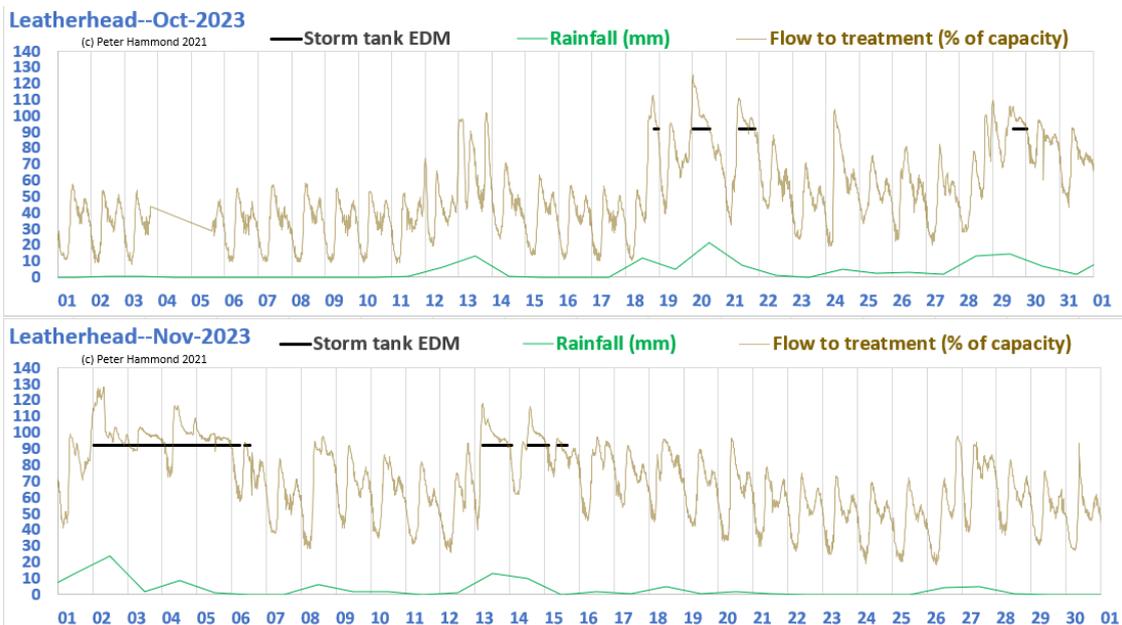
But at other times there are hugely extended and amalgamated spill intervals where the sewage flow and rainfall data are not compatible with the spill.



**Figure 171:** example of overextended spill in August 2022 at Leatherhead STW

**2023**

Leatherhead STW does provide some reliable EDM data in 2023 (e.g., October) but there are also some spills that are either “early” (November), “dry” or both:



**Figure 172:** examples of illegal spills in October and November 2023 at Leatherhead STW

2024

The February 2024 chart shows good separation of EDM spill intervals without breaches.

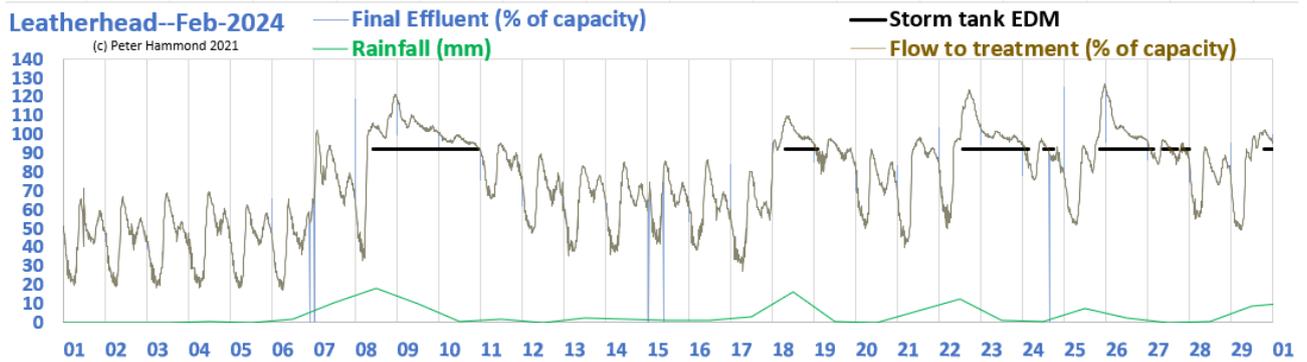


Figure 173: examples of good separation of spills in February 2024 at Leatherhead STW

Examples of “early” spills where short extensions of the spill are “early” are given below:

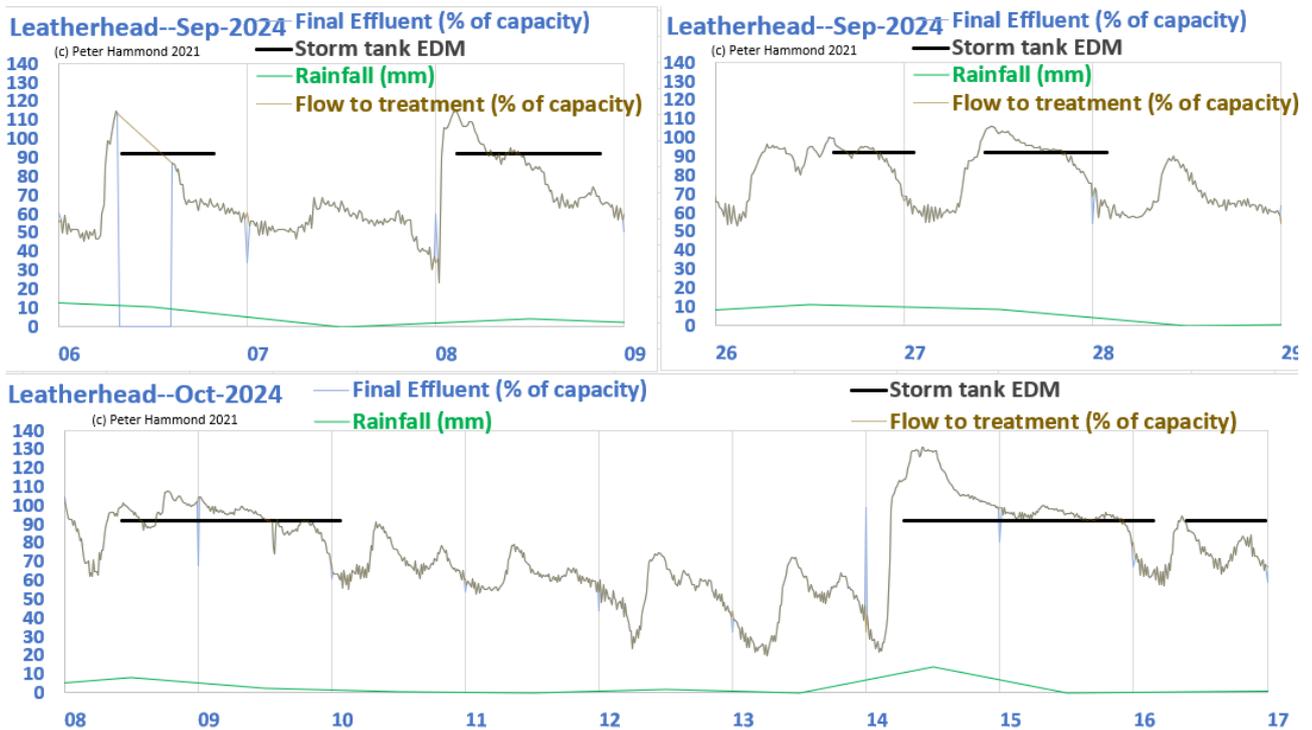


Figure 174: examples of illegal spills in September and October 2024 at Leatherhead STW

# Hamstead Marshall\_Analysis

Leatherhead STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	632	899	1,022	1,009	96
<b>Spill frequency</b>	56	57	93	79	13
<b>Illegal spills</b>	2	U	40	6	0
<b>% illegal</b>	4%	-	43%	8%	0%
U=unreliable					
<b>Constituency</b>	Newbury				
<b>MP</b>	Lee Dillon				
<b>Party</b>	Liberal Democrat				

Hamstead Marshall STW serves a very small population of about 160 and discharges to the Hamstead Stream.

In its online Groundwater Impacted System Management Plan Thames Water has the following reference to Hamstead Marshall STW:

*We expect this location to meet all government targets for storm overflows by 2030.*

## 2021

No sewage flow data was provided for 2021. The 2 “dry” spills are based on EDM and rainfall data alone.

## 2022

Given its small size, it seems reasonable to expect management of such a works would be straightforward and the associated data in good order.

The 2022 annual overview clearly contradicts any expectation of acceptable data quality with a 3-month data gap including several EDM detected spills. So none of these spills can be investigated for compliance.

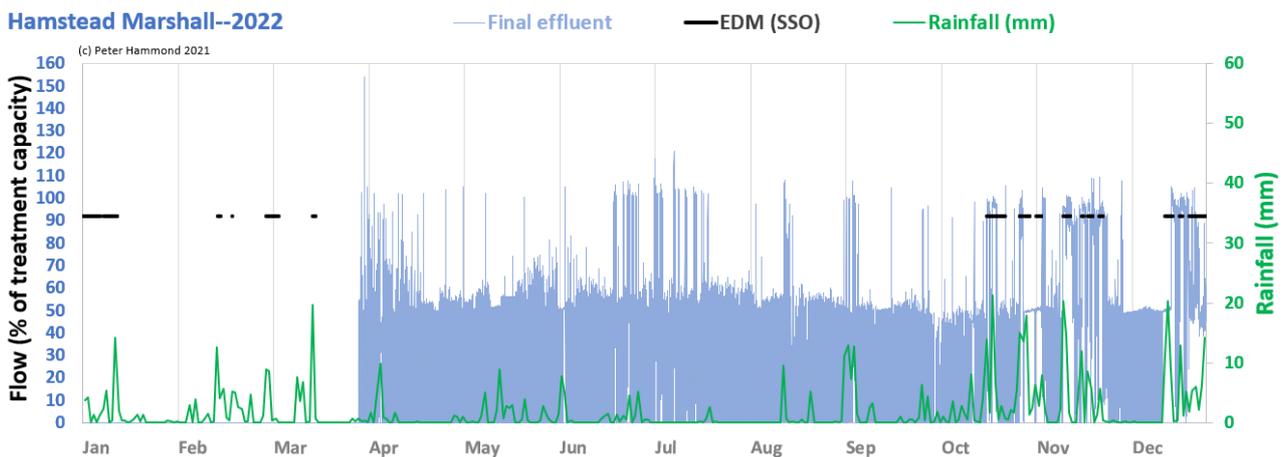


Figure 175: annual 2022 data series for Hamstead Marshall STW

The Nov and Dec 2022 monthly series have leaps and drops in sewage treatment data and although the spills at the end of Nov’22 look reliable, others are inconsistent with treatment and rainfall data, such as the end of Dec’22.

In November and mid-December, treatment flow flatlines during spills sometimes above treatment capacity (legal) and sometimes as low as 50% (illegal), whereas in the last 6 days of December the treatment flow behaves differently and for that reason looks unreliable.

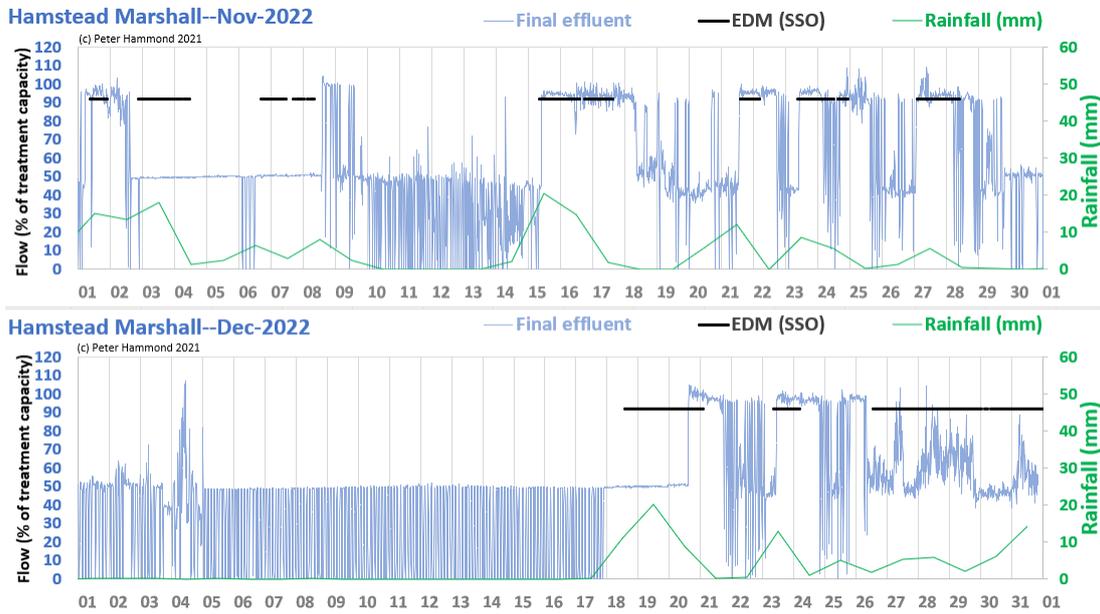


Figure 176: Nov and Dec 2022 data series for Hamstead Marshall STW

2023

The 2023 annual overview chart below shows considerable variation in the flow to full treatment during spills – sometimes below capacity and hence spilling “early” (e.g. January and March) and sometimes hugely in excess of and as high as 170% to 250% of capacity. WASP wonders what the effluent quality might be during these periods of massive throughput compared to dry weather flow.

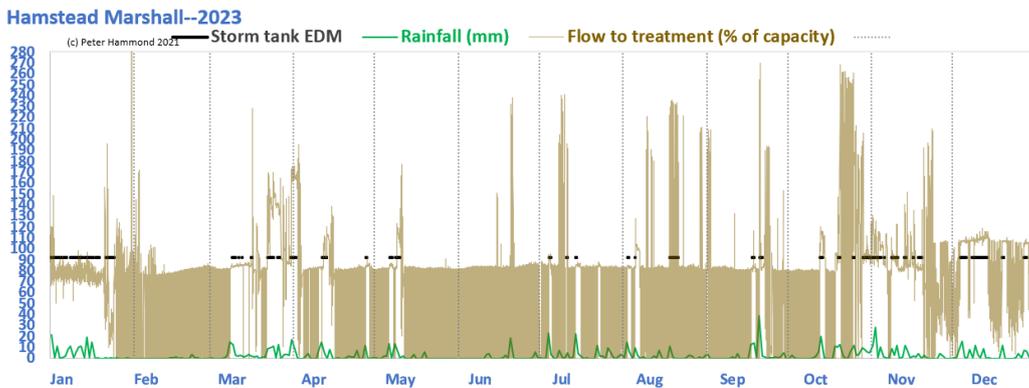


Figure 177: 2023 annual overview chart for Hamstead Marshall STW

There are at least 40 days with illegal “early” spills and 6 days with spills that are both “dry” and “early”.

2024

For some reason, the data quality in 2024 is almost perfect with clear separation of spill intervals and clearly flattened flow to full treatment during spills. None of the spills appear to be non-compliant. The Feb 2024 monthly chart is a typical example of the better behaved data.

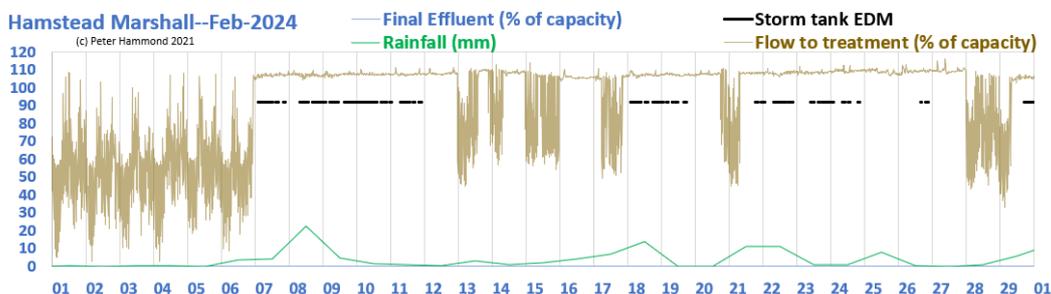


Figure 178: February 2024 monthly chart for Hamstead Marshall STW

## STWS WITH AMP7 UPGRADES DEFERRED UNTIL 2025-30

Thames Water had an allowance for WINEP7 (Water Industry National Environment Programme 7) but has claimed it is insufficient to complete all planned work<sup>7</sup>. The company has requested additional funding of £1,181m to complete the remaining schemes, including 103 projects at 88 different STWs. So far, WASP has found evidence that 72 of these STWs made illegal “early” sewage discharges on at least 2,755 days for the period **2021** to **2025**.

Thames Water’s report on AMP7 to AMP8 carryover includes a section entitled “Examples of projects and reasons for cost increase” citing 6 STWs: Oxford, Maple Lodge, Woking, Cranleigh, Kingston Bagpuize and Hogsmill. This section of the report as initially provided was fully redacted. WASP requested and was eventually provided with an unredacted version.

The most egregious spiller of the cited STWs is Oxford with at least 167 days with illegal spills from 2021-2025 and estimated costs of deferred improvements increasing 5-fold at one point<sup>8</sup>. The EA has imposed (post April’25) more stringent permits on AMP7 works that were not upgraded to reflect agreed capacity improvement. This will likely increase the frequency or the degree of illegality.

- Berkhamsted
- Dorking
- Fairford
- Faringdon
- Heyford
- Kingston Bagpuize
- Oxford
- Ripley
- South Moreton

---

<sup>7</sup> <https://www.thameswater.co.uk/media-library/cjzoty31/tms-dd-057-winep7-carryover-redacted.pdf>

<sup>8</sup> <https://www.thameswater.co.uk/media-library/home/about-us/performance/oxford/oxford-stw-report.pdf>

## Berkhamsted\_Analysis

Berkhamstead STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	3,770	64	227	1,775	200
<b>Spill frequency</b>	172	14	31	151	31
<b>Illegal spills</b>	57	14	15	32	0
<b>% illegal</b>	33%	100%	48%	21%	0%
<b>Constituency</b>	Harpenden and Berkhamsted				
<b>MP</b>	Victoria Collins				
<b>Party</b>	Liberal Democrat				

Berkhamsted STW discharges to the Grand Union Canal and serves a population equivalent of about 25,000.

In January 2021, Thames Water published “**Groundwater Impacted System Management Plan: Berkhamsted, River Bulbourne**”<sup>9</sup> in which it was acknowledged that groundwater infiltration through leaky pipes was an issue in the catchment of this STW. The report has been updated each year up to and including 2024/2025:

Investigation / remediation type	2020/21	2021/22	2022/23	2023/24	2024/25
CCTV surveys	-	-	-	-	-
Look and lift surveys	-	-	-	-	-
Sewer lining	-	104m	-	-	-
Patch lining	-	-	-	-	-
Manhole sealing / plates / covers and frames replaced	-	3	-	-	-
ATAC unit deployment	-	-	-	-	-
Treatment Works / Pumping Station Upgrades	-	-	-	Increased STW capacity	Upgraded treatment processes

### Summary

The groundwater and river level has increased in 2023/24 compared to previous years. This increase is due to higher average rainfall in 2024 compared to the average rainfall levels of the previous year. The number and duration of spills has increased in 2024 compared to 2023. The higher number of annual spills and river and groundwater levels could be a result of the increased rainfall in 2024 (seen in Figure 5).

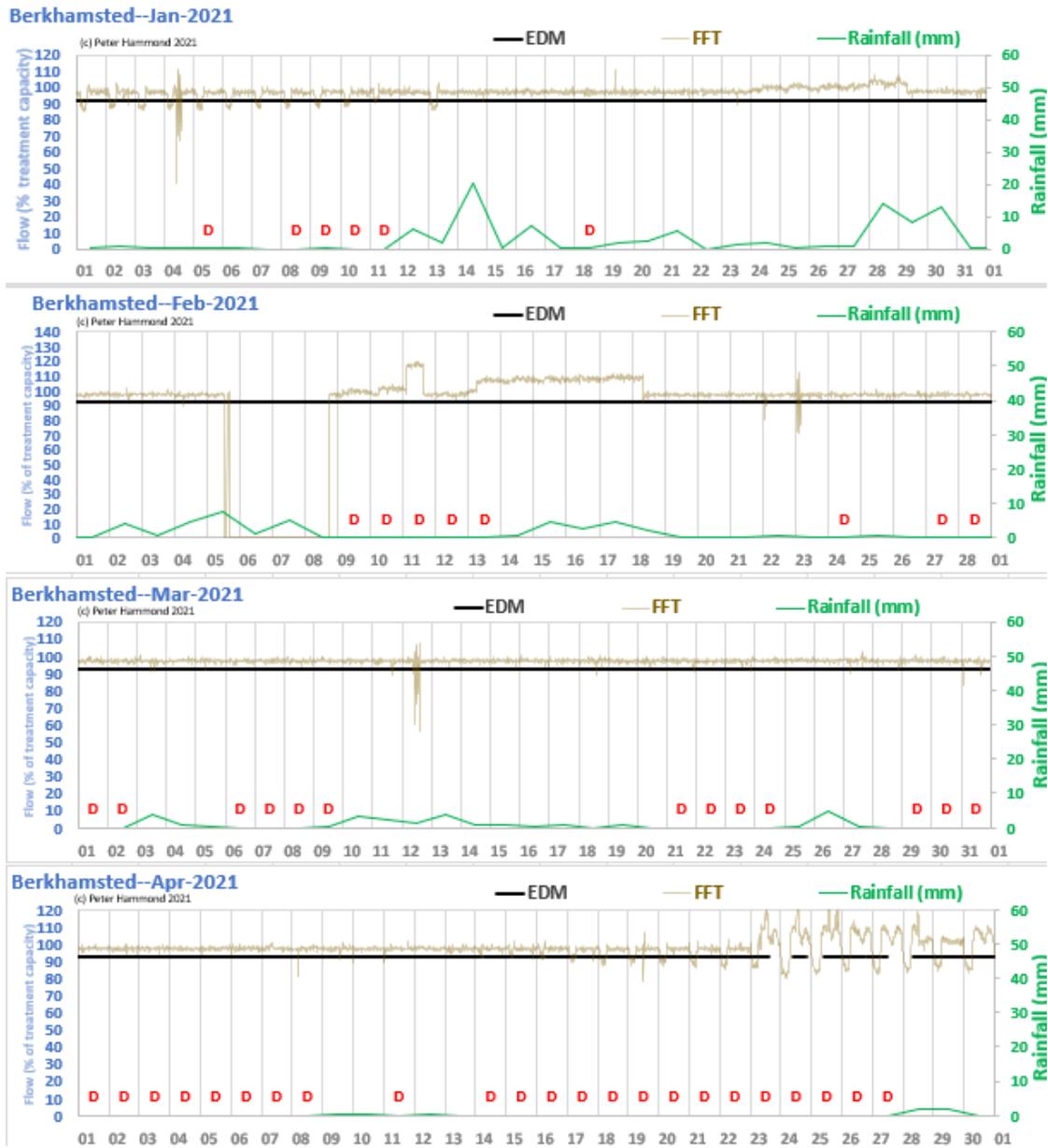
To mitigate spills Thames Water has introduced a scheme. The first was completed in 2023, it provides a major increase in treatment capacity, reducing the need for untreated discharges to the environment. The second scheme completed in 2024 upgraded treatment processes to increase the quality of treated effluent discharging into the river.

The work undertaken appears to have been focused on the period 2023-2025. The detailed analysis below gives an indication of the success or failure of this remedial work. The EA Public Register has CAR reports relating to just 2 inspections, both in 2025. Only then was it established that the flow to full treatment and final effluent flow meters are not MCERTS certified.

<sup>9</sup> <https://www.thameswater.co.uk/media-library/home/about-us/regulation/drainage-reports/groundwater-infiltration-management-plans/berkhamsted-groundwater-infiltration-management-plan.pdf>

**2021**

In 2021, the works discharged untreated sewage via its storm tank with no break for almost the first 4 months of the year. This included more than 50 days with “dry day” discharges of untreated sewage.



**Figure 179:** multiple days with illegal “early” and “dry” spills detected in 2021 at Berkhamsted STW

An EA report (NIRS-01903629) describes an incident called in by a member of the public on March 7<sup>th</sup> 2021 when a 200m stretch of the receiving watercourse was polluted by sewage and that the pollution had first been noticed 2 weeks before. There was a strong smell of sewage but no sign of dead or distressed fish. The EA called Thames Water who sent an engineer to the site. The investigation concluded there had been a “dry” spill:

*Thames Water sent through an update of water quality readings that were being taken since January. They showed that the water quality wasn't being affected by the storm tank discharge but photos showed discoloration. Karen Douse breached the site for discharging from storm tanks during dry weather conditions. A groundwater infiltration plan is being produced to try and resolve the excessive use of the storm tanks at this STW.*

2022

The evidence suggests at least 14 illegal “early” spills in 2022 at Berkhamsted STW.

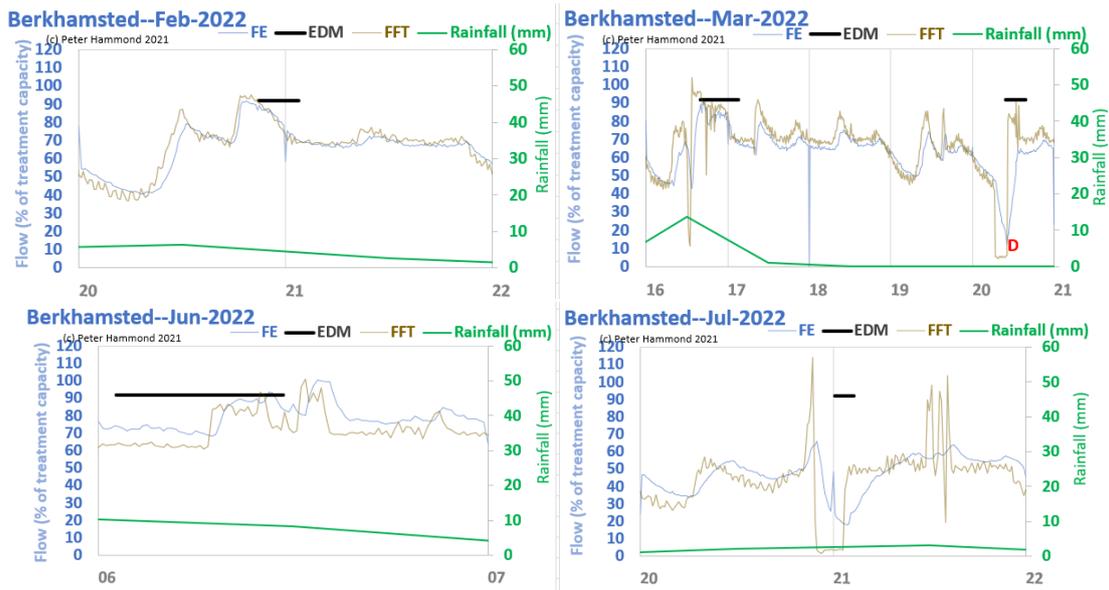


Figure 180: multiple illegal “early” spills detected in 2022 at Berkhamsted STW

The “private” sonde data demonstrate how effluent Ammonia levels do exceed the LUT limit of 2 mg/l while the OSM samples never quite do during the very narrow interval in which they are collected – 10 of 11 between 8 am and 10:33 am.

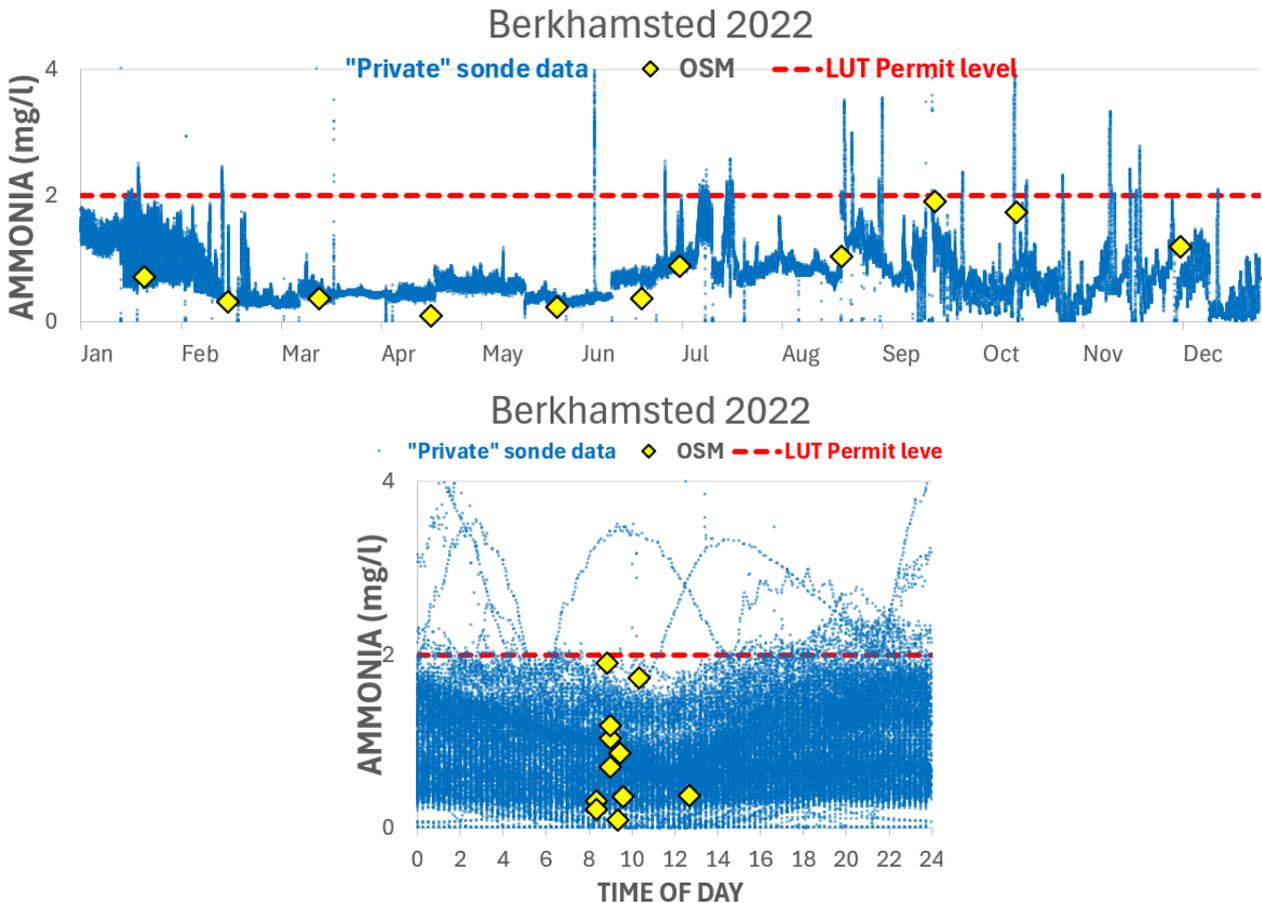


Figure 181: 2022 OSM and “private” Ammonia data for Berkhamsted STW

### 2023

The 2023 annual overview chart below shows a clipping of flow to full treatment at 120% of capacity suggesting that the flow meter cannot record a higher value and the actual throughput is higher.

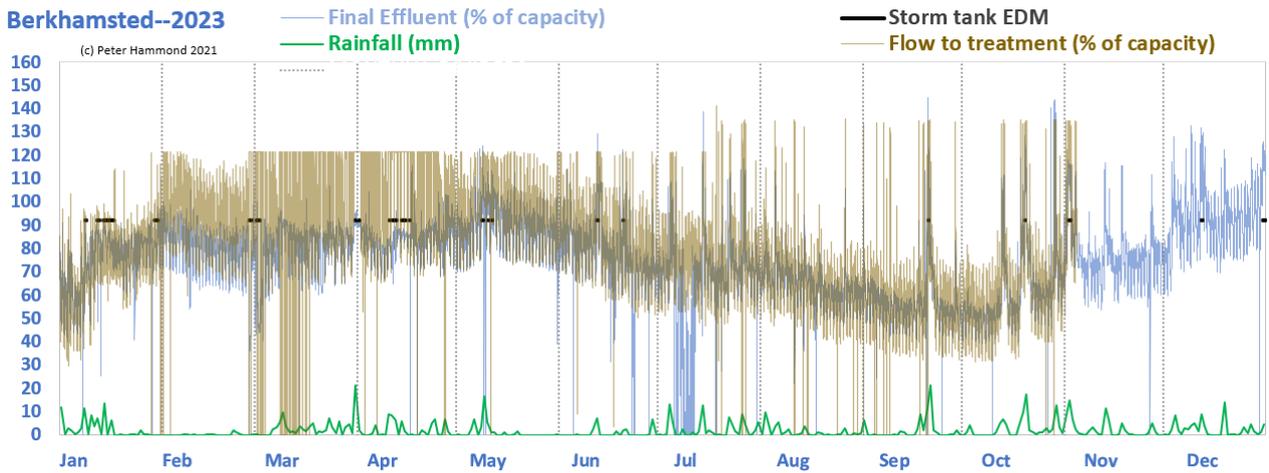


Figure 182: 2023 annual overview chart showing increased throughput of sewage flow at Berkhamsted STW

Examples of early spilling at Berkhamsted STW for 2023 are shown in the figure below:

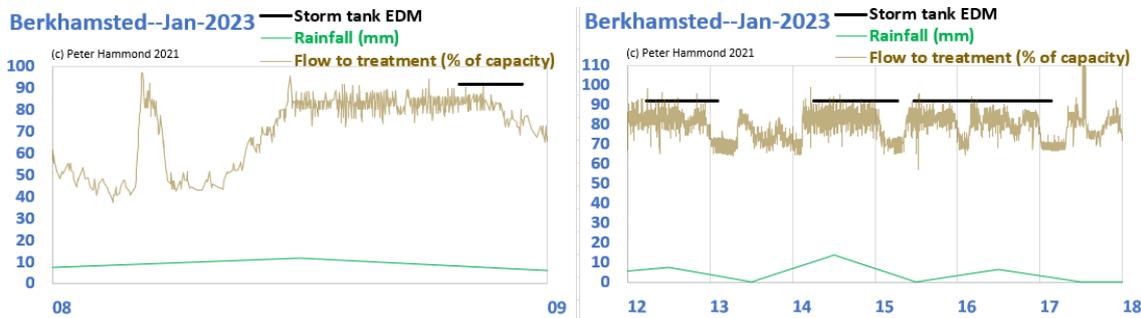


Figure 182: examples of “early” spilling at Berkhamsted STW in 2023

As with 2022, the “private” sonde Ammonia data for Berkhamsted STW show possible exceedances outside the times of the OSM samples.

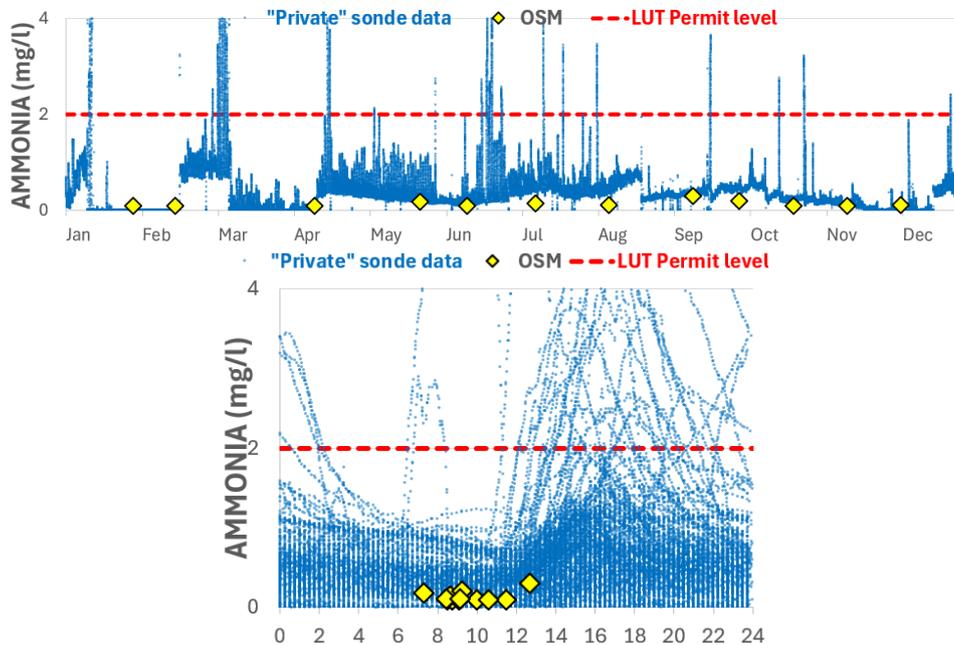


Figure 183: 2023 OSM and “private” Ammonia data for Berkhamsted STW

2024

The 2024 annual overview chart for Berkhamsted STW clearly shows a sustained throughput of more than 130% of capacity during spills which are almost continuous for the first 5 months of the year.

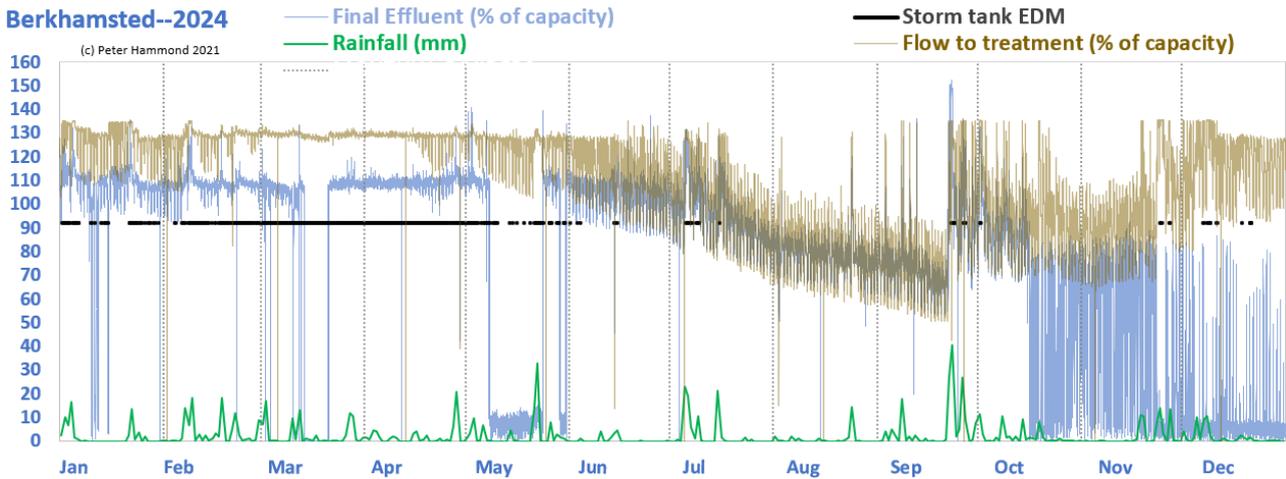


Figure 184: 2024 annual overview chart showing increased throughput of sewage flow at Berkhamsted STW

The untreated sewage discharges include 32 days with illegal “dry” spills. There appears to be strange behaviour for final effluent towards the end of the year:

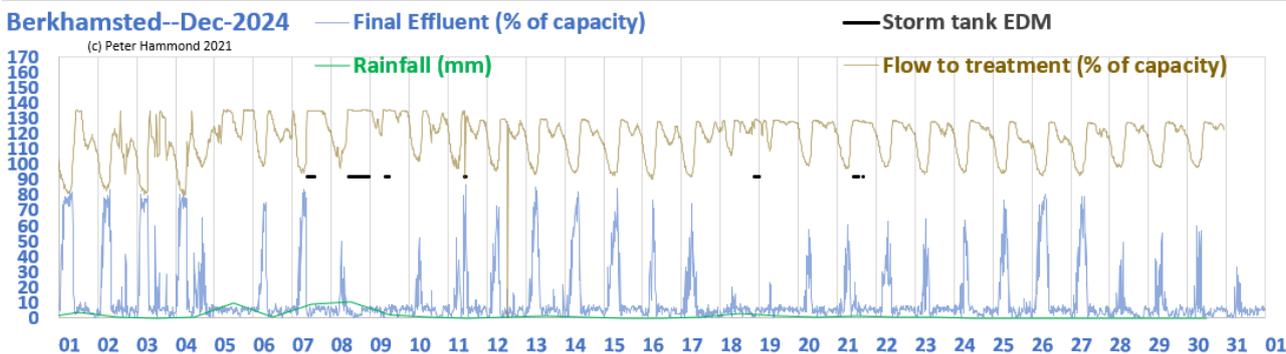
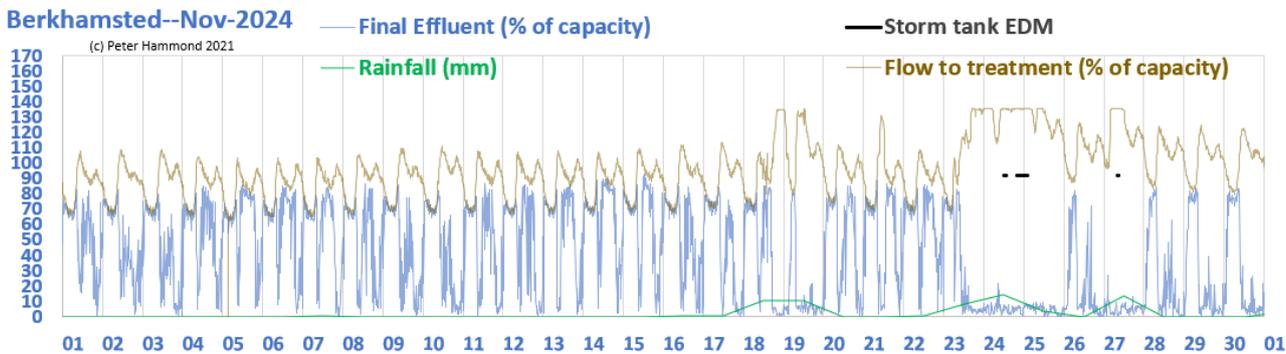


Figure 185: strange final effluent behaviour towards the end of 2023 at Berkhamsted STW

2025

The increased sewage throughput and odd final effluent behaviour continues into 2025 and it is not straightforward to determine the compliance of the untreated sewage discharges.



### 2021

The 2021 annual overview for Dorking STW is shown below:

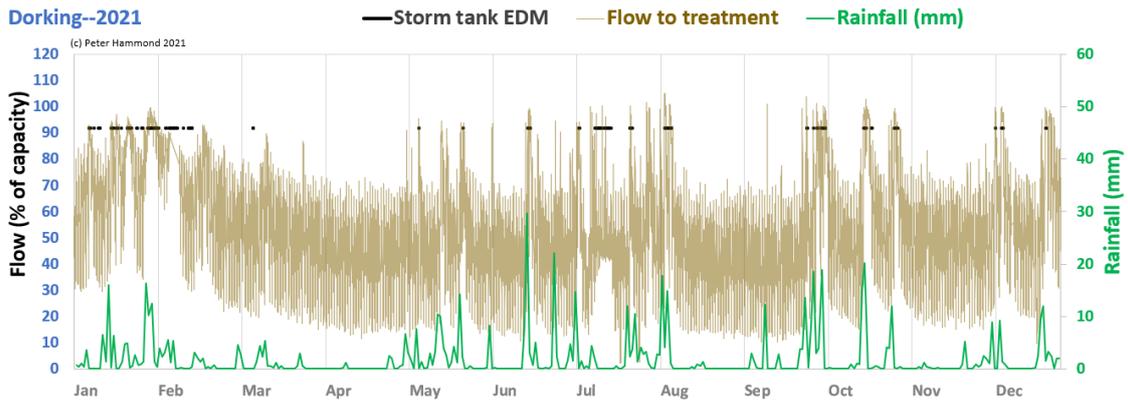


Figure 187: 2021 annual overview chart for Dorking STW

Dorking STW made illegal “early” discharges of untreated sewage on at least 33 days in 2021. Examples are provided in the figure below.

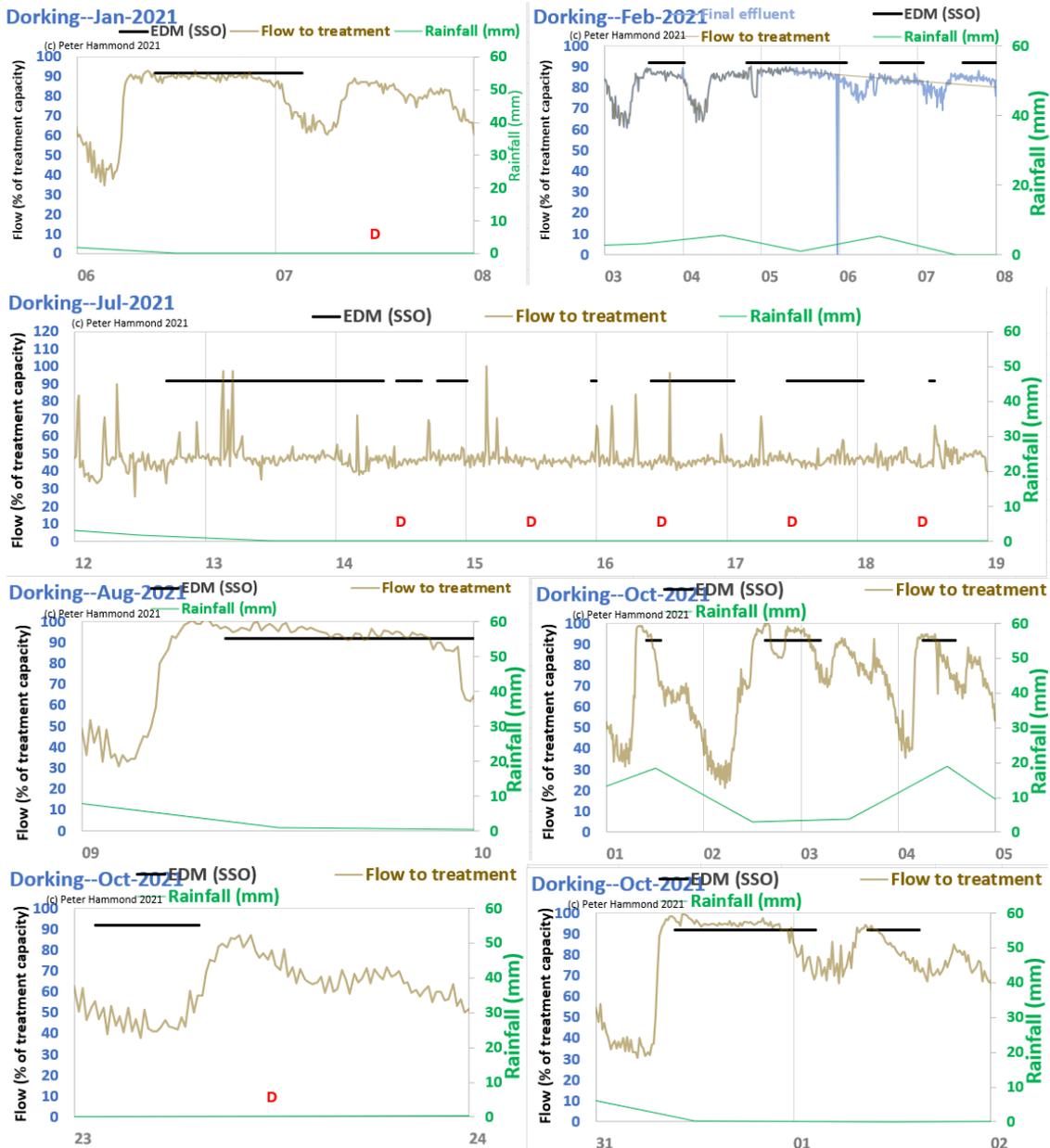


Figure 188: multiple “dry day” and “early” spills detected in 2021 at Dorking STW

### 2022

The evidence suggests that Dorking STW made illegal “early” discharges of untreated sewage on at least 24 days in 2022.

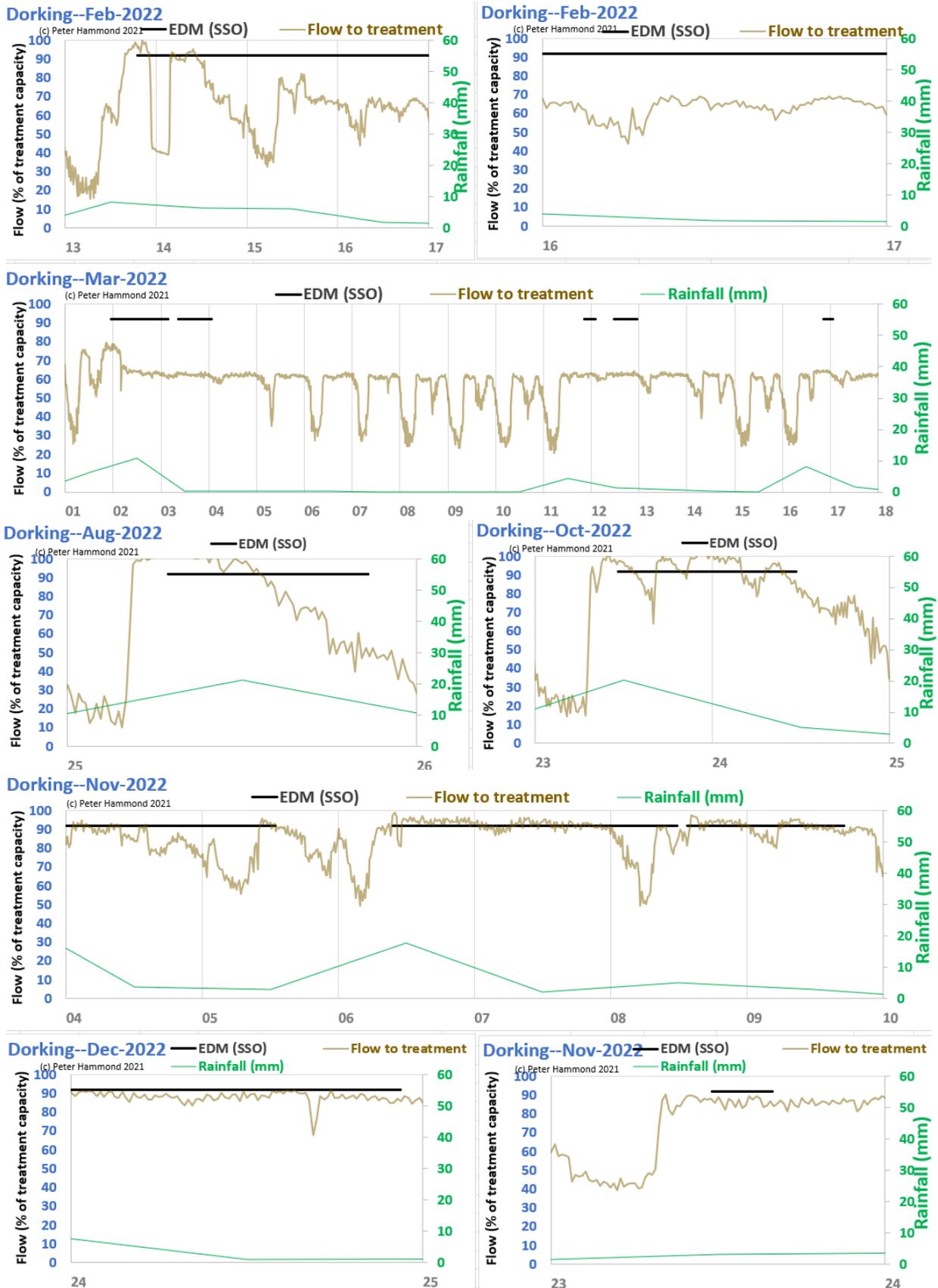


Figure 189: multiple “dry day” and illegal “early” spills detected in 2022 at Dorking STW

2023

The 2023 annual overview chart for Dorking STW is shown in the figure below:

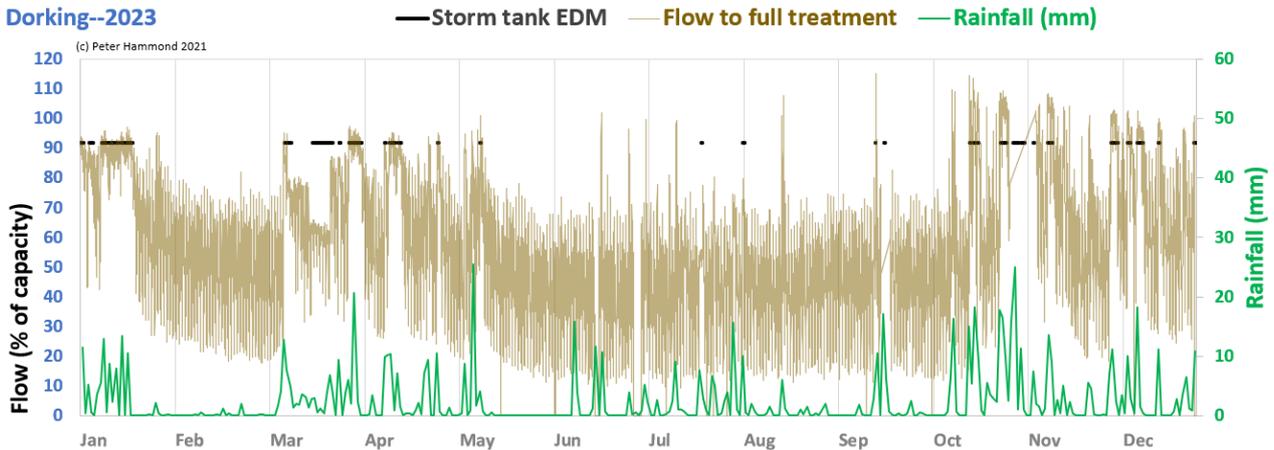


Figure 190: 2023 annual overview chart for Dorking STW

Dorking STW does produce good quality data sometimes with clear separation of spills that are compliant (Fig. 191a). At other times, it makes illegal “early” sewage discharges (Fig. 191b) or loses data and also increases its sewage throughput to over 110% of capacity (Fig. 191c).

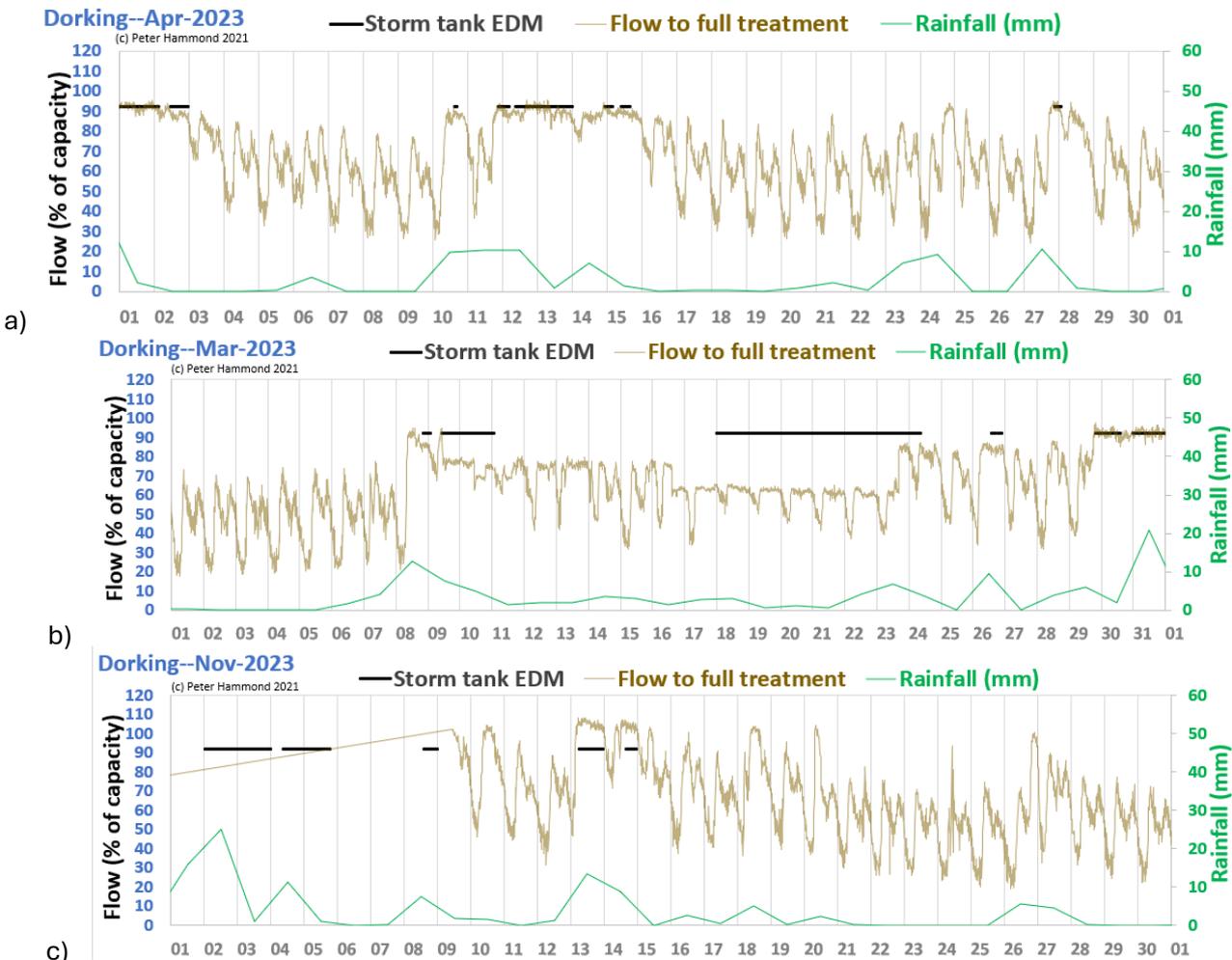


Figure 191: Dorking STW data showing a) compliant spills; b) illegal spills; c) data loss and increased flow

2024

At first sight, the 2024 annual overview chart appears to show good spill separation of compliant spills (Fig. 192).

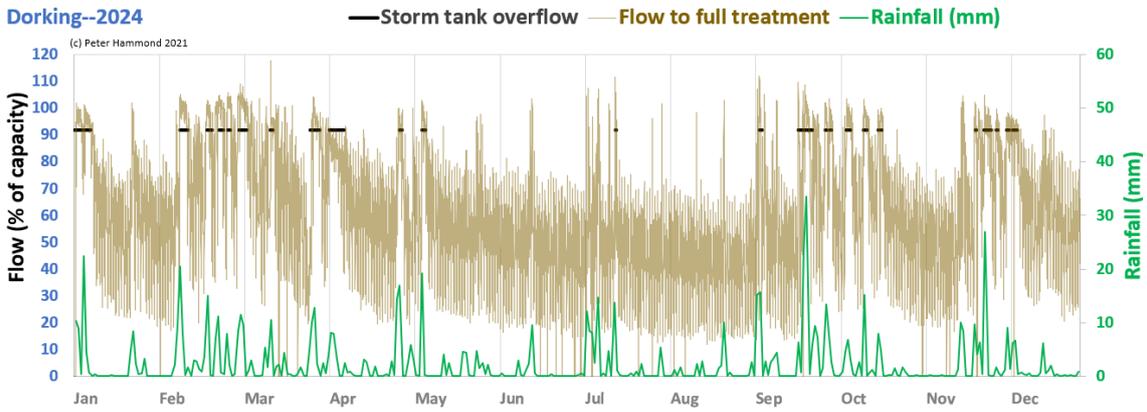


Figure 192: 2024 annual overview chart for Dorking STW

But more detailed analysis at a monthly level shows a mix of legal and illegal spilling similar to 2023:

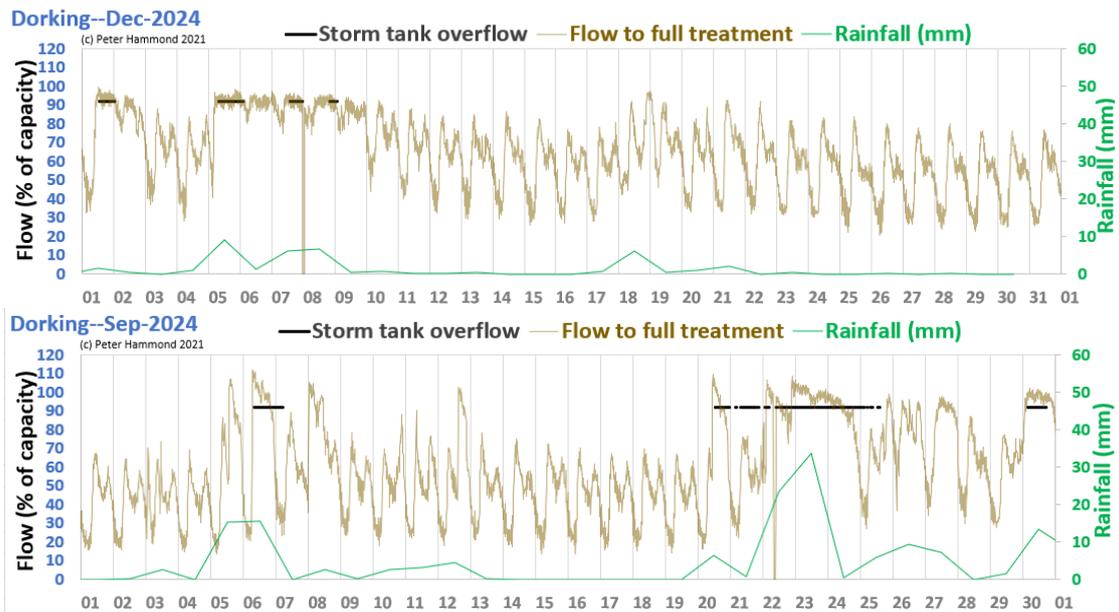


Figure 193: 2024 examples of legal and illegal spilling at Dorking STW

2025

2025 is a similar mix of legal and illegal spilling

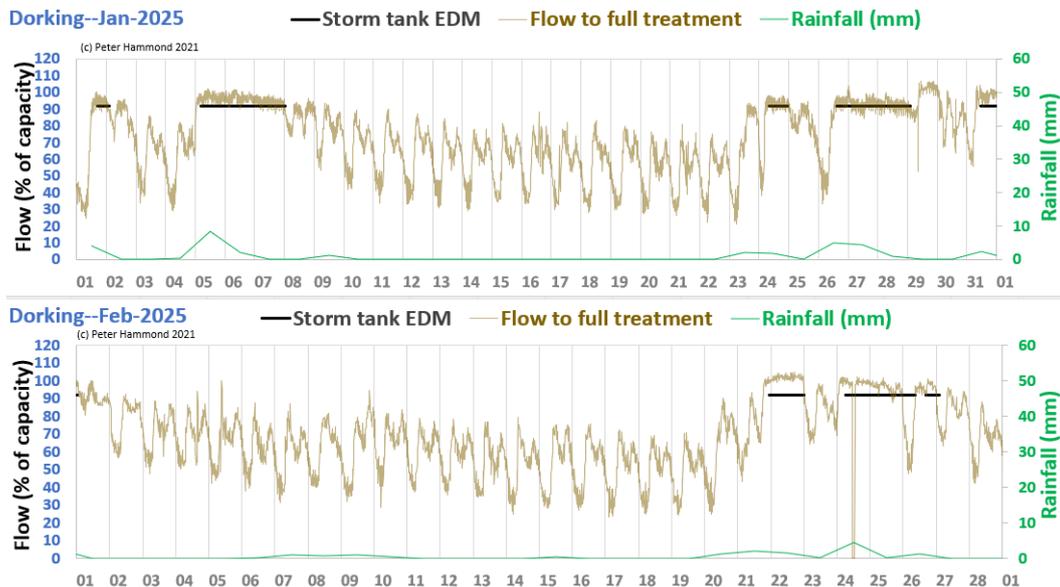
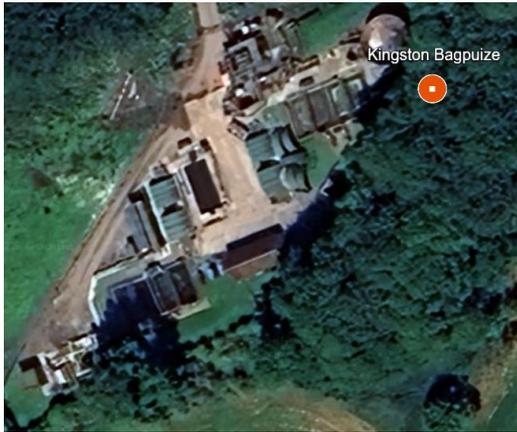


Figure 194: 2025 examples of legal and illegal spilling at Dorking STW

# Kingston\_Bagpuize\_Analysis

generally good data with a few illegal “early” spills

## Kingston Bagpuize STW



	2021	2022	2023	2024	2025
<b>Spill hours</b>	244	306	135	2,287	368
<b>Spill frequency</b>	40	32	22	136	24
<b>Illegal spills</b>	8	22	1	37	9
<b>% illegal</b>	20%	69%	46%	27%	38%
<b>Constituency</b>	Witney				
<b>MP</b>	Charlie Maynard				
<b>Party</b>	Liberal Democrat				

Kingston Bagpuize STW serves a population equivalent of about 4,361 and discharges to the Bagpuize Brook.

The cost breakdown for improvements to Kingston Bagpuize STW has risen 9-fold from £4.1 million in the Ofwat’s final PR19 determination to £37.5 million as the latest best estimate in the PR24 October submission based on a June 2023 forecast.

### 2021

Generally speaking, the EDM spill intervals in 2021 are well demarcated and consistent with sewage treatment and rainfall data. Very occasionally, the EDM intervals include a period when the sewage flow is below treatment capacity identifying an illegal “early” spill (such as **Fig 195: Feb 9, 22-24**).

### Kingston Bagpuize--Feb-2021

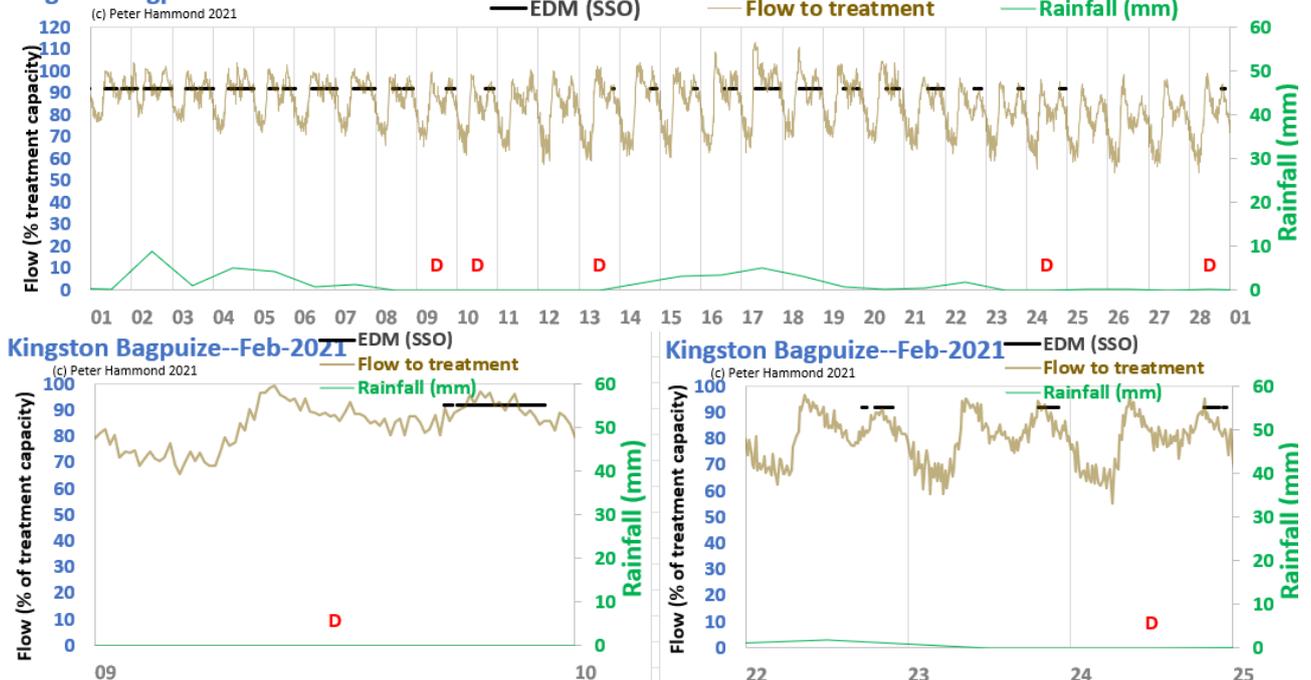


Figure 195: February 2021 data for Kingston Bagpuize STW

### 2022

The 2022 annual overview chart is shown in **Fig. 196** below.

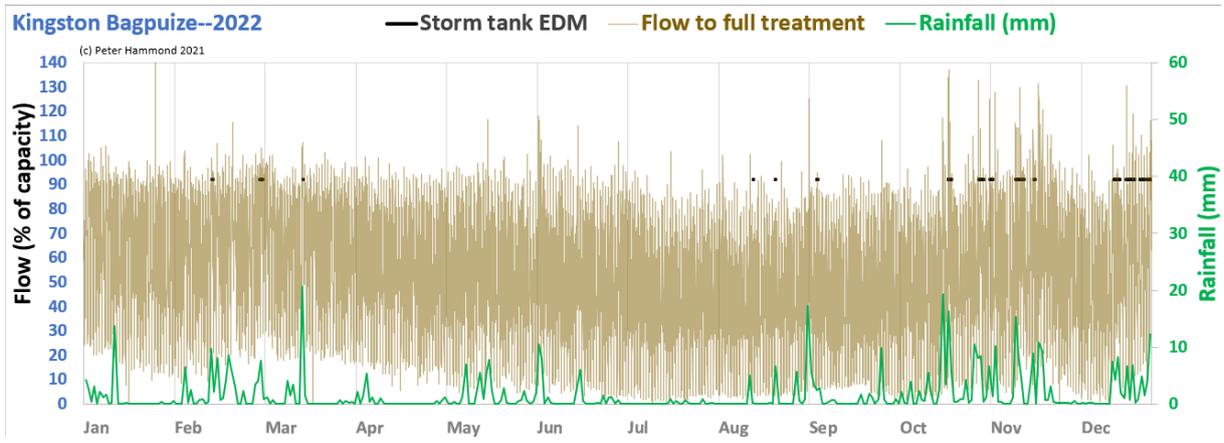


Figure 196: 2022 annual overview for Kingston Bagpuize STW

The 306 hours of spilling gave rise to 22 days with illegal “early” spills (Fig. 197).

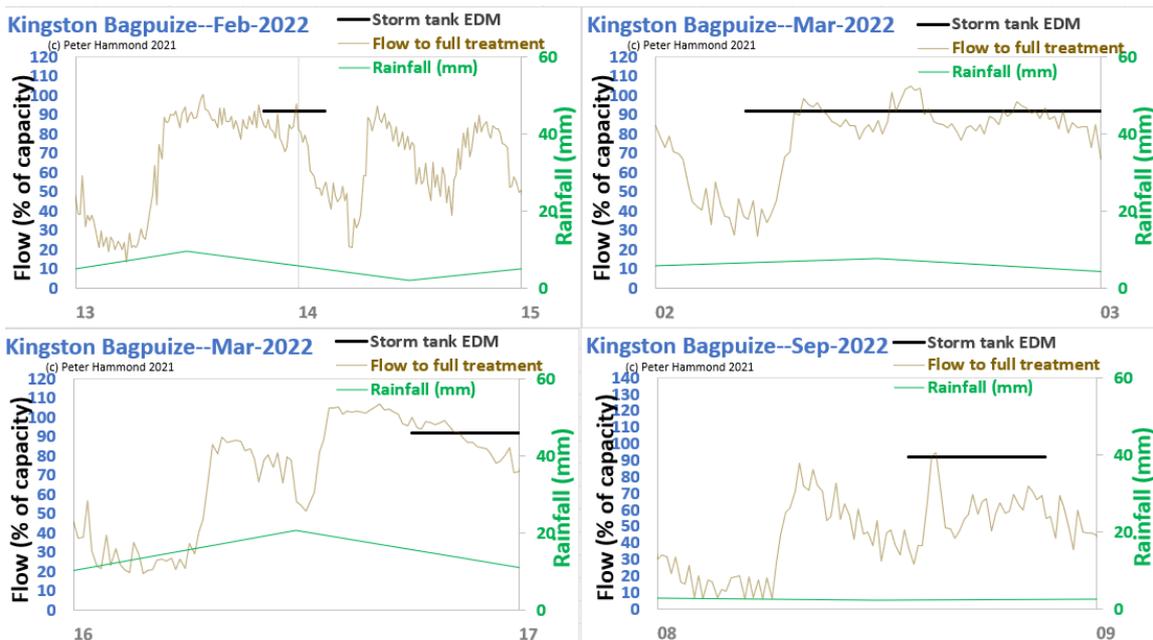


Figure 197: Examples of illegal “early” spills in 2022 at Kingston Bagpuize STW

The LUT permit level for Ammonia is 7 mg/l which was exceeded on April 25<sup>th</sup> 2022 when it was 11.49. The figure below shows when the offending sample was made and that the sewage flow appears disrupted compared to days either sided. In order to understand what happened it would be necessary to obtain full telemetry data.

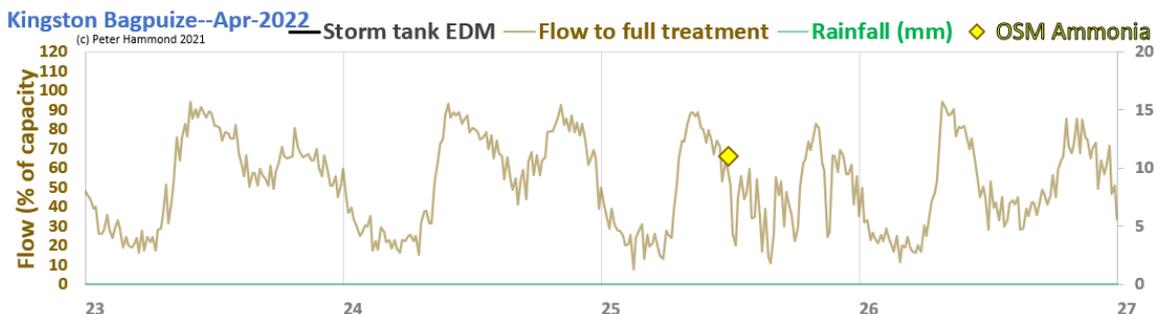
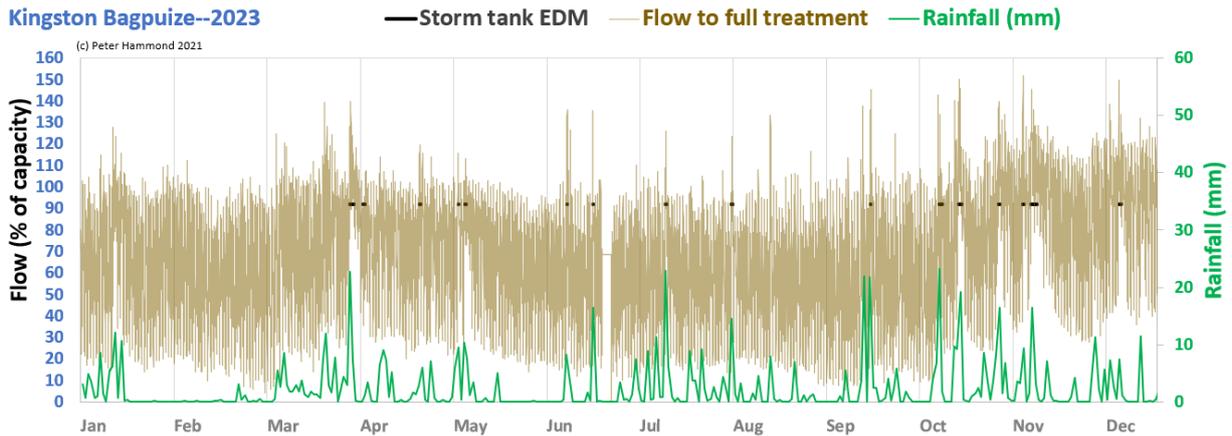


Figure 198: OSM Ammonia exceedance at Kingston Bagpuize STW when sewage flow appears disrupted

Unfortunately, Thames Water did not provide any “private” Ammonia sonde data for Kingston Bagpuize STW.

**2023**

The 2023 annual overview chart is shown in Fig. 199.

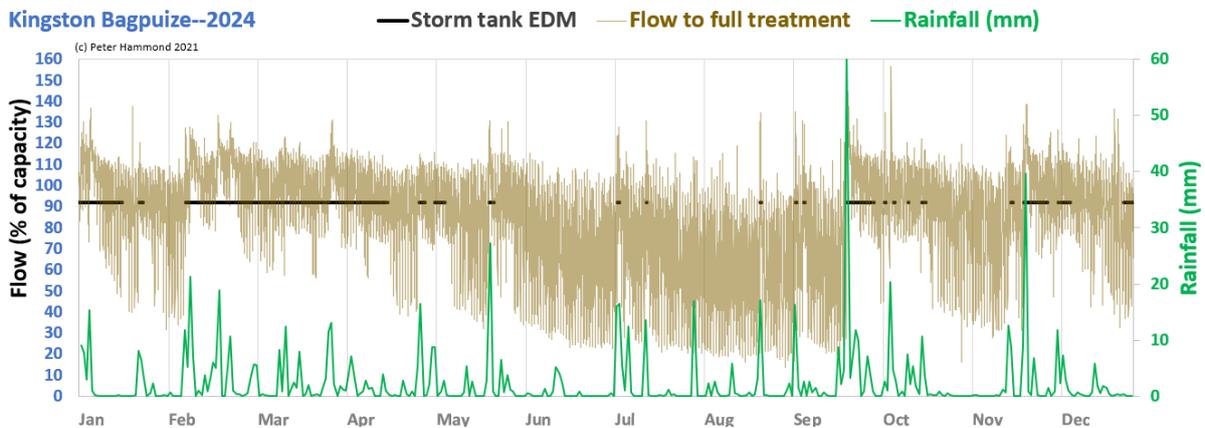


**Figure 199: 2023 annual overview chart for Kingston Bagpuize STW**

There is one day with a “dry” spill and there are no days with “early” spills. However, there is another exceedance for an OSM Ammonia sample with a value of 9.8 mg/l on August 1<sup>st</sup> 2023. But because this occurred more than 12 months after the exceedance in 2022, it does not constitute a permit breach.

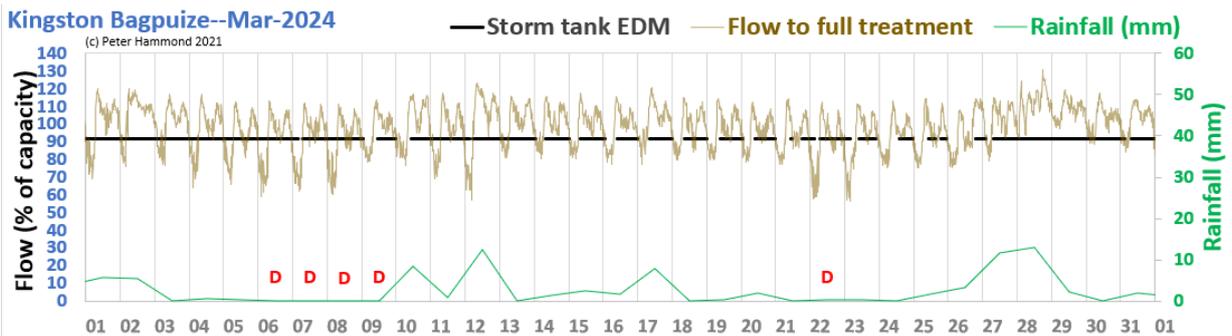
**2024**

The 2024 annual overview chart is shown in Fig. 200. The high rainfall resulted in a huge increase in annual spill hours to 2,286.



**Figure 200: 2024 annual overview for Kingston Bagpuize STW**

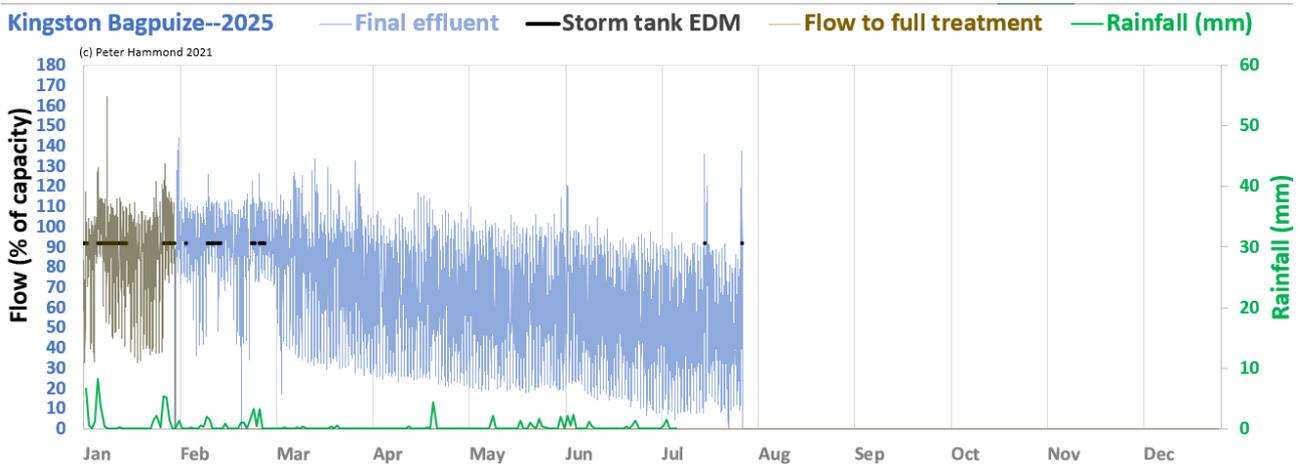
There were at least 7 days with “dry” spills, 14 days with “early” spills and 16 “days” involved spills that were both “dry” and “early”. An example month is shown below:



**Figure 201: Monthly chart for Kingston Bagpuize showing days with “dry” (Mar 6-8, 22) and “early” (Mar 1-8) spills**

**2025**

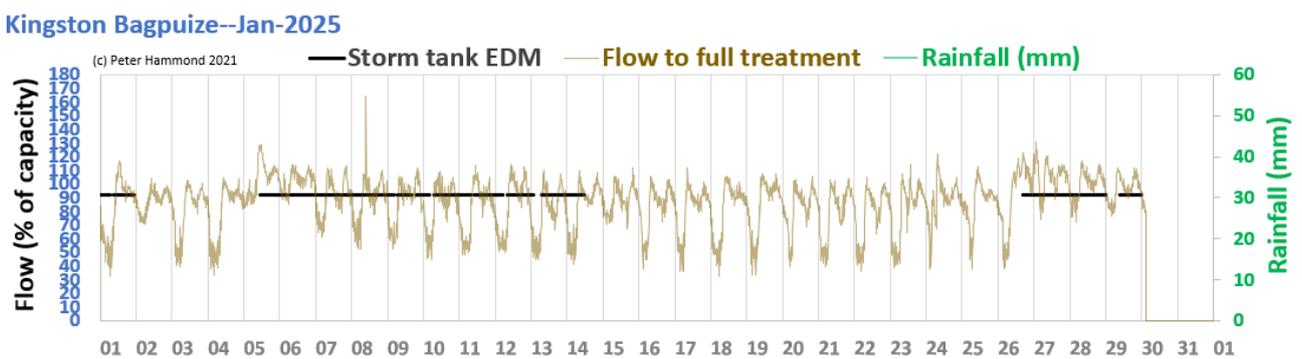
The annual overview chart for 2025 for Kingston Bagpuize is given below.



**Figure 202: 2025 annual overview chart for Kingston Bagpuize**

An OSM Ammonia test result of 7.98 mg/l on 20/03/2025 at 13:47 proved to be in excess of the LUT permit limit of 7 mg/l. But the gap since the last Ammonia exceedance was more than 12 months and so does not constitute a permit breach.

Fig. 202 provides the January 2025 chart which can easily be seen to include 9 days with “early” spills.



**Figure 203: January 2025 chart for Kingston Bagpuize showing 9 days with “early” spills**

An EA report (CAR/580360) about Kingston Bagpuize STW that was published on October 9<sup>th</sup> 2025 confirmed that the works should reapply for a revision of its dry weather flow following exceedances in 4 of the years 2000-2024.

Another EA report (CAR C0002773) of October 23<sup>rd</sup> 2025 confirmed that the storm tank size at Kingston Bagpuize STW has not been increased from 120 m<sup>3</sup> to 492 m<sup>3</sup> as was required in the last EA permit revision dated January 16<sup>th</sup> 2024. The EA classified this permit breach at the category 2 level.