



Event Duration Monitoring

Trigger Exceedance Notification

Document ID

Report type: Stage 2: Full Investigation Proposal

Permit Number: BW4102301

Receiving / Impacted waters: BW5

Location: Furzeland Drive CSO

DCWW Asset ID: 72736

CAR References:



Document Control

Version	Status	Date	Author(s)	Description of Change
1	Stage 2: Full Investigation Proposal - Draft	14/07/25	J.Turner	Initial report - Draft
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1. Summary of Each Stage

This TEN document follows the six Spill Frequency Trigger stages as detailed in the “*Water and Sewerage Company actions following a spill frequency trigger permit condition exceedance*” guidance document (GN005) to comply with the associated permit conditions.

The consent for asset Combined Sewer Overflow at Furzeland Drive CSO is BW4102301. The EDM classification for this asset is Bathing Water and has a limit of 5 spills. The asset breached its EDM requirements on the 6th of September 2024 when it spilt for the 6th time as per the Spill Block Counting Method. On the issue of the TEN 04/10/2024 it had spilt 8 times.

Initial desktop studies and operational investigations have identified the root cause to be Hydraulic Overload.

Detailed root cause analysis, optioneering and solution development work is currently being undertaken.

1.1. Stage 1: Spill Frequency Trigger Summary

- Consent Number BW4102301 = BW 5 spills in a year (as per the spill block counting method)

TEN History:

Year	2022	2023	2024	2025	2026	2027	2028	2029
TEN ?	No	Yes	Yes	-	-	-	-	-

- Stage 1 Acceptance of the TEN by DCWW 04-10-2024.

1.2. Stage 2: Initial Investigation Summary

Desk top analysis & onsite investigations haven't found any maintenance issues with the asset, the detailed Root cause could not be confirmed but is believed to be Hydraulic overload.



2. Stage 2: Initial Investigation

2.1. Site Location

The area of Sketty is a suburban district in the SA2 region, approximately 2 miles West of Swansea city centre.

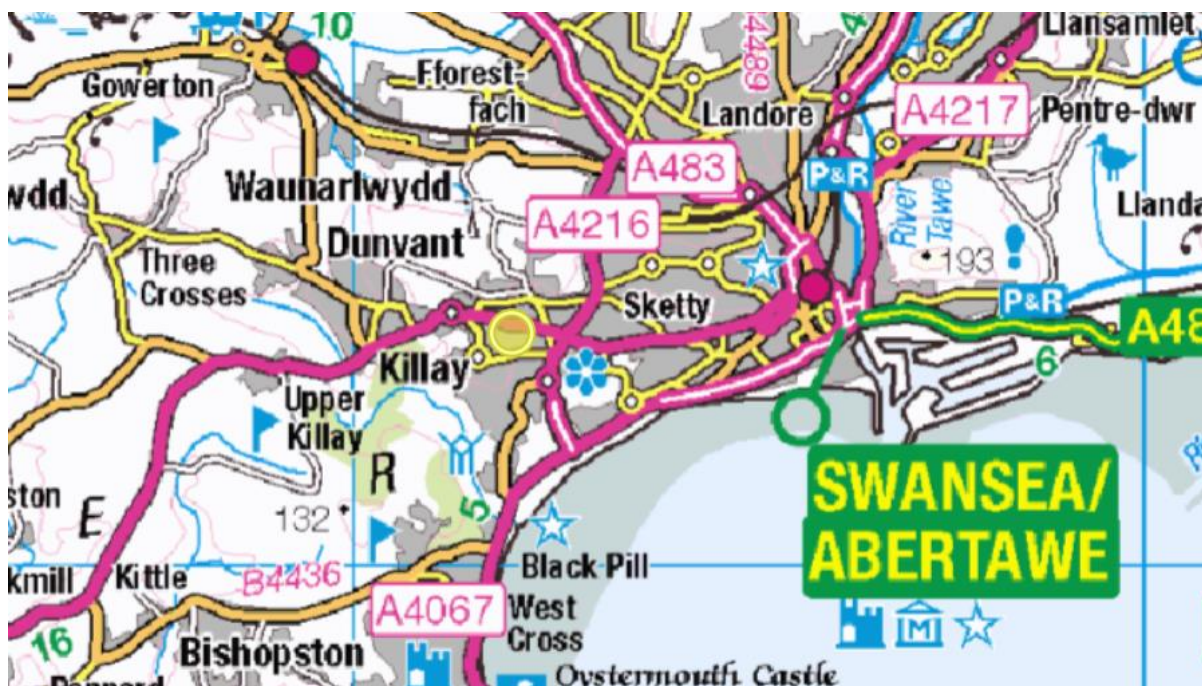
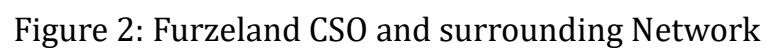


Figure 1: Location of Furzeland Drive CSO





2.2. Permit & EDM Requirements

Schedule 3 – Emissions and monitoring

Effluent and discharge point	Parameter	Limit (including unit)	Reference Period	Limit of effective range	Monitoring frequency	Compliance Statistic
Storm sewage via POINT OF DISCHARGE	Discharge start and end times	N/A	N/A	N/A	Whenever a discharge occurs	N/A
	Block-counted significant spills	5 spills	15 th May to 30 th September inclusive	N/A	15 minutes	Condition 3.1.2 applies - the spills threshold is a trigger for investigation only and not a statistic for use in compliance of asset
	Block-counted spills	N/A	15 th May to 30 th September inclusive	N/A	15 minutes	N/A
	Block-counted spills	N/A	1 st January to 31 st December inclusive	N/A	15 minutes	N/A
	Event recorder status operational	N/A	N/A	N/A	15 minutes	N/A

Effluent Name	Discharge Point	Discharge point NGR	Receiving water/Environment
Storm sewage	POINT OF DISCHARGE	SS 61998 92934	Culverted section of an unnamed tributary of River Clyne

Effluent and discharge point	Description of discharge	Overflow setting l/s	Maximum size of solid matter	Screen aperture size	Minimum storage capacity m ³
Storm sewage via POINT OF DISCHARGE	Storm sewage	93	No greater than 6 mm in more than 1 dimension	6 mm x 6 mm	400

Effluent and discharge point	Monitoring type	Monitoring point NGR	Monitoring point reference
Storm sewage via POINT OF DISCHARGE	Effluent sampling	SS 61973 93005	POINT OF OVERFLOW
	Event duration monitoring	SS 61973 93005	

Figure 3: Furzeland CSO Discharge Permit Details



2.3. Asset and Telemetry Description

Furzeland Drive CSO was constructed in 2015 and replaced CSO 52466, known as Whitethorn Place. The asset receives flows from a significant area consisting of the Carnglas and Tycoch areas. The catchment upstream of consists of mainly residential properties covering an area of approximately 1.03sq. km

Discharges are monitored with a 'CELLO' ultrasonic sensor, used for EDM purposes. Pass forward flow is controlled by two flow control controls chambers, where flows are controlled at 45l/s and 50l/s to meet the consented overflow setting.

During normal operation, flows are restricted to 45l/s in chamber SS61929903. When flows exceed the limit, they are diverted into the new adjacent storage tanks. The contents of the storage tank are constantly released back into the system at a controlled flow rate of 50l/s. Once the incoming flow exceeds the pass forward flow, the tanks begin to fill. Once they are full, spill flows rise through a static screen and spill over the weir wall and are discharged to the culvert.

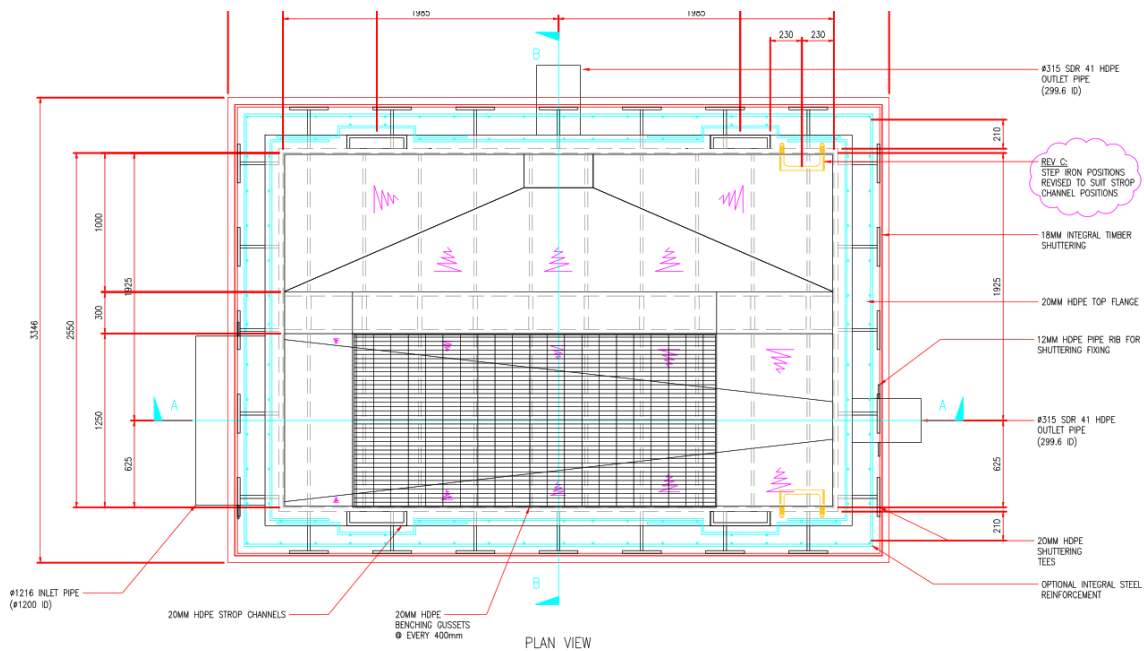


Figure 4: Plan View of CSO chamber

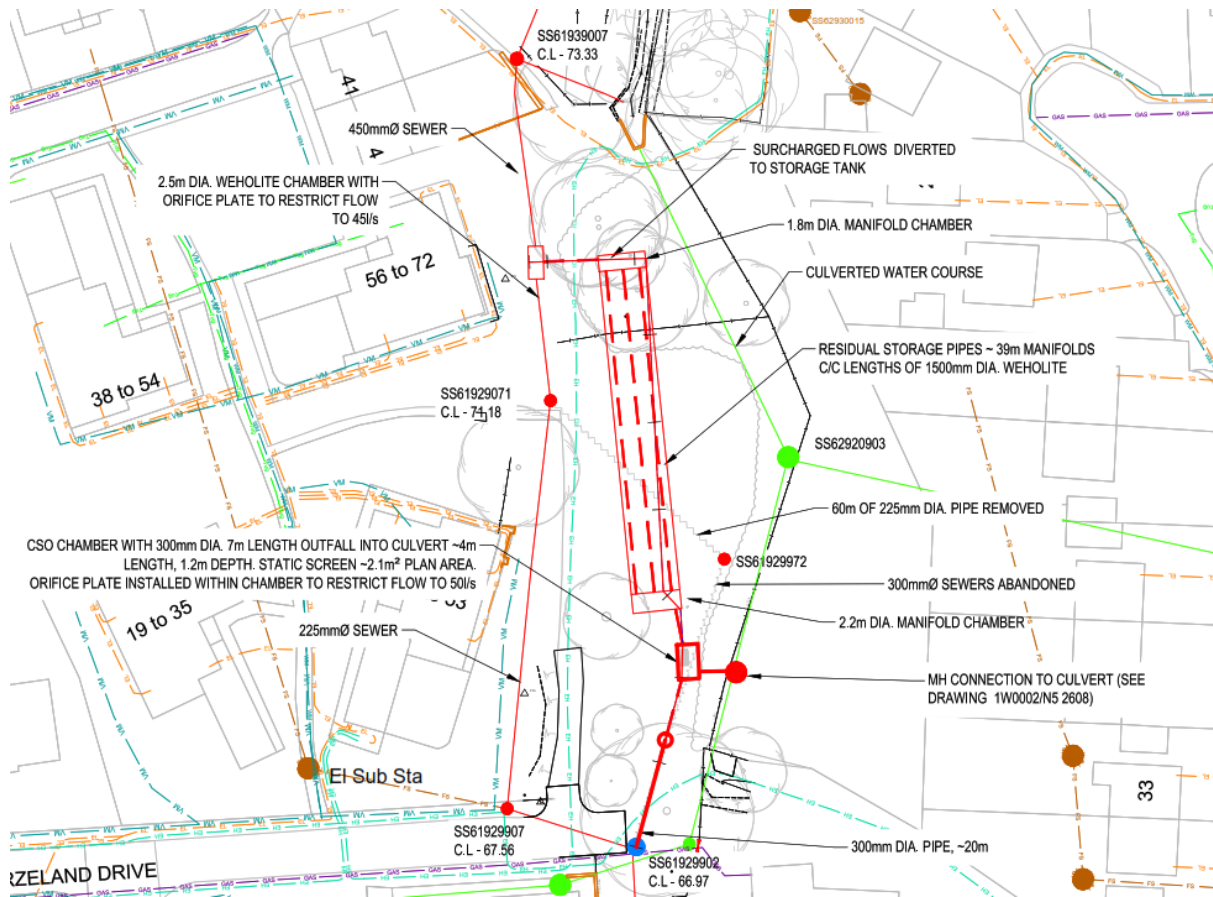


Figure 5: Labelled Plan of Storage pipes and CSO chamber



2.4. Telemetry Data Analysis

3. Bathing Water spills occurred from 18/5/2024 – 06/09/2024 as shown in the screen shot below (Figure 6) taken in from Scopex / Prism telemetry data.

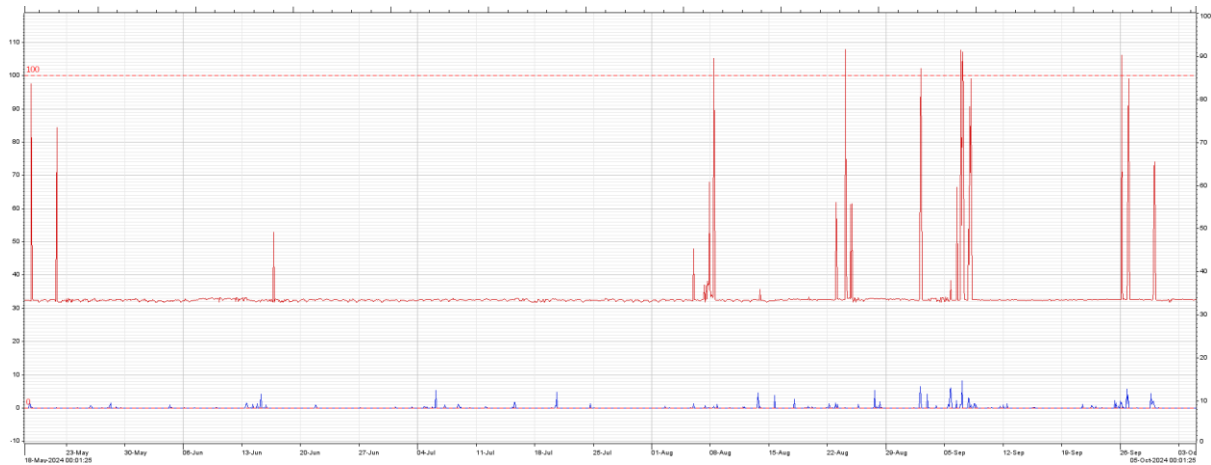


Figure 6: Scopex / Prism telemetry data.

Figure 6: graph showing –

■ = CSO Levels

■ = Rainfall Intensity

3.1. Root Cause Statement

A detailed Root cause cannot be determined at this stage. But we believe it to be hydraulic overload.

3.2. Stage 2: Next Steps

Detailed root cause analysis, optioneering and solution development is currently being carried out.

3.3. Stage 2 Full Investigation Plan

Table X: Full Investigation Plan

Action Ref.	Action Required	Action Due Date	Comments	Complete (Y/N)	Completion Date
1.	Modelling assessment of asset and surrounding networks	July 30 th 2026	Asset modelled to confirmed root cause as Hydraulic Overload	N	



4. Stage 3: Trigger Exceedance Reason Report (TERR)

5. Stage 4: Spill Reduction Plan

5.1. Spill Reduction Proposal

Identifies how the number of spills will be reduced. The plan must contain reasonable deadlines and be sent to NRW for approval.

Complete Stage 5 which details our communication plan with NRW during the implementation of the SRP.

Table X: Spill Reduction Plan

Action Ref.	Action Required	Action Due Date	Comments	Complete (Y/N)	Completion Date

6. Stage 5: Implement Solutions

6.1. Stakeholder Communication

NRW will be updated via local quarterly meetings and CAR process.

7. Stage 6: Close Out Report

7.1. Spill Reduction Performance

7.2. Trigger Exceedance Close Out Statement



8. Appendices

8.1. Appendix A: Acronyms/Abbreviations

Acronym/Abbreviation	Meaning
AMP	Asset Management Plan
CSO	Combined Sewer Overflow
DWF	Dry Weather Flow
DCWW	Dwr Cymru Welsh Water
EDM	Event and Duration Monitoring
FFT	Flow to Full Treatment
NGR	National Grid Reference
PFF	Pass Forward Flow
SAS	Surplus Activated Sludge
SOAF	Sewer Overflow Assessment Framework
SPS	Sewage Pumping Station
SRP	Spill Reduction Plan
STMF	Storm Tank Flow
STMRF	Storm Tank Return Flow
TEN	Trigger Event Notification
WWTW	Wastewater Treatment Works

8.2. Appendix B: Attachment X1

8.3. Appendix C: Attachment X2