SOAF Investigation Output Summary

Reference: SOAF.R 00001

Please see Audit Statement Technical Guidance for further information

ASSET INVESTIGATION DETAILS					
SAP Asset Name:	Adpar, No.2 Teifi Terrace		**Asset Template reference**	MP3521XX-Teifi Terrace CSO-71348-Stage 4 - Non CBA-Ceredigion	
Investigation Type	SOAF (River)				
Year of breach:	*2017*	**Spill Trigger cause:**		*Hydraulic*	
Year of Investigation:	*2022*	**Investigation year performance:**		*182*	
Population of Asset	*1329*	**Modelled Performance: (DESIGN) / (CALIBRATED)**		*95 / 163*	
Permit Details					
Storm Permit ID:	MP3521XX	**Storm Permit Name:**		Teifi Terrace CSO	
Asset NGR:	SN3075440929	**Waterbody ID**		GB41002G203300	
Discharge NGR:	SN3075340928	**Water body Discharge location**		Afon Teifi	

Brief description of asset
(Screen, PFF flow control, Storage, outfall)

Incoming line: 150mm gravity; CSO Type: hole in the wall overflow pipe; Screening: unscreened; Flow Control: 150mm pipe; PFF Pipe: 150mm; Storage Provision: none; Consent: 23.608 l/s; SocA: 25.5 l/s

SOAF STAGE 1	
Details of assessment:	Asset condition surveys supported by hydraulic model assessment of the asset performance. Additional flow and rainfall monitoring was undertaken to improve the baseline model accuracy and assist in defining the root cause of spills.
Permit Compliance	
PFF	Not Design Compliant - Intervention and review of influencing factors required
Storage	N/A
Screening	N/A
Bespoke/Other	N/A

SOAF Stage 1 findings

Following the hydraulic model assessment, the cause of the high spills at the asset is concluded to be hydraulic, with OC infiltration/OC Maintenance as the secondary cause of spills. The predicted pass-forward flow is less than 30% of consent prior to the first spill and there is good level of confidence in the incoming and outgoing flows from the asset based on flow survey data. The model is fit for use, based on the reported spill numbers and telemetry trends.

Cause of spill count :	**Other Cause**	**Yes**	**Catchment Hydraulic**	**Yes**	**Infiltration & IRP required**	**Yes**
Future Operational Management Proposal:	*The primary cause of the high spills is hydraulic and as such the asset progresses for Stage 2 and 3 assessments under the worst-case impact scenario of the current performance. However, operational interventions detailed below are required to mitigate excessive spills beyond the design criteria and should be implemented prior to the final Stage 4 decision confirmation*					
Operational intervention required:	*Regular jetting schedule /clear debris on the 150mm pipes between upstream asset 73377 and 71348 spanning over a length of 120m and also in the 225mm pipes between 71348 and treatment works at 50533 spanning over a length of 275m.* *Infiltration reduction plan also required.* *Following maintenance activities, the asset will continue to not be compliant with the permit and investigation of the appropriateness of the current discharge permit/design set up will be required.*					

SOAF Operational Intervention					
Start Date:	**Sep-24**	**Completion Date:**	*TBC*	**Indicative future annual spill performance** *(less than 40 do not continue to stage 2)*	95

Intervention Description:	**Infiltration has been identified as a factor in excess spills at this asset. An infiltration reduction plan (IRP) is in the process of development to address the problem. It is recognised in the Storm Overflow Assessment Framework that investigation and resolution of infiltration issues can be difficult and that solutions may be iterative with IRPs potentially only succeeding over the medium to long-term.**				
Target Completion by Date:	**Sep-29**	**Data years to be excluded from future SOAF triggers calculations**	-	**Request to hold stage 2 surveys for environment recovery**	

SOAF STAGE 2					
Receiving Waterbody WFD Status			Good		
Stage 2a					
Aesthetic survey:	Spring	2023	**Aesthetic Total score** (inclusive of amenity classification, previous complaints & pollutions)	30	Moderate
	Autumn	2023		50	Moderate
Stage 2b				*Yes / No unable due to culverted watercourse*	
Invertebrate survey:	Spring	-	**Invertebrate survey score:**	-	-
	Autumn	-		-	-
Stage 2c Required:				*Yes / No*	
Stage 2c screening:	Required	**Progressed through screening?** Yes	**Stage 2c water quality assessment Score:**	0 - No Impact	

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	Y	PFF Increase	N
Equivalent storage volume required	35.61192m3	**Rainscape Cost**		£1,790,440.00	**CBR**	0.0
Bespoke future trigger agreement	40	**Traditional Storage**		£112,384.66	**CBR**	0.0
		Other			**CBR**	
Key Constraints	*Storage solution would be located coming off of primary sewer constrained by river on one side and residential property on the other and so unit costs used may be underestimated.*					
Future Active Management Proposal	*The primary cause of spills was hydraulic and Stage 2 impact assessments have shown that the asset was having a significant effect on the receiving waterbody, with the waterbody itself currently achieving a good or higher status. Assessment of the potential high-level solutions have indicated that any solution entailed excessive costs for the benefit it provided and thus the asset does not pass the SOAF Cost Benefit threshold and will not progress to detailed benefits assessment. Further details are shown below detailing DCWW's plans for storm overflow spill reduction*					

Conclusion and Future Spill Reduction Proposals					
Summary	*Based on the direction from the Welsh Government led Better River Quality Task Force, DCWW Storm overflow spill reduction programme will target the elimination of ecological harm and prevention of adverse ecological impact of any SO. With a large programme of assets requiring improvement priority will be given to CSOs having the greatest impact in the most sensitive receiving waters. To ensure that the improvement delivered is long term, the improvements for each site will be based on the expectation that water quality upstream of the discharge meets good or high ecological status (GES) irrespective of the actual status of the water. This approach has formed the basis of DCWW's portfolio investment plan for Storm Overflows. Teifi Terrace CSO was Shown to have a No / Very low Impact therefor as set out above based upon our Long Term Delivery Strategy a spill reduction scheem to elimeite this level of impact is Profiled to be delivered between 2040-2050*				
Asset Prioritisation Level	*Priority 5*			**Delivery Predicted Period**	*AMP11/12*
Asset NEP ID	*N/A*	**Asset NEP Driver Code**	*N/A*	**Detailed Design Predicted Period**	*AMP10/11*
Progression to Stage 5 In AMP	*No*	*Proposed Solution yet to be taken through detailed design devloped*			

SOAF AGREEMENT					
	Date	**SOAF STAGE**	**Name**	**Contact Details**	**Location of Output**
DCWW Approval	01/09/2024	*Stage 4 - Non CBA*	**Christian Phillips Adams**	christian.phillipsadams@dwrcymru.com	*Email*
Regulator Liaison Date	Click here to enter a date				
CSO Classification					
Satisfactory	**N**	Unsatisfactory	**Y**	Sub Standard	**N**
		Any operation in dry weather conditions?	**N**	Does not meet modern standards of engineering and aesthetic control for storm overflow structures set out in the British standard BS EN 752:2017 drain and sewer systems outside buildings	**N**

Any operation in breach of permit conditions?	**Y**	Does not have sufficient hydraulic capacity compared to accepted minimum design standards	**N**
Any significant visual or aesthetic impact due to solids or sewage fungus?	**Y**	Risks becoming unsatisfactory because discharges have increased beyond the original design due to infiltration, growth and urban creep	**UTC**
Cause or significantly contributes to a deterioration in the biological or chemical status of the receiving water?	**N**		
Causes or significantly contributes to failures in bathing water quality standards for identified bathing waters?	**N/A**		
Causes or significantly contributes to failures in shellfish quality standards for identified shellfish waters	**N/A**		
Causes or significantly contribute to failures in water quality standards in coastal and transitional waters?	**N/A**		
Causes pollution of groundwater?	**N/A**		