SOAF Investigation Output Summary

Dŵr Cymru Welsh Water

Cyfoeth Naturiol Cymru Natural Resources Wales

Reference: SOAF.R 00001

Please see Aurill Statement Technical Guidance for further information

ASSET INVESTIGATION DETAILS					
SAP Asset Name:	Upper Mwldan 2 CSO		**Asset Template reference**	BP0321201-GREENFIELD SQUARE CSO CARDIGAN CERE-52029-Stage 1 - OC-Ceredigion	
Investigation Type	SOAF River				
Year of breach:	*2017*	**Spill Trigger cause:**		*OC Telemetry*	
Year of Investigation:	*2021*	**Investigation year performance:**		*20 Spills*	
Population of Asset	*1557.32*	**Modelled Performance: (DESIGN) / (CALIBRATED)**		*23 Spills*	
Permit Details					
Storm Permit ID:	BP0321201	**Storm Permit Name:**		Greenfield Square CSO, Cardigan	
Asset NGR:	SN1771046199	**Waterbody ID**		GB110062039160	
Discharge NGR:	SN1771046199	**Water body Discharge location**		Mwidan - headwaters to confluence with Teifi	

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

Incoming Pipe: 375 mm; CSO Type: Pumped; Screening: 6mm in 1D; Flow Control: PFF Pipe ; PFF Pipe: 375 mm;; Storage 50m3; Consent: 42l/s

Flows incoming via a 375mm combined sewer (2400mm and 1050mm storage upstream). Once storage is utilised, levels rise in CSO over weir it is discharged to the wet well which then discharges to culverted River Mwldan via pumped overflow

SOAF STAGE 1	
Details of assessment:	Asset condition surveys supported by hydraulic model assessment of the asset performance against available telemetry information (EDM and radar rainfall datasets). 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	Compliant
Storage	Not compliant – Operational Intervention required to restore
Screening	Compliant
Bespoke/Other	N/A

SOAF Stage 1 findings

Primary Cause: OC Telemetry
Secondary Cause: None

Following the hydraulic model assessment, the cause of the high spills at the asset is concluded to be OC Telemetry, with no secondary cause of spills. The predicted pass-forward flow is within 10% of consent prior to the first spill. The model is fit for use, based on the reported spill numbers and telemetry trends.

Spill counts have dropped substantially from the original trigger year, and the site now appears to be performing well with annual spills below 40. PFF is predicted to be only slightly below the consent value, however the calculated storage provision is significantly under the permitted volume.

Cause of spill count :	**Other Cause**	**Yes**	**Catchment Hydraulic**	**No**	**Infiltration & IRP required**	**No**
Future Operational Management Proposal:	*None - intervention addressed - spills fallen below trigger level.*					
Operational intervention required:	*None - intervention addressed - spills fallen below trigger level.*					

SOAF Operational Intervention					
Start Date:	**Jun-24**	**Completion Date:**	*TBC*	**Indicative future annual spill performance** *(less than 40 do not continue to stage 2)*	22

Intervention Description:	**The storm tank maintainace has been identified as a factor in excess spills at this asset, the assessment has determined that this requires a review and implementation of recommendations in order to reduce Spills.**				
Target Completion by Date:	**Jun-25**	**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			-		
Stage 2a					
Aesthetic survey:	Spring	-	**Aesthetic Total score** (inclusive of amenity classification, previous complaints & pollutions)	-	-
	Autumn	-		-	-
Stage 2b				*Yes / No unable due to culverted watercourse*	
Invertebrate survey:	Spring	-	**Invertebrate survey score:**	-	-
	Autumn	-		-	-
Stage 2c Required:				*Yes / No*	
Stage 2c screening:	Ratio	**Progressed through screening?**	Progress Yes / No	**Stage 2c water quality assessment Score:**	Not required/status if progressed

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	-	PFF Increase	-
Equivalent storage volume required	-	**Rainscape Cost**		-	**CBR**	-
Bespoke future trigger agreement	-	**Traditional Storage**		-	**CBR**	-
		Other		-	**CBR**	-
Key Constraints	*Note of major factors affecting suitability of solution/pricing details*					
Future Active Management Proposal	*i.e. Bespoke improved planned maintenance/mitigation, investigation under DWMP or NEP revisit – future funding intention*					

Conclusion and Future Spill Reduction Proposals					
Summary	*Greenfield Square CSO, CardiganBased 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.* *Greenfield Square CSO, Cardigan was Shown to have an other cause issue resulting in higher spills which are expected to reduce once a resolution has been implemented.* *The asset will under take classification as part of DCWW's GN066 in AMP8, to establish any impact that there might be.*				
Asset Prioritisation Level	-			**Delivery Predicted Period**	-
Asset NEP ID	*N/A*	**Asset NEP Driver Code**	*N/A*	**Detailed Design Predicted Period**	-
Progression to Stage 5 In AMP	*No*	-			

SOAF AGREEMENT					
	Date	**SOAF STAGE**	**Name**	**Contact Details**	**Location of Output**
DCWW Approval	01/06/2024	*Stage 1 - OC*	**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	**Y/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?	**U**	Risks becoming unsatisfactory because discharges have increased beyond the original design due to infiltration, growth and urban creep	**N**
Cause or significantly contributes to a deterioration in the biological or chemical status of the receiving water?	**U**		
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**		