SOAF Investigation Output Summary

Dŵr Cymru Welsh Water

Cyfoeth Naturiol Cymru Natural Resources Wales

Reference: SOAF.R 00001

Please see Aprill Statement Technical Guidance for further information

ASSET INVESTIGATION DETAILS					
SAP Asset Name:	RHOSTYLLEN BERSHAM COLLIERY			**Asset Template reference**	CM0199101-BERSHAM COLLIERY CSO-2202-Stage 1 - OC-Flintshire & Wrexham
Investigation Type	SOAF (River)				
Year of breach:	*2019*	**Spill Trigger cause:**		*OC Telemetry*	
Year of Investigation:	*2022*	**Investigation year performance:**		*44*	
Population of Asset	*1793.77*	**Modelled Performance: (DESIGN) / (CALIBRATED)**		*30 / 30*	
Permit Details					
Storm Permit ID:	CM0199101	**Storm Permit Name:**		BERSHAM COLLIERY CSO, WREXHAM ROAD, RHOSTYLLEN, WREXHAM	
Asset NGR:	SJ3167848447	**Waterbody ID**		GB111067051700	
Discharge NGR:	SJ3164148418	**Water body Discharge location**		Black Brook	

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

Incoming Pipe: 375mm; CSO Type: Single sided high level weir; Screening: 10mm 1D; Flow Control: X-Pipe ; PFF Pipe: 225mm; Storage Provision: None; PFF Consent: 46l/s

SOAF STAGE 1	
Details of assessment:	Assessment of asset performance undertaken by asset condition surveys supported by hydraulic model enhancement through flow survey and verification.
Permit Compliance	
PFF	Compliant
Storage	N/A
Screening	Compliant
Bespoke/Other	N/A

SOAF Stage 1 findings

Following the hydraulic model assessment, the primary 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. Erratic spikes in telemetry data corresponding to minor rainfall events noted indicating an issue with EDM monitor which has affected the recorded spill count.

A telemetry review has been carried out for 2021 & 2022. The CSO generally operates around 5%, there are frequent increases to 28%. The level in the CSO doesn't respond to all rainfall, the rises in CSO level don't seem to have a pattern to them without consistency to how long it remains at 28%. Over the assessment year, 14 'spills' were fount to be erroneous.

Cause of spill count :	**Other Cause**	**Yes**	**Catchment Hydraulic**	**No**	**Infiltration & IRP required**	**No**
Future Operational Management Proposal:	*The primary cause of the spills are operational factors that have been assessed as deliverable in the short term. The asset has been added to the SOAF Intervention programme with the details outlined below.*					
Operational intervention required:	*Investigate the telemetry monitor- Telemetry monitor need to be recalibrated as there is inconsistency in the CSO response to rainfall and the spill level of CSO is unclear due to trend patterns. Review required following telemetry intervention having been implemented and performance trigger again.*					

SOAF Operational Intervention					
Start Date:	**Jul-24**	**Completion Date:**	*TBC*	**Indicative future annual spill performance** *(less than 40 do not continue to stage 2)*	30

Intervention Description:	**Telemetry has been identified as a factor in excess spills at this asset. Telemetry maintenance has been issued to address this problem. This is focused on, the re calibration to correctly capture spills and future performance will be monitored**				
Target Completion by Date:	**Jul-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			Moderate		
Stage 2a					
Aesthetic survey:	Spring	2021	**Aesthetic Total score** (inclusive of amenity classification, previous complaints & pollutions)	20	Low
	Autumn	2021		25	Low
Stage 2b				*Yes / No unable due to culverted watercourse*	
Invertebrate survey:	Spring	2021	**Invertebrate survey score:**	4	Low
	Autumn	2021		1	No impact
Stage 2c Required:				*Yes / No*	
Stage 2c screening:	Not Required	**Progressed through screening?**	No	**Stage 2c water quality assessment Score:**	Not required

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	Not required	PFF Increase	Not required
Equivalent storage volume required	Not required	**Rainscape Cost**		Not required	**CBR**	Not required
Bespoke future trigger agreement	40	**Traditional Storage**		Not required	**CBR**	Not required
		Other		Not required	**CBR**	Not required
Key Constraints						
Future Active Management Proposal						

Conclusion and Future Spill Reduction Proposals					
Summary	*BERSHAM COLLIERY CSO, WREXHAM ROAD, RHOSTYLLEN, WREXHAMBased 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.* *BERSHAM COLLIERY CSO, WREXHAM ROAD, RHOSTYLLEN, WREXHAM 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	*Priority 4*			**Delivery Predicted Period**	*AMP10*
Asset NEP ID	*N/A*	**Asset NEP Driver Code**	*N/A*	**Detailed Design Predicted Period**	*AMP9*
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	01/07/2024	*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	**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?	**N**	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	**N**
Cause or significantly contributes to a deterioration in the biological or chemical status of the receiving water?	**Y**		
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**		