

ASSET INVESTIGATION DETAILS			
SAP Asset Name:	Padeswood Road Storm Tank CSO		Asset Template reference
Investigation Type	SOAF (River)		CM0081101-PADESWOOD ROAD STORM TANK CSO-73471-Stage 1 - OC-Flintshire & Wrexham
Year of breach:	2019	Spill Trigger cause:	OC Infiltration
Year of Investigation:	2022	Investigation year performance:	57
Population of Asset	6232	Modelled Performance: (DESIGN) / (CALIBRATED)	22 / 46
Permit Details			
Storm Permit ID:	CM0081101	Storm Permit Name:	Padeswood Storm Tank CSO
Asset NGR:	SJ2743762830	Waterbody ID	GB111067052172
Discharge NGR:		Water body Discharge location	Alyn - Leadmill to Hope, US STW
Brief description of asset (Screen, PFF flow control, Storage, outfall)			
<p>Inlet Spill point Incoming line: 1500 mm gravity; CSO Type: Single-sided, high-level weir; Screening: 6mm 2D (on spill from tank); Flow Control: X Pipe ; FFT Pipe: 525mm gravity ; Consent: 96 l/s; SoCA: 111 l/s.</p> <p>Storm tank spill point Volume: 1250 m³; CSO Type: Single sided screened weir; Spill level: 118.48 mAOD; Screening: Huber Rotomat Screen 6mm 2D; Tank emptying philosophy: Rotork Penstock with unknown dimensions; Tank emptying Rate: Unknown</p>			

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	Compliant					
Screening	Compliant					
Bespoke/Other	N/A					
SOAF Stage 1 findings						
<p>Following the hydraulic model assessment, the cause of the high spills at the asset is concluded to be OC Infiltration, with no secondary cause of spills. The predicted pass-forward flow is within 10% of SOCA prior to the first spill. The model is fit for use, based on the reported spill numbers and telemetry trends.</p> <p>Telemetry trends clearly show the effects of rainfall induced groundwater infiltration during the winter months which has a significant effect on the predicted spill count. Representations using an industry standard, average level of infiltration (40% PG) predict a spill count for the assessment year below that of the threshold for investigation level.</p>						
Cause of spill count :	Other Cause	No	Catchment Hydraulic	No	Infiltration & IRP required	Yes
Future Operational Management Proposal:	<p>The primary cause of the spills are operational factors that have been assessed as requiring longer term (1+ year) intervention programmes. Given the scale of the issue, the asset will progress under a bespoke intervention programme with details to be supplied to with the regulator and other stakeholders outside of the normal SOAF processes.</p>					
Operational intervention required:	<ol style="list-style-type: none"> 1. Infiltration Reduction Plan needs to be implemented at the upstream of the asset 2. Regular maintenance of screen to avoid piling up of rags in the outfall pipe 3. Regular cleaning of the inlet channel and storage tank to prevent accumulation of gravels and other sediments 					
SOAF Operational Intervention						
Start Date:	Jul-24	Completion Date:	TBC	Indicative future annual spill performance (less than 40 do not continue to stage 2)	22	

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:	Jul-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			Moderate		
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:	Not Required	Progressed through screening?	Not Required	Stage 2c water quality assessment Score:	Not required

SOAF STAGE 3 - STEP 1>3						
Options assessed	-		Traditional Storage	-	PFF Increase	-
Equivalent storage volume required	-	Rainscape Cost		-	CBR	-
Bespoke future trigger agreement	-	Traditional Storage		-	CBR	-
		Other		-	CBR	-
Key Constraints						
Future Active Management Proposal						

Conclusion and Future Spill Reduction Proposals					
Summary	<p><i>Padeswood Storm Tank CSO 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.</i></p> <p><i>With a large programme of assets requiring improvement priority will be given to CSOs having the greatest impact in the most sensitive receiving waters.</i></p> <p><i>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.</i></p> <p><i>This approach has formed the basis of DCWW's portfolio investment plan for Storm Overflows.</i></p> <p><i>Padeswood Storm Tank CSO 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.</i></p>				
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	01/07/2024	Stage 1 - OC		Christian Phillips Adams	christian.phillipsadams@dwrcymru.com	Email
Regulator Liaison Date	Click here to enter a date					
CSO Classification						
Satisfactory	Y	Unsatisfactory	N	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?	UTC	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?	UTC		
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		