

		NETWORK RAIL Underwater Examination Report										
ELR:	SWM2	Contract Mileage: 233 m 1023 yds 46.5 ch						Struct Ref:		233 46.5		
Examination Type: Underwater		NR ID: 20024778				Exam Date: 19/04/2022						
Area: South Wales		BRS: 602				OS Ref: SN40900560						
Structure Name: R. Gwendraeth Fawr				Type: BU		Exam ID:		14464241				
Route: Gloucester Yard Jct to Johnston						Complete Exam: Yes						
Section A: To Be Completed By The Examining Organisation												
HIDDEN PARTS NOT EXAMINED (EXCLUDING FOUNDATIONS)		Part				Reason						
ITEM	DESCRIPTION	LOCATION	Est. Cost £k +/- 20%	Priority Within	Quantity	Severity	Probability	Risk Score	Works Category			
1	Infill scour hole and provide rock armour or reno mattress scour protection	Upstream end	5000	6 mths	80 m3	3	3	M9	Scour			
2	Reinstate missing invert	Downstream high mileage	1000	6 mths	6 m2	3	3	M9	Scour			
3	Wingwall movement : cracks to be monitored with mortar datal tabs local displacement of blocks and extents of bulging to be recorded	US HM WWL, DS LM WWL	2000	6 mths	1 unit	2	3	S6	Hand Pointing			
History of Live Significant Defects												
No	Description	Location	Exam Date	Access Gained	Exam Type	Rec Raised	Risk Score	Access Req'd	Deterioration	Repaired	Flagged For Closure	Engineer Comments
3	Deteriorating Paintwork.	Bottom Flanges of Internal Main Girders.	09/10/13	N	U.WA T	NV	4	N	NV	N	N	Location Beyond Scop of Underwater Examination.
3	Deteriorating Paintwork.	Bottom Flanges of Internal Main Girders.	03/07/19	N	U.WA T	N	4	Y	Cannot Determine	N	N	Outside scope of UW exam. Not commented on.
3	Deteriorating Paintwork.	Bottom Flanges of Internal Main Girders.	19/04/22	N	U.WA T	N	4	Y	Cannot Determine	N	N	Outside scope of UW exam. Not commented on.
8	Loss of section to unprotected bottom flange 2mm up to 5mm	Steel girders in soffit of 5 internal units	03/07/19	N	U.WA T	N	6	Y	Cannot Determine	N	N	Outside scope of UW exam. Not commented on.
8	Loss of section to unprotected bottom flange 2mm up to 5mm	Steel girders in soffit of 5 internal units	03/07/19	N	U.WA T	N	6	Y	Cannot Determine	N	N	Outside scope of UW exam. Not commented on.
9	No safety fencing to top of wingwalls	All four wingwalls	03/07/19	Y	U.WA	N	10	Y	Cannot determine	N	N	Outside scope of UW exam. Not commented on.
9	No safety fencing to top of wingwalls	All four wingwalls	19/04/22	Y	U.WA	N	10	Y	Cannot determine	N	N	Outside scope of UW exam. Not commented on.

10	Scour hole	Upstream	19/04/22	Y	UW	Y	9	N	Baseline	N	N	
11	Missing blocks to invert	Downstream end	19/04/22	Y	UW	Y	9	N	Baseline	N	N	
12	Bulging	US HM WWL, DS LM WWL	19/04/22	Y	UW	Y	6	N	Baseline	N	N	

Engineers Notes**Comments**

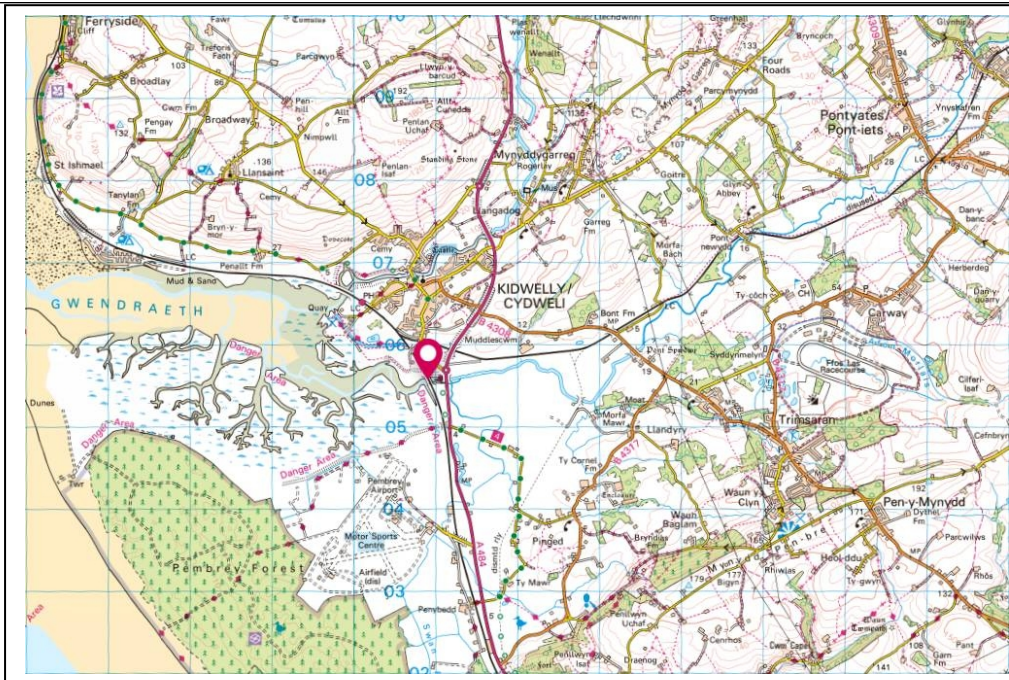
- (1) The live defects and the work items (blank) have been reproduced from the last UW exam report of with only the entries recorded for previous UW exams tabulated and updated.
 - (2) The last UW exam report of 2019 as downloaded from CARRS only contains the first four pages that is up to and including the defects table preventing comparison with its content. Thus the comparisons – where possible have been made with the 2016 UW exam report.
 - (3) According to the 2016 UW exam report extensive masonry repairs were carried out to the substructures between then and 2013. Since then a number of generic masonry defects i.e open joints presumably from water action, small fractures and spalls have become apparent which are mostly of minor importance with no further deterioration since the last UW exam. Two areas of bulging were identified (US HM WWL, DS LM WWL) but these appeared stable. The current visual exam of 28/12/22 does not consider areas below the deck.
 - (4) No PH presented as such for the upstream scour hole but from Appendix A it's beyond the rick armour which protects the invert beneath the bridge. PH4 would appear to indicate where matting or mesh to the river bed has been torn away.
 - (5) The coarser gravel particles found in the 2016 sieve analysis are no longer present suggesting a flood or tidal event in the period since.
 - (6) No significant changes in the river bed profile (+/-0.3m) to the invert beneath the bridge or radials since the last UW exam although there was deposition between 2016 and 2019. As noted by the examiner significant areas of lowering at the 30m upstream and downstream of the bridge: bed transport has taken place without more knowledge of the tides it's unclear whether this is from tidal ingress and retreat or flooding. The confluence of two rivers upstream with channel constriction are noted in the introductory description.
 - (7) The repairs that have taken place and the coring – probably to establish the formation level for the abutments – suggest a history of problems. From CARRS work item 1029277 which was completed 16/08/2010 the bridge had a scour score of 16.3 *'Install scour protection works to invert along the length of the abutments and wingwalls and extend behind wing walls to protect bank erosion. 40m2 Install new sheet piled wing walls, repair the bridge deck and abutments and install scour protection 12sqm Repoint open joints to all parts of the bridge 40sqm. Replace introduced strengthening timbers and anchor to walls 3no'*.
 - (8) Good quality, comprehensive but concise report.
- Recommendations**
- (1) The score protection has failed and needs to be reinstated and the scour hole also needs to be infilled and protected with reno mattresses or rock armour. In the interim period until this can be organised maximum 6 monthly additional exams are to be carried out. I have created new work item(s) and live defects to this effect. The repairs should take in tying new wire mesh back to sound and making good the missing stone to the reno mattresses – see PH6.
 - (2) There is history of wingwall movement / instability. It seems that ground anchors were preferred to fronting the wingwalls with sheet piles but movement is still present. The additional exams proposed should cover monitoring of wingwall movement both the bulging and cracks present and any further cracks or new lateral movement.

Signed:

Name: Robert Russell**Date: 08/08/2023**

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Previous Examination Date:		03/07/2019		Penultimate Examination Date:		25/05/2016	
Area:		South Wales		OS Ref:		SN 4090 0560	
Structure Name:		R Gwendraeth Fawr		Group:		BU	
Route:		Gloucester Yard Jct to Johnston				Complete Examination:	
						Yes	
Examiners Name:		A Bennett (STE 07)		Examiners Signature:			
Section A; To be completed by the examining organisation							
Hidden parts not examined (excluding foundations)		Part		Reason			
		None					
Parameter		Yes/No		Reason			
Changes in bed profile		Yes		See page 7			
Changes in bed material		No		No change from previous report			
Evidence of scour		Yes		Upstream end 10m wide x 8m long x 1m deep.			
Change of construction		No		No change from previous report			
Works since last exam		No		No works since previous report			
Elevation Photograph							
							

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Area:		South Wales		OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston			Group:	BU	Exam ID:	14464241



OS Map – Location of structure

Structure Description

Single span steel & concrete deck on bonded, coursed, dressed masonry stone abutments and straight masonry wing walls. Extensive repairs have been carried out since the last inspection.

Two river courses converge immediately upstream of the structure which narrows the natural channel and acts as a constriction during times of peak flow.

The river is tidal and the structure was examined at low water slack.

Access Route

Take A484 to Llanelli from Carmarthen. @ Kidwelly roundabout straight over Immediately on RHS metal gates onto waste ground adjacent to road bridge & sluice-gate structure. Park up. Cross back over bridge and over fence into field. Walk along dyke 300m to structure.

Contact Details and Access Restrictions

The river is tidal and the structure was examined at low water slack.

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Name of Part	Good/Fair/Poor/NA	Remarks
Weather	-	Dry
Watercourse	-	River Gwendraeth
Salt or Fresh	-	Salt
Flow/Tidal	-	Tidal and moderate
Bed material	-	Silt and gravel
Invert	F	Articulated concrete block
Bed pitching	N/A	
Aprons	N/A	
Piling	N/A	
Banking	F	Stable
Foundations	N/E	No Information supplied
Sidewalls	N/A	
Abutments	F	Stone
Wing/Retaining Walls	F	Stone
Tow path	N/A	
Piers	N/A	
Fenders	N/A	
Headwalls	N/A	
Pointing	F	Isolated loss
Painting	P	Paint loss to girders
Vegetation	No	None
Number plates	No	None found
Navigation	N/A	
Datum used	10m	Underside of deck
Inaccessible parts	No	None
Mortar tabs or Avongard	N/A	
Monitoring or Plumb points	N/A	
Change to high water mark	N/A	
Works done with exam	No	None
Trestle/Crossheads	N/A	
Bedstones/Cills	N/A	
Soffit/Floorplate	N/E	Beyond scope of this underwater
Rail bearers	N/A	
Cross girders	N/A	
Main girders	N/A	
Waterproofing	N/E	Corrosion to steel girders
Observed under live load	No	No trains were observed passing over the structure

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CONDITION:

The examination of this structure was undertaken during daylight hours and in line with GW Marine Systems Ltd. Detailed Underwater Examination procedures. The examination includes all elements of the structure from 2m above normal water level, extending down to the river bed. The examination excludes any part of the structure beyond 2m above normal water level & buried foundation elements.

All photographs taken on day of examination.

Personnel: Examiner: A Bennett

Assistant: S Wheatley

Abutments**Low Mileage**

Overall fair condition. (Photo 15)

No significant defects to note.

No scour or undermining detected at the invert interface.

High Mileage

Abutment in fair overall condition (Photo 16)

1m² of sporadic open joints, average 20mm and maximum 30mm deep. (Photo 17) [N.F.D.]

Core hole partly filled.

No significant defects to note.

No scour or undermining detected at the invert interface.

Wingwalls**Upside Low Mileage**

Overall fair condition with 6.0m² of marine growth. (Photo 8)

0.8m² of sporadic spalling at low level, average 20mm and maximum 50mm deep. (Photo 9) [N.F.D.]

0.8m from the upstream end, there is a 0.4m long x 3mm wide through block fracture. (Photo 10) [N.F.D.]

Upside High Mileage

Overall fair condition with 3.0m² of marine growth. (Photo 11)

0.8m² of low level sporadic spalling, average 20mm and maximum 50mm deep. (Photo 12) [N.F.D.]

0.8m² of sporadic open joints, average 20mm and maximum 40mm deep. (Photo 13) [N.F.D.]

@3m from end of wall & 1m from top, there is 1.0m² of bulging up to 60mm. (Photo 14) [N.F.D.]

Core holes partly filled.

Downside Low Mileage

General view of wingwall with 8.0m² of marine growth (Photo 19)

1m² of sporadic joint loss, average 30mm and maximum 70mm deep (Photo 20) [N.F.D.]

@7m from downside there is a bulging 2.0m length x 0.5m wide x 40mm displacement. (Photo 21) [N.F.D.]

Downside High Mileage

General view of wingwall with 1.0m² of marine growth (Photo 22)

1m from the downstream end and 0.4m from the top, there is a void, 0.3m long x 0.1m high x 0.1m deep. (Photo 23) [N.F.D.]

Training Wall**Upside Low Mileage – Gabion Baskets**

Overall fair condition. (Photo 3)

Upside High Mileage – Gabion Baskets

Overall fair condition. (Photo 5)

Deck

Beyond scope of this underwater examination. (Photo 18)

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CONDITION: (Cont.)**River bed, invert and embankments**

Embankments sustain long established growth and appeared stable. (Photo's 2 & 22).

Watercourse

To the upstream end there is rock armour in the river bed fronting the concrete apron. (Photo 7)

There is a scour hole to the upstream end 10m wide x 8m long x 1m deep.

Invert

Typical view of gabion baskets in river bed fronting gabion training walls. (Photo 4)

Gabion baskets to upside high mileage have 2m² of missing mesh with stone fill starting to fall out. (Photo 6)

Mid way along the high mileage abutment and 1.5m the abutment, there are 2 missing blocks.

Concrete block invert which extends to the ends of the wingwalls in fair condition. (Photo 24)

To the downstream end adjacent to the downside high mileage wingwall, there is an area missing 2m long x 2m wide. (Photo 25)

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Previously recorded significant (open) defects:

Defects 3, 8 & 9 are all beyond scope of this underwater examination.

Defect Number: 10

Defect Description: PNE – No safe access due to deep water and estuary silt – deck and abutments

Dimensions:

Urgent: No

Status: Accessed

See Existing (open) Significant Defect Photos: 10, 15 & 18

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Conclusion and recommendations:

The structure was found to be in overall fair condition.

Recommendations include:

- Repair areas of missing invert.
- Monitor at future examinations areas of noted bulging to wingwalls.
- Install rock armour to scour hole.

Cross Sections and Radials:

All cross section and radial soundings were taken for the structure.

Evidence of Scour:

There is a scour hole to the upstream end 10m wide x 8m long x 1m deep.

Changes in Bed Profile:

The following measurements are as compared against previous profile data.

30m Upstream cross section – HM Bank +2m = 0.6m of lowering HM +3m = 0.5m of lowering.

30m Downstream cross section – LM +4m = 0.5m of lowering, +5m = 0.7m of lowering

Signatures if underwater exam was completed by sub-contractor

	Print Name	Signature	Date
Prepared by:	A Marshall BEng		15/06/2022
Checked by:	A Bennett (STE 07)		18/06/2022



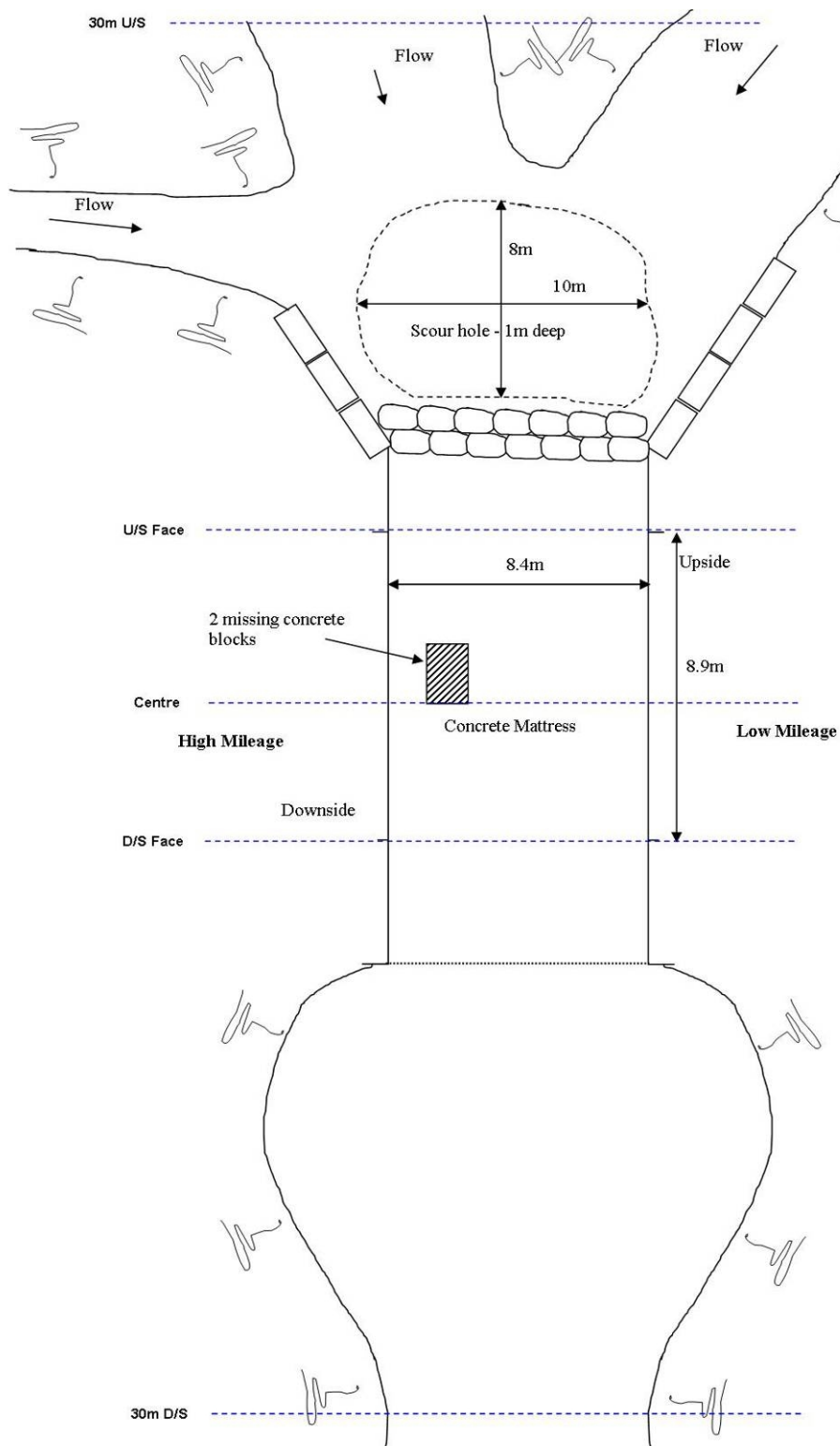
NETWORK RAIL

Underwater Examination Report



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Appendix A – Sketch plan





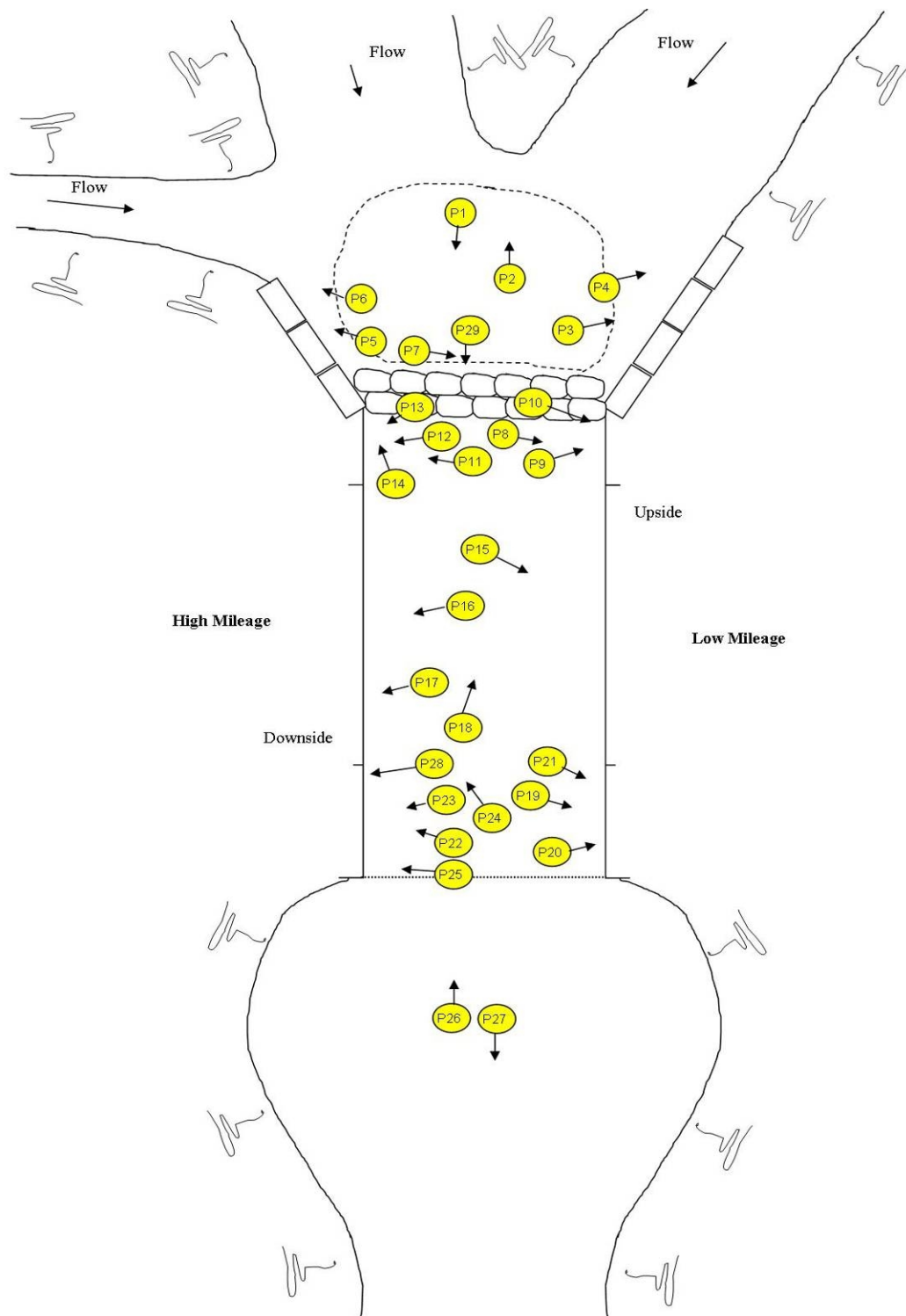
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Appendix B – Photographs





NETWORK RAIL

Underwater Examination Report



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Photo 1 Upside / upstream elevation



Photo 2 Looking upstream

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Photo 3 Upside low mileage gabion training wall



Photo 4 Gabion bed basket fronting upside low mileage training wall

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Photo 5 Upside high mileage training wall



Photo 6 Missing mesh to bed gabion baskets upside high mileage

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Photo 7 Rock armour to upstream end of invert



Photo 8 Upside low mileage wingwall

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Photo 9 Area of spalling



Photo 10 Through block fracture



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Photo 11 Upside high mileage wingwall

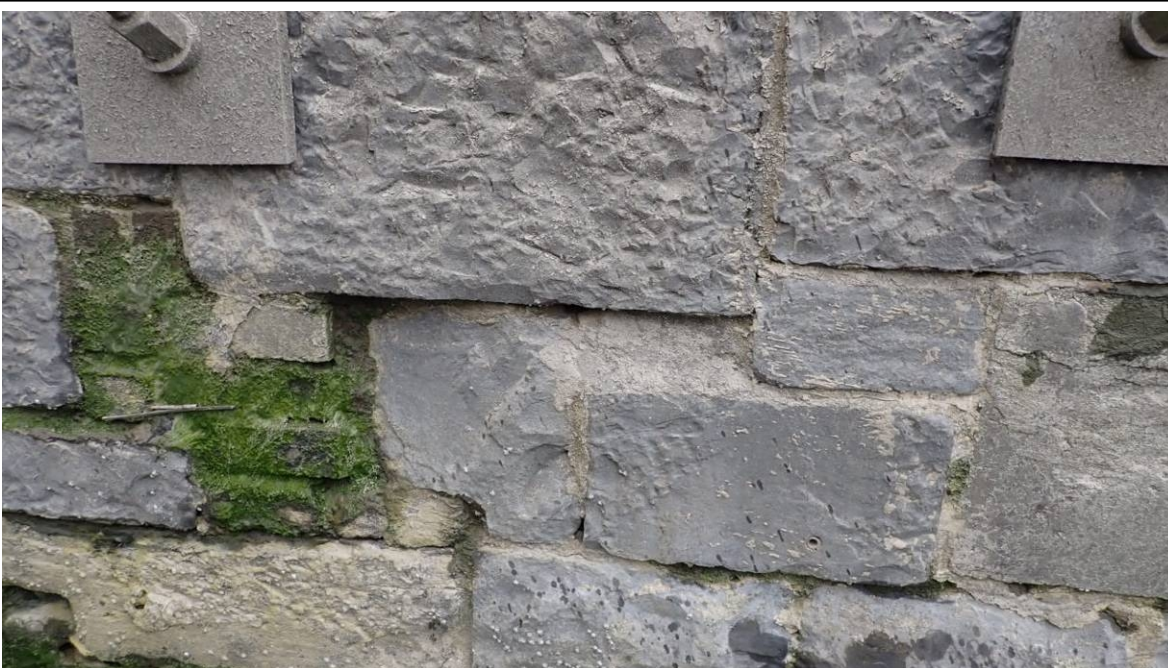


Photo 12 Spalling at low level



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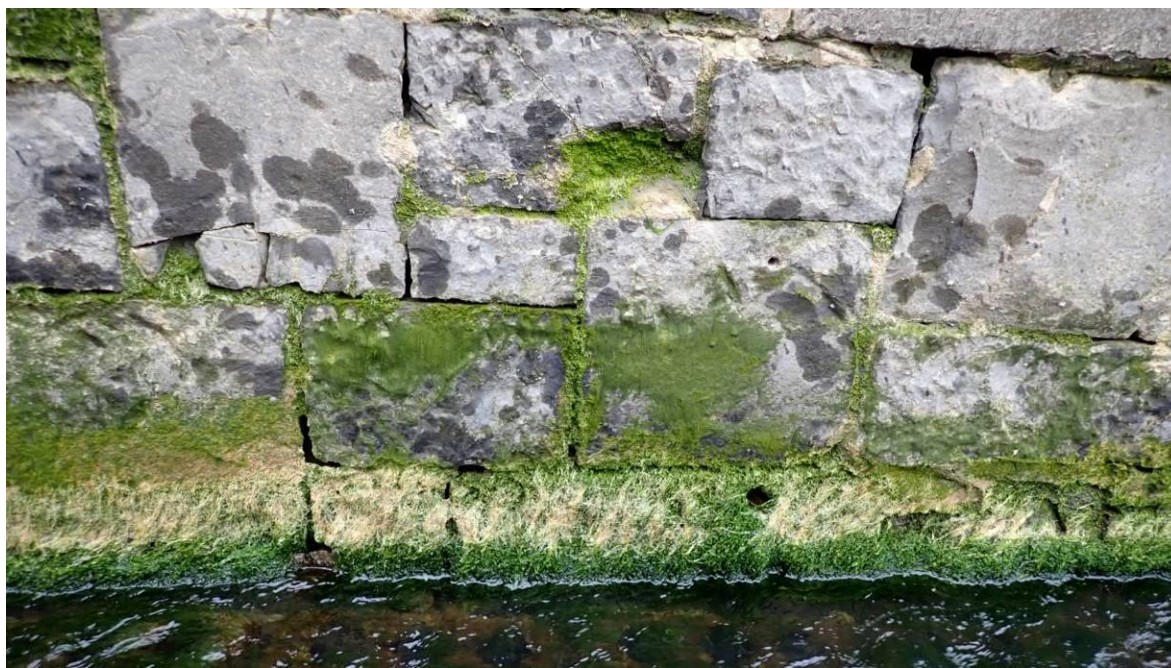


Photo 13 Open joints

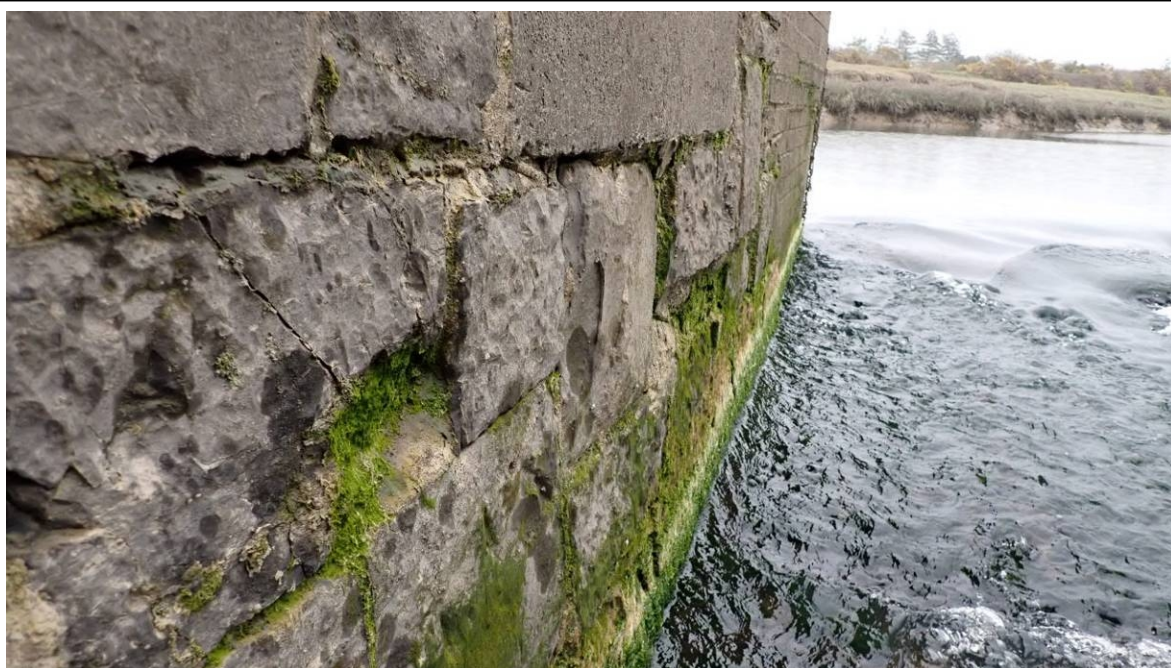


Photo 14 Area of bulging

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Photo 15 Low mileage abutment



Photo 16 High Mileage abutment

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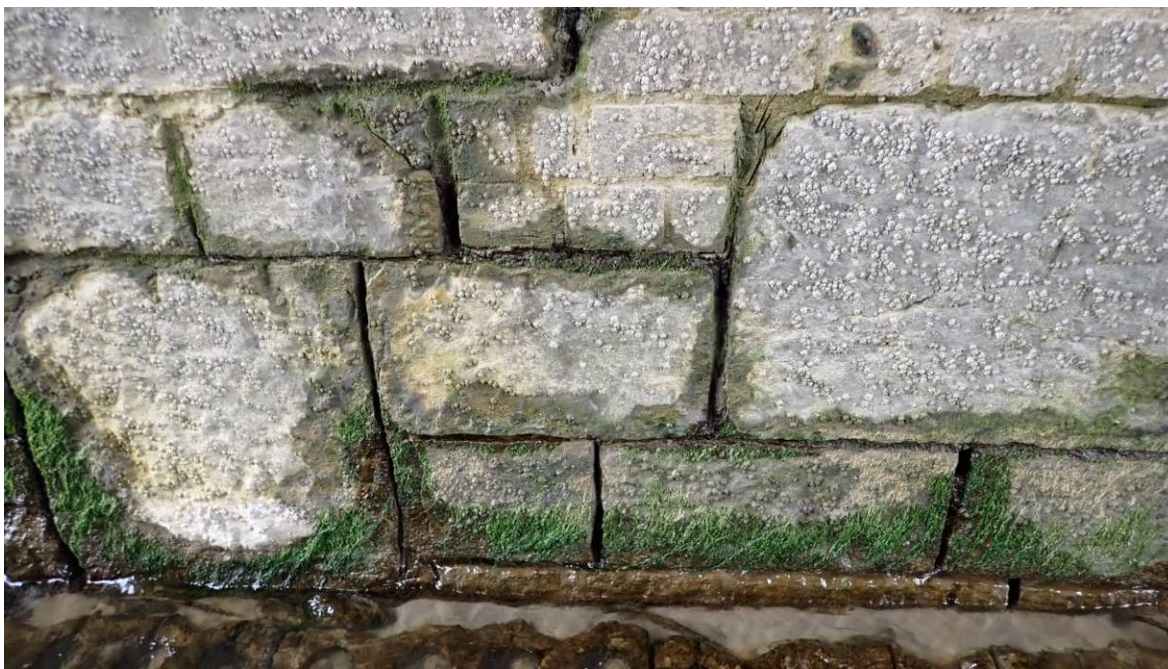


Photo 17 Open joints



Photo 18 View of deck



NETWORK RAIL

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Photo 19 Downside low mileage wingwall



Photo 20 Open joints

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Photo 21 Bulge to wall



Photo 22 Downside high mileage wingwall



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Photo 23 Void to downstream end



Photo 24 Typical view of invert

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Photo 25 Area of missing invert –downstream high mileage



Photo 26 Downside / downstream elevation

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Photo 27 Looking downstream

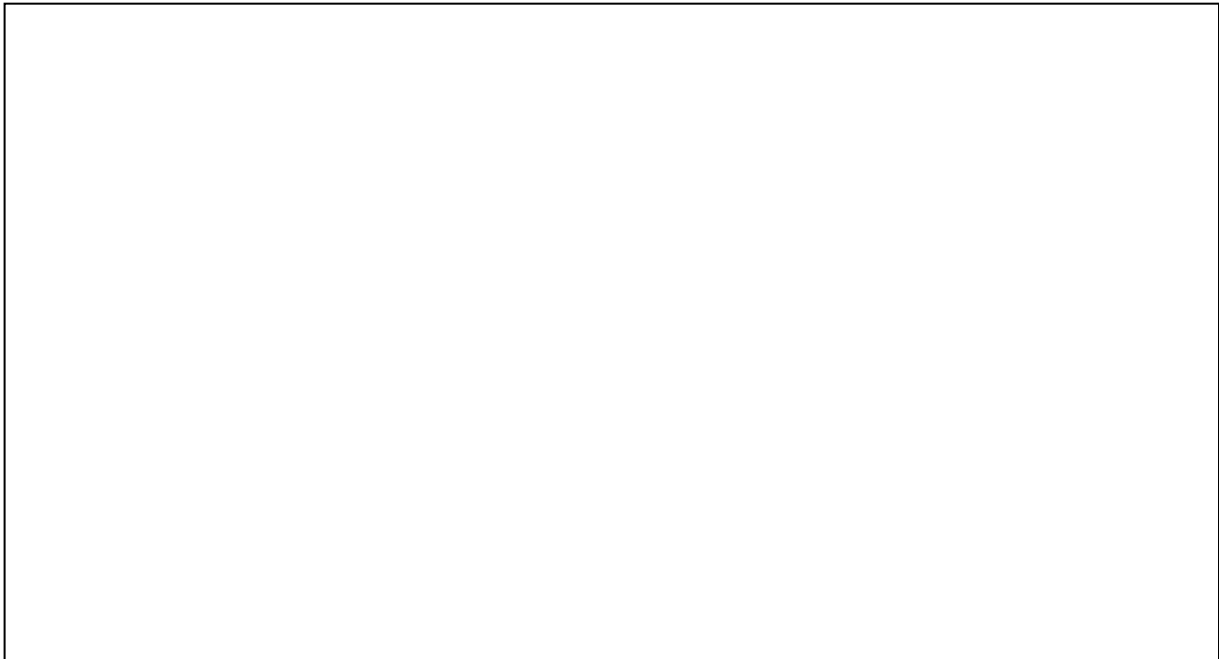


Photo 28 View of flood board

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Photo 29 Datum





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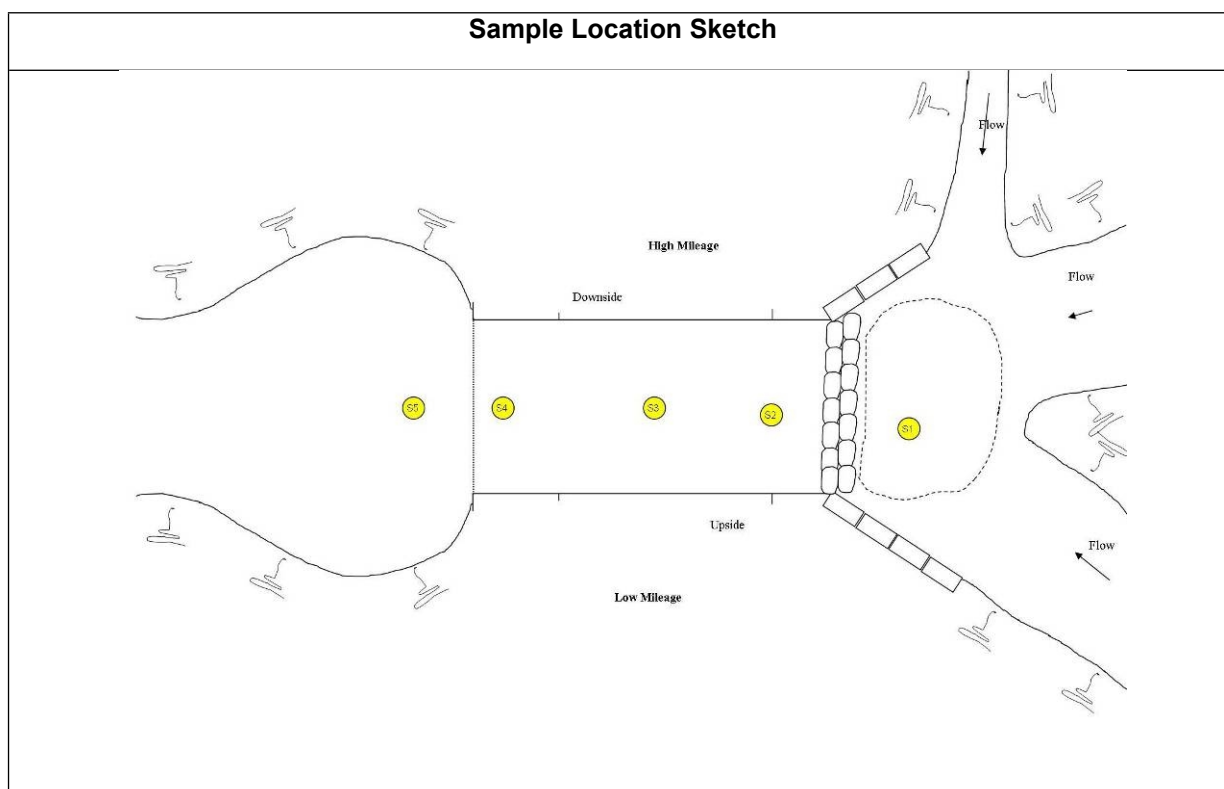
Appendix C – Riverbed Samples

Description	Clay	Silt	Sand	Gravel	Gravel/Stone
Particle Size (mm)	<0.002	0.002 – 0.06	0.6 – 2.0	2.0 – 20	>20
Sample Ref. No					
1		X		X	
2		X		X	
3		X		X	
4		X		X	
5		X		X	

SAMPLE LOCATION TABLE

Sample 1	3m from upstream face of structure
Sample 2	In line with upstream abutments
Sample 3	Centre line of structure
Sample 5	In line with downstream abutment
Sample 5	3m from downstream face of structure

Sample Location Sketch



		NETWORK RAIL Underwater Examination Report					
ELR: SWM2		Contract Mileage: 233 m 1023 yds 46.5 ch				Struct Ref: 233 46.5	
Structure Name: R. Gwendraeth Fawr		Examination Date: 19/04/2022					
Area: South Wales		OS Ref: SN 4090 0560		No of Spans: 1			
Route: Gloucester South Yard to Johnston		Group: BU		Exam ID: 14464241			

Appendix D – Diving Operational Records

		NETWORK RAIL Underwater Examination Report					
ELR: SWM2		Contract Mileage: 233 m 1023 yds 46.5 ch				Struct Ref: 233 46.5	
Structure Name: R. Gwendraeth Fawr		Examination Date: 19/04/2022					
Area: South Wales		OS Ref: SN 4090 0560		No of Spans: 1			
Route: Gloucester South Yard to Johnston		Group: BU		Exam ID: 14464241			

Appendix E – Engineers Recommendations

ITEM	DESCRIPTION	LOCATION	PRIORITY	COMMENTS
1	Repair areas of missing invert	Invert	6 months	
2	Monitor bulging	Wingwalls	1 year	
3	Install rock armour	Upstream end	6 months	
Signed: 		Engineer : G Williams (CRE)		Date: 18/06/2022

		NETWORK RAIL Underwater Examination Report				
ELR: SWM2		Contract Mileage: 233 m 1023 yds 46.5 ch			Struct Ref: 233 46.5	
Structure Name: R. Gwendraeth Fawr		Examination Date: 19/04/2022				
Area: South Wales		OS Ref: SN 4090 0560		No of Spans: 1		
Route: Gloucester South Yard to Johnston		Group: BU		Exam ID: 14464241		

Appendix F – Riverbed Soundings

TABULATED CROSS-SECTION LEVELS

General Data for Structure	
Datum Level (arbitrary):	10 m
Datum Position:	Crown - upstream
Datum to Water Level:	4 m
Previous Datum to Water Level:	4 m
Penultimate Datum to Water Level:	4.5 m
Datum to Newlyn	5.25 m

Dist. Across Watercourse (m)	30m Upstream of Structure Bed Profile Levels (m)			Water Level (m)
	19/04/2022	04/06/2019	25/05/2016	
LM Bank	7.5	No previous Data	No previous Data	6
1	5.9			6
2	5.7			6
3	5.8			6
4	5.9			6
Bank	7.0			6
Bank	7.0			6
Bank	7.0			6
8	5.9	5.9	5.4	6
9	5.7	5.8	4.4	6
10	5.2	5.7	4.4	6
11	5.2	5.8	4.4	6
12	5.6	5.8	4.4	6
13	5.9	5.9	5.2	6
HM Bank	7.0			6

Dist. Across Watercourse (m)	30m Downstream of Structure Bed Profile Levels (m)			Water Level (m)
	19/04/2022	04/06/2019	25/05/2016	
LM	6.7	6.7	No data	6
1	5.9	5.9		6
2	5.5	5.5		6
3	5.0	5.3		6
4	4.5	5.0		6
5	4.0	4.7		6
6	4.0	4.4		6
7	4.0	4.4		6
8	4.0	4.3		6
9	4.0	4.2		6
10	4.0	4.0		6
11	4.0	4.0		6
12	4.0	4.0		6
13	4.0	4.0		6
14	4.0	4.2		6
15	4.0	4.4		6
16	4.4	4.8		6
17	4.8	5.2		6
18	5.4	5.6		6
19	5.9	5.9		6
HM	6.8	6.8		6



NETWORK RAIL

Underwater Examination Report



ELR:	SWM2	Contract Mileage:	233 m 1023 yds 46.5 ch	Struct Ref:	233 46.5
Structure Name:	R. Gwendraeth Fawr			Examination Date:	19/04/2022
Area:	South Wales	OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston	Group:	BU	Exam ID:	14464241

TABULATED CROSS-SECTION LEVELS

General Data for Structure		
Datum Level (arbitrary):	10	m
Datum Position:	Crown - upstream	
Datum to Water Level:	4	m
Previous Datum to Water Level:	4	m
Penultimate Datum to Water Level:	4.5	m
Datum to Newlyn	5.25	m

Dist. Across Watercourse (m)	Upstream Face of Structure Bed Profile Levels (m)			Water Level (m)
	19/04/2022	04/06/2019	25/05/2016	
LM	6.1	5.9	5.6	6
1	5.8	5.8	5.4	6
2	5.7	5.7	5.1	6
3	5.7	5.7	4.9	6
4	5.7	5.7	4.6	6
5	5.7	5.7	4.4	6
6	5.7	5.8	4.7	6
7	5.7	5.8	5.1	6
8	5.8	5.9	5.4	6
HM	6.1	5.9	5.6	6

Dist. Across Watercourse (m)	Centreline of Structure Bed Profile Levels (m)			Water Level (m)
	19/04/2022	04/06/2019	25/05/2016	
LM	6.1	5.9	5.6	6
1	5.9	5.8	5.3	6
2	5.8	5.8	5.2	6
3	5.7	5.7	5.2	6
4	5.7	5.6	5.2	6
5	5.7	5.6	5.2	6
6	5.7	5.7	5.2	6
7	5.6	5.8	5.2	6
8	5.7	5.8	5.3	6
HM	5.9	5.9	5.6	6



NETWORK RAIL

Underwater Examination Report



ELR:	SWM2	Contract Mileage:	233 m 1023 yds 46.5 ch	Struct Ref:	233 46.5
Structure Name:	R. Gwendraeth Fawr			Examination Date:	19/04/2022
Area:	South Wales	OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston	Group:	BU	Exam ID:	14464241

TABULATED CROSS-SECTION LEVELS

General Data for Structure		
Datum Level (arbitrary):	10	m
Datum Position:	Crown - upstream	
Datum to Water Level:	4	m
Previous Datum to Water Level:	4	m
Penultimate Datum to Water Level:	4.5	m
Penultimate Datum to Water Level:	5.25	m

Dist. Across Watercourse (m)	Downstream Face of Structure Bed Profile Levels (m)			Water Level (m)
	19/04/2022	04/06/2019	25/05/2016	
LM	5.9	5.9	5.6	6
1	5.8	5.8	5.3	6
2	5.7	5.8	5.3	6
3		5.7	5.3	
4		5.7	5.3	
5		5.8	5.3	
6		5.8	5.3	
7		5.9	5.4	
8		5.9	5.4	
HM		5.9	5.6	



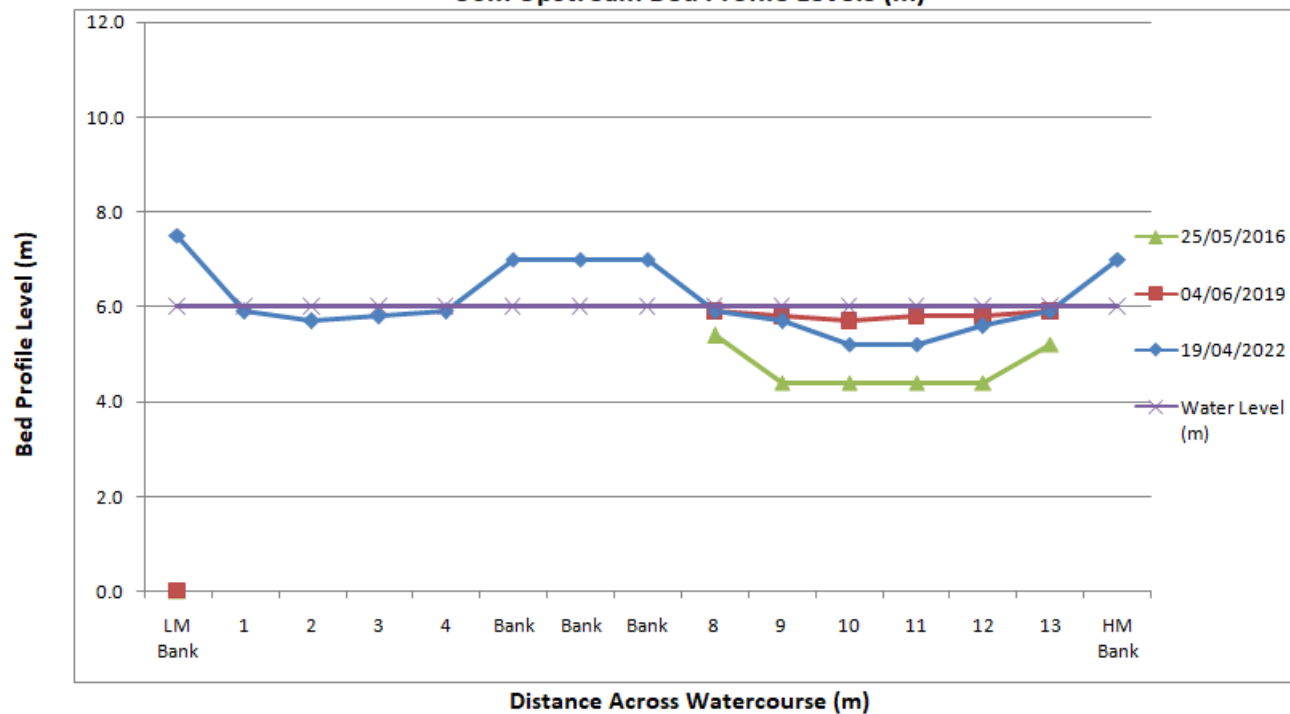
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Underwater Examination Report

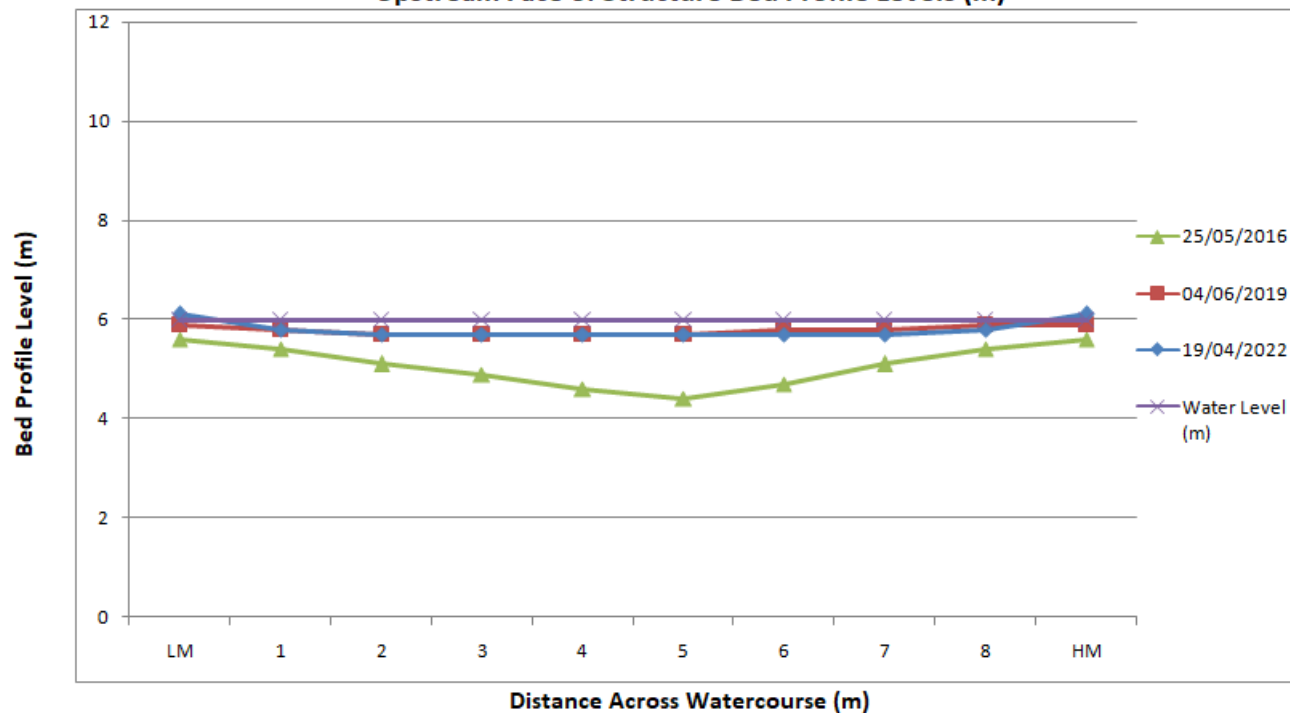


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Structure Name:	R. Gwendraeth Fawr			Examination Date:	19/04/2022
Area:	South Wales	OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston	Group:	BU	Exam ID:	14464241

30m Upstream Bed Profile Levels (m)



Upstream Face of Structure Bed Profile Levels (m)





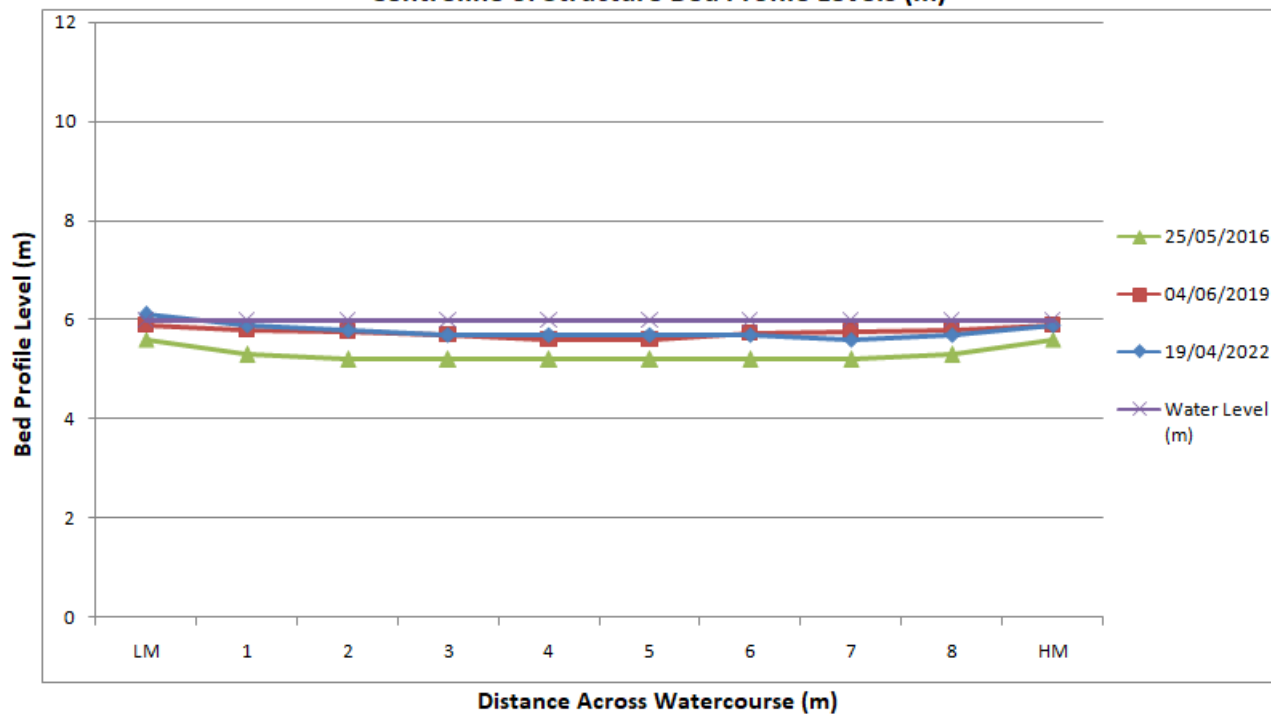
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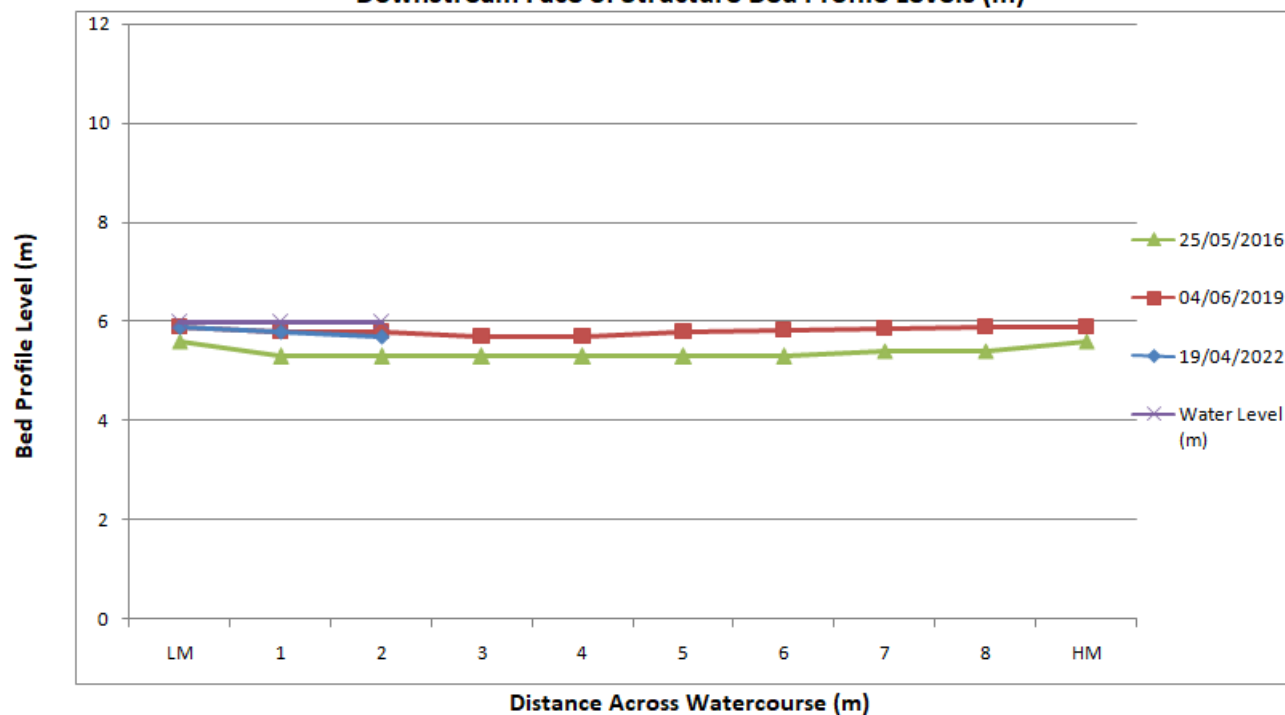


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Structure Name:		R. Gwendraeth Fawr					Examination Date:		19/04/2022		
Area:		South Wales			OS Ref:		SN 4090 0560		No of Spans:		1
Route:	Gloucester South Yard to Johnston				Group:		BU		Exam ID:		14464241

Centreline of Structure Bed Profile Levels (m)



Downstream Face of Structure Bed Profile Levels (m)





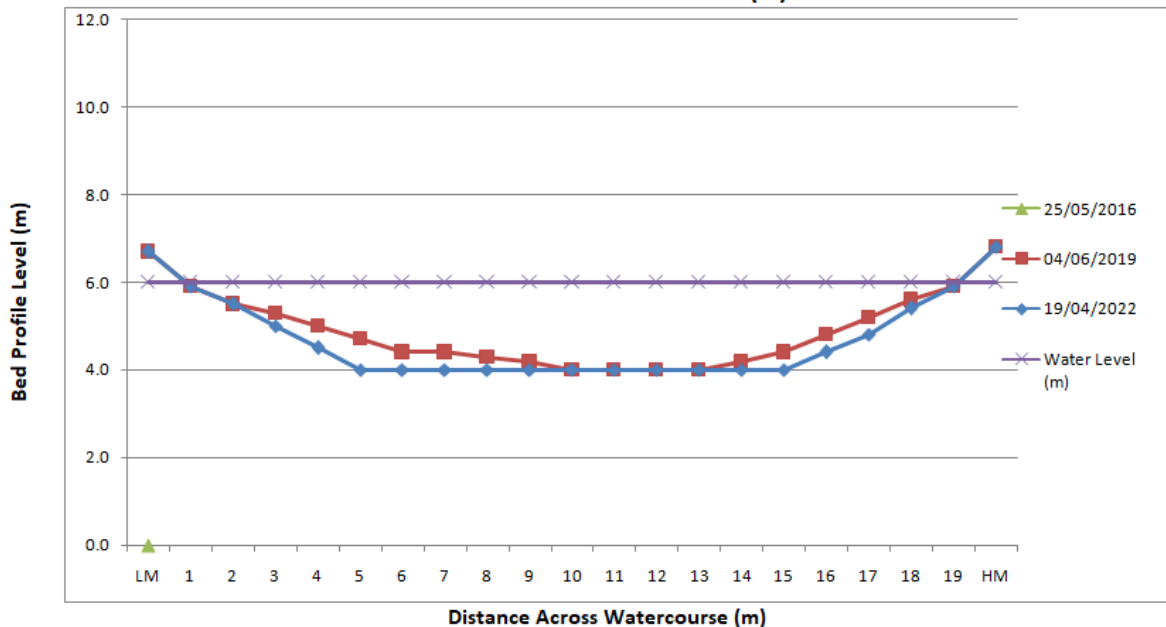
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Underwater Examination Report

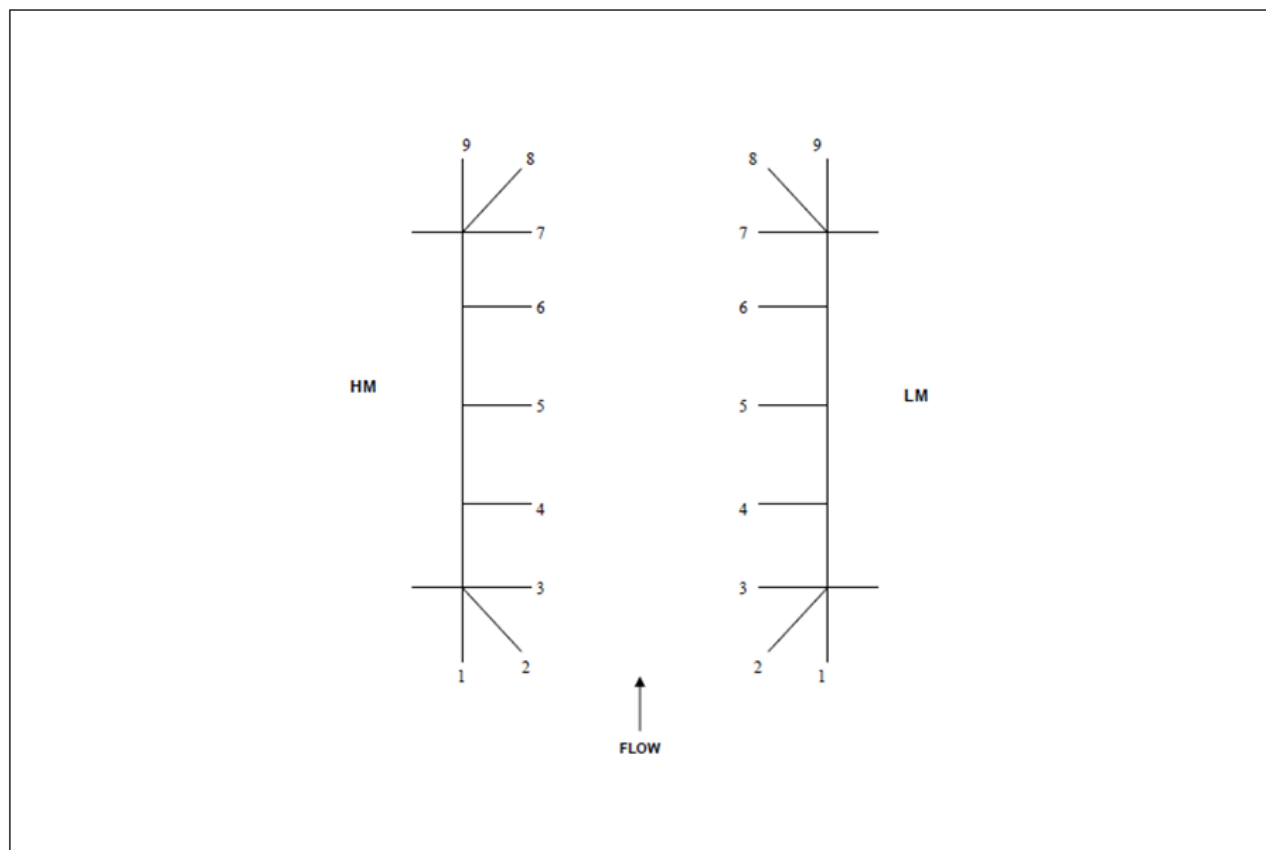


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Area:		South Wales		OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston			Group:	BU	Exam ID:	14464241

30m Downstream Bed Profile Levels (m)



Radials Sketch





NETWORK RAIL

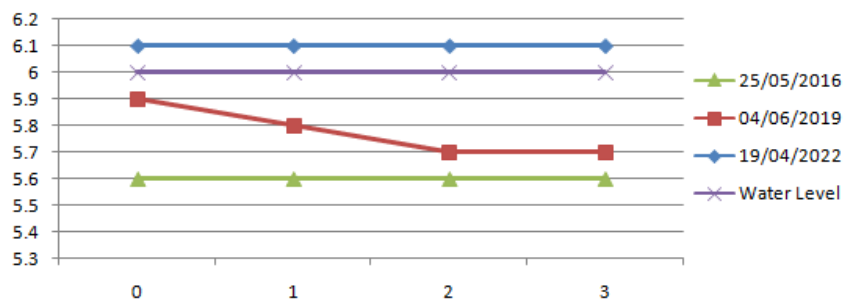
Underwater Examination Report



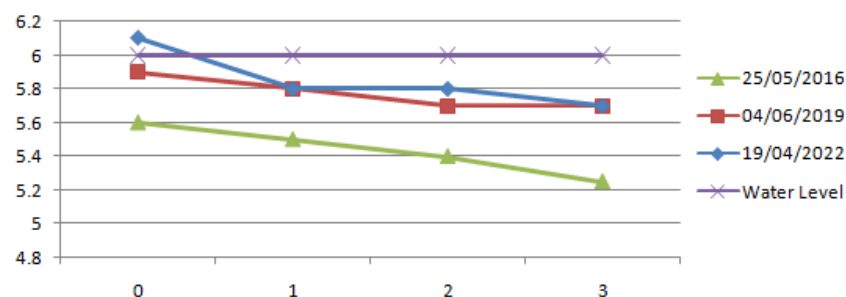
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Structure Name:		R. Gwendraeth Fawr			Examination Date:		19/04/2022
Area:		South Wales		OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston			Group:	BU	Exam ID:	14464241

Radial Soundings

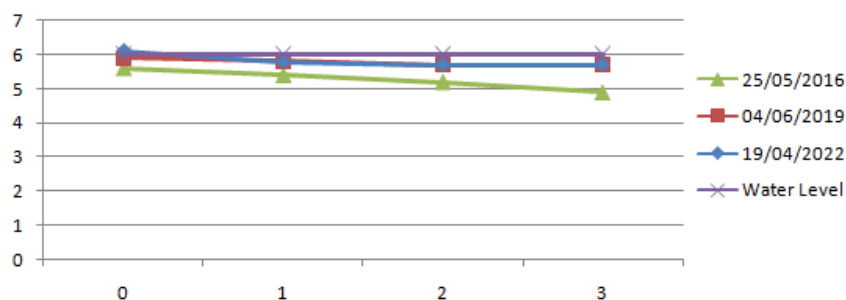
LM	Radial 1			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	6.1	5.9	5.6	6
1	6.1	5.8	5.6	6
2	6.1	5.7	5.6	6
3	6.1	5.7	5.6	6



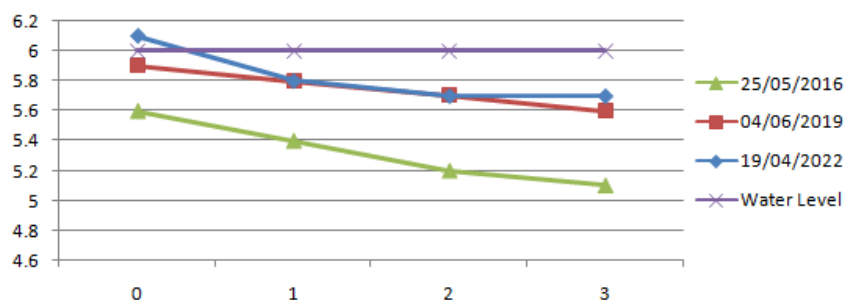
LM	Radial 2			
	Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016
0	6.1	5.9	5.6	6
1	5.8	5.8	5.5	6
2	5.8	5.7	5.4	6
3	5.7	5.7	5.25	6



LM	Radial 3			
	Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016
0	6.1	5.9	5.6	6
1	5.8	5.8	5.4	6
2	5.7	5.7	5.2	6
3	5.7	5.7	4.9	6



LM	Radial 4			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	6.1	5.9	5.6	6
1	5.8	5.8	5.4	6
2	5.7	5.7	5.2	6
3	5.7	5.6	5.1	6





NETWORK RAIL

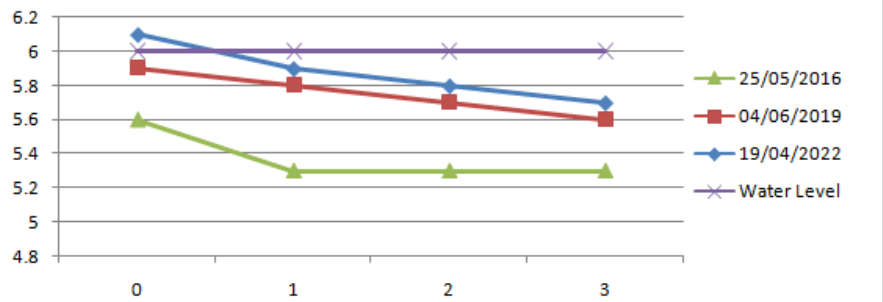
Underwater Examination Report



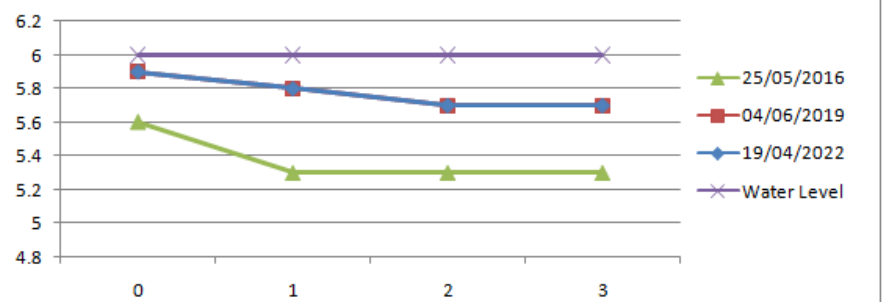
ELR: SWM2		Contract Mileage: 233 m 1023 yds 46.5 ch				Struct Ref:	233 46.5
Structure Name:		R. Gwendraeth Fawr				Examination Date:	19/04/2022
Area:		South Wales		OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston			Group:	BU	Exam ID:	14464241

Radial Soundings

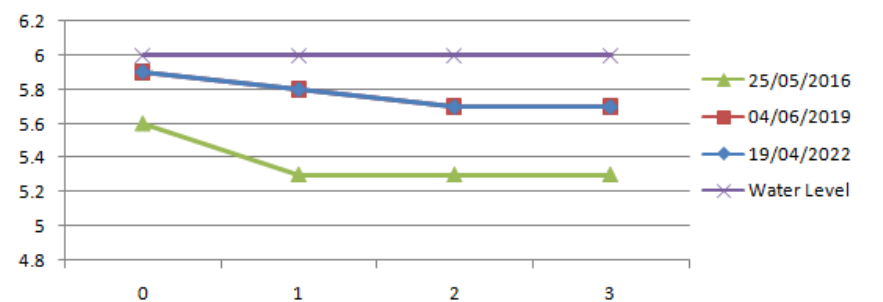
LM	Radial 5			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	6.1	5.9	5.6	6
1	5.9	5.8	5.3	6
2	5.8	5.7	5.3	6
3	5.7	5.6	5.3	6



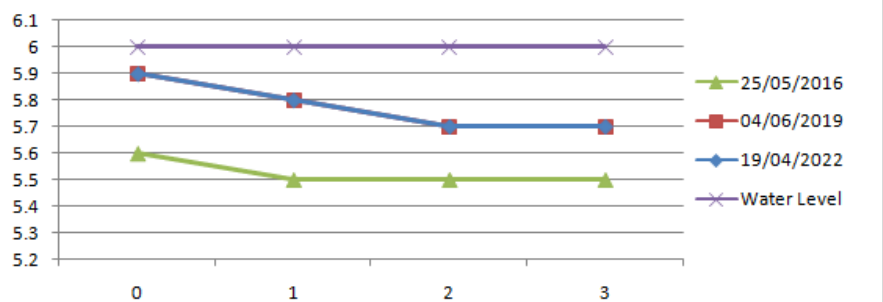
LM	Radial 6			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.9	5.9	5.6	6
1	5.8	5.8	5.3	6
2	5.7	5.7	5.3	6
3	5.7	5.7	5.3	6



LM	Radial 7			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.9	5.9	5.6	6
1	5.8	5.8	5.3	6
2	5.7	5.7	5.3	6
3	5.7	5.7	5.3	6



LM	Radial 8			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.9	5.9	5.6	6
1	5.8	5.8	5.5	6
2	5.7	5.7	5.5	6
3	5.7	5.7	5.5	6





NETWORK RAIL

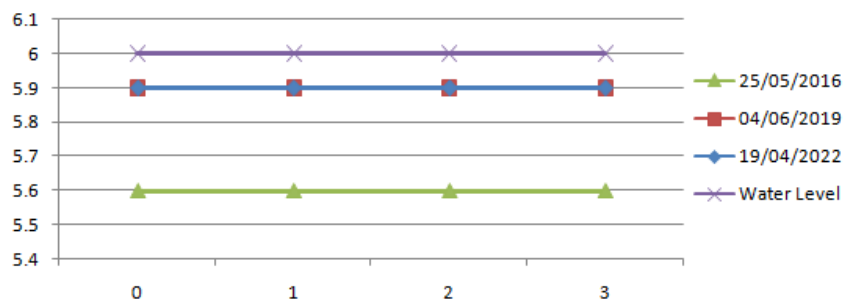
Underwater Examination Report



ELR: SWM2		Contract Mileage: 233 m 1023 yds 46.5 ch				Struct Ref:	233 46.5
Structure Name:		R. Gwendraeth Fawr			Examination Date:		19/04/2022
Area:		South Wales		OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston			Group:	BU	Exam ID:	14464241

Radial Soundings

LM	Radial 9			
	19/04/2022	04/06/2019	25/05/2016	Water Level
Distance from Structure (m)				
0	5.9	5.9	5.6	6
1	5.9	5.9	5.6	6
2	5.9	5.9	5.6	6
3	5.9	5.9	5.6	6





NETWORK RAIL

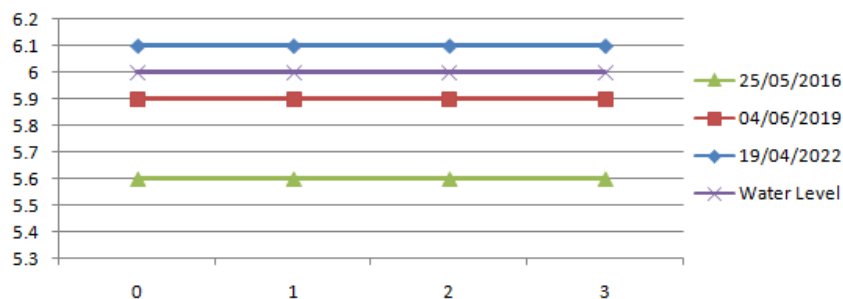
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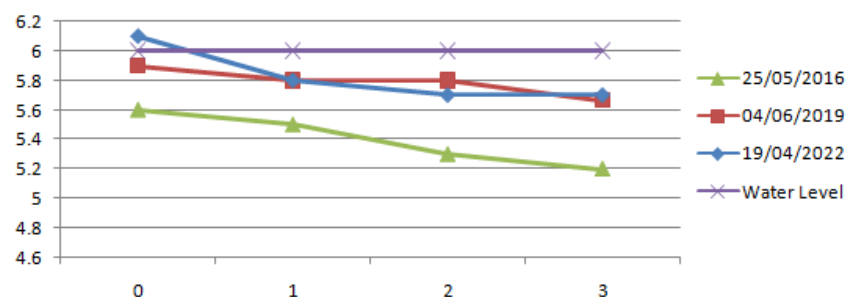
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Structure Name:	R. Gwendraeth Fawr			Examination Date:	19/04/2022
Area:	South Wales	OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston	Group:	BU	Exam ID:	14464241

Radial Soundings

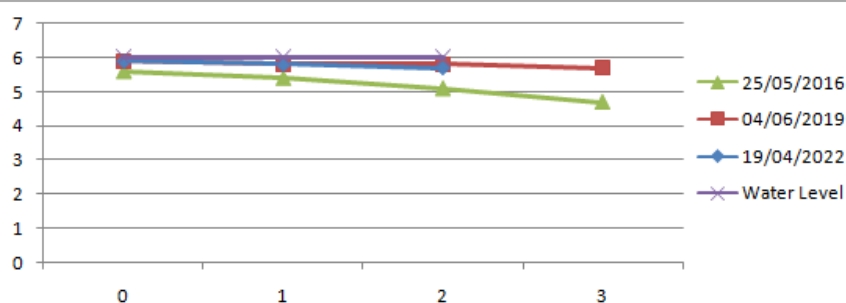
HM	Radial 1			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	6.1	5.9	5.6	6
1	6.1	5.9	5.6	6
2	6.1	5.9	5.6	6
3	6.1	5.9	5.6	6



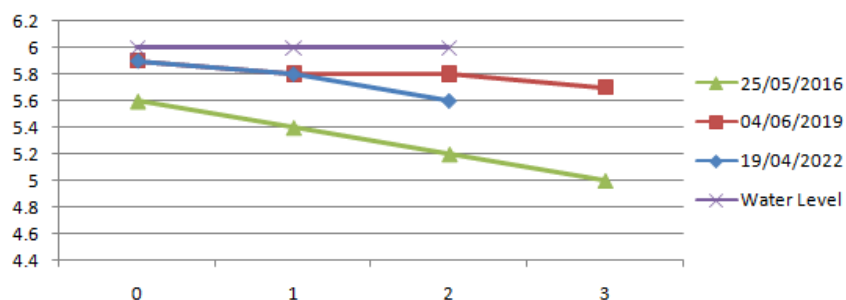
HM	Radial 2			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	6.1	5.9	5.6	6
1	5.8	5.8	5.5	6
2	5.7	5.8	5.3	6
3	5.7	5.7	5.2	6



HM	Radial 3			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.9	5.9	5.6	6
1	5.8	5.8	5.4	6
2	5.7	5.8	5.1	6
3		5.7	4.7	



HM	Radial 4			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.9	5.9	5.6	6
1	5.8	5.8	5.4	6
2	5.6	5.8	5.2	6
3		5.7	5	





NETWORK RAIL

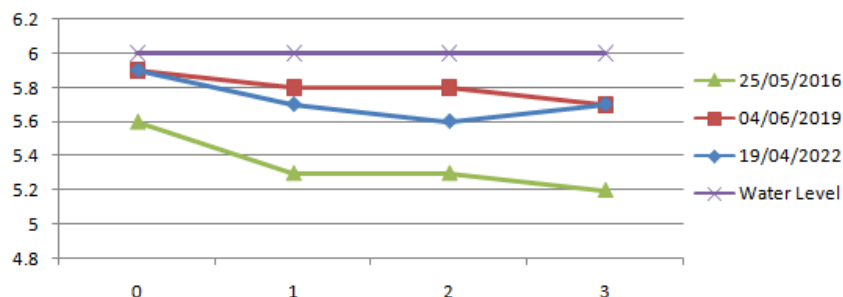
Underwater Examination Report



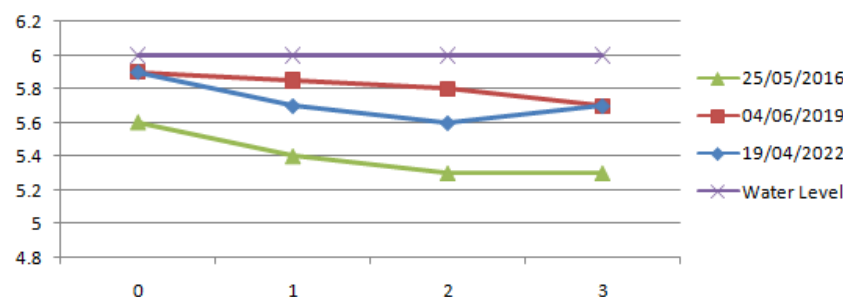
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Structure Name: R. Gwendraeth Fawr	Examination Date: 19/04/2022	
Area: South Wales	OS Ref: SN 4090 0560	No of Spans: 1
Route: Gloucester South Yard to Johnston	Group: BU	Exam ID: 14464241

Radial Soundings

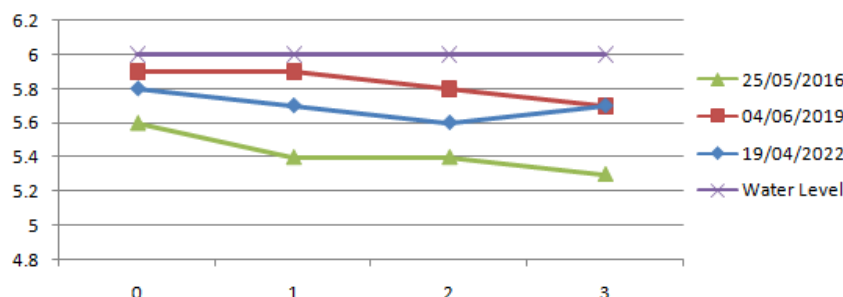
HM	Radial 5			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.9	5.9	5.6	6
1	5.7	5.8	5.3	6
2	5.6	5.8	5.3	6
3	5.7	5.7	5.2	6



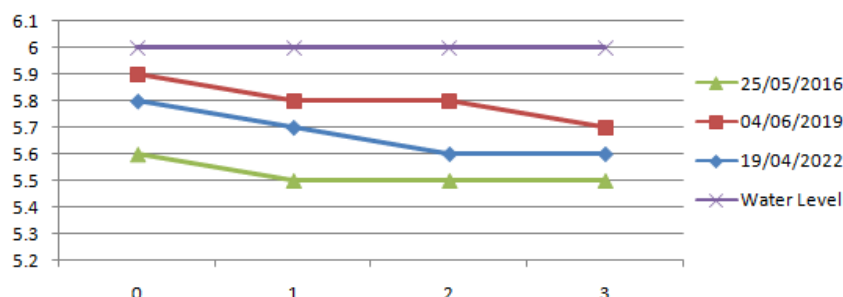
HM	Radial 6			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.9	5.9	5.6	6
1	5.7	5.9	5.4	6
2	5.6	5.8	5.3	6
3	5.7	5.7	5.3	6



HM	Radial 7			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.8	5.9	5.6	6
1	5.7	5.9	5.4	6
2	5.6	5.8	5.4	6
3	5.7	5.7	5.3	6



HM	Radial 8			
Distance from Structure (m)	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.8	5.9	5.6	6
1	5.7	5.8	5.5	6
2	5.6	5.8	5.5	6
3	5.6	5.7	5.5	6





NETWORK RAIL

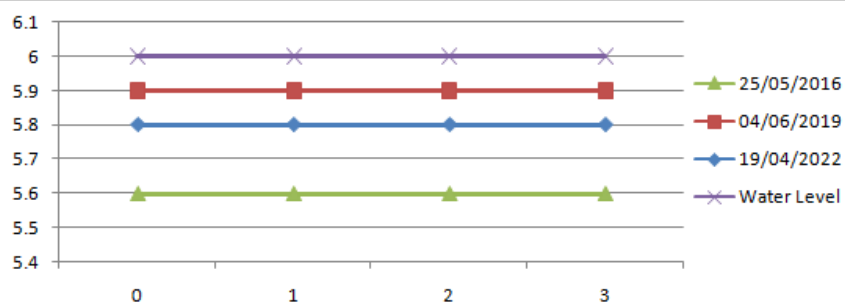
Underwater Examination Report



ELR: SWM2		Contract Mileage: 233 m 1023 yds 46.5 ch				Struct Ref:	233 46.5
Structure Name:		R. Gwendraeth Fawr			Examination Date:		19/04/2022
Area:		South Wales		OS Ref:	SN 4090 0560	No of Spans:	1
Route:	Gloucester South Yard to Johnston			Group:	BU	Exam ID:	14464241

Radial Soundings

HM	Radial 9			
Distance from Structure (m)				
	19/04/2022	04/06/2019	25/05/2016	Water Level
0	5.8	5.9	5.6	6
1	5.8	5.9	5.6	6
2	5.8	5.9	5.6	6
3	5.8	5.9	5.6	6



		NETWORK RAIL Underwater Examination Report					
ELR: SWM2		Contract Mileage: 233 m 1023 yds 46.5 ch				Struct Ref: 233 46.5	
Structure Name: R. Gwendraeth Fawr		Examination Date: 19/04/2022					
Area: South Wales		OS Ref: SN 4090 0560		No of Spans: 1			
Route: Gloucester South Yard to Johnston		Group: BU		Exam ID: 14464241			

APPENDIX G – SCOUR ASSESSMENT SHEET