# Leri Viaduct
# Urgent Repair
# Water Framework Directive Assessment

CPF7208

## Document Control Sheet

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|---|---|
| **Document Title:** | Water Framework Directive Assessment |
| **Document Author(s):** | Eifion Glyn Davies BSc MCIWEM |
| **Project Ref / Title:** | 7208 – Penmaenmawr Sea Wall Urgent Repair |
| **Project Manager:** | Bethan Moseley |

### Revision History

| Date | Version No. | Summary of Changes |
|---|---|---|
| 18/06/2020 | 0.01 | Initial draft version |
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### Reviews

| Name | Title | Date | Version |
|---|---|---|---|
| Owain E. Griffith | Principal Environment Officer | 23/06/2020 | 0.01 |
| | | | |

### Approvals

| Name | Title | Date | Version |
|---|---|---|---|
| Bethan Moseley | Environmental Technical Assistant | 23/06/2020 | 0.01 |
| | | | |

### Distribution

| Name | Title | Date | Version |
|---|---|---|---|
| Bethan Moseley | Environmental Technical Assistant | 23/06/2020 | 0.01 |
| Client | | 23/06/2020 | 0.01 |

*Content*

## *Background:*

YGC have been commissioned by Alun Griffiths Contractors to carry out Environmental Assessments, including a Water Framework Directive Assessment, in support of a Marine Licence application, for repair works to Leri viaduct, on the SBA Shrewsbury to Aberystwyth line between Dovey Junction station and Aberystwyth, which runs over the tidal river Afon Leri.

## *Introduction:*

Leri viaduct is a structure on the SBA Shrewsbury to Aberystwyth railway line between Dovey Junction station and Aberystwyth, which runs over the tidal river Afon Leri.

It is an 8-trestle bridge which has a newer GRP public footpath attached to the upside of the structure, this is attached along the extended crossheads and bolted to the top.

A significant amount of wailer removals, pile replacements and steel repairs are required along with new corbels at certain locations.

A dive team will be required for most of these works due to the area being in a tidal estuary.

Key dates:

- Site set up: 17th to 28th August, including access across field
- Prep works including scaffold: 31st August to 10th September
- *Prep/delivery possessions: Sat nights; 29th August and 5th September*
- Main Possession: Fri night 11th to Mon morning 14th Sept 24/7 working
- Removal of scaffold/snagging: 14th to 25th September
- *Snagging/removal of material: Sat nights; 19th and 26th September*
- Site demob: 28th to 2nd October

The proposal is subject to a Marine Licence by Natural Resource Wales, and must also follow the guidelines set out by the WFD legislation[1] and not cause negative effects to the water environment,

[1] Water Framework Directive (WFD)- The WFD requires us to aim to meet good status in all water bodies. The Water Framework Directive (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy) is a European Union directive which commits European Union member states to achieve good qualitative and quantitative status of all water bodies (including marine waters up to one nautical mile from shore) by 2015.

For surface waters, good status is made up of 'good ecological status (GES)' (or good ecological potential (GEP) where artificial or heavily modified[1]) and 'good chemical status'.

Ecological status and potential are made up of a number of biological, hydromorphological and physico-chemical quality elements. Chemical status is recorded as either good or failing

.

For a groundwater water body to be in overall 'good' status, both quantitative and chemical status must be 'good'.
Where water bodies are currently at less than good status we have planned a series of improvement measures.

The WFD also requires prevention of deterioration in water body status including deterioration of any of the individual quality elements. The 'no deterioration position statement' gives further information on this requirement.

water quality, ecosystems or biodiversity. This report therefore highlights any impacts the work could potentially have on the waterbody, along with mitigation and an assessment (if required) of whether the proposals complies with the Water Framework Directive.

## *Legislative Background:*

The Water Framework Directive (WFD) is a European Directive which sets out a strategic planning process for the purposes of managing, protecting and improving the water environment. The WFD introduces new environmental requirements which aim to meet good status in all water bodies. For surface waters, good status is made up of 'good ecological status (GES)' (or good ecological potential (GEP) where artificial or heavily modified) and 'good chemical status'. Ecological status and potential are made up of a number of biological, hydromorphological and physio-chemical quality elements. Chemical status is recorded as either good or failing. For groundwater to be in overall 'good' status, both quantitative and chemical status must be 'good'. The WFD also requires prevention of deterioration in water body status including deterioration of any of the individual quality elements.

The main objectives of the WFD are to:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- Aim to achieve at least 'Good Status' for all waters by 2015 (2021 or 2027 where fully justified within an extended deadline under Article 4.4);
- Promote sustainable use of water;
- Conserve habitats and species that depend directly on water;
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- Help reduce the effects of floods and droughts.

New activities and schemes that affect the water environment may adversely impact biological, hydro morphological, physico-chemical and/or chemical quality elements (WFD quality elements), leading to deterioration in water body status. They may also render proposed improvement measures ineffective, leading to the water body failing to meet its WFD objectives for GES/GEP. Under the WFD, activities must not cause deterioration in water body status or prevent a water body from meeting GES/GEP by invalidating improvement measures.

## *WFD Assessment in Stages*

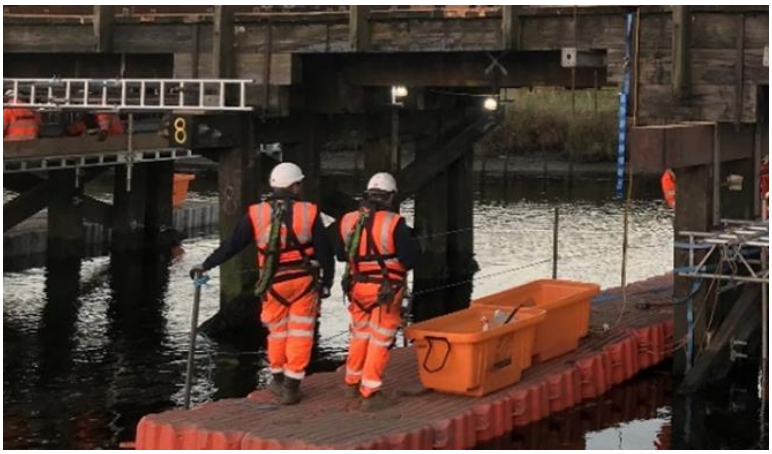
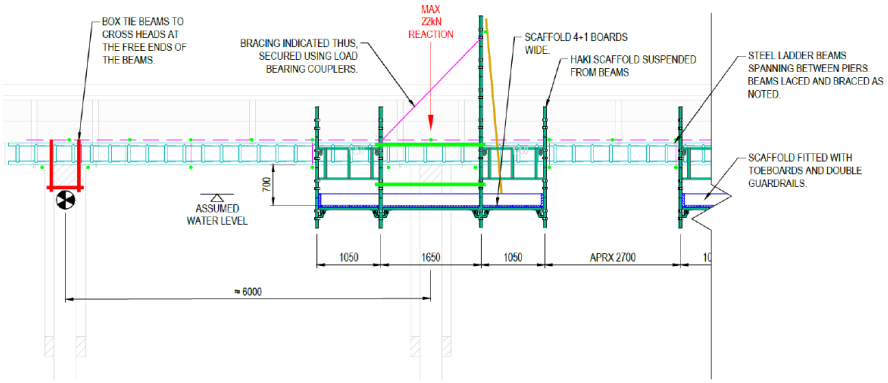
The Water Framework Directive Assessment can have up to three stages, which are

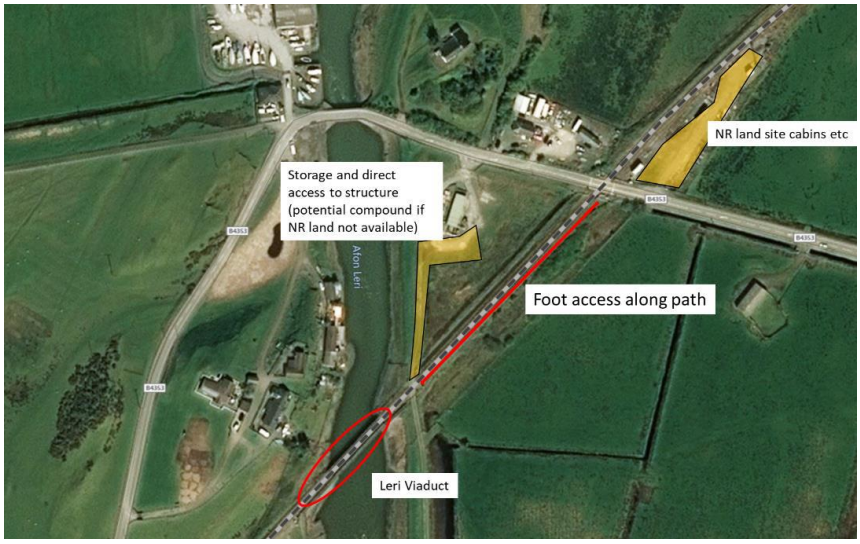
- Screening Stage: excludes any activities that do not need to go through the scoping or impact assessment stages

- **Scoping Stage:** identifies the receptors that are potentially at risk from your activity and need impact assessment
- **Impact Assessment Stage:** considers the potential impacts of your activity, identifies ways to avoid or minimise impacts, and shows if your activity may cause deterioration or jeopardise the water body achieving good status

## *The proposal:*

<table>
<tr><th>Your activity</th><th>Description, notes or more information</th></tr>
<tr><td>Name of activity</td><td>Urgent Repair & Maintenance Works of Railway Viaduct.</td></tr>
<tr><td>Brief description of activity</td><td>The work will be delivered using both day and night shift, without disruption to the operational railway. Bolts will be changed in the upper wailer. The diagonal restraint bracings and certain metalwork components will be changed. During the nightshifts and Saturday nights on the build up to the main blockade, wailers will be removed in a specific sequence and pile strap assemblies installed to 30No piles. There are also 3 full piles to replace, this will be carried out in the main blockade. Pile packing with Stainless Steel shims will also be done as and when the tide suits, day or night. There will be occasions where the rising tide will render the night shift unworkable for certain operations but will have other parts of the works to complete while this occurs.<br><br>
<table>
<tr><td>Trestle No.</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>No. of Piles to be replaced</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>Temporary pile splice assemblies</td><td></td><td>5</td><td>4</td><td>4</td><td>4</td><td>5</td><td>4</td><td></td></tr>
<tr><td>No. of lateral restraint diagonals to be replaced</td><td>4</td><td>0</td><td>0</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>No. of Wailers to be replaced</td><td>0</td><td>4out 2new</td><td>4out 2new</td><td>4out 2new</td><td>4out 2new</td><td>4out 2new</td><td>4out 2new</td><td>0</td></tr>
<tr><td>Pile shim repairs</td><td>1</td><td>4</td><td>1</td><td>0</td><td>0</td><td>3</td><td>2</td><td>3</td></tr>
<tr><td>Corbel replacement</td><td></td><td></td><td></td><td></td><td></td><td>B3</td><td></td><td>B6</td></tr>
<tr><td>Number of TA bolts to replace</td><td>0</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>0</td></tr>
</table>
Above is a table of wooden elements needing changing during the project.<br><br>
Most of the works on Leri viaduct will require the use of pontoons. Changing straps and diagonal restraint timbers will require a scaffold tower erected on them to reach these works. the pontoons will be launched at a pre-arranged location and tied off while not in use, the pontoons will be managed by a water rescue team who will be on site at all times for emergency procedures and moving pontoons around the bridge safely.<br><br>
Please see below picture taken at ARTRO, showing pontoon in position, after having a crosshead installed.</td></tr>
</table>

| | |
|---|---|
| |  <br><br>Temporary tower scaffold off pontoons to be utilised for general access. Trestle scaffold access for spans 2, 4, 5, 6, 7, and 8. Example below.<br><br>  <br>*Typical trestle access scaffold (extract Aztec scheme)* |
| Location of activity (central point XY coordinates or national grid reference) | *SN 61667, 92957 Ynys Las, Borth, Ceredigion*<br><br>*Easting (X): 261667; Northing (Y): 292957* |
| Footprint of activity (ha) | The proposed area involves the Viaduct, storage area, site cabins as detailed on the plan below. It is estimated that the total area of the works would not exceed *0.75ha.* |

| | |
|---|---|
| |  |
| Timings of activity (including start and finish dates) | • Site set up: across field — 17th to 28th August, including access<br>• Prep works including scaffold: — 31st August to 10th September<br>• Prep/delivery possessions: — Sat nights; 29th August and 5th September<br>• Main Possession: 24/7 working — Fri night 11th to Mon morning 14th Sept<br>• Removal of scaffold/snagging: — 14th to 25th September<br>• Snagging/removal of material: — Sat nights; 19th and 26th September<br>• Site demob: — 28th to 2nd October |
| Extent of activity (for example size, scale frequency, expected volumes of output or discharge) | The activities will be confined to the areas shown on the plan above. Duration of each component of the works is detailed above. |
| Use or release of chemicals (state which ones) | Plant machinery will be operated along the railway, and there is an inherent risk of accidental spillages to the marine environment. Chemicals can include oils (engine, hydraulic), coolants and un-cured concrete. |

## *WFD Assessment:*

### *WFD Classification:*

The WFD classification for a defined water body is produced by assessment of a wide variety of different 'elements' which includes:

- 'biological elements' such as fish, invertebrates, phytobenthos (which includes plants, macro-algae and phytoplankton);
- 'supporting elements' that include chemical measurements such as ammonia, dissolved oxygen, pH, phosphate, copper, zinc and temperature; and
- 'supporting conditions' (sometimes referred to as hydromorphology), that assess the physical attributes of the water body such as 'quantity and dynamics of flow' and 'morphology'.

The assessment given for each element is also accompanied by a measure of certainty in the result. The status classification is published in the River Basin Management Plan (RBMP)[2] and provides a baseline condition against which compliance and future improvements can be measured.

The activity / proposal involves the Dyfi & Leri waterbody, and a summary of key elements is provided below.

| Water body[1] | Description, notes or more information |
|---|---|
| WFD water body name | *Dyfi & Leri* |
| Water body ID | *GB511006407000* |
| River basin district name | *Western Wales River Basin* |
| Water body type (estuarine or coastal) | *Transitional* |
| Water body total area (ha) | *14.33km2 (1,433ha)* |
| Overall water body status (2018) | *Moderate* |
| Ecological status | *Good* |
| Chemical status | *Fail* |
| Target water body status and deadline | *Not Designated* |
| Hydromorphology status of water body | *Not Designated* |
| Heavily modified water body and for what use | *No* |
| Higher sensitivity habitats present | *Saltmarsh habitat within 500m of the proposed work* |

[2] https://cdn.naturalresources.wales/media/676165/wwrbdsummary.pdf?mode=pad&rnd=131596369400000000

| | |
|---|---|
| Lower sensitivity habitats present | *Rocky shore, shingle, intertidal soft sediment (mudflats and sandflats)* |
| Phytoplankton status | *Not Designated* |
| History of harmful algae | *None* |
| WFD protected areas within 2km | *Pen Llyn a'r Sarnau SAC, Dyfi SSSI, Dyfi Estuary SPA, Cors Fochno & Dyfi Ramsar Site.* |

### *WFD Assessment - Screening:*

The proposed activity involves engineering works and piling activities within a waterbody and has been identified as an activity that may adversely impact biological, hydro morphological, physico-chemical and/or chemical quality elements (WFD quality elements), and therefore is not considered to fall within the definition of a low risk activity as outlined on gov.uk[3].

### *WFD Assessment – Scoping Exercise:*[4]

At the scoping stage you must identify all your activity's potential risks to each receptor element that are used to determine the status of the waterbody. The receptors / elements are:

- Hydromorphology
- biology – habitats
- biology – fish
- water quality
- protected areas

These receptors are based on the water body's quality elements (supporting elements, biological elements, and chemical elements), see classification above.

### *Hydromorphology:*

| Consider if your activity: | Yes | No | Hydromorphology risk issue(s) |
|---|---|---|---|
| Could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at high status | ~~Requires impact assessment~~ | Impact assessment not required | *Maintenance of an existing structure, and like for like basis.* |
| Could significantly impact the hydromorphology of any water body | ~~Requires impact assessment~~ | Impact assessment not required | *Maintenance of an existing structure, and like for like basis.* |

[3] https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters
[4] The scoping exercise has been undertaken in line with the guidance provided https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters#contents

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| Is in a water body that is heavily modified for the same use as your activity | ~~Requires impact assessment~~ | Impact assessment not required | *The proposed activity is not within a waterbody classed as heavily modified.* |

### *Biology - habitats:*

Consider if habitats are at risk from your activity.

| Higher sensitivity habitats [5] | Lower sensitivity habitats [6] |
|---|---|
| chalk reef | cobbles, gravel and shingle |
| clam, cockle and oyster beds | intertidal soft sediments like sand and mud |
| intertidal seagrass | rocky shore |
| maerl | subtidal boulder fields |
| mussel beds, including blue and horse mussel | subtidal rocky reef |
| polychaete reef | subtidal soft sediments like sand and mud |
| saltmarsh | |
| subtidal kelp beds | |
| subtidal seagrass | |

| Consider if the footprint[7] of your activity is: | Yes | No | Biology habitats risk issue(s) |
|---|---|---|---|
| 0.5km$^2$ or larger | Yes to one or more – requires impact assessment | ~~No to all – impact assessment not required~~ | *No – The total area of the activity would not exceed 0.0075km2* |
| 1% or more of the water body's area | | | *No – The area of the work constitute 0.05% of the water body area.* |
| Within 500m of any higher sensitivity habitat | | | *Yes – The proposed work is within 500m and upstream of an area of Saltmarsh habitat, see plan in Appendix. The Afon Leri forms an impact pathways, therefore impact assessment is required, as it cannot be ruled out at the scoping stage.* |
| 1% or more of any lower sensitivity habitat | | | *No – There are no lower sensitivity habitat within the area of the works. Whilst there are lower sensitivity habitat within 500m, it is not believed that the footprint of the scheme would exceed a total area of more than 1% of the habitat area.* |

[5] Higher sensitivity habitats have a low resistance to, and recovery rate, from human pressures.
[6] *Lower sensitivity habitats have a medium to high resistance to, and recovery rate from, human pressures.*
[7] Note that a footprint may also be a temperature or sediment plume. For dredging activity, a footprint is 1.5 times the dredge area.

| | | | |
|---|---|---|---|
| | | | |

*Biology – fish*

Consider if fish are at risk from your activity, but only if your activity is in an estuary or could affect fish in or entering an estuary.

| Consider if your activity: | Yes | No | Biology fish risk issue(s) |
|---|---|---|---|
| Is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary | Continue with questions | ~~Go to next section~~ | The proposed work is in a transitional waterbody adjacent to the Dyfi Estuary. |
| Could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow) | Requires impact assessment | ~~Impact assessment not required~~ | The work involves piling operations, and therefore will produce noise that may temporarily affect fish movement up and down the Leri. |
| Could cause entrainment or impingement of fish | ~~Requires impact assessment~~ | Impact assessment not required | |

*Water Quality:*

Consider if water quality is at risk from your activity.

| Consider if your activity: | Yes | No | Water quality risk issue(s) |
|---|---|---|---|
| Could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days) | ~~Requires impact assessment~~ | Impact assessment not required | No – the proposed work would predominantly be carried out above tide level, and as such would not directly impact water clarity, temperature, oxygen levels, nutrients or microbial patters of the water body, especially not for continuous periods longer than 14 days. There may be some discolouration and sediment resuspension due to piling activities, however, this would clear within 1 tidal cycle i.e. high water – low water – high water |

| | | | |
|---|---|---|---|
| Is in a water body with a phytoplankton status of moderate, poor or bad | ~~Requires impact assessment~~ | Impact assessment not required | No – From available information, the waterbody does not have a phytoplankton status of moderate, poor or bad. |
| Is in a water body with a history of harmful algae | ~~Requires impact assessment~~ | Impact assessment not required | No – As far as we are aware, the waterbody does not have a history of harmful algae. |

Consider if water quality is at risk from your activity through the use, release or disturbance of chemicals.

| If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if: | Yes | No | Water quality risk issue(s) |
|---|---|---|---|
| The chemicals are on the Environmental Quality Standards Directive (EQSD) list | Requires impact assessment | ~~Impact assessment not required~~ | Plant machinery will be required to undertake the proposed activity, and therefore there is an inherent risk of releasing oils and fuels into the environment, albeit, the risk is considered to be low. |
| It disturbs sediment with contaminants above Cefas Action Level 1 | ~~Requires impact assessment~~ | Impact assessment not required | No – we have no reason to believe that the work would disturb sediments with contaminants above Cefas Action Level 1. |

| If your activity has a mixing zone (like a discharge pipeline or outfall) consider if: | Yes | No | Water quality risk issue(s) |
|---|---|---|---|
| The chemicals released are on the Environmental Quality Standards Directive (EQSD) list | ~~Requires impact assessment~~[5] | Impact assessment not required | No – the proposal does not use the chemicals listed on the EQSD list. |

### *WFD Protected Areas*

Consider if WFD protected areas are at risk from your activity. These include:

- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Shellfish waters

- Bathing Waters
- Nutrient Sensitive Areas

| Consider if your activity is: | Yes | No | Protected areas risk issue(s) |
|---|---|---|---|
| Within 2km of any WFD protected area[6] | Requires impact assessment | ~~Impact assessment not required~~ | The proposed work is within and / or within 2km of *Pen Llyn a'r Sarnau SAC, Dyfi SSSI, Dyfi Estuary SPA, Cors Fochno & Dyfi Ramsar Site.* |

*Invasive Non-Native Species (INNS)*

Consider if there is a risk your activity could introduce or spread INNS.
Risks of introducing or spreading INNS include:

- materials or equipment that have come from, had use in or travelled through other water bodies
- activities that help spread existing INNS, either within the immediate water body or other water bodies

| Consider if your activity could: | Yes | No | INNS risk issue(s) |
|---|---|---|---|
| Introduce or spread INNS | Requires impact assessment | ~~Impact assessment not required~~ | The NRW coastal risk assessment shows that Leri & Dyfi is at risk from the following INNS:<br>• Chinese Mitten Crab<br>• Leathery Sea Squirt<br>• Colonial Tunicate<br>And is at an overall INNS risk of deterioration by 2050.<br>Floating Pontoons will be the only equipment used in the water, and at this stage it cannot be ruled out completely that the pontoons would be free from INNS, as it is unknown where the plant would be used immediately prior to mobilisation to this site. However, the risk is deemed to be low since it is common practice to wash down equipment following a period working in marine environments (to ensure longevity of equipment and reduce ongoing maintenance and repair costs), and the risk can be easily managed by ensuring the plant are |

| | | | |
|---|---|---|---|
| | | | cleaned before leaving the existing / preceding site, and are clean on arrival onto this site. |

*Summary of Scoping:*

| Receptor | Potential risk to receptor? | Note the risk issue(s) for impact assessment |
|---|---|---|
| Hydromorphology | No | It is concluded that it is unlikely that the proposed work would have any impact on hydromorphology, due to the maintenance nature of the works, which does not alter the overall dimensions or physical characteristics of the structure, therefore this receptor has been scoped out from further assessment. |
| Biology: habitats | Yes | There is a Higher Sensitivity Habitat within 500m of the proposed work, and the Afon Leri provides a potential impact pathway, therefore, impact could not be ruled out at the scoping stage. |
| Biology: fish | Yes | There will 3 no Piles will be driven into the ground, which will cause some degree of underwater noise, which could potentially cause some delay in fish migration. |
| Water quality | No | Plant machinery will be required to undertake the proposed activity, and therefore there is an inherent risk of releasing oils and fuels into the environment, albeit, the risk is considered to be low. |
| Protected areas | Yes | The proposed work is within and within 2km of Pen Llyn a'r Sarnau SAC, Dyfi SSSI, Dyfi Estuary SPA, Cors Fochno & Dyfi Ramsar Site. Since there would be engineering operations within the boundaries of these sites and within 2km of the boundaries of these sites, risk impact on these receptors could not be ruled out at scoping stage. |
| Invasive non-native species | Yes | Low risk of INNS identified at scoping stage via equipment and materials being imported from another site or another waterbody. |

## *Assessment of impacts on waterbody quality elements*

### *WFD Compliance:*

There are three key objectives against which the impacts of proposed works on a water body need to be assessed to determine compliance with the overarching objectives of the WFD:

- Objective 1: The Scheme will not cause deterioration in any element of water body classification.
- Objective 2: The Scheme will not prevent the WFD status objectives from being reached within the water body or other downstream water bodies.
- Objective 3: The Scheme will contribute to the delivery of the relevant WFD objectives. In this case it will be what contribution the Scheme can make towards the water body reaching its objective Good Ecological Potential (GEP) through planned RBMP mitigation measures.

The first two objections must be met to avoid infraction of the WFD. The delivery of the third objective is central to the implementation of the WFD, where it can be supported through its operational activities. If it is considered that the scheme is likely to cause deterioration in water body status or prevent a water body from meeting its ecological objectives then an assessment would be made against the conditions listed in Article 4.7 of the WFD. Article 4.7 can be invoked if; 'new modifications' are of overriding public interest and/or the environmental and social benefits of achieving the WFD objectives are outweighed by the benefits of the new modifications to human health, safety and sustainable development; there are no significantly better environmental options that are technically feasible or not disproportionately costly; and all practicable steps for mitigation have been taken.

### *Biology: habitats*

The scoping exercise identified that the proposed activity is within 500m upstream of a Saltmarsh that is a Habitat of Higher Sensitivity. The work is being undertaken on a viaduct structure, spanning Afon Leri, and the Leri provides a potential impact pathway between the works and the Saltmarsh. Whilst accepting that there is an impact pathway, the proposed work would not take any land from the saltmarsh, would not affect any factors such as inundation of the marshes (changes in hydromorphology) or the characteristic of the water inundating the marshes, therefore, it is considered unlikely that the proposed activity would contravene Objective 1 for this particular element.

### *Biology: fish*

From the information provided, it is expected that 3 no. piles will need to be replaced on the viaduct and driven into the ground, which will cause some degree of below and above water noise, which could affect marine mammals, and fish in particular, in this area.

It is likely that fish will start mobilising and entering the estuary and lower Leri reaches from end of summer to autumn to migrate to spawn in the gravel beds further upstream.

The timing of the works and nature of the works is expected to inflict some behavioural response from fish in the direct vicinity of the piling operations. However, the zone of influence of vibro-piling noise on fish is likely to be relatively small (approximately 50m), and the result of which is that there may be some barrier to fish during piling operations, however, this barrier would be temporary during piling operations only, which will only occur intermittently between Friday 11th of September to Monday 14th of September 2020 and will not be a prolonged operation.

On balance, whilst it is expected that there may be some slight temporary behavioural changes, it is not expected that the proposed piling works would result in a contravention of Objective 1, above, due to the temporary and intermittent nature of the impact.

### *Water Quality:*

Plant machinery will be required to undertake the proposed activity, and therefore there is an inherent risk of releasing oils and fuels into the environment, albeit, the risk is considered to be low, and impact on the waterbody could not be completely ruled out at the scoping stage. The following Reasonable Avoidance and Mitigation Measures will be implemented during the course of the proposed work:

- Vehicles to use biodegradable oils.
- Use of spill kits and personnel trained to use the kit will be available on site on case of oil leak.
- Good working practices will be taken, such as adhering to GPP5 Works and maintenance in or near water.
- The contractor has a designated company, which they use to deal will accidental spillages this forms part of their emergency plan.
- The staff will be trained to contain any oil/diesel and clean up.
- NRW emergency help line (0300 065 3000) will be contacted in the case of an emergency spill.

Since the plant machinery would not directly enter the waterbody, and assuming that machinery used are well maintained, it is considered unlikely that the proposed activity would result in a contravention of Objective 1. However, accidents do happen – and by having the above measures in place it will reduce any impact should an accident occur.

### *Protected areas*

The proposed work is located within and within 2km of WFD Protected Areas, namely Pen Llyn a'r Sarnau SAC, Dyfi SSSI, Dyfi Estuary SPA, Cors Fochno & Dyfi Ramsar Site. Since there are engineering works within and within 2km of these protected areas, and a potential impact pathways in the form of the Afon Leri, impact upon these receptors could not be ruled out at scoping stage.

A Habitat Regulations Assessment (CPF7162 Leri Viaduct Maintenance Works Habitat Regulations Assessment v.01 – available as a separate document), has been produced for the works. Whilst Likely Significant Effect could not be ruled out in the screening stage (Stage 1 – Test of Likely Significant Effect), due to potential pollution and potential impact on otters. A conclusion of No likely Significant Effect was reached at Stage 2 with the implementation of Reasonable Avoidance Measures. Therefore it is considered that the proposed activity will not result in the contravention of Objective 1.

### *Invasive non-native species*

The NRW coastal risk assessment shows that Leri & Dyfi is at risk from the following INNS:

- Chinese Mitten Crab
- Leathery Sea Squirt
- Colonial Tunicate

And is at an overall INNS risk of deterioration by 2050.

Floating Pontoons will be the only equipment used in the water, and at this stage it cannot be ruled out completely that the pontoons would be free from INNS, as it is unknown where the plant would be used immediately prior to mobilisation to this site. However, the risk is deemed to be low since it is common practice to wash down equipment following a period working in marine environments (to

ensure longevity of equipment and reduce ongoing maintenance and repair costs), and the risk can be easily managed by ensuring the plant are cleaned before leaving the existing / preceding site, and are clean on arrival onto this site.

By implementing the simple protocol of Check, Clean and Dry, it is considered that the proposed activity would not result in a contravention of Objective 1.

## *Conclusion:*

It is established through the assessment above that by implementing good working practices and reasonable avoidance measures that the proposed works would not lead to deterioration of any quality element of the waterbody (objective 1) nor would prevent the overall objectives for the waterbody being met (Objective 2).