Report Title	**Proposed Demolition & Removal of Weir/ Associated Works at Felin Puleston, Erddig, Wrexham, LL13 7RE – Otter Survey and Reasonable Avoidance Measures Method Statement**
Date issued	**18th February 2025**
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Report Version	**C564/ 1.0**
Client	**Welsh Dee Trust**
Contract Ref.	**C564**

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Quality Assurance

Survey/ Assessment Work Schedule		
Survey/Assessment Type	**Surveyors/ Author**	**Date**
Otter Survey	Max Ellson & Tom Knight	11/02/25

Review Schedule				
Issue	**Date**	**Author**	**Reviewed by**	**Approved by**
1.0	18/02/25	Max Ellson	Tom Knight	Tom Knight

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The assessment provided in this report is specific to the iteration of the proposal detailed in *Section 1*. It would no longer be valid should the layout be changed in anyway, should the report be used for a different proposal at the same site or should it be used a maximum of 12 months after the date of issue.

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1 INTRODUCTION

1.1 Project Background

1.1.1 Marches Ecology was commissioned by the Welsh Dee Trust to undertake an Otter (*Lutra lutra*) survey, and the subsequent preparation of a Reasonable Avoidance Measures (RAMs) Method Statement, in relation to the proposed demolition and removal of a weir (and associated works) at Felin Puleston, Erddig, Wrexham, LL13 7RE (approximate OS Grid Ref. SJ 3256 4929).

1.1.2 The requirement for an Otter survey/ RAMs Method Statement is outlined within Condition 7 of Wrexham County Borough Council (WCBC) planning permission notice P/2024/0266 (dated 15/10/2024), which states the following:

- '*Prior to the commencement of development, an Otter survey, together with any necessary Reasonable Avoidance Measures shall be submitted to and approved in writing by the Local Planning Authority. Such details as maybe approved shall be fully implemented*.'

1.1.3 It is also detailed in a Preliminary Ecological Appraisal (Cheshire Ecological Services, 2023) which was submitted to support the planning application; *paragraph 5.74* of which states the following:

- '*Given the presence of otter within the River Clywedog both up and downstream, the likelihood of this species moving through the site and the destructive nature of the works, it is recommended that an otter survey be carried out of the watercourse, including a 50m buffer both up and downstream of the site. Otter surveys can be carried out at any time of year. The survey can be undertaken at any time of the year and will include a detailed search of the riverbanks from the river, if possible, to look for signs of otter within the site (specifically holts and/or couches) or in close proximity to the site*.'

1.1.4 Emma Broad (WCBC Ecologist) was consulted (by email dated 05/02/25) with regards the scope of the survey reported here[1].

1.1.5 The survey focused on the approximately 140 m section of the River Clywedog that is within the proposed works boundary, as well as approximately 100 m[2] lengths up- and down-stream (refer to *Figure 1*). The principal aim of the survey was to establish the extent of use of the River Clywedog (within the survey area) by Otter by recording signs of Otter activity, determine how the habitat is utilised, and locate potential resting/ breeding locations where possible. An assessment was also undertaken of the suitability of the river/ immediate bankside habitats with regards Otter (refer to *Section 2.1*).

1.1.6 The survey results are provided in S*ection 3. Section 4* assesses the level of risk to Otters due to the proposed works and subsequently proposes appropriate working methods to be

[1] It has not been possible to discuss the scope of the proposed RAMs at the time of this report being finalised.
[2] It is recognised that the Cheshire Ecological Services report noted 50 m survey buffers, however 100 m was deemed a more robust approach.

implemented in order to avoid/ minimise any identified impacts. The RAMs Method Statement is provided in *Section 5*. This details non-licensed RAMs to be implemented prior to and during the proposed works.

1.2 Report Author

1.2.1 This report was produced by Max Ellson of Marches Ecology. Max Ellson is an ecologist with over twenty years of consultancy experience who has undertaken numerous Otter surveys, as well as designed and implemented RAMs schemes. His relevant academic qualifications and professional memberships are as follows:

- Chartered Environmentalist (Society for the Environment).
- Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- MSc Vegetation Survey and Assessment.
- BSc (Hons) Environmental Biology.

1.3 The Proposed Works

1.3.1 The proposed works are illustrated on a series of Dynamic Rivers plans (Drawing No. DR-2021-0074, dated 11/10) including:

- Sheet 1, entitled '*Clywedog Weirs – Felin Puleston; Overview Map*'.
- Sheet 4, entitled '*Remove Weir and Regrade Bed*'.
- Sheet 5, entitled '*Rapid 2 & 3 Feature*'.
- Sheet 6, entitled '*Rapid 1 & Bed Check Feature*'.
- Sheet 7, entitled '*Rapid & Bed Check Feature*'.

1.3.2 The works will focus on removal of the existing concrete weir/ associated walling and gabions, the regrading/ reprofiling of the riverbed, and the creation of three rapids and a bed check feature (to slow the flow of the river once the weir is removed). The river will also be locally widened around the current weir location. Tree planting will also be undertaken along the western side of the new river alignment.

1.3.3 Further information is provided in the following documents:

- Dynamic Rivers (2022). F*elin Puleston Weir Optioneering DRAFT Report*. Unpublished document on behalf of the Welsh Dee Trust.
- Dynamic Rivers (2022a). F*elin Puleston Weir – Outline Method Statement*. Unpublished document on behalf of the Welsh Dee Trust.

1.3.4 It is understood (Gareth Jones, Welsh Dee Trust, *pers. comm.*) that machine access will be from the nearby Erddig carpark to the south-west of the weir, accessing to the river across a grassland field. Furthermore, that excavated material (topsoil/ riddled subsoil) will be moved to/ graded into an existing grassland bank to the southwest of the site/ west of the river (approximate OS Grid Ref. SJ 3266 4902), with machine access to this location largely being via an existing field track/ path. The transfer of excavated material will take approximately 1 week.

1.3.5 It is assumed that any temporary compounds will be located on areas of exiting hard-standing (for example in the nearby Erddig carpark).

1.3.6 The works are estimated to be approximately 6 weeks in duration (with potential delays, due to, for example, high water levels, being possible), and are scheduled to be initiated in June or September 2025.

1.4 Policy and Legislation

1.4.1 The Otter is listed on *Schedule* 5 of the *Wildlife and Countryside Act 1981* (as amended)[3], and receives full protection under *Section 9*. The 1981 Act was amended by the *Countryside and Rights of Way Act 2000* (the CRoW Act)[4] which further extends the protection. It is also listed on *Schedule 2* of *The Conservation of Habitats and Species Regulations 2017*[5,6]. The Otter is a so-called European Protected Species.

1.4.2 Under the above legislation it is an offence to intentionally or recklessly:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
- disturb such a species whilst using any place of shelter or protection; or
- sell or attempt to sell any such species.

1.4.3 There is currently no formal guidance provided by the Statutory Nature Conservation Organisations on what constitutes potential disturbance to Otter. However, the 2017 regulations refer to disturbance of animals as including *in particular any disturbance which is likely*:

- to impair their ability –

  i) to survive, breed or reproduce, or to rear or nurture their young; or

  ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

- *to affect significantly the local distribution or abundance of the species to which they belong.*

1.4.4 Guidance has previously been provided by the European Commission (EC 2007) and in a joint note produced by Natural England and the Countryside Council for Wales (2007) on the interpretation of disturbance in relation to legally protected species. These documents followed on from amendment of the *Habitats Regulations* at that time. EC (2007) defines 'disturbance' in terms of *Article 12*, as any disturbing activity that affects the survival chances, the breeding success or the reproductive ability of a protected species or leads to a reduction

[3] HMSO (1981). *The Wildlife and Countryside Act 1981*. HMSO, London.
[4] HMSO (2000). *The Countryside and Rights of Way Act 2000*. HMSO, London.
[5] HMSO (2017). *The Conservation of Habitats and Species Regulations 2017*. HMSO, London
[6] Amended in line with EU Exit by *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.*

in the occupied area. It suggests that sporadic disturbances without any likely negative impact on the species should not be considered disturbance under *Article 12* (Otters are often able to tolerate a degree of noise and disturbance (*e.g*. Bassett & Wynn 2010)).

1.4.5 The Otter is included on *Section 7* of the *Environment Act 2016*[7].

[7] HMSO (2016). *The Environment Act (Wales) 2016*. HMSO, London.

2 METHODOLOGY

2.1 Otter Survey

2.1.1 A single survey visit was undertaken on 11th February 2025 by Max Ellson and Tom Knight of Marches Ecology. The weather was cloudy, cold and dry (with light rain the previous day).

2.1.2 The survey methodology broadly followed that outlined in NRA (1993) as recommended by IEEM (2005), JNCC (2004), and Chanin (2003). There is no substantive guidance on the level of effort required for an Otter survey in such circumstances (apart from for Environmental Impact Assessment projects). One visit at an appropriate time of year was considered appropriate for this project, when considering the nature of the proposed works and limited scope for impacts (on Otters). Although May to September is the key Otter survey period, surveys can be undertaken year round, depending on such factors as timing of recent rain fall, river levels and density of vegetation cover. At the time of the survey the level of the River Clywedog appeared fairly low, although there was evidence that it had been several meters higher in the (recent) past. It is possible that such water levels may have resulted in some Otter signs, such as footprints and spraints, being washed away. However, this wasn't considered a substantial limiting factor to the survey (also refer to *Section 2.2* below).

2.1.3 As outlined in *Section 1.1*, the survey focused on the approximately 140 m section of the river that is within the proposed works boundary, as well as approximately 100 m up- and down-stream (refer to *Figure 1*). The River Clywedog is of variable width along this survey length, from approximately 4 – 10 m wide, largely shallow, and therefore access was easily obtainable to both banks. The positions and densities of spraints, holts, couches, and other field signs were noted if present.

2.1.4 A (brief) assessment was also undertaken of the suitability of the river/ immediate bankside habitats with regards Otter; whilst this focused on habitats within the proposed works boundary (and immediately adjacent land), consideration was also given to the immediate riverine corridor along the whole surveyed river length, as well as the two proposed machine access routes (from Erddig carpark to the weir, and from the weir to the grassland bank where excess soil will be regraded, refer to *paragraph 1.3.4*).

2.1.5 A single spot check was also undertaken, associated with a road (A5152) bridge located approximately 180 m up-stream of the proposed works boundary (approximate OS Grid Ref. SJ 3236 4928).

2.1.6 Target notes recorded during the survey are reproduced in *Section 6* and mapped on *Figure 1.*

2.1.7 There is some difficulty in identifying Otter resting places, refuges and holts and similarly there is a range of terms applied to these features but no standard. For transparency the terms holt and resting place will be utilised in this report as follows:

- A holt is usually a secure underground resting place usually associated with breeding locations. This may be applicable to the natal den (as defined in Liles, 2003) and is taken to be the small space occupied by the female when she gives birth and where the cubs stay for up to three months. Liles (2003) also makes a distinction between the natal site and breeding site. The term breeding site describes an area of land, or open water and land large enough to provide a breeding Otter with all the required resources. These resources include one or more potential natal den sites.
- A resting place is a temporary 'bivouac' often used at the end of a foraging period or to rest overnight. An Otter will have many resting opportunities within its usable range often under exposed tree roots or undercut riverbanks, in pollard trees, drains, thick vegetation like Bramble, scrub, reed-beds and stands of tall-herbs. Resting places can be located above or below ground. They are often referred to as couches, hovers or lie-ups and are the most frequently used and encountered Otter resting site (Woodroffe, 2001).

2.2 Survey Constraints

2.2.1 Potential survey constraints relating to the survey visit are as follows:

- As detailed in *paragraph 2.1.2*, recent high water levels may have resulted in some Otter signs, such as footprints and spraints, being washed away.
- The majority of the length of the river corridor subject to survey appears to be heavily used by Dog (-walkers). Dog activity in particular, both on the immediate river banks, and in the river itself, may have obscured some signs.

3 RESULTS

3.1 Contextual

3.1.1 Once common and widespread throughout the UK, Otter numbers declined dramatically from the late 1950's, largely due to pesticide pollution and habitat loss. By 1980 the Otter was almost extinct in most of England and parts of Wales and Scotland. The River Clywedog is a tributary of the River Dee (the confluence of which is more than 10 km down-stream). The most recent Wales national survey (2015-2018) recorded signs of Otters from 70.46% (85 % in the Dee catchment) of sites visited (Kean and Chadwick, 2021). Nationally this represents a decline of 22% in the number of sites with Otter signs since the last survey. This is the first decline recorded in Wales since the national surveys began in the 1970's.

3.2 Habitat Description

Proposed Works Boundary

3.1.2 The proposed works boundary is located at the northern end of the National Trust Erddig Estate. It is dominated by an approximately 140 m section of the River Clywedog, flowing in an easterly/ southerly direction, with the associated weir. The river varies in width from approximately 4 to 10 m wide. It is frequently shallow (less than 0.3 m) deep, although locally it can be much deeper. It has a moderate/ fast flow. There are occasional exposed shingle bars. Locally the banks have been reinforced with boulders and or rock gabions. There are occasional (semi-)mature trees along the immediate river banks.

3.1.3 To the immediate north/ east of the river channel (*Target Note 4a*), there had been significant recent scrub/ *Rubus fruticosus* agg. (Bramble) clearance (partly located within the proposed works boundary), with largely only scattered semi-mature trees retained. This area is adjacent to a well-used (Dog-)walking path. The southern end of the proposed works boundary is partly on the edge of/ immediately adjacent to a longer zone of wet woodland (*Target Note 12*), that continues adjacent to the eastern bank of the river down-stream.

3.1.4 To the immediate south/ west of the river channel, a large tussocky grassland field (*Target Note 6*) dominates, part of which is located within the proposed works boundary. There is also an adjacent fenced off open woodland/ and a narrow zone of bankside tall-herbs and young tree saplings (*Target Note 5*). Opposite the wet woodland described above, at *Target Note 13*, there is a narrow/ steep bank at the river edge which supports trees (largely young)/ saplings, and Bramble scrub.



Above and Below. Examples of River Clywedog/ bankside habitats in proposed works boundary. Above: photo taken looking down-stream from approximately western extent of boundary. Below: photo taken from just up-stream of weir.



Up-stream

3.1.5 Up-stream of the proposed works boundary the river flows in a northerly/ easterly direction, and largely passes between a light industrial site (tyre/ motor yard) and an open woodland (*Target Note 2*) adjacent to a car park. The river boundary adjacent to the yard comprises a vertical wall with a sloping bank to the river edge which supports young tree saplings/ tall-herbs (*Target Note 1*). The immediate banksides in this section are variously walled (*e.g. Target Notes 2a, 3b*), or with gabion baskets (*Target Note 1b*). There is a distinct vegetated marginal silt bar/ nearby in-river shingle bar at *Target Notes 3/3a.*



Example of River Clywedog/ bankside habitats up-stream of proposed works boundary.

Down-stream

3.1.6 Down-stream of the proposed works boundary the river flows in a southerly direction, with the eastern bank supporting Bramble and tall-herbs associated with a strip of wet woodland; there are a few trees at the immediate water's edge. The western bank (for example *Target Note 14*) is largely characterised by the edge of a large open grassland field; which is frequented by (Dog-)walkers.



Example of River Clywedog/ bankside habitats down-stream of proposed works boundary.

Machine Access Routes

3.1.7 The machine access route to the weir from the carpark passes through a large tussocky grassland field (*Target Note 6*). It appears to be occasionally managed but there are developing tall-herb/ Bramble stands towards the edges; there is frequent (Dog-)walker disturbance.

3.1.8 The machine access route to the bank where excavated material will be deposited is largely via an existing field track/ path. The bank itself forms part of large field supporting tussocky grassland.



Above and Below. Machine access routes. Above: grassland field at *Target Note 6*, photo looking towards river/ weir. Below. Southerly face of grassland bank to be used for excess soil.



3.3 Otter Survey

Proposed Works Boundary

3.3.1 Otters signs within/ immediately adjacent to the proposed works boundary itself were limited to two sprainting locations: three dry-fragmented[8] spraints at *Target Note 4b* (on top of a large boulder located beneath a semi-mature *Alnus glutinosa* (Alder) on the immediate water's edge), and one dry-intact spraint at *Target Note 9* (on an old fallen tree trunk resting on the bank into the river).



Dry-intact spraint at *Target Note 9.*

3.3.2 It is considered possible that Otters exit the river at *Target Note 4b* to navigate around the weir.

3.3.3 No actual resting sites were located. Specific potential resting places were noted as follows:

- A small chamber in the bank at the base of the weir at *Target Note 7,* which could be utilised when the water level is not high enough to submerge it.
- A possible cavity associated with a large/ submerged Alder root plate at *Target Note 8*: this feature very locally appears to extend approximately 1.5 m back into the bank.
- Potential small voids associated with a line of degrading gabion baskets at the base of a steep/ low bank at *Target Note 11.*
- A small chamber in a sloping bank, approximately 2 m above the water level, at *Target Note 13a.*

[8] Terms used to describe otter spraints: 'dry-fragmented', dry-intact' and 'not-dry', as per Chanin (2003).

3.2.4 With the possible exception of the chamber at *Target Note 7*, these features are deemed to be of low potential value.



Opening to chamber at *Target Note 7.*

3.2.5 In addition, some of the boundary habitat features present, such as (Bramble) scrub (generally small stands)/ associated woodland (*Target Notes 4, 5a, 5b, 12, 13*), grassland (*Target Note 6*), tall-herbs (*Target Note 5*), and occasional brash piles (*Target Note 10*), could provide low potential value resting places for Otter (particularly in the summer months when the associated vegetation may be dense). However, frequent (Dog-)walking activity is likely to minimise any such potential.

Up-stream

3.2.6 No Otter signs were recorded in the 100 m section up-stream of the proposed works boundary.

3.2.7 No actual resting sites were located. Specific potential resting places (of low potential value) were noted as follows:

- An overhang formed by a large, broken, concrete slab at *Target Note 1a,* which could be utilised when the water levels is lower.
- A small cavity beneath a pile of large cut trunks on a silt bar at *Target Note 3*, although this feature is probably too small.

3.2.8 Boundary habitat features present, such as scattered tree saplings/ tall-herbs at *Target Note 1a,* a narrow zone of tall-herbs/ rough grassland with gabion baskets/ broken brick wall sections at *Target Note 1b*, and tall-herb dominated vegetation associated with a silt bar at

Target Note 3a, could provide low potential value resting places for Otter (particularly in the summer months when the associated vegetation may be dense). However, nearby human/ Dog activity is likely to minimise any such potential.

3.2.9 No Otter signs were recorded at the spot-check (bridge).

Down-stream

3.2.10 No Otter signs were recorded in the 100 m section down-stream of the proposed works boundary.

3.2.11 No actual resting sites were located. Specific potential resting places (of low potential value) were noted as follows:

- Occasional small overhangs in the immediate river side bank (on both sides of the channel at *Target Note 14*). These features may be suitable depending on factors such as water levels/ how much cover is provided. There is frequent (Dog-)walker disturbance, especially on the right-hand (western) bank.
- A large brash pile at *Target Note 15.*

3.2.12 Boundary habitat features, which could provide low potential value resting places for Otter (as outlined above) are largely restricted to the Bramble/ woodland vegetation on the eastern bank (*Target Note 12*).

4 ASSESSMENT OF RISK (TO OTTERS)

4.1.1 Otters require a large territory that supports an abundant and varied food resource. Depending on the productivity of the river and other factors the range of a male Otter may be up to 70 km (of linear watercourse) while for a female it could be 25-40 km; a male Otter may overlap with two or three female territories (*e.g*. Woodroffe 2001). Within an occupied territory, Otters may have up to around 30 resting places, some used regularly while many more are used only once or a few times.

4.1.2 Although only a single visit was undertaken, the survey results suggest (at the time of the survey) a relatively low level of usage by Otter of the River Clywedog (within the area subject to survey). Signs recorded were limited to two spraint locations (neither of which were associated with a (potential) resting place). No fresh ('not-dry') spraint was recorded. It should be noted however that the level of use of areas within an Otter's territory can fluctuate at different times of the year and, for example, in response to food availability. (Recent) high river levels may also have washed away signs.

4.1.3 No (potential) holts or confirmed resting sites were located during the survey. Three specific potential Otter resting features are located within the proposed works boundary and will be directly impacted/ lost: a small chamber in the bank at the base of the weir at *Target Note 7,* a possible cavity associated with a large/ submerged Alder root plate at *Target Note 8*, and potential small voids associated with a line of degrading gabion baskets at *Target Note 11.* Another feature at *Target Note 13a* (a small chamber in a sloping bank) is located within close proximity. No evidence of use of any of these features was recorded during the survey, with only the feature at *Target Note 7* being of possibly more than low potential value. Should Otter(s) be occupying any of these features during the removal works there is the potential for direct disturbance/ injury/ death of an Otter, however, refer to *paragraph 4.1.5* below.

4.1.4 Within the proposed works boundary/ approximately 30 m, some boundary habitat features, such as the vegetated silt bar at *Target Note 3*, (Bramble) scrub (generally small stands)/ associated woodland (*Target Notes 4, 5a, 5b, 12, 13*), grassland (*Target Note 6*), tall-herbs (*Target Note 5*), occasional brash piles (*Target Note 10*) and bankside overhangs at *Target Note 14*, could also provide low potential value resting places for Otter (particularly in the summer months when the associated vegetation may be dense). There is therefore the potential for an indirect (*e.g*. disturbance) risk to individual Otters when undertaking the works. Otters are also inquisitive animals and will investigate new features within their territory; there is a risk that Otters might enter areas of works (during hours of darkness) and be potentially subject to direct disturbance and/ or injury/ death when works resume during day-light hours.

4.1.5 The potential use of any of the above resources by Otter should be considered in the context of the frequent (Dog-)walking activity that is present and which is likely to minimise any such potential.

4.1.6 There is also the potential for (in)direct impacts on the watercourse itself (*e.g*. pollution due to fuel spillage).

4.1.7 In summary, potential risks (impacts on Otters) associated with the proposed works at Felin Puleston are as follows:

- Direct disturbance/ injury/ death of an Otter;
- Indirect disturbance of an Otter (while at a resting place);
- Obstruction of an Otter trying to access a resting place;
- Obstruction of a dispersal route (*e.g*. disturbance that could impair their ability to migrate);
- Indirect effects on habitat/ food resource, *e.g*. pollution of the River Clywedog; and
- Habitat modification/ loss of potential resting sites.

4.1.8 It is concluded that the proposed works at Felin Puleston present a low risk to individual Otters (without mitigation/ avoidance measures) but a moderate risk of in/direct disturbance of a resting place. This is based on the following information:

- The proposed works are to be associated with removal of a weir and associated re-modelling of approximately 140 m of the River Clywedog/ its immediate banks;
- There are no known holt or resting sites within the proposed works boundary or approximately 100 m up- and down-stream;
- Possible resting sites are located within the proposed works boundary/ immediately adjacent land, including three specific features (largely of low potential value) which will be lost as a result of the works;
- The proposed works boundary/ immediately adjacent land are subject to frequent (Dog-)walking activity;
- Clearance of vegetation associated with the scheme is limited to a small number of trees, and some grassland, only; no dense scrub/ Bramble vegetation for example will be cleared; and
- The duration of the works will be limited to approximately 6 weeks.

4.1.9 (In)direct disturbance are likely to be the main potential impacts (on Otters) associated with the proposed works. It is unlikely that the work would prevent Otters dispersing along this stretch of the River Clywedog during the work period (assuming that there will be no night-time working) and it is also unlikely that it would temporarily prevent use of nearby (potential) resting places. Otters usually have a number of resting places and alternative features are available nearby. Evidence suggests that Otters will continue to use such features despite the presence of construction works in quite close proximity (*e.g*. Bassett & Wynn 2010). As noted previously this location is already subject to existing levels of noise/ disturbance due to (Dog-)walking activity. Furthermore, on completion of the work Otters will still be able to disperse along the river at this location as they may currently do.

4.1.10 Noise, the use of vehicles, the obstruction of paths and the presence of a number of human beings can all have detrimental effects (on Otters). However, the proposed works can be considered to be small-scale overall and over a limited time period. It is assumed that works will be progressed in a methodological manner throughout the 6 week period, with small sections of river being worked on at any one time.

4.1.11 Potential impacts on water quality (and therefore on the potential feeding resource that Otters currently exploit) are not considered to be an issue as it is assumed that works will be

undertaken according to best practice (pollution prevention) guidelines[9,10] and that there will be no measurable (negative) impact on the quality of the aquatic habitat.

4.1.12 Loss of the small number of potential resting sites will be a short term impact only, with similar features (for example natural voids, overhangs *etc.)* considered likely to develop naturally in the short-medium term, as part of a dynamic river system. The scheme will also include tree planting – with those planted along the immediate river banks in particuallr being able to provide similar potential resting features once established in the long-term.

4.1.13 As stated above the risk to individual Otters due to the proposed work is considered to be low (although the risk of (in)direct disturbance may be moderate). Assuming the appropriate implementation of the RAMs measures detailed in *Section 5* this risk will be avoided/ minimised as far as is reasonably possible. Due to the nature of the proposed work (small-scale, temporary), and that there would be no direct impacts on (potential) holt sites it is considered unlikely that there would be any significant impact on the local Otter population. Measures to mitigate/ avoid the impact of the proposed work on individual Otters will ensure that the local Otter population's ability to survive, breed or reproduce, or to rear or nurture their young is not impaired. Furthermore, it is not envisaged that the local distribution or abundance of Otter will be significantly affected by the proposed works.

[9] The River Clywedog should be protected through the implementation of best practice. This will help to safeguard Otters as well as other riverine species. Measures to protect the river from sediment release, sediment run-off, pollution by fuel and oil and other accidental spillage's during the works should be confirmed with the appropriate authorities. In addition, the general advice contained in the Pollution Prevention Guidance (PPG) leaflets produced by SEPA, EA and the Environment and Heritage Service (Northern Ireland) should be adhered to.
[10] Further detail provided in Dynamic Rivers (2022a).

5 REASONABLE AVOIDANCE MEASURES METHOD STATEMENT

5.1 Introduction

5.1.1 The risk (to individual Otters) due to the proposed works at Felin Puleston has been assessed as low, although the risk of in/direct disturbance is considered to be moderate. The risk is largely associated with in/direct disturbance of individual Otters that might utilise specific identified potential resting places which will be lost as a result of the works, or adjacent potential resting places, and also with the potential for Otters to enter the areas of works. Otters are inquisitive animals and may also be attracted into the work site to investigate, for example, new vehicles or rock/ debris piles[11].

5.1.2 Non-licenced RAMs are proposed to ensure that any risk to Otters is avoided as far as is reasonably possible. This Method Statement is provided below and provides the following:

- a pre-works toolbox talk[12] with on-site contractors;
- supervision of the initial habitat removal/ site clearance works to include: checking of potential resting sites immediately prior to the start of works, and subsequently at the start of each day, and precautionary supervision of the destruction of specific features;
- a protocol to be followed during works/ should an Otter/ actual resting place be found during works; and
- a watching-brief.

5.1.3 The RAMs scheme will be subject to the proviso that should an Otter/ confirmed resting place be discovered during the implementation of the scheme that, the ecologist would be required to undertake a risk assessment procedure as detailed below in the first instance[13]. Further to this it may be required for all works to cease and consultation with Natural Resources Wales (NRW) sought. It is possible that in this instance, an NRW 'development' licence will be required to lawfully proceed with the works.

5.1.4 As outlined in *Section 1.4,* the Otter is a protected species (under British Law); as well as protection against direct injury/ killing/ capture, this protection also includes in-direct disturbance, as well as obstruction/ damage/ destruction of any places it uses for breeding/ resting. Any such offences can result in prosecution of the individual and/ or company involved; this can lead to fines of up to £5000 per offence, and potentially a prison sentence of up to six months.

[11] DMRB Volume 10, Section 4 (Part 4) HA81/99: Nature Conservation Advice in Relation to Otters.
[12] Any requirement for a detailed pre-works survey is not deemed required in this instance. Rather, further to provision of a toolbox talk, certain features will be subject to an initial and subsequent daily checks at the start of each working day; these checks will be completed by a suitably qualified ecologist. Refer to *Section 5.2.*
[13] If a holt is recorded, then this Method Statement is likely to require review with subsequent delays to the initiation of the scheme.

5.2 RAMs Method Statement

Toolbox Talk

5.2.1 Prior to any works commencing/ any machinery accessing the proposed works boundary/ access route from the Erddig carpark, a toolbox talk/ site meeting will be held with all on-site contractors. This toolbox talk will identify:

- the recorded presence of Otters on the River Clywedog and in the vicinity of Felin Puleston;
- legal protection afforded the Otter and associated penalties;
- identification features of an Otter (see *Section 5.3* below);
- potential risks to Otters (due to the proposed work);
- responsibilities of the contractors with regards minimising/ avoiding potential risks, *e.g.* disturbance;
- the areas within which activity should be restricted; and
- the procedure to follow should an Otter be located during the work.

Working Protocol

5.2.2 Before any works commence a copy of this method statement will be issued to all site personnel/ contractors. This method statement must be strictly adhered to by all site personnel/ contractors involved with the proposed work. The ecologist will retain a copy of the method statement to be signed by those attending the toolbox talk (see *Section 5.4*).

Initial & Daily Checks

5.2.3 Immediately prior to the start of works (on the same day), the following features will be checked (where physically possible) for the presence of any animal/ signs of use:

- small chamber adjacent to the weir at *Target Note 7*;
- possible cavity at *Target Note 8*;
- potential small voids at *Target Note 11*;
- small chamber at *Target Note 13a;* and
- other (bankside) habitats within approximately 30 m of the proposed works boundary such as: vegetated silt bar at *Target Note 3*, (Bramble) scrub (generally small stands)/ associated woodland (*Target Notes 4, 5a, 5b, 12, 13*), grassland (*Target Note 6*), tall-herbs (*Target Note 5*), occasional brash piles (*Target Note 10*) and bankside overhangs at *Target Note 14.*

This check will be completed by a suitably qualified ecologist.

5.2.4 Further to the check, dependant on the results, the approach outlined below will be updated as deemed necessary. For example, if an animal and/ or confirmed resting place is recorded, further consideration on potential impacts/ measures required to be implemented may be necessary. This should be reviewed as required by an ecologist.

5.2.5 If the presence of an Otter (/actual resting place) is identified, the potential risk to that animal due to the proposed work will need to be assessed (by the ecologist) at that time, particularly if that feature is to be directly impacted/ lost. Dependent on the outcome of this risk assessment it may be necessary to temporarily postpone the work and or redefine the works proposed for that (and or subsequent) days. However, if the risk to any animal that may be present is considered to be negligible or low then the work may proceed in accordance with the working protocol detailed below. The level of risk is likely to be based (not necessarily exclusively) on the following factors:

- distance from the animal to the works;
- nature of resting place, *e.g*. well covered? in plain sight of work?; and
- type and extent of work proposed for that day.

5.2.6 This exercise will subsequently be repeated to ensure that as far as is possible there is no Otter located close to the work site at the time the work is to be undertaken. As such, at the start of each working day, it will be necessary for the small chamber adjacent to the weir at *Target Note 7*[14] to be checked for the presence of any animal. It will also be necessary to (where physically possible) check other features/ areas within approximately 30 m of physical works that are proposed for that particular day, to include the following:

- possible cavity at *Target Note 8*[15];
- potential small voids at *Target Note 11*;
- small chamber at *Target Note 13a;* and
- other (bankside) habitats such as: vegetated silt bar at *Target Note 3*, (Bramble) scrub (generally small stands)/ associated woodland (*Target Notes 4, 5a, 5b, 12, 13*), grassland (*Target Note 6*)[16], tall-herbs (*Target Note 5*), occasional brash piles (*Target Note 10*) and bankside overhangs at *Target Note 14.*

These checks will be completed by a suitably qualified ecologist.

<u>Supervision</u>

5.2.7 In addition to the daily checks, removal/ destruction for the following specific features will be supervised by a suitably qualified ecologist as a precautionary approach:

- small chamber adjacent to the weir at *Target Note 7* (unless blocked up, refer above)*;*
- possible cavity at *Target Note 8*[17]; and
- potential small voids at *Target Note 11*.

[14] Ideally (should it be deemed practicable), immediately at the start of works (further to the initial check by the ecologist) this feature would be either 1) investigated/ removed as per *paragraph 5.2.7* or 2) blocked up (for example using wooden stakes/ boarding, wire mesh, or tarpaulin (ensuring any such material is robust and that no gaps greater than 0.25 cm remain)).
[15] Ideally (should it be deemed practicable), immediately at the start of works (further to the initial check by the ecologist) this feature would be investigated/ removed as per *paragraph 5.2.7.*
[16] The machine access route from the carpark to the weir will be initially checked by the ecologist immediately prior to first use – it is suggested that it follows the line of an existing path. Dependent on the vegetation height as the scheme progresses, a daily check of this route may not be required. However, site personnel should maintain a watching brief at all times. A similar approach should be undertaken for the access route to the bank to be used for excess soil/ the bank itself, although much of this is associated with an existing track/ path.
[17] The associated grass bank should be gently scrapped back using a toothed bucket to methodically reveal any internal chamber.

Watching-brief

5.2.8 Outside the requirements detailed above, the ecologist will remain off site (on stand-by).

5.2.9 Although Otters are largely nocturnal, it is possible that Otters could move through the work site during daylight hours. If an Otter is flushed during the work all personnel should stop and remain in the same position until it can be seen that the animal has vacated the area. It will be emphasised to all on-site contractors that should an Otter be found at any time during any part of the work/ implementation of the RAMs (and the ecologist is not present at the site), all works must be halted immediately, personnel must retreat from the location, the ecologist be contacted for advice, and (re)start of work postponed the until the ecologist has confirmed it is OK to do so.

5.2.10 It may be necessary in this scenario for the ecologist to attend site to assess the potential risk to the identified animal (using the risk assessment procedure above). Work may then (or may not) proceed dependent on the outcome of this risk assessment. It is possible that should this be the case that an NRW 'development' licence would be required in order for the work to proceed.

5.2.11 In addition to that outlined above, the following measures will be implemented:

- If any areas of dense vegetation (scrub/ woodland/ tall-herbs/ grass) are to be directly impacted by the works, the ecologist should be notified in advance to advise of any other additional requirements.
- The temporary contractors compound should be located away from potential Otter habitat and as far away from the river as possible.
- All work will be completed within 'daylight hours'. No work will be carried out in the early morning or late evening at any time of year.
- No additional (external) lighting will be used during the work.
- All vehicles/ machinery will be driven slowly at all times and will not be driven across areas of dense vegetation.
- All fuelling of tools and equipment will be undertaken a minimum of 20 m from any water course and at least one fluid spill-kit will be located on site at all times.
- Prior to leaving the site at the end of each day, all vehicles, tools and other materials should be stored in the site compound.
- Prior to the start of each working day, all vehicles/ machinery/ equipment/ stored materials *etc* that may have been stored on site will be thoroughly checked (including underneath) by site-personnel for the presence of Otters. Should an Otter be present, site personnel/ contractors should leave the vehicle/ machinery/ equipment in-situ and contact the ecologist for advice.
- The contact details of the supervising ecologist will be provided to all site personnel during the toolbox talk.

5.3 Otter Identification

5.3.1 Otters (refer to drawing below) have long slender bodies with short legs and a thick tapered tail.



Drawing from Field Studies Council, 1998. Key to British Land Mammals.

5.3.2 Their body is about one metre long. They have dark brown fur on the back with a pale underside. Their head is flattened with a broad muzzle, small eyes and ears. Otters swim low in water with only the nose and eyes above water. It is unlikely that you will see an Otter at the work site as they are largely nocturnal.

Identifying Signs of Otter – Spraints





Spraints: (Left above) Usually left on prominent features such as rocks. (Right above) More typically a black colour/ tarry often with fish scales/ bones visible. These two examples show how variable they can be. They are often crumbly and grey when old. Supposedly sweet smelling.

Identifying Signs of Otter - Footprints





Footprints: (Above) This is a hind footprint with the outline and all the pads visible. Five toepads although often only four are visible. The toe pads are small, oval and can end in a short claw giving a 'tear' shape. (Right) Series of footprints in sand – often Otter footprints will only be visible in soft ground. Hind footprint approximately 6 cm wide by 9 cm long, front footprint 6 cm wide by 6.5 cm long – medium to large dog size.

5.3.3 Other signs of Otter activity include: worn paths alongside watercourses and flattened areas within dense vegetation.

5.4 Signatories

I attended a Toolbox Talk on the (Otter) Reasonable Avoidance Measures detailed in this Method Statement. I have read this document and understand my responsibilities in accordance with this Method Statement.

Print	Signed	Company	Date

6 TARGET NOTES

Target Note 1. The left-hand side river bank comprises a vertical wall on the edge of an adjacent tyre/ motor yard, with an approximately 3 m wide sloping bank to the river edge. The bank is at approximately 45º and supports young tree saplings/ tall-herbs – the vegetation is fairly sparse. Potential resting places could be provided when the vegetation is denser over summer months, however it is of low potential value due to adjacent disturbance. Most of this bank appears to have been scoured by higher water levels in the recent past.
At *Target Note 1a,* a large, broken, concrete slab forming the bank has created an overhang. This provides a potential resting place when the water level is lower: there was not enough space under the slab during the survey. Low potential value at most.
At *Target Note 1b* the immediate bankside below the wall is characterised by a narrow zone of tall-herbs/ rough grassland with gabion baskets/ broken brick wall sections at the immediate water's edge. Low potential value resting place as above.

Target Note 2. The right hand-side river bank comprises a steeply sloping/ vertical face approximately 1.5-2 m high which comprises largely small trees/ associated exposed roots, earth and various debris such as bricks. The face flattens out to an area of open woodland adjacent to a well-used car park. Frequent Dog activity in woodland. Occasional very small voids were present in the bank, however no particular potential resting places were noted.
Towards a footbridge a section of block work wall is located at the immediate water's edge (*Target Note 2a*), with the open woodland above. No voids were found.

Target Note 3. A large silt bar by a footbridge. Appears to be dominated by tall-herbs/ scramblers such as *Urtica dioica* (Common Nettle), *Impatiens glandulifera* (Himalayan Balsam), *Galium aparine* (Cleavers), along with *Rubus fruticosus* agg. (Bramble). Provides a potential resting place when vegetation has grown up over summer months, however it is close to a well-used footbridge. There is also a pile of large cut trunks from a felled tree on the bar; there is a small cavity beneath but this feature is probably too small, and no obvious signs of use observed. Low potential value at most.
The bar extends under the footbridge where it provides a possible sprainting spot, although none were recorded. Likewise no spraints were recorded on a central shingle bar (*Target Note 3a*) immediately up-stream of the bridge (this appears to have been scoured in the recent past).
The adjacent river edge (*Target Note 3b*) here is formed by a block work/ brick wall/ fence.

Target Note 4. A small stand of Bramble scrub located in a narrow zone adjacent to a well-used (Dog-)walking path – this provides a potential resting site, although use is deemed unlikely. Otherwise this zone is characterised by occasional mature trees at the immediate water's edge.
Much of this northern/ eastern bank, for example at *Target Note 4a,* had been subject to significant recent scrub/ Bramble clearance, with largely only scattered semi-mature trees retained. Collapsed gabions can form the banks with occasional large boulders.
At *Target Note 4b* a large boulder (erosion protection) is located beneath a semi-mature *Alnus glutinosa* (Alder) on the immediate water's edge. Three dry-fragmented spraints on top. It is possible Otters exit the river here to navigate around the weir.

Target Note 5. A narrow zone of bankside tall-herbs and young tree saplings. There is also a small area supporting dense *Salix* sp. (Willow)/ Alder and Bramble scrub at the immediate water's edge – *Target Note 5a.* These features provides low potential value resting places (in summer months) as above. A fenced off area of open woodland is adjacent at *Target Note 5b*; this wasn't assessed in detail, however it is possible it provides low potential value resting places in the summer months.

Target Note 6. Occasionally managed tussocky grassland field. There are developing tall-herb/ Bramble stands towards the edges. This vegetation may provide low potential value resting places (in summer months) if it is uncut/ grazed, however there is frequent (Dog-)walker disturbance. This extends to the water's edge where the immediate banks are occasionally characterised by 0.5 m high vertical faces. The banks are collapsing in the vicinity of the weir (down-stream). No particular overhangs of potential value as resting places were noted.

Target Note 7. A small square opening at the base of the weir, located in the gabion basket wall/ bank. It is approximately 0.2-0.35 m wide, and appears to extend approximately 1-1.5 m into the bank. During the survey this feature was largely dry internally, with water tumbling onto the bottom step of the weir lapping into the entrance. A potential resting place, although when the water level is higher it is likely to be submerged. No evidence of use was found, however it is likely to have been regularly scoured.

Target Note 8. A large Alder root plate which extends to the immediate eater's edge. This was underwater and as such it was not possible to inspect where the river has undercut the bank/ root plate, but locally it appears to extend approximately 1.5 m back into the bank. It was not possible to determine if a cavity is present – there was no obvious entrance, but this could be underwater.

Target Note 9. An old fallen tree trunk resting on the bank into the river. One dry-intact spraint on the trunk over the water.

Target Note 10. Brash has piled up in the vicinity of immediate banks side shrubs/ young trees, creating a secluded area. No particular voids were present, but this feature offers a low value potential resting place in the summer months.

Target Note 11. A small chamber in a (the depth of the river largely precluded direct access)/ low potential value resting place. A set of associated large boulders did not have any spraints.

Target Note 12. Bramble and tall-herbs characterise this immediate bank, associated with a strip of wet woodland. There are few trees at the immediate water's edge. Potential resting places could be present during the summer months, albeit of low potential value.

Target Note 13. A narrow/ steep bank from the water's edge which supports trees (largely young)/ saplings, and Bramble scrub (can be locally dense especially on flatter ground above). Potential resting places as above. The immediate banks at the water's edge are often undercut but exposed, with no potential features seen.
At *Target Note 13a* there is a hole in the bank below a large *Acer pseudoplatanus* (Sycamore) tree, approximately 2 m up from the water's edge. The entrance is approximately 0.3 m across, partly obscured by *Hedera helix* (Ivy). Internally there is a small void, approximately 0.5 m deep. No evidence of Otter observed, but it provides a possible resting place.

Target Note 14. Example of a small overhang in the low grassed bank/ face which characterises this length. It is approximately 0.5 m deep and is fairly open, the base is dry. There are similar features on both sides of the river along this stretch (towards *Target Note 15*) of varying depths *etc*, some with water at the base. These features may offer low potential value resting places depending on factors such as water levels/ how much cover is provided. Frequent (Dog-)walker disturbance, especially on the right-hand bank.

Target Note 15. A large brash pile caught in a bank-side Willow. Low potential resting place, with no obvious evidence found.

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North

Puleston Industrial Estate

Pond

1a
1
2
1b
2a
3
3a
3b
4
4a
4b
5
5a
5b
6
7
8
9
10
11
12
13
13a

5 m 0 25 m
1: 500

Base mapping provided by the client.

Proposed Works Boundary

Survey site approximate 100 m extents

Target Note

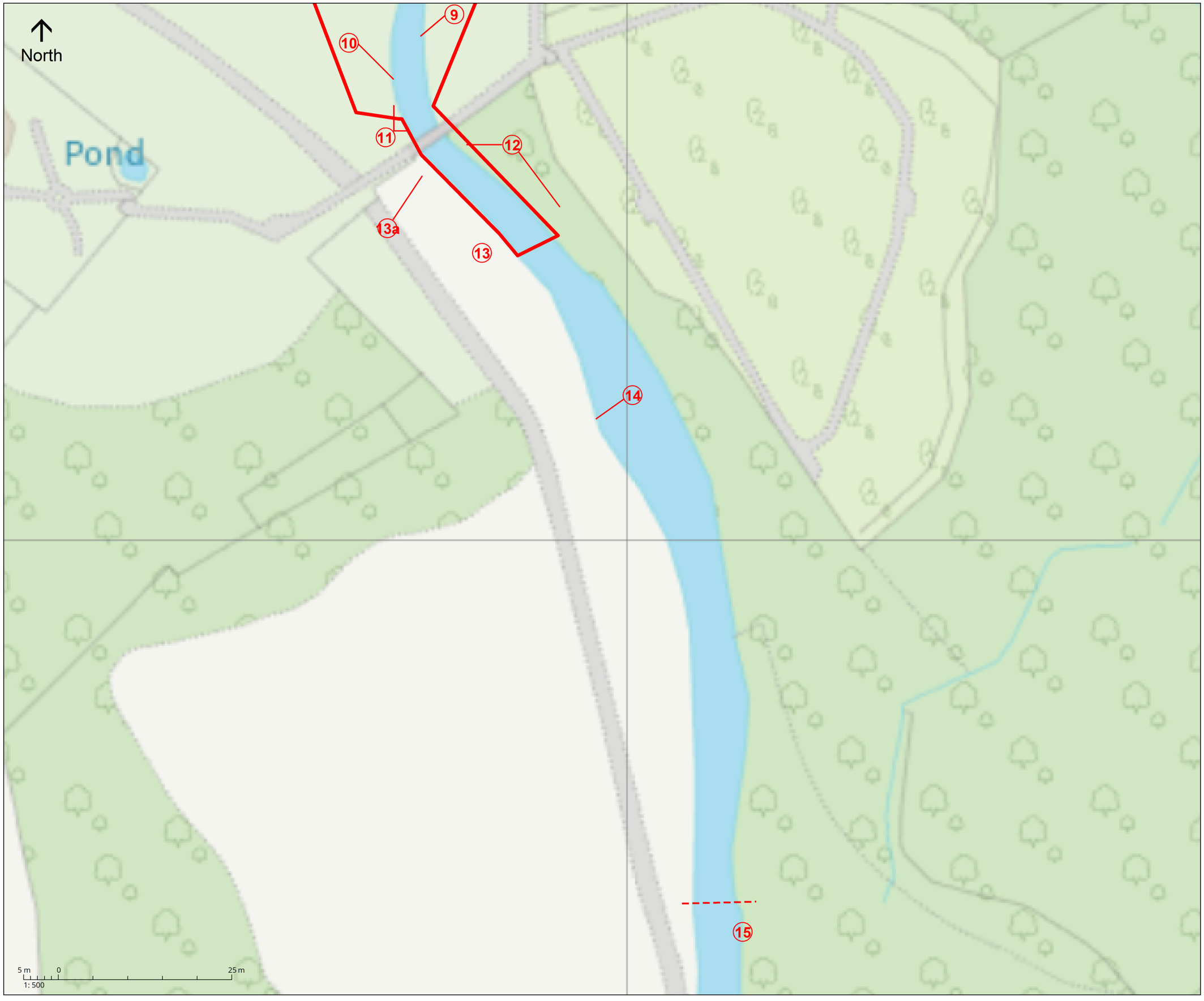
C564 Proposed Demolition & Removal of Weir/ Associated Works at Felin Puleston, Erddig, Wrexham, LL13 7RE - Otter Survey and Reasonable Avoidance Measures Method Statement

Figure 1* - Target Notes *Sheet 1 of 2

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Base mapping provided by the client.

Proposed Works Boundary

Survey site approximate 100 m extents

Target Note

C564 Proposed Demolition & Removal of Weir/ Associated Works at Felin Puleston, Erddig, Wrexham, LL13 7RE - Otter Survey and Reasonable Avoidance Measures Method Statement

Figure 1* - Target Notes *Sheet 2 of 2

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