



THE
ENVIRONMENT
PARTNERSHIP



UNITED UTILITIES

**HAWESWATER AQUEDUCT RESILIENCE PROGRAMME
- PROPOSED MARL HILL SECTION**

**MARL HILL HABITATS REGULATIONS ASSESSMENT
(RVBC-MH-APP-010)**

TEP

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

Tel: 01925 844004
Email: tep@tep.uk.com
www.tep.uk.com

Offices in Warrington, Market Harborough, Gateshead, London and Cornwall

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|----------------|---|
| Document Title | Marl Hill Habitats Regulations Assessment (RVBC-MH-APP-010) |
| Prepared for | United Utilities |
| Prepared by | TEP - Warrington |
| Document Ref | 7478.03.004 |

| | |
|----------|----------------|
| Author | Mike Walker |
| Date | June 2021 |
| Checked | Elizabeth Seal |
| Approved | Elizabeth Seal |

| Amendment History | | | | | |
|-------------------|----------|-------------|---------------------|--------------------------------------|--------|
| Version | Date | Modified by | Check / Approved by | Reason(s) issue | Status |
| 1.0 | 28.05.20 | MW | EJS | For review by Natural England | Draft |
| 2.0 | 17.09.20 | MW | EJS | Changes to scheme design | Draft |
| 3.0 | 21.03.21 | MW | EJS | Update from Air Quality Assessment | Final |
| 4.0 | 18.05.21 | MW | EJS | Conversion to Appropriate Assessment | Final |
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| CONTENTS | PAGE |
|---|-------------|
| Executive Summary | 1 |
| 1.0 Introduction | 3 |
| 2.0 Summary of Baseline Information | 8 |
| 3.0 Screening Assessment | 11 |
| 4.0 Appropriate Assessment | 14 |
| 5.0 Conclusions | 23 |

| TABLES | PAGE |
|---|-------------|
| Table 1 - Internationally Designated Sites within 20km | 8 |
| Table 2 - Test of Likely Significant Effect | 12 |
| Table 3 - Maximum estimated nutrient N deposition resulting from proposed Marl Hill works | 16 |
| Table 4 - Maximum estimated acid deposition resulting from proposed Marl Hill works | 16 |
| Table 5 - Appropriate Assessment Summary Table | 18 |

| FIGURES | PAGE |
|---|-------------|
| Figure 1. The Habitats Regulations Assessment process (Figure 1 from Planning Inspectorate Advice Note 10)..... | 7 |

APPENDICES

APPENDIX A: Attributes of European Sites

DRAWINGS

G7478.03.001.4 Project Location and International Designated Sites

Executive Summary

1. United Utilities (UU) maintains and operates the Haweswater Aqueduct, which runs 110 km from Cumbria through Lancashire to Greater Manchester. Inspections of the aqueduct identified areas of concern that pose a potential future risk to water supply. In response UU is replacing six tunnel sections of the aqueduct, collectively this is known as the Haweswater Aqueduct Resilience Programme (HARP). This Habitats Regulation Assessment (HRA) is in relation to the replacement works for the tunnel known as Proposed Marl Hill Section and supports the associated planning application to Ribble Valley Borough Council (RVBC)
2. The proposed works comprise the installation of a single line tunnel and conduit sections which is 4.3 km long and runs from just south of Newton-in-Bowland, down to just west of Waddington in Lancashire. Above ground works will comprise site compound and working areas at the start and end of the section. Tunnelling will commence from the launch compound at the southern end and will drive north to the reception compound. With the exception of arisings resulting from the creation of the reception shaft, all excavated material will be removed at the southern end. All excavated material will be transported to Waddington Fell Quarry. A number of highways improvements works are required to facilitate construction traffic access to the rural compounds including road widening and passing places, a new crossing of the River Ribble and use of existing parking facilities near Clitheroe, in turn these works would need their own temporary compounds.
3. Three European sites identified within 20km of the proposed works at Marl Hill have been scoped in to the assessment to examine any potential impacts on these sites that could arise from the proposals. These designations are:
 - Bowland Fells SPA
 - Calf Hill & Crag Woods SAC
 - North Pennine Dales Meadows SAC
4. None of the designations are crossed by the above ground elements of the proposed development and all of the designations are >3 km away. However, the following potential impact pathways have been identified that could possibly result in a likely significant effect on one or more of the identified European sites and are therefore taken through to Appropriate Assessment:
 - Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of waterborne pollution travelling to designations via hydrological linkages during the construction and operational phases of the development.
 - Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of airborne pollution travelling to designations during the construction phase of the development.
 - Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of changes to groundwater as a result of the development including decommissioning of the existing asset.

- Disturbance to species associated with the SPA / Ramsar or loss of supporting habitat for these species during the construction and operational phases of the development.
5. This assessment concludes that, without mitigation, there will be no adverse effect on the integrity of any European sites alone or In-combination with other projects or plans.

1.0 Introduction

Background

- 1.1 United Utilities (UU) maintains and operates the Haweswater Aqueduct, a pipeline running 110km from Cumbria and through Lancashire to Greater Manchester. The pipeline is comprised of multiple pipe and single tunnel sections. Inspections of the aqueduct identified areas of concern that posed a potential future risk to both water quality and supply. In response UU is replacing all tunnel sections of the aqueduct. Each tunnel section is an independent development, the completion of which is not reliant on any other tunnel section, therefore each section will be accompanied by its own Environmental Statement to support the planning application (some tunnel sections require multiple planning applications where they cross planning authority boundaries). Collectively this is known as the Haweswater Aqueduct Resilience Programme (HARP).
- 1.2 The Environment Partnership Limited (TEP) was commissioned by United Utilities to undertake a Habitats Regulations Assessment (HRA) of the Proposed Marl Hill Section of the larger HARP scheme and supports associated planning applications to Ribble Valley Borough Council (RVBC). The HRA determines firstly in the Scoping Assessment whether the proposals could possibly have a significant effect on any European sites or Ramsar sites and then (for any sites carried forward to Stage 2) the Appropriate Assessment determines if the proposals could result in a significant adverse effect on the integrity of these sites.
- 1.3 This assessment covers the Proposed Marl Hill Section (henceforth referred to as 'the Project'), which is located in Lancashire northwest of Clitheroe between National Grid References SD696489 and SD709449. It comprises the replacement of a tunnel section towards the central section of the existing Haweswater Aqueduct between Waddington at the southern end and south of Newton-in-Bowland at the northern end (Figure G7478.03.001.4).
- 1.4 The existing aqueduct between these areas would be replaced with a single tunnel. The new tunnel would be created using a tunnel boring machine (TBM) from an above-ground launch facility, from which the TBM will drive approximately 4.1 km northwards below-ground to an above-ground reception facility. Tunnel boring activities will be at depths of between 15 m and 65 m below ground level. Short open-cut surface trenching sections would be required at each end of each tunnel section making connections back to the existing aqueduct.
- 1.5 Above-ground works include a mix of temporary construction activities and permanent installations. Above-ground works consist of two main working areas:
 - Braddup Compound will be the launch facility in the south, approximately 3.8 km north west of Clitheroe
 - Bonstone Compound will be the reception facility in the north, approximately 8 km north west of Clitheroe
- 1.6 Tunnel arisings would be extracted at the southern (launch) compound and transported to Waddington Fell Quarry, accessed by the B6478.

- 1.7 Transport routes for both compounds for light vehicles and HGVs will be from Junction 31 of the M6 along the A59 then the A671 Pimlico Link Road and B6478, with an adapted route along Clitheroe Road for abnormal loads.
- 1.8 Site access for the Braddup Compound will be from the B6478 in the east via an upgraded existing track. Site access for the Bonstone Compound will be from the B6478 in the east, initially via an upgraded track and then heading northwest along a newly constructed access road.
- 1.9 Construction activities are anticipated to continue for a period of two and a half years, (Q2 2024 to Q3 2026) excluding commissioning (connecting to the existing asset) and land reinstatement. The exact timing of commissioning depends on the connection approach and if requiring a full outage of the aqueduct this can only be undertaken once (in September / October) every two years. Land reinstatement would be carried out progressively, starting as early as possible at each of the construction compounds. This involves land restoration activities being commenced in appropriate locations at the compounds whilst construction and commissioning activities are still underway.
- 1.10 Construction compounds are the locations within which construction activities would be undertaken. The construction compounds would contain tunnel launch and reception facilities (e.g. vertical tunnel shafts), tunnel slurry treatment facilities, diesel generators (where necessary), welfare and administration facilities, vehicle parking, surplus materials storage areas, and water management areas. Lighting would be required for safety reasons and where 24-hour working is required. Lighting designs and locations would minimise light spill towards any sensitive locations.
- 1.11 The locations of construction compounds for the proposed Marl Hill Section are shown in Figure G7478.03.001.4.
- 1.12 Enabling works would include fencing working areas and preparing sites. Working areas would be topsoil stripped and construction phase drainage installed where required. As required, trees would be felled and vegetation would be cleared. Compounds and laydown areas would be constructed and safe access and egress to and from the sites would be provided via the local road network.
- 1.13 To facilitate construction traffic getting to and from site two existing parking areas at Hansons Cement works would be used by the proposed development and a number of highways improvement works are proposed which would include road widening and installation of additional passing places. Part of construction access includes the proposed Ribble Crossing, which is one of two options to allow the movement of construction vehicles in and around the Clitheroe area. The proposed Ribble Crossing will require a temporary road bridge crossing the River Ribble just north of Clitheroe.
- 1.14 For the majority of the length of the replacement aqueduct there would be no permanent above-ground structures with much of the new sections of aqueduct being located deep below ground level. Permanent new valve houses would be built at the end of each replacement tunnel section, these would be single storey structures approximately 11 m wide by 12 m long.

- 1.15 Land used for temporary compounds would be reinstated after completion of construction works with temporary access roads being removed. Where launch and reception facilities (e.g. shafts) exist, these would be covered and reinstated at ground level.
- 1.16 Once the new section of aqueduct has been constructed, the replaced section of aqueduct would be decommissioned, with the new asset being tested and commissioned before the existing sections of aqueduct are decommissioned.
- 1.17 The new tunnel sections would connect to the existing overflow pipes that allow the aqueduct to be drained to existing outfall points. The overflows are only used in an emergency or for rare maintenance requirements and represents no change to the existing operational activities of the aqueduct. The only operational phase change resulting from the proposed development is the discharge of water from the decommissioned asset via the existing overflow pipes as a result of water ingress into the unused tunnel sections.

The Habitats Regulations Procedure

- 1.18 The Habitats Directive (92/43/EEC) established a network of designated sites, within the European Community, with the objective of protecting sites that are considered to be of exceptional importance in respect of rare, endangered or vulnerable natural habitats and species. These sites are European designated sites and are known as Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Offshore Marine Sites (OMS).
- 1.19 The Habitats Directive (92/43/EEC) transposed into UK law in 1994 as The Habitats Regulations, which was subsequently amended and is known as the Conservation of Habitats and Species Regulations 2017. A number of changes have been made to this by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, referred to as the 2019 Regulations. Under the 2019 Regulations, SACs and SPAs in the UK no longer form part of the EU's Natura 2000 ecological network. The 2019 Regulations have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK.
- 1.20 Although Ramsar sites do not form part of the national site network, National planning policy recommends that Ramsar sites should be afforded the same level of consideration as SAC and SPA designated sites.
- 1.21 Under the Habitats Regulations the granting of approval (i.e. planning permissions, licenses and consents) for developments is restricted if they are likely to have a significant adverse effect on an SAC, SPA or Ramsar site.
- 1.22 Guidance (EC, 2001¹; IPC, 2011²) on undertaking assessment of plans or projects that may impact upon designated European sites recommends a staged approach to the assessment process:

¹ European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 Sites. Methodological guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC

² The Infrastructure Planning Commission (2011). Habitat Regulations Assessment for nationally significant infrastructure projects

- Screening (Step 1): The process of identifying potentially relevant European sites and the likely impacts of a project upon the designated features of a European site, either alone or in combination with other plans and projects, and considering whether the impacts are likely to be significant.
- Appropriate Assessment (Step 2): Assessment of the impacts, taking into account proposed mitigation measures, on the integrity of the European site, either alone or in combination with other plans and projects, with regard to the site's structure and function and its conservation objectives. If it cannot be concluded beyond reasonable scientific doubt that the project would not adversely affect site integrity then development consent cannot be issued unless the steps set out in Stages 3 and 4 are successfully concluded.
- Assessment of Alternative Solutions (Step 3): Examining alternative ways of achieving the objectives of the project, to establish whether there are solutions that would avoid an adverse effect on the integrity of a European site(s).
- Assessment of IROPI (Step 4): If it is shown that there are no alternative solutions then the project can receive development consent only if it can also be demonstrated that it should proceed for imperative reasons of overriding public interest (IROPI). Where IROPI can be shown then compensatory measures required to maintain the overall coherence of the site or integrity of the European site network will need to be identified and secured.

1.23 All four stages of the process are referred to cumulatively as the Habitats Regulations Assessment (HRA). Figure 1 taken from the Planning Inspectorate Advice Note 10 (Version 8 – Planning Inspectorate, November, 2017), sets out the recommended steps in the process.

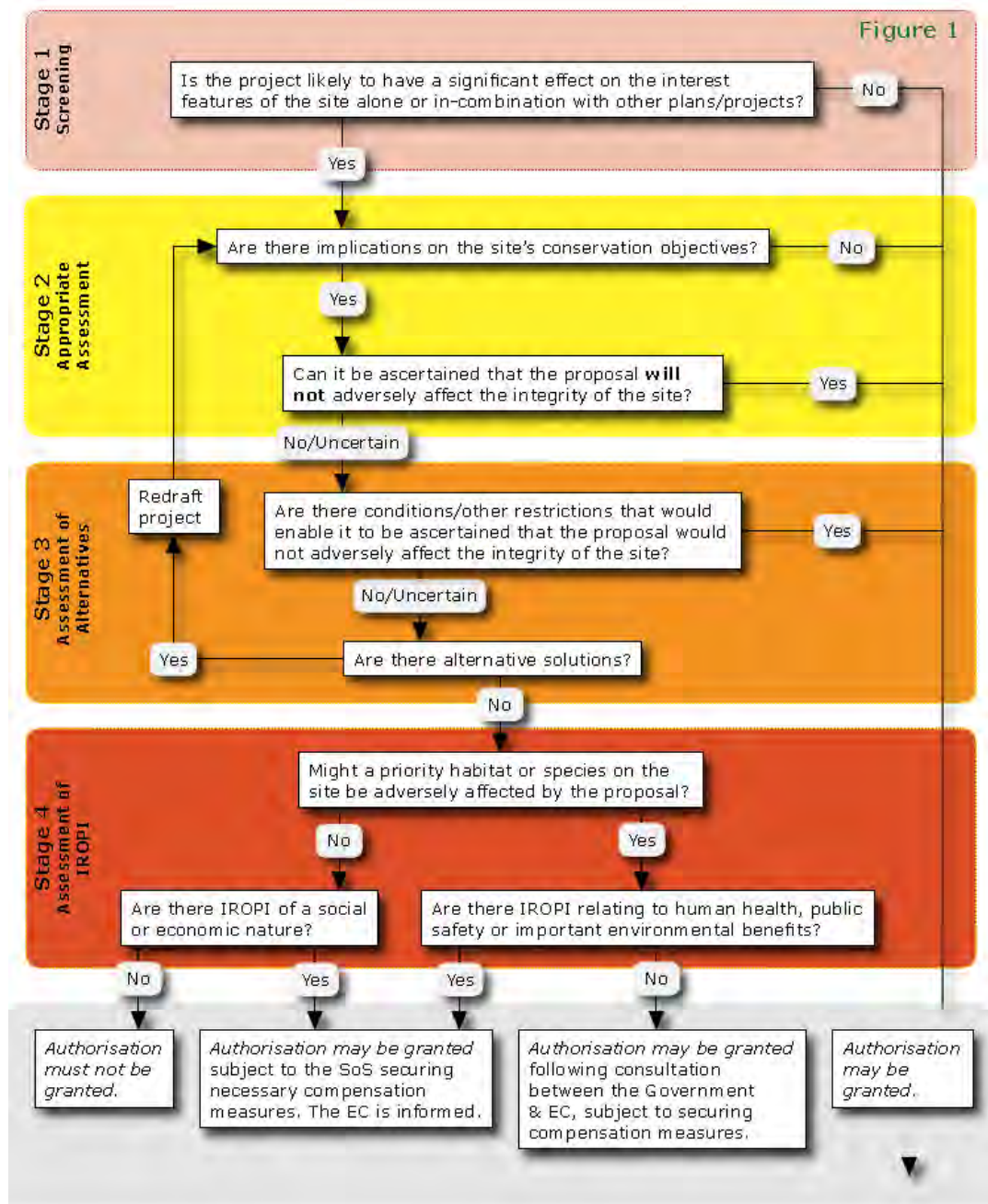


Figure 1. The Habitats Regulations Assessment process (Figure 1 from Planning Inspectorate Advice Note 10).

2.0 Summary of Baseline Information

Natura 2000 Sites considered within influencing distances

- 2.1 The Proposed Programme of Works is located within 20 km of the following European sites:

Table 1 - European Sites within 20 km

| Site name: | Designation: | Distance (km): |
|-----------------------------|--------------|-----------------------------------|
| Bowland Fells | SPA | 4.1km west of northern area |
| Calf Hill and Crag Woods | SAC | 19.2km northwest of northern area |
| North Pennine Dales Meadows | SAC | 3.6km north of northern area |

- 2.2 Therefore, on a precautionary basis, all of these sites have been taken forward for further assessment to determine whether a likely significant effect could occur.
- 2.3 The locations of these European sites relative to the Proposed Development are shown at Figure G7478.03.001.4.
- 2.4 A summary of the European sites scoped in for assessment and potential impact pathways are given below. Full descriptions of the European sites scoped in are given in Appendix A.

Bowland Fells SPA (UK9005151)

- 2.5 Bowland Fells is classified as a Special Protection Area because of its importance for the Annex I upland breeding birds hen harrier and merlin. It also supports an internationally important population of breeding lesser black-backed gulls which is proposed as an additional feature of the site. The Bowland Fells SPA encompasses the main upland block within the area of Lancashire known as the Forest of Bowland.

Calf Hill & Crag Woods SAC (UK0030106)

- 2.6 These old sessile oak *Quercus petraea* woods occupy north- and south-facing slopes of a valley on millstone grit. Oak dominates in the canopy with birch *Betula* sp., rowan *Sorbus aucuparia* and holly *Ilex aquifolium*. The ground flora ranges from areas of abundant bilberry *Vaccinium myrtillus*, through grassy areas, to rich moss carpets. Small areas of alder *Alnus glutinosa* flushes also occur.
- 2.7 Qualifying habitats: The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnion incanae*, *Salicion albae*). (Alder woodland on floodplains)*
 - Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles. (Western acidic oak woodland)

North Pennine Dales Meadows SAC (UK0014775)

- 2.8 This site contains a series of isolated fields within several valleys encompassing the range of variation exhibited by mountain hay meadows in the UK. The grasslands included show very limited effects of agricultural improvement and have good conservation of structure and function. A wide range of rare and local meadow species are contained within the meadows, including globeflower *Trollius europaeus*, the lady's-mantles *Alchemilla acutiloba*, *A. monticola* and *A. subcrenata*, and spignel *Meum athamanticum*.
- 2.9 Qualifying habitats: The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae). (purple moor-grass meadows)
 - Mountain hay meadows

Species and Habitat Records

Desk Based Records

- 2.10 Data gathering from a combination of web-based sources and local biological records centres was undertaken in August 2018 by United Utilities.
- 2.11 Additional desk study searches were undertaken where it is considered that existing information is insufficient to appropriately assess likely significant ecological effects. This particularly relates to desk study searches for non-statutory designated sites of nature conservation interest and protected / notable species. As part of the desk study the following data sources were contacted or accessed for records:
- Lancashire Environment Record Network (LERN)
 - The Multi Agency Geographic Information for the Countryside (MAGIC) website (<https://magic.defra.gov.uk/MagicMap.aspx>)
 - Google maps (<https://www.google.co.uk/maps>)
 - Environment Agency (North West region Analysis and Reporting team) – information requested August 2019. In addition to Open Government (<https://data.gov.uk/>), macroinvertebrate / macrophyte site and metric data, a request for data relating to freshwater invertebrates, freshwater macrophyte and diatom, and protected species records was submitted for selected watercourses across the Proposed Programme of Works.
- 2.12 Extensive bird records were obtained from Lancashire with regards to potential bird migratory routes and functionally linked land for species of conservation concern associated with the European sites (see Ref RVBC-MH-TA-009-01-01).
- 2.13 Additional sensitive bird records of Schedule 1 species winter roost sites, including hen harrier and merlin were obtained from the RSPB in October 2020.

Field Surveys

- 2.14 A full suite of ecological surveys were undertaken in 2019/20 by Bowland Ecology Ltd and Ricardo to support the Proposed Programme of Works and included:
- Extended phase 1 habitat surveys
 - NVC surveys
 - Great crested newt (GCN) surveys
 - Hedgerow surveys
 - Wintering bird surveys
 - Breeding bird surveys
 - Reptile surveys
 - Bat activity surveys
 - Badger surveys
 - Water vole, otter and crayfish surveys
 - Aquatic walkover surveys
- 2.15 A Groundwater Dependant Terrestrial Ecosystems (GWDTE) survey was carried out by Bowland Ecology Limited and a GWDTE assessment was undertaken by Jacobs' water environment team. The GWDTE assessment included analysis of habitat and botanical / wetland community data alongside hydrological data to identify potential GWDTE located within 200 m from compounds, 250 m from access roads and 500 m from shafts.
- 2.16 The initial scoping distance for shafts was later refined. The Sichardt method (e.g. Preene et al, 2016) was used to estimate the dewatering zone of influence around each of the shafts at each compound that would be expected to intercept groundwater. This was applied using the estimated drawdown of groundwater levels to the base of the shaft during construction. A minimum zone of influence of 25 m was assumed and was applied for both shafts. This was considered to be a conservative estimate.
- 2.17 The GWDTE assessment is provided in Environmental Statement Technical Appendix 7.2 (Ref LCC_RVBC-MH-TA-007-002). The assessment was based on general EIA methodology and criteria from the Design Manual for Roads and Bridges (DMRB) HD45/09 Road Drainage and the Water Environment (hereafter referred to as HD45/09). The methodology was also based upon discussion with the regulatory bodies during the scoping stage of Environmental Impact Assessment (EIA).

3.0 Screening Assessment

- 3.1 This section provides Stage 1 of the Habitats Regulations Assessment which determines if the scheme could possibly have a significant effect on each of the European sites to be assessed. Due to the proposed development type, the following impact pathways have been identified that could potentially affect the conservation status of the identified European sites, which will be further assessed:
- Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of waterborne pollution travelling to designations via hydrological linkages during the construction and operational phases of the development.
 - Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of airborne pollution travelling to designations during the construction phase of the development.
 - Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of changes to groundwater as a result of the development including decommissioning of the existing asset.
 - Disturbance to species associated with the SPA / Ramsar or loss of supporting habitat for these species during the construction and operational phases of the development.
- 3.2 Table 2 considers each of the impact pathways and confirms whether or not the proposed development has a risk or possibility of causing a likely significant effect on each of the European designated sites identified.
- 3.3 In relation to potential for waterborne pollution impacts, sites greater than 5 km from above ground works have been scoped out. Any pollutants resulting from the proposals that might enter local watercourses are highly unlikely to have perceivable impacts beyond this distance.
- 3.4 In relation to potential for impacts from airborne pollution, the Institute of Air Quality Management Guidance (IAQM, May 2020)³ requires identification of European designations within 10 km. Two designations are present within 10 km (Bowland Fells SPA, North Pennine Dales Meadows SAC) all other designations are scoped out.
- 3.5 In relation to potential for impacts on ground water dependant terrestrial ecosystems (GWDTE), the groundwater assessment of potential effects has been based on an interpretation of data from the ground investigations which characterises the groundwater environment intercepted by the Proposed Marl Hill Section, and confirms groundwater levels (i.e. groundwater pressures above the tunnelled sections, areas of shallow groundwater conditions, geological settings and groundwater quality). Based on this information, an Overarching GWDTE Assessment Area was defined as a 200 m buffer in all directions around the surface works proposed development envelope (Ref: RVBC-MH-TA-007-002). As the nearest European site is located 3.6 km from the proposed surface works, this impact is scoped out

³ IAQM 2020. A guide to the assessment of air quality impacts on designated nature conservation sites. Version 1.1

- 3.6 No effects on GWDTE are predicted to arise during tunnel construction as the lining will be installed immediately behind the tunnel boring machine preventing any route for dewatering, furthermore the proposed tunnel does not pass beneath any SAC, SPA or Ramsar designations.
- 3.7 The potential for dewatering effects on GWDTEs to arise as a result of decommissioning the existing asset are dependent on the construction type and depth of the existing Haweswater Aqueduct (HA) and the geological conditions between the asset and the surface. Therefore a detailed assessment has been undertaken to identify any lengths of the HA where effects on GWDTEs might occur and estimate a dewatering zone of influence. Based on this assessment, lateral effects at the surface are expected to extend no further than 200m. The existing tunnel section proposed for decommissioning does not travel beneath or within 200m of any European sites and there will therefore be no impacts on European sites as a result of the decommissioning works. Groundwater impacts will not be considered further within the assessment.
- 3.8 In relation to species disturbance, as all above ground works are greater than 2 km from designations, birds are the only qualifying features with a risk of being affected due to the potential use of supporting land outside the designation boundaries. Therefore only designations with birds as qualifying features have been scoped into the Appropriate Assessment.

Table 2: Summary of Screening

| Designated Sites | Impact Pathways - risk/possibility of significant effect? | | | |
|---------------------------------|---|----------------------------|---------------------|------------------------|
| | Waterborne pollution impacts | Airborne pollution impacts | Groundwater impacts | Disturbance to species |
| Bowland Fells SPA | Yes | Yes | No | Yes |
| Calf Hill & Crag Woods SAC | No | No | No | No |
| North Pennine Dales Meadows SAC | Yes | Yes | No | No |

- 3.9 Each of the European sites within Table 2 where a risk or possibility of a likely significant effect has been identified is now taken through to the second stage of the HRA process, the Appropriate Assessment, to determine whether the impact pathways identified could result in a significant adverse effect on the integrity of these sites. The Appropriate Assessment is provided in Section 4.0.

- 3.10 For those sites not carried forward to Appropriate Assessment, since there are no predicted impacts, there is no requirement to undertake an In-combination assessment to consider whether a significant impact could arise when combined with any other projects or plans.

4.0 Appropriate Assessment

4.1 This section assesses whether each of the potentially significant impact pathways identified as a result of the proposed scheme could have a significant adverse effect on the integrity of the European sites. The Appropriate Assessment is made within Table 5, with further information to support this assessment detailed below. The assessment is made with regard to each site's structure and function and its conservation objectives which are provided below.

Conservation Objectives

4.2 The conservation objectives for the Bowland Fells SPA are as follows:

4.3 *Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;*

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*

4.4 The conservation objectives for the North Pennine Dales Meadows SAC are as follows:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats*
- *The structure and function (including typical species) of qualifying natural habitats, and*
- *The supporting processes on which qualifying natural habitats rely*

Waterborne Pollution Impacts

4.5 The Bowland Fells SPA and North Pennine Dales Meadows SAC are the only designations that fall within 5 km of the above ground works. Due to the lack of any hydrological linkages between the above ground works and these two designations and with consideration of the distance and topography between the above ground works and these designations, there are no opportunities for waterborne pollution from the proposed development to reach these sites.

Air Quality Impacts

- 4.6 An assessment has been carried out to fully determine potential air quality impacts of the construction phase of the scheme on designated sites including European designations covered by HRA. Chapter 18 of the Environmental Statement considers air quality issues (Ref: RVBC-MH-ES-018) and is supported by Technical Appendices 18.1 and 18.2 (RVBC-MH-TA-018-001 and 002) and Figure 18.1 (RVBC-MH-FIG-018-001).
- 4.7 The Air Quality ES chapter included the assessment of the potential air quality impacts associated with emissions from diesel generators at the works compounds required for construction of the Proposed Marl Hill Section. The assessment also included consideration of the impact of road traffic emissions due to the additional vehicle movements on the local road network during construction. The predicted impacts were assessed against the relevant air quality standards and guidelines for protected designated ecological sites (referred to as critical levels and critical loads).
- 4.8 Relevant to HRA, the Institute of Air Quality Management Guidance (IAQM, May 2020)⁴ requires identification of European designations within 10 km. Two designations are present within 10 km (Bowland Fells SPA, North Pennine Dales Meadows SAC).
- 4.9 The UK Air Pollution Information System (APIS)⁵ provides a list of nitrogen sensitive habitats that have been used to scope European designations that might be subject to air quality impacts. In line with the Institute of Air Quality Management Guidance (IAQM, May 2020)⁶ these were used to determine if any European designations were present within 10 km of the proposals that contain nitrogen sensitive habitats.
- 4.10 The following designations are present within 10 km of the north and/or south compounds, along with the relevant nitrogen sensitive habitats:
- Bowland Fells SPA (both compounds / LCC and RVBC):
 - Broad habitat: Dwarf shrub heath
 - Relevant nitrogen critical load class: Northern wet heath: Calluna-dominated wet heath (upland moorland)
 - North Pennine Dales Meadows SAC (south compound only / RVBC): dry grassland, humid grassland, mesophile grassland.
 - Broad habitat: Mountain hay meadows
 - Relevant nitrogen critical load class: Mountain hay meadows
 - Broad habitat: Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)
 - Relevant nitrogen critical load class: Moist and wet oligotrophic grasslands: Molinia caerulea meadows

⁴ IAQM 2020. A guide to the assessment of air quality impacts on designated nature conservation sites. Version 1.1

⁵ UK Air Pollution Information System. <http://www.apis.ac.uk/>

⁶ IAQM 2020. A guide to the assessment of air quality impacts on designated nature conservation sites. Version 1.1

4.11 The predicted nitrogen and acid deposition at these designation sites resulting from diesel generator emissions is summarised in Tables 3 and 4. The results indicate that the predicted deposition rates from diesel generator emissions are all within the relevant criteria (set out in Section 18.4.5 of the ES Air Quality chapter) for identifying where further assessment is required by ecologists (i.e. the Process Contribution (PC) was less than 1 % of the critical load for the European designated sites (PC/CL)). Therefore, the predicted impacts are imperceptible and would be unlikely to result in any significant air quality effects at any of the designated sites identified in the assessment.

Table 3. Maximum estimated nutrient N deposition (kgN/ha-year) resulting from proposed Marl Hill works.

| Ref | Designated Site | Min.Critical Load (CL) | Estimated nutrient N deposition (kgN/ha-year) | | | | |
|------|---------------------------------|------------------------|---|-------|------|-----------|------------|
| | | | Existing deposition | PC | PEC | PC/CL (%) | PEC/CL (%) |
| H3a | North Pennine Dales Meadows SAC | 10 | 26.6 | 0.039 | 26.6 | 0.4 | 266 |
| H25g | Bowland Fells SPA | 10 | 27.7 | 0.026 | 27.7 | 0.3 | 277 |

Table 4. Maximum estimated acid deposition (kEqH+/ha-year) resulting from proposed Marl Hill works.

| Ref | Site | Critical load (CL) (kEqH+/ha-year) | | | Estimated acid deposition (kEqH+/ha-year) | | | | | |
|------|---------------------------------|------------------------------------|---------|---------|---|-------------------------|--------|-----|-----------|------------|
| | | CLMax xS | CLMin N | CLMax N | Existing deposition (N) | Existing deposition (S) | PC (N) | PEC | PC/CL (%) | PEC/CL (%) |
| H3a, | North Pennine Dales Meadows SAC | 1.6 | 0.4 | 2.10 | 1.9 | 0.3 | 0.0051 | 2.2 | 0.2 | 105 |
| H47k | Bowland Fells SPA | 0.7 | 0.6 | 1.4 | 2.0 | 0.4 | 0.004 | 2.4 | 0.3 | 172 |

Species Disturbance

4.12 No hen harrier or merlin (the qualifying species of the Bowland Fells SPA) were recorded within or near to the two works areas during the winter bird survey (Ref RVBC-MH-TA-009-01-07). It is highly unlikely that these species use the works area or land near to them for nesting, and due to the distance from the SPA it is highly unlikely that these areas provide valuable foraging habitat.

- 4.13 Records of a number of known hen harrier winter roost sites north of the Bowland Fells have been obtained from the RSPB. It is the view of the RSPB (Bray, Pers comms, November 2020) that the proposed works will not have a negative impact on roosting hen harrier, due to no known roosting locations being present within at least 500m of the Marl Hill works. In addition there is no suitable roosting habitat within 500m of the works. There are no known hen harrier or merlin nest sites that could be impacted by the works and the habitat surrounding the sites is not suitable for nesting by these species. There will therefore be no disturbance impacts on hen harrier or merlin. It is therefore considered that the proposed works would not have any impact on breeding hen harrier or merlin associated with the Bowland Fells SPA.
- 4.14 Breeding lesser black-backed gull is a proposed feature of the SPA which, having been considered at the public consultation stages as a proposed feature, must be treated as a feature within the SPA process. The nearest notable lesser black-backed gull colony is approximately 10.8 km northwest of the reception compound and 15 km northwest of the launch compound. During the breeding season lesser black-backed gull were only recorded within the launch site during the April survey visit with one individual within the site. A peak count of five individuals were recorded within 100m of the launch site compound during the breeding bird survey and a peak of two lesser black backed gull between 100 and 500 m from the compound. Three lesser black-backed gulls were recorded within 500 m of the reception compound on one occasion, with no other lesser black-backed gull recorded within or surrounding the reception compound during the breeding bird survey. It is highly unlikely that lesser black-backed gull nest within 500 m of the site. Due to the very low usage of the compounds and low usage within 500 m of the compounds, as well as the known high tolerance of this species to disturbance the proposals are highly unlikely to result in any disturbance impacts on breeding lesser black-backed gull. There is an abundance of suitable feeding habitat for this species in the wider surrounding area. Very little usage was observed within the footprint of the works. It is therefore highly unlikely that the works will result in a loss of supporting habitat for this species.
- 4.15 It is therefore considered that the proposed works would not have any impact on breeding hen harrier, merlin or lesser black-backed gull associated with the Bowland Fells SPA.

Table 5 - Appropriate Assessment Summary Table

| Designated Site (inc. distance from Project) | Impact & Pathway (TR) | Assessment | Likely Significant Effect? |
|---|---|--|--|
| Bowland Fells SPA (UK9020326) (4.1 km west of northern area) | <u>Construction and Operation</u> Loss or degradation of habitat and species from waterborne pollution during the construction and operational stages. | There are no hydrological linkages between the above ground works and the Bowland Fells SPA. The distance and topography between the project and the SPA (>4km away and uphill of both compounds) means that waterborne pollution could not reach the SPA. | No Due to the distance from the Bowland Fells SPA and the lack of hydrological linkages, there would be no effect on the SPA. There would therefore be no adverse effect on the integrity of this SPA. |
| | <u>Construction</u> Loss or degradation of habitats or species associated with the SPA as a result of airborne pollution travelling to designations during the construction phase of the development | The SPA lies within the 10km air quality assessment zone of both compounds, and the following nitrogen sensitive habitats form part of the designation: bog, heath, grassland, inland rock and scree. Generators will be used at the compounds during the construction period. This is the only source of potentially significant air quality effects resulting from the proposals. However the assessment confirmed no perceivable impacts at the SPA would result from the proposals. | No There would be no likely significant effects on the Bowland Fells SPA resulting from airborne pollution during the construction phase. There would therefore be no adverse effect on the integrity of this SPA |

| Designated Site (inc. distance from Project) | Impact & Pathway (TR) | Assessment | Likely Significant Effect? |
|---|--|---|--|
| | <p><u>Construction and Operation</u></p> <p>Disturbance to species associated with the SPA or loss of supporting habitat for these species.</p> | <p>It is highly unlikely that hen harrier or merlin use the works area or land near to them for nesting, and due to the distance from the SPA it is highly unlikely that these areas provide valuable foraging habitat.</p> <p>It is the view of the RSPB that the proposed works will not negatively impact roosting hen harrier, due to no known or suitable roosting locations being present within 500m of the works and the topography preventing any line of sight between the works and the roost sites.</p> <p>Due to low use of the compounds and land within 500m by lesser black-backed gull, as well as the known high tolerance of this species to disturbance the proposals are highly unlikely to result in habitat loss or disturbance impacts on breeding lesser black-backed gull.</p> <p>It is therefore considered that the proposed works would not have any impact on breeding hen harrier, merlin or lesser black-backed gull associated with the Bowland Fells SPA.</p> | <p>No</p> <p>Due to the distance from the Bowland Fells SPA, the habitats present at the works area and the timing of the works, there will be no disturbance or habitat loss impacts on the qualifying species.</p> <p>There would therefore be no adverse effect on the integrity of this SPA</p> |
| <p>North Pennine Dales Meadows SAC (UK0014775) (3.6km north of northern area)</p> | <p><u>Construction and Operation</u></p> <p>Loss or degradation of habitat and species from waterborne pollution during the construction and operational stages.</p> | <p>There are no hydrological linkages between the above ground works and the North Pennine Dales Meadows SAC. The distance and topography between the project and the SAC (>3km away and uphill of northern compound) means that waterborne pollution could not reach the SAC.</p> | <p>No</p> <p>Due to the distance from the North Pennine Dales Meadows SAC and the lack of hydrological linkages, there will be no effect on the SAC</p> <p>There would therefore be no adverse effect on the integrity of this SAC.</p> |

| Designated Site (inc. distance from Project) | Impact & Pathway (TR) | Assessment | Likely Significant Effect? |
|--|--|---|---|
| | <p><u>Construction</u></p> <p>Loss or degradation of habitats or species associated with the SAC as a result of airborne pollution travelling to designations during the construction phase of the development</p> | <p>The SAC lies within 10 km of the southern compound, and the following nitrogen sensitive habitats form part of the designation: dry grassland, humid grassland, mesophile grassland.</p> <p>Generators will be used at the compounds during the construction period. This is the only potentially significant air quality impact resulting from the proposals. However the assessment confirmed no perceivable impacts at the SAC would result from the proposals.</p> | <p>No</p> <p>There would be no likely significant effect on the North Pennine Dales Meadows SAC resulting from airborne pollution during the construction phase.</p> <p>There would therefore be no adverse effect on the integrity of this SAC.</p> |

In-Combination Assessment

- 4.16 Another tunnel section is proposed to be replaced as part of the HARP project within 1 km of the Marl Hill section at its closest point, known as the Proposed Bowland Section which is subject to a separate planning application. On a precautionary basis the air quality impacts for the Bowland and Marl Hill sections have been modelled together to assess the combined impact on the designated sites. The results are summarised in Tables 6 and 7 and show that even when combined, the PC does not exceed 1 % of the critical load for the European designated sites.

Table 6. Maximum estimated nutrient N deposition (kgN/ha-year) resulting from proposed Bowland and Marl Hill works combined.

| Ref | Designated Site | Min.Critical Load (CL) | Estimated nutrient N deposition (kgN/ha-year) | | | | |
|------|---------------------------------|------------------------|---|-------|------|-----------|------------|
| | | | Existing deposition | PC | PEC | PC/CL (%) | PEC/CL (%) |
| H17a | North Pennine Dales Meadows SAC | 10 | 26.6 | 0.084 | 26.7 | 0.8 | 267 |
| H47k | Bowland Fells SPA | 10 | 27.7 | 0.079 | 27.8 | 0.8 | 278 |

Table 7. Maximum estimated acid deposition (kEqH+/ha-year) resulting from proposed Bowland and Marl Hill works combined.

| Ref | Site | Critical load (CL) (kEqH+/ha-year) | | | Estimated acid deposition (kEqH+/ha-year) | | | | | |
|------|---------------------------------|------------------------------------|---------|---------|---|-------------------------|--------|-----|-----------|------------|
| | | CLMax xS | CLMin N | CLMax N | Existing deposition (N) | Existing deposition (S) | PC (N) | PEC | PC/CL (%) | PEC/CL (%) |
| H17a | North Pennine Dales Meadows SAC | 1.6 | 0.4 | 2.10 | 1.9 | 0.3 | 0.011 | 2.2 | 0.5 | 107 |
| H47k | Bowland Fells SPA | 0.7 | 0.6 | 1.4 | 2.0 | 0.4 | 0.011 | 2.4 | 0.8 | 172 |

- 4.17 The Bowland Fells SPA and North Pennine Dales Meadows SAC are in a rural location where development pressures are low and no other plans or projects were identified that could have in-combination air quality effects on these designations. Therefore, the predicted in-combination impacts remain imperceptible and would be unlikely to result in any significant air quality effects at any of the designated sites identified in the assessment.
- 4.18 The permanent storage of surplus materials generated by the Project within Waddington Fell Quarry is subject to a separate planning application for which the quarry is responsible. Any HRA considerations of the material storage will be dealt with in this separate application. As there are no predicted impacts from the Project on European sites there will be no significant impact in-combination with the proposals at Waddington Fell Quarry.

- 4.19 Other than air quality effects which have been assessed and ruled out, the predicted impacts from the proposed Marl Hill section on European designated sites are nugatory and there is no other potential for in-combination effects to arise with other projects or plans.

5.0 Conclusions

- 5.1 This HRA has been carried out to assess whether the Proposed Marl Hill Section, forming part of the wider HARP scheme could result in a significant adverse effect on the integrity of any European site.
- 5.2 On a precautionary basis, the following European sites within 20 km of the Project were scoped into the Screening Assessment to identify whether there was a risk or possibility of a significant effect occurring:
- Bowland Fells SPA
 - Calf Hill & Crag Woods SAC
 - North Pennine Dales Meadows SAC
- 5.3 The following potential impact pathways were identified for the European sites:
- Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of waterborne pollution travelling to designations via hydrological linkages during the construction and operational phases of the development.
 - Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of airborne pollution travelling to designations during the construction phase of the development.
 - Loss or degradation of habitats or species associated with the SPA / SAC / Ramsar as a result of changes to groundwater as a result of the development including decommissioning of the existing asset.
 - Disturbance to species associated with the SPA / Ramsar or loss of supporting habitat for these species during the construction and operational phases of the development.
- 5.4 The Screening Assessment determined that there was a risk of a significant effect for one or more of each of the above impact pathways for each of the identified European sites with the exception of Calf Hill & Crag Woods SAC. The remaining designations were then taken forward for Appropriate Assessment to determine if there could be an adverse effect on integrity of any of the sites.
- 5.5 The Appropriate Assessment concludes that, without mitigation, there will be no adverse effect on the integrity of any European sites alone or in-combination with other projects or plans. The HRA can therefore be concluded at this stage.

APPENDIX A: Attributes of European Sites

European Site Conservation Objectives for Bowland Fells Special Protection Area and potential Special Protection Area Site Code: UK9005151



With regard to the SPA and potential SPA, and the individual species and/or assemblage of species for which the site has been or may be classified (the 'Qualifying Features' including the 'Additional Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying Supplementary Advice document (where available), which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A082 *Circus cyaneus*; Hen harrier (Breeding)

A098 *Falco columbarius*; Merlin (Breeding)

Additional Qualifying Features*

A183. *Larus fuscus*; Lesser black-backed gull (Breeding)

*Government has undertaken public consultation on the scientific case for the classification of these additional features as part of this Special Protection Area (SPA).

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a [Special Protection Area \(SPA\)](#).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

This is a potential Special Protection Area (pSPA)

This site is also a pSPA because Government has previously undertaken a [public consultation on the scientific case for the classification of breeding lesser black-backed gull](#) as an additional qualifying feature of this Special Protection Area (SPA). As a matter of Government policy, potential SPAs and their features are treated as if they are formally classified. The provisions of the Habitats Regulations therefore apply to them (see above).

Publication date: 21 February 2019 (version 4). This document updates and replaces an earlier version dated 13 July 2018 to reflect the consolidation of the Habitats Regulations in 2017.

EC Directive 2009/147/EC on the Conservation of Wild Birds Special Protection Area (SPA)

Name: Bowland Fells

Unitary Authority/County: Lancaster, Ribble Valley, Wyre, Lancashire.

Consultation proposal: Bowland Fells is classified as a Special Protection Area because of its importance for the Annex I upland breeding birds hen harrier and merlin. It also supports an internationally important population of breeding lesser black-backed gulls which is proposed as an additional feature of the site. The SPA boundary is coincident with the boundary of Bowland Fells SSSI. For details of the SPA boundary see map.

Site description: The Bowland Fells SPA encompasses the main upland block within the area of Lancashire known as the Forest of Bowland. This is an outlier of the Pennine Range situated in the north of the county and to the east of the M6 motorway.

Most of this land, stretching from Clougha and Whitray Fell in the north to Parlick in the south, is over 250 m OD and rises sharply to a stream dissected plateau with the highest point being Ward's Stone at 561 m. The underlying rock is Millstone Grit beneath which lies Carboniferous Limestone. These extensive upland fells support the largest expanse of blanket bog and heather moorland in Lancashire and provide suitable habitat for a diverse upland breeding bird community which includes the Annex I species hen harrier and merlin for which the SPA is classified. The site also qualifies as it supports more than 1% of the biogeographic population of breeding lesser black-backed gull.

The most extensive plant communities within the site are dry heather dominated heathland, generally found on the steeper slopes, and heather *Calluna vulgaris* and cotton grass *Eriophorum vaginatum* dominated blanket bog which covers the tops of the ridges and shallow slopes.

Size of SPA: 16,002.3 ha

Qualifying species: The site qualifies under **article 4.1** of the Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

| Species | Count (period) | % of population | Interest type |
|--------------------------------------|--------------------|----------------------|---------------|
| Hen harrier <i>Circus cyaneus</i> | 12 pairs 1986-1990 | 2.4% (GB population) | Annex I |
| Merlin <i>Falco columbarius</i> | 21 pairs 1986-1990 | 3.2% (GB population) | Annex I |

Proposed new interest: The site qualifies under **article 4.2** of the Directive (2009/147/EC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

| Species | Count (period) | % of population | Interest type |
|--|-----------------------------------|--|---------------|
| Lesser black-backed gull <i>Larus fuscus graellsii</i> | 4575 pairs 2009-2012 ¹ | 2.5% (biogeographic population) ² | Migratory |

¹Data from: i) Sowter, D. J., 2009-2011. Tarnbrook Fell gullery reports, unpublished, and ii) Coyle, S. P., 2012. The Tarnbrook Fell gullery report 2012 and Langden Head gullery report 2012, unpublished.

²Biogeographic reference population cited in Mundkur T., & Nagy S. eds 2012. Waterbird Population Estimates - Fifth edition. Wetlands International. Wageningen, The Netherlands.

European Site Conservation Objectives for Calf Hill and Cragg Woods Special Area of Conservation

Site code: UK0030106



With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats**
- **The structure and function (including typical species) of qualifying natural habitats, and**
- **The supporting processes on which qualifying natural habitats rely**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H91A0. Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles; Western acidic oak woodland
H91E0. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*); Alder woodland on floodplains*

* denotes a priority natural habitat or species (supporting explanatory text on following page)

* Priority natural habitats or species

Some of the natural habitats and species for which UK SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Habitats Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a [Special Area of Conservation \(SAC\)](#). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name: Calf Hill and Cragg Woods
Unitary Authority/County: Lancashire
SAC status: Designated on 1 April 2005
Grid reference: SD543614
SAC EU code: UK0030106
Area (ha): 34.43
Component SSSI: Calf Hill and Cragg Woods SSSI

Site description:

These old sessile oak *Quercus petraea* woods occupy north- and south-facing slopes of a valley on millstone grit. Oak dominates in the canopy with birch *Betula* sp., rowan *Sorbus aucuparia* and holly *Ilex aquifolium*. The ground flora ranges from areas of abundant bilberry *Vaccinium myrtillus*, through grassy areas, to rich moss carpets. Small areas of alder *Alnus glutinosa* flushes also occur.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*). (Alder woodland on floodplains)*
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles. (Western acidic oak woodland)

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030106
Date of registration: 14 June 2005

Signed: *Trew Salmon*

On behalf of the Secretary of State for Environment,
Food and Rural Affairs

European Site Conservation Objectives for North Pennine Dales Meadows Special Area of Conservation Site Code: UK0014775



With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats**
- **The structure and function (including typical species) of qualifying natural habitats, and**
- **The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H6410. *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows

H6520. Mountain hay meadows

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the “Habitats Regulations”). They must be considered when a competent authority is required to make a ‘Habitats Regulations Assessment’, including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a [Special Area of Conservation \(SAC\)](#). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term ‘favourable conservation status’ is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

| | |
|----------------------------------|--|
| Name: | North Pennine Dales Meadows |
| Unitary Authority/County: | Cumbria, Durham, Lancashire, North Yorkshire, Northumberland |
| SAC status: | Designated on 1 April 2005 |
| Grid reference: | NY931256 |
| SAC EU code: | UK0014775 |
| Area (ha): | 497.09 |
| Component SSSI: | See list below |

Site description:

This site contains a series of isolated fields within several north Pennine and Cumbrian valleys, and encompasses the range of variation exhibited by mountain hay meadows in the UK. The grasslands included within the site exhibit very limited effects of agricultural improvement and show good conservation of structure and function. A wide range of rare and local meadow species are contained within the meadows, including globeflower *Trollius europaeus*, the lady's-mantles *Alchemilla acutiloba*, *A. monticola* and *A. subcrenata*, and spignel *Meum athamanticum*.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). (purple moor-grass meadows)
- Mountain hay meadows

List of component SSSIs:

Arkle Beck Meadows, Whaw SSSI
Ashes Pasture and Meadows SSSI
Askrigg Bottoms SSSI
Aules Hill Meadows SSSI
Barrowburn Meadows SSSI
Bell Sykes Meadows SSSI
Borrow Beck Meadows SSSI
Bowber Head and Piper Hole Meadows SSSI
Bowlees and Friar House Meadows SSSI
Bretherdale Meadows SSSI
Catton Lea Meadow SSSI
Cautley Thwaite Meadows and Ecker Secker Beck SSSI
Cliff Beck Meadow, Buttertubs SSSI
Cornriggs Meadows SSSI
Deepdale Meadows SSSI (*Cumbria*)
Deepdale Meadows SSSI (*North Yorkshire, known as "Deepdale Meadows, Langstrothdale"*)
Durtrees Burn Grassland SSSI
Far High House Meadows SSSI
Fothering Holme SSSI

Gingerfields SSSI
Gowk Bank SSSI
Grains O' th' Beck Meadows SSSI
Grassington Hospital Grounds SSSI
Greenhaugh Meadow SSSI
Hannah's Meadows SSSI
Harker's House Meadows, Keld SSSI
Heatheryburn Bank SSSI
High Knock Shield Meadow SSSI
Knarsdale Meadows SSSI
Langcliff Cross Meadow SSSI
Low Redford Meadows SSSI
Mere Beck Meadows SSSI
Middle Crossthwaite SSSI
Middle Side and Stonygill Meadows SSSI
Mill Holme Meadows, Thwaite SSSI
Muker Meadows SSSI
Myttons Meadows SSSI
New Close, Calvert Houses SSSI
New House Meadows, Malham SSSI
Oughtershaw and Beckermonds SSSI
Peckriding Meadows SSSI
Pry and Bottom Meadows, Mid-Mosssdale SSSI
Raisbeck Meadows SSSI
Richmond Meadows SSSI
Rigg Farm and Stake Hill Meadows SSSI
Sandybeck Meadow SSSI
Scar Closes, Kisdonside SSSI
Stephen Ings, Crackpot SSSI
Swindale Meadows SSSI
Thorneyburn Meadow SSSI
Town End Meadows, Little Asby SSSI
Walden Meadows SSSI
West Newlandside Meadows SSSI
West Park Meadows SSSI
Wet Sleddale Meadows SSSI
White Ridge Meadow SSSI
Wilson Place Meadows
Yockenthwaite Meadows SSSI

This citation relates to a site entered in the Register of European Sites for Great Britain.

Register reference number: UK0014775

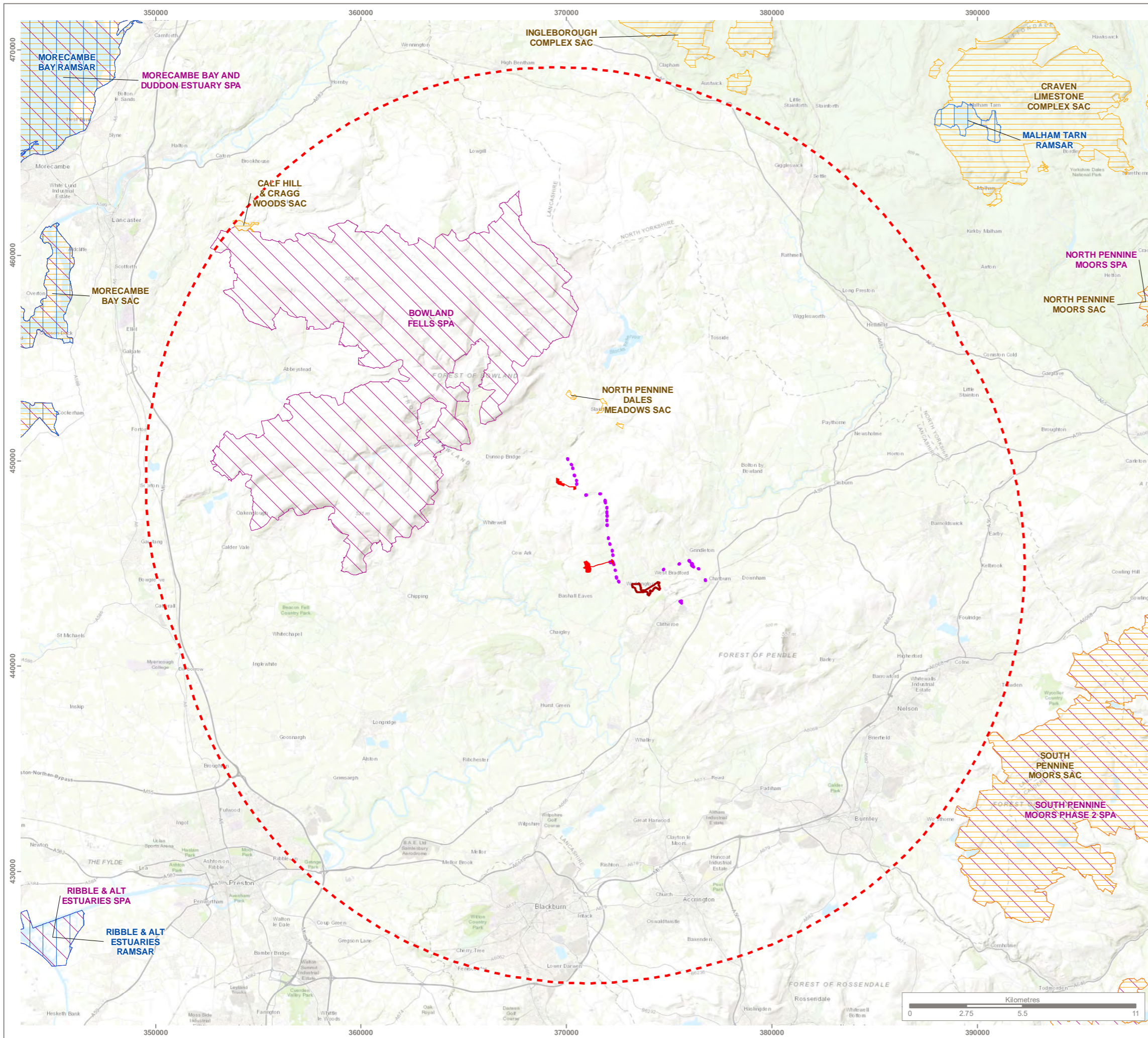
Date of registration: 14 June 2005

Signed: *Trevor Salmon*

On behalf of the Secretary of State for Environment,
Food and Rural Affairs

DRAWINGS

G7478.03.001.4 Project Location and International Designated Sites



KEY

- Development area
- Development area 20km buffer
- Ribble Crossing red line boundary
- Proposed highways works

International Designations

- Ramsar
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)

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| Rev | Description | Drawn | Approved | Date |
|-----|--|-------|----------|------------|
| C | Revised labelling of designated sites. | CW | MW | 18/09/2020 |
| B | Revised compound designs | CW | LS | 07/09/2020 |

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
United Utilities Haweswater Aqueduct Resilience

Title
Internationally Designated Sites Within 20km - The Proposed Marl Hill Section

Drawing Number
G7478.03.001C.4 Sheet 4 of 5

| Drawn | Checked | Approved | Scale | Date |
|-------|---------|----------|----------------|------------|
| CW | MK | MW | 1:185,000 @ A3 | 04/05/2020 |



HEAD OFFICE

Genesis Centre,
Birchwood Science Park,
Warrington
WA3 7BH

Tel: 01925 844004
E-mail: tep@tep.uk.com

**MARKET
HARBOROUGH**

No. 1 The Chambers,
Bowden Business Village,
Market Harborough,
Leicestershire,
LE16 7SA

Tel: 01858 383120
E-mail: mh@tep.uk.com

GATESHEAD

Office 26, Gateshead
International Business
Centre,
Mulgrave Terrace,
Gateshead
NE8 1AN

Tel: 0191 605 3340
E-mail: gateshead@tep.uk.com

LONDON

8 Trinity Street,
London,
SE1 1DB

Tel: 020 3096 6050
E-mail: london@tep.uk.com

CORNWALL

4 Park Noweth,
Churchtown,
Cury,
Helston
Cornwall
TR12 7BW

Tel: 01326 240081
E-mail: cornwall@tep.uk.com
