

Project N°. ME814b

Your Ref.

Barhale Enpure JV,
Barhale House,
Bescot Crescent,
Walsall,
West Midlands,
WS1 4NN

18th June 2024

Dear Andy,

Re: ME814 - Worsbrough STW - Ecology Update

Further to your emails regarding the proposed works at the Worsbrough Sewage Treatment Works (STW) (NGR: SE 362 034) and my previous report^[1] for the whole site based on a 10th April 2024 site visit, I have reviewed the plan showing the current works proposal^[2].

This report combines the results and recommendations of the previous reports to address the impacts of the current planning proposal and provides appropriate mitigation proposals for these areas.

As works had begun during the 10th April site visit, where habitats had already been affected their type and condition was assessed using the remaining habitats, the surveyors experience and the previous PEA as indicators the lost habitats.

Staff

Mr Milner is a chartered environmentalist with over twenty years' experience of undertaking ecological assessment projects and has been involved in more than 850 environmental projects including pipelines, highways, housing, leisure and retail. He has experience of working with the full range of legally protected and other species and has significant experience in the field of environmental management and project supervision, particularly on large scale projects such as cross country pipelines where he has held Senior Environmental Advisor positions from National Grid on several projects including the 94km 1220mm Pannal to Nether Kellet Pipeline, the NGN Crossing of the River Eden at Lazonby and several other pipeline repair projects affecting SAC/SPAs and SSSIs where he has prepared the appropriate consents and supervised the works to ensure compliance. Mr Milner holds current survey/disturbance licences for great crested newt and bats from Natural England and has produced and implemented development licences for otter, bats, badger and great crested newt.

Mr Milner exceeds the requirements for knowledge, skills and practical experience as set out in the CIEEM Technical Guidance Series^[3] for all works undertaken.

Survey

A standard walkover survey was undertaken in line with the recommendations made in the CIEEM Guidelines for Preliminary Ecological Appraisal (PEA)^[4].

¹ Milner Ecology (2024) Worsbrough STW - Ecology Update [Report Ref: ME814a, Issued: 17/05/2024].

² Barhale Enpure JV (2024) Worsbrough STW – Proposed Site Layout [Drawing N°: WOR07_BNE_WWT_WWT_DR_C_0801, Rev: C02, Issued: 14/03/2024].

³ CIEEM (2013) Technical Guidance Series - Competencies for Species Survey. Winchester.

⁴ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal [2nd Ed]. Winchester.

As an overview of the habitats present on site, a survey following the standard UKHabs 2.01 survey methodology^[5] was undertaken. The survey involves walking the site, mapping and describing all habitats present, for example; woodland, grassland or scrub.

The condition of each habitat unit is assessed using the Statutory Biodiversity Metric condition assessment sheets for inclusion into the Metric tool.

The habitat survey was modified according to the approach recommended by the Guidelines for Baseline Ecological Assessment^[6]. In this extended version, evidence of fauna and faunal habitat is also recorded, for example droppings, tracks or other field signs.

Results


Data Search

The data search identified two statutory sites, a Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSSI), and six non-statutory sites, Local Wildlife Sites (LWS), within 2km of the works as shown on Figure 1 below;

- **Worsbrough Country Park LNR** – lies 100m to the site to the west of the works. An urban fringe LNR with habitats including a ancient, semi-natural woodland, reservoir, willow carr, managed grassland and meadow, and reedbed. It also supports a number of waterfowl species.
- **Stairfoot Brickworks SSSI** - 1.9km east of the site. A Geological Conservation Review (GCR) site.
- **Barrow Colliery Site LWS**
- **Wombwell Wood LWS**
- **Worsbrough Reservoir**
- **Short Wood and Hay Green LWS**
- **Swaithe Flood Meadows LWS**
- **Kendal Green Scrub LWS**



Habitats

The habitats present on the site prior to works are shown on Figure 2 below and in more general terms including the surrounding areas in the previous PEA plan presented as Appendix 2.

Unit	Habitats Description	Photograph
1	Existing road running around the northern, central and eastern sides of the STW. Sections of this feature will be upgraded and extended.	

⁵ UKHab Ltd (2023). UK Habitat Classification Version 2.0 (at www.ukhab.org)

⁶ Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment. Taylor & Francis Ltd Spon Press

<p>2</p>	<p>A band of bare ground with scattered ruderal species running along the northern boundary of the STW.</p> <p>Species present include willowherb, bramble, creeping thistle, tufted forget-me-not, annual meadow grass, germander speedwell, daisy, red dead-nettle, weld and dandelion</p> <p>The eastern section will be lost as part of the proposed works.</p>	
<p>3</p>	<p>Modified grassland present across the southern section of the STW.</p> <p>The sward is regularly mown and comparatively short with abundant Yorkshire fog, red fescue, red clover, creeping thistle, ribwort plantain and occasional daisy, creeping buttercup, annual meadow-grass and yarrow with common mouse-ear, cow parsley, spring turf-moss, creeping cinquefoil, common ragwort, common nettle, cleavers, tufted forget-me-not, common storks-bill, greater plantain, spear thistle and dandelion occurring rarely.</p> <p>An average of ten 1m² quadrants taken at random throughout the grassland onsite resulted in a species density of 5.5 Species/m².</p> <p>The majority of works will be undertaken in this habitat.</p>	


<p>4</p>	<p>Woodland outside STW along the Pennine Way. Species include grey willow, ash, hawthorn and privet. There will be no direct impact to this feature from the works.</p>	
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Table 1: Habitats present within STW.

Protected Species

In terms of protected species impacts, these were covered in detail in Preliminary Ecological Appraisal (PEA) Report⁷, produced by BL Ecology covering the whole STW for a different, higher impact, scheme and the results are summarised below.

Species	Status at time of PEA
Amphibians	Pond 2 in the previous PEA considered unsuitable for great crested newt (HSI 0), no other waterbodies within 100m and ponds within 250m (P1, 3, 4 and 5) were either unsuitable (P1 – fishing pond), negative for great crested newt eDNA (P4 & 5) or un-surveyable due to low water levels (P3). Potential terrestrial habitat is located throughout the site in particular within tall ruderal and scrub habitats and old overgrown workings and debris/spoil.
Badger	Habitats within the current treatment works were unsuitable for sett creation and only limited foraging opportunities existing in the amenity grass.
Bats	The site is likely to provide good foraging habitat for a range of bat species with unlit and undisturbed mosaic of wet habitats, woodland, scrub, tall ruderal and grassland habitats.
Birds	Potential breeding bird habitat is present across the entire site, within the trees and scrub, on the waterbodies and for a range of ground nesting species.
Otter	No positive signs of otter were identified within the survey area.
Reptiles	Anecdotal evidence from staff on site having seen grass snakes within the current STW.
Water Vole	limited potential aquatic habitat was considered present along sections of the River Dove and Blacker Dike.

Table 2: Protected species identified during PEA which may be impacted by proposed works.

As the 2024 walkover and discussions with project staff suggest the site has not materially altered since the BL Ecology report, the recommendations given below can still be considered valid.

Invasive Species

No invasive species were noted within 50m of the proposed works during the BL Ecology surveys or the 2024 walkover.

Proposed Works

Based upon the current works plan, there are two areas where works will be undertaken and improvements to the existing roads within the STW as shown on Figure 3 below and in more detail as Appendix 1.

- **Site Cabins & Ferric Kiosk** (Units 2 and 3 - Currently 0.031ha modified grassland and 0.0150ha ruderal)

Impact Assessment

⁷ BL Ecology (2020) YW Phosphorus Removal Improvements (Site 24 – Worsbrough Treatment Works) - Preliminary Ecological Appraisal Report. [Report Ref: 006_20_24_RE01, Rev: v1, Issued: 21/10/2020].

Protected Sites

There will be no direct impacts to any of the surrounding protected sites and given the small scale of the proposed works, it is not anticipated that any indirect impacts will occur.

Habitats

The habitats present within the footprint of the proposed works are common habitats found across the UK, with no rare flora or communities recorded during the BL Ecology survey of the 2024 walkover.

- **Modified** - All semi-improved grasslands in Barnsley are a priority for conservation. This includes those such as amenity and road verges, as they can be managed to benefit biodiversity and are therefore included in the local Biodiversity Action Plan.

Loss or damage to limited areas of this habitat - *minor adverse impact*.

- **Ruderal** - Loss or damage to limited areas of this habitat not considered to function as part of a larger habitat mosaic- *slight adverse impact*.

- **Bare Ground** - Loss or damage to limited areas of this habitat not considered to function as part of a larger habitat mosaic- *slight adverse impact*.

Protected Species

The PEA did not identify any protected species from the proposed works area.

Recommendations

Habitats

The habitats impacted by the proposed works will be small in scale and limited in their ecological value, therefore no specific mitigation is required due to habitat loss, however vegetation management will be required for reptile and amphibians (see below).

Despite the limited ecological value, it is important that the works are constrained within the agreed site area and therefore it is recommended that appropriate signage and demarcation fencing is utilised to prevent site creep.

As the site is dominated by mown species poor, semi-improved grassland which will readily regenerate, it is recommended that natural regeneration is encouraged to prevent the introduction of any undesirable species following works.

Biodiversity Net Gain

As shown on Table 3 and Figure 2 below and the attached BNG Calculation Tool, the working area supported 0.12 BNG Units prior to works.

Unit	Habitat		Area (Ha)	Condition	BNG Units
1	Urban	Built linear features	0.099	N/A - Other	0.00
2	Sparsely vegetated land	Ruderal/Ephemeral	0.015	Moderate	0.06
3	Grassland	Modified grassland	0.031	Poor	0.06
Total			0.145		0.12

Table 3: Pre-development BNG Values

The works will result in the loss of Units 2 and 3, and their replacement with new equipment or access road.

Once works are completed, the site will support the following habitats as shown on Table 4 and Figure 3 below.

Unit	Habitat		Area (Ha)	Condition	BNG Units
1	Urban	Built linear features	0.099	N/A - Other	0.00
2	Urban	Developed land; sealed surface	0.015	N/A - Other	0.00
3	Urban	Developed land; sealed surface	0.031	N/A - Other	0.00

Total	0.145		0.00
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Table 4: Post-development BNG Values

The loss of the grassland and ruderal habitats and their replacement by urban habitats will result in the scheme having a post-development reduction of 0.12 BNG Units to a total of 0 BNG Units.

The statutory 10% gain in BNG Units will require the acquisition of 0.13 BNG Units to result in a post-construction BNG value for the scheme of 0.13 Units. This is most likely to be undertaken off site due to the restricted area available within the STW.

Amphibians

Great crested newt is fully protected under Schedule 5 of the Wildlife and Countryside Act (1981, as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Legal protection is afforded to the species and its habitat at all stages of its life cycle. Great crested newt has also been identified as a Priority Species by the UK Biodiversity Group. Under the legal protection afforded great crested newt it is an offence to knowingly kill, harm, injure or disturb a great crested newt or its habitat. It is also an offence to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding by the species; or to disturb it while it is occupying such a structure or place.

Prosecution can result in imprisonment, fines and confiscation of vehicles and equipment used. In order to minimise the risk of breaking the law it is essential to work with care to avoid harming newts and to be aware of the procedure to follow should newts be found on the site during the development.

The previous survey information, the HSI scores and the surveyors experience suggest that great crested newts may breed within the surrounding ponds although no confirmation of this was identified. Therefore, a full survey would normally be required to assess population size and facilitate a licence application. However Natural England has developed a rapid risk assessment tool as part of the great crested newt licence application pack (WML-A14-2). This was generated by examining where impacts occurred in past mitigation projects, alongside recent research on newt ecology. Each effect is assigned a notional probability of leading to an offence. The maximum notional probability is then used to derive a conclusion, which is displayed as red (probability ≥ 0.65), amber (0.3-0.65) or green (<0.3) in the "risk assessment result" box. This provides a simple risk assessment to help inform the decision whether or not to apply for a licence.

Direct impacts to the potential breeding ponds will not occur under the current work schedule. The likely risks to great crested newts will come from disturbance to newts during their dispersal phase and whilst in hibernation. The proposed works do not contain any high value hibernation habitat. The grassland at TN3 provides potential, albeit sub-optimal, terrestrial refugia in terms of cracks crevices and small mammal burrows.

An English Nature study in 2004 found that by far the most captures were recorded within 50m of ponds and few animals were captured at distances greater than 100m^[8], a figure of 63m for 95% of a radio-tagged population was found in similar studied in France^[9]. Therefore, due to the quality of the habitat present in the immediate vicinity of the ponds it is unlikely that great crested newts, even if present, would venture far enough from the ponds to be affected by the proposed works.

With regard to the proposed works, it is recommended that the following reasonable avoidance measures (RAMs) are adhered to;

- The working area will be subject to habitat manipulation to encourage any animals present to vacate the area and discourage animals re-entering. To achieve this the vegetation within the working area will be cut to 15cm and maintained as such until work have been completed.
- Throughout the duration of the project the working area will be checked for amphibians prior to commencement of the day's work and will be subject to regular inspections by the ECoW.
- Any amphibians encountered will be recorded, with data sent to the local biological records centre, and relocated to un-disturbed habitat to the south of the works.
- Works area to be clearly demarcated with appropriate fencing i.e. Netlon and access beyond this to be prohibited.

⁸ Edgar, P. & Griffiths, R. A. (2004) English Nature Research Reports Number 575: An evaluation of the effectiveness of great crested newt *Triturus cristatus* mitigation projects in England. Peterborough.

⁹ Jehle, R. (2000) The terrestrial summer habitat of radio- tracked great crested newts (*Triturus cristatus*) and marbled newts (*T. marmoratus*). *Herpetological Journal* 10: 137-142.

- No storage of material should occur within the adjacent grassland areas.
- All site operatives should be made aware of the procedure to follow if amphibians are encountered during the project, see Appendix 3.

When considering the potential impacts on great crested newts taking into account the above RAMs, the small area affected and the timing of the works during the breeding period, the following result is obtained using the rapid risk assessment calculator in WML-A14-2.

Component	Likely effect	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.001 - 0.01 ha lost or damaged	0.005
Land >250m from any breeding pond(s)	0.001 - 0.01 ha lost or damaged	0.0005
Individual great crested newts	No effect	0
Maximum:		0.005
Rapid risk assessment result:		Green: Offence Highly Unlikely

Table 3: Great crested newt risk assessment

The "Green" results indicate that "the development activities are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed using the recommended approach".

Due to the small area of habitat to be disturbed it is not considered that the works would have negative impact on great crested newts even if present. Therefore, the impacts caused by the works would not require a licence from Natural England to be undertaken and it is likely that any residual offences would have negligible impact on conservation status, and enforcement of such breaches is unlikely to be in the public interest.

If the precautions outlined above are adhered to during construction, it is not considered that the works will have a negative impact on the favourable conservation status of the local amphibian population.

Badger

Badgers and their setts are protected under the protection of Badgers Act 1992. This means that it is unlawful to knowingly kill, capture, disturb or injure an individual or intentionally damage, destroy or obstruct an area used for breeding, resting or sheltering by badgers. The Protection of Badgers Act is essentially animal welfare law as opposed to conservation legislation, specifically badgers are generally too common to be included under Schedule 5 of the Wildlife and Countryside Act. The Protection of Badgers Act is not therefore intended to prevent work when badger setts are present but rather to ensure that the animal's welfare is preserved.

As no badger setts will be disturbed by the works, there will be no requirement for a licence from Natural England. However, as badgers may be present within the wider area, the following precautions must be put in place to minimise any disturbance.

- Inform operatives of the potential for badgers to be impacted by the works and the legal protection afforded to badgers.
- Ensure excavations are closed at night or an egress ramp is installed to allow any badgers that enter the trench to escape.

If these measures are followed it is not considered that the project will cause any long term, negative impacts on badger.

Bats

All British bats and their roosts are protected under The Wildlife & Countryside Act (1981, as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. All British bats are listed as UK BAP priority Species. Therefore, measures must be undertaken to identify the usage of the site by bats prior to any disturbance, especially if mature trees are to be removed. Determining the presence/likely absence of a bat roost is a material consideration for planning applications.

No evidence of a bat roost was noted during the surveys for the scheme, and no trees or buildings suitable for a roost will be impacted by the works. However, the woodland surrounding the site, in particular Unit 22, will provide a feeding and commuting resource for the local bat population.

In order to avoid impacts to the local bat population, works will not commence before sunrise or continue after sunset, since these are the periods when bats are most active. Artificial lighting at night will be avoided wherever possible to reduce the impact upon foraging or commuting bats in the area. If artificial lighting is essential, it will be designed and installed carefully to light working areas without causing light spill onto the surrounding areas or the woodland.

If these measures are followed it is not considered that the project will cause any long term, negative impacts on bats.

Birds

The Wildlife & Countryside Act (1981, as amended) gives general protection to all wild birds from killing, injuring or taking; destroying, damaging or taking nests in use or being built; and taking or destroying eggs.

No scrub removal is proposed for this project and the footprint of the works is limited, therefore impacts to scrub and ground nesting species is anticipated to be limited.

To avoid the risk to ground nesting birds, it is recommended that works do not take place in the months April to August inclusive.

If this is not possible a suitably experienced ornithologist should check for the presence of nests within the footprint and mark the locations and a suitable buffer zone around each nest.

If a nest is discovered within the working area, a two meter buffer will be left around the nest to prevent isolation which may cause the adult birds to abandon the nest. The nest will be left in place until the chicks have fledged. This will be determined via reference to the BTO website^[10] which gives incubation and fledging timescales for all British species. Once the chicks are expected to have fledged the nest will be rechecked and, if clear, the works resumed.

Reptiles

All native British reptiles are protected under Section 9(1) against intentional killing and injury under the Wildlife and Countryside Act 1981 (as amended). In England, Scotland and Wales, the widespread reptile species; viviparous lizard, slow worm, grass snake and adder, are also protected against killing, injury or sale, barter or exchange, but their habitats or places of shelter are not specifically protected.

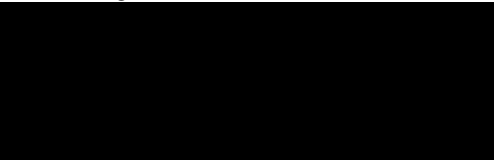
The site provides sub optimal habitat for basking and foraging, however anecdotal reports indicate occasional grass snake presence.

However, as grass snake is a wide ranging and highly mobile species and is likely to vacate the working area well in advance of construction operations due to the elevated levels of human disturbance.

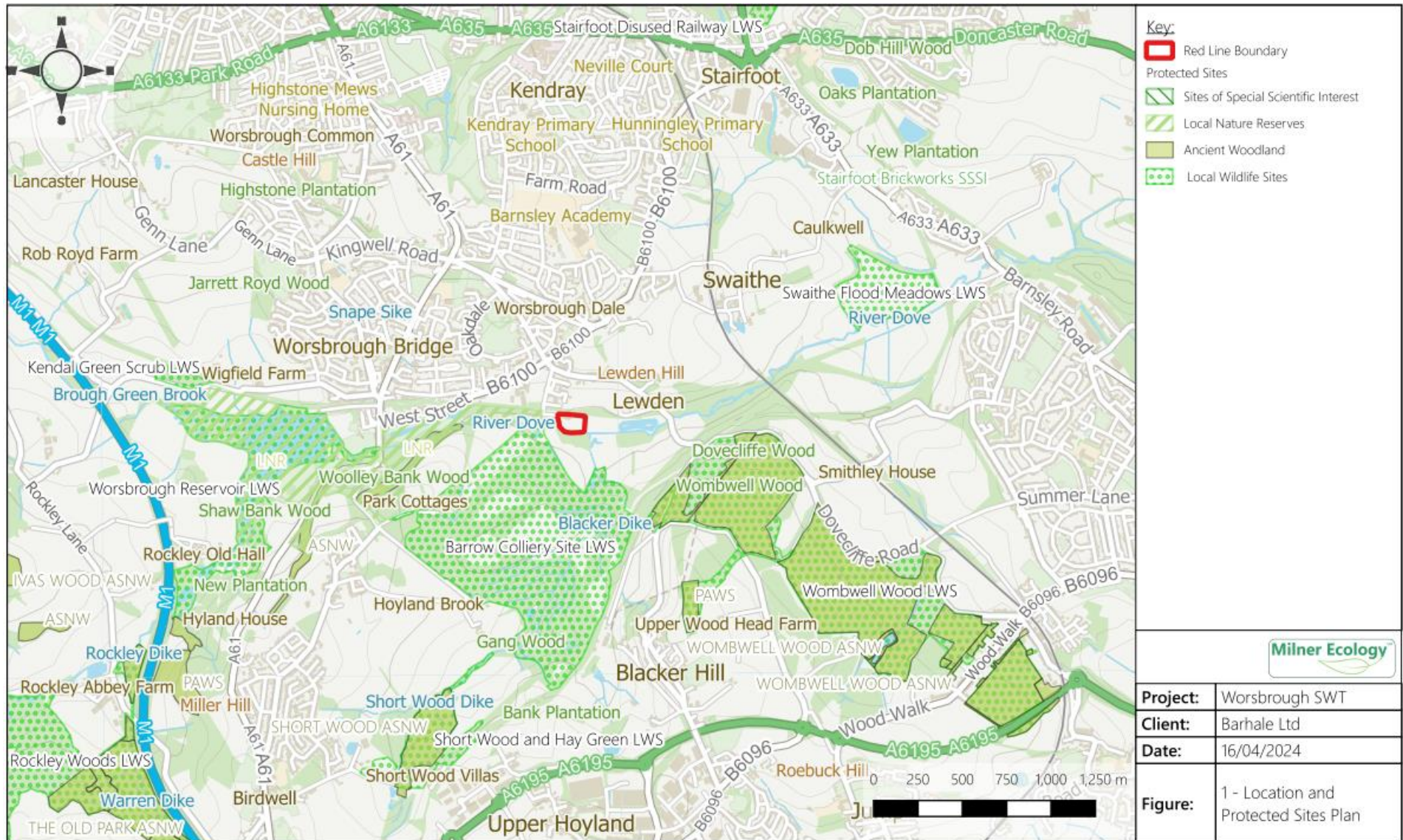
To ensure this the works site will be subject to habitat manipulation as discussed above for amphibians and a tool box talk given to contractors to inform them of the risk of encountering reptiles and appropriate working practices (see Appendix 4).

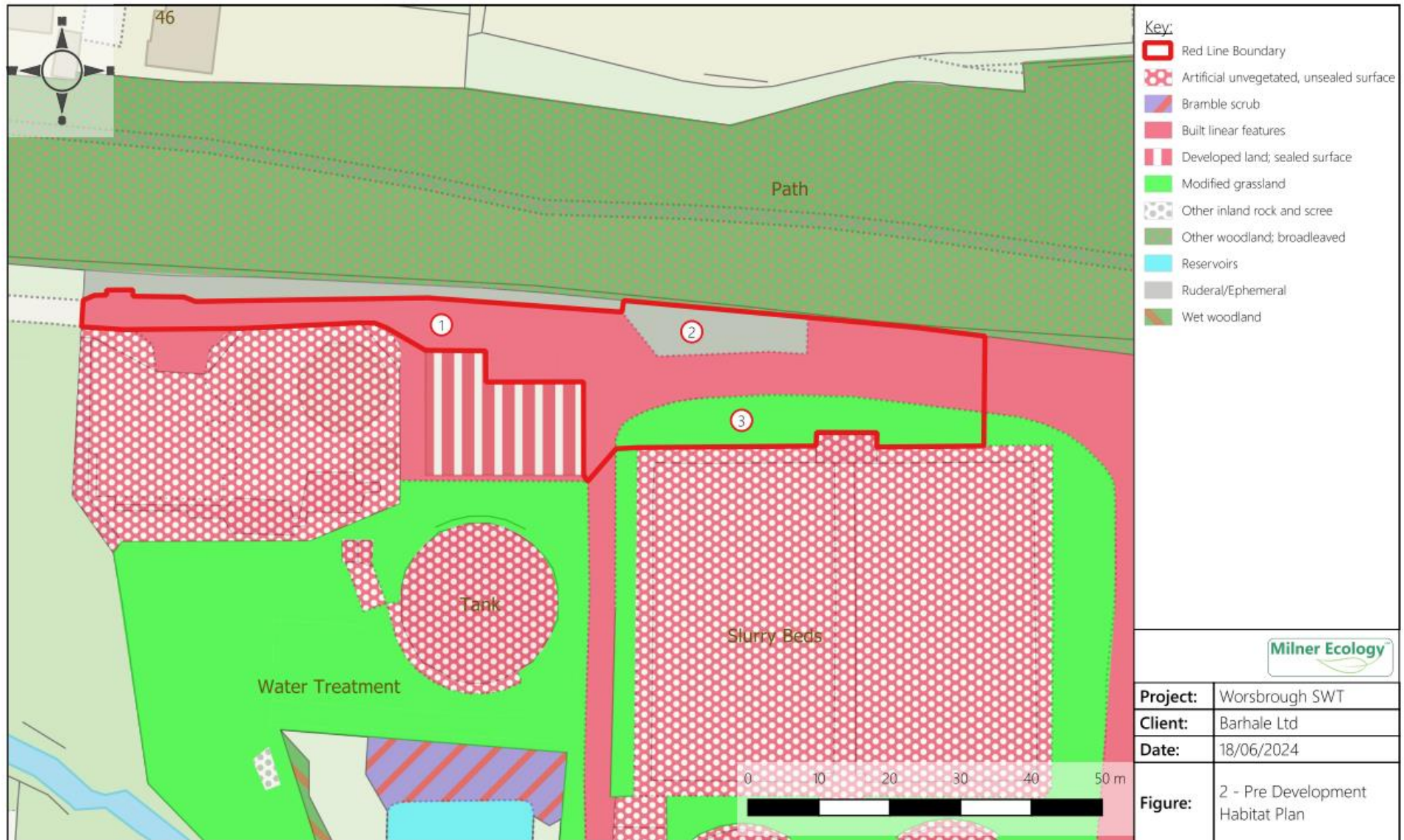
I hope this provides all the information you require, however, if you have any queries please do not hesitate to contact me.

Kind regards,



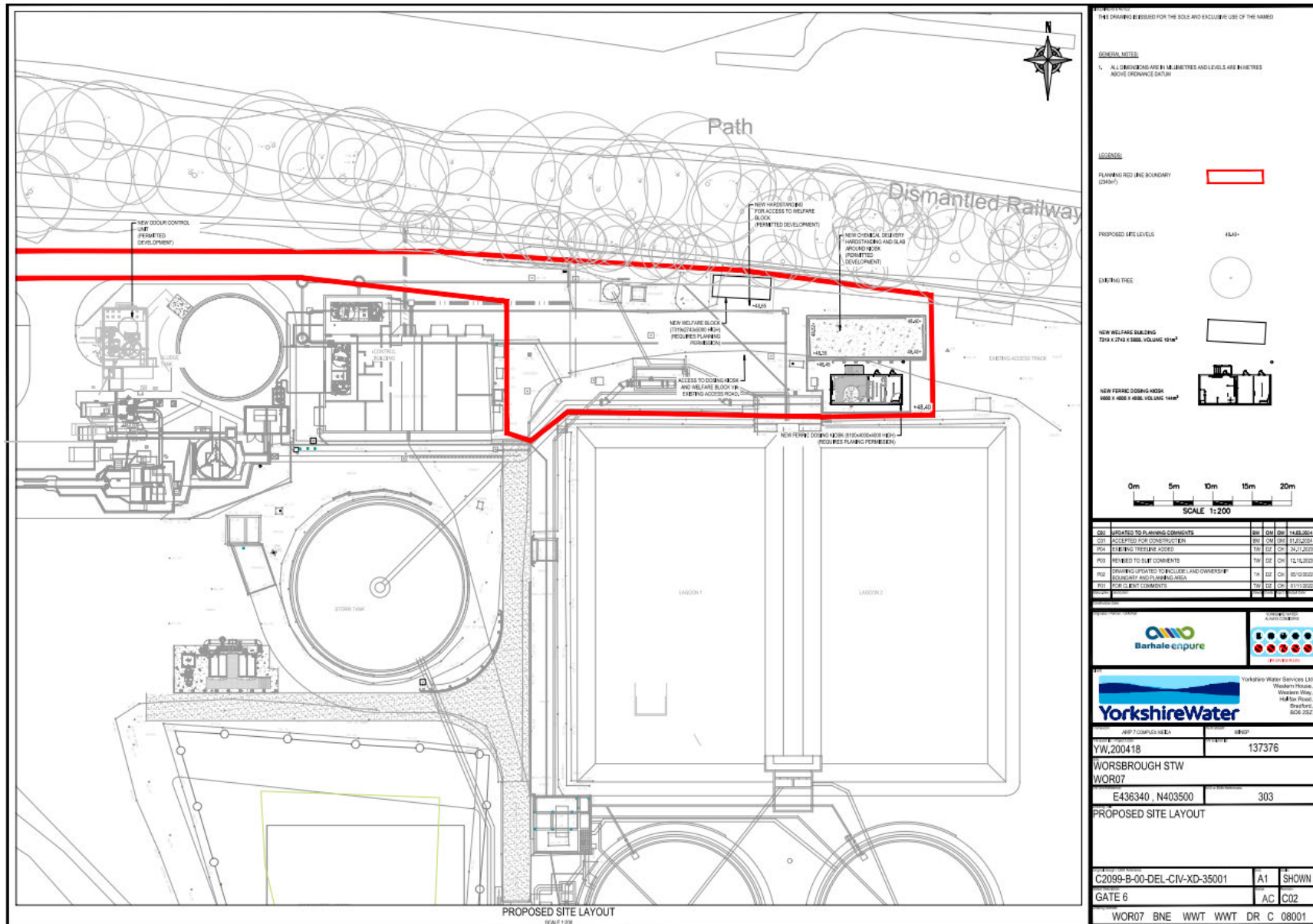
Ben Milner BSc (Hons.) CEnv MCIEEM
Managing Director & Principal Ecologist







Appendix 1 – Proposed Works Plan



THIS DRAWING IS ISSUED FOR THE SOLE AND EXCLUSIVE USE OF THE NAMED CLIENT

GENERAL NOTES

1. ALL DIMENSIONS ARE IN METRES AND LEVELS ARE IN METRES ABOVE ORDNANCE DATUM

LEGEND

PLANNING RED LINE BOUNDARY (200M)

PROPOSED SITE LEVELS

EXISTING TREE

NEW WELFARE BUILDING 2719 X 274 X 500 VOLUME 101m³

NEW FERRIC DOSING WORK 900 X 400 X 400 VOLUME 144m³

0m 5m 10m 15m 20m
SCALE 1:200

001	UPDATED TO PLANNING COMMENTS	BW	DM	DM	14.08.2014
002	ACCEPTED FOR CONSTRUCTION	BM	DM	DM	01.12.2014
003	EXISTING TITLING ACROSS	TM	DM	DM	24.12.2013
004	REMOVED TO SUIT COMMENTS	TM	DM	DM	12.12.2013
005	DRAWING UPDATED TO INCLUDE LAND OWNERS' PLANNING AND PLANNING AREA	TM	DM	DM	05.10.2013
006	FOR CLIENT COMMENTS	TM	DM	DM	01.11.2012

Barhale cripure

YorkshireWater
Yorkshire Water Services Ltd
Western House,
Western Way,
Hullin Road,
Barnsley,
S62 2SE

PROJECT NUMBER	YW.200418	PROJECT ID	137376
CLIENT	WORSBROUGH STW	PROJECT CODE	303
PROPOSED SITE LAYOUT			
PROJECT REFERENCE	C2099-B-00-DEL-CIV-XD-35001	SCALE	A1
DATE	GATE 6	STATUS	AC C02
WOR07 BNE WWT WWT DR C 08001			

Appendix 3 - Guidelines For Contractors Working in Proximity to Potential Great Crested Newt Habitat

Although it is unlikely that great crested newts will be encountered on this site, as they are a Protected Species under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), it is important that if they are found they are identified correctly and the relevant bodies notified.

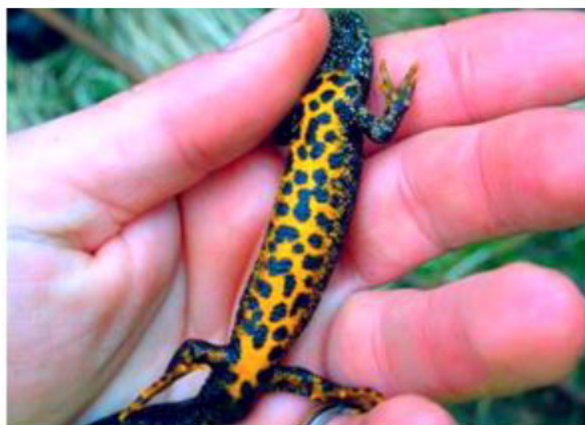
It is an offence to intentionally kill, injure or take a great crested newt. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to any place that a great crested newt uses for shelter or protection or to disturb a great crested newt whilst it is occupying such a place. The potential fine for each offence is £5000. If more than one great crested newt is involved the fine can be up to £5000 per great crested newt. An offender can also be imprisoned for up to six months. In addition, items used to commit the offence (e.g. vehicles) may be forfeited.

Great Crested Newt Identification Guide

- UK's largest newt, much larger than smooth or palmate newts.
- Maximum adult length 170mm but generally 110-130mm for females and 110-120mm for males.
- The skin of great crested newts is dark brown or black and granular in appearance.
- The belly is bright orange and marked with irregular black blotches
- Male great crested newts have a jagged crest (although this lies flat to the body on land) and a white stripe along their tail.
- Great crested newts may be found sheltering under debris on the ground i.e. rocks, wood or other debris at any time of year.
- Great crested newts are slow moving and may attempt to 'freeze' when exposed requiring careful attention to notice.



Great crested newt



Belly of a great crested newt

If great crested newts are discovered, they should not be handled by the general public as a specific Natural England licence is required to handle or disturb them.

If great crested newts are found on site, contact Milner Ecology Ltd on 07980621006 for further advice.

Appendix 4 - Guidelines For Contractors Working in Proximity to Reptile Sites

Although it is unlikely that reptiles will be encountered by operatives on this site, they are known to be present in the immediate area.

There are two different levels of legal protection for reptiles in the UK. The adder, common lizard, grass snake and slow worm are protected from killing and injuring under Schedule 5 (Section 9) of the Wildlife and Countryside Act 1981 (as amended). Sand lizard and smooth snake and their respective habitats are fully protected under Schedule 5 (Section 9) of the Wildlife and Countryside Act 1981 (as amended) and under Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

The maximum penalty for each offence in the Magistrates' Court is a Level 5 (up to £5000) and/or six months imprisonment. In addition, items used to commit the offence (e.g. vehicles) may be forfeited.

Signs to look for:

Common lizards and snakes spend much time basking, while slow worms are often hidden in vegetation, under refuges or underground.

Contractors should be aware of the physical characteristics of reptiles, particularly their small size and cryptic colouration.

If reptiles are discovered they should not be handled by the general public as lizard species can shed their tails if disturbed, grass snakes can emit a noxious secretion and adders can inflict a serious venomous bite. If handling is absolutely essential to move reptiles away from immediate harm gloves must be worn. Reptiles should be placed in a container and removed to a safe place where a suitably experienced ecologist can attend and release the animal into suitable habitat.

If reptiles are found on site contact Milner Ecology Ltd on 07980621006 for further advice.



Juvenile slow worm under site debris



Adult common lizard in the hand



Adult male adder in bracken