



Fosse Green Energy

Preliminary Environmental Information Report

VOLUME

3

Appendix 8-E: Great-Crested Newts

October 2024



Prepared for:

Fosse Green Energy Limited

Prepared by:

AECOM Limited

© 2024 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

Table of Contents

1.	Introduction	1
1.1	Background	1
1.2	Site Description	1
1.3	Aims and Objectives.....	1
2.	Relevant Legislation, Policy and Guidance	3
2.1	Legislation	3
2.2	European Protected Species Licencing.....	3
2.3	Priority Species.....	4
2.4	Local Priority Species	5
3.	Methods	6
3.1	Characterising the baseline	6
3.2	Desk Study	6
3.3	Field Survey.....	7
3.4	Biodiversity Importance	10
3.5	Assumptions and Limitations	10
4.	Results	12
4.1	Desk Study	12
4.2	Field Survey.....	12
5.	Conclusions	14
6.	References.....	15
	Annex A Figures	17
	Annex B HSI Scores.....	18
	Annex C eDNA Results	19
	Annex D Summary of Great Crested Newt assessment for all water bodies	21

Tables

Table 1: GCN suitability indices and description.....	7
Table 2: HSI Scores.....	13

1. Introduction

1.1 Background

- 1.1.1 This report forms a technical appendix to the Preliminary Ecological Information (PEI) Report, specifically to accompany **PEI Report Volume 1, Chapter 8: Ecology and Nature Conservation**. The report provides information on the approach and findings of the Great Crested Newt (GCN) *Triturus cristatus* desk study and surveys, relevant to Fosse Green Energy (hereafter referred to as the 'Proposed Development'), including the results of surveys undertaken within (and up to 250 metres (m) from) the Site.
- 1.1.2 Further information on the Proposed Development is included within **PEI Report, Volume 1, Chapter 2: The Proposed Development**.

1.2 Site Description

- 1.2.1 The Proposed Development is located approximately 9 kilometres (km) south and south west of Lincoln City Centre, Lincolnshire, and lies within the administrative district of North Kesteven.
- 1.2.2 The Proposed Development comprises two distinct parcels:
- 'the Principal Site', which is where ground mounted solar PV panels, electrical sub-stations and Battery Energy Storage System (BESS) will be installed; and
 - 'the Cable Corridor', which comprises the underground electrical infrastructure required to connect the Principal Site to the National Grid.
- 1.2.3 The location of the Proposed Development is centred at Ordnance Survey (OS) Grid Reference SK 90388 62514 and is presented in **PEI Report Volume 2, Figure 1-1**.
- 1.2.4 The Site covers an area of approximately 1,426 hectares (ha) and is dominated by arable fields (approximately 90% of the Site) with smaller areas of improved and semi-improved grassland, hedgerows and woodland.

1.3 Aims and Objectives

- 1.3.1 The aim of this report is to determine the presence and distribution of GCN within the ZOI (see Section 3.1).
- 1.3.2 The objectives, therefore, are to:
- review existing ecological data to identify any records of GCN occurring within the Study Area (see Section 3.1);
 - identify the presence of potentially suitable water bodies located within the Survey Area (see Section 3.1) using OS aerial mapping and online sources; and

- c. undertake GCN Habitat Suitability Index (HSI) assessments on identified accessible water bodies, followed by environmental DNA (eDNA) surveys of those water bodies which are assessed as potentially suitable, to confirm presence or absence of GCN.

1.3.3 Combined, this is used to:

- a. determine the biodiversity importance of the Site for GCN; and
- b. the potential impacts of the Proposed Development on GCN and any required mitigation (as presented in **PEI Report Volume 1, Chapter 8: Ecology and Nature Conservation**).

2. Relevant Legislation, Policy and Guidance

2.1 Legislation

2.1.1 All stages of the GCN life cycle as well as their habitat are fully protected under Schedule 2 of The Conservation of Habitats and Species Regulations (Habitats and Species Regulations) 2017 (as amended) (Ref 2). GCN is listed on Schedule 5 of the Wildlife & Countryside Act (WCA) 1981 (Ref 3), which affords it protection under Section 9, as amended by the Countryside and Rights of Way (CROW) Act 2000 (Ref 4). It is also listed on Annex II and VI of the European Council (EC) Habitats Directive (Ref 5), is included as a Species of Principal Importance (SPI) in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref 6). In combination, this makes it an offence to:

- a. deliberately capture, injure or kill a GCN;
- b. deliberately take or destroy their eggs;
- c. deliberately, intentionally or recklessly disturb an individual; or
- d. damage, destroy or obstruct access to any structure which a GCN used for shelter or protection.

2.1.2 The protection includes both the breeding water body¹ itself and the terrestrial habitat used for foraging and hibernation, which may be distant (up to 500 metres (m)) from the water body (Ref 7), although 250m is typical, acknowledging that there is a notable decrease in abundance of GCN beyond a distance of 250m from a breeding pond (Ref 8).

2.2 European Protected Species Licencing

2.2.1 Where GCN habitat, including their breeding sites and resting places, is present on a site and a development has the potential to cause one or more offences under The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 2), a European Protected Species Licence (EPSL) is required from Natural England to allow the development to proceed. This licence allows the development to proceed with exemption from offences, provided works are undertaken with strict accordance of the terms of the licence. A licence cannot, however, be obtained to provide protection against offences under the WCA 1981 (Ref 3).

¹ A water body that is suitable for GCN is a certain clearly distinguishable part of surface water, such as a lake, pond or watercourse (such as a ditch / stream) without any flow.

- 2.2.2 In determining whether to grant a licence, Natural England must apply the requirements of Regulation 55 of The Conservation of Habitats and Species Regulations 2017 (Ref 2), these being:
- a. Regulation 55(2)(e) states: “*subject to the provisions of this regulation, the relevant licensing body may grant a licence for the purposes specified in paragraph 2*”. The relevant section of paragraph 2 being:
 - b. (e) a licence can be granted for the purposes of “*preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.*”
 - c. Regulation 55(9)(a) states: “*the relevant licensing body must not grant a licence under the regulation unless it is satisfied –*
(a) “that there is no satisfactory alternative”; and
(b) “that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.”
- 2.2.3 A determining authority must also apply these tests when determining a planning/DCO application, where a proposed development is likely to cause an offence under The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 2).
- 2.2.4 In order for a EPSL to be approved by Natural England for works with GCN, it must be demonstrated that The Proposed Development will minimise any potential impacts upon GCN and will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- 2.2.5 Offences can be avoided through the implementation of appropriate mitigation that will minimise the potential for any offences to be committed. Mitigation can include the undertaking of vegetation clearance works at an appropriate time of the year and completing works in accordance with methods that will minimise or avoid potential disturbance or destruction of habitats. In such circumstances it is sensible for works to be completed using Reasonable Avoidance Measures (RAMs).

2.3 Priority Species

- 2.3.1 In England, the Natural Environment and Rural Communities (NERC) Act (Ref 6) requires the Secretary of State for Environment, Food and Rural Affairs to publish and maintain a list of habitats and species that are of ‘principal importance’ for the purpose of conserving biodiversity and are regarded as conservation priorities under the UK Biodiversity Framework 2024 (Ref 9), which supersedes the UK Biodiversity Action Plan (UKBAP) (Ref 10). The UKBAP was launched in 1994 and established a framework and criteria for identifying species (and habitat types) of conservation concern.
- 2.3.2 GCN is listed as being a SPI for conservation in England under Section 41 of the NERC Act (Ref 6). Therefore, the presence of GCN on a site is of

material consideration during the planning process and is used to guide decision-makers such as public bodies (including local and regional authorities) in implementing their duty under Section 40 of the NERC Act.

2.4 Local Priority Species

- 2.4.1 The Proposed Development is located within the county of Lincolnshire. Formerly, the Lincolnshire Biodiversity Action Plan (3rd edition) (Lincolnshire BAP) (Ref 11) provided context to inform identification of threatened or uncommon species of local relevance, alongside priorities for conservation and enhancement targeted at a local level in Lincolnshire. However, under the Environment Act 2021 (Ref 12), these are being replaced by Local Nature Recovery Strategies (LNRSs), which are a system of spatial strategies for nature which will support delivery of biodiversity net gain (BNG) and provide more focussed action for nature recovery. Whilst this is still being developed for Lincolnshire and with no specific habitat or species plans currently in place, this report references the Lincolnshire BAP, for which GCN is included in a grouped species action plan for newts (Ref 11).
- 2.4.2 Additionally, the Lincolnshire BAP (Ref 11) identified the following threats to GCN populations in Lincolnshire:
- a. loss of suitable breeding ponds due to lowered water-tables; infilling for development, farming or waste disposal; neglect; natural succession; shading from surrounding vegetation;
 - b. degradation, loss and fragmentation of terrestrial habitats;
 - c. introduction of fish into breeding ponds, which eat young newts and eggs; and
 - d. chemical pollution, eutrophication and toxic effects of agrochemicals.

3. Methods

3.1 Characterising the baseline

- 3.1.1 Within this report, the following terminology is used when referring to the geographic areas within which assessments were made:
- Study Area– the area within the Site and a 2km radius which was subject to collection of background information e.g. desk study records for GCN to supplement the findings of the survey work
 - Zone of Influence (Zol) – the area over which GCN may be affected by the Proposed Development which, using the criteria below and proportionate to the project's impacts, is typically no greater than 250m from the Site. The scope of field surveys was defined through review of likely impacts of the Proposed Development and results of the desk study; and
 - Survey Area – the area within which the GCN survey work was undertaken (the Site plus a radius of up to 250m where access allowed).
- 3.1.2 The Zol is based on:
- the nature of the project (a solar farm), project activities and the potential for effects at all development stages (construction, operation and decommissioning);
 - the nature of the current land use (approximately 90% arable) and habitats in the vicinity, the water bodies present, their connectivity (e.g. through hedgerows, grassland margins) and how they may be used by GCN;
 - the presence of GCN in the Zol, based on the location of the Site and desk study data; and
 - the habits, behaviours and preferences of GCN and whether these could be affected both spatially and temporally.

3.2 Desk Study

- 3.2.1 A desk study was undertaken as part of the PEA in 2023 (see **PEI Report, Volume 3: Appendix 8-B: Preliminary Ecological Appraisal Report**).
- 3.2.2 Records of GCN within a 2 km radius of the Site were obtained through Greater Lincolnshire Nature Partnership (GLNP) (Ref 13). Only records up to ten years old were considered within the assessment, as any records older than ten years are unlikely to be still representative of GCN populations in the local area.
- 3.2.3 Aerial photographs, OS maps and the indicative design of the Proposed Development (as presented in **PEI Report Volume 2, Figure 3-2-A and 3-2-B**) were reviewed to identify water bodies of potential value to GCN within the Zol. This review included identifying any key routes of potential habitat connectivity to the Proposed Development from outside water bodies (e.g.,

ponds) and significant barriers to GCN dispersal (e.g., main roads or rivers). This exercise was used to scope out the need for field surveys where connectivity was limited, where there were barriers to dispersal for GCN or where no impacts were predicted. Furthermore, any water bodies that were beyond 250 m from the Site were not subject to further survey as GCN commonly move between water bodies up to a distance of 250m from each other (Ref 8), although there are studies showing GCN travelling much further than this (Ref 7) and consideration for survey was made in recognition of this.

- 3.2.4 Multi-Agency Geographic Information for the Countryside ('MAGIC') website (Ref 14) was reviewed to identify species licence returns of GCN that are within 2km of the Site, to identify species presence in the wider area and supplement the data search.
- 3.2.5 The indicative design of the Proposed Development, as presented in **PEI Report Volume 2, Figure 3-2-A** and **3-2-B** was also reviewed whilst determining the GCN field survey area.

3.3 Field Survey

Habitat Suitability Index (HSI)

- 3.3.1 The Habitat Suitability Index (HSI) for GCN was devised to quantitatively assess the suitability of water bodies to support GCN, using ten suitability features of the water body, which are assessed in the field and are later converted into a HSI index to determine a measure of breeding suitability for GCN.
- 3.3.2 A description of the ten indices is presented in **Table 1**.

Table 1: GCN suitability indices and description

Suitability Indices	Suitability Indices Title	Suitability Indices Description
(SI1)	Geographic location	Different areas of the UK represent different indices scores. The UK is divided into three zones (A, B and C) which illustrate decreasing potential for GCN in regard to their geographical range
(SI2)	Water body area	The optimum water body size is between 500 and 750m ² .
(SI3)	Water body permanence	The optimal frequency of drying is one year per decade as this reduces the number of predatory fish. However, permanent water retention is preferable to annual drying up.
(SI4)	Water quality	Good water quality is optimal and is measured through invertebrate diversity and the condition of the water body.

Suitability Indices	Suitability Indices Title	Suitability Indices Description
(SI5)	Water body shading	Represented as a percentage of the bank, GCN occurrence is significantly reduced above a threshold of 75% shade.
(SI6)	Impact of waterfowl	Waterfowl impact on water body vegetation and water turbidity is a negative indicator for GCN as heavy use by waterfowl can deteriorate the suitability of a waterbody for GCN.
(SI7)	Occurrence of fish	The effect of fish presence is related to the species. Some species can have negative impacts and GCN rarely coexist with larger predatory fish species. Other species (depending on conditions) are not detrimental.
(SI8)	Water body density	The presence of water bodies within the local area increases the chances of GCN becoming established from nearby water bodies (and also the suitability of the local area to support a meta-population).
(SI9)	Terrestrial habitat	In general, scrub, unimproved grassland, woodland (deciduous and coniferous) and gardens are regarded as being suitable terrestrial habitat, unlike improved pasture, arable and hardstanding. The SI9 is the combination between positive factors (suitable habitat) and negative factors (e.g., inherent barriers to movement such as roads). The surrounding habitat is scored according to the extent of high-quality terrestrial newt habitat.
(SI10)	Macrophyte content	The highest occurrence of GCN is found in water bodies with emergent vegetation cover between 25% and 50% and submerged vegetation between 50% and 75%.

3.3.3 The ten field scores were converted into suitability index scores which was multiplied together then calculated to the power of 0.1, to give the resulting HSI score which were categorised in terms of their suitability to support GCN as follows:

- <0.5: poor likelihood of presence;
- 0.5 – 0.59: below average likelihood of presence;
- 0.6 – 0.69: average likelihood of presence;
- 0.7 – 0.79: good likelihood of presence; and
- >0.8: excellent likelihood of presence.

- 3.3.4 Any water body with an HSI score of below average or greater is then surveyed using eDNA analysis or field-based methods, to determine GCN presence or absence.

eDNA Laboratory Analysis

- 3.3.5 Further to the HSI assessment, suitable (see Section 3.3.4) and accessible water bodies identified within the Survey Area were scoped in for environmental DNA (eDNA) survey.
- 3.3.6 eDNA survey is an established technique for determining presence or absence of GCN within aquatic habitats, which is approved by Defra and Natural England within their standing advice (Ref 1). In aquatic environments, eDNA is naturally diluted and distributed in the water. Sources of eDNA in water derive from faeces, mucous, gametes, shed skin and carcasses. The eDNA survey involves the collection of water samples for laboratory analysis for the DNA of species of interest, in this case GCN. The sampling procedure is prescribed in the published method and requires that the water sample be taken between 15th April and 30th June.
- 3.3.7 The eDNA surveys were undertaken in May 2023 (water bodies 57 and 66 as presented in **Figure 8-E-1**); and June 2024 (water bodies 49, 50, 59 and 61 as presented in **Figure 8-E-1**) by AECOM ecologists in accordance with the published protocol for survey (Ref 1, Ref 15), using eDNA sampling kits and analysis services undertaken by one of the approved suppliers. To prevent contamination of the samples:
- gloves were worn at all times during the sampling process, and gloves were replaced between sample collection from the water body and pipetting into the sterile sub-sample tubes; and
 - samples were collected without entering the water i.e., the surveyor stood only on the water body bank or water body edges. This prevented disturbance of the substrate to limit cross-contamination.
- 3.3.8 The field sampling protocol consisted of the following steps for each surveyed water body:
- the location of sub-samples was spaced as evenly as possible around the margin of the water body. Sub-samples generally targeted areas with potential egg laying substrate (e.g., vegetation) and open water areas which newts may be using for displaying. Prior to sampling, the water column was mixed by gently using a ladle to stir through the entire water column, whilst avoiding disturbing the sediment on the bed of the water body. Sampling of very shallow water (less than 5-10cm deep) was avoided where possible;
 - a new pair of gloves was put on to keep the next stage as uncontaminated as possible;
 - using a clear plastic pipette, approximately 15mL of water were taken from the bag and pipetted into six sterile tubes containing 35mL of ethanol to preserve the eDNA sample (i.e., the tube was filled to the 50mL mark)

- d. the tube was shaken vigorously for ten seconds to mix the sample and preservative. This is essential to prevent DNA degradation and was also repeated for each of the six conical tubes. Before taking each sample, the water in the bag was shaken to homogenise the sample, as DNA material constantly sinks to the bottom; and
 - e. the box of preserved sub-samples was kept in a fridge and then later returned to ambient temperature in the laboratory for analysis.
- 3.3.9 eDNA kits were procured from SureScreen Scientifics and on collection of samples, they were then sent back to SureScreen Scientifics to be analysed in their laboratory. Laboratory analysis was consistent with the methods described in Appendix 5 of the WC1067 Technical Advice Note (Ref 15), including control analysis for inhibition and degradation.
- 3.3.10 eDNA sampling resulted in a result of either positive (eDNA was detected in the water sample), negative (no eDNA was detected in the sample and GCN are likely absent) or inconclusive (the sample was degraded or otherwise could not provide a positive or negative result).

3.4 Biodiversity Importance

- 3.4.1 An essential prerequisite step to allow an ecological impact assessment of the Proposed Development was an evaluation of the relative biodiversity importance of the Survey Area for GCN. This is necessary to set the terms of reference for the subsequent ecological impact assessment (as presented in **PEI Report Volume 1, Chapter 8: Ecology and Nature Conservation**).
- 3.4.2 The method of evaluation that was utilised has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines (Ref 16). This gives guidance on scoping and carrying out environmental assessments and places appraisal in the context of relevant policies and at a geographical scale at which feature matters (i.e. international, national, regional, county, district, local or site). Data received through desk study and field-based surveys were used to identify the importance of GCN. Professional judgement was also applied, where necessary. Relevant published national and local guidance and criteria can be used, where available, to inform the assessment of biodiversity importance and to assist consistency in evaluation. Population and conservation status for GCN within Lincolnshire has been made with reference to the GLNP's '*Newts: an assessment of current status in Greater Lincolnshire*' (Ref 17).

3.5 Assumptions and Limitations

- 3.5.1 This report is based on the administrative county of Lincolnshire whilst recognising that key aspects of biodiversity are co-ordinated and managed within the geography of Greater Lincolnshire, for example the Nature Strategy for the Greater Lincolnshire Nature Partnership.

Desk Study

- 3.5.2 The aim of a desk study was to help characterise the baseline context of the Proposed Development and provide valuable background information that would not be captured by site surveys. Information obtained during the course of the desk study was dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for GCN does not necessarily mean that this species does not occur in the Study Area. Likewise, the presence of records of GCN does not automatically mean that these still occur within the area of interest or are relevant in the context of the Proposed Development.

Field Survey

- 3.5.3 The HSI survey is not sufficiently precise to conclude that any particular water body with a score of average or greater will support GCN or that those with a score of below average will not support GCN. However, it is a useful and recognised tool for establishing the potential suitability of water bodies for breeding GCN to inform further survey requirements. The HSI for GCN is a measure of habitat suitability and is not a substitute for aquatic amphibian surveys.
- 3.5.4 Any water bodies that were dry at the time of HSI survey were recorded as such and then a precautionary HSI was taken, based on known indices or those recorded on similar ponds, but these results are not included in Annex B. Generally, water bodies that are dry at the time of HSI survey in spring are unlikely to support breeding GCN.
- 3.5.5 There was no access to two water bodies that were outside of the boundary of the Site and were not viewable from within the Site (19 and 20). As presented in Annex D, four water bodies (5, 6, 9, 14) that scored below average or average during HSI surveys were not surveyed using eDNA methods as these were outside of the boundary of the Site and there was no access. Whilst the likelihood of these water bodies supporting GCN is low (based on absence from surveyed water bodies within the Site), every effort will be made to survey these in spring 2025.
- 3.5.6 Sufficient information was gathered from the surveys to provide an assessment of GCN presence within the Survey Area.

4. Results

4.1 Desk Study

- 4.1.1 The data search, through GLNP, returned eight records of GCN presence or absence from five different locations within the Study Area and from the preceding ten years, although only two records were of GCN presence (from 2014), the other records related to confirmed absence. The closest record to the Site was of a negative eDNA sample (confirming GCN absence) approximately 40m from the Site in 2021. All other records (including that of GCN presence) were beyond 250m from the Site.
- 4.1.2 A review of 'MAGIC' (Ref 14) did not identify any GCN class survey licence returns within the Study Area. The closest record was approximately 6.8 km north east of the Site from 2015.
- 4.1.1 A literature review for abundance of GCN in Lincolnshire identified that GCN is relatively abundant within Greater Lincolnshire but "*there are still many gaps in our understanding of the species range*" (Ref 17).
- 4.1.2 From the desk study, using maps and aerial photography, 70 water bodies were identified within the Survey Area (numbered non-sequentially 1-99 as presented in **Figure 8-E-1**).
- 4.1.3 Of the 70 water bodies identified, the desk study scoped out the need to calculate the HSI of 55 water bodies for the following reasons:
- a. distance between the water body and the Site; and, or
 - b. barriers to GCN dispersal between the water body and the Site, such as roads, rivers, intensively managed farmland; and, or
 - c. other reasons e.g. the pond is no longer present, as identified from aerial imagery, or the management and, or use of the water body (e.g. fishing, suggesting the presence of large fish that would predate GCN) determined that the water body will not support breeding GCN.
- 4.1.4 The rationale for scoping ponds out of further survey during the desk study is presented in Annex D.

4.2 Field Survey

- 4.2.1 This section presents the results of HSI and eDNA surveys undertaken in 2023 and 2024.

HSI Surveys

- 4.2.2 Fifteen water bodies identified within the Site (see **Figure 8-E-1**) were surveyed to initially check that each water body held water and then a HSI was calculated for each water body, where required. The HSI calculations are presented in **Table 2**.

Table 2: HSI Scores

HSI Score	Water body (see Figure 8-E-1)
Excellent	61
Good	-
Average	6, 9, 57, 59, 66
Below Average	5, 14, 49, 50
Poor	18, 29, 31, 33, 62

- 4.2.3 Nine water bodies were scoped in for field surveys during the desk study but were dry at the time of survey (12, 23, 32, 34, 36, 39, 40, 43, 58). Based on HSI indices from similar ponds, these would have been scored as poor.

eDNA Surveys

- 4.2.4 Water samples were taken from six water bodies within the Site that scored above an HSI score of below average (see **Table 2**) and held water in May 2023 and June 2024, which were analysed for GCN eDNA. The eDNA water bodies were 49, 50, 57, 59, 61 and 66.
- 4.2.5 All the eDNA samples returned a negative result for GCN, confirming GCN absence from these water bodies.
- 4.2.6 The results of the eDNA laboratory analysis are included in Annex C.

5. Conclusions

- 5.1.1 The desk study identified 70 water bodies within 250m of the Site. The desk study identified eight records (presence or absence) of GCN, occurring within 2 km of the Site and from the preceding ten years. The desk study identified GCN presence at two water bodies within 2km of the Site although both are more than 50m from the Site and the records are from 2014. Fifty-five of the 70 water bodies identified in the desk study were scoped out of further assessment, the majority as a result of barriers between the water body and the Site (see Section 4.1.3).
- 5.1.2 In 2023 and 2024, ten water bodies within the Survey Area were surveyed for their suitability to support GCN. Six of these water bodies had an HSI score of greater than 'below average' and held water in May 2023 and June 2024 (water bodies 49, 50, 57, 59, 61 and 66). Water samples were collected from these six water bodies for eDNA analysis. The eDNA analysis of each of the six water bodies indicated a negative result for GCN eDNA, confirming absence.
- 5.1.3 A summary of the assessment of all water bodies is presented in Annex D.
- 5.1.4 On the basis of the scoping of the water bodies and the data reported in this appendix, it is concluded that GCN does not occur within the Site nor within 250 m of the Site. However, should the presence of GCN within the ZOI be identified, for example, when undertaking further surveys in 2025 (as detailed in Section 3.5), mitigation will need to be implemented, formalised through a Construction and Environment Management Plan (CEMP) to:
- ensure compliance with relevant legislation; and
 - avoid impacts that would give rise to a potential "significant effect", therefore contrary to planning policy and biodiversity obligations of the NERC Act (Ref 6).

6. References

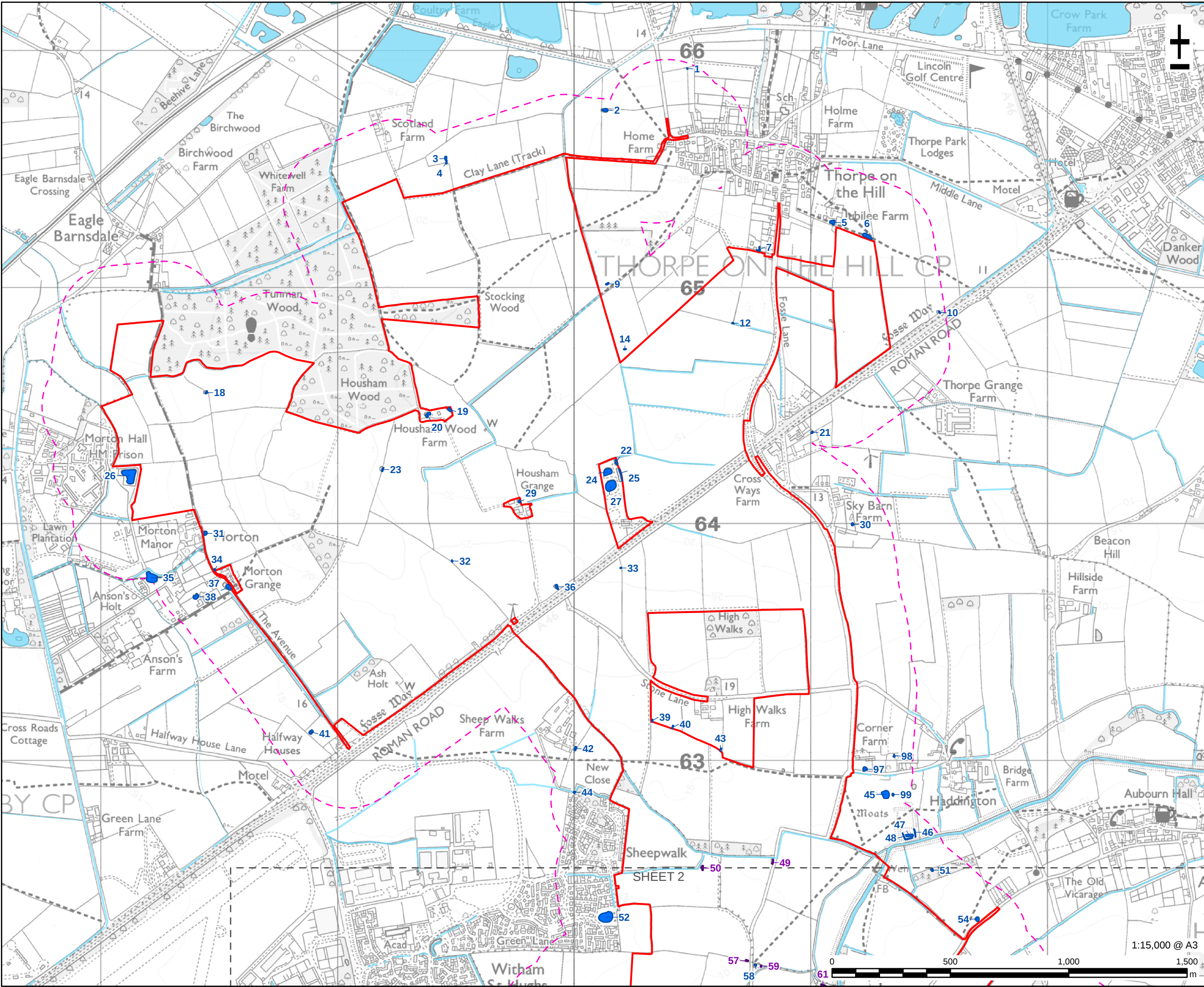
- Ref 1 Natural England Standing Advice: <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects>
- Ref 2 His Majesty's Stationery Office (HMSO) (2018). The Conservation of Habitats and Species Regulations 2017 (as amended). HMSO, London. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>.
- Ref 3 HMSO (1981). Wildlife & Countryside Act 1981 (as amended). HMSO, London. Available at: <https://www.legislation.gov.uk/ukpga/1981/69>.
- Ref 4 HMSO (2000). Countryside and Rights of Way Act 2000. HMSO, London. Available at: <https://www.legislation.gov.uk/ukpga/2000/37/contents>.
- Ref 5 European Council (EC) (1992). Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. EC, Brussels. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31992L0043>.
- Ref 6 HMSO (2006). Natural Environment and Rural Communities Act 2006. HMSO, London. Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents>.
- Ref 7 English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.
- Ref 8 Natural England (2004). An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt. <http://publications.naturalengland.org.uk/publication/134002>
- Ref 9 Joint Nature Conservation Committee (JNCC) on behalf of the Four Countries' Biodiversity Group (2024). UK Biodiversity Framework. JNCC, Peterborough. Available at: <https://data.jncc.gov.uk/data/19a729f6-440e-4ac6-8894-cc72e84cc3bb/uk-biodiversity-framework.pdf>
- Ref 10 HMSO (1994). Biodiversity The UK Action Plan. HMSO, London. Available at: <https://data.jncc.gov.uk/data/cb0ef1c9-2325-4d17-9f87-a5c84fe400bd/UKBAP-BiodiversityActionPlan-1994.pdf>.
- Ref 11 Lincolnshire Biodiversity Action Plan. (2012-2020) 3rd edition. Available at: <http://www.southkesteven.gov.uk/CHttpHandler.ashx?id=7371&p=0>.
- Ref 12 HMSO (2021). The Environment Act 2021. Available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>
- Ref 13 Greater Lincolnshire Nature Partnership. Available at: <https://glnp.org.uk/>.
- Ref 14 Department for Environment, Food and Rural Affairs (DEFRA (2022). Multi-Agency geographical information for the countryside (MAGIC) map. Available at: <https://magic.defra.gov.uk/MagicMap.aspx>.
- Ref 15 Biggs, J., Ewald N., Valentini, A., Gaboriaud C., Griffiths, R.A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. and Dunn, F. (2014). Analytical and

methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust, Oxford.

- Ref 16 Chartered Institute of Ecology and Environmental Management (CIEEM). (2018). Guidelines for Ecological Impact assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Available at: <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf>.
- Ref 17 Greater Lincolnshire Nature Partnership (2013). Newts: an assessment of current status in Greater Lincolnshire

Annex A Figures

PEI Report Volume 3, Figure 8-E-1 to 4 Great Crested Newt Survey



PROJECT

Fosse Green Energy

CLIENT

Fosse Green Energy Ltd

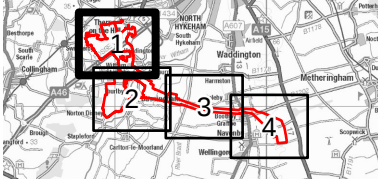
CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
www.aecom.com

LEGEND

- Site Boundary
- 250m Survey Buffer
- Pond Surveyed for Great Crested Newts, eDNA Surveys (Negative result)
- Pond Surveyed for Great Crested Newts
- Other Watercourse
- Other Waterbody

SHEET LAYOUT



NOTES

Reproduced from Ordnance Survey digital map data © Crown copyright 2023. All rights reserved. License number 0100031673.

ISSUE PURPOSE

PEI Report

PROJECT NUMBER

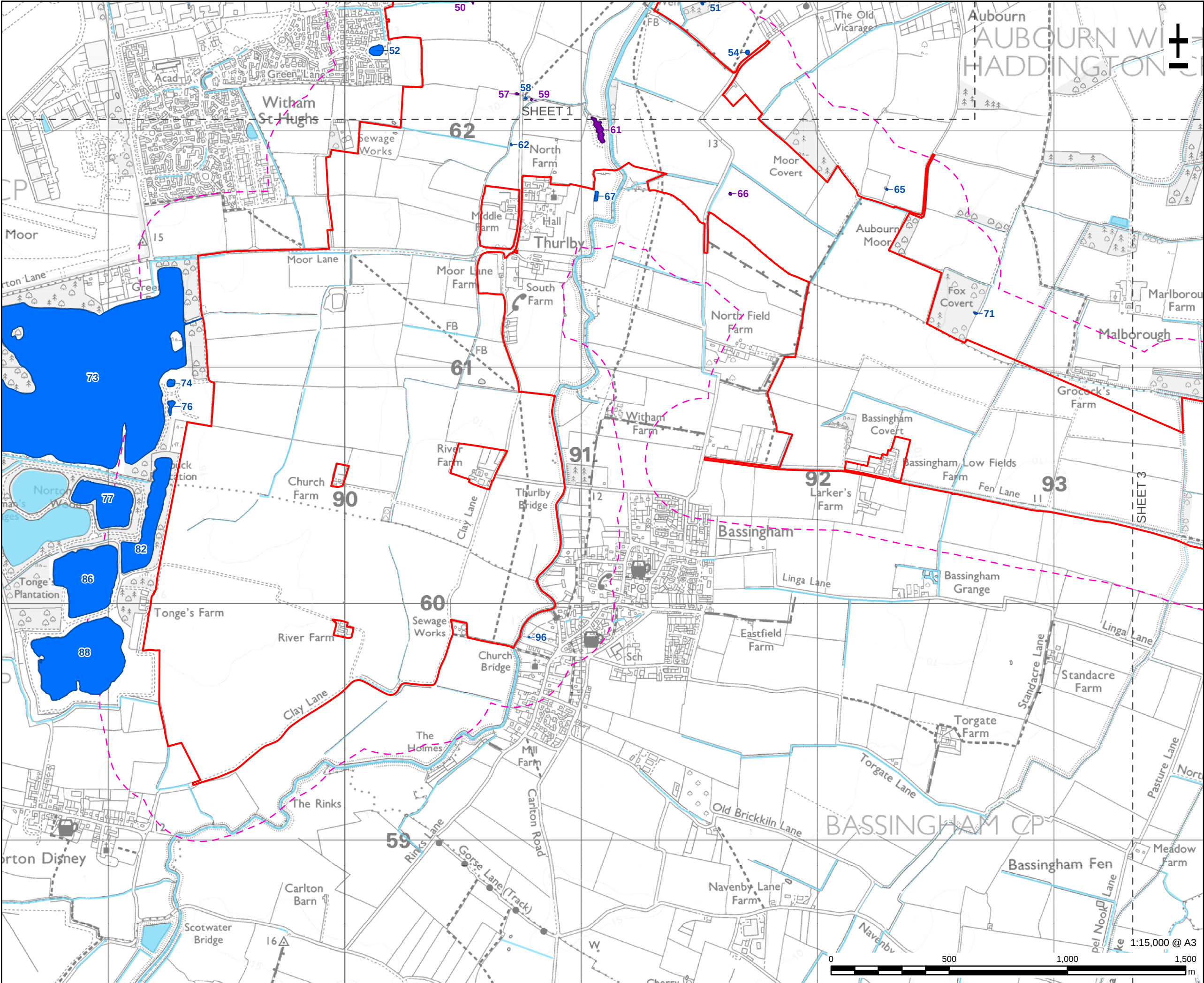
60664324

FIGURE TITLE

Great Crested Newt Survey

FIGURE NUMBER

Figure 8-E-1



PROJECT

Fosse Green Energy

CLIENT

Fosse Green Energy Ltd

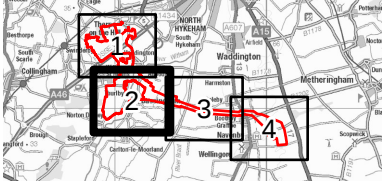
CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
www.aecom.com

LEGEND

- Site Boundary
- 250m Survey Buffer
- Pond Surveyed for Great Crested Newts, eDNA Surveys (Negative result)
- Pond Surveyed for Great Crested Newts
- Other Watercourse
- Other Waterbody

SHEET LAYOUT



NOTES

Reproduced from Ordnance Survey digital map data © Crown copyright 2023. All rights reserved. License number 0100031673.

ISSUE PURPOSE

PEI Report

PROJECT NUMBER

60664324

FIGURE TITLE

Great Crested Newt Survey

FIGURE NUMBER

Figure 8-E-2



CLIENT

CONSULTANT

LEGEND

- ## SHEET LAYOUT

NOTES

ISSUE PURPOSE

PEI Report

PROJECT NUMBER

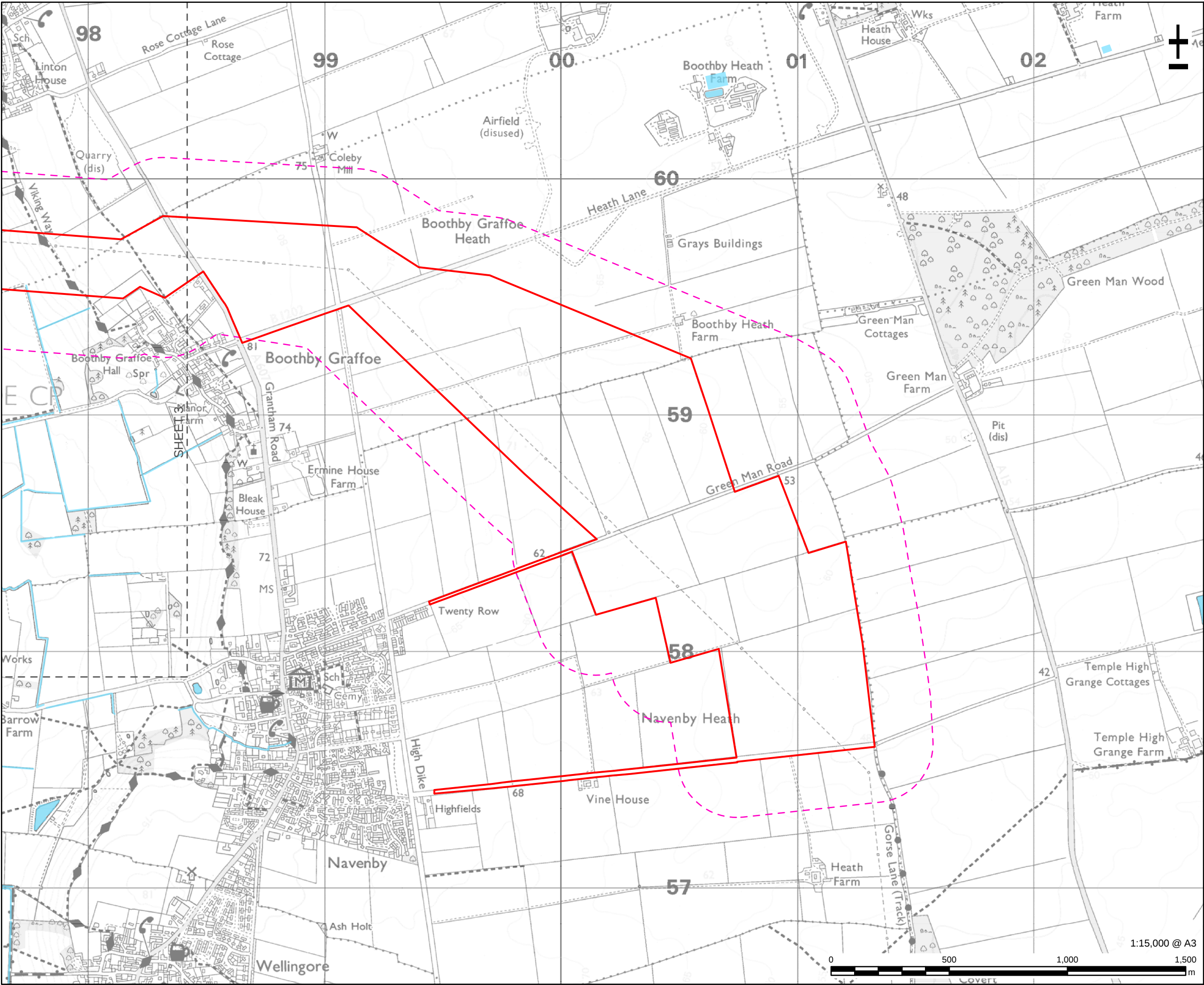
60664324

FIGURE TITLE

Great Crested Newt Survey

FIGURE NUMBER

Figure 8-E-3



PROJECT

Fosse Green Energy

CLIENT

Fosse Green Energy Ltd

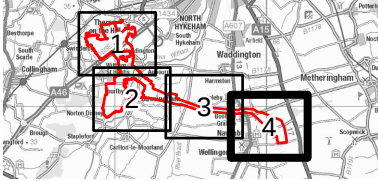
CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
www.aecom.com

LEGEND

- Site Boundary
- 250m Survey Buffer
- Other Watercourse
- Other Waterbody

SHEET LAYOUT



NOTES

Reproduced from Ordnance Survey digital map data © Crown copyright 2023. All rights reserved. License number 0100031673.

ISSUE PURPOSE

PEI Report

PROJECT NUMBER

60664324

FIGURE TITLE

Great Crested Newt Survey

FIGURE NUMBER

Figure 8-E-4

Annex B HSI Scores

Water body Reference (see Figure 8-E-1)	Pond Area (m ²)	Pond Drying	Quality	Shade (%)	Fowl	Fish	Ponds	Terrestrial Habitat	Macrophytes (%)	HSI Score
Pond 5	145	Never	Good	0	Absent	Possible	1	Poor	0	Below average
Pond 6	365	Never	Good	0	Absent	Minor	1	Moderate	10	Average
Pond 9	<50	Rarely	Good	0	Absent	Absent	1	Good	60	Average
Pond 14	<50	Annually	Good	0	Absent	Absent	1	Good	50	Below average
Pond 18	<50	Annually	Poor	85	Absent	Possible	12	Moderate	0	Poor
Pond 29	<50	Annually	Moderate	90	Absent	Absent	0	Moderate	80	Poor
Pond 31	<50	Annually	Bad	100	Absent	Possible	13	Moderate	0	Poor
Pond 33	<50	Sometimes	Poor	100	Absent	Absent	7	Poor	0	Poor
Pond 49	200	Never	Poor	100	Minor	Possible	20	Moderate	0	Below average
Pond 50	150	Never	Poor	95	Minor	Possible	20	Good	0	Below average
Pond 57	<50	Sometimes	Poor	60	Absent	Absent	17	Poor	50	Average
Pond 59	<50	Sometimes	Poor	80	Absent	Absent	17	Good	0	Average
Pond 61	1750	Never	Good	60	Minor	Possible	18	Good	60	Excellent
Pond 62	<50	Annually	Poor	100	Minor	Absent	17	Poor	0	Poor
Pond 66	<50	Sometimes	Poor	60	Absent	Absent	13	Poor	70	Average

Annex C eDNA Results

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 24/05/2023
Date Reported: 31/05/2023
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
3741	Fosse - Pond 4	-	Pass	Pass	Pass	Negative	0
3743	Fosse - Pond 5	-	Pass	Pass	Pass	Negative	0

C.1.1 Note:

- Fosse – Pond 4 is referenced as Pond 57 throughout this report
- Fosse – Pond 5 is referenced as Pond 66 throughout this report

GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
4427	Fosse_59		Pass	Pass	Negative	0/12
4431	Fosse_50		Pass	Pass	Negative	0/12
4432	Fosse_49		Pass	Pass	Negative	0/12
4433	Fosse_61		Pass	Pass	Negative	0/12

Matters affecting result: none

Annex D Summary of Great Crested Newt assessment for all water bodies

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
1	225	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, greater than 200m from the Proposed Development and barriers to dispersal, separated from the Proposed Development by intensively managed arable fields and Station Road. Therefore, no impacts to GCN would occur, even if present within this water body.
2	196	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, nearly 200m from the Proposed Development and barriers to dispersal, separated from the Proposed Development by intensively managed arable fields and Clay Lane. Therefore, no impacts to GCN would occur, even if present within this water body.
3	121	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, >100m from the Proposed Development and barriers to dispersal, separated from the Proposed Development by intensively managed arable fields and Clay Lane. Therefore, no impacts to GCN would occur, even if present within this water body.
4	112	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, >100m from the Proposed Development and barriers to dispersal, separated from the Proposed Development by intensively managed arable fields

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
				and Clay Lane. Therefore, no impacts to GCN would occur, even if present within this water body.
5	15	Yes – below average	No	No access to this off-Site water body, but viewable from within the Site. As there are no records of GCN in nearby water bodies and limited connectivity between water bodies within 250m of this water body, the likelihood of GCN being present is low, although every effort will be made to survey this water body, using eDNA methods, between April and June 2025.
6	4	Yes – average	No	No access to this off-Site water body, but viewable from within the Site. As there are no records of GCN in nearby water bodies and limited connectivity between water bodies within 250m of this water body, the likelihood of GCN being present is low, although every effort will be made to survey this water body, using eDNA methods, between April and June 2025.
7	5	No	No	Scoped out during desk study, of requiring any further assessment or survey, as within a residential garden and therefore water body may not still be present.
9	34	Yes – average	No	No access to this off-Site water body, but viewable from within the Site. As there are no records of GCN in nearby water bodies and limited connectivity between water bodies within 250m of this water body, the likelihood of GCN being present is low, although every effort will be made to survey this water body, using eDNA methods, between April and June 2025.
10	224	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, >200m from the Proposed Development and barriers to dispersal, separated from the Proposed Development by intensively managed arable fields. Therefore, no impacts to GCN would occur, even if present within this water body.

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
12	Within the Site	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
14	25	Yes – below average	No	No access to this off-Site water body, but viewable from within the Site. As there are no records of GCN in nearby water bodies and limited connectivity between water bodies within 250m of this water body, the likelihood of GCN being present is low, although every effort will be made to survey this water body, using eDNA methods, between April and June 2025.
18	Within the Site	Yes – Poor	No	Scoped out of requiring eDNA survey due to poor HSI score, including poor water quality and little to no aquatic macrophytes (see Annex B).
19	On the Site boundary	No	No	No access to this off-Site water body. As there are no records of GCN in nearby water bodies and limited connectivity between water bodies within 250m of this water body, the likelihood of GCN being present is low, although every effort will be made to survey this water body between April and June 2025.
20	9	No	No	No access to this off-Site water body. As there are no records of GCN in nearby water bodies and limited connectivity between water bodies within 250m of this water body, the likelihood of GCN being present is low, although every effort will be made to survey this water body between April and June 2025.
21	204	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, >200m from the Proposed Development and separated by Haddington Lane, a main road which would act as a barrier to GCN dispersal to

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
				the Site. There would be no impacts to GCN, even if present within this water body.
22	On the Site boundary	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this water body is within a holiday park, used for amenity purposes, including fishing. It is unlikely that this water body supports GCN due to the presence of large fish and waterfowl. This water body is off-Site and there would be no impacts to GCN, even if present within this water body.
23	Within the Site	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
24	13	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this water body is within a holiday park, used for amenity purposes, including fishing. It is unlikely that this water body supports GCN due to the presence of large fish and waterfowl. This water body is off-Site and there would be no impacts to GCN, even if present within this water body.
25	On the Site boundary	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this water body is within a holiday park, used for amenity purposes, including fishing. It is unlikely that this water body supports GCN due to the presence of large fish and waterfowl. This water body is off-Site and there would be no impacts to GCN, even if present within this water body.
26	18	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this is a large water body that is not suitable for GCN (most likely supports large

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
				fish and waterfowl). Additionally, a negative eDNA sample (proving GCN absence) was identified from this water body from 2021.
27	10	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this water body is within a holiday park, used for amenity purposes, including fishing. It is unlikely that this water body supports GCN due to the presence of large fish and waterfowl. This water body is off-Site and there would be no impacts to GCN, even if present within this water body.
29	On the Site boundary	Yes – Poor	No	Scoped out of requiring eDNA survey due to poor HSI score, including poor water quality and little to no aquatic macrophytes (see Annex B).
30	101	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, >100m from the Proposed Development and separated by Haddington Lane, a main road which would act as a barrier to GCN dispersal to the Site. There would be no impacts to GCN, even if present within this water body.
31	Within the Site	Yes - poor	No	Scoped out of requiring eDNA survey due to poor HSI score, including poor water quality and little to no aquatic macrophytes (see Annex B).
32	Within the Site	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
33	Within the Site	Yes – poor	No	Scoped out of requiring eDNA survey due to poor HSI score, including poor water quality and poor terrestrial habitat (see Annex B).

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
34	Within the Site	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
35	225	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, >200m from the Proposed Development and separated by residential properties and minor roads which would act as a barrier to GCN dispersal to the Site. There would be no impacts to GCN, even if present within this water body.
36	Within the Site	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
37	3	No	No	Whilst this water body is adjacent to the Site, it was Scoped out during desk study, of requiring any further assessment or survey, due to distance, c.170m from the developed areas of the Proposed Development, with adjacent fields of the Proposed Development identified as proposed grassland enhancement (see PEI Report Volume 2, Figure 3-2-A and 3-2-B). There would be no impacts to GCN, even if present within this water body.
38	114	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance, >100m from the Proposed Development and >300m from the developed areas of the Proposed Development, with adjacent fields of the Proposed Development identified as proposed grassland enhancement (see PEI

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
Report Volume 2, Figure 3-2-A and 3-2-B). There would be no impacts to GCN, even if present within this water body.				
39	On the Site boundary	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
40	On the Site boundary	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
41	77	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to barriers to dispersal, separated from the Proposed Development by intensively managed arable fields and a minor road (The Avenue). Therefore, no impacts to GCN would occur, even if present within this water body.
42	112	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>100m from the Proposed Development) and within an industrial (quarried) area which is likely to prevent GCN dispersal to/from this water body (if present). There would be no impacts to GCN, even if present within this water body.
43	On the Site boundary	No	No	This pond was assumed to be dry at time of HSI survey, based on its location on woodland edge. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
				winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
44	149	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (nearly 150m from the Proposed Development) and within a residential garden and therefore water body may not still be present. There would be no impacts to GCN, even if present within this water body.
45	144	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (nearly 150m from the Proposed Development) and barriers to GCN dispersal between this water body and the Proposed Development, being separated by Haddington Lane. Furthermore, this water body is >200m from any developed areas of the Proposed Development. There would be no impacts to GCN, even if present within this water body.
46	168	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>150m from the Proposed Development) and barriers to GCN dispersal between this water body and the Proposed Development, being separated by Haddington Lane. Furthermore, this water body is >200m from any developed areas of the Proposed Development. There would be no impacts to GCN, even if present within this water body.
47	145	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (nearly 150m from the Proposed Development) and barriers to GCN dispersal between this water body and the Proposed Development, being separated by Haddington Lane. Furthermore, this water body is >200m from any

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
				developed areas of the Proposed Development. There would be no impacts to GCN, even if present within this water body.
48	131	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>100m from the Proposed Development) and barriers to GCN dispersal between this water body and the Proposed Development, being separated by Haddington Lane. Furthermore, this water body is >200m from any developed areas of the Proposed Development. There would be no impacts to GCN, even if present within this water body.
49	Within the Site	Yes – below average	Yes – absent	GCN confirmed as absent by eDNA analysis (see Annex C).
50	Within the Site	Yes – below average	Yes - absent	GCN confirmed as absent by eDNA analysis (see Annex C).
51	131	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>100m from the Proposed Development). This water body is within woodland and is likely to be dry for the majority of the year. Regardless, there would be no impacts to GCN, even if present within this water body.
52	38	No	No	Scoped out during desk study, of requiring any further assessment or survey, as Airbus imagery (dated 5th August 2024) does not identify the presence of any water. Additionally, this water body is >100m from any developed areas of the Proposed Development and there would be no impacts to GCN, even if present.
54	83	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (nearly 100m from the Proposed Development) and intensively

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
				managed arable fields separating this water body from the Proposed Development. There would be no impacts to GCN, even if present within this water body.
57	Within the Site	Yes – average	Yes – absent	GCN confirmed as absent by eDNA analysis (see Annex C).
58	Within the Site	No	No	This pond was dry at time of HSI survey. However, a HSI based on indices from similar ponds and this pond would score as poor. It is unlikely that this pond ever holds water outside of winter months and therefore the likelihood of GCN being present is low. Furthermore, there are no records of GCN in nearby water bodies.
59	Within the Site	Yes – average	Yes – absent	GCN confirmed as absent by eDNA analysis (see Annex C).
61	Within the Site	Yes – excellent	Yes – absent	GCN confirmed as absent by eDNA analysis (see Annex C).
62	Within the Site	Yes – poor	No	Scoped out of requiring eDNA survey due to poor HSI score, including poor water quality and little to no aquatic macrophytes (see Annex B).
65	59	No	No	Scoped out during desk study, of requiring any further assessment or survey, as it appears from aerial imagery that this water body is not likely to be present as it's located on the edge of woodland and latest Airbus imagery (dated 5th August 2024) does not show any water body present. Regardless, there would be no impacts to GCN, even if present within this water body

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
66	Within the Site	Yes – average	Yes – absent	GCN confirmed as absent by eDNA analysis (see Annex C).
67	10	No	No	Scoped out during desk study, of requiring any further assessment or survey, as it appears from aerial imagery that this water body is not likely to be present as it's located on the edge of woodland and latest Airbus imagery (dated 5th August 2024) does not show any water body present. Regardless, there would be no impacts to GCN, even if present within this water body
71	114	No	No	Scoped out during desk study, of requiring any further assessment or survey, as it appears from aerial imagery that this water body is not likely to be present as it's located on the edge of woodland and latest Airbus imagery (dated 5th August 2024) does not show any water body present. Regardless, there would be no impacts to GCN, even if present within this water body
73	5	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this is a large water body, used for recreational purposes and likely to support large fish and waterfowl which would inhibit any population of GCN present. There would be no impacts to GCN, even if present within this water body.
74	142	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>100m from the Proposed Development) and nearly 180m from the developed areas of the Proposed Development ((see PEI Report Volume 2, Figure 3-2-A and 3-2-B). Therefore, there would be no impacts to GCN, even if present within this water body.
75	32	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this water body is >100m from the developed areas of the Proposed

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
				Development ((see PEI Report Volume 2, Figure 3-2-A and 3-2-B). Therefore, there would be no impacts to GCN, even if present within this water body.
76	75	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this water body is within 100m of the Proposed Development boundary, it is >100m from the developed areas of the Proposed Development ((see PEI Report Volume 2, Figure 3-2-A and 3-2-B). Therefore, there would be no impacts to GCN, even if present within this water body.
77	161	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>150m from the Proposed Development) and as this is a large water body, used for recreational purposes and likely to support large fish and waterfowl which would inhibit any population of GCN present. There would be no impacts to GCN, even if present within this water body.
82	29	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this is a large water body, used for recreational purposes and likely to support large fish and waterfowl which would inhibit any population of GCN present. There would be no impacts to GCN, even if present within this water body.
83	187	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>150m from the Proposed Development). There would be no impacts to GCN, even if present within this water body.
85	185	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>150m from the Proposed Development). There would be no impacts to GCN, even if present within this water body.

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
86	165	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>150m from the Proposed Development) and as this is a large water body, used for recreational purposes and likely to support large fish and waterfowl which would inhibit any population of GCN present. There would be no impacts to GCN, even if present within this water body.
87	81	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance from the Cable Corridor, nearly 100m from the Proposed Development boundary, but impacts to GCN (if present) can be avoided by ensuring construction is >100m from the water body.
88	83	No	No	Scoped out during desk study, of requiring any further assessment or survey, as this is a large water body, used for recreational purposes and likely to support large fish and waterfowl which would inhibit any population of GCN present. There would be no impacts to GCN, even if present within this water body.
96	36	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to barriers to GCN dispersal between this water body and the Proposed Development, being separated by the River Witham. There would be no impacts to GCN, even if present within this water body.
97	42	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to barriers to GCN dispersal between this water body and the Proposed Development, being separated by Haddington Lane. Furthermore, this water body is >100m from any developed areas of the Proposed Development. There would be no impacts to GCN, even if present within this water body.

Water body number (see Figure 8-E-1 for location)	Distance from the Proposed Development (metres)	HSI Assessment carried out? (HSI score: excellent, good, average, below average, poor)	eDNA analysis carried out? (GCN – present / absent)	Supporting Comments
98	168	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>150m from the Proposed Development) and barriers to GCN dispersal between this water body and the Proposed Development, being separated by Haddington Lane. Furthermore, this water body is >200m from any developed areas of the Proposed Development. There would be no impacts to GCN, even if present within this water body.
99	185	No	No	Scoped out during desk study, of requiring any further assessment or survey, due to distance (>150m from the Proposed Development) and barriers to GCN dispersal between this water body and the Proposed Development, being separated by Haddington Lane. Furthermore, this water body is >200m from any developed areas of the Proposed Development. There would be no impacts to GCN, even if present within this water body.