Ecosulis Ltd
The Rickyard
Newton St Loe
Bath BA2 9BT
T: 01225 874 040
E: info@ecosulis.co.uk
W: www.ecosulis.co.uk

GREAT GROVEHURST, KENT

Great Crested Newt Surveys

Client: G H Dean & Co Ltd

Reference: J006022

Date: July 2016

Issue:	Date:	Written by:	Reviewed by:	Amended by:	Approved by:
One	25 July 2016	AH	SK	AH	SK
Two	31 August 2016	-	-	AH	SK
Three	7 September 2016	-	-	SK	SK
Four	26 October 2016	-	-	SK	SK

Company Registration Number: 372 4176
VAT Number: 601216305

ISO 9001, ISO 14001, OHSAS 18001
Certificate Number 6745

Ecosulis Ltd (Exeter Office)
The Innovation Centre, University of Exeter,
Rennes Drive, Exeter, Devon EX4 4RN
Tel: 01392 247 906

Ecosulis Ltd (Welsh Office)
Britannia House, Caerphilly Business Park,
Caerphilly, Nr Cardiff CF83 3GG
Tel: 02921 679 141

Ecosulis Ltd (Chester Office)
Herons Way, Chester Business Park,
Chester CH4 9QR Tel: 01244 893 130

Ecosulis Ltd (London Office)
2 Sheen Road, Richmond TW9 1AE
Tel: 020 8973 2428

NON-TECHNICAL SUMMARY

Site location and size	Great Grovehurst, Kent; TQ 90439 66626; 4.8ha
Scope of works	Great crested newt presence/absence and population monitoring survey to inform a planning application for the site
Dates of site visits and names of surveyors	18 April– 16 May 2016; Dan Sullivan, Ben Nelumbu, Rachel Geller and Peter Howarth
Overview	Two ponds were surveyed for great crested newts during April and May 2016. A third pond was present on highways land and could not be accessed for the survey. Both ponds were identified as containing a medium-sized breeding meta-population of great crested newts. Habitats on site including grassland and hedgerows, provide commuting opportunities for great crested newts, as well as limited hibernation opportunities. Habitats surrounding the site also provide opportunities for great crested newts, including the ponds to the north, south and west. Pond 1 has good connectivity to suitable terrestrial habitat along the railway line to the east of the pond.
Action required for planning and/or legal compliance	Great crested newts have been recorded on the site, and as such a European Protected Species Licence will be required for site clearance works during brickearth extraction, and the subsequent development of the site. Suitable mitigation has been incorporated into the scheme, including corridors for commuting newts to ensure connection between Pond 1 and suitable terrestrial habitat, such as the railway corridor in the east of the site. A translocation of the great crested newts on site will be required, with the use a receptor site and Temporary Amphibian Fencing (TAF) and drift fencing. This exercise would be required to clear the site of great crested newts. This would be undertaken under licence when newts are active between March October. A minimum of 30 consecutive capture days is required for a small population. Destructive searches of habitats will be required following trapping effort, supervised by an Ecological Clerk of Works. Once the site has been deemed clear of great crested newts, vegetation clearance works would proceed under supervision of an Ecological Clerk of Works. These works will avoid hibernation season (generally November to February). A retained wildlife corridor will be present along the southern boundary to enable connectivity. An additional corridor will be planted along the northern and eastern boundaries following the completion of brickearth extraction.

	Habitats will be retained on site, namely hedgerows and some grassland habitats, which will be protected during both stages of the works. This will include marking out retained habitats with Heras fencing (or similar) and signs for contractors. A receptor site will be created on site prior to works, which is located along the southern site boundary. The location of the receptor site will allow great crested newts to utilise the pond immediately south-west of the site, which is likely to be used by the meta-population of newts currently utilising the site, as well as the railway line to the east whilst allowing a feasible development scheme.
Recommendations for ecological enhancement (Site ecological enhancement is required under current planning policy)	The post-development site should be enhanced for amphibians and consideration should be given to creating longer grassland margins at the edges of the site. The retained buffer along the southern boundary will maintain connectivity east/west for foraging and commuting great crested newts, therefore aiming to maintain the favourable conservation status of the local population. Sustainable Drainage Systems (SuDS) will be incorporated into the development scheme. Two great crested newt hibernacula will be created adjacent to the drainage feature in the north-west of the site, to provide additional refuge habitat for great crested newts.

CONTENTS

1 INTRODUCTION

1.1 In March 2016, Ecosulis was commissioned by G H Dean & Co Ltd to undertake update great crested newt surveys of land at Great Grovehurst, Kent. Previous surveys were undertaken in 2013 by Lloydbore Landscape and Ecology, which recorded Great Crested Newt presence in both Pond 1 and 2, Pond 3 could not be accessed.

1.2 The current proposals for the site include the extraction of brickearth from the site, following which the site will be developed for residential houses and associated infrastructure.

1.3 Ecologists representing Ecosulis visited the site between April and May 2016 to undertake the survey. Access was provided by the landowners including the owner of Great Grovehurst Farmhouse.

Objectives of Study

1.4 The objectives of this study are: to provide information on the existing ecological conditions at the site with regards to great crested newts; to identify potential constraints and opportunities that great crested newts may pose to the development plans; to update the great crested newt mitigation strategy and inform a subsequent Natural England licence application, and to identify further ecological studies that may be required to ensure that great crested newts are fully considered within the proposals.

1.5 The aim of this survey and report is also to assess whether previous assessments of required great crested newt mitigation within the proposals is still accurate. The original assessment was undertaken by Thomson Ecology in in 2014.

General Description of Site

1.6 The site is located on the northern outskirts of Kemley and is centred on OS grid reference TQ 904 666. It covers an area of 4.8ha and includes a cottage, farm and former stables which are all now unoccupied. Other areas on site include hardstanding and grassland.

1.7 The site is located north of the residential area of Kemsley. There is an A-class road to the north, a B-class road to the west, housing to the south and a railway line to the east of the site.

Nomenclature

1.8 The common name only of flora and fauna species is given in the main text of this report; however, Latin names are used for species where no common name is available. A full list of all species recorded on site during the surveys is given in Appendix I with their Latin names. All plant names follow the nomenclature of Stace (2010).

2 METHODS

Desktop Study

2.1 The Kent Reptile and Amphibian Group (KRAG) was asked to provide any information on species records within a 5m radius of the site.

2.2 The 'MAGIC' website was accessed for aerial views of the site and used as a visual aid to help put the site into context with its surroundings and to identify any potential features of interest in the surrounding land.

2.3 The Multi-Agency Geographical Information for the Countryside (MAGIC) website was consulted for information on statutory site designations in the area.

Great Crested Newt Habitat Suitability Index Assessment

2.4 The Habitat Suitability Index (HSI) for the great crested newt was developed by Oldham *et al.* (2000) and was applied according to guidance set out by the National Amphibian and Reptile Recording Scheme (NARRS 2007). The HSI is a numerical index, for which scores between 0 and 1.0 indicate the suitability of the habitat. The scoring system is shown in Table 1 below.

Table 1: HSI Scores Summary

HSI score	Pond suitability
<0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

2.5 The final HSI score gained for each accessible water body can be used to predict the suitability of the habitat to support great crested newt. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors thought to affect great crested newts, and these were recorded for three ponds within 500m of the site. These include the location of the water bodies, water body area, water body drying, water quality, and the presence of macrophytes. Other factors include shade, presence of water fowl, fish, nearby water bodies and adjacent terrestrial habitat.

2.6 The HSI for great crested newts is not a substitute for newt surveys. In general, water bodies with high HSI scores are more likely to support great crested newts than those with low scores; however, the calculation is not precise enough to allow the conclusion that any water body with a high score will support newts, or that any pond with a low score will not.

Great Crested Newt Population Monitoring

2.7 In order to determine presence, the Great Crested Newt Mitigation Guidelines (English Nature 2001) requires three survey techniques to be employed where possible, including: bottle-trapping, torch searches and egg searches.

2.8 Six data sets were collected in accordance with the great crested newt guidelines (English Nature 2001). The six site visits required to obtain these data sets were undertaken between April and May 2016, which falls within the aquatic phase of the great crested newt life cycle (mid-March to mid-June). The visits were undertaken when the temperature was consistently above 5°C and when the night-time weather was suitable, i.e. little or no wind and rain.

Torch Searches

2.9 Searches of the water bodies were conducted by torch light at night. The perimeters were walked slowly and searched using a 1,000,000-candlepower lamp (operated off a 12V battery). Any newts sighted within the torch beam were identified by species and gender, where possible, and counted and recorded. Other amphibians were also recorded.

Bottle-trapping

2.10 Bottle-traps constructed from two-litre plastic bottles were secured around the margins of each pond at intervals of approximately 2m. Bottles were angled to allow for a bubble of air. The traps were left overnight and checked the following morning. Any newts found were identified by species and gender, counted and recorded before being released. Other amphibians were also recorded.

Egg Searches

2.11 Aquatic and marginal vegetation (and other suitable substrates) were searched for the presence of great crested newt eggs. Once eggs were found and identified by species, no further egg searches were undertaken within that water body. The presence of eggs of other species of amphibian was also noted.

Net Searches

2.12 Searches of the water bodies were conducted using a long-handled dip-net. The perimeter was walked and the net agitated through aquatic vegetation in a two-metre arc.

Personnel

2.13 All surveys were undertaken by experienced representatives of Ecosulis, led by Dan Sullivan, working under a Natural England Great Crested Newt Survey Licence (licence reference 2015-18860-CLS-CLS).

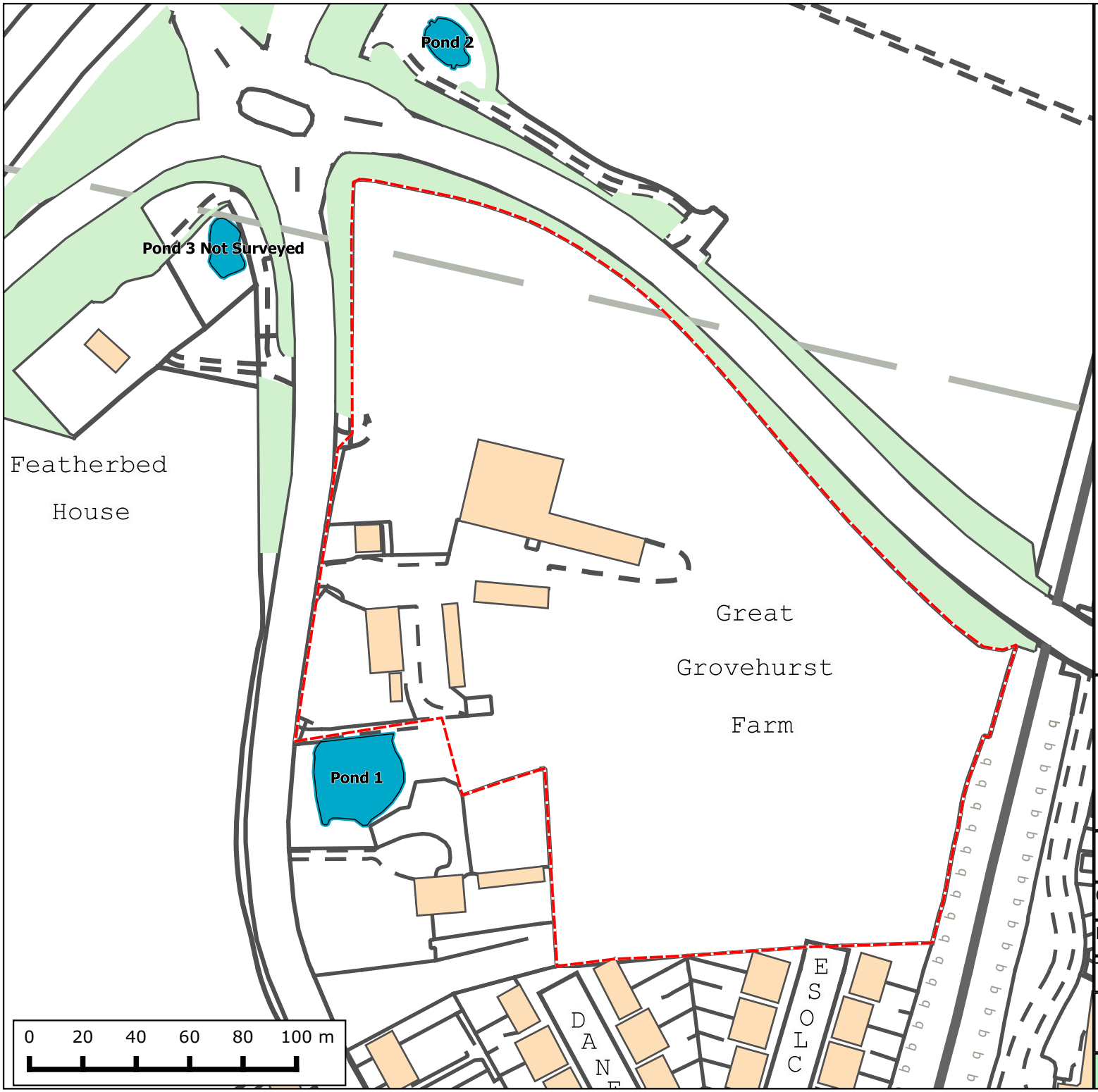
Great Crested Newt – Population Size Class Assessment

2.14 From the results of the surveys, the maximum adult count per pond per night gained through either the torch searches or bottle-trapping is used to categorise the population size of great crested newt within each pond. The categories are shown in Table 2 below.

Table 2: Population Size Class Assessment (English Nature 2001)

Population size class	**Peak count**
Small	For maximum counts up to 10
Medium	For maximum counts between 11 and 100
Large	For maximum counts over 100

FIGURE 1



Key

- Site Boundary
- G1 Standing water

N

ecosulis
Experience Better

The Rickyard, Newton St Loe, Bath BA2 9BT
T: 01225 874 040 E: info@ecosulis.co.uk

Client: G H Dean & Co Ltd

Project: Great Grovehurst

Title: Great Crested Newt Survey

June 2016

Figure 1

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3 RESULTS

Desktop Study

3.1 The results of the desktop study are included within the table below, taken from original report compiled by Lloydbore Landscape and Ecology (report reference 2488/ R 03). :

Table 3: Historical Records from the Kent Amphibian and Reptile Group

Distance from site	Location	GCN record
Immediately adjacent (SW)	Private residence	50 adults – 2002 (visual)
0.05km north-west	A249 Balancing Pond	Unspecified (2004)
0.91km north	Iwade area	2 adults – 1989 (net)
1km north	Old Orchard, Iwade	1 juvenile – 2004 (refugia) 1 adult – 2004 (refugia)
1km north	Old Orchard, Iwade	1 juvenile – 2004 (torch)
1km north	Old Orchard, Iwade	1 juvenile – 2004 (bottle-trap)

Great Crested Newt Habitat Suitability Index Assessment

3.2 Pond descriptions are provided below, and photographs are included within Appendix III. All ponds are located off-site.

3.3 Pond 1 is located within the curtilage of Great Grovehurst Farmhouse and is around 500m^2. The pond rarely dries and has moderate water quality. A small percentage of the pond is shaded with very few water fowl present on the pond. No fish were found in the pond and there was around 50% surface cover of macrophytes. The surrounding habitat contains grassland and provides moderate suitability for newts within their terrestrial phase.

3.4 Pond 2 covers an area of around 150m^2. This is a drainage pond located on the north side of Swale Way. The pond dries out each summer and does not contain fish or water fowl. Only a small amount of the pond is shaded and the water quality is poor. Around 65% of the surface of the pond is covered in macrophytes. The terrestrial habitat is similar to that of Pond 1 and provides moderate suitability for terrestrial newts.

3.5 Pond 3 could not be surveyed due to access restrictions. The pond is surrounded by metal fencing and CCTV and is owned by the Highways Agency.

Great Crested Newt Population Monitoring

3.6 Information regarding water turbidity, vegetation cover, air temperature, the number of bottle-traps used and the torch power utilised for each site visit is detailed within Appendix IV.

Table 4: Great Crested Newt Bottle-trapping Results, 18 April 2016 – 15 May 2016

Water body	Site visit						Maximum count	Field observations Maximum count
	18 April	26 April	4 May	6 May	13 May	15 May		
1	2♀ 2♂	1♀ 2♂	6♀ 6♂	5♀ 4♂	1♀ 0♂	1♀ 3♂	6♀ 6♂	14 SN
2	2♀ 13♂	0	4♀ 3♂	1♀ 3♂	4♀ 0♂	3♀ 2♂	13♂ 4♀	11 SN

Key
♀ Female great crested newt
♂ Male great crested newt
SN – Smooth newt
- No survey undertaken

3.7 Referring to Table 4 above, the method of bottle-trapping recorded the presence of great crested newts in Ponds 1 and 2. A peak count of six male and six female adult great crested newts was recorded within Pond 1 during bottle-trapping. A peak count of 13 male and 4 female adult great crested newts was recorded in Pond 2. Medium numbers of smooth newts were also recorded within Ponds 1 and 2 during the survey.

Table 5: Great Crested Newt Torch Search Results, 18 April 2016 – 15 May 2016

Water body	Site visit						Maximum count	Field observations Maximum count
	18 April	26 April	4 May	6 May	13 May	15 May		
1	4♀ 2♂	3♀ 3♂	3♀ 4♂	8♀ 3♂	5♀ 7♂	8♀ 3♂	8♀ 7♂	34 SN
2	4♀ 8♂	2♀ 3♂	5♀ 3♂	4♀ 7♂	5♀ 1♂	9♀ 1♂	9♀ 8♂	11 SN

Key
♀ Female great crested newt
♂ Male great crested newt
SN – Smooth newt
- No survey undertaken

3.8 Referring to Table 5 above, the method of torch-searching recorded the presence of great crested newts in Ponds 1 and 2. A peak count of seven male and eight female adult great crested newts was recorded within Pond 1 during torch-searching. A peak count of eight male and nine female adult great crested newts was recorded in Pond 2. Moderate numbers of smooth newts were also recorded within Ponds 1 and 2 during the survey.

3.9 Great crested newt eggs were found in both ponds on the first visit.

4 ASSESSMENT

4.1 The population size class assessment of Ponds 1 and 2 is summarised in Table 6 below.

Table 6: Great Crested Newt Population Size Class Assessment

Water body	Maximum count	Population size	Great crested newt eggs present/absent
1	15	Small	Present
2	21	Medium	Present

4.2 A small population of great crested newts was recorded within Pond 1 and a medium population was recorded in Pond 2 during the survey (refer to Figure 1 for the location of these ponds). Smooth newts were recorded in both ponds and their eggs were also found in Ponds 1 and 2. Great crested newt eggs were recorded within both ponds during the surveys, confirming these ponds are both great crested newt breeding ponds.

4.3 Suitable terrestrial habitat for great crested newts surrounds the ponds, including tussocky grassland and hedgerows. Due to the close proximity of the ponds to one another it is assumed that they form a meta-population, however connectivity between the ponds is limited due to the presence of roads. Connectivity across the site comprises an arable field. Other habitats on site including grassland and hedgerows, however, provide commuting opportunities for great crested newts, as well as limited hibernation opportunities. Habitats surrounding the site also provide opportunities for great crested newts, including the hedgerow along the southern boundary which links the site from east to west.

5 ECOLOGICAL CONSIDERATIONS AND RECOMMENDATIONS

5.1 This section provides considerations in relation to the ecology of the site and any adjacent habitats that should be considered within development proposals to ensure that impacts on ecology are avoided and/or mitigated within the scheme.

Great Crested Newts

5.2 Great crested newts are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations (2010) from deliberate capture, injury and killing, intentional or reckless disturbance, intentional or reckless obstruction of access to any structure or place which any such animal uses for shelter or protection, and deliberate damage or destruction of a breeding site or resting place. Common toad is a UK BAP species and is a material consideration in respect to planning issues.

5.3 Applications for Natural England licences can only be made once planning permission has been granted (with no outstanding conditions relating to nature conservation). Within the project timescales, consideration will need to be given to the following: the time required for the licensing application process (typically a minimum of 40 working days to compile and process the application); the creation/enhancement of habitats; capture/relocation effort; and seasonal restrictions.

5.4 Building demolition will be undertaken, followed by enhancements to the receptor site on the southern boundary. The site will then be trapped out under a Natural England licence to allow Brickearth extraction as detailed below.

5.5 In order to safeguard great crested newts during the construction and operational phases of the development, the EPS licence application for the site should include the following:

- Terrestrial habitat creation/enhancement as appropriate to the scale of habitat loss. For this site, the calculated habitat creation requirement is 1.3ha based on the amount of suitable habitat to be lost to the development. Appendix V includes a breakdown of this calculation.
- For terrestrial habitats, a trapping and translocation programme comprising a minimum of 60 consecutive capture days (for a large, population undertaken between March and October) (for aquatic habitats, this may take longer and span more than one season), however, as most of the site is arable land, this limits opportunities for great crested news in their terrestrial phase. As a result the number of trapping days in this case may be reduced to 30 days.
- Destructive searches of habitats following pitfall trapping above
- Watching brief by an Ecological Clerk of Works

- Fence repair/maintenance throughout works
- Monitoring programme.

5.6 A receptor site will be created along the southern boundary of the site prior to works. This area is adjacent to pond 1 and within commuting distance of pond 3. This, along with the retained habitat corridor along the southern edge, will retain connectivity for great crested newts within the area. Extra planting works will be undertaken within this area to enhance it further for great crested newts.

5.7 A translocation of the great crested newts on site to the receptor site will then take place with the use of Temporary Amphibian Fencing (TAF) and drift fencing, within a minimum of 30 trapping days.

5.8 Once the site has been deemed clear of great crested newts, vegetation clearance works would proceed under supervision of an Ecological Clerk of Works. These works will avoid hibernation season (generally November to February).

5.9 Habitats will be retained on site, namely hedgerows and some grassland habitats, will be protected during both stages of the works. This will include marking out retained habitats with Heras fencing (or similar) and signs for contractors. The receptor area is located along the southern boundary of the site. The location of the receptor site will allow great crested newts to utilise the pond immediately south-west of the site, which is used by the meta-population of newts currently utilising the site, as well as allowing a feasible development scheme. The railway to the east provides a corridor of suitable habitat, helping link the receptor site to the other ponds within the area.

5.10 A habitat corridor will be retained along the southern boundary, this will maintain connectivity east/west for foraging and commuting great crested newts, therefore aiming to maintain the favourable conservation status of the local population.

5.11 Following brickearth extraction, a second landscaped corridor will be created along the eastern and northern boundaries of the site. This will provide further habitat for great crested newts, as well as other wildlife. This will be created prior to the commencement of the housing development.

5.12 The housing development proposals will include amphibian friendly kerbs (dropped, sloping kerbs), as well as amphibian friendly gully pots to allow the safe movement of great crested newts across the site. The use of Sustainable Urban drainage Systems (SuDS) will be incorporated within the scheme in the form of a drainage basin in the north-west corner of the site.

5.13 The proposals include the creation of a SUDS pond on the northern boundary, which will provide additional breeding habitat for great crested newts, and will be connected to the railway corridor in the east.

5.14 Two great crested newt hibernacula will be created adjacent to the new pond to provide additional refuge habitat for great crested newts. These will be created

from a combination of wood, soil, rubble and rock, and will provide additional refuge opportunities for great crested newts.

5.15 Landscaped wildlife corridors will be created on the southern, eastern and northern boundaries of the site specifically landscaped for great crested newts. These areas will be managed appropriately in the long-term to enhance opportunities for great crested newts in the local area. Additional planting will also be incorporated into these areas, enhancing the site for great crested newts in the terrestrial phase.

Area of Great Crested Newt Mitigation Habitat Required

5.16 Thomson Ecology undertook an assessment in 2014 to establish the required area of great crested newt habitat on the site to ensure that opportunities for this species were maintained in the long-term. This was based on the amount of suitable habitat within 250m of the pond, and the amount to be lost to the development. A total of 1.3ha of suitable habitat is present on site, therefore this area must be maintained within the design proposals to ensure no loss of suitable habitat. The majority of this habitat is present in the south of the site, and includes scrub and grassland habitats. Cropped arable land provides very limited opportunities for great crested newts, and as such was not included within these calculations.

5.17 The update 2016 surveys recorded the same size population as previous surveys (small population present), and the same habitats on the site. As such, the calculated 1.3ha of mitigation habitat is still required for this scheme.

6 CONCLUSION

The purpose of this survey is to update the great crested newt data for the site to inform the planning application and a European Protected Species Licence for the site. The current proposals for the site include the extraction of brickearth from the site, following which the site will be developed for residential houses and associated infrastructure.

6.1 Two ponds located within 500m of the site were surveyed in April and May 2016. A third pond was present on highways land and could not be accessed for the survey. A medium meta-population of great crested newts were recorded within these ponds during the survey, which is consistent with previous surveys undertaken to date.

6.2 Habitats on the margins of the site, including grassland and hedgerows, provide suitable terrestrial habitat for great crested newts. The site is dominated by arable land which provides limited opportunities for great crested newts.

6.3 Suitable mitigation has been incorporated into the scheme, which includes corridors on the southern, eastern and northern boundaries of the site, to maintain connectivity west to east across the site.

6.4 Temporary Amphibian Fencing would be installed around the boundaries of the site and pitfall traps installed. The site would then be cleared of great crested newts with a minimum of 30 consecutive days trapping. A receptor site will be created in advance of the trapping works in the south of the site.

6.5 On this basis, the mitigation included within the scheme will aim to maintain the favourable conservation status of the local population, and provide an enhancement in terrestrial habitat on site.

7 LIMITATIONS OF SURVEY AND REPORT

7.1 This report records wildlife found during the survey and anecdotal evidence of sightings. It does not record any plants or animals that may appear at other times of the year and were therefore not evident at the time of the visits. Some species that might use the site or be apparent at other times of year, or only in certain years, would not have been detected.

7.2 Variations in the quality of the water bodies during the monitoring period can affect the success of the survey methods used and may influence the results. Owing to the difficulty in accessing and examining all aquatic and marginal vegetation during the egg searches, not all vegetation was surveyed.

7.3 The behaviour of animals can be unpredictable and may not conform to standard patterns recorded in current scientific literature. This report therefore cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable.

7.4 The data search can only provide information on species already recorded and cannot be taken to represent a complete overview of all species present in the survey site.

7.5 The advice contained in this report relates primarily to factual survey results and general guidance only. On all legal matters you are advised to take legal advice.

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Appendix I: SPECIES LIST

Fauna	
Common name	**Latin name**
Great crested newt	*Triturus cristatus*
Smooth newt	*Lissotriton vulgaris*

Appendix II: HABITAT SUITABILITY INDEX ASSESSMENT

Habitat suitability criteria	Pond 1	Pond 2
Location	1	1
Pond area	1	0.3
Drought	1	0.5
Water quality	0.67	0.33
Shade	1	1
Waterfowl	0.67	1
Fish	1	1
Pond count	0.4	0.95
Terrestrial map	0.67	0.67
Macrophyte score	0.8	0.95
HSI scores	0.79	0.70
Pond suitability	Good	Good

Appendix III: Pond Photos

Plate 1: Pond 1- Great Grovehurst Farmhouse Pond

Plate 2: Pond 2 – A249 Balancing Pond

Appendix IV: GREAT CRESTED NEWT SURVEY INFORMATION

Table 1: Great Crested Newt Survey Information: Pond 1

Date 2016	Visit	Air temp.	Water temp.	Weather	Veg. cover[1]	Methods used[2]	Torch power	Water turbidity[3]
18 April	1	10.0°C	11.5°C	No rain gentle breeze	4	BT TS ES	1,000,000cp	2
26 April	2	5.0°C	9.0°C	No rain, moderate breeze	4	BT TS	1,000,000cp	1
4 May	3	11.0°C	14.0°C	No rain, calm	4	BT TS	1,000,000cp	1
6 May	4	13.0°C	16.0°C	No rain, calm	4	BT TS	1,000,000cp	2
13 May	5	10.0°C	16.0°C	No rain, moderate breeze	4	BT TS	1,000,000cp	1
15 May	6	10.4°C	14.4°C	No rain, gentle breeze	4	BT TS	1,000,000cp	2

Table 2: Great Crested Newt Survey Information: Pond 2

Date 2016	Visit	Air temp.	Water temp.	Weather	Veg. cover[1]	Methods used[2]	Torch power	Water turbidity[3]
18 April	1	10.0°C	12.0°C	No rain gentle breeze	2	BT ES TS	1,000,000cp	1
26 April	2	5.0°C	9.0°C	No rain, moderate breeze	2	BT TS	1,000,000cp	1
4 May	3	9.0°C	14.0°C	No rain, calm	3	BT TS	1,000,000cp	2
6 May	4	13.0°C	16.5°C	No rain, calm	3	BT TS	1,000,000cp	2
13 May	5	11.0°C	17.3°C	No rain, moderate breeze	3	BT TS	1,000,000cp	2
15 May	6	10.4°C	13.7°C	No rain, gentle breeze	3	BT TS	1,000,000cp	1

[1] On a scale where 0 = No vegetation obscuring survey and 5 = Water completely obscured by vegetation

Where BT = bottle trapping; ES = egg search; TS = torch search; NS = net search

[3] On a scale where 0 = clear and 5 = Turbid

Appendix V: GREAT CRESTED NEWT MITIGATION CALCULATIONS

The amount of habitat to be created in compensation for the loss of suitable great crested newt habitat is detailed below. This is based on the amount of suitable habitat within 50m of the pond (core habitat), and within 250m of the ponds. This is based on the Thomson Ecology assessment, however has also been updated following the update surveys. The amount of suitable habitat for great crested newts on site has not changed, and therefore 1.3 ha of suitable habitat is required within the scheme.

Habitats within 50 meters of WB1

Habitat	Habitat ID	Area (ha)
HS	<Null>	0.208820671
B	B5	0.013759672
B	B6	0.02732347
B	B7	0.00356188
DS	DS3	0.074989887
SI	SI5	0.108761895
SI	SI2	0.0290958707
A	A1	0.0174712

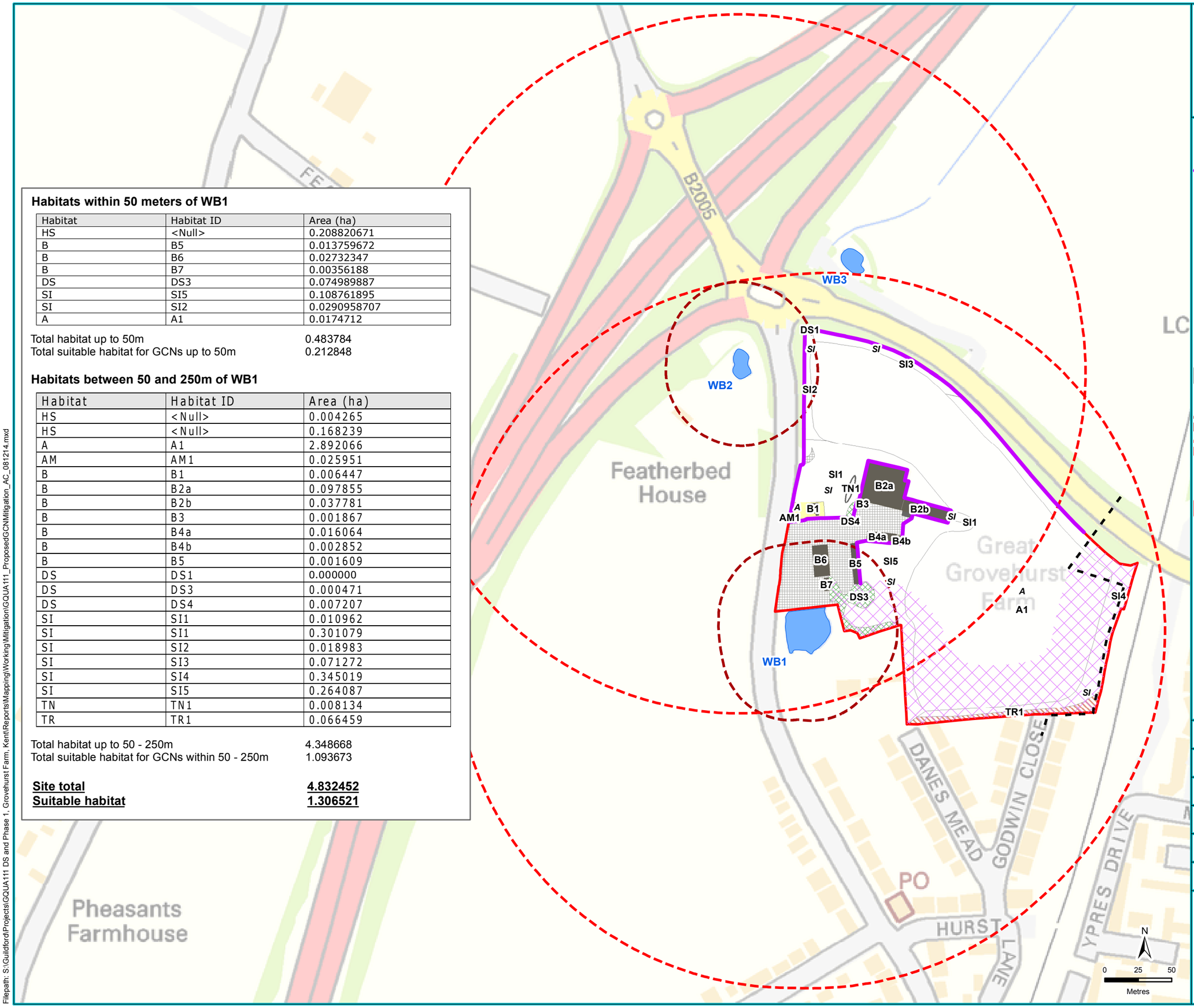
Total habitat up to 50m 0.483784
Total suitable habitat for GCNs up to 50m 0.212848

Habitats between 50 and 250m of WB1

Habitat	Habitat ID	Area (ha)
HS	<Null>	0.004265
HS	<Null>	0.168239
A	A1	2.892066
AM	AM1	0.025951
B	B1	0.006447
B	B2a	0.097855
B	B2b	0.037781
B	B3	0.001867
B	B4a	0.016064
B	B4b	0.002852
B	B5	0.001609
DS	DS1	0.000000
DS	DS3	0.000471
DS	DS4	0.007207
SI	SI1	0.010962
SI	SI1	0.301079
SI	SI2	0.018983
SI	SI3	0.071272
SI	SI4	0.345019
SI	SI5	0.264087
TN	TN1	0.008134
TR	TR1	0.066459

Total habitat up to 50 - 250m 4.348668
Total suitable habitat for GCNs within 50 - 250m 1.093673

Site total **4.832452**
Suitable habitat **1.306521**



thomson ecology

www.thomsonecology.com
enquiries@thomsonecology.com

Legend

- Location of Gas Pipe
- Perimeter Fence
- Dense Scrub
- Poor Semi-Improved Grassland (*SI*)
- Tall Ruderal
- Arable (*A*)
- Amenity Grassland (*A*)
- Building
- Hard Standing
- Target Note Area
- Standing Water
- 50m Buffer
- 250m Buffer
- Proposed Receptor Area (1.3 ha)
- Site Boundary

Site Grid Reference: 590,278 166,666
Site Postcode: ME9 8RB

Drawing Ref	GQUA111/17717/1
Scale at A3	1:2,650
Drawn: AC	Checked: NS
Date: 08/12/2014	Date: 08/12/2014
Client	Quarryplan (GB) Ltd
Figure Number	-
Figure Title	Field Map

DRAFT

Filepath: S:\Guildford\Projects\GQUA111 DS and Phase 1, Grovehurst Farm, Kent\Reports\Mapping\Working\Mitigation\GQUA111_ProposedGCNMitigation_AC_081214.mxd