

**Abermule Business Park,  
Abermule, Powys, SY15 6ND**

***Great Crested Newt Survey  
and Mitigation Plan***

For: Powys CC

May 2017

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## **1.0 INTRODUCTION**

### **1.1 Background - Gerald Longley.**

Gerald Longley Ecological Consultants (GLEC Ltd) has been commissioned to undertake a Newt Survey on ponds near a proposed development at Abermule Business Park, Abermule, Powys, SY15 6ND (national grid reference SO158942). They previously carried out a Preliminary Ecological Appraisal (PEA) of the site (GLEC-0896a-01, April 2017). Gerald Longley has two decades of experience of wildlife surveying and, prior to working as an independent ecological consultant, held posts as Conservation Officer with Montgomeryshire Wildlife Trust and Head of Shrewsbury Countryside Unit.

### **1.2 Background – This Survey**

The request for this work comes from the applicant's and the planning team's need to establish whether great crested newts were present in ponds within a relevant distance of the site and, if they were present, to make a population estimate and establish whether the actual land take and any consequences of habitat division and species dispersal in the surrounding area as result of the proposed development could have any effect on great crested newts.

The PEA survey found a juvenile great crested newt on the site, also developing great crested newt eggs in a pond approximately 50m from the site. A second pond, approximately 200m from the site was assessed as being of 'good' suitability for great crested newts. The survey recommended that a great crested newt survey be carried out on both ponds by a suitably licensed and experienced ecologist to establish a population class size estimate for pond 1 and if great crested newts were present in pond 2.

Under the law, great crested newts and all places they use to feed, forage, shelter and breed are protected. A full citation of the law with regard to great crested newts is given in the Appendices.

### 1.3 Report Summary

#### **Abermule Business Park, Abermule, Powys, SY15 6ND Great Crested Newt Survey & Mitigation Plan**

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The proposed development involves the change of land use from farmland, constructing a bulk recycling facility and a series of business units and associated access and services on the approximately 3.75ha Abermule Business Park site. A great crested newt breeding pond is approximately 50m from the boundary of the site.

Initial visits were made on 12 and 19 April 2017 to each of two ponds found within 500m of the site to carry out a habitat suitability evaluation for great crested newts, as per ARG UK Advice Note 5 (2010). Both ponds scored an HSI of 'good' and developing great crested newt eggs were found in pond 1 (approx. 50m from the site). A juvenile great crested newt was found on the site itself during the PEA survey.

**Six survey visits** were made to pond 1, as recommended for a population size class assessment newt survey, and **four survey visits** to pond 2, as recommended for a presence/absence survey between 18 April and 12 May 2017. Standard Great Crested Newt Mitigation Guideline methods were used – bottle trapping, torching and egg searching.

**A single great crested newt was found on the proposed development site using a dumped piece of wood as a refuge. A palmate newt was also recorded using the same refuge.**

**A medium great crested newt population was recorded in pond 1 with a maximum count of 12. Developing great crested newt eggs were found, confirming that breeding was taking place. Smooth and palmate newts were also recorded.**

**No great crested newts were recorded in pond 2 on any of four survey visits and they were considered not to be using the pond.**

It is recommended that:

1. Since the presence of a medium great crested newt population with a breeding pond approximately 50m from the boundary of the site is a constraint on the proposed development at Abermule Business Park, the Newt Mitigation Plan and Method Statement presented in section 8.0 must be followed to avoid any offence in relation to great crested newts being committed. It includes such matters as timing of works, capturing and re-locating newts, and habitat enhancements.
2. An EPS mitigation licence from Natural Resources Wales is required for development to proceed since the unavoidable loss and fragmentation of terrestrial great crested newt habitat and the risk of injury or death to individual great crested newts means that it will NOT be possible to protect great crested newts and their habitat relying on a Reasonable Avoidance Method Statement with no licence.

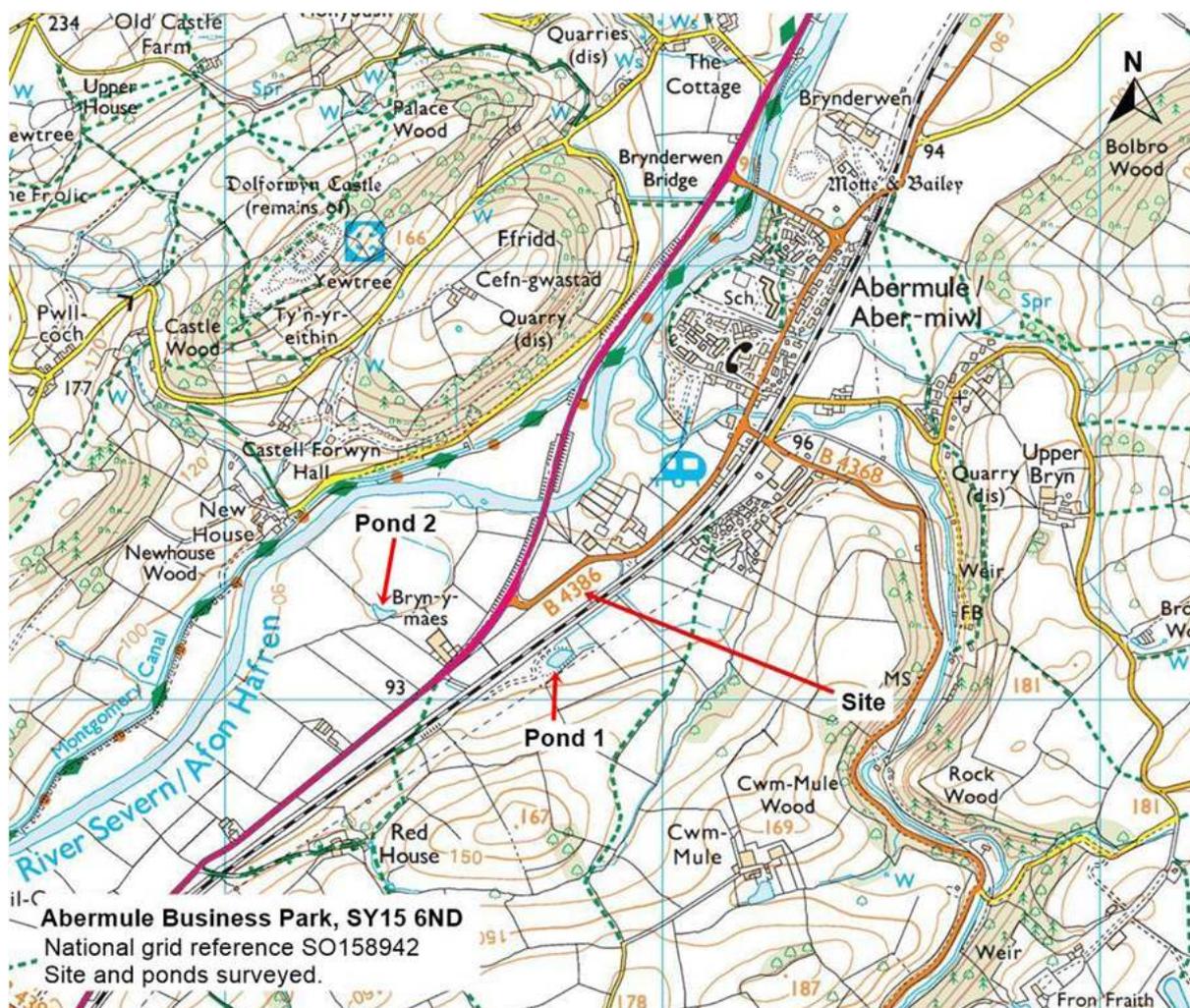
## 2.0 METHODOLOGY

### 2.1 Aims of the Survey

- Firstly to establish the presence or absence of great crested newts in ponds within 500m of Abermule Business Park, Abermule, Powys, SY15 6ND.
- To estimate the great crested newt population size class assessment for the ponds surveyed where great crested newts were found to be present.
- To make recommendations accordingly.

### 2.2 Desk Study.

The 1:25000 Ordnance Survey map covering the site, and aerial photos accessed from the internet, were scrutinised to initially assess the wildlife value of the proposed development site and surrounding habitat at a crude level. This looked for any semi-natural habitat that may be of value to wildlife, for example ponds, hedges, parkland, wetland, and woodland with interconnecting habitat links. Searches were made for statutory designated sites coincident with or adjacent to the area of search and existing records of keynote species within a 2km radius of the site.



## 2.3 Site Survey

The site surveys were designed by Gerald Longley using standard techniques based on the guidance and information in JNCC (1993), English Nature (2001 and 2004), Natural England government website advice (2015) and ARG UK Advice Notes 4 (2017) and 5 (2010).

Two ponds within 500m of the site were found on aerial photographs and maps, one approximately 50m southeast of the site (pond 1), across a railway line, and the second (pond 2) approximately 200m northwest, across the A483.

An initial visit was made to each of the possible ponds found during the desk study to carry out a habitat suitability evaluation for great crested newts, as per ARG UK Advice Note 5 (2010).

Great crested newts were known to have been recorded at pond 1 as part of surveys for earlier access and services works on the site. Given the previous records for great crested newt and the recording of developing great crested newt eggs during the PEA, it was surveyed using a population size class assessment survey.

No previous records were available for pond 2 so it was surveyed using a presence/absence survey. If great crested newts were found the survey would be extended to a population size class assessment survey.

**Six survey visits** were made to pond 1, as recommended for a population size class assessment newt survey, and **four survey visits** to pond 2, as recommended for a presence/absence survey. Three guideline surveying methods were used at both ponds:

- i. Bottle trapping
- ii. Torching
- iii. Egg searching

Each survey visit entailed evening setting of bottle traps, where sufficient water depth or lack of tree margin allowed, and, later, torching in the dark. 62 traps were set in pond 1 each night, and 58 in pond 2, except for the fourth and final survey visit when reduced water levels meant only 46 traps could be fitted in. A return visit was made the following morning to recover all traps and search for eggs.

The surveyors were Gerald Longley, (Licence No: NRW GCN 71877a:OTH:SA:2017 inc. Box traps), Mary Thornton (Licence No: NRW 69483:OTH:SA:2016), Lindsay Barton and Sarah Smith.

### 3.0 RESULTS

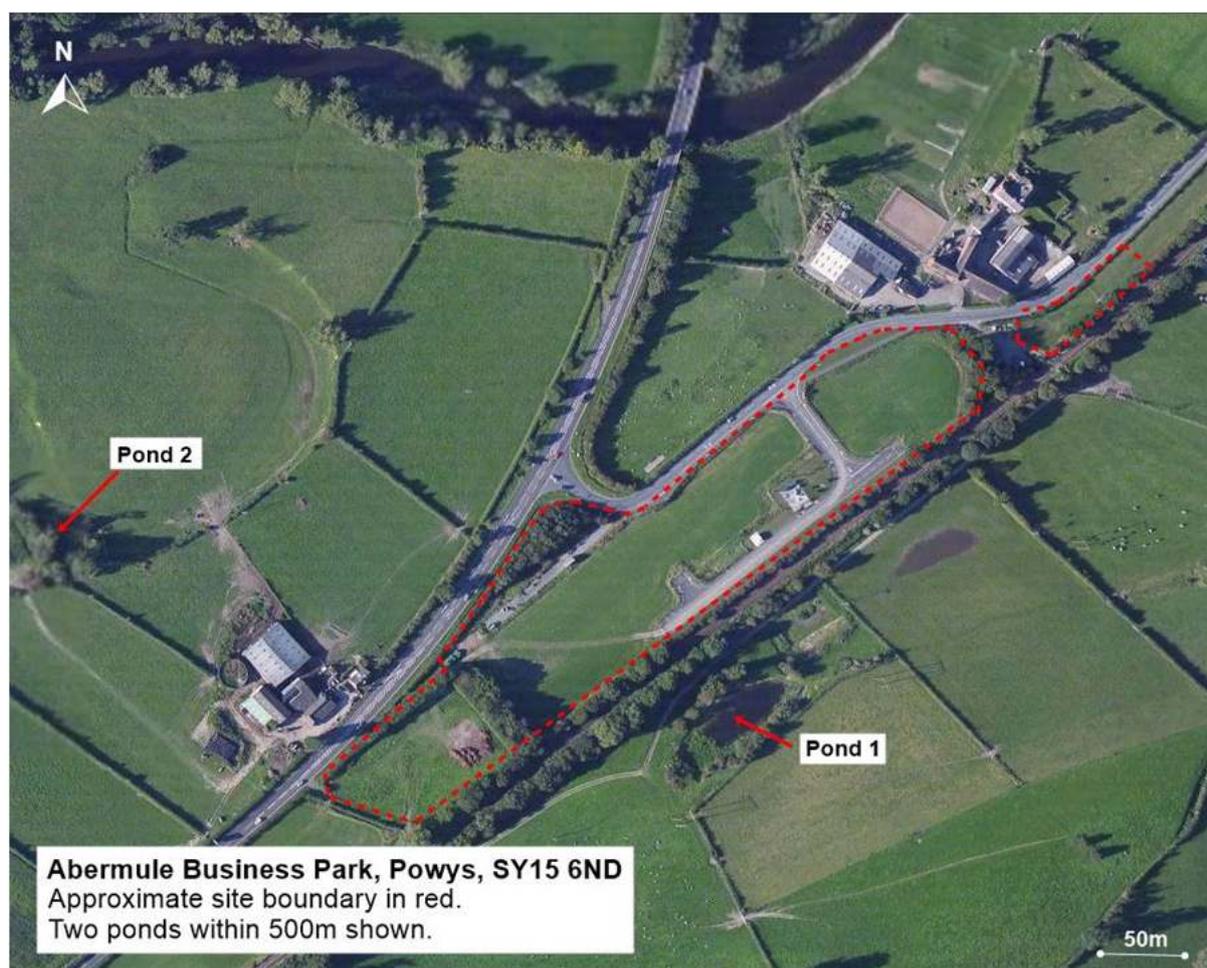
#### 3.1 Desk study.

The nearest great crested newt records found during the PEA desk study were approximately 2.1km southwest of the site (2007), however, great crested newts were known to have been recorded from pond 1 as part of surveys for earlier access and services works on the site. During the PEA survey (April, 2017) a juvenile great crested newt was found under a piece of wood on the northwest side of the site and great crested newt eggs were found on vegetation in pond 1. They had started to develop so were estimated to be a few days old.

The 2km buffer desk study for sites and wildlife records revealed that there were no coincident statutory wildlife sites or SSSIs. The nearest SSSIs were the Montgomery Canal SSSI, approximately 400m north of the site at the nearest point, and Hollybush Pastures SSSI, approximately 1.2km north of the site. The stretch of the Montgomery Canal closest to the site was also designated as a SAC for its population of floating water plantain (*Luronium natans*).

#### 3.2 Site Surveys

The ponds surveyed are shown on the aerial photograph below. The ponds are in the same land ownership as the development site, Powys CC, and we are grateful to the tenants for their help with access to carry out the survey.



## Habitat Suitability Evaluation

An initial assessment of the ponds was carried out following the ARG Great Crested Newt Habitat Suitability Index. The results are in table 1.

<b>Table 1: Great crested newt habitat suitability index results for ponds within 500m of Abermule Business Park, Abermule, Powys, SY15 6ND 12 and 19 April 2017 <a href="http://www.geraldlongley.co.uk">www.geraldlongley.co.uk</a></b>			
<b>Pond 1</b> (assessment carried out 12 April 2017)			
<b>grid ref.</b>	SO15769410		
<b>approx. distance from site</b>	50m (across single track railway line)		
<b>HSI FACTOR</b> ↓	<b>Site assessment</b>	<b>HSI value</b>	<b>Notes</b>
1. Location	Zone B	0.5	-
2. Pond area	>2000m <sup>2</sup>	-	Factor not included as pond too large.
3. Pond drying	Never dries	0.9	Estimated from water level at time of survey and surroundings.
4. Water quality	Moderate	0.67	Sampling with net found water louse, water beetles, snails, mayfly larvae, damselfly larvae.
5. Shade	20%	1	Trees and hawthorn scrub on bank to southeast. Estimate made outside recommended period May to Sept
6. Waterfowl	Water fowl present but little indication of impact on pond vegetation	0.67	Coot nest at south end of pond. Pair of mallard present.
7. Fish	No evidence of fish	1	-
8. Nearby ponds	5 ponds/π = 1.59	0.7	-
9. Terrestrial habitat	Moderate	0.67	Mix of heavily grazed grassland, hedgerow, wet ditch, scrub and woodland on railway embankment.
10. Macrophytes	25%	0.55	Range of aquatic plants recorded especially at south end including water mint, floating sweet grass, water plantain, water forget-me-not, branched burr-reed and brooklime. Patches of blanket weed also present.
Product		0.05210719	
<b>HSI Score</b>		0.74420017	
<b>HSI Category</b>		<b>Good</b>	
<b>Pond 2</b> (assessment carried out 19 April 2017)			
<b>grid ref.</b>	SO15359419		
<b>approx. distance from site</b>	200m (across A483)		
<b>HSI FACTOR</b> ↓	<b>Site assessment</b>	<b>HSI value</b>	<b>Notes</b>
1. Location	Zone B	0.5	-
2. Pond area	600m <sup>2</sup>	1	-
3. Pond drying	Never dries	1	Estimated from water level at time of survey and information from tenant.
4. Water quality	Moderate	0.67	Moderate invertebrate diversity.
5. Shade	80%	0.6	Shaded on all but part of north side. Estimate made outside recommended period May to Sept
6. Waterfowl	Water fowl present but little indication of impact on pond vegetation	0.67	Coot nest with eggs.
7. Fish	No evidence of fish	1	-

8. Nearby ponds	5 ponds/ $\pi$ = 1.59	0.7	-
9. Terrestrial habitat	Moderate	0.67	Pond surrounded by grazed grassland with some hedgerows.
10. Macrophytes	30%	0.5	Floating sweet grass, gypsywort, water plantain.
Product		0.03789613	
<b>HSI Score</b>		0.72087422	
<b>HSI Category</b>		<b>Good</b>	

## Description of ponds

### Pond 1

Pond 1 was a large, broadly oval-shaped pond on a terrace in a north-facing slope. It sloped gently from the edges to an estimated depth of approximately 2-3m with a solid stone and clay base. A coot nest with eggs was present at the south end of the pond at the beginning of the survey but the eggs disappeared during the survey period. A pair of mallard was also present on the pond during the survey. The pond contained a range of aquatic invertebrates including water louse, water beetles, water snails, mayfly larvae and damselfly larvae.

Approximately 25% of the pond surface was covered with vegetation (vegetation score = 3). A range of aquatic plants were recorded, especially at the south end of the pond, including water mint (*Mentha aquatica*), floating sweet grass (*Glyceria fluitans*), water plantain (*Alisma plantago-aquatica*), water forget-me-not (*Myosotis scorpioides*), branched burr-reed (*Sparganium erectum*) and brooklime (*Veronica beccabunga*). Patches of blanket weed were also present. The turbidity was scored as 2 (using the Natural England licensing scale).

The pond was surrounded by a mix of heavily sheep grazed grassland, hedgerow, wet ditch, scrub, and woodland on the railway embankment to the northeast. Trees and hawthorn scrub on a very steep bank on the southeast side of the pond cast some shade. Access to the pond edge to set traps was not possible along this section (approx. 25m of a total perimeter of 180m). A pile of old fence posts and other timber at the southwest side of the pond offered a possible refuge for great crested newts. Holes under tree roots and the woodland along the railway were also possible refuges.

There was an area of shallow standing water immediately northeast of and below pond 1 at the beginning of the survey. The area around it had been used to store old silage bales and burn waste and the water showed signs of pollution from these activities. By the end of the survey the area of water was much smaller and would soon have dried out completely. It did not offer suitable habitat for great crested newts.

### Pond 2

Pond 2 was a shallow pool with a soft, silt and clay base. A coot nest with eggs was present on fallen branches in the water on the east side of the pond at the beginning of the survey but, as with pond 1, the eggs disappeared during the survey period. Water beetles were also recorded.

The pond was surrounded by grazed pasture fields with hedges. The pond itself was fenced so there was no grazing of the immediate margins and these contained large patches of sweet flag (*Acorus calamus*). The pond was shaded on all but part of the north side by willow scrub, and mature ash and oak trees on the south side. Fallen branches had rooted so that willows were growing in the pond too. Steep banks, soft mud and tree growth made parts of the west and south edges of the pond inaccessible for setting bottle traps (approx. 30m of a total perimeter of 120m). Parts of the water surface where it was less shady were covered with mats of floating sweet grass. Other emergent plants included water plantain and gypsywort (*Lycopus europaeus*). (Vegetation score = 3). Holes under tree roots around the

pond and in nearby hedgerows and cracks and holes in and under logs and fallen branches were possible refuges and hibernacula for great crested newts.

Torching was carried out on the first survey visit but abandoned for the remainder as the water was too turbid to see into the water effectively (turbidity score = 3).

## **Newt survey results**

### **The proposed development site**

During the PEA survey (12 April, 2017), a juvenile great crested newt was found under a piece of wood on the northwest side of the site. A palmate newt was recorded under the same piece of wood during a reptile survey visit on 5 May 2017.

### **Pond 1**

During the PEA survey (12 April, 2017) great crested newt eggs were found on vegetation in pond 1. They had started to develop so were estimated to be a few days old. This confirmed that great crested newts were breeding in the pond and no further egg searches were made as unfolding leaves can increase the chances of eggs/larvae being predated. However, more folded leaves, likely to be egg-laying sites, were evident as traps were being emptied.

Great crested newts were recorded on all of the survey visits with a **maximum count of 12 on 30 April 2017**. Both males and females were recorded.

This survey was a population size class assessment with six survey visits. With the maximum count by one of the survey methods used, in this case bottle trapping on any one survey being 12 great crested newts, this is categorised as a medium population (maximum counts between 11 and 100) (English Nature, 2001).

Male and female palmate (23) and smooth (16) newts were also recorded on all of the six survey visits, maximum counts in brackets.

### **Pond 2**

The pond contained good egg laying plant material (mainly *G. fluitans*) for great crested newts and was egg searched on each morning survey visit. No newt eggs of any kind were found during the four survey visits.

No great crested newts, or any other species of newt, were recorded on any of the four survey visits.

Full details of the survey visits and results are in Table 2 below.

**A single great crested newt was found on the proposed development site using a dumped piece of wood as a refuge. A palmate newt was also recorded using the same refuge.**

**A medium great crested newt population was recorded in pond 1 with a maximum count of 12. Developing great crested newt eggs were found, confirming that breeding was taking place. Smooth and palmate newts were also recorded.**

**No great crested newts were recorded in pond 2 on any of four survey visits and they were considered not to be using the pond.**

**Table 2:** Newt Survey Summary 2017 for ponds within 500m of proposed development at Abermule Business Park, Abermule, Powys, SY15 6ND

[www.geraldongley.co.uk](http://www.geraldongley.co.uk)

gcn = great crested newt s = smooth newt p = palmate newt max count of gcn in yellow

		<b>Pond 1</b> SO15769410 62 bottle traps. Turbidity: 2 Vegetation cover: 3		<b>Pond 2</b> SO15359419 58 bottle traps (1 <sup>st</sup> – 3 <sup>rd</sup> surveys), 46** bottle traps (4 <sup>th</sup> survey) Turbidity: 3 Vegetation cover: 3	
<b>Surveys</b>	<b>Min at night (°C)</b>	<b>Bottle Trap</b>	<b>Torch</b>	<b>Bottle Trap</b>	<b>Torch</b>
<b>1st survey</b> 18-19 April 2017	4.5*	1 gcn 2 s 1 p	0 gcn 4 s/p	0 gcn 0 s 0 p	No newts seen.
<b>2nd survey</b> 20-21 April 2017	10.5	3 gcn 4 s 2 p	1 gcn 6 s/p	0 gcn 0 s 0 p	No torching. Water too turbid.
<b>3rd survey</b> 29-30 April 2017	8.5	<b>12 gcn</b> 6 s 5 p	2 gcn 7 s/p	0 gcn 0 s 0 p	No torching. Water too turbid.
<b>4th survey</b> 01-02 May 2017	4.5*	4 gcn 1 s 9 p	2 gcn 9 s/p	0 gcn 0 s 0 p	No torching. Water too turbid.
<b>5<sup>th</sup> survey</b> 06-07 May 2017	5	11 gcn 7 s 8 p	1 gcn 3 s/p	No newts found in four survey visits. No further survey visits made.	
<b>6<sup>th</sup> survey</b> 11-12 May 2017	10	3 gcn 16 s 23 p	2 gcn 9 s/p		

Vegetation cover score (0-5); 0 = no vegetation obscuring survey; 5 = water completely obscured by vegetation.  
Turbidity score (0-5): 0 = completely clear; 5 = very turbid.  
\* Temperature recorded below the guide of 5°C min. Data logger data recovered shows that temperature was at or above 5°C for much of the night.  
\*\*Falling water levels meant only 46 traps could be fitted into pond on final survey.

## **4.0 DISCUSSION AND INTERPRETATION**

### **4.1 Possible effect on great crested newts**

These results indicate that there is a medium, maximum count 12 (“medium” is 11-100 adults caught/recorded in one survey by one method) great crested newt population in pond 1 which is approximately 50m from the proposed development site at Abermule Business Park. Developing great crested newt eggs were found on vegetation in pond 1, confirming that it was a breeding pond.

Pond 1 had good habitat links to the site with only a narrow, un-vegetated gap across the single railway track. Even this could be avoided as pipes installed under the track at intervals, probably for cables, created possible crossing places for newts. No newts were found in pond 2, the only other pond within 500m of the proposed development site, so it was considered that the great crested newt found on the site itself had come from pond 1, confirming that the railway track was not a barrier to newt movement from the pond to the site.

The site contained many potential refuge sites for amphibians, including great crested newts, in piles of logs, rubble, stones and other items dumped on the site, particularly along the northwest boundary and between the main and northeast parts of the site. There were more potential refuges for amphibians among tree roots along the bottoms of the hedgerows on the site and potential foraging habitat along hedgerows. Although the main part of the site was heavily grazed by sheep at the time of the survey, the tenant indicated that these would soon be removed and the grass allowed to grow for silage, making it temporarily more attractive for foraging amphibians.

Foraging habitat immediately around pond 1 was only moderately suitable for newts being mainly heavily grazed short grass. The lack of good foraging and refuge habitat around pond 1 meant that newts there would need to travel further from the pond, and onto the development site, to find food and shelter. Finding a great crested newt and a palmate newt actually on the site confirmed that this was the case and that newts were using the terrestrial habitat on the proposed development site.

#### **Proposed development**

The proposed development includes the construction of a bulk recycling facility where waste collected from houses in the surrounding area will be sorted and stored until it is taken away in bulk. In addition to a building housing the main bulk recycling, this will include garden, or green, waste and other materials being stored in open bunkers and handled outside. Plans show parking for up to fifty staff vehicles and twenty-eight waste vehicles.

The northeast part of the main section of the site will be developed as a range of different sized business units with associated parking, delivery areas and services. This area will also include some new planting as part of the landscaping.

The southwest part of the main site may be developed as a surface water compensation pool. Plans available at the time of writing this report did not show any proposals for the small northeast part of the site separated from the main site by a farm track crossing the railway by both an underpass and a level crossing.

Available plans are in appendix 7.3.

### Impacts of proposed development on great crested newts

Government guidance looks at the possible impacts of developments on great crested newts at different distances from the breeding pond. Predicted impacts of the proposed development are in Table 3. Mitigation measures are required even for low impacts.

<b>Table 3: Predicted impacts of proposed development at Abermule Business Park on great crested newts</b>			
<a href="http://www.geraldlongley.co.uk">www.geraldlongley.co.uk</a>			
		<b>Details at Abermule Business Park</b>	<b>Impact</b>
Effect on breeding ponds	None	Pond 1 is outside proposed development site.	None
Effect on other ponds newts use	None	No other ponds nearby.	None
Effect on terrestrial habitat less than 50m from breeding pond	Partial destruction	0.01ha currently grass will have French drain and water pipe installed. Part of grass surface will change to gravel surface of French drain.	Medium
	Temporary disturbance	From drain construction, storage of materials, machinery and people on site etc	Low
Effect on terrestrial habitat 50m to 250m from breeding pond	Destruction	1.8ha currently grass and some scattered trees and hedgerow will become recycling facility and business units.	Medium
	Temporary destruction and re-instatement	0.5ha at SW end of site proposed for possible surface water compensation. Grassland would be destroyed during excavations etc and reinstated once groundworks complete.	Low
	Temporary disturbance	From construction works, soil stripping, storage and subsequent movement of materials, machinery and people on site. This may last several years.	Low
	Post-development interference	Increased traffic – up to 50 staff vehicles arriving and leaving daily, 20+ waste vehicles coming and going daily, vehicles collecting bulk materials. Storage of green waste and other materials which are potentially attractive to great crested newts as refuges. All in recycling facility which will be located between breeding pond and area on northwest of site used by great crested newts for refuge and hibernation and which will remain undeveloped. Kerbs etc. throughout development forming barriers to newts and also acting to channel newts towards drain gully pots where amphibians, especially newts, fall in and are trapped and die.	Low
Effect on terrestrial habitat over 250m from breeding pond	Not known	Plans do not show any proposals for 0.15ha currently grassland with boundary hedge at northeast end of site.	Low (All impacts are categorised as Low at this distance from a breeding pond.)

The Natural England rapid risk assessment template (wmla14-2\_tcm6-4103) was used to give an indication of whether the proposed development was likely to result in an offence relating to great crested newts being committed and whether an EPS mitigation licence

would be required. If the likely effects of the development **without any mitigation measures** are considered, the result is red (offence highly likely) as there is a possibility that individual great crested newts present on the site may be injured or killed during or after the works and newt habitat will be destroyed. This is illustrated in table 4.

<b>Table 4: NE rapid risk assessment for proposed works at Abermule Business Park without any mitigation measures.</b>		
<b>Component</b>	<b>Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)</b>	<b>Notional offence probability score</b>
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	0.5 - 1 ha lost or damaged	0.7
Land 100-250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.4
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	Killing or injuring newts	0.8
	Maximum:	0.8
Rapid risk assessment result:	<b>RED: OFFENCE HIGHLY LIKELY</b>	

**Notes:** The NE rapid risk assessment uses different distances from the breeding pond from the Government website's impact assessment table (table 3) so ha figures in each table are different.

The northwest section of the site and the plantation areas, which are shown on plans as remaining undeveloped, were not included in the areas to be lost or damaged in tables 3 and 4.

Guidance suggests that non-licensed avoidance measures should be used to avoid harm to great crested newts and perhaps avoid the need for licensed work, ie. work which will disturb or damage great crested newts and their habitat. These measures may include locating development away from breeding ponds and high quality terrestrial habitat and timing works to avoid the newt active season.

Locating the development further away from the breeding pond would not be possible in this case. The site has been designated for development for some years and significant works to install access roads and services have already taken place. The terrestrial habitat that will be lost is permanent pasture, grazed or left to grow longer and cut for silage. It was moderately good foraging habitat for great crested newts.

The northwest part of the site, which contained piles of rubble and logs and other items that could be used as refuges or hibernacula by newts and where the great crested newt found on the site was recorded, will not be developed as it falls within the 12m development exclusion zone along a water main and the 5m development exclusion zone along a pressurised foul rising main. It will, however, be divided from the pond by the new development.

Three areas planted with a mix of broad-leaved species including wild cherry, ash, hazel, silver birch, field maple, hawthorn and elder are shown on proposed plans as being retained. These plantations are not currently high value habitat for great crested newts as they are heavily grazed by sheep and have little ground cover. Post-development there will be no grazing so ground vegetation will gradually develop, particularly if the plantations are managed to increase their structural diversity, eg. by coppicing sections on rotation, and their value as habitat for great crested newts will increase.

Although some of the better and potentially better areas of newt habitat on the site will be retained, they are mainly on the opposite side of the site from the breeding pond with the

recycling facility directly in between. Newts travelling between these areas and the pond may try to cross the construction site or, post-development, the recycling facility and be at risk of death or injury.

Timing works during the winter to avoid newts' active period is unlikely to be possible in this case. Construction works are likely to last for more than one season so increasing the chance of newts being on the construction site and at risk of injury or death. The maximum count of great crested newts was 12, a medium population. This maximum count is not the number of newts that use pond 1 and the surrounding habitat. Studies suggest that newt surveys trap between 5% and 30% of a pond's newt population, depending on the efficiency of the survey (J. Fairclough, FSC GCN Licensing and Mitigation course, Dec 2014). Survey efficiency will depend on various factors including weather, timing, turbidity and the amount of vegetation in the pond. The actual number of great crested newts in pond 1 could be between 40 and 240 newts.

It will not be possible to avoid the loss of terrestrial newt habitat so habitat must be created or enhanced in another location to compensate for this loss. The risk of injury and death to individual newts during construction can be avoided by capturing and removing them from construction areas and then excluding them until development is complete in the case of most of the site and excluding them permanently from the recycling facility where it is considered the post-construction use of the site, and its location between the breeding pond and an area used for hibernating, means that newts will be at risk of injury or death during its operation as well as its construction. Destroying great crested newt habitat and capturing and excluding great crested newts from a site can only be carried out under an EPS mitigation licence from Natural Resources Wales.

An outline Great Crested Newt Mitigation Plan and Method Statement for the proposed works at Abermule Business Park are presented in section 8.0. The assessment of impacts, mitigation plan and method statement are based on the plans available at the time of writing this report. If the development proposals change, the impact assessment, mitigation plan and method statement will need to be reviewed and altered accordingly.

## **4.2 Constraints**

As with all wildlife surveys conducted, the data collected is only a representation of the species and species presence markers found during the actual dates of the survey. There are other seasons and many species are mobile or transitory. There were no major constraints. On two of the survey nights the minimum temperature recorded was 4.5°C, just below the minimum guide temperature of 5°C. Data logger records show that the temperature was at or above 5°C for much of the night and as great crested newts were recorded on those nights it is not considered that this will have affected the overall results of the survey.

Parts of the perimeter of both ponds (approx. 14% of pond 1 and 25% of pond 2) were not accessible due to steep slopes, soft ground and dense scrub growth and bottle traps could not be set there. It is possible that trapping the missing section in pond 1 would have resulted in more newts being caught, however, with a maximum count of twelve, it was considered unlikely that enough extra newts would have been trapped to move the population size class assessment from medium to large. It was considered extremely unlikely that trapping the missing section in pond 2 would have detected newts when none were found in any of the four survey visits trapping the other 75% of the pond margin.

## 5.0 RECOMMENDATIONS

It is recommended that:

1. Since the presence of a medium great crested newt population with a breeding pond approximately 50m from the boundary of the site is a constraint on the proposed development at Abermule Business Park, the **Newt Mitigation Plan and Method Statement** presented in section 8.0 must be followed to avoid any offence in relation to great crested newts being committed. It includes such matters as timing of works, capturing and re-locating newts and habitat enhancements.
2. An EPS mitigation licence from Natural Resources Wales is required for development to proceed since the unavoidable loss and fragmentation of terrestrial great crested newt habitat and the risk of injury or death to individual great crested newts means that it will NOT be possible to protect great crested newts and their habitat relying on a Reasonable Avoidance Method Statement with no licence.

## 6.0 REFERENCES

1. Amphibian disease precautions: a guide for UK fieldworkers. Amphibian and Reptile Groups of the UK (ARG UK) Advice Note 4 Version 2 (2017).
2. Great crested newt mitigation guidelines English Nature (2001).
3. Great crested newt habitat suitability index. Amphibian and Reptile Groups of the UK (ARG UK) Advice Note 5 (2010).
4. Research Reports Number 576 An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt *Triturus cristatus*. Warren Cresswell and Rhiannon Whitworth English Nature (2004).
5. Baker, J., Beebee T., Buckley, J., Gent, A. and Orchard, D. Amphibian Habitat Management Handbook. Amphibian and Reptile Conservation (ARC) (2011).
6. The UK Biodiversity Action Plan. Joint Nature Conservancy Council. Peterborough, Belmont Press. ANON :( 2004).
7. Powys Local Biodiversity Action Plan (1998 and later amended).
8. The Handbook for Phase 1 Habitat Survey (JNCC, 1993).
9. Design Manual Roads and Bridges Volume 10 Section 4 Part 6 (HA 98/01) Environmental design and management. Nature conservation. Nature conservation management advice in relation to amphibians (2001)
10. GLEC (April 2017) Abermule Business Park, Abermule, Powys, SY15 6ND: Proposed change of use and construction of recycling facility - Preliminary Ecological Appraisal (GLEC-0896a-01)
11. Great crested newts: surveys and mitigation for development projects, (March 2015) <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects>

## 7.0 APPENDICES

### 7.1 Amphibians and Reptiles - legislation

All native amphibian and reptile species are protected in England and Wales by specific laws to varying degrees. Amphibians and reptiles fall into three groupings with differing levels of protection:

- Widespread amphibians
- Widespread reptiles
- European protected species

#### **Widespread Amphibians**

The palmate newt, smooth newt, common frog and common toad are listed on Schedule 5 of the Wildlife and Countryside Act 1981, but are protected by Section 9(5) only. This refers to trade in animals (prohibition of sale and advertising for sale, etc.). Hence these species are not legally protected from killing, injury or development, although other considerations may be taken into account (e.g. existing site designations, planning guidance and Biodiversity Action Planning).

#### **Widespread Reptiles**

Four reptile species, slow-worm, viviparous (or common) lizard, grass snake and adder have additional protection under the Wildlife and Countryside Act 1981. Their inclusion on Schedule 5 gives 'partial protection' via Section 9(1) from intentional killing & injuring.

Section 10(3) c of the Wildlife and Countryside Act 1981 offers a defence in situations where killing and injury are an incidental result a lawful action and could not reasonably have been avoided. Interpretation can be difficult, but courts have taken the view that activities, such as development, that lead to injuring or killing reptiles, can constitute an intentional act if insufficient care to avoid harm was taken.

#### **European Protected Species**

These are strictly protected species, great crested newt, natter jack toad, sand lizard and smooth snake, which are protected by a combination of both the Wildlife and Countryside Act 1981 (Schedule 5 - full protection) and the Conservation of Habitats and Species Regulations 2010 (listed on Schedule 2). The latter are domestic implementation of the European Commission's "Habitats Directive" 1992, hence the term.

Protection of these "European protected species" differs from that of the widespread reptiles in that not only are they protected from killing and injury, but also from disturbance and capture. Additionally, the habitat of European protected species is legally protected, from damage or destruction. The development of a site where European protected species occur can therefore go ahead only if licensed by Natural England/Natural Resources Wales.

Note that the natter jack toad, sand lizard and smooth snake are rare species, occurring in a few specific locations, so they only infrequently coincide with building development issues. In contrast, the great crested newt has a large range in England and Wales and is hence more likely to occur in areas subject to building development. The great crested newt's strict protection stems from a decline throughout its European range – England and parts of Wales are a stronghold area for the species.

## **7.2 Field equipment used for the survey:**

Escort Mini temperature data logger (left on site throughout each night's survey, recording once every minute)

Silva compass

Cluson Clubman (CB2) 1 Million candle-power lamp

Professional hand nets (2mm mesh)

Standard 2 litre bottle traps and canes

White plastic buckets





## **8.0 MITIGATION PLAN**

### **Great Crested Newt Mitigation Plan and Method Statement**

**Abermule Business Park, Abermule, Powys, SY15 8ND**  
**May 2017**

#### **Background and Supporting Information**

##### **A Executive Summary**

The need for this work comes from the site owners and manager's need to ensure that the development minimises the consequences of any possible killing, disturbance, habitat loss, division and species dispersal of great crested newts.

This project is change of land use and the construction of a bulk recycling facility and business park units with associated surface water storage, access and services on approximately 3.75ha of land. There is a great crested newt breeding pond where surveys in 2017 found a 'medium' great crested newt population, approximately 50m from the boundary of the site.

An assessment of the possible need for a licence was carried out using standard Natural England procedures and it was concluded that it would not be possible to avoid the loss of terrestrial newt habitat. The risk of injury and death to individual newts during construction could be avoided by capturing and removing them from construction areas and then excluding them until development was complete in the case of most of the site and excluding them permanently from the recycling facility where it was considered the post-construction use of the site, and its location between the breeding pond and an area used for hibernating, meant that newts would be at risk of injury or death during its operation as well as its construction. Destroying great crested newt habitat and capturing and excluding great crested newts from a site can only be carried out under an EPS mitigation licence from Natural Resources Wales.

This method statement provides that work on the project will avoid disturbance or harm to this great crested newt population by using practices which will avoid harm, attract newts away from the construction area and make the new development safer and more newt friendly post development. Further, it gives details of works which will enhance the population of great crested newts in the locality. Finally it gives a timetable for these works, assigns who will carry them out, and how they will be monitored.

This mitigation plan and method statement assume that all the construction works, ie. recycling facility, business units and surface water compensation, will take place at the same time as a single project under one EPS mitigation licence.

#### **Delivery Information**

##### **A Mitigation and Compensation.**

###### **A.1 Summary of mitigation strategy**

The mitigation strategy is based on avoidance of damage and conflict principally by avoiding harm to great crested newts by trapping and translocating any newts on the construction area and excluding them from the site until works are complete and so avoiding harm. Great crested newts will be permanently excluded from the bulk recycling facility as once

operational this will store and handle material outside that is attractive as refuges to great crested newts. It will also lie directly between the breeding pond and part of the site that is to remain undeveloped and contains many refuge and hibernation sites for great crested newts and where a great crested newt was found under a piece of wood during the surveys.

A combination of displacement, capture and translocation of great crested newts will be undertaken under a Natural Resources Wales EPS mitigation licence.

## **B Works to be undertaken by the ecologist or suitably qualified person/contractors working under their supervision.**

### **B.1 Site modification, newt translocation.**

- a) Design the great crested newt mitigation scheme and apply, along with the developer, as named ecologist for the NRW EPS mitigation licence. No works of any sort are to take place until that licence has been issued.
- b) Supervise the design/location/installation of the newt exclusion fencing, trapping design and stock fencing of the receptor area and breeding pond and the creation of a new pool and newt hibernacula there.
- c) Provide copies of the Newt Licence Method Statement and a great crested newt factsheet to workers/contractors.

### **B.2 Capture and exclusion**

#### **Exclusion fencing**

The perimeters of the two construction areas (firstly the business units plus the recycling facility – the main site; and secondly the surface water compensation area), as shown in the Mitigation Plan drawing at B6 below (also submitted as a separate PDF for ease of viewing), will be fenced with semi-permanent and permanent amphibian fencing prior to any works of any sort, including storage of building materials, waste, machinery, equipment or similar, on the sites and for the entire duration of works until all buildings are finished and all infrastructure, such as utilities, roads, drains etc. **are complete**. Once construction is complete the final section of permanent amphibian fencing plus a newt proof access gate will be installed along the northeast edge of the recycling facility so that amphibians are permanently excluded from the whole of the recycling facility.

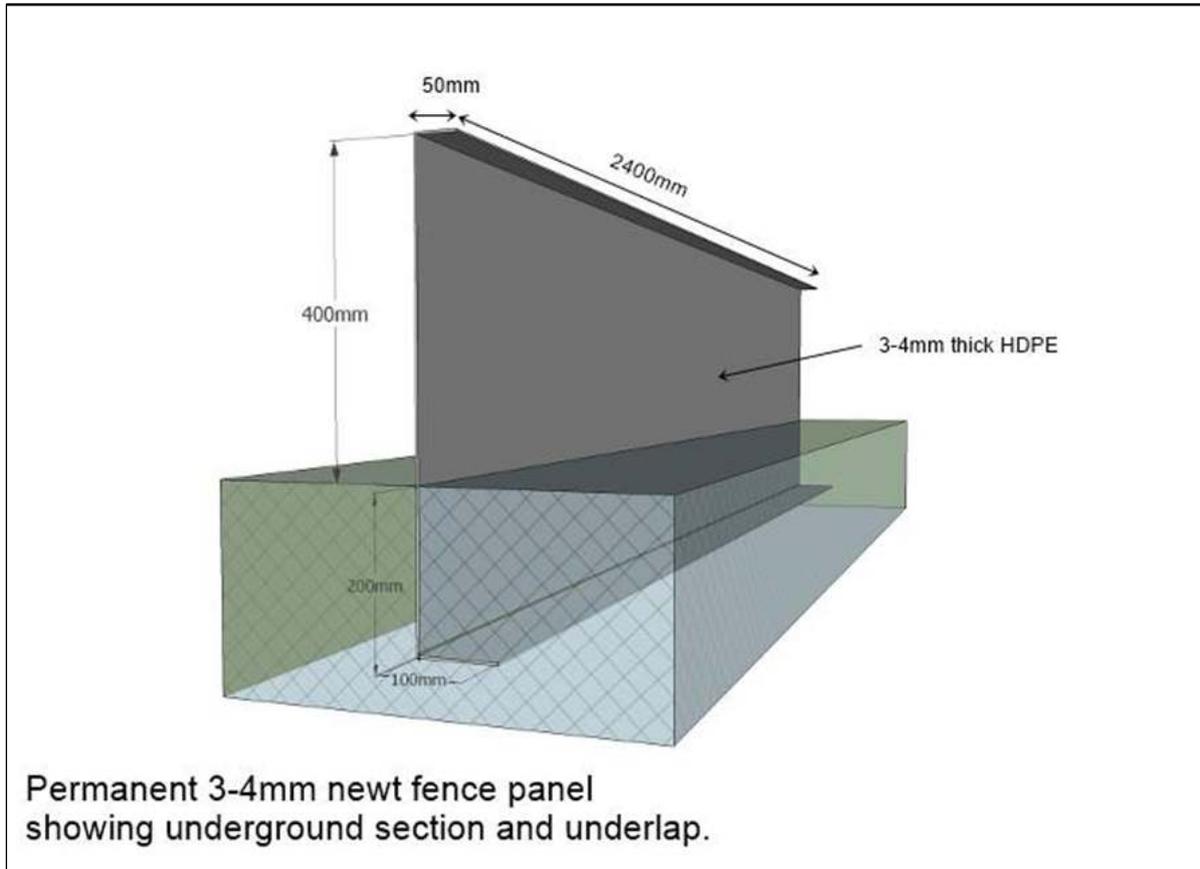
Permanent amphibian fencing (PAF) is made from a 3-4mm thick HDPE with a top return. This material is stabilised against ultraviolet (UV) damage for up to 15 years. It has a 50mm return folded and welded into the top edge forming an overlap to emulate the 'rolled top curl' in the English Nature Newt Mitigation Guidelines. There is also a scored groove 100mm from the bottom of the panel to allow the installer to create an underground return, if required. Each panel also incorporates 4 expansion slots at one end to allow for the slight expansion in the panels caused by seasonal temperature changes and protect fixings from breaking.

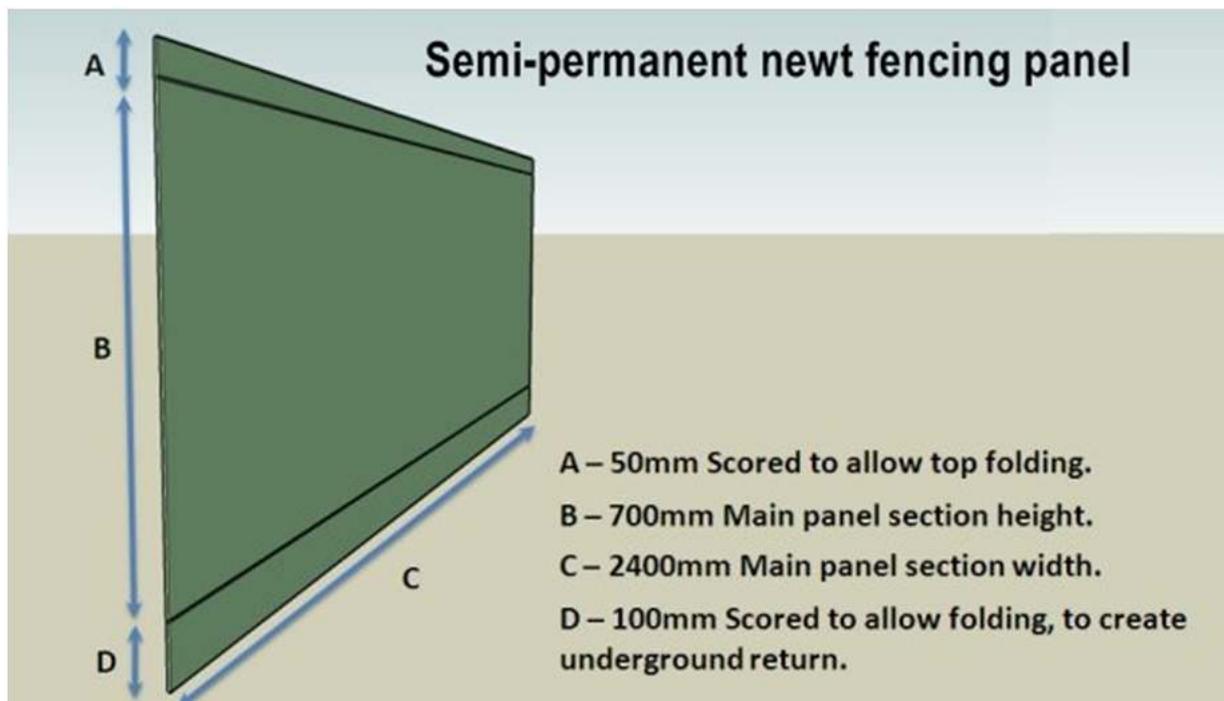
Semi-permanent amphibian fencing is a tough plastic, UV stabilised for up to 5 years, with underground and top edge returns. It can be supplied in panels or as a roll.

The lower edge of both permanent and semi-permanent amphibian fencing is "ploughed" and buried into the ground with a special machine mounted on a tractor. It then has regular posts to keep it vertical and sections, if there are any, are bolted together. Temporary amphibian fencing (TAF), which is only polythene, has a life expectancy of around two years and is not robust or long lasting enough for perimeter fencing where lengthy construction and machinery use will take place.

Where the plan shows hedges and plantation woodland being excluded from the fenced area a 1m buffer will be left between the fence and hedge/woodland. These hedges and woodland are to remain post-development. The amphibian fence is to facilitate trapping of newts and prevent them from accessing all the construction sites, and also the bulk recycling facility once it is operational. Human access to the sites during construction will be by a single access to each site, with a gate, or gates, with anti-newt flaps along their lower sections sweeping the ground. The access to the main site will be on the northwest side of the site where the existing access off the B4386 is. Access to the surface water compensation area will be at the existing gate on the track off the A483 on the south side of the site.

The inside of both construction sites will be compartmentalised into suitable areas practical for trapping with temporary amphibian fencing (TAF). This fencing inside the perimeter is known as drift fencing. Great crested newts on the development site will be actively trapped in this area by falling into pitfall traps and resting under carpet tiles and will be found in daily searches by the ecologist and moved to the receptor site; the area around the pond to the east of the site.







## Capture

The minimum level of trapping effort required for a medium great crested newt population is a minimum of 80 pitfall traps/ha and a minimum of 60 nights of trapping in suitable weather conditions until there are five nights clear with no great crested newts trapped (English Nature, 2001). Details of the number of pitfall traps and carpet refuges to be used for each of the two development sites are below. Pitfall traps and refuges (carpet tiles) will be placed at about 5 - 10m intervals on both sides of the internal drift fencing and along the interior of the perimeter fencing. Trap density will be increased in optimal newt habitat – close to hedgerows, plantations and potential refuges on the northwest sides of the sites.

	Area (ha)	No. of pitfall traps	No. of carpet refuges
Main site	2.3	225 (=98/ha)	225
Surface water compensation area	0.5	50 (=100/ha)	50

The installation of fencing may require prior vegetation clearance under the supervision of the licensed ecologist and would involve trimming hedges or plantation trees back if needed, depending on vegetation height; and strimming of ground vegetation to no less than 150mm in height (and removal of arisings) followed by spraying a strip 1m wide with Glyphosate along the line the amphibian fencing is to follow. Immediately prior to fence installation the licensed ecologist will carry out a finger-tip search along the fence line for newts, followed by the fence and trap installation. Traps will be installed with lids in place and carpet refuges laid.

Trapping will start in the spring and traps/carpet tiles will be checked once in every 24 hour period between 06.00 and 11.00. Any amphibians captured will be translocated to the receptor area as soon as possible. A record of all great crested newt captures will be included in the licence report. The 60 nights of trapping must be during suitable weather conditions where great crested newt capture is likely. Suitable weather conditions for trapping are nights with a minimum temperature above 5°C and damp ground, ie. rain in the night or in recent days. If temperatures fall below 5°C or the ground becomes very dry the night is discounted. Therefore the actual period of capture is usually greater than the minimum trapping of 60 nights. Furthermore, a minimum of five consecutive trapping nights with no great crested newt captures (providing there has been a minimum of 60 trapping nights in total) is required to indicate that suitable effort has been expended to remove great crested newts from the construction area.

Once 60 nights of trapping have taken place with at least 5 clear nights of no newts found, the licensed ecologist will supervise the lifting and removal from site of all pitfall traps, refuge carpets and drift (interior) TAF fencing and search for and translocate any remaining newts found under and around these to the receptor area. They will then make a judgment to release the site to the developer as regards whether sufficient effort has been made to ensure that all great crested newts that could have reasonably been removed from the site have been. The site will be released with the perimeter newt fence intact and this will remain as an enduring, effective barrier to newts until the end of all site works.

Any potential refuges, eg. piles of wood, rubble, within the perimeter fence will be dismantled by hand and searched for great crested newts before the material is removed off the site for disposal.

The perimeter newt fence will be checked for its integrity at least weekly and a record of checks made by the licensed ecologist while newt trapping takes place. Any gaps or fallen, damaged fences will be repaired in daylight hours before the next day. When the

development works do start newt fence checks will remain weekly and be carried out by the development site manager and records made of the checks and any repairs. There will also be monthly checks by the licensed ecologist with the same records made. Checks to fences only need to take place February to November inclusive. As the new season for newt activity starts in February each year the licensed ecologist will make a full check of fences in the first week of February and the fence will be repaired/replaced as required for the coming active newt season. During the active season the perimeter newt fence will be kept clear of vegetation by spraying a 50cm strip along the outside of the fence with Glyphosate as required.

### **B.3 Temporary loss of breeding sites, resting places**

There will be none.

### **B.4 Destruction of existing breeding sites, resting places**

Potential refuge sites in the surface water compensation area will be dismantled and removed prior to any excavation works beginning.

### **B.5 Newt receptor site**

The receptor site for newts trapped/found in the construction area is the area around the breeding pond. Newt mitigation guidelines state that a receptor site should not usually already have a population of great crested newts. In this case, it is considered that any newts found on the construction site will be part of the same population as newts found in the pond as there are no other ponds within 500m of the construction site for newts to come from. The only other possible breeding pond within 500m was found not to have newts of any kind during the 2017 survey. As the receptor site is already available to great crested newts, it will be enhanced to provide higher quality habitat close to the breeding pond and so compensate for the loss of moderate newt habitat (mainly short grassland) on the development site which is further from the breeding pond. Improving the habitat for newts in this area will also encourage newts not to forage to the construction area.

To this end:

- The area around the pond will be fenced with lamb-proof stock fencing to make a permanently un-grazed area (see Mitigation Plan drawing). This will be a no grazing area. Longer vegetation, more attractive to newts for foraging, will develop. There will be a field gate in the fence to allow access for future management work.
- A new pond will be created in the existing shallow, seasonal wet area just northeast of the breeding pond. This area does not currently contain suitable habitat for great crested newts as it is used to store old silage bales and burn waste and the water present at the start of the survey showed signs of pollution from these activities. By the end of the survey the area of water was much smaller and would soon have dried out completely. As the area is already damp the pond will not need to be lined. The pond will be 1m max depth with gentle slopes (less than 1 in 5 and preferably less than 1 in 20 at the margins to maximise the shallow areas most favoured by plants and animals) and have a surface area of approximately 500m<sup>2</sup>. In plan the pond will have an irregular shape.

The pond will be designed so that no runoff from field drains, flows into it. The pond will be dug during winter (Nov - Jan inclusive) when newts are unlikely to be active. The pond will be dug on an area of solid, wet ground; not suitable hibernating habitat for newts. Spoil from digging the new pond will be mixed with rubble and logs to create new newt hibernacula in locations determined by the ecologist.

No plants of any sort including wetland/water plants, animals or 'sludge' from other ponds are to be added to the new pond. Introducing plants into ponds can often lead to

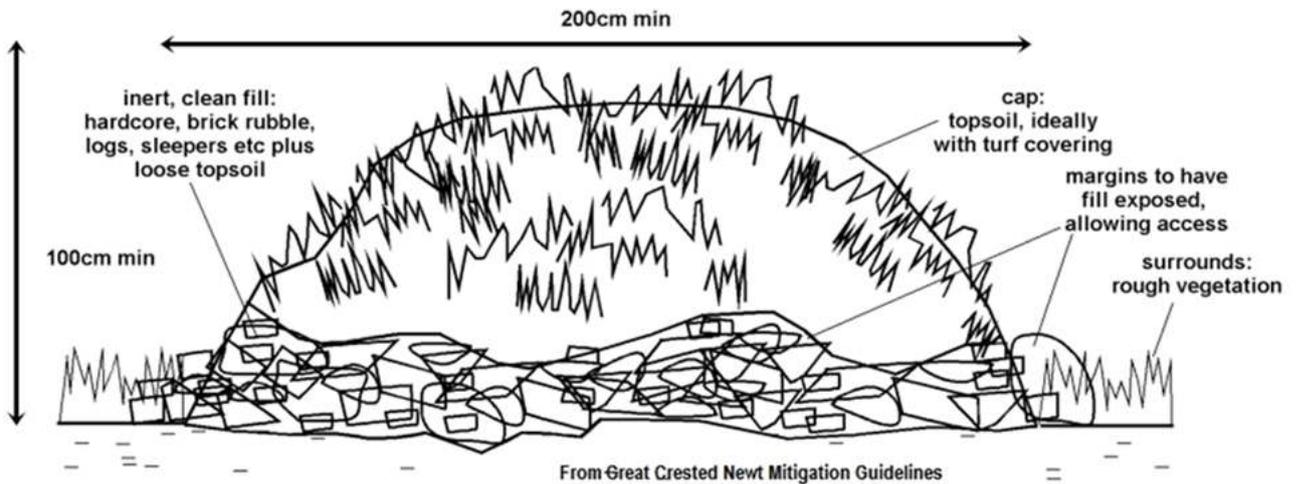
accidental invasions of non-native invasive plants. Water bodies will naturally colonise with wetland plants surprisingly quickly.

- Four newt hibernacula will be created inside the fenced area. Hibernacula can be created very quickly and inexpensively using local materials, making mounds of wood logs, rocks and topsoil as per the great crested newt mitigation guidelines (English Nature, 2001).

Installing the stock fence, creating the new pond and hibernacula will all be completed during a winter period (Nov – Jan inclusive) when newts are unlikely to be active above ground and before the trapping of newts starts. Exact locations for the newt hibernacula will be chosen by the licensed ecologist so that the risk of disturbance or injury to any newts in the area is minimised.

### Suggested hibernaculum design

This design mimics artificial and natural conditions in which great crested newts have frequently been found overwintering. Dimensions should not be below 2m length x 1m width x 1m height. The illustrated design would be suitable for locating on an impermeable substrate. On free-draining substrates, the design is largely similar but the bulk of the fill is sited in an excavated depression in the ground. Hibernacula should ideally be positioned across a site, both close to and distant from breeding ponds, always in suitable terrestrial habitat and above the flood-line.

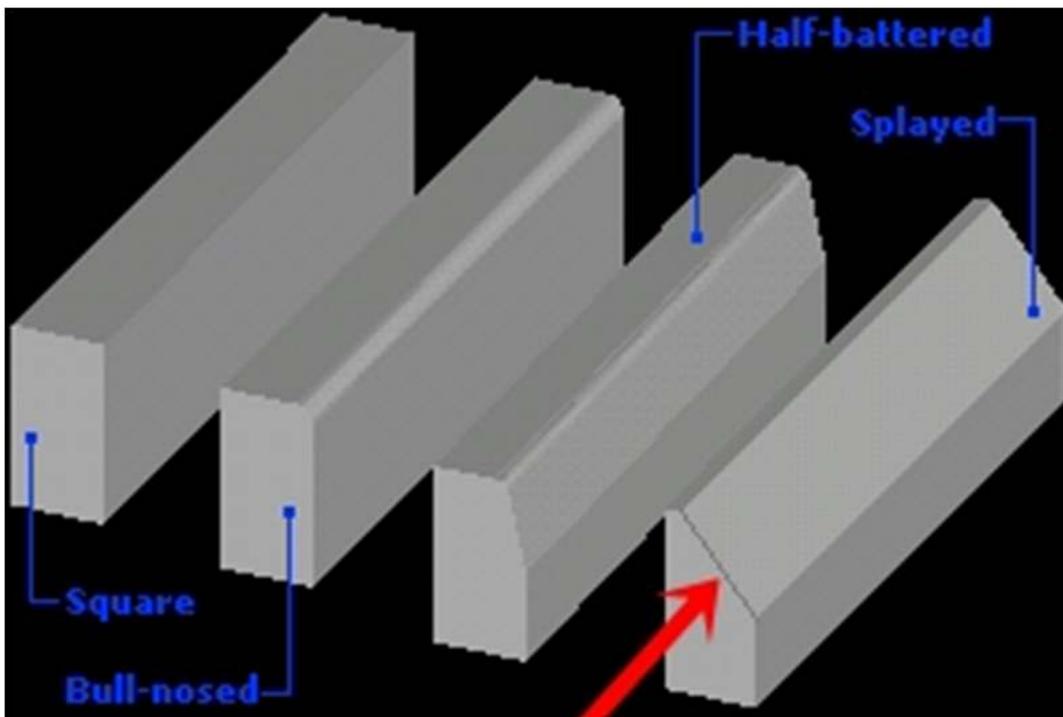




## C Works to be undertaken by the Developer/Landowner.

### C.1 Design of development roads/drive/pavements

ALL kerbing built at the edges of roads, drives and paths at the business unit part of the development site, ie. the developed area outside the permanent newt fencing around the recycling facility, will be splayed kerbing, NOT vertical or bull-nosed standard kerbing, so as not to create a barrier to newts once the newt fence is removed when development works are complete. **In addition all gully pot drains will be set back 100mm from the edge of the drain to the kerb face.** See design guides below and kerb examples of what to use and NOT to use.



**only splayed suitable**



**Special "newt friendly kerb". NOT ideal as standard kerb eitherside still channels newts towards drains.**



### **C.2 Provide sufficient resources**

Effective and sufficient resources from the site developer will be provided to ensure these details are carried out, both direct works and the retention of the licensed ecologist and contractors for example, the permanent, semi-permanent and temporary amphibian fencing and pitfall trap installation specialist contractor.

### **C.3 Ensure appointment of an independent auditing scheme**

The NRW EPS mitigation licence will state whether this is required when it is issued.

## **D Management, monitoring and delivery**

### **D.1 Habitat/site management and maintenance of the receptor site around the breeding pond**

The fenced area around the breeding pond and new pond will remain un-grazed. All existing boundary hedges and woodland plantations on the development site will be retained as these provide foraging habitat, connectivity with the breeding pond and links to the refuge sites on the northwest side of the recycling facility.

New, native species tree and shrub planting will be carried out to link the existing woodland plantation between the recycling facility and the surface water compensation area to the hedgerows and longer vegetation of the old road (also the water main development exclusion zone) on the northwest side of the site. See the Newt Mitigation Plan Drawing. Suitable species are in section F.

A section of the old road is a triangle of land outside the south end of the northwest boundary of the site. It has a double hedge, the old roadside hedges, and longer vegetation and is good terrestrial habitat for newts. It will be retained as a non-operational part of the site, along with the water main exclusion zone area, with habitat suitable for newts maintained.

The permanent newt fencing around the recycling facility will require annual checks and any necessary repairs to be made. Vegetation must not grow over it to make a route into the site for great crested newts. To this end the permanent perimeter newt fence will be kept clear of vegetation by spraying a 50cm strip along the outside of the fence with Glyphosate as required.

### **D.2 Population monitoring,**

Monitoring post works will be provided as per the details of the issued NRW EPS mitigation licence.

### **D.3 Mechanism for ensuring delivery**

A planning condition will include these details and works will be undertaken by the applicant and/or their contractor/s and also the NRW EPS mitigation licence will ensure it is carried out. The Mitigation guidelines state that the mechanism for ensuring the future existence/management of the pond and receptor site is the creation and adoption of a Newt Pond Management and Maintenance plan covering a period of 4 years following completion of the development (not the start).

## E Timetable of works

<p style="text-align: center;"><b>Timetable of Works</b> (See also Newt Mitigation Plan Drawing GLEC-0896b-01)</p> <p style="text-align: center;"><b>Great Crested Newt Method Statement</b> <b>Abermule Business Park, Abermule, Powys, SY15 6ND</b></p>			
<b>A: Development activities and timing</b>			
<b>Project Number</b>	<b>Work/Project</b>	<b>Timing of works</b>	<b>Who to carry out</b>
01	Create new pool and 4 hibernacula in the area around the pond.	Nov to Jan inclusive	Land owner or contractors supervised by Ecologist
02	Install lamb-proof stock fencing and 10ft field gate around perimeter of receptor area to create un-grazed area around pond.	Nov to Jan inclusive	Land owner or contractors supervised by Ecologist
03	Provide copies of this Method Statement and a great crested newt factsheet to workers/contractors	Before work starts	Ecologist
04	Clear/cut vegetation along lines that perimeter and internal newt fencing will follow. Remove rubbish and other debris, eg. old wire, off-site. <b>Do not</b> remove or dismantle any possible newt refuges or hibernacula during the winter.	Nov to Jan inclusive.	Contractor with Ecologist advice on what to leave.
05	Spray 1m wide strip along cleared fence lines with Glyphosate and repeat as required if vegetation begins to grow before fence is installed.	March - Sept	Contractor
06	Hand search of lines that newt fence will follow immediately followed by installation of newt fencing and access gates. Access to main site will be on northwest side of site where existing access off the B4386 is. Access to surface water compensation area will be at existing gate on track off A483 on south side of the site.	In time for trapping to begin in spring.	Search by Ecologist. Fence installation by specialist contractor experienced in newt fencing.
07	Install pitfall traps and carpet tiles.	At same time as fence installation	Newt fencing contractor
08	60 days trapping and relocation of any newts captured. Weekly checks of perimeter newt fence and any repairs required.	Begin in late Feb/March	Ecologist
09	Remove traps and carpet tiles, interior newt fencing and any drift fencing. Move any newts found to receptor site.	At end of trapping period	Contractor, supervised directly by Ecologist on site.
10	Dismantle and search by hand possible refuges on northwest side of site where these are inside newt fence.	During newt active period (late Feb – Oct).	Contractor and Ecologist
11	Weekly checks, report and any necessary repairs to perimeter newt fence.	Feb – Nov each year until works complete	Site manager

12	Keep vegetation from encroaching on perimeter newt fence by spraying 50cm wide strip along the outside of the newt fence with Glyphosate as required during the growing season.	March – Sept each year until works complete.	Contractor
13	Monthly checks, report and any necessary repairs to perimeter newt fence.	Feb – Nov each year until works complete	Ecologist
14	Carry out all works including installation of newt friendly kerbs and drains etc. Final stretch of permanent newt fencing and newt proof gate to be installed on northeast edge of recycling facility when construction complete but before site is operational.	Can begin once internal newt fences and traps removed.	Contractor
15	Remove semi-permanent perimeter newt fence. Retain permanent newt fence around recycling facility. Move any newts found to receptor site.	When all works are complete.	Contractor, supervised directly by Ecologist on site.
16	Plant native trees and shrubs to link existing plantation woodland to hedgerows and trees on northwest side of recycling facility.	Oct - March	Contractor
<b>B: Post-development monitoring</b>			
17	Post development monitoring of newt population in pond if required by EPS mitigation licence conditions.		Ecologist

## F List of native trees/shrubs/climbers to plant

Native Trees, Shrubs and Climbers		
<a href="http://www.geraldlongley.co.uk">www.geraldlongley.co.uk</a>		
No. of Species	Scientific name	Common name
1	<i>Cornus sanguinea</i>	Dogwood
2	<i>Corylus avellana</i>	Hazel
3	<i>Crataegus monogyna</i>	Hawthorn
4	<i>Euonymus europaeus</i>	Spindle
5	<i>Frangula alnus</i>	Alder Buckthorn
6	<i>Ilex aquifolium</i>	Holly
7	<i>Ligustrum vulgare</i>	Wild Privet
8	<i>Lonicera periclymenum</i>	Honeysuckle
9	<i>Malus sylvestris</i>	Crab Apple
10	<i>Prunus padus</i>	Bird Cherry
11	<i>Prunus spinosa</i>	Blackthorn
12	<i>Rhamnus cathartica</i>	Buckthorn
13	<i>Salix cinerea</i>	Grey Willow
14	<i>Sambucus nigra</i>	Elder
15	<i>Viburnum opulus</i>	Guelder-rose
16	<i>Fraxinus excelsior</i>	Ash
17	<i>Quercus robur</i>	Oak

## 9.0 SITE PICTURES







