

Initial Habitat and species assessment, new site off Moss Road, Gwersyllt, Wrexham

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The author of this report, E J Lomas, holds an MSc in Ecology and Management of the Natural Environment (Bristol) and a Cert HE in British Archeology (Birmingham). He has over 30 years of professional experience and worked for NJL Consultants, Telford, a landscape and ecology consultancy, between 1991 and 2011. Before that his background and main work was in agriculture. He has carried out many surveys for small scale developments and has also acted as the principal ecologist for large scale road building, flood defense, and historical landscape restoration projects.

NOTE – all dimension, boundaries and drawings given in this report are approximate, for illustration only. More definitive details are provided in the architect's drawings.

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Note that this report relates to a new site and wholly replaces the previous Camlad Ecology report, January 2021, which related to a proposed pitch site about 30m to the south west

Short-form Summary

1. This report relates to the possible ecological impacts of a proposed development affecting an area of sheds and small paddocks between Summerhill Road and Moss Road, Gwersyllt, near Wrexham. The proposed development area is mostly under sheds and hard standing with a small area of grassland, surrounded in evergreen cypress hedges. The owner of the property is proposing to establish a two pitch gypsy / traveller site as a permanent family residence.
2. A desk study and site survey has been completed by E J Lomas, a suitably qualified and experienced ecologist employed by Camlad Ecology Ltd, in October 2023. This survey sought to determine whether the proposed development was likely to have any impact on protected and priority species, or on valued habitat.
3. There is a small stream in a steep sided valley below the site, part of the Moss Valley Country Park. This park has pools and an area of wetland (Gatewen Marsh SSSI, 1.4km downstream), in the valley. A high level of pollution control will be required during construction and use.

The survey and study has found that:

4. For reasons of project scale, distance, topography and hydrology, there are no predicted impacts on statutory protected sites or priority habitats, provided significant pollution risks are removed by design and site management. Consideration has been given to the design and layout of a waste water treatment installation, in line with current NRW guidelines. The requirement for a Habitat Risk Assessment by the planning authority may be scoped out.
5. Desk study and soil pits dug on site show that the development site is not over a former tip or near-surface mine site.
6. Land and habitat features around the proposed development could be closely examined. There was no evidence of habitat important to bats or fully protected bird species within the site. Notes on suitable precautions and mitigation measures are given in the main text.
7. There are no existing local ponds shown on maps, or located during survey of the wider area. We are confident that there will be no impact on great crested newt populations.
8. Impacts on other habitat of value to fully protected species are unlikely, given adequate control of pollution and light spill.
9. No further survey for protected species should be needed.
10. There is a low level of risk to nesting birds and to hedgehogs. These risks have to be managed by careful timing and careful working procedures. No other mitigation would be practical or proportionate.
11. There would be little or no impact on distinctive habitat; the only habitat within the site and the paddocks around it is semi improved and improved grassland. Very little mitigation would be needed.

Notice concerning copyright, assignment and validity

This report has been produced for _____ by Camlad Ecology Ltd, following surveys carried out in October 2023. Copyright resides with Camlad Ecology. The report may be quoted in part or in full in relation only to the site described in it by those with a legitimate interest in the development or wildlife conservation value of the site. If the report is quoted in part then the relevant and exact context of any quotation must be evident. Where information from this report is misquoted or quoted without full context we will make planning officers aware of this. In relation to this, we must point out that all ecological surveys are 'incomplete' and all findings are conditional: it is impossible to know exactly what species are present where, over any extended period of time.

Camlad Ecology Ltd. have given consent for this report to be assigned _____ to any initial purchasers of the site described in this report, _____, provided that we are notified of the assignee's formal business name and address. The report may not be further assigned without direct agreement between Camlad Ecology and later purchasers of the site.

Intending developers of the site should take note of the fact that ecology surveys are concerned with habitats that change through successional processes and with protected species that are usually mobile and often seek concealment. Therefore the findings of an ecological survey are not perpetual and not completely definite. The condition of the site will change; in particular any buildings and large trees that are not maintained will become increasingly attractive to wildlife, including protected species, as they suffer damage from vandalism, storms and normal decay processes. Ecology survey reports are generally considered to have limited value from two years after the last survey date.

Intending developers should take careful note of the information provided in Annex 3, concerning wildlife protection law, planning policies, and the protected species frequently encountered during development projects in the Welsh border counties and the adjacent English counties.

Survey results as published

If this report is published as part of a planning application it enters the public domain. It is acceptable to Camlad Ecology Ltd. and our clients for a brief summary of the report's findings to be quoted in relation to other local ecology surveys, or in relation to the proposed development, as long as the quotation is accurate, with full context, and attributed. As examples:

"Survey by Camlad Ecology Ltd. during spring 2021 found a small breeding population of great crested newts in the pond at OS grid reference NH 240250. This is about 640m from the site" would be acceptable. "Survey by Camlad Ecology has found great crested newts near to the site. These newts could spread to the proposed development site" is not acceptable.

Use of our raw or numeric data, or tables showing results, assessments and conclusions, or plans and maps drawn by us, would not be acceptable without prior agreement.

Initial habitat and species assessment, land off Moss Road, Gwersyllt, Wrexham**1.0 Introduction****1.1 Origins and Objectives**

1.1.1 Camlad Ecology Ltd. has been commissioned to carry out a desk study and an ecological survey of land off Moss Road, Gwersyllt, Wrexham,

1.1.2 This report, based on the desk study and survey, provides a Preliminary Ecological Assessment and endeavours to take that process forward by including additional information to support an assessment of likely impacts on habitats or species of recognised importance that could be affected by the proposed development.

1.1.3 The survey was undertaken to establish whether bats, badgers, breeding birds, other protected species and some locally valued species could be present within the site and in the area around the site. The survey sought to determine whether protected or valued species were present and in the absence of direct evidence, whether habitats in and around the site were likely to support any populations of protected or valued species.

1.1.4 Potential impacts on any local sites that have statutory protection for nature conservation or any other designated value for nature conservation have been assessed, and the intended work to the site has been considered in relation to the Wrexham Biodiversity Action Plan, Wrexham Council's Local Planning Guidance 32, Biodiversity, Planning Policy Wales Technical Advice Note 5, and NRW's latest advice on phosphate discharges near sensitive rivers (July 2022). Information has been obtained from the MAGIC website, the NBN Atlas website, Welsh Government and NRW documents relating to the management of the River Dee, and the published Local Plans of Wrexham Council.

1.1.5 The results of the study and survey are given and assessed in this report. Recommendations for a precautionary approach are given in conclusion.

1.1.6 Wildlife conservation in relation to planning policy is effectively covered by the Planning Policy of the Welsh Government and Wrexham County Borough Council, as well as the UK National Planning Policy Framework document: *Conserving and enhancing the natural environment* (DCLG 2019, HMSO, UK), with recent amendments and case law changes to the Habitat Regulations (now the Conservation of Habitats and Species Regulations 2017, amended 2019). The impact of this is to require assessment of potential impacts on sites of international and national importance, and survey for protected species where there is any likelihood of their presence, before work affecting any habitat that might shelter them is begun. Details about wildlife protection laws, wildlife conservation policy, and the principal protected species found in the Welsh border region are given in Annex 3 of this report. Where there is any doubt or difficulty over these issues, appropriate legal advice should be obtained.

1.1.7 Legal protection for species is from the Wildlife and Countryside Act 1981 as amended (the WCA) and the Protection of Habitats and Species Regulations 2017 (as amended 2019) (The Habitats Regulations). Badgers and their setts are protected under the Protection of Badgers Act 1992 (The Badgers Act).

1.2 General site description

In this report 'the development site' or 'the site' (unqualified) refers to the structures and locations where work may take place, together with ground around it that might be affected. 'The wider site' refers to the ownership area, including the paddocks around the development site. The 'survey area' refers to the accessible landscape and buildings within about 250m of the site, while 'the study area' refers to the wider landscape around the site, for which data has been collected in a desk study. Other 'sites' are referred to with a descriptor, as for example 'the statutory site'

1.2.1 The development site consists principally of about 1,175m² (0.117ha) of yards and small sheds, the open areas variously concrete, stone and grass surfaced. It is located in OS grid square SJ 311 531, site centre approx. 331134, 353126. The post code for the locality is LL11 6HA. This location is west of Gwersyllt village, off the Summerhill Road and about 3.5 km north west of Wrexham town centre.

1.2.2 The habitats within the proposed development site are sheds of light construction, roofed with metal sheeting, a small area of close-grazed pasture, a disused and long dry pond, and concreted and stone surfaced yards, all partly surrounded by a tall evergreen hedge of non-native conifers. The proposed caravan bases can avoid impacts on the root zone of large trees, or are on space that has been previously hard surfaced. There are large trees along the back (east) boundary of the site; these are outside the site boundary and in other ownership. West of the site and enclosing it there are small paddocks of close grazed semi-improved grassland, within the ownership boundary and covering about 1ha. These slope down to Moss Road.

1.2.3 A small stream flows from north to south in the Moss Valley, just west of the site. The stream was seen to be about 0.5m wide in October 2023, flowing swiftly in an incised man-made channel. The hillsides of Moss Valley around the river corridor carry extensive deciduous woodland, mostly of fairly recent origin and with a fairly natural species composition. There are two man-made pools on line with the stream, starting about 490m SW of the site, about 6,000 and 9,500m² in area. This area is the Moss Valley Country Park, which covers about 33ha and begins about 600m NW of the site. It was reclaimed from a former mining area 50 years ago. Land below Moss Road slopes steeply down to the stream. At the lower end of Moss Valley there is a wetland Site of Special Scientific Interest (SSSI), Gatewen Marsh, on-line with the site and 1.4km downstream.

1.2.4 The stream flows through Wrexham town centre, with about 1km in culverts, and joins the River Clywedog at King's Mill about 7km downstream (corridor length – a 'smoothed' approximation to the channel length at high flow). The Clywedog does not have a statutory designation for nature conservation but it is a tributary of the River Dee, which is about 18km corridor length downstream from the site. The

entire River Dee and its corridor are designated as a Site of Special Scientific Interest (an SSSI) and a Special Area for Conservation (an SAC): both are designations applied to high value sites for nature conservation and they provide considerable legal protection.

1.2.4 Much of the land within 1km of the site is under 20th century housing estates of high to medium density. The Moss Valley and parts of the Brymbo Heritage area are used for quiet recreation and managed as semi-natural habitat. Most fields near to the site are small enclosures of improved grassland used for grazing or silage, or improved amenity grassland on sports pitches and golf courses. Further away from the neighbouring villages of Gwersyllt and Brymbo there is mixed improved grassland and arable cultivation in small fields on relatively level ground, with extensive areas of woodland on steep slopes.

1.2.5 The earliest OS maps (1879 6", 1:10,560) show the site as part of parkland in a small country estate around Gersyllt Hall, which lay in ornamental grounds just to the north of the site. By 1900 the parkland is shown as mostly enclosed, with the wider site as a single field, and small scale quarrying or open cast mining in the Moss valley. Small construction stone quarries on the edges of the valley appear to pre-date this. Mining and quarrying increases through the first half of the 20th century; by 1964 most of the Moss Valley area is shown as quarried or tipped with spoil, with no woodland, the site is a single field, and Gersyllt Hall is marked as a club, with most of the grounds as woodland.

1.2.6 Google Earth aerial images from 2007 onwards show the site and wider site as similar to the present layout, with some increase in the area under sheds and changes to the paddock layout. Gwersyllt Hall itself has gone and the grounds appear to be mixed woodland. By 2018 this area is a low density housing estate, with an area adjacent to the site left as managed grassland and the boundary as a fringe of large trees, against the wider site boundary.



View of the proposed pitch location (from the south, site is behind shrubs)

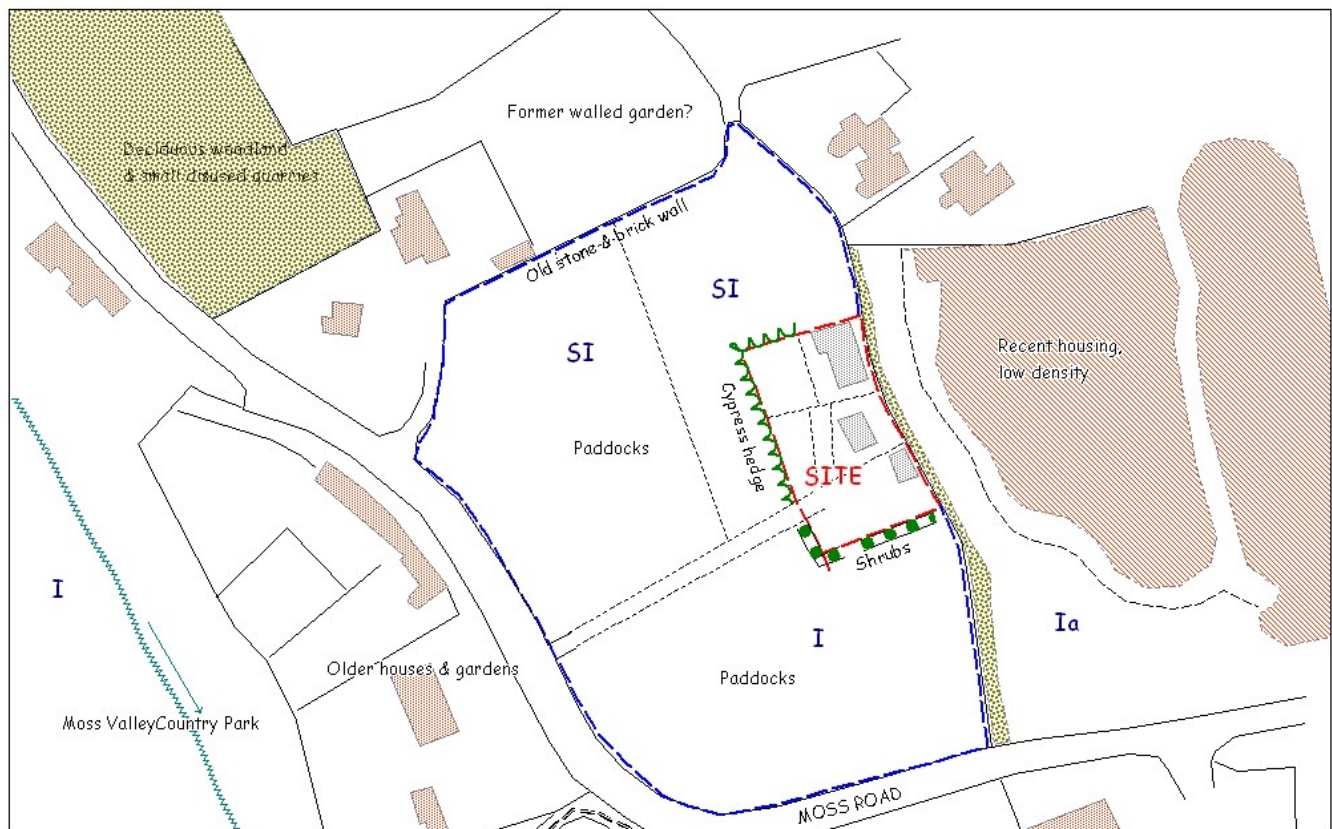


View of the paddocks from Moss Road

1.3 Proposed Works

1.3.1 Our client is seeking to establish residency within the site. This could lead to facilities for long-term occupation, requiring planning consent to construct two pitches, each of one permanent static caravan base, one mobile caravan base, and a day room. The property will be served by existing stone-surfaced roads.

Plans of the site follow.



Site off Moss Road

2.0 Methodology

2.1 Desk study

2.1.1 The proposed development has been considered in relation to the Wrexham Biodiversity Action Plan. Information has been obtained from the NBN Atlas website, Wrexham Council's website, The Welsh Government website, the NRW website, the British geological Survey website and the MAGIC website. No information has been acquired from COFNOD, the source for ecological data for North Wales, due to time constraints from Wrexham Council.

2.1.2 Ordnance survey maps of the area, including historic large scale maps from 1879 onwards, together with online British Geological Survey maps and Google Earth images, have been used to assess the wider landscape and environment.

2.1.3 None of the records on the NBN Atlas website related to the site or land around it, strongly indicating that there had been no previous survey effort in the immediate locality. NBN records appeared comprehensive and up to date for this area; the most recent record found was a bat record from 2022.

2.2 Habitat survey

2.2.1 Habitats were observed in the course of walkover surveys on 16th October 2023, with the survey methodology based on the JNCC Phase 1 methodology (JNCC 2001) and CIEEM recommendations for Preliminary Ecological Assessment.

2.2.2 The holding and the public land west of the site (Moss Valley) were walked over and neighbouring gardens were viewed from boundaries. Roads and footpaths were followed on foot for about 250m away from the site. The large pools on the stream were viewed from their margins. There was some observation of habitats beyond this in all directions.

2.2.4 Spade pits to about 350mm below soil surface were dug within the development site.

2.3 Species survey

2.3.1 Badger survey followed Mammal Society guidelines, with particular attention to the boundaries of the site, where evidence of foraging animals entering the site would be apparent.

2.3.2 The mature trees near the site were checked externally for bat roost evidence in accordance with Bat Conservation Trust recommendations, using close focussing binoculars, but full access was not possible and no climbing survey was carried out.

2.3.3 Nesting birds: bird species and nests were recorded during other survey work. Habitat suitability was noted.

2.3.4 Great crested newts: In the desk study modern and older large scale maps were searched for ponds within 1km of the site. Very few were found and there has been considerable disturbance from 20th century mining activity and 20/21st century housing estate construction. During the walkover survey ground within 250m of the site was checked for unmapped ponds and ditches. None were found. One pond shown on modern maps at about 140m from the site was viewed; this pond was created in or around 2018, has failed and no longer holds water.

2.3.5 Other species: the presence or likely absence of other species has generally been inferred from the presence or absence of suitable habitat. Species using scrub, hedgerows and trees and crevices may be present in the wooded margins of the site and the hedgerow and walls north of the site, but there would be no significant disturbance of these features.

3.0 Habitat: findings and assessment

3.1 Protected, listed and other valued habitats

3.1.1 The nearest site with statutory protection for nature conservation is the Gatewen Marsh SSSI about 1.4km south of the site and on-line with the stream flowing through Moss Valley. Risks to this should be minimal but are considered in 3.18 below.

An earth sciences SSSI, Brymbo Fossil Forest, lies 1.5km W of the site; no impacts are predicted from the development.

Lley Bog SSSI is 2.4km NE of the site, within a separate river catchment from the site; no impacts are predicted from the development.

There are four other nationally and internationally important sites for nature conservation within 5km; all are over 4km from the site. These are The Berwyn and South Clwyd Mountains SSSI, Ruabon and Llantysilio Mountains SSSI, and Vicarage Moss Ramsar Site; no impacts are predicted from the development.

The site is within the catchment of the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC and the coincident Afon Dyfrdwy / River Dee SSSI (Wales). This is a site of international importance as river and river corridor habitat extending from upland sources to its estuary, with high quality habitats throughout. The site is over 10km from the SAC boundary at its nearest, and 18km upstream (corridor length).

3.1.4 Soils under the site are fine clayey organic-rich loams with clayey-sandy subsoil, including fractured sandstone pieces at over 300mm below surface. The BGS mapping shows the site and the surrounding area as being over Cefn Sandstone, part of productive coal measures (Carboniferous), with coal and ironstone mining locally in the 19th and 20th century, up to the 1960's. The soils within the development site have a natural form and there is no evidence of disturbance or imported material.

3.1.5 The subsoil matrix appeared to be clayey so only slowly permeable; deeper layers, as observed in nearby former quarries will be more permeable, as a hard sandstone. The slopes from the paddocks to the road are likely to result in overground flow during very heavy rain.

3.1.7 The stream feeds into river habitat that is also protected from pollution under the Water Resources Act 1991 and the Salmon and Freshwater Fisheries Act 1975. Reference is made to this in the Dee Water Protection Zone document (NRW 2008), and the Dee Basin River Management Plan (NRW 2015). Any pollution spill could quickly become unmanageable, so a high level of precaution over pollution will be needed. Recommendations are given in section 5.4 & 5.5, but see also 3.1.8 below.

3.1.8 In addition to concerns about pollution spills during construction, there has to be concern about the management of domestic waste water. The treated waste from one or two pitches would not be significant in relation to the Wrexham population, but the incremental accumulation of such discharges from widespread development in the Dee catchment has to be taken into account. This is referenced in

NRW 2015 and NRW 2022. There are also potential risks to Gatewen Marsh SSSI, downstream of the site and beyond the two large pools, also on line with the stream. These risks are considered to be minimal, and not significant. The proposed development would include septic tanks, and several local features mitigate potential risks from these. It should be noted that the following reduce risks to the river system if and only if the septic tank system fails to do its job due to some incident; they are not presented as a routine form of secondary treatment.

- Due to the slope of the paddocks and the underlying sandstone rock, soils on site are well drained and will maintain significant water retaining capacity except during sustained wet weather. Any spills should be held back on the land.
- Flow from the paddocks in extreme weather would be captured by the road drainage system of Moss Road, rather than flowing directly down to the stream. The road drains may discharge to the stream from a point about 350m north of the site. The stream then runs rapidly, with steps, for about 750m down to a reedbed at the head of the first pool, which is shallow. This means that the stream is well oxygenated and sediment would be trapped by the upper pool. Water entering the pools moves through them much more slowly than along streams, allowing time for breakdown processes.
- Water from both pools flows out over sills, adding to oxygenation, before it reaches Gatewen Marsh SSSI. The stream then flows for about 7km, mostly through urban areas, before it enters the Clywedog. In an urban area, the stream should have various traps and other pollution control features.
- Groundwater from the site passes into iron-rich sandstone, which will naturally trap phosphates. The Carboniferous strata of the Wrexham area are heavily faulted and discontinuous, so there will be no direct groundwater movement to larger watercourses. There is no sign of any use for public or agricultural water supply in the Moss Valley.

3.1.9 In this location we suggest additional safeguards, 'downstream' of the septic tanks, such as passive swales that would normally be dry. See also section 5.4 following.

3.2 General habitat in and around the site

3.2.1 Most of the development site area is under hard standing or sheds. The hard standing is variously of concrete or stone, while the sheds appear to have been constructed of re-purposed materials. They have single pitch roofs, generally of corrugated iron, and walls variously of corrugated iron, wooden boards, aluminium-foam sandwich, and some concrete blockwork. They have open doorways or split stable doors and are used as stables or for storage.

3.2.2 The small area of pasture within the proposed development site is all closely grazed by horses and heavily poached. It appeared to be of very low diversity, with a limited range of grass species and few

other herbs (forbs). There is a small former pond, circular, about 10m², as a hollow with a plastic membrane liner. This appears to have been short-lived and is now completely dry.

3.2.3 The paddocks to the north and west of the proposed pitches are lightly grazed and fairly rough. On grazed pasture in late autumn it is hard to distinguish grasses, but the main constituents seemed to be rough meadow-grass and fescues; there was just a small amount of ryegrass in the sward. This is likely to be a consequence of management for horses, as fertiliser inputs, especially of nitrates, will be kept low to avoid problems such as laminitis. Other grasses and forbs in this sward include, in rough order of abundance, meadow buttercup, ribwort plantain, knapweed, yarrow, nettles, Yorkshire fog-grass, cocksfoot grass, creeping thistle, ragwort and sorrel. The plant species and the ground form strongly indicate that this is semi-improved pasture with a low level of management.

3.2.4 The paddocks to the south of the proposed pitches and the access track are close grazed, smooth surfaced and contain a high proportion of ryegrass, with white clover. This indicates that they are improved, and probably reseeded; GE images from 2012 seem to show this.

3.2.5 The eastern boundary of the site is a wire fence, with a line of mature trees just beyond it; the stems are outside the site but the canopy overhangs the site. Within this tree line there are three mature native oaks (*Quercus robur*, pedunculate oak), about 700mm stem diameter (dbh) and 10-11m high; these are over shadowed by other trees, mostly sycamore and horse chestnut to about 850 dbh, to 18m high. Although these two species are widespread and have considerable amenity value, they are in fact non-native and have relatively low biodiversity value. Some of the mature trees have dense old ivy cover.

3.2.6 Just north of the site there is a detached house, probably 19th century, with a garden and meadow area. This is enclosed by an old wall to about 1.5m high, variously of brick and stone.

3.2.7 Moss Road runs along the western boundary of the wider site. Beyond this there are older houses with large gardens, and then the grassland of Moss Valley Countryside Park. All of this land slopes steeply down to the stream.

4.0 Protected, listed and priority species

Details about species protection and formal titles of Acts and Regulations are given in Annex 2.

Ecological record references that follow are from the NBN Atlas records. They indicate the presence of the various species in the wider area.

4.1 The majority of protected, listed and priority species that are found in the Welsh border region are highly unlikely to be present in or around the development site.

4.2 Badgers:

Badgers are protected from harm and disturbance under the Badgers Act; work close to a badger sett may require licensing. There was no evidence of badger activity within 50m of the site and no burrows were found in the adjacent fields and hedgerows. There were no definite signs of activity within the wider survey area. Precautions should be maintained during all work on site – See 5.3.4 below.

4.4 Bats

4.4.1 There are 8 bat records for the 2km radius study area: these records include common pipistrelle, and brown long-eared bat. This is a relatively low level of bat records for high quality mixed habitat around a large river and probably under represents bat presence in the area. Bats are fully protected under the WCA and the Habitats Regulations.

4.4.2 The development site itself contains no suitable shelter habitat for bats. The sheds have sheet metal roofs, mostly of corrugated iron, on lightweight wooden frames. They are low and generally open with either no doors or stable type divided doors; their thermal characteristics would not be suited to long term use as bat roosts. There was no sign of bat activity in them.

The nearby line of large mature trees, along the eastern edge of the site, could provide bat roost habitat in crevices, hollows and under large ivy stems. These trees appear to be in generally good condition but could not be closely inspected all round. This line of trees may well provide a flight line but the site itself does not lie across any evident flight lines. Lighting is planned to avoid any illumination of the trees. Paddock boundaries close to the site are open post, wire and rail fences.

4.4.3 The proposed development should not result in any significant decrease in foraging habitat. There will be no routine night time lighting of the site margins. Impacts on bats are unlikely and further survey is not considered necessary.

4.5 Other mammal species

4.5.1 There are 53 hedgehog records for the study area, including some from the residential area of Gwersyllt. Hedgehogs have a species action plan under the UK BAP; there is evidence that numbers are declining nationally. The wider site and adjoining gardens could support hedgehogs. To avoid harm to hedgehogs any potential hibernation sites should be removed from the working area before late autumn, or left until spring.

4.5.2 Polecats, a UK BAP species, could be present in the wider area around the site. These are very active animals, and highly unlikely to be affected by small scale works.

4.5.3 There are no otter or water vole records from the Moss Valley area; these are unlikely to be present and active along the stream, which is small and cut off from other watercourses by long culverts

under Wrexham. The proposed work on the site should not impact water voles or otters and should not result in any increased risk to otters on local roads.

4.6 Protected bird species

4.6.1 Protected bird species are those listed in Schedule 1 of the WCA; they are fully protected from disturbance or harm at all times. There are no schedule 1 bird records for the surrounding 2km radius area on the NBN Atlas. There is no particularly suitable nesting habitat for protected species in or immediately adjacent to the site. No further survey is considered necessary.

4.6.2 A normal level of precaution should be sufficient to avoid any impact on protected birds.

4.7 Breeding birds

4.7.1 All birds are protected while breeding, under the WCA, this protection includes all related activity and all life stages. There are records for 89 bird species and several thousand separate occurrences within the 2km radius study area. The great majority of these appear to be from systematic surveys such as BTO winter surveys and semi-systematic surveys such as the RSPB Big Garden Bird Watch, and are at 1km precision. The shrubs, mature trees and old stone walls near to the site are likely to be used by a number of species, but there was no sign of any bird nesting activity in the sheds. If the occupiers wish to remove the very tall conifer hedge around the site (probably Lawson's Cypress or a similar hybrid cypress) this should only be done between mid September and late February, due to the risk to nesting birds.

There is one bird box on the margins of the site; its location indicates that it was placed on one of the trees just outside the site, by the previous occupiers of this site. The box is large, with an entrance hole of about 120mm diameter, set low down; this corresponds to a kestrel box design. There were signs of previous occupation, when viewed with binoculars, but the species involved could not be determined. This box should be retained.

4.7.2 Birds will nest in any available habitat that meets the particular needs of their species, including hedgerows, piles of brash, stacks of construction material and inactive construction plant, which can present a serious constraint on development. This is normally avoided by site clearance during autumn or early spring and good site management practices. Clearance in winter should be avoided if possible, because of the risks to dormant or hibernating wildlife.

4.8 Reptiles

4.8.1 There is one reptile record for the surrounding area, a record for grass snake from Gatewen Marsh SSSI. The habitat in the site itself is limited and not particularly suitable due to the dense shade. Common (viviparous) lizards may be present in the old walls on the north side of the paddocks. The risk to reptiles is assessed as low. Survey for reptiles is difficult, and it is possible for populations to remain

undetected. A precautionary approach should be maintained during development. No further survey should be necessary.

4.9 Great crested newts

4.9.1 Great crested newts are fully protected under the WCA and the Habitats Regulations. There are some records within 1km of the site; the NBN Atlas shows clusters around Gersyllt village, beginning about 600m SE of the site.

4.9.2 Overall, the nature of the terrain around the site and the lack of ponds near to the site indicates that great crested newts are very unlikely to be present around the site. Normal precautions should be sufficient and no further survey should be necessary.

4.10 Other amphibians

4.10.1 Common frogs, common toads and smooth newts may be present around wetland habitat in the wider area. A precautionary approach is recommended. These species are partially protected under the WCA.

4.11 Invertebrates

4.11.1 The site consists of short grass sward, with only commonplace and relatively recently established plant communities around it. There are no veteran trees or old orchards nearby. Rare or endangered invertebrates are unlikely to be present around the site.

4.12 Plant species

4.12.1 Habitats around the site are typical pasture fields, gardens and derelict grassland with some hedgerows and old stone walls, all highly unlikely to support rare plants or uncommon plant communities. The Moss Valley plant community dates from reclamation starting in the 1970's. The nearest record for a protected or listed species is for native bluebell, about 0.6km west of the site.

4.13 Mature Trees

4.13.1 There are a number of mature trees on the margins of the adjacent fields. Care should be taken not to damage these; they are well outside the range of any likely works. The trees close to the site do have part of their canopies over or adjacent to the site. These trees have stems of up to 850mm diameter, and a Root Protection Area of over 10m can easily be achieved. Fencing should be used to protect this area, working in accordance with BS 5387/2012.

4.14 Invasive species

4.14.1 No non-native invasive species (INNS) such as Japanese knotweed were found in or near the site. There are records for Japanese knotweed and Indian balsam within 2km of the site. There did not appear

to be any cotoneaster species or other plants previously used for landscaping and now listed as invasive (Schedule 9, WCA) in or near the site, which is under a close grazed sward. Given the nearby populations of some INNS, care must be taken not to import any material from invasive plants.

5.0 Conclusions and recommendations

5.1 Conclusions

5.1.1 Based on our survey findings, there would be no direct risk to protected and valued species from the proposed work on this site, provided that care is taken to avoid disturbance of hedgehogs and nesting birds.

5.1.2 As this small site consists of close grazed pasture with lightweight sheds, fences and a non-native hedge, further species survey is not considered necessary.

5.1.3 Work to the site should not impact on the surrounding landscape if care is taken over pollution.

5.1.4 There is a pollution risk to the nearby watercourse from both overground flow down steep slopes during rainstorms and potentially through short-period groundwater flows and discharge to the stream. Potential pollution sources during construction could include fuel and oil spillage, cement or raw concrete spillage, and suspended fine particles from soil. Strict pollution control measures must be in place, including designated areas for refueling and storage, sediment traps such as swales, and spill procedures.

5.1.5 Long term cumulative pollution from domestic waste water, particularly dissolved nitrates and phosphates would be mitigated by the installation of septic tanks, with off-site treatment, which should reduce nitrates, phosphates, and Biological Oxygen Demand. Additional storage is suggested. Details are given in 5.5 following.

5.1.6 Because ecological survey can only show presence or likely absence, rather than certain absence, and because species may move into a site before the start of development work, a precautionary approach over badgers and other species is also advised.

5.2 General Precautions during construction work

5.2.1 All site workers should be made aware of protected species issues and the need for care over spillages and water borne pollution. Former Environment Agency pollution protection guidelines, particularly the recent NRW pollution prevention guidelines such as GPP5, GPP13, GPP19, GPP21 and GPP22 should be followed. Special care must be taken over re-fuelling operations.

5.2.2 The developers, site managers and workers should be aware that the contents of this report do not remove individual responsibility under the Wildlife and Countryside Act 1981 as amended.

5.2.3 Clearance of any shrubs, undergrowth and tall herb and grass growth around access routes and the fringes of working areas before mid March will reduce the possibility of harmful impacts on wildlife. Site clearance during cold winter weather should be avoided. The best period is mid autumn.

5.2.4 Any trenches left open overnight should have wood or earth ramps to allow trapped animals to escape. All open pipe runs should be blocked off when not being worked on, to avoid trapping animals.

5.2.5 There are populations of Japanese knotweed and other invasive plants in the wider area. Machinery and tools should be carefully cleaned before being brought to the site. A watch should be maintained for any growth of INNS species in or near the site.

5.3 Protected and listed species:

5.3.1 If any bats or other fully protected species are discovered, works should cease immediately and Natural Resources Wales or suitable ecological consultants should be contacted for advice. **(Natural Resources Wales tel: 0300 065 3000, state protected species, development type and that the site is in the Wrexham area, grid reference SJ 289 417)** Contact with NRW is important for the protection of both the species involved and everyone connected with the project; delay over this can open the risk of prosecution.

5.3.2 Bats: If any bat is found on the ground, then it must not be handled but should be covered with an open and inverted cardboard box and left for collection by a licensed bat worker. As above, NRW must be notified. There is a risk of infection with a very rare but extremely dangerous disease from handling bats.

5.3.3 No evidence of bat activity or suitable roost habitat has been found in or around the site, but the presence of small numbers of hibernating bats in tree hollows and buildings in winter cannot be predicted or reliably detected. Work to trees and roofs in cold weather should be avoided.

5.3.4 Badgers: Throughout development work, maintain a watch for signs of badger activity and ensure that any observations or signs of badger activity including fresh excavations, dung pits etc. close to working areas are immediately reported to Camlad Ecology, or other suitable specialists, or appropriate officers at Wrexham Council. In general, no works with hand tools should take place within 10m of a badger sett entrance, no works with JCB 3C or smaller sized machinery within 20m of a sett, or within 30m for larger machinery.

5.3.5 Hedgehogs: Any piles of brush, deadwood and other potential hibernation sites should be removed from the possible working area before late October or left until spring. No material should be stacked in the area before then unless it is raised up on pallets or similar, to avoid creating hibernation habitat. If hibernating hedgehogs are found on site they should be covered over with a cardboard box in the first place, and specialist advice should be obtained.

5.3.6 Nesting Birds: The risk of harming birds nesting in shrubs and trees can be avoided by not working in or close to these features or by clearing them outside the breeding season. Work commencing after mid August and before mid March is unlikely to affect nesting birds. During any construction work care should be taken to avoid birds building nests in stacks of waste and construction materials.

5.3.7 Amphibians and Reptiles: Site workers should be made aware that any deliberate or reckless harm to reptiles is illegal. Careful site clearance can minimize the risk to reptiles and amphibians; waste material, cut vegetation etc. should not be stacked on site close to any likely working areas. Any reptiles and amphibians should be moved to suitable habitat; advice should be sought from ecological consultants and snakes should not be handled without suitable experience.

5.4 Habitat features

5.4.1 Water bodies and ground water: The site is over slowly draining clayey soils, shallow mixed subsoil and sandstones; most drainage will be to surface watercourses in wet weather, and to groundwater in dry weather. Pollution control procedures and spillage action plans and materials must be in place and known to all workers. It must be made clear that simple assertion and practice of 'skill and care' is not sufficient in this location.

5.4.2 Former Environment Agency pollution protection guidelines, and the recent pollution prevention guidelines should be followed; the new GPP5, GPP13, GPP19, GPP21 and GPP22 guidance documents will be particularly relevant. Special care must be taken over re-fuelling operations, waste storage and storage of chemicals, cement etc. These must take place in designated areas where the movement of any spillages over the ground or into the ground will be slow, and capable of being intercepted and the spillage removed. Sediment traps downslope of the site could protect the river during rainstorms.

5.4.3 Mature Trees: The design, layout and implementation of the scheme should avoid any impact on mature trees. There is always some likelihood of damage to the root systems of trees near to excavations; adhering to guidance given in British Standard BS5837:2012 is advised. Root protection areas should be fenced off.

5.5 Suggested long-term pollution control

5.5.1 The following suggestions are based on experience of similar schemes, examination of published documents, and ecological consultancy work for the Environment Agency. The author is not a hydro-geologist or a drainage engineer.

5.5.2 Capture in septic tanks and off-site treatment is effective at providing primary and secondary treatment of waste water. However, there is some risk of on site discharge due to overloading or failure of pumping out arrangements. We suggest that there is some downstream storage that would be functional during heavy rain. This should intercept any overground flow before it reaches Moss Road. with additional tertiary treatment, before any discharge to ground infiltration. Stormwater from the sheds, caravans and other structures should be diverted away from these arrangements.

5.6 Habitat mitigation and enhancement

5.6.1 The proposed works should have very little impact on habitat for wildlife. As there should be very little biodiversity impact from this scheme, a gain in habitat value can be easily achieved.

5.6.2 Options for habitat improvement include hedgerow planting around the pitch site, replacement of non-native shrubs with native species, new tree planting in corners and margins of the paddocks, and provision of bird or bat boxes on the mature trees. Planting schemes should take into account the browsing habits and long necks of the horses.

5.6.3 There is little benefit in planting advanced stock such as standard trees, since saplings will make fast early growth if planted carefully, whereas larger trees will be set back by transplanting. Any tree and shrub planting for biodiversity should be with locally appropriate native species, of British origin, rather than simply 'British provenance', and preferably with stock of local origin.

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Natural England: the Natural England website www.naturalengland.org.uk

This gives access to summaries of wildlife legislation, licensing forms and procedures, etc. and the current mitigation manuals for protected species.

NBN Atlas (National Biodiversity Network) www.nbnatlas.org

For the national database of records for protected and BAP species

Natural Resources Wales: the NRW website, www.naturalresources.wales This gives access to summaries of wildlife legislation, licensing forms and procedures, etc. In particular, advice concerning phosphorous sensitive rivers.

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Annex 1 – Additional photographs

Annex 2
Notes on wildlife legislation, planning policy and protected species