PRELIMINARY ECOLOGICAL APPRAISAL

RELATING TO LAND AT THE PROPOSED WESTERN EXTENSION AT

DENBIGH QUARRY, DENBIGHSHIRE

APPLICATION FOR PLANNING PERMISSION

For Breedon Southern Limited

REVISION B – SEPTEMBER 2021

PSL Report Reference Number: M18.155.R.008A

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PRELIMINARY ECOLOGICAL APPRAISAL
ON LAND AT
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Revision A – July 2021
Revision B – September 2021

Issued By

Preliminary Ecological Appraisal

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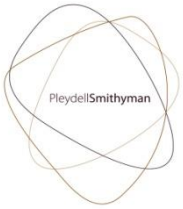

1.0 INTRODUCTION

Background and Proposals

1.1 Pleydell Smithyman Limited was instructed by Breedon Southern Limited to undertake a Preliminary Ecological Appraisal of land at Denbigh Quarry, Denbighshire. Please see Drawing Number M18.155.D.014: Preliminary Ecological Appraisal, for a plan showing the existing quarry boundary and the proposed western extension boundary. The existing quarry and the proposed western extension combined is hereafter referred to as 'the site'.

1.2 The survey was required to inform the preparation and submission of a planning application for the extraction of mineral from the proposed western extension of the quarry and to provide compliance with national and European legislation. The surveys covered the whole site; however, the assessment focussed on any areas of change (i.e. the proposed western extension) as opposed to existing operations.

1.3 Revision A of this report was produced following an update survey that was completed in June 2021. Revision B of this report was produced following a further update survey that was completed in September 2021. These update surveys were completed given the time delay between the original survey (April 2019) and the proposed planning application submission. Update surveys and desk study were considered necessary to identify any changes to the habitats on site and the potential for them to support protected species. The proposals at the site have not changed during this period.

Site Location

1.4 The site is located off Fford Y Graig Road, approximately 950m to the north of the centre of Denbigh in Denbighshire. The site is centred on grid reference SJ050671.

Site Description

1.5 The site comprised an existing working quarry with bare earth, open water and cliff faces. The working quarry was surrounded by areas of plantation and semi-natural woodland with small areas of scattered scrub. The north-western boundary of the

extension was bordered by Crest Mawr Wood Site of Special Scientific Interest (SSSI).

1.6 Arable and pastoral land dominated the majority of the landscape to the north and west; with the town of Denbigh situated to the south and east. An industrial park was also present to the east of the site.

Aims and Objectives of the Survey

1.7 There were two primary objectives of the Preliminary Ecological Appraisal. The first was to classify the habitats present on the site according to the Phase 1 habitat survey methodology (JNCC, 2010) and the second was to establish the potential of the site to support protected and notable species, of which account must be taken prior to and during the planned works in accordance with the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, the Protection of Badgers Act 1992 and the Natural Environment and Rural Communities Act 2006 (details of Wildlife Legislation in Appendix 5).

1.8 Where necessary, further (Phase 2) detailed surveys were recommended to safeguard any existing ecological interests within the site and opportunities for mitigation or enhancement were proposed with reference to current legislation and guidance.

1.9 The Preliminary Ecological Appraisal also aimed to identify key constraints of the project and make recommendations for design options where appropriate.

1.10 The site visit also focussed on assessing the potential of the site to support populations of priority species, whose protection and recovery is promoted under national or International legislation as stated below.

<u>Biodiversity Legislation and Policy</u>

1.11 Details of National and International Biodiversity Legislation and Policy are found in Appendix 6. It should be noted that this is a summary of legislation and full original texts should be referred to for further details.

1.12 The Habitat (Amendment) (EU Exit) Regulations 2019 are the principal means by which Council Directive 92/43/EEC on the conservation of natural habitats of wild fauna and flora (the 'Habitats Directive') is transposed in England and Wales and the adjacent territorial seas. They also transpose elements of the EU Wild Birds Directive in England and Wales.

1.13 The Environment (Wales) Act 2016 is in place to build greater resilience within the ecosystems present in Wales. Section 7 of the Act provides lists of priority species and habitats that must be taken into account by Welsh Ministers to ensure that the living organisms and habitats listed are maintained and enhanced. Section 6 of this Act states the following: "the S6 duty requires that public authorities must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so going promote the resilience of ecosystems."

1.14 Furthermore, the survey assessment recommendations are guided by the Planning Policy Wales (Edition 10, December 2018), where the information contained in section 6 details the measures to be considered with regards to the environment.

2.0 SURVEY METHODOLOGY

2.1 The original Preliminary Ecological Appraisal survey was undertaken on 11th April 2019 by Kelly Hopkins BSc (Hons) ACIEEM of Pleydell Smithyman Limited. The weather on the day of the assessment was sunny and clear with a light breeze (Beaufort Scale 2) and an air temperature of approximately 9°C.

2.2 The update Preliminary Ecological Appraisal was undertaken on 3rd June 2021 by Kelly Hopkins. The weather during the survey was dry and overcast with a fresh breeze (Beaufort Scale 3) and an air temperature of approximately 17°C.

2.3 The Preliminary Ecological Appraisal was completed following the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance produced in 2017. The survey methodology used can be split into three main areas: a desk study, Phase 1 habitat survey and a protected species assessment. These are discussed in more detail below.

Desk Study

2.4 In order to obtain information on sites of nature conservation interest in the area, the Multi-Agency Geographical Information for the Countryside (MAGIC) website was searched for ecological statutory sites within a 2km radius around the central point of the site.

2.5 In addition, Cofnod (North Wales Environmental Information Service) was commissioned to undertake a data search for all protected and notable species and all sites of conservation importance and ancient woodland within 2km of central grid reference SJ049671. Phase 1 habitat types were returned from a 10km radius surrounding the central grid reference. For relevant information please see Appendix 1.

2.6 The Natural Resources Wales terrestrial Phase 1 habitat survey and habitat network information was also reviewed to identify priority habitats within 2km of the site.

2.7 The data search was originally completed in 2019 and was subsequently updated in July 2021.

2.8 Reference was also made to Ordnance Survey maps and aerial photography, which were used to determine the presence of open water and ponds in the area and to provide information on land use and habitat connectivity throughout the area.

Habitat Survey

2.9 The Phase 1 habitat survey was carried out in order to assess the current ecological importance of the site. This involved identifying the main habitats and associated plant species present at the time of the survey.

2.10 The site was surveyed using the Phase 1 Habitat Survey methodology (JNCC, 2010). This involved identifying the species present within each habitat and classifying the habitat types accordingly, following the Phase 1 habitat survey methodology. This technique provides an inventory of the basic habitat types present and enables areas of greater botanical interest which may require further, more detailed, surveys to be identified.

2.11 Habitats are mapped (Drawing Number: M18.155.D.014: Preliminary Ecological Appraisal) and 'target notes' are made where relevant to describe characteristic habitats, features of ecological interest, or any other features which may present a potential constraint to the proposed development.

2.12 Whilst not a full protected species or botanical survey, the survey enables a suitably experienced ecologist to undertake a baseline ecological appraisal of the site that:

- provides a preliminary evaluation of the nature conservation significance of the site and survey area and assess the potential for impacts on habitats/species likely to represent a material consideration in planning terms; and,
- determines the scope of further specialised surveys that may be required.

2.13 Higher plant species nomenclature follows that provided in Stace (2019) for vascular plants and Atherton, Bosanquet and Lawley (2010) for bryophytes.

Protected Species Assessment

2.14 General faunal activity, such as birds or mammals observed or noted by call or, evidence of a species' activity such as prints, droppings, burrows or similar, was

also recorded with specific attention paid to the potential presence of any protected, rare and notable species, including species listed on local Biodiversity Action Plan (BAP) or national priority lists. This involved assessing the suitability of the habitats present on the site for these species as well as the connectivity of the site to other areas of potentially suitable habitat nearby. In addition, specific survey work was undertaken for bats and great crested newt (*Triturus cristatus*) and is outlined below.

Bats

2.15 All trees within the site that were anticipated to be impacted by the proposed quarry extension were assessed from the ground during the Preliminary Ecological Appraisal and subsequent update for potential features that may be used by bats for roosting (e.g. splits, cracks, rot holes or lifted bark) along with any direct evidence of bats (e.g. droppings and urine staining). The potential for the trees to support bat roosts was ranked in accordance with the criteria set out in Collins (2016) for Ground Level Bat Roost Assessments:

- Negligible Suitability – Negligible habitat features on site likely to be used by roosting bats.
- Low Suitability – A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs (Potential Roosting Features) but with none seen from the ground or features seen with only very limited roosting potential.

- Moderate Suitability – A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments are made irrespective of species conservation status, which is established after presence is confirmed).
- High Suitability – A structure or tree with one or more potential roost sites that are obviously suitable for use by a large number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

2.16 An assessment was also made as to the suitability of the habitat on the site to support foraging and commuting habitat for bats in line with Collins (2016). This included an assessment of the extent, quality and diversity of habitats present and their potential importance in providing linkages within the landscape for bats.

2.17 Following the updated ground level tree inspection, 5 trees were recommended for further assessment during a climbed tree survey. Those trees that were deemed safe to climb were inspected at height. Aerial inspections were completed by a team of two CS38 climbers trained in tree climbing and aerial rescue with the lead climber also holding a class 2 licence for bats. Features identified from ground level as well as any additional features identified at height were inspected with the aid of an endoscope with motion capture abilities to assess and determine the suitability of the feature as well as identify evidence of use such as droppings or bats themselves. Where applicable, pictures or videos of bats within the roost or evidence of use such as droppings, staining or scratch marks were recorded. The potential for the trees to support bat roosts was ranked in accordance with the criteria set out in Collins (2016) as set out above. Where suitable roosting features were identified recommendations for further surveys were also provided.

<u>Great crested newt</u>

2.18 A Habitat Suitability Index (HSI) assessment was undertaken on all waterbodies on the site and within 500m of the boundaries (where they were not separated by major dispersal barriers and where access permission was granted). This follows the criteria produced by Oldham *et al.* (2000). This assessment is undertaken in order to establish the likelihood of great crested newt either breeding on the site or dispersing to the site in their terrestrial phase.

2.19 The HSI is a standard assessment method developed specifically to evaluate the habitat suitability for this species. A series of factors must be considered. Each factor is assessed along suitability guidelines and allocated a value of between 0.01 (highly unsuitable) to 1.0 (highly suitable). The geometric mean of these values provides an overall suitability score for each waterbody. Although this is no substitute for a dedicated survey, it does give an indication of whether such a survey is required.

2.20 A total of five ponds were present within 500m of the site and quarry boundaries, which were assessed on 11th April 2019, by Kelly Hopkins of Pleydell Smithyman Limited. This assessment was updated during the update PEA on 3rd June 2021. The location of these waterbodies can be seen on Drawing M18.155.D.014. One additional pond was shown on some OS maps and aerial imagery towards the south-eastern boundary of the site approximately 115m to the south of Pond 2. This pond was not present at the time of the assessment. A further three ponds were shown on OS maps between 350m and 450m to the east of the quarry, however access was not granted for survey. These ponds are at least 650m from the proposed western extension.

Evaluation

2.21 An initial assessment of the ecological importance of the site has been conducted following guidance from CIEEM (2019). A geographical context is given to the site and important ecological features using the following frame of reference:

- International;
- National;
- Regional;

- Metropolitan, county, vice-county or other local authority-wide area; and
- Local.

2.22 Important features such as nature conservation designated sites; rare or protected habitats and species; fragility and connectivity are taken into account when assessing the site. Where clear evidence is available following the necessary survey work, ecological impacts are predicted in line with the current guidelines. Without this evidence, potential constraints to the development are highlighted which may require further detailed survey work.

2.23 The mitigation hierarchy is followed to avoid impacts in the first instance; provide appropriate mitigation measures as a second option; and provide compensation measures as a last resort should avoidance or mitigation not be possible.

Survey Constraints and Limitations

2.24 The information from the data search may return no records of a certain species or species group. This is not necessarily due to absence of this species or species group, but may be due to lack of recording in the area.

2.25 The Preliminary Ecological Appraisal aims to identify the likelihood of particular species or species groups occurring on the site, and is not a comprehensive survey for these individual species/species groups. Following this survey, where necessary, further protected species surveys are recommended to identify the presence/absence of these species/species groups.

2.26 The original data search returned from Cofnod returned priority habitats within 10km of the central grid reference and did not include a map to show where these habitats were. It was therefore not possible to locate these habitats in proximity to the site.

2.27 As part of the Ground Level Bat Roost Assessments, it was not possible to view the whole of the tree in some cases, and therefore it is possible that some trees may support PRFs at a higher level. In these situations, a precautionary approach has been adopted and further climbed tree surveys have been completed to establish

the presence/absence of potential roosting features at a higher level as appropriate.

2.28 The ecological evaluation of the site is produced following the results of this Preliminary Ecological Appraisal and is preliminary. The ecological importance of the site may change following additionally recommended ecological surveys (where these are relevant).

2.29 Notwithstanding the above comments, it is considered that this report is accurate at the time of the assessment, taking into account all habitats present on the site at the time of the survey and their potential to support protected and notable species and the likely importance these combined factors give to the site.

3.0 RESULTS

Desk Study

Ecological Statutory Designations

3.1 The data search returned one statutory designated site present within the site; Graig Quarry Site of Special Scientific Interest (SSSI) located towards the south-western boundary of the existing quarry. The site is 0.45 hectares in size and is notified for its rare higher plant species interest. The citation states:

"The remaining strip of semi-natural broadleaved woodland at the southern edge of the limestone working known as Graig Quarry supports purple gromwell *Buglossoides purpurocaeruleum*, a Red Data Book species in its only known locality in North Wales. This species has been known from the Denbigh area since the seventeenth century." Please see Appendix 1 for the full citation.

3.2 One other statutory designated site was present within 2km of the site. This was Crest Mawr Wood SSSI located adjacent to the north-western boundary of the proposed extension. This is 23 hectares in size and is designated for its botanical interest. The citation states: "An area of mixed deciduous woodland on the Carboniferous Limestone west of the Vale of Clwyd. It represents one of the best examples in Clwyd of a woodland type occurring mainly in south-east England but also in other parts of Britain at low altitude on shallow slopes with low rainfall." Please see Appendix 1 for the full citation.

3.3 No changes to these results were observed during the update data search in July 2021.

Ecological Non-Statutory Designations

3.4 Cofnod returned ten County Wildlife Sites (CWS) within 2km of the site. These are detailed in Table 1 below:

Table 1. Ecological Non-statutory designations within 2km of the site.

Site Name	Distance From the Site	Area (ha)	Site Description
Coed Parc-Pierce CWS	Adjacent to the eastern boundary	12.2	Broadleaved limestone woodland

Denbigh Golf Course CWS (DR001)	550m to the north-west	0.3	Unimproved neutral grassland
Denbigh Golf Course CWS (D063)	680m to the north-west	1.3	Calcareous grassland and limestone outcrop
Coed Coppy CWS	680m to the west	12.6	Broadleaved ancient woodland, neutral grassland and bracken.
Coed Mawr CWS	1.2km to the north-west	6.2	Broadleaved woodland
King's Mill/Afon Ystrad Woods CWS (D065/A)	1.6km to the south-west	15.4	Ancient broadleaved woodland
King's Mill/Afon Ystrad Woods CWS (D065/B)	1.65km to the south-west	4.9	Ancient broadleaved woodland
Pont Ystrad fields CWS	1.8km to the south	1.4	Neutral grassland and scrub
Bryn-y-Parc CWS	2km to the north-west	1.1	Neutral and calcareous grassland with rock outcrops
Rosa-fawr/Llys/Pont Ystrad Woods CWS	1.9km to the south	26.5	Broadleaved woodland

Ancient Woodland

3.5 There were a total of 30 areas of ancient woodland within 2km of the site centre. These were a combination of ancient semi-natural woodland, restored ancient woodland sites and plantation on ancient woodland sites. An area of ancient semi-natural woodland and plantation on ancient woodland is present towards the south-western corner of the site. An area of ancient semi-natural woodland also occurs bordering the eastern boundary of the site and areas of ancient semi-

natural woodland, plantation on ancient woodland and restored ancient woodland are situated bordering the north-western boundary of the proposed extension.

3.6 The next closest is located approximately 750m to the west of the site. This is restored ancient woodland.

Priority Habitats

3.7 The Cofnod data search returned a number of habitats listed on the priority habitat inventory within a 10km radius from the central point of the site including coastal and floodplain grazing marsh, blanket bog, unimproved calcareous grassland, unimproved acid grassland and semi-natural broad-leaved woodland.

3.8 These areas were not mapped and therefore it was not possible to calculate how close these habitats were to the site.

3.9 The Natural Resources Wales habitat network information identified unimproved grassland and broadleaved woodland priority habitat within 2km of the site. A total of 29 areas of broadleaved woodland were present within 2km of the site boundary. The closest of these was located on the site and formed the boundaries of the existing quarry. The next closest was approximately 200m to the south-east of the site. A total of 15 areas of unimproved grassland were present within 2km of the site boundaries. The closest of these was approximately 150m to the south of the site.

Local Records

3.10 Cofnod returned records of four plants from the site which included greater knapweed (*Centaurea scabiosa*), bluebell (*Hyacinthoides non-scripta*), purple gromwell and charlock (*Sinapis arvensis*). These records were dated between 2014 and 2015. Additional plant species were returned from the data search within the 2km search radius from the site, with a number of records returned from Crest Mawr Wood to the north-west.

3.11 A number of non-native invasive plant species were returned from the data search. This included wall cotoneaster (*Cotoneaster horizontalis*), Himalayan Cotoneaster (*Cotoneaster simonsii*), Montbretia (*Crocosmia pottsii x aurea*), Japanese knotweed

(*Fallopia japonica*), giant-rhubarb (*Gunnera tinctoria*), Spanish bluebell (*Hyacinthoides non-scripta x hispanica*), Himalayan balsam (*Impatiens glandulifera*), variegated yellow archangel (*Lamiastrum galeobdolon subsp. argentatum*), Himalayan honeysuckle (*Leycesteria formosa*), cherry laurel (*Prunus laurocerasus*) and white stonecrop (*Sedum album*). None of these records were specific to the site, with a number associated with Denbigh Castle to the south of the site.

Phase 1 Habitat Survey

3.12 The following habitats/ecological features were identified within the site and classified according to the system prescribed in the JNCC 'Handbook for Phase 1 Habitat Survey' (2010):

- Broad-leaved semi-natural woodland;
- Broad-leaved plantation woodland;
- Scattered scrub;
- Scattered trees;
- Improved grassland;
- Standing water;
- Quarry;
- Ephemeral/short perennial;
- Species-poor defunct hedgerow; and
- Buildings.

3.13 The location of these habitat types and features are represented on Drawing Number: M18.55.D.014: Preliminary Ecological Appraisal and described in detail below. Please see Appendix 2 for photographs of the site. Appendix 3 lists the Latin names of species recorded, as well as their frequency recorded on the site according to the DAFOR scale.

3.14 No significant changes to any of the habitats present on the site were recorded during the update PEA completed in June 2021. The species lists detailed below are therefore still accurate. An additional two buildings were present around the weighbridge towards the entrance of the quarry.

<u>Broad-leaved Semi-natural Woodland</u>

3.15 This habitat was present in blocks of woodland to the north-east, north-west and south of the site, with most included on the ancient woodland inventory. A dense canopy was present with abundant species including pedunculate oak, ash and sycamore. The understorey comprised of frequent elder, hazel, hawthorn and willow and the ground flora was varied, with dense bramble in places and frequent ancient woodland indicator species including bluebell, wood anemone, wood avens, dog's mercury, lesser celandine and wild garlic. See photo 1 in Appendix 2.

Broad-leaved Plantation Woodland

3.16 Areas of broad-leaved plantation woodland were present to the north, north-east and west of the active quarry. Discarded tree guards were present throughout much of the area. The trees in these areas appeared to have been regularly coppiced, forming dense woodland, particularly to the west of the active quarry. This habitat contained frequent hawthorn, blackthorn, hazel, silver birch, ash, field maple, lime and willow. Occasional spindle, rose and guelder rose were recorded in this habitat. The ground flora was varied with some areas comprising dense common ivy and other areas containing a mix of frequently occurring stinging nettle, hogweed, cow parsley, cleavers, wood avens, dock, germander speedwell, hedge garlic and lords and ladies. See photo 2 in Appendix 2.

Scattered Scrub

3.17 Scattered scrub was present around the boundaries of the quarry, with species present including bramble, hazel, hawthorn, blackthorn, ash saplings, rose, willow sp. willowherb, nipplewort and buddleia. Towards the northern boundary of the quarry this scrub was denser, with other areas around the quarry being much sparser. See photo 3 in Appendix 2.

Scattered Trees

3.18 Mature scattered trees were present towards the western boundary of the proposed western extension. Trees present included pedunculate oak, ash, sycamore, crab apple and hawthorn. A number of these trees had fungus present

or obvious damage, including hollow trunks and broken limbs. See photo 4 in Appendix 2. Additional scattered trees were present towards the entrance to the quarry. Trees present included sycamore, field maple, silver birch and alder. These trees will not be impacted by the proposals.

Improved Grassland

3.19 The proposed western extension included three areas of improved grassland fields. One of these fields was grazed by cattle at the time of the original survey. The other two fields were not grazed and were mown by tractor. The sward length was approximately 10cm at the time of the original survey. The grassland was dominated by perennial rye-grass, with frequently occurring cock's-foot, annual meadow grass, dandelion, creeping buttercup, daisy, white clover, and creeping thistle and occasionally occurring germander speedwell, dandelion, mouse-ear chickweed, dove's-foot cranesbill, ragwort, shepherd's purse, marsh thistle, creeping thistle, nettle and broad-leaved dock. Harebell was rarely occurring along the edges of the field. See photo 5 in Appendix 2. A small area of improved grassland was also present at the entrance to the quarry. Species present in this area included annual meadow grass, white clover, bird's-foot trefoil, ribwort plantain, red clover, dandelion, germander speedwell, creeping buttercup, hawkbit, vetch, yarrow, hogweed, common valerian and rush.

Standing Water

3.20 There were two ponds present on the site. Pond 1 was present in the centre of the quarry and was a large lagoon used to extract water from for the bowser to reduce dust levels around the quarry. The pond had no aquatic vegetation noted at the time of the survey. See photo 6 in Appendix 2.

3.21 Pond 2 was a previous silt lagoon that is no longer used and was present towards the entrance of the quarry. The pond did not contain any aquatic vegetation but bramble was present around the northern edge and scattered scrub including buddleia and willow sp. were present to the west. During the update PEA survey a mallard (*Anas platyrhynchos*) was seen on this pond. See photo 7 in Appendix 2.

Quarry

3.22 The vast majority of the site comprised working quarry, which included benched cliff faces, ramps, open voids and bare ground. Scattered scrub and ephemeral/short perennial were present around the edges of the quarry where there had not been any mineral extraction or vehicle movement recently. See photo 8 in Appendix 2.

Ephemeral/Short Perennial

3.23 Small patches of ephemeral/short perennial habitat were noted around the edges and banks of the quarry. Species recorded included dandelion, colt's foot, common mallow, daisy, field forget-me-not, bird's-foot trefoil, herb Robert, crosswort, wild strawberry, ragwort, willowherb spp., common valerian, and pineappleweed. See photo 8 in Appendix 2.

Species-poor Defunct Hedgerow

3.24 There was one species-poor defunct hedgerow present towards the western boundary of the site. This was approximately 1.5m in height and width and was dense along its extent with a number of gaps present. The hedgerow appeared to be regularly managed via flail. A post and wire stock fence was present along the eastern extent. Species present included abundant hawthorn, frequent gorse and blackthorn and occasional field rose and elder. Ground flora species included cleavers, lesser stitchwort, dog's mercury and lesser celandine. See photo 9 in Appendix 2.

Buildings

3.25 There were a number of buildings associated with the weighbridge present towards the south-east of the site. These included the weighbridge (Building 1), a sub-station (Building 2) and a steel container (Building 3). A porta cabin toilet block (Building 4) and a brick shed (Building 5) were also present towards the entrance of the site. See photo 10 in Appendix 2. Buildings 6 and 7 were new during the update survey in July 2021.

3.26 These are detailed in the below table:

Table 2. Buildings present and construction details.

Building Number	Details
1	Raised metal portacabin used as the old weighbridge.
2	Single storey brick building with a flat felt roof.
3	Metal storage container.
4	Single storey metal portacabin with metal soffits.
5	Single storey brick building with a corrugated roof and wooden beams. Ivy is growing within and around this building.
6	Raised metal portacabin used as the new canteen
7	New metal porta cabin.

3.27 A number of buildings were also present associated with the concrete plant. These buildings were not inspected at the time of the original or update survey as these are owned by Hanson and will not be impacted by the proposals. See photo 11 in Appendix 2.

Protected Species Assessment

Bats

Roosting habitat

3.28 There were 20 mature trees anticipated to be impacted by the proposals that were identified from ground level as having potential for roosting bats. The details of these trees are shown in the below table. Trees 1 and 2 were outside of the site boundary, however, were assessed due to their proximity to the boundaries. Please see Drawing M18.155.D.015 for a plan of the trees with bat roosting potential. A separate column has been added in Revision A of this report to provide update details following the update PEA survey completed in June 2021. A further column has been added in Revision B of this report to provide details following the tree climbing survey completed in September 2021, and changes in level of bat roosting potential are highlighted with bold text. This secondary survey was completed instead of a nocturnal survey as it was concluded more efficient and given the trees

and type of features identified this would yield as suitable an result when compared to nocturnal survey.

Table 3. Trees present and associated potential bat roosting features

Tree Number	Species	Bat Roosting Features	Level of Bat Roosting Potential	Changes observed June 2021 survey	Changes observed Sept 2021 survey
Tree 1	Ash	Split limb present at approx. 2-3m height on the southern aspect. Rot holes also present and black fungus. See photo 12 in Appendix 2.	High	Additional peeling bark and tear out noted on the northern limb. Still high potential. Tree Tag Number 0535 noted.	**Tree climb concluded moderate potential.** Branch cavity (split limb) observed on the eastern elevation at approximately 4m from the ground. See photographs 19 and 20 in Appendix 2. No bats or bat evidence observed. Cavity full of woodlice, *Oniscidea,* towards the back and deemed to be moderate potential due to presence of these competitors. Adjacent knotholes observed but deemed to be of negligible potential as roost features due to none extending inwards.
Tree 2	Ash	Broken limb stub at	Moderate	Split in limb noted on	**Tree climb concluded high**

		approx. 4m height on eastern aspect. See photo 13 in Appendix 2.		south facing limb at 4m height. Also tear out heal wound on eastern side at 3.5m Still moderate potential. Tree Tag Number 0534 noted.	**potential and nocturnal surveys are recommended.** A split was inspected at approximately 4m on the south-eastern elevation. See photograph 21 in Appendix 2. No bats or bat evidence observed but feature of unknown hibernation potential and extended further than the reach of the endoscope.
Tree 3	Ash	Hollow base with small hole present at 1m height. No evidence of bats observed.	Low	No change observed. Still low potential. Tree Tag Number 0533 noted.	No tree climb required.
Tree 4	Pedunculate Oak	Mature tree with no obvious features observed from the ground inspection.	Low	Split in north facing limb at 7m. Still low bat roost potential. Tree Tag Number 0529 noted.	No tree climb required.
Tree 5	Ash	Hole in trunk on north side at approx. 1.5m high. See photo 14 in Appendix 2.	Moderate	No change observed. Still moderate potential. Tree Tag Number 0527 noted.	Inspected from ground. No climb completed. Knot-hole observed on northern elevation. See photograph 22. No bats or bat evidence found.

					Competitors present and dusty at entrance but suitable cavity for roosting. Still moderate potential.
Tree 6	P. oak	Mature tree with no obvious features observed from the ground inspection.	Low	Tree is dead with some peeling bark. Still low potential. Tree Tag Number 0528 noted.	No tree climb required.
Tree 7	P. oak	Mature tree with no obvious features observed from the ground inspection.	Low	Cut limb on north side with split. Split limb present on the eastern side. **Tree now of moderate potential.** Tree Tag Number 0526 noted.	**Tree climb concluded low potential.** Split on the northern elevation inspected. See photographs 23 and 24 in Appendix 2. Feature is open to the elements and does not extend inwards or provide any shelter. No bats or bat evidence observed.
Tree 8	Ash	Mature tree with no obvious features observed from the ground inspection.	Low	No change observed. Still low potential. Tree Tag Number 0531 noted.	No tree climb required.
Tree 9	Ash	Mature tree with no obvious features observed	Low	No change observed. Still low potential. Tree Tag	No tree climb required.

		from the ground inspection.		Number 0525 noted.	
Tree 10	Ash	Mature tree with no obvious features observed from the ground inspection.	Low	Small knot hole at 0.5m on south side. Still low potential. Tree Tag Number 0530 noted.	No tree climb required.
Tree 11	Ash	Mature tree with no obvious features observed from the ground inspection. Black fungus present.	Low	Tear out wound on north side at 5m height. No black fungus present. Still low potential. Tree tag Number 0523 noted.	No tree climb required.
Tree 12	Ash	Mature tree with no obvious features observed from the ground inspection.	Low	No change observed. Still low potential. Tree Tag Number 0524 noted. Black fungus present.	No tree climb required.
Tree 13	Ash	Mature tree with no obvious features observed from the ground inspection.	Low	Broken limb at 2m height. Still low potential. Tree Tag Number 0522 noted.	No tree climb required.
Tree 14	Ash	Mature tree with no obvious features	Low	No change observed. Still low potential.	No tree climb required.

		observed from the ground inspection.		Tree Tag Number 0521 noted.	
Tree 15	Sycamore	Mature tree with no obvious features observed from the ground inspection.	Low	No change observed. Still low potential. Tree Tag Number 0520 noted.	No tree climb required.
Tree 16	Ash	Mature tree with no obvious features observed from the ground inspection.	Low	Two main limbs, with 2nd limb hollow at base. Still low potential. Tree Tag Number 0519 noted.	No tree climb required.
Tree 17	P. oak	Mature tree with no obvious features observed from the ground inspection.	Low	Some hollowed bark up to 2m on south side. Still low potential. No tree tag observed.	No tree climb required.
Tree 18	P. oak	Mature tree with no obvious features observed from the ground inspection.	Low	No change observed. Still low potential. Tree Tag Number 0517 noted.	No tree climb required.
Tree 19	Ash	Main trunk is hollow with only two limbs present. Rot holes and woodpecker	Moderate	No change observed. Still moderate potential. Tree Tag	Inspected from ground. No climb completed. A ground-level butt-rot trunk cavity on the northern

		holes present in limbs. See photo 15 in Appendix 2.		Number 0516 noted.	elevation at ground level was inspected. See photograph 25 in Appendix 2. No bats or bat evidence found. Still deemed to be moderate potential.
Tree 20	Crab apple	Deep cavity present at base. Limited potential for bats.	Low	No change observed. Still low potential. Tree Tag Number 0532 noted.	No tree climb required.

3.29 The scattered trees present at the entrance to the quarry did not support any potential roosting features and are understood to be unaffected by the proposals.

3.30 There were also a number of mature trees within the woodland present to the south-west and north-west of the site that offered roosting potential for bats. It is our understanding that these trees will not be removed or directly impacted by the proposals.

3.31 There were a number of buildings present towards the south-east of the site as detailed in Table 2 above. During the original survey, none of these buildings were considered to offer roosting potential for bats due to their steel construction (B1 and B3) and lack of potential roosting features. During the update survey completed in June 2021, Buildings 1, 3, 4, 6 and 7 offered no potential roosting features and were therefore considered to be negligible for roosting bats. Building 2 was considered to offer low bat roost potential due to a small number of gaps present around the edge of the felt. Building 5 had a small number (6-7) of bat droppings inside the building. These droppings were fairly fresh and it was considered possible that this building was used as a feeding perch. The wooden door was open to the building, allowing easy access for bats to roost within the

building. This building was therefore considered to be of high bat roosting potential during the June 2021 update survey.

3.32 A number of buildings were also present associated with the concrete plant. These buildings were not assessed at the time of the original or update survey as these are owned by Hanson and will not be impacted by the proposals as they are over 500m from the proposed extension and will continue to be surrounded by the ongoing active quarry.

3.33 The quarry cliff faces supported numerous gaps, cracks and fissures which could provide suitable roosting potential for bats. However, the quarry is subject to frequent blasting disturbing the faces on a regular basis, thereby limiting their potential.

Foraging and commuting habitats

3.34 Cofnod returned records of unknown bat species (*Chiroptera*), Pipistrelle bat species (*Pipistrellus* sp.), Myotis bat (*Myotis* sp.), brown long-eared bat (*Plecotus auritus*), and lesser horseshoe bat *(Rhinolophus hipposideros)* within 2km of the central point of the site. None of these records were specific to the site, with the closest being a brown long-eared bat from approximately 450m to the south. This record was from 1986. All other records were dated between 1988 and 2019. The most recent records (2019) are of *Pipistrellus sp.* droppings located in buildings approximately 1.3km south of the site.

3.35 The majority of the site was comprised of bare quarry and improved grassland and as a result offers limited foraging opportunities for bats. However, there were a number of areas which offered more suitable foraging habitat in the form of hedgerows, scattered trees, waterbodies and woodland. In addition, broad-leaved woodland borders the eastern and north-western site boundary. Many of these features provided foraging habitat for bats as well as commuting routes through the site to the local area and additional areas of foraging habitat such as the areas of woodland to the north-west. The site as a whole, in line with Collins 2016, is considered to be of moderate habitat quality due to the connections of the hedgerows and woodland into the wider landscape. However, the majority of the

features which provide connectivity to the wider area will be retained and not directly impacted by the proposed western extension.

3.36 Barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*) bats are listed on Section 42 of the NERC Act 2006 as species of principal importance for conservation of biological diversity in Wales.

Otter

3.37 Cofnod returned two records of otter (*Lutra lutra*) from the data search. These records were between 1991 and 2002 and were approximately 1.7km south of the site at Afon Ystrad.

3.38 There were two ponds present on the site, however these did not provide cover for otter; were unlikely to contain fish; and were not connected to more suitable habitat and therefore were considered highly unlikely to support this species.

3.39 The closest river is the Afon Ystrad which was located approximately 1.5km to the south-west of the site. Despite historical records, the site is not currently considered suitable for otter, and therefore this species is not considered further in this report.

Hazel Dormouse

3.40 Cofnod did not return any records of hazel dormouse (*Muscardinus avellanarius*) from the data search. However recent records (from 2017) are reported to occur from a woodland approximately 1.6km to the south of the site.

3.41 The site supported suitable habitat for hazel dormouse in the form of hedgerows and broad-leaved woodland. The woodland in the northern and southern parts of the site had a diverse structure with a dense canopy and a varied understorey of coppiced hazel and elder with a ground flora that also contained suitable plants for foraging including bramble. The plantation woodland between the two mature woodlands supported a good understorey of coppiced trees and there was good connectivity to the wider area into other suitable woodlands outside of the site boundary. The hedgerow in the north-western part of the site (within the western

extension area) was defunct but dense with hawthorn and gorse present. This hedgerow was connected to a dense area of woodland to the north and to an additional hedgerow further south-west.

Great crested newt

3.42 The data search returned two records of great crested newt from a 2km radius surrounding the central point of the site. These were both located in a pond approximately 400m to the south-west. These records were dated between 1993 and 2004. No more recent great crested newt records were returned from the data search.

3.43 The site supported suitable habitat for great crested newt in the form of hedgerows, scrub and woodland. The improved grassland and bare quarry were largely unsuitable for great crested newt due to the frequent disturbance and the lack of shelter.

3.44 There were two waterbodies on the site and an additional three waterbodies within 500m of the site and quarry boundary. All five ponds were accessed and subject to an HSI assessment. No significant change to any of these ponds was noted at the time of the update survey in June 2021.

3.45 Pond 1 was present in the centre of the quarry and was a large lagoon used to extract water from for the bowser to reduce dust levels around the quarry. The pond had no aquatic vegetation with no shade. It was considered unlikely that fish were present or that waterfowl used this pond frequently. During the survey a number of gulls (*Laridae* sp.) were noted loafing on the pond. The pond was surrounded by steep cliff faces, with one ramp present allowing vehicle access to the pond.

3.46 Pond 2 was a previous silt lagoon that is no longer used. The pond comprised three sections and was surrounded by vertical concrete walls on three sides. The northern side of the pond had shallower water, with a gravel bed and small amounts of bramble present. The pond was not shaded and it was considered unlikely that fish or waterfowl were present. The water quality appeared to be poor.

3.47 Pond 3 was present approximately 395m to the south-west of the site boundary. This pond has previously been found to support great crested newt. The pond supported approximately 80% aquatic vegetation and was shaded by approximately 10%. The pond was considered unlikely to support fish or large numbers of waterfowl. Two mallard (*Anas platyrhynchos*) and a single greylag goose (*Anser anser*) were noted on the pond during the survey. See photo 16 in Appendix 2.

3.48 Pond 4 was present approximately 340m to the south-west of the site. This pond supported approximately 30% aquatic vegetation and was shaded by approximately 25%. The pond was considered unlikely to support fish or large number of waterfowl. Two mallard were noted on the pond during the survey. See photo 17 in Appendix 2.

3.49 Pond 5 was present approximately 375m to the north of the quarry. This pond was present in the centre of an improved grassland field grazed by cows. It was considered likely that this pond annually dries. The pond contained algae and grasses over approximately 20% of the surface. It is considered unlikely that fish or waterfowl would occur on this pond. A number of gulls were noted on the pond during the survey. See photo 18 in Appendix 2.

3.50 A table summary of the results of the HSI calculations for each of the ponds within the site and within 500m of the site boundary is presented within Table 4 below. Please see Appendix 4 for full details of the calculations.

Table 4. Summary of HSI data

Waterbody	**HSI Score**	**Suitability**
Pond 1	0.57	Below Average
Pond 2	0.58	Below Average
Pond 3	0.73	Good
Pond 4	0.69	Average
Pond 5	0.52	Below Average

3.51 The above table shows a range in HSI scores for the waterbodies assessed. Ponds 1, 2 and 5 show a below average score, Pond 4 has an average score and Pond 3 has a good score. Pond 3 has historic records (1993 and 2004) of great crested newt.

Badger

3.52 No badger setts were recorded on the site during the original survey however a thorough badger survey to include habitat within 30m of the site was not completed. The site incorporated suitable habitat for foraging and commuting badger in the form of hedgerows, woodland and improved grassland. Suitable sett building opportunities were also present within the scrub and woodland.

3.53 Cofnod returned 16 records of badger from the 2km search radius surrounding the central point of the site. These records ranged between 1997 and 2018 and none were specific to the site.

Water vole

3.54 Cofnod did not return any records of water vole (*Arvicola amphibius*) from the data search.

3.55 There were two ponds present on the site, however these did not provide cover for water vole or suitable banks for burrowing; and were not connected to more suitable habitat and therefore were considered highly unlikely to support water vole.

3.56 The site is not considered suitable for water vole, and therefore this species is not considered further in this report.

Reptiles

3.57 The site offered small areas of suitable habitat for reptiles in the form of the scattered scrub and grassland that bordered the woodland edges that could be used to forage, bask and disperse. The woodland present on the site had a dense canopy with limited light reaching the ground making the ground flora restricted and is considered to be sub-optimal for reptiles.

3.58 Cofnod returned nine records of reptiles from the data search. These were all slow-worm (*Anguis fragilis*) and were located at least 760m to the south of the site, on the southern side of the town of Denbigh. The site is not well connected to these records of reptiles and slow-worm are not considered likely to disperse long distances (Edgar *et al.,* 2010*)*.

3.59 Due to the distance of the records of slow-worm and the presence of only small areas of suitable habitat present on the site, it is considered unlikely that reptiles would occur on the site. The proposed western extension largely comprises unsuitable habitat for reptiles. The border of the plantation woodland with the quarry incorporated small areas of suitable habitat for common reptile species; however these were not well connected to other more suitable areas of habitat in the wider area.

Other mammals

3.60 The data search from Cofnod returned records of brown hare (*Lepus europaeus*) and hedgehog (*Erinaceus europaeus*) from the 2km search radius surrounding the central point of the site. The records were dated between 1966 and 2021. The majority of the hare records were between 2005 and 2013, with no records specific to the site, however a number were returned with a four-figure grid reference that could occur on the site (SJ0567 and SJ0566). There was an increase in number of hedgehog records within recent years, however, the majority of records are from a single individual who appears to be rescuing and rehabilitating them so this likely reflects an increase in recording effort. All records are greater than 500m from site, largely to the south-east.

3.61 The site supported suitable habitat for brown hare and hedgehog in the form of improved grassland, hedgerows and woodland. These features were connected to the wider landscape and to additional areas of woodland and grassland.

3.62 Evidence of the non-native pest species, rabbit and grey squirrel was observed on the site. No signs of any other protected, rare or notable mammal species were recorded.

Birds

3.63 The site offered suitable habitat for nesting and foraging birds in the form of woodland, hedgerows, scattered trees, scrub, cliff faces and waterbodies. The proposed extension incorporated small areas of suitable habitat including a hedgerow, scattered trees and plantation woodland. During the original Preliminary Ecological Appraisal, birds recorded on the site included great spotted woodpecker (*Dendrocopos major*), jackdaw (*Corvus monedula*), woodpigeon (*Columba palumbus*) and buzzard (*Buteo buteo*). The update PEA survey also recorded blackbird (*Turdus merula*).

3.64 It was reported that peregrine (*Falco peregrinus*) have previously nested in the quarry faces (Chris Bryan pers. comm., 2019).

3.65 Cofnod returned a large number of bird records from the 2km search radius surrounding the centre of the site. This included records of peregrine from 2015 which was specific to the site. The most recent peregrine record was in 2020 and was approximately 1.2km from the site. A number of the records were for a four-figure grid reference that could include the site (SJ0466, SJ0467, SJ0567).

Terrestrial Invertebrates

3.66 The site did not support any habitats that are not common in the wider area. It is therefore anticipated that a number of invertebrates are likely to occur on the site, as well as in the wider area. During the Preliminary Ecological Appraisal, small tortoiseshell (*Aglais urtica*), peacock (*Aglais io*) and orange-tip (*Anthocharis cardamines*) butterflies were noted on site.

3.67 Cofnod returned a number of records of butterfly and moth from the data search. None of these records were specific to the site; however these species could occur on the site.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Ecological Designations and ancient woodland

4.1 Graig Quarry SSSI is located towards the south-western boundary of the site. The western extension is proposed to commence approximately 130m to the north of the SSSI. It will, therefore, be necessary for the continued work at the quarry to avoid indirectly negatively impacting this SSSI due to changes in hydrology, dust deposition and noise. Regular monitoring (through the adoption and implementation of a Construction and Environmental Management Plan (CEMP)) will be required to reduce the potential for significant negative effects on the integrity of the SSSI. In line with the Management Plan for the site, consultation with Natural Resources Wales is recommended prior to the commencement of any extraction of minerals.

4.2 Crest Mawr Wood SSSI and ancient woodland is located adjacent to the north-western boundary of the proposed extension. It will be necessary to maintain an appropriate buffer zone between the proposed extension and the SSSI to avoid any indirect impacts from possible hydrological, noise and dust deposition changes. This should be informed by an arboriculturalist to detail necessary root protection zones. Appropriate construction methods should be put in place via a CEMP which will promote the avoidance of indirect impacts in the first instance and minimise and mitigate where avoidance is not possible. Soil bunds should be built along the boundary of the extraction area to provide a barrier to noise and dust dispersal from the proposed works. Regular monitoring will be required to identify if there have been any changes to the condition of the SSSI from changes in hydrology, dust and noise in the vicinity. Liaison with Natural Resources Wales will be necessary and the management actions associated with the SSSI must be adhered to and promoted where possible.

4.3 Coed Parc-Pierce County Wildlife Site is present adjacent to the eastern boundary. The proposed extension is approximately 280m to the west of this CWS. It will be necessary to minimise the potential for the proposed extension to have any indirect impacts on this wildlife site through changes in hydrology, noise and dust.

4.4 All other non-statutory designated sites are at least 500m from the site boundary and therefore not anticipated to be impacted by the proposals. Detailed hydrological assessments should be completed to identify any hydrological connections between the proposed extension site and any designated sites. Where connections are identified, appropriate control measures will be required to reduce the potential for negative impacts.

4.5 A Construction Environmental Management Plan (CEMP) (incorporating a dust management plan) should be produced for the proposals to detail measures required during the proposed works to minimise impacts to designated sites, habitats and species within the surrounding areas.

Habitats

4.6 A large number of priority habitats were returned from the data search. It will be necessary to maintain the integrity of any habitats present outside of the site boundary and reduce the potential for any negative impacts by the proposed works. Detailed hydrological, air quality and noise assessments should be completed to inform the assessment of the site and mitigation measures will be required where negative impacts are anticipated.

4.7 The most ecologically important habitats present within the site are the areas of broad-leaved semi-natural woodland. The majority of the other habitats present on the site are considered to be of relatively low ecological importance due to their species poor and widespread nature. The broad-leaved plantation woodland and scattered trees offer suitable habitat for a range of species that may occur on the site.

4.8 It is recommended that as part of the proposed development plan, a suitable stand-off is observed from all semi-natural woodland to maintain their quality. Where possible, mature standard trees present on the site should be retained. Advice should be sought from an arboriculturalist to provide details on suitable woodland buffer zones and root protection zones.

4.9 Given the nature of the habitats present on the site that are proposed to be impacted by the development, and their widespread presence in the wider area, it is unlikely that they will be of greater than local significance.

4.10 Development plans should, as far as reasonably practical, avoid impacts on habitats of nature conservation importance. Where avoidance is not possible, impacts should be minimised through design and mitigation measures. In the event that likely impacts remain after mitigation, these should be compensated for by enhancement or creation of habitats. The restoration plan should include habitats of equal or greater quality than the current situation.

4.11 The scheme should aim to provide improvements resulting in an overall net gain in biodiversity, which can be achieved through appropriate management of habitats within the site and the creation of additional habitats of greater ecological importance. Where possible, this should include habitats of principal importance on Section 42 of the NERC Act.

Protected Species

4.12 For details of legislation pertaining to wildlife please see Appendix 5.

Bats

4.13 During the original PEA survey, twenty trees were present on the site that were considered to be directly impacted by the proposals and that offered bat roosting potential, including one tree with high, three trees with moderate and 16 trees with low roosting potential. Subsequent bat roost emergence/re-entry surveys were completed on the trees with high and moderate potential during summer 2019 and no roosting bats were observed.

4.14 Subsequent to this an update Ground Level and Aerial inspection fo the trees identified as moderate or high roost potential was undertaken. The purpose of the update survey was to provide new information in regards to roosting capacity and update the 2019 nocturnal surveys. roped aerial assessments provide a reliable survey technique and recognised as a suitable alternative to nocturnal assessment where safe roped access is available. The update survey completed in June 2021

identified a small number of changes to these trees, with 1 high potential tree, 4 moderate potential and 15 low potential trees.

4.15 As it stands the 2019 survey identified no roosts and the update 2021 aerial assessment has revealed limited alteration in characteristics of the trees or there potential for roosting. No bats or evidence of bats was found. It is therefore recommended that no further survey is necessary at this stage to determine presence / absence of roosting. However, bat tree roosts often occur in short time frames and seasonal variations with low fidelity to a site and so validity of surveys for tree roosting is shorter in duration than typical for buildings for example. It is therefore recommended that pursuant to works starting on site, and covered under condition of planning, that further update surveys are undertaken at an appropriate time of year either in the form on nocturnal or roped aerial assessments prior to any tree felling. These surveys are required to determine an accurate and update presence / absence review at the start of works with any mitigation thereafter followed

4.16 The site as a whole, in line with Collins 2016, is considered to be of moderate habitat quality due to the connections of the hedgerows and woodland into the wider landscape. Bat activity transect surveys were completed across the site in 2019, with the surveys completed in line with sites that offer low habitat quality due to the majority of the features which provide connectivity to the wider area being retained and not directly impacted. The surveys identified the presence of eight species of bat (common pipistrelle, soprano pipistrelle, noctule, Leisler's, serotine, brown long-eared, lesser horseshoe and Myotis sp. Given that the habitats haven't changed since the previous surveys, update surveys are not considered necessary and the conclusions and recommendations within the bat activity report can still be relied upon.

<u>Hazel Dormouse</u>

4.17 The site offers suitable habitat for hazel dormouse in the form of hedgerows and broad-leaved woodland and recent records have been returned approximately 1.6km to the south of the site. Dormouse surveys were conducted between May and November 2019 and no evidence of dormouse were recorded. Given that the habitats haven't changed since these surveys, it is not considered necessary to update these surveys and the results and conclusions can still be relied upon.

Great crested newt

4.18 The site supports suitable terrestrial habitat for great crested newt in the form of hedgerows, scrub and woodland. There are two ponds present on the site and a further three present within 500m of the site boundary.

4.19 Great crested newt eDNA surveys were completed on all 4 ponds in 2019, with negative results returned for Pond 1 and positive results returned for Ponds 2, 3 and 4. Subsequent population surveys were completed on Ponds 2, 3 and 4 between May and June 2019, with a small sized population of great crested newts recorded in all three ponds. Given the lack of change in breeding and terrestrial habitat since the 2019 surveys, it is not considered necessary to update these surveys and the results, recommendations and conclusions can still be relied upon to support the planning application.

Badger

4.20 A badger survey was completed in September 2019 across the site which recorded the presence of three badger setts. These were all observed within the woodland to the east of the active quarry and a considerable distance from the proposed extension. No significant changes were recorded to these setts during the June 2021 survey and therefore the results, recommendations and conclusions within the badger report can still be relied upon to support the planning application.

Breeding Birds

4.21 The site supports suitable habitat for nesting birds in the form of woodland, hedgerows, scattered trees, scrub, cliff faces and waterbodies. Breeding bird surveys were completed on the site between May and July 2019 and a total of 29

bird species were recorded across the site. Given the lack of change in breeding bird habitat since the 2019 surveys, it is not considered necessary to update these surveys and the results, recommendations and conclusions can still be relied upon to support the planning application.

Other protected and notable species

4.22 Apart from the species listed above, there are no obvious and immediate issues regarding other protected and notable species on the site.

Enhancements

4.23 Enhancements should be delivered on the site that are above and beyond the requirements for mitigation as a result of the proposed quarry extension. Enhancements should be specific to the species recorded on the site, or to the species that have potential to occur on the site. All habitats created through the restoration should seek to meet targets produced by national and local priorities and should be managed appropriately to achieve the highest biodiversity net gain possible.

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PRELIMINARY ECOLOGICAL APPRAISAL

DRAWING M18.155.D.015

TREES WITH BAT ROOSTING POTENTIAL

APPENDIX 1

Information obtained from Cofnod – North Wales Environmental Information Service

APPENDIX 2

Site Photographs

APPENDIX 3

Site Plant List

APPENDIX 4

HSI Calculations

APPENDIX 5

Wildlife Legislation

APPENDIX 6

Biodiversity Legislation and Policy