CRAIG YR HESG QUARRY
Western Extension

Supplementary Environmental Statement

Volume 5

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SUPPLEMENTARY ENVIRONMENTAL STATEMENT

VOLUME 5

CRAIG YR HESG QUARRY

Extension and Consolidation Application

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1.0 INTRODUCTION

1.1 Application Documents

In May 2015 a planning application was submitted to Rhondda Cynon Taff County Borough Council (RCT) by Hanson UK (Hanson), which sought planning permission for a western extension to Craig yr Hesg Quarry (the Quarry), near Pontypridd, and the consolidation of the current planning permissions at the Quarry into a single permission regulating quarrying, restoration and ancillary operations at the overall quarry site.

The application was accompanied by:

- A Planning Application Statement which included a description of the proposed quarry development and restoration scheme, and the formal application plans.
- An Environmental Statement (ES) Volume 1, which set out the results of an environmental impact assessment undertaken in connection with the proposed development.
- A series of technical appendices in support of the ES, produced as ES Volume 2.
- Figures in support of a Landscape and Visual Impact Assessment, included as chapter 6.0 of the ES, which were produced as ES Volume 3; and
- A Non -Technical summary of the ES, produced as ES Volume 4.

During the consideration of the application by RCT, minor amendments to the originally submitted application plans were made in September and November 2016, primarily relating to boundary security fencing.

In addition, supplementary information was submitted by Hanson to RCT in the form of:

- a 'Response to Public Consultation: Well-Being and Environmental Health Issues' (June 2016);
-
- a response to other consultee comments and responses (September 2016);
- a Dust and Particulate Management Plan and Dust Monitoring Plan (August 2017);
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- an updated ecological baseline report (September 2018), and
- a note on updated traffic movements (September 2018).

However, following protracted delays by RCT in reporting the application to Committee for determination, a decision on the application was finally made in July 2020, when RCT resolved to refuse planning permission. A decision notice to this effect was issued on 23rd July 2020.

An appeal against this decision was submitted to the Planning Inspectorate (PINS) on behalf of Hanson UK on 16th December 2020.

1.2 Planning Inspectorate (PINS) Assessment of ES

In accordance with standard procedure, PINS has undertaken an assessment of the adequacy of the ES and supporting documents. A formal 'assessment of the environmental statement' was issued by PINS via a letter dated 28th January 2021.

The Inspector who undertook the assessment concluded, inter alia, that:

- *I find the description of the development to be satisfactory (10);*
- *Schedule 4 of the 1999 Regulations includes 'an outline of the main alternatives considered and a main indication for the chosen scheme'. I am satisfied that the proposed scheme has been*

formulated as part of an iterative process which has been tested in particular against noise, blast vibration and air quality criteria defined and reported on in other sections of the ES. I consider this to be satisfactory (13).

- *The ES considers a range of topics including landscape and visual effects, ecology, agriculture and soil resources, hydrology and hydrogeology, noise, blast vibration, air quality, transportation and cultural heritage. All relevant aspects of the physical, visual, cultural and natural and historic environments that are likely to be significantly affected have been sufficiently described for the purposes of the Regulations (15).*

- *The likely significant effects of the development on the environment have been systematically assessed in terms of the proposed land take, operational, remediation and restoration effects for each topic area. Methodologies and baseline conditions have been sufficiently described before impacts have been assessed and potential mitigation discussed. Detailed surveys and modelling exercises have been presented (17).*

However, the Inspector has noted that:

- *…..the ES was written in 2015 and some of the survey information on which it is based is older. The habitat and botanical surveys both date from 2014 as does the noise monitoring and air quality data. The traffic surveys are earlier having been carried out in 2012 and 2013. Furthermore some of the key planning policy documents and technical guidance has been superseded, the most notable of which is Planning Policy Wales edition 10 is currently in force whereas the ES had regard to edition 7. In addition the cultural heritage section has cited Welsh Office Circulars 60/96 and 61/96 which have been replaced by Technical Advice Note 24: The Historic Environment and in the hydrology and hydrogeology section reference has been made to the National Planning Policy Framework which is not in force in Wales (18).*

- *Whilst I am satisfied that the significant effects of the development on the environment have been systematically assessed and are sufficiently described, I consider that the survey results and policy and guidance changes highlighted above should be considered and the ES reviewed as and where necessary (19).*

The Inspector has also highlighted an anomaly whereby whilst reference is made in paragraph 1.6 of the ES (Volume 1) to an EIA 'Scoping Report' being reproduced as Appendix 1.6 to the ES, the Report is not actually included within the Volume of Appendices (ref ES Volume 2).

The Appellants have thus been requested to provide an update to the ES to include updated survey results and any associated revisions to proposed mitigation measures; an update which reflects policy guidance changes which have been issued in the intervening period; and a correction to the reference to the EIA scoping Report and its inclusion as part of the submitted documents.

This Supplementary Environmental Statement (SES) has been prepared to fulfil these requirements. It follows the sequence of the originally submitted documents in being numbered as Volume 5 of the submission.

The SES is supported by a volume of Appendices which includes as Appendix 9.1 the EIA Scoping Report submitted to RCT in June 2014 as part of a request for a formal EIA Scoping Opinion. The SES Appendices are produced as Volume 6.

A Non-Technical Summary of the SES has been prepared as a separate document, produced as Volume 7.

2.0 ECOLOGY

2.1 Introduction

This Chapter of the Supplementary Environmental Statement (SES) has been prepared by SLR Consulting and provides an Ecological Impact Assessment review (EcIA review) in respect of the proposed extension and subsequent restoration of Craig-yr-Hesg Quarry. The EcIA review focuses on a proposed north-westerly extension to the existing quarry void.

In 2015, a planning application was submitted to Rhondda Cynon Taf County Borough Council (RCT) in respect of a proposed north-westerly extension and consolidation of existing planning permissions of Craig-yr-Hesg Quarry, Pontypridd.

The application was reported to RCT's Planning Committee in February and July 2020. The Committee resolved to refuse the application (15/0666/10 dated 23rd July 2020) contrary to the Planning Officer's recommendation. The sole reason for refusal related to the encroachment of the proposed development within 200m of sensitive development. No objections were raised in relation to ecology by the RCT Ecologist.

Hanson have lodged an appeal to this decision and as part of the process have prepared the SES to include an EcIA review. The EcIA review sets out to review the 2015 EcIA and conclusions reached therein to establish whether they remain appropriate in 2021, either due to changes in baseline conditions, legislation or policy etc.

The boundary of the extension and consolidation application site includes the currently permitted Craig-yr-Hesg Quarry, and an extension area comprising some 11.2 hectares (ha) of land to the west of the existing quarry, which comprises the proposed quarry extension area, land to accommodate screen bunds, and immediately adjoining land. Within this chapter reference is made, where appropriate to the 'application site' which relates to the full 'application site' (existing quarry and extension area), and to the 'extension area' alone.

The proposed quarry development is described in full in Chapter 3 of the original 2015 Environmental Statement (ES), although in summary it will essentially comprise:

- establishment of proposed landform screening bunds to enclose the quarry extension area and accommodate overburden material from phase 1 of the extension area development;
- progressive development of existing quarry faces and benches in a north-westerly direction, to a depth of 100m AOD in accordance with existing quarry depth, as shown on the Phasing Plan Figures 3.1 – 3.5 within the 2015 ES; and
- restoration of the application site in accordance with the established principles for the existing quarry. The proposed restoration and aftercare schemes are included as Chapter 4 of the ES. The ability to deliver biodiversity gains has been a key consideration in the development of the restoration and aftercare proposals.

The purpose of this EcIA review is to provide decision-makers with information about the likely significant ecological effects associated with the proposed quarry development within the extension area, in particular the potential impacts on designated and undesignated habitats and protected or notable species, as well as the continuation of operations within the existing quarry.

In particular this relates to any changes in habitat type, or extent, and the potential for protected or notable species to occur in the intervening period since the ES was prepared in 2015. It should be noted that since completing the 2015 EcIA, the Chartered Institute of Ecology and Environmental Management (CIEEM) has updated the guidelines for completing EcIA. Whilst there are subtle differences in the approach, structure and terminology which would now be used when completing an EcIA, these changes are not deemed to be significant in planning policy or legislative terms when considering the validity of the conclusions reached within the 2015 EcIA. Further consideration is given to this below.

2.1.1 Purpose of EcIA

This document details update surveys carried out in 2018 and 2021 to inform the review of the 2015 EcIA and establish whether the conclusions and mitigation originally recommended remain appropriate.

It is the role of all ecologists involved in ecological assessment to:

- provide an objective and transparent assessment of the ecological effects of a proposed development or activity;
- facilitate objective and transparent determination of the consequences of the proposals in terms of national, regional and local policies relevant to nature conservation and biodiversity; and
- set out what steps will be taken to ensure that legal requirements relating to habitats and protected, or controlled species are met.

In assessing the effects of any such proposal, it is necessary to define the spatial and temporal area of study and to focus the assessment upon those features or resources that are of ecological value in the context of that proposal. The scope of this assessment has been determined through the consideration of the possible direct and indirect impacts associated with the proposed extension and the ecological receptors that may be affected.

2.1.2 Evidence of Technical Competence and Experience

This EcIA has been carried out by Lis Weidt, a Senior Ecologist at SLR who is a full Member of the CIEEM (MCIEEM). Lis has six years consultancy experience.

Technical review has been by Chris Mitchell CEcol, CEnv, MCIEEM and a Principal Ecologist with SLR. Chris has 15 years consultancy experience with the majority of this time being focussed on projected relating to the extractive industry. Chris holds Natural Resources Wales (NRW) survey licences for bats, great crested newt (Triturus cristatus) and hazel dormouse (Muscardinus avellanarius) alongside mitigation licences for bats, great crested newt, hazel dormouse and badger (Meles meles). The 2015 EcIA was undertaken by Chris.

2.1.3 Relevant Legislation and Policy

National Policy

National Planning Policy (Wales)

Planning Policy Wales Edition 11, February 2021 (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales. Section 6.4 of PPW relates to biodiversity and ecological networks.

Paragraph 6.4.3 of PPW states that:

"*The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement*"."

It goes on to state that:

"*Development plan strategies, policies and development proposals must consider the need to:*

- *support the conservation of biodiversity, in particular the conservation of wildlife and habitats;*
- *ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;*
- ensure *statutorily and non-statutorily designated sites are properly protected and managed;*
- *safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and*

- *secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks."*

Section 6.4 goes on to set out policy in respect of:

- The Biodiversity and Resilience of Ecosystems Duty, as set out in Section 6 of the Environment (Wales) Act 2016;
- Designated Sites, including:
  - Sites of Special Scientific Interest;
  - Special Protection Areas, Special Areas of Conservation and Ramsar Sites;
  - Proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; and
  - Non-statutory Designations.
- Protected Species; and
- Trees, Woodlands and Hedgerows.

PPW Edition 7 was in place at the time of the preparation of the 2015 ES, but the themes of 'caring for biodiversity' and the need for measures to conserve and enhance biodiversity were well established at that time and have not materially changed in the current Edition 11 of PPW.

PPW is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. TAN 5 deals with Nature Conservation and Planning and states in paragraph 2.4:

"When considering policies and proposals in local development plans and when deciding planning applications that may affect nature conservation, local planning authorities should:

- *Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;*
- *Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;*
- *Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;*
- *Ensure that appropriate weight is attached to designated sites of international, national and local importance;*
- *Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;*
- *Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;*
- *Ensure that the range and population of protected species is sustained;*
- *Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered."*

Local Policy

The existing Rhondda Cynon Taf Local Development Plan (LDP) was adopted in March 2011. It sets out Rhondda Cynon Taf County Borough Council's vision and strategy for the county borough. Relevant passages from the Plan are as follows:-

Policy AW 6 - Design and Placemaking

Development Proposals will be supported where: - … (14). The design protects and enhances the landscape and biodiversity;

Policy AW 8 - Protection and Enhancement of the Natural Environment

Rhondda Cynon Taf's distinctive natural heritage will be preserved and enhanced by protecting it from inappropriate development. Development proposals will only be permitted where:-

1. They would not cause harm to the features of a Site of Importance for Nature Conservation (SINC) or Regionally Important Geological Site (RIGS) or other locally designated sites, unless it can be demonstrated that:-

a) The proposal is directly necessary for the positive management of the site; or

b) The proposal would not unacceptably impact on the features of the site for which it has been designated; or

c) The development could not reasonably be located elsewhere and the benefits of the proposed development clearly outweigh the nature conservation value of the site.

2. There would be no unacceptable impact upon features of importance to landscape or nature conservation, including ecological networks, the quality of natural resources such as air, water and soil, and the natural drainage of surface water.

All development proposals, including those in built up areas, that may affect protected and priority species will be required to demonstrate what measures are proposed for the protection and management of the species and the mitigation and compensation of potential impacts. Development proposals must be accompanied by appropriate ecological surveys and appraisals, as requested by the Council.

Development proposals that contribute to the management or development of Ecological Networks will be supported.

Environment (Wales) Act 2016

The Environment (Wales) Act puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 Section 6 of the Act introduces a new biodiversity duty, which replaces and enhances the biodiversity duties set out in the Natural Environment and Rural Communities Act (NERC Act) 2006 and requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions and in so doing promote the resilience of ecosystems.

Section 7 of the Act lists living organisms and types of habitat in Wales, considered to be of key significance to sustain and improve biodiversity in relation to Wales.

This Act was not in place at the time of preparation of the 2015 ES, but, as noted above, it replaces and enhances duties previously contained in the NERC Act, as referred to in the 2015 ES. The obligations imposed by the Environment (Wales) Act 2016 are highlighted in the Planning Officer's report on the application presented to RCT's Planning Committee in February 2020.

Local Biodiversity Action Plan

The Rhondda Cynon Taff Local Biodiversity Action Plan (LBAP) *Action for Nature* identifies habitats and species that are targeted for positive action at a more local level. The Plan is dated October 2000 and was thus in place at the time of the 2015 EcIA.

2.1.4 Legislation

Many individual wildlife species receive statutory protection under a range of legislative provisions. Local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents.

A summary of legislation relevant to (onshore) biodiversity in Wales is provided below. Note that the summary provided here is intended for general guidance only and the original legislation should be consulted for definitive information.

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Under the Habitats Regulations it is an offence to deliberately capture, kill or disturb[1] wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

The 2010 Regulation were in place at the time of the 2015 ES, but the 2017 Regulations introduce only a small number of minor amendments and do not change the consideration of the habitats and species referred to in the Regulations as undertaken in the 2015 ES.

Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

As is apparent from the date of the Act, the Wildlife and Countryside Act was in place at the time of the 2015 EcIA.

2.2 Methodology

2.2.1 Scope

The scope of this EcIA review follows guidelines set out by the Chartered Institute of Ecology and Environmental Management (CIEEM 2018)[1] and references therein.

It follows the same general methodology which was in place at the time of the 2015 ES and EcIA which was based upon the 2006 version of the CIEEM Guidelines.

It should be noted that this EcIA review does not fully duplicate all sections of the EcIA format and is confined to providing a review of the 2015 EcIA.

All ecologists that have led survey work and reporting associated with the EcIA are members of CIEEM and follow the Institute's Code of Professional Conduct when undertaking ecological work.

[1] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Chartered Institute of Ecology and Environmental Management, Winchester.

2.2.2 Baseline Data Collection

Pre-existing Site Information

The 2015 EcIA study focussed on the proposed extension area as shown on **Figure 7.1** of the 2015 ES but referred to ecological information relating to the existing quarry where relevant.

Previous Environmental Statements provide an important source of background information for the site. EcIA's were undertaken in 2009 (ROMP) and 2014 (western extension to which this EcIA review relates) which included surveys and assessments of the existing quarry (2009) and existing quarry fringe (2014).

Reference is made to these surveys as appropriate in Section 2.3.

Collation of Baseline Data – Consultation

A scoping opinion was obtained from Rhondda Cynon Taf County Borough Council (RCT), dated 26th November 2014 during the preparation of the 2015 ES. The scoping opinion was issued after completion of the initial (Phase 1) habitat survey, although was developed through discussion between SLR and RCT.

A discussion was also held between SLR and the RCT Ecologist on 5th August 2014. The discussion related specifically to the requirement for any additional protected species surveys, during which it was agreed that no specific surveys for protected species would be required. This was based on the habitat types to be affected and the nature of potential impacts.

The scoping opinion requested that existing grassland be subject to a Phase 2 vegetation survey, with particular reference to establishing whether the grassland communities MG5 or U4 occur within the proposed extension area, as these grassland communities are generally indicative of unimproved grassland habitats of higher conservation value.

No specific consultation has been undertaken in relation to this EcIA review or to inform the SES, although the RCT Ecologist was contacted on 13th January 2021 to verify that the situation regarding non-statutory designations reported in 2015 remained the same. It was confirmed by RCT that this is the case.

Collation of Baseline Data – Background Data and Biological Records

To inform the 2015 EcIA study, the following organisations or on-line resources have provided data:

- South East Wales Biodiversity Records Centre (SEWBReC) has provided information relating to statutory designations and existing species records for a 2km search area based on the approximate centre of the quarry itself (National Grid Reference ST076916) ensuring a minimum buffer of 1km from the proposed extension area;
- The RCT Ecologist has provided information relating to non-statutory ecological designations;
- Natural Resources Wales Website2; and
- Lle Geo-Portal for Wales3.

A summary of background information received for the purposes of this EcIA review is included within this Chapter and **Appendix 2.1**. Copies of site designations have been included within **Appendix 2.1,** although the full SEWBReC report is not included due to the contents including sensitive information on the location of protected species.

[2] https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/)

[3] https://lle.gov.wales/catalogue?lang=en&c=2007

In addition, a range of ecological surveys were undertaken during 2009 to inform an Environment Act Initial Review application, which was submitted to RCT in 2010. A decision notice with an updated schedule of conditions was issued in April 2013 (ref 08/1380/10).

The 2009 study area encompassed the boundary of the current planning permission at Craig-yr-Hesg Quarry, and immediately adjoining land, where the 2009 survey area partly overlaps the boundary of this EcIA. The 2009 EcIA thus provides a valuable source of contextual information, and the 2009 survey results are considered as appropriate in this EcIA review, where relevant to the current application.

2.2.3 Collation of Baseline Data – Field Survey

Phase 1 Survey

To inform the 2015 EcIA, a Phase 1 habitat survey of the extension area and immediate surrounding was undertaken following the standard methodology for Phase 1 habitat survey; this approach was developed by the Joint Nature Conservation Committee (JNCC) in the mid 1980's and has, as its core, the utilisation of a standardised series of colour, symbols and descriptive categories to record habitats, species and other physical features.

The methodology was developed in order to allow a quick, universal, means of mapping semi-natural and other habitats at up to a county scale. A Phase 1 survey therefore provides a consistent approach to habitat recording and evaluation, and a means of identifying features which may be of value for protected species through the use of target notes.

The Phase 1 survey was 'extended' to include an assessment of the potential for protected species to occur within or adjacent to the study area.

The Phase 1 survey was undertaken on the 9th May 2014. The Phase 1 habitat map is shown as Figure 7/1 accompanying the 2015 ES and is based upon the JNCC methodology. Figure 7/1 from the 2015 ES is reproduced at the end of this chapter for ease of reference as SES **Figure 2.1**.

The results of the 2014 Phase 1 survey have been subject to review on 13th September 2018 and 7th January 2021 through the completion of a repeat walkover survey to review habitat descriptions previously made and their extents. This EcIA review considers the 2014, 2018 and 2021 habitat survey results.

Phase 2 Survey

Following consultation with RCT during the preparation of the 2014 scoping opinion, a Phase 2 botanical survey was undertaken on 10th September 2014 following the National Vegetation Classification (NVC) methodology. The quadrat locations are shown on Figure 7.2 accompanying the 2015 ES.

Vegetation communities (determined by recording species and their abundance) were sampled using 2x2m quadrats, in accordance with the guidance for sampling grassland.

The survey area was initially walked to identify potentially different stands of vegetation. At least five quadrats were then completed in each potential stand of homogenous vegetation/grassland community that had been identified.

The quadrat data from each vegetation stand was then assessed cross-referencing the data to the NVC British Plant Communities Volume 3 (grasslands) in order to determine which community of the NVC was most like that of those recorded.

Protected and Notable Fauna

The 2014 Extended Phase 1 survey and consultation identified that the proposed extension area largely occurs within two fields enclosed by dry stone walls. The fields were found to contain a sward of predominantly semi-improved grassland, which was found to be relatively species poor across much of the study area and lack any vegetation structure.

The south-western field was found to contain localised areas where the sward showed increased floristic diversity, although remained heavily grazed and

dominated by grasses, with more extensive areas of bracken also present with scattered scrub species.

As such, the potential for protected and notable fauna to occur, or be negatively impacted upon by the proposed extension, was considered to be low and no specific protected species surveys were undertaken to inform the 2015 EcIA. This approach was agreed during consultation with RCT on 5th August 2014.

The update Phase 1 Habitat surveys in 2018 and 2021, and data search in 2020, have not identified any significant changes to the habitat baseline, or known presence of protected species locally, such that this conclusion would not remain valid for the purpose of this EcIA review.

The presence of birds and reptiles within the application site has been confirmed during habitat surveys, and it has been concluded for the purposes of this EcIA that these groups utilise the application site. Further details are provided in the updated Baseline Section 2.3 below.

Ecological survey work undertaken at the site during 2009 has also been taken into account for contextual purposes.

2.2.4 Collation of Baseline Data – Constraints

No specific constraints have been identified that would prevent the EcIA review from being completed.

It is considered that the level of detail gathered during this EcIA review has been sufficient to assess the ecological value of the application site and to advise an appropriate scheme of mitigation to ensure that the proposed extension development can be undertaken without adversely affecting sensitive or important ecological receptors.

The ecological surveys undertaken to inform this EcIA review have been undertaken following industry guidance and best practice. The surveys have been undertaken at appropriate times of the year to achieve the required objectives.

It is often considered that ecological surveys should be reviewed and possibly updated on a regular basis, although the exact timing of updates will be dependent on many factors, such as importance (rarity) of the population, scale (significance) of potential impacts and whether there have been any changes i.e. to supporting habitats or local populations, that could provide reasonable assumption that pre-existing survey data does not reflect the current status of a particular feature which may then change a previous conclusion or proposal.

To help consider the suitability of existing data sets for use in this review, the Chartered Institute of Ecology and Environmental Management (CIEEM)[4] identifies that "*In the majority of cases, ecological data are likely to have been collected within one or two years prior to an EcIA being written and development activities may take place one or two years after. In these cases the survey data may represent a reliable indication of the baseline conditions*".

The most recent survey, a review of the Phase 1 habitat survey, was undertaken in January 2021. As set out in further detail in this EcIA review chapter, only subtle changes to habitat types and extents were noted when compared to the initial 2014 Phase 1 habitat survey and associated 2015 EcIA.

As such, these minor changes would be unlikely to materially change the species or assemblages of species that are present or likely to be present as identified by the 2015 EcIA.

[4] *CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition.* Chartered Institute of Ecology and Environmental Management, Winchester.

2.2.5 Assessment Approach

The approach used in this EcIA review draws upon relevant sections of the Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland ("CIEEM guidelines").

2.3 Ecological Baseline

2.3.1 Ecologically Designated Sites

A summary of the ecologically designated sites identified within the desk study search area is provided in Table 2-1 below.

Citations and site information received during the desk-top study have been provided within **Appendix 2.1.**

Table 2-1 Summary of Ecologically Designated Sites within the 2km Search Area

Site Name and proximity to Application Site Boundary	Reason for Importance
Craig-yr-Hesg Local Nature Reserve – adjacent to southern boundary of quarry. (This land was gifted by Hanson to the predecessor authority Taff Ely Borough Council in 1993).	Part of the SINC area (see below for habitat descriptions) has been designated as a LNR formalising public access and use of the woodland habitat.
Craig-yr-Hesg/Lan Wood SINC - partially within Phase 1 study area (TN 10), but outside the proposed development area, and present adjacent to Craig-yr-Hesg Quarry. (As part of the western extension application, Hanson offered to dedicate 4.6 ha of land within the SINC to RCT as a potential extension to the LNR, but the offer was declined by RCT).	The SINC designation extends to 89.72ha and is predominantly ancient semi-natural woodland, with evidence of former quarry/coal workings and natural rock outcrops, with smaller areas of grassland and bracken habitats. The SINC has associated faunal interest, in particular woodland birds.
Lower Clydach Woodlands – c.0.6km north.	Semi-natural (and part ancient) woodland occurring along a steep sided valley of the Nant Clydach. The SINC also contains areas of dry grassland / bracken and species-rich marshy grassland.
Llys Nant and Craig Twyn-y-glog Woodlands – c.0.5km north-west.	A mosaic of habitats including an upland stream which is likely to have associated faunal interest for birds such as dipper and salmonid fishes. The SINC also contains areas of species-rich broadleaved woodland and conifer plantation.
Taff and Rhondda Rivers – c.1km south-east.	Recognised as a 'major biodiversity artery' the river catchment has high faunal interest, including otter, salmonid fishes, birds and a diverse range of associated riparian habitats including carr woodland, floodplain grassland and scrub/woodland.

Craig-yr-Hesg / Lan Wood SINC was taken forward for further consideration in the 2015 EcIA due to its proximity to the proposed extension area and the potential for there to be indirect impacts. The majority of the SINC designated area is also identified as 'restored ancient woodland' by the SEWBReC report.

There were no predicted impact pathways in respect of the remaining sites identified in Table 2-1, due to their separation from the site and absence of identified impact pathways.

This remains a valid conclusion for the purpose of this EcIA review.

2.3.2 Habitat Baseline

2014 Results Summary

The application site largely occurs within two fields partly enclosed by dry stone walls. The fields contain a sward of predominantly semi-improved grassland, which was found to be dominated by monocotyledons and relatively species poor in terms of herbaceous species.

The majority of the grassland area was found to be very closely grazed by horses at the time of both the Phase 1 and Phase 2 surveys, showing signs of more intensive agricultural improvement in places through the localised dominance of white clover (*Trifolium repens*). The south-western field was found to contain localised areas where the sward showed increased floristic diversity, although remained heavily grazed and dominated by grasses, with areas of bracken (*Pteridium aquilinum*) also present with scattered scrub species.

The field boundaries were marked by dry stone walls, which were generally intact, with bracken fringing the walls in places.

The wider surroundings comprise of the existing quarry void broadly to the south, semi-improved grassland and small woodland blocks to the north and east, with Craig-yr-Hesg / Lan Wood SINC to the west of the application site, with a small area within the boundary of the application site but not part of the extension area.

2018 Results Summary

The 2018 survey found the habitat baseline remained broadly comparable to that reported by the surveys undertaken in 2014 to inform the 2015 EcIA. Subtle changes were evident as a result of less intensive management (grazing) being in place at the time of survey and evidence of a fire across parts of the extension area, the cause of which is unknown but not an uncommon situation following an exceptionally dry summer in 2018. As a result, the grassland sward was found to be higher in locations unaffected by the fire than reported in 2015 although the sward composition remained comparable.

2021 Results Summary

The 2021 survey found the habitat baseline remains broadly comparable to that reported by previous surveys undertaken to inform the 2015 EcIA and updated in 2018. It was noted that grassland management is now taking the form of annual topping, and that the ruderal mosaic habitat comprised of more extensive bramble.

Based on the observations made during the 2018 survey, these subtle changes are not significant enough that the Phase 1 habitat map (Figure 7.1 of the 2015 EcIA) would need to be revised. As such, the habitat descriptions contained within the 2015 EcIA as Target Notes also remain reflective of the habitat type and species composition present. On this basis it is considered that the vegetation communities identified by the Phase 2 NVC survey also remain comparable to those reported in the 2015 EcIA.

Overall Results Summary

The results of the survey are shown on Figure 7.1, Phase 1 Habitat Map reproduced from the 2015 as Figure 2.1 to this SES. Full descriptions of habitats against the Target Note (TN) references shown on Figure 7.1 are provided in Table 2-2 below which includes details from the 2014, 2018 and 2021 surveys.

Table 2-2 Target Note Descriptions

Habitat Description	Photograph 2015	2018	2021
1. Ruderal Mosaic An area of disturbed ground with various soil storage mounds (from the previous quarry extension) that have been re-colonised by bramble (*Rubus fruticosus* agg.) with patches of soft rush (*Juncus effusus*), rosebay willowherb (*Chamerion angustifolium*) and broad-leaved dock (*Rumex obtusifolius*). Small remnants of grassland sward occur, with sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), common bent (*Agrostis capillaris*) and occasional bird's foot trefoil (*Lotus corniculatus*), creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*) and sheep's sorrel (*Rumex acetosella*). A defunct hedge marks the boundary, ranging from 4-6m in height and dominated by goat willow (*Salix caprea*) with silver birch (*Betula pendula*) also present.		No change	
2. Dry stone Wall Field Boundary Mostly intact with some collapsed sections, the wall has a partial fringe of bracken and scattered scrub regeneration comprising bramble, holly (*Ilex aquifolium*), rowan (*Sorbus acuparia*) and hawthorn (*Crataegus monogyna*). Bluebell (*Hyacinthoides non-scripta*) was present at low frequencies along the base of the wall.			

Habitat Description	Photograph 2015	2018	2021
Two semi mature Scot's pine (*Pinus sylvestris*) trees, in the region of 8-10m in height and with a Diameter at Breast Height of 0.5m, occur alongside the wall.			
3. Semi-improved grassland The main component of the proposed extension area, a gently sloping field heavily grazed by horses at the time of survey, with sward height being less than 2cm across large swathes of the field. Grasses dominate the sward, with sweet vernal grass, common bent and crested dog's tail (*Cynosurus cristatus*) all being abundant species. Yorkshire fog, red fescue (*Festuca rubra*) and smooth meadow grass (*Poa pratensis*) and perennial rye grass (*Lolium perenne*) occur on an occasional to frequent basis. Herbaceous species occur at low frequencies and include rough hawkbit (*Leontodon hispidus*), creeping buttercup, ribwort plantain, cat's ear (*Hypochaeris radicata*) and common field speedwell (*Veronica persica*). Common knapweed (*Centaurea nigra*) was found to occur at very low frequencies (less than 5 plants in total). White clover was found to be an abundant sward component over an approximate 20% of the field (broadly south-western area), indicating more intensive agricultural improvement is likely to have taken place here.			

Habitat Description	Photograph 2015	2018	2021
4. Dry stone Wall Field Boundary The wall is largely intact although gaps occur towards the northern end (as shown in photo) and is approximately 1m in height. A fringe of bracken occurs along most of the wall, with occasional foxglove (*Digitalis purpurea*), sheep's sorrel, heath bedstraw (*Galium saxatile*) and the moss *Polytrichum formosum*.			
5. Semi-improved grassland Also heavily grazed at the time of survey, with sward height typically less than 5cm and generally comparable to TN3 in open grass dominated areas. The main exception being that bracken forms dominant stands over approximately 50% of the field area which became more evident by the September survey. Where bracken does occur, the sward was found to contain occasional yellow rattle (*Rhinanthus minor*) and bird's foot trefoil, although the sward remains otherwise comparable to the wider field. The localised presence of anthills in this area, and noticeable absence of clovers, indicates this area of the field is less likely to have been subject to significant levels of agricultural improvement. Towards the western edge of the field, sandstone bedrock outcrops occur, although limited in extent, and support a sparse cover of mosses (*Rhytidiadelphus squarrosus, Brachythecium rutablum* and *Polytrichum* sp.) and sheep's sorrel.			

Habitat Description	Photograph 2015	2018	2021
6. Quarry Boundary The existing quarry rim is marked by a palisade fence, with a low bund and stone wall also running alongside. The bund is bare/disturbed ground and rock in places, but also vegetated with small patches of grassland and is subject to encroachment by bramble, silver birch and oak (*Quercus robur*).			
7. Semi-Improved Grassland The field was not directly accessible during the survey but appeared to support a grassland resource comparable to that of TN 5, although the field was unmanaged and had an increased sward height at the time of survey.		No change	No change
8. Woodland The woodland was not directly accessible during the survey but the main species could be observed. The woodland appeared secondary in nature, potentially including a degree of plantation, with beech (*Fagus sylvatica*), ash (*Fraxinus excelsior*) and rowan (*Sorbus acuparia*) all forming the canopy layer. The shrub layer comprises hazel (*Corylus avellana*), holly and hawthorn (*Crataegus monogyna*) over patches of bramble and scattered bluebell.		No change	

Habitat Description	Photograph 2015	2018	2021
9. Darren Ddu Road The Road, which takes the form of a narrow lane which is not suitable for road traffic is bordered by mature hazel coppice and frequent oak, rowan and beech which continue along the edge of the grassland (TN 5), opening out to TN 10 (below). The lane edges support a woodland ground flora which includes bluebell, wood avens (*Geum urbanum*), enchanter's nightshade (*Circea intermedia*), common male fern (*Dryopteris felix-mas*), hard fern (*Blechnum spicant*), dog violet (*Viola riviniana*) and wild strawberry (*Fragaria vesca*). Mosses also form a prominent element of the ground flora, in particular along the edges of a defunct stone wall which marks the field boundary, with *Polytrichum formosum* and *Plagiothecium undulatum* being abundant species.			
10. Bracken with Scattered Trees The woodland shelter belt of Darren Ddu Lane opens out to an area of predominantly bracken with an understorey of bluebells, interspersed with lenses of acid grassland and scattered scrub/mature trees. This area is included within the Craig-yr-Hesg/Lan Wood SINC and is also identified as ancient semi-natural woodland.			

2.3.3 Species Baseline

Flora

Bluebell, a plant species listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), was identified in the desk study and recorded within the study area (TN 2, 8, 9, & 10). This species receives protection in respect of collection for trade purposes rather than in relation to development activities.

Detailed Phase 2 botanical surveys of the proposed extension area were undertaken during September 2014.

The survey covered the grassland habitats within the proposed extension area, with a total of 30 quadrats being completed. The locations of the quadrats are shown on Figure 7.2 accompanying the 2015 ES, with a copy of the quadrat data being provided as Appendix 7.2 to the 2015 ES.

Completion of the computerised analysis found all six sample areas to most closely resemble the NVC community of MG6 Lolium perenne – Cynosurus cristatus grassland. Five of the sample areas most closely resembled the Anthoxanthum odoratum sub-community, with one area most closely resembling the typical sub-community.

Following completion of the computerised analysis, manual reference to the NVC key confirmed the vegetation as most closely resembling MG6.

Subtle changes in management have been noted during 2018 and 2021 although not of any significance that changes to grassland community types would be anticipated.

No invasive plant species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), were recorded. Japanese knotweed (Fallopia japonica) is known to occur adjacent to the existing quarry, although beyond the current application site.

Bats

The 2020 desk study returned 153 records relating to 10 species or species groups of bat, as summarised below:

- Two records of brown long-eared bat (*Plecotus auratus*) have been returned within the 2km search area.
- 31 records of common pipistrelle (*Pipistrellus pipistrellus*) were returned between 2007 and 2018.
- Two records of Daubenton's bat (*Myotis daubentonii*) have been returned from 2009 and 2018.
- There are five records of commuting and foraging Myotis bats dating between 1986 and 2018.
- One Nathusius's Pipistrelle (*Pipistrellus nathusii*) record has been returned.
- Seven records of foraging and commuting Noctule (*Nyctalus noctule*) were returned.
- Twenty-two records identified as being pipistrelle species (though not identified to species level) have been recorded between 1984 and 2019.
- Fifty-four records of soprano pipistrelle (*Pipistrellus pygmaeus*) were returned between 2007 and 2018.
- Twenty-six records of unidentified bats were returned dating between 1982 and 2015.
- Whiskered bats (*Myotis mystacinus*) have been recorded twice in 2011 and 2014.

The 2009 surveys of the existing quarry site did not identify any roost sites and concluded that the presence of roosts within the existing active quarry (faces) was unlikely due to the high levels of ongoing mineral extraction at the site. This assessment remains valid as the existing quarry is highly operational.

The proposed extension area does not contain any potential roost sites i.e. mature trees, buildings or underground structures, this was verified in 2018 and 2021.

Scattered semi-mature trees occur beyond the application site although these would be retained during the proposed quarry development.

Activity surveys of the wider site undertaken in 2009 identified relatively low levels of foraging activity by soprano pipistrelle and common pipistrelle.

The extension area itself offers limited foraging opportunities for bats, due to the absence of floristically diverse/structured habitats that would have associated invertebrate interest and therefore provide significant foraging opportunities for bats. The elevated and exposed setting of the extension area also reduces the likelihood of sustained or regular bat foraging taking place.

The extension area does not contain any connected hedgerows that could provide secure movement corridors for bats.

The woodland edge habitats adjacent to the extension area are representative of more suitable foraging and commuting habitats for bats.

As such, no further surveys in respect of bat activity were undertaken to inform the 2015 EcIA, an approach agreed during consultation with the RCT Ecologist. No significant change in the habitats present on site has been recorded therefore this conclusion remains relevant for the purpose of this EcIA review.

Badger

The data search returned two records of badger (*Meles meles*) dating to 2015.

The 2009 ecological surveys did not identify any badger setts in the survey area employed at the time, although reference to a potential badger paw print/scratch marks and foraging marks along the south-western area of the quarry void was made.

No evidence of badgers, such as setts, footprints, pathways, snagged hairs or snuffle marks, was recorded during either of the 2014 site survey visits.

An update survey for potential badger setts was carried out in 2018 and 2021 with no evidence of any badger activity found.

The current presence of badgers is therefore discounted and no further surveys have been undertaken, therefore the 2015 EcIA conclusions remains valid for the purpose of this EcIA review.

Reptiles

The desk top study identified the presence of slow worm, common lizard and adder within the search area.

The 2009 surveys of the wider site area identified the presence of these species and identified that the presence of grass snake could not be fully discounted.

A juvenile common lizard was recorded during the 2014 Phase 1 survey, basking near to the edge of the existing quarry rim (close to TN 6).

The majority of the extension area represents unsuitable habitat for reptiles, due to the intensity of grazing and latterly topping which prevents the development of structured vegetation. The open nature of the sward also removes opportunities for reptiles to bask or find shelter.

The exception to this is the presence of localised areas where grazing (/ topping) less intensive and scattered scrub/tall ruderal vegetation occurs i.e., predominantly along the margins of the existing quarry void and field boundary walls.

The areas dominated by bracken were found to lack vegetation structure during the May 2014 site survey, although sward height had increased by the time of the September 2014 survey. Although these areas could also support reptiles, they remain isolated from any extensive areas of high suitability habitat which decreases the likelihood of high numbers of reptiles occurring.

Based on the nature of potential impacts, and minimal areas of reptile habitat that would be lost, it was agreed in 2014 with the RCT Ecologist that a formal survey for reptiles would not be necessary to inform an appropriate mitigation strategy for reptiles, given their presence has already been confirmed.

Whilst grazing of the site has ceased, management through mowing is in place which has kept the majority of the site as described above therefore the 2015 EcIA conclusion remains relevant. As such, no specific surveys for reptiles have been undertaken to inform this EcIA review.

Amphibians

There are no records of great crested newt (*Triturus cristatus*) within the 2km search area identified by the SEWBReC report. The SEWBReC report did identify the presence of common frog (*Rana temporaria*) and common toad (*Bufo bufo*).

Three palmate newt (*Lissotriton helveticus*) records were returned, dating between 2019 and 2020. Two adults were recorded in a pond in Craig-yr-Hesg wood. Two individuals were recorded in Lan Woods.

No aquatic habitats occur within the proposed extension area, and none were identified in the immediate surrounding area[5].

No significant change in the habitats present on site has been recorded therefore the 2015 EcIA conclusion remains relevant. As such, no specific surveys for amphibians have been undertaken, as their presence within the proposed extension area is highly unlikely.

Birds

The desk top study identified a relatively high number of bird species within the search area, including species of high conservation importance such as peregrine falcon, goshawk, hobby and kingfisher, all of which are included in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

The majority of bird records are correlated with woodland habitats and sites of known nature conservation value, including Craig-yr-Hesg/Lan Wood SINC.

A breeding bird survey of the wider site was undertaken in 2009, which recorded the presence of 28 species as confirmed or likely breeders. This included the presence of peregrine falcon, which was also recorded during the September 2014 survey, although the majority of interest was found to be associated with peripheral woodland and scrub habitats of the existing quarry.

Two meadow pipits (*Anthus pratensis*) were recorded during the September 2014 survey, both of which were recorded in the south-western field where bracken occurs.

Individual raven (*Corvus corax*), jackdaw (*C. monedula*) and green woodpecker (*Picus viridis*) were also recorded flying over the proposed extension area during the 2014 study.

Potential bird nesting habitats within the proposed extension area are limited to immature scattered scrub and any localised areas of increased sward height i.e. where bracken dominates, which offer limited opportunities for ground nesting species such as meadow pipit. Based on the relatively low level of bird activity recorded during the site visits, it is considered highly unlikely that significant assemblages of breeding birds would occur.

No significant change in the habitats present on site has been recorded in 2018 or 2021 and, therefore, the 2015 EcIA conclusion remains relevant.

Invertebrates

The desk top search returned records of a number of butterflies and moths and a smaller number of other invertebrate species. This included species of high conservation priority, such as marsh fritillary, pearl-bordered fritillary and grayling butterflies.

The presence of grayling butterfly, and a range of other common and widespread species, was identified during the 2009 surveys of the wider site.

[5] Based on a review of background OS maps

The 2014 Phase 1 survey found that the majority of the site provides limited opportunities for invertebrates, due largely to absence of structured vegetation or flowering plants, this remained the case in 2018 and 2021. The extension area does not contain any habitats which are of recognised high invertebrate value, such as semi-natural woodland, species rich-grassland or standing water.

The margins of the existing quarry (i.e. TN 6) offer increased suitability for invertebrates due to the presence of a more varied vegetation structure combined with areas of bare rock with a range of aspects. This mosaic also meets the habitat requirements of grayling butterfly, which has previously been recorded at the site.

Due to the limited scale of any potential invertebrate habitat within the extension area, and nature of quarry development and restoration that is proposed, no specific surveys for invertebrates have been undertaken to inform the 2015 EcIA.

No significant change in the habitats present on site has been recorded therefore the 2015 EcIA conclusion remains relevant.

Other Fauna

Based on the geographical setting and nature of habitats present within the proposed extension area, the potential for any other faunal groups to occur has been discounted.

No significant change in the habitats present on site has been recorded therefore the 2015 EcIA conclusion remains relevant.

2.3.4 Summary of Important Ecological Features

Table 2-3 summarises the important ecological features identified in the 2015 EcIA and verified as still being relevant by this EcIA review.

Table 2-3 Summary of Important Ecological Features

Ecological Feature	Scale at which Feature if Important	Comments on Legal Status and/or Importance
Craig-yr-Hesg/Lan Wood SINC (including restored Ancient Woodland)	County	Non-statutory designation, not formally protected by legislation but planning policy seeks to avoid loss or detrimental impact. Part of SINC is also defined as LWS which although statutory is in relation to public access rather than ecological value. Recognised as a priority habitat under Section 7 of the Environment Act.
Bats	Local	European and UK Protected species. Some species are of higher conservation priority as Annex II species. A number of bat species are recognised as species of principal importance under Section 7 of Environment Act.
Reptiles	Local	All native reptiles are UK Protected species and recognised as species of principal importance under Section 7 of the Environment Act. Grass snake, adder and common lizard are also identified as LBAP species.
Birds	Local	All species protected whilst nesting under Wildlife and Countryside Act (peregrine falcon, Peregrine falcon also protected from disturbance under Schedule 1). A number of species are also species of principal importance under Section 7 of the Environment Act or Birds of Conservation Concern in Wales.

2.4 Potential Impacts and Mitigation

The ecological baseline in respect of the proposed western extension of Craig-yr-Hesg has been collected over a period of six years between 2014 and 2021.

The habitats present remain broadly comparable to when the initial habitat survey was completed in 2014, as confirmed by update habitat survey in 2018 and 2021. There are no recent additional biological records that are likely to occur and be affected by the proposed development or affect the judgements and decisions made in 2014 regarding the approach to baseline data collection.

Therefore, it is considered that the baseline data presented in the 2015 ES, and decision made around specific protected species surveys not being required, remain accurate and fit for the purpose of EIA.

An assessment of potential impacts of the proposed development was undertaken as part of the 2015 EcIA. As the ecological baseline remains broadly as set out at the time, it is considered that the potential impacts remain as reported in 2015 and are therefore not repeated here. As such, the proposed mitigation measures also remain appropriate to address the identified effects upon ecological features that were identified, as summarised in Table 2-4, and no further recommendations for additional mitigation are considered necessary.

The 2015 Impact Assessment summary table has been provided as Table 2-4 below. This summarises the mitigation strategies that were proposed in 2015 and which are still considered to be appropriate for the proposed western extension.

Table 2-4
Summary of Potential Impacts, Mitigation and Residual Impacts

Ecological Feature	Description of Potential Impact	Characterisation of Impact	Ecological Significance of Impact if unmitigated	Mitigation and Enhancement Proposals	Significance of Residual Impact following Mitigation and level of Confidence.
Habitat Loss – c.7.9 ha of MG6 Grassland including small areas of bracken, scattered scrub and ruderal vegetation.	Loss of 7.9ha to allow establishment of screening bunds and mineral extraction area.	• Negative. • Certain. • Direct. • 7.9ha or c. 40% of the approximate 19ha of connected grassland habitat present. • Permanent (although reversible through restoration).	Significant at Parish (Local) level.	Regeneration of acid grassland around screening bunds using topsoils/turves to be lost, wider long term establishment of further areas during site restoration.	Minor negative significance at a local level during operational period. High level of confidence.
Breeding birds **Protected under Wildlife and Countryside Act 1981 whilst nesting.**	Loss of nesting habitat.	• Negative. • Certain. • Direct. • Negligible proportion of wider habitat network. • Permanent (although reversible through restoration).	Insignificant.	Provision of alternative comparable habitats along screening bund and during restoration.	Not significant. High level of confidence.
Reptiles **Partial protection under Schedule 5 of the Wildlife and Countryside Act.**	Potential killing or injury during vegetation removal, reduced foraging area.	• Negative. • Certain. • Direct. • Loss of approximately 0.8ha, minor proportion of wider habitat network. • Permanent (although reversible through restoration).	Significant for any reptiles killed, unlikely to be significant for wider site reptile assemblage.	Implementation of Reptile Mitigation Strategy (RMS) to prevent killing or injury, provision of alternative habitats during operational stages and final restoration.	Not significant. High level of confidence.

Habitat Creation and Species Enhancements during landscape and restoration works.	The following habitats will be present upon completion of all quarrying and restoration works resulting in 'no net loss' in terms of habitat area: • Exposed quarry faces, bare ground and rock/scree; • Naturally regenerated acid grassland; and • woodland and scrub. Further areas of these habitat types will also occur within the wider site as per the permitted restoration concept as shown on application plans ref CYH / E12 and E14.	• Positive.	n/a	Creation of northern screening landform with woodland planting would provide a habitat linkage between currently unconnected blocks of woodland in the peripheral areas of the site. This would also represent an enhancement for bats, invertebrates, breeding birds and reptiles. The western screen bund would be allowed to naturally regenerate, to include a mosaic of woodland, scrub and acrid grassland to compliment the wider Ffridd mosaic of the Craig yr Hesg ridgeline. Progressive restoration of the quarry void would also provide further areas of habitat for bats (foraging), birds, invertebrates and reptiles.	Positive long term gains, significant at Parish (Local) level.

2.5 Ecology Summary and Conclusions

In 2015, SLR Consulting Limited was instructed by Hanson UK to undertake an EcIA to provide technical input into an Environmental Statement and planning application to extend Craig-yr-Hesg quarry.

This comprised an assessment of the significance of predicted ecological impacts that would result from the proposed extension of the site.

The scope of the EcIA was informed through consultation with stakeholders and a review of information available from SEWBReC.

An Extended Phase 1 habitat survey was undertaken in May 2014 by an experienced terrestrial ecologist, followed by a Phase 2 (NVC) survey during September 2014.

Impacts to the majority of protected species groups were discounted on the basis of the nature of habitats present. As such, no specific species surveys were deemed to be required to enable completion of the EcIA in 2015, a conclusion discussed and agreed with RCT during the scoping stages.

The presence of reptiles was confirmed and the implementation of a RMS was proposed to avoid significant impacts to reptiles and comply with the relevant legislation.

Breeding birds are also likely to occur, although impacts can be avoided through timing of works or advance survey if this is not possible.

No significant adverse ecological impacts were predicted by the 2015 EcIA, and it was considered that the proposed nature conservation-based restoration would provide a net gain for biodiversity in the long term.

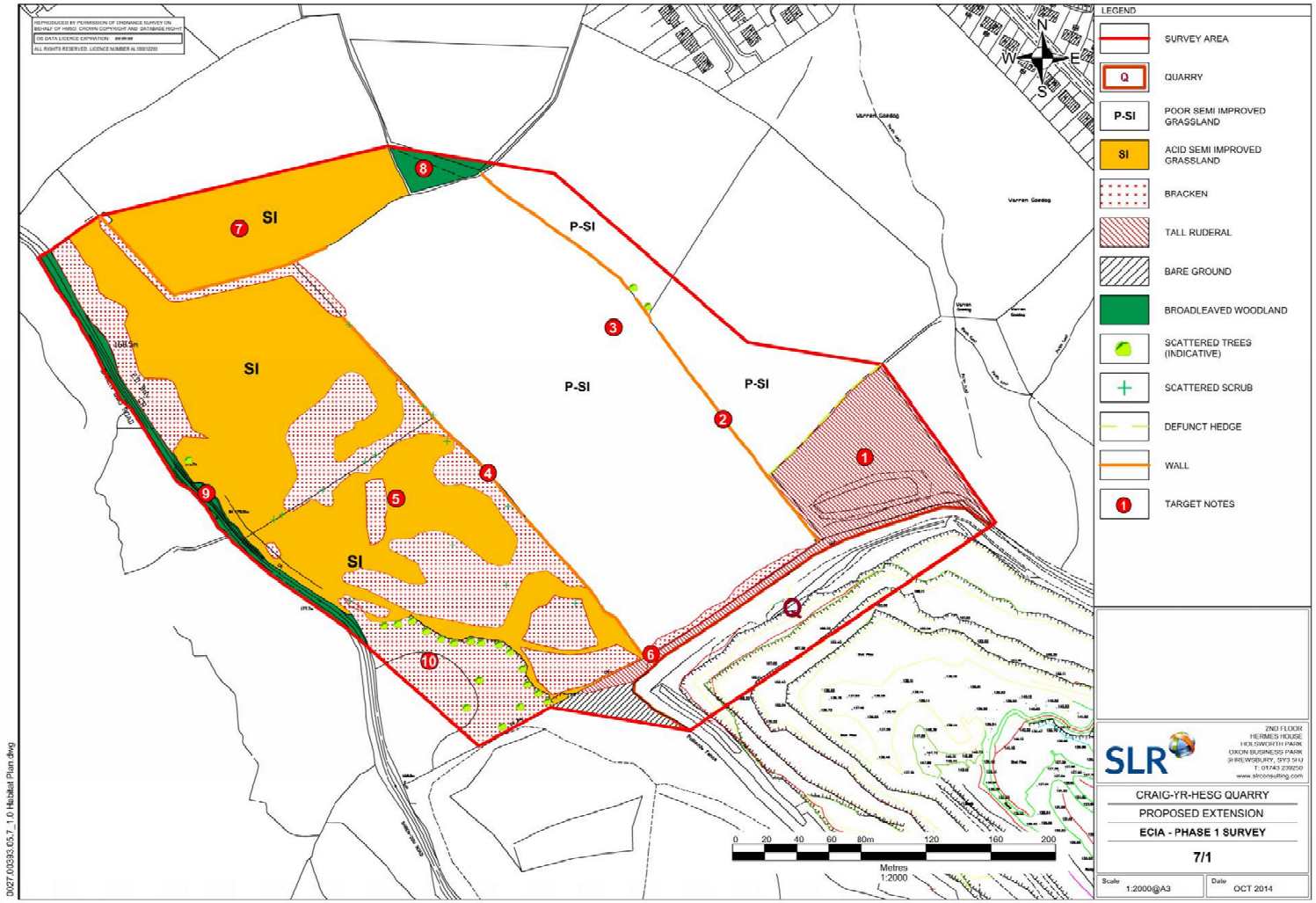
The 2015 EcIA / ES and associated planning application was reported to RCT's Planning Committee in February 2020. The Committee resolved to refuse the application (15/0666/10 dated 23rd July 2020) contrary to the Planning Officer's recommendation.

Hanson have lodged an appeal to this decision and as part of the process have prepared the SES. This EcIA review has been undertaken to consider the 2015 EcIA and conclusions reached therein to establish whether they remain appropriate in 2021, either due to changes in baseline conditions, legislation or policy etc.

This has been undertaken following an updated Phase 1 habitat survey in September 2018, an updated desk study (December 2020), and an updated Phase 1 habitat survey (January 2021).

No substantive changes that could affect the conclusions reached in 2015 have been identified and it is therefore considered that the 2015 EcIA findings remain valid and appropriate in 2021.

Figure 2-1 Habitat Map (Figure 7/1 Phase 1 Survey from 2015 ES)



3.0 NOISE

3.1 Introduction

The noise assessment undertaken as part of the 2015 ES has been reviewed by the Walker Beak Mason Partnership (WBM) in response to the Inspector's comments regarding the 2014 noise monitoring data and consideration of any policy and guidance changes since 2015.

As part of a review, noise monitoring has taken place in December 2020 and March 2021 as an update on baseline conditions.

There has been no change to the directly relevant policy or guidance on noise, specifically Minerals Technical Advice Note (Wales) 1: Aggregates (MTAN1).

Reference has also been made to the noise study undertaken by Entec as part of the 2010 EIA and ES submitted in support of the Environment Act ROMP Review, and the resulting noise conditions at four named locations included as part of the updated ROMP schedule of planning conditions.

The update on baseline conditions has been taken into account in the consideration of site noise limits, and it is recommended that the ROMP conditions for three out of four of the named locations remain in place (Pen y Bryn, Garth Avenue and Rogart Terrace).

For the fourth named location Conway Close, consistent with the 2015 ES, it is recommended that consideration be given to a lower site noise limit as set out in Table 10-4 Suggested Site Noise Limits in the 2015 ES.

For the two other named locations assessed as part of the extension development (Cefn Heulog and Cefn Primary School), it is recommended that the noise limits proposed in the 2015 ES should remain unchanged.

3.2 Policy Guidance

MTAN1 issued by the Welsh Assembly Government in March 2004 includes paragraphs 85 to 88 headed "*Noise*" on pages 34 and 35. MTAN 1 supersedes paragraphs 31 to 42 of MPG 11:1993, but the advice and noise limits closely follow the advice contained in MPG 11: 1993 (since replaced in England), with daytime working hours defined as 0700-1900 and night-time hours as 1900-0700. Paragraphs 85 to 88 from pages 34 and 35 of MTAN 1 are reproduced in **Appendix 3-1** for examination.

3.3 Update on Baseline Conditions

Routine noise monitoring was undertaken by WBM in April and November 2013, July and December 2014, June 2015, June 2016 and July 2017 at the four locations referred to in condition 18 of the ROMP schedule of conditions, referred to as locations A - D in Table 10.1 of the 2015 ES as the "*Existing Site Noise Monitoring Locations under ROMP Planning Conditions*".

Baseline Noise Surveys were completed by WBM on Thursday 10 July 2014, Friday 11 July 2014 and Tuesday 15 July 2014 at three locations "*Additional Noise Monitoring Locations for Quarry Extension Survey*", referred to in table 10-1 in the 2015 ES as locations 1-3. A total of fifteen 15-minute attended measurements were taken.

Sound level meters were also installed for unattended measurements between about 12:00 on Thursday 10 July 2014 and 14:00 on Tuesday 15 July 2014, with consecutive hourly data obtained over that period, at two locations in gardens at dwellings on Conway Close and Cefn Lane, also referred to in Table 10.1 of the 2015 ES. The Site Plan and Survey Locations are included as Appendix 10-3 of the 2015 ES.

Noise monitoring has taken place in December 2020 and March 2021 as an update on baseline conditions.

In December 2020 measurements were undertaken at the four noise monitoring locations identified in the ROMP conditions for the existing quarry, at times when the quarry was operating.

In March 2021, sound level meters were installed for unattended measurements between about 15:00 on Thursday 04 March 2021 and 17:00 on Tuesday 09 March 2021, with consecutive 15-minute data obtained over that period at two locations in gardens at the same dwellings (as in July 2014) on Conway Close and Cefn Lane. Seven attended sample measurements of 15-minute duration were also made at these two locations when the sound level meters were installed and collected so that observations could be made about the sources of noise contributing to the measured noise levels. Additional sample measurements were undertaken at two noise monitoring locations, namely Pen y Bryn and Garth Avenue, when the quarry was not operating.

The Instrumentation and Calibration details for the installed sound level meters and the meters used for the attended noise measurements are presented in **Appendix 3-2**.

The attended noise survey results from December 2020 and March 2021 are presented in **Appendix 3-3** and the results from the installed sound level meters in March 2021 are presented in **Appendix 3-4** for Conway Close and Appendix **3-5** for Cefn Heulog.

Noise Measurements December 2020

Noise measurements during normal daytime quarry operations were undertaken in December 2020. These included measurements at the four noise monitoring locations used for the existing quarry site, as identified in ROMP Condition 18.

These locations are described below:

- No 36 Conway Close - by pavement and low wall south of No.23 Conway Close
- No 3 Pen y Bryn - by break in fence at edge of road, west of No. 5 Pen y Bryn
- Flat above shop, Garth Avenue, edge of grass bank above shop, end of roadway east of No. 113 Garth Avenue
- No 1 Rogart Terrace - on path by site access road, west of 1 Rogart Terrace, about 5 metres to HGV movements on site access road

Noise measurements were undertaken during daytime hours on Tuesday 08 and Wednesday 09 December 2020. A summary of the results is presented in Table 3-1.

Table 3-1 Summary of Noise Measurement Results December 2020

Location	Measured Noise dB $L_{Aeq,15min}$	Estimated Site Noise dB $L_{Aeq,T}$	Current ROMP Condition Site Noise Limit dB $L_{Aeq,1h}$
No 36 Conway Close	41-47	Site inaudible	49
No 3 Pen y Bryn	40-54	<39 or otherwise inaudible	47
Flat above shop Garth Avenue	51-57	≤53	54
No 1 Rogart Terrace	57-59	≤54	55

Site activities were generally inaudible at Conway Close and Pen y Bryn.

At Conway Close, the most significant noise source was distant and local road traffic.

There was one instance where activities that could be attributed to the site were audible at Pen y Bryn but these were below 39 dB(A) and below the site noise limit of 47 dB $L_{Aeq,1h}$ at this location. The noise sources noted at this location included distant road traffic and local activity.

The estimated site noise at Garth Avenue and Rogart Terrace are below the site noise limits for these locations.

Site activity noise is generally audible at Garth Avenue. Other noise sources audible at this location include road traffic.

Rogart Terrace is adjacent to the site access road but is also adjacent to the B4273 Ynysybwl Road; road traffic from Ynysybwl Road is the dominant noise source at this location. Site activity noise is audible at this location due to plant and vehicles.

The surveys undertaken in December 2020 demonstrated compliance with the current ROMP noise limits.

The ranges of background noise levels obtained during the December 2020 surveys were:

- 40-45 dB $L_{A90,T}$ at No 36 Conway Close;
- 35-36 dB $L_{A90,T}$ at No 3 Pen y Bryn;
- 48-55 dB $L_{A90,T}$ at Garth Avenue; and
- 53-56 dB $L_{A90,T}$ at No 1 Rogart Terrace.

For the measurements at 36 Conway Close and Pen y Bryn, site operations were generally inaudible and were not significant with regard to the background noise levels

The background noise measurements at Garth Avenue and Rogart Terrace included some contributions from site activity.

Noise Measurements March 2021

Additional noise measurements were undertaken in March 2021. These included sample measurements at the noise monitoring locations at Pen y Bryn and Garth Avenue during daytime hours but at a time when site operations had ceased. This was to allow noise measurements to be obtained at these locations without any contribution from site activities.

The range of background noise levels from these additional sample measurements were:

- 34-35 dB $L_{A90,T}$ at Pen y Bryn; and
- 44-46 dB $L_{A90,T}$ at Garth Avenue.

Noise monitoring also took place at the rear of 26 Conway Close and Cefn Heulog with sound level meters installed for several days. The range of measured noise levels, dB $L_{A90,T}$ and dB $L_{Aeq,T}$ are presented in Table 3-2 for the existing hours for quarrying operations, namely 07:00 to 19:00 Monday to Friday and 07:00 to 16:00 on Saturday, for the installed sound level meter locations in March 2021.

Table 3-2 Range of Measured Noise Levels March 2021

Position	dB $L_{A90,T}$	dB $L_{Aeq,T}$
Install – Conway Close	30-47	35-67
Install – Cefn Heulog	29-46	35-55

For No. 26 Conway Close the average daytime background noise level is 37 dB for all $L_{A90,T}$ values obtained in March 2021 at the install location, for the permitted (and proposed) hours of operation.

For Cefn Heulog the average daytime background noise level is 36 dB for all $L_{A90,T}$ values obtained in March 2021 at the install location, for the permitted (and proposed) hours of operation.

3.4 Consideration of Site Noise Limits

Based on observations from attended sample measurements when the meters were installed and collected, the background noise levels were controlled by extraneous noise and would have been affected by wind speed and direction over the measurement period. Due to the separation distances the existing quarry operations were not likely to be controlling the background noise levels, dB $L_{A90,T}$ values, at the install locations in March 2021. Accordingly, there would be no difference in 'baseline' for these locations on Conway Close and Cefn Lane between the 'quarry' and 'no quarry' scenarios.

For No. 26 Conway Close the average daytime background noise level is 37 dB for all $L_{A90,T}$ values in March 2021 obtained for the permitted (and proposed) hours of operation. In the 2015 ES for the proposed quarry extension, the Suggested Site Noise Limit for the nearby No 36 Conway Close was 46 dB $L_{Aeq,\ 1\ hour,\ free\ field}$. It is therefore considered appropriate to 'maintain' the 2015 ES Suggested Site Noise Limit for this location.

For Cefn Heulog, one of the nearest properties on Cefn Lane, the average daytime background noise level is 36 dB for all $L_{A90,T}$ values obtained in March 2021 for the permitted (and proposed) hours of operation. In the 2015 ES for the proposed quarry extension, the Suggested Site Noise Limit for Cefn Heulog was 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$.

This was based upon an average daytime background noise level in 2014 at Cefn Heulog of 31 dB $L_{A90,T}$ where a site noise limit based on average dB $L_{A90,\ T}$ + 10 dB would be 41 dB $L_{Aeq,\ 1\ hour,\ free\ field}$. However, a daytime site noise of 41 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ would be below the MTAN1 night-time noise limit of 42 dB $L_{Aeq,\ 1\ hour,\ free\ field}$.

It was thus considered in the 2015 ES that the imposition of site noise limits lower than 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ at the dwellings on Cefn Lane closest to the extension area would impose unreasonable burdens on the minerals operator (see MPG 11 paragraph 1) and unrealistic restrictions on development. A noise limit of 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ was proposed accordingly.

Based upon the average daytime background level ($L_{A90,T}$) of 36 dB measured during the update survey in March 2021, which would give a site noise limit of 46 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ based on average dB $L_{A90,\ T}$ + 10 dB, it is appropriate to 'maintain' what has become a more conservative Site Noise Limit of 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ for this location, as recommended in the 2015 ES.

The current ROMP noise limit for Pen y Bryn is 47 dB $L_{Aeq,1h}$. The noise measurements undertaken at this location in 2020 and 2021, with and without the quarry operating, have resulted in similar background levels to those determined in 2009, on which the current noise limits are based. No changes are proposed to the noise limit at this location.

The current noise limit for Garth Avenue is 54 dB $L_{Aeq,1h}$. The recent measurements in March 2021 undertaken without quarry operations resulted in similar background levels to those determined in 2009, on which the current noise limits are based. No changes are proposed to the noise limit at this location.

The current noise limit for Rogart Terrace is 55 dB $L_{Aeq,1h}$. The noise environment at this location is controlled by road traffic. No changes are proposed to the noise limit at this location.

The Suggested Site Noise Limits are presented in Table 3-2 (was Table 10-4 in the 2015 ES) for the existing hours for quarrying operations, namely 07:00 to 19:00 Monday to Friday and 07:00 to 16:00 on Saturday. The suggested site noise limits are in terms of dB $L_{Aeq,\ 1\ hour,\ free\ field}$.

Table 3-3 Suggested Site Noise Limits

Position	Suggested Site Noise Measurement Location	Suggested Noise Limit dB $L_{Aeq,1h}$
No 36 Conway Close	Local Authority Land to West of the dwelling	46
No 3 Pen y Bryn	Existing location *	47
No 113 Garth Avenue	Existing location *	54
No 1 Rogart Terrace	Existing location *	55
Cefn Heulog	Public Footpath South of Cefn Lane in field west of houses	45
Cefn Primary School	Near to School Buildings by Agreement with the School	45

Note* The Suggested Site Noise Measurement Location for these Positions are the "*Existing Site Noise Monitoring Locations under ROMP Planning Conditions*".

3.5 Calculated Site Noise Levels

The calculated site noise levels for daytime operations at the site are set out in Table 3-3 (was Table 10-5 in the 2015 ES). The calculated site noise levels include the barrier attenuation attributable to the proposed screening landform / bunding around the proposed quarry extension area. Since the existing ground rises from the dwellings towards the proposed quarry extension area, set back tests for the rock drill have been undertaken as a check. The calculated site noise levels are in terms of dB $L_{Aeq,\ 1\ hour,\ free\ field}$.

Table 3-4 Calculated Site Noise Levels

Position	Calculated Site Noise Level (Extension Area) dB $L_{Aeq,1h}$	Suggested Noise Limit dB $L_{Aeq,1h}$
No 36 Conway Close	45	46
No 3 Pen y Bryn	47	47
Cefn Heulog	44	45
Cefn Primary School	43	45

For all of the receiver locations, the calculated site noise level complies with the suggested noise limit.

3.6 Recommendations

It is recommended that the ROMP conditions noise limits for Pen y Bryn (Position B), Garth Avenue (Position C) and Rogart Terrace (Position D), at the measurement locations listed in Table 10-1 in the 2015 ES, remain in place.

It is recommended that consideration be given to a lower site noise limit for No 36 Conway Close and that a revised measurement location (Position A) be agreed with the mineral planning authority. Should the mineral planning authority agree to the revised measurement location it is recommended that it should be on land owned by the authority at the rear garden boundary (west) of No 36 Conway Close.

For Cefn Heulog, it is recommended that a noise limit of 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ should apply, as recommended in the 2015 ES and supported by the March 2021 survey average daytime background noise levels.

For Cefn Primary School a site noise limit at the school buildings, for routine quarrying operations, of 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ is recommended which corresponds to the lowest value in the BB93 Table 3.2 "*Guideline noise levels for external teaching areas*".

Given that the greatest contribution to the calculated site noise levels is from the use of the rock drill on the uppermost rock head it would be possible, as a further mitigation measure, to restrict the time of drilling to say 10.00 to 16.00 for work on the uppermost rock head.

It is recommended that the formation of the screening landform be classified as "*temporary and short-term operations*" subject to a noise limit of 67 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ "*for periods of up to 8 weeks in a year at specified noise sensitive properties"*.

This would lead to an intense but short-term period of activity for the construction of the screening landform leading to the long-term benefit in terms of noise attenuation that the landform will provide to all subsequent quarrying activity.

The other main mitigation measure for noise is the selection and use of a rock drill with a Sound Power Level not exceeding 116 dB L_{WA}, for work on the uppermost rock head. For the Craig yr Hesg Quarry ROMP a Sound Power Level of 116 dB L_{WA} was presented in the noise chapter of the ES in 2010. From measurements obtained of the rock drill in use at the site on 19 May 2014, from examination of the WBM plant noise database and noise data supplied by manufacturers, it is considered that a Sound Power Level of 116 dB L_{WA} is a realistic value for the calculations.

Quarry benches are to be maintained at a minimum height of 7 m, in other words plant and equipment at the extraction face will be at least 7 m below the rock drill on the uppermost rock head. The maximum bench height will be 15 m, which means that plant and equipment at the working face would be 15 m below the rock drill on the uppermost rock head at times.

It is recommended that the existing site noise monitoring scheme be amended, to include the two additional locations that are representative of the nearest noise sensitive properties to the proposed extension area, so that noise monitoring would be undertaken in the event of work in that area.

3.7 Noise Summary and Conclusions

Noise has been identified as a key issue given the relative proximity of the proposed extension area to noise sensitive properties. The consideration of noise has been a significant factor influencing the design of the screening landform, with particular reference to the height of the bund and the barrier attenuation it can provide, notably in relation to operations (shot hole drilling) which will take place on the top level of the quarry on its inner side.

WBM was approached by Hanson in March 2014 to provide preliminary advice on noise in connection with the proposed extension area. WBM has had previous involvement with Craig yr Hesg Quarry, including examination of a noise impact assessment prepared as part of the 2010 Environment Act Review EIA / ES, and subsequent routine site noise monitoring undertaken between 2013 and 2017.

In May 2014 WBM was instructed to provide professional advice on noise in connection with input to an EIA for the proposed quarry extension.

The noise assessment set out in full in the 2015 ES follows a conventional approach of establishing current background noise levels, via noise monitoring at representative properties in the vicinity of the extension area; determining the sound power levels of plant to be utilised; calculating site noise levels; and comparing the site noise levels with conventional criteria set out in MTAN1.

In response to the Inspector's comments regarding the 2014 noise monitoring data and consideration of any policy and guidance changes since 2015, the noise assessment has been reviewed. Noise monitoring has taken place in December 2020 and March 2021 as an update on baseline conditions.

It has been confirmed that there has been no change to the directly relevant policy or guidance on noise, specifically MTAN1.

The update on baseline conditions has been taken into account in the consideration of site noise limits and it is recommended that the ROMP conditions for three out of four of the named locations remain in place. For the fourth named location (Conway Close) it is recommended that consideration be given to a lower site noise limit of 46 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ as set out in Table 10-4 Suggested Site Noise Limits in the 2015 ES.

For the two other named locations assessed as part of the extension development (Cefn Heulog and Cefn Primary School), it is considered that the noise limits proposed in the 2015 ES should remain unchanged.

The calculated site noise levels for the extraction operations, with the barrier attenuation afforded by the screening landform, for daytime operations are around 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ at the nearest dwellings and the school.

The calculated site noise levels for the construction of the screening landform are around 60 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ at the nearest dwellings depending on the amount of equipment that is used for that operation. For all receiver locations, the calculated site noise levels are below the noise limit advised in MTAN1 for temporary operations.

It is recommended that the existing ROMP site noise monitoring scheme be amended, to include additional monitoring locations at Cefn Heulog and Cefn Primary School that are representative of the nearest noise sensitive properties to the north of the proposed extension area, so that noise monitoring would be undertaken in the event of work in that area.

NOISE 3

4.0 AIR QUALITY

4.1 Introduction

This Chapter of the SES has been prepared by Smith Grant LLP (SGP) and reviews the dust and air quality assessment carried out by SGP for the 2015 ES. The review has considered any changes in relevant policy, legislation and guidance in relation to dust and air quality, along with any changes to baseline conditions that have occurred since preparation of the 2015 ES. Any such identified changes have been assessed to determine the potential implications on the original assessment findings and presented mitigation recommendations and are discussed in the following Chapter. Where necessary revised assessment and mitigation recommendations are provided.

The 2015 ES air quality assessment was based on a review of the new extension proposals and potential for dust impacts (where dust is a term used to describe particulate matter that can be dispersed through the air as a result of mechanical disturbance and wind movements) on local sensitive receptors and the identification of appropriate mitigation, together with an assessment of the continued operation at Craig yr Hesg Quarry. The assessment described the baseline air quality in relation to particulate matter and dust and considered the potential sources of dust emission associated with the operations undertaken on the site.

As requested by RCT in their formal Scoping Opinion the assessment primarily considered potential changes in levels of local PM_{10} (particulate matter of 10 µm or less) and whether the proposals could influence future compliance with relevant Air Quality Objectives (AQOs) that have been established in relation to the protection of human health. The assessment also considered the potential for nuisance dust impacts (also termed dis-amenity impacts).

In particular, the 2015 ES assessment referred to on-site and off-site PM_{10} monitoring that had been, and was continuing to be, undertaken by Hanson and RCT respectively. RCT had stated that there existed a significant risk of breaching the short-term AQO that has been established for PM_{10} within the settlement of Glyncoch located to the north of the existing Craig yr Hesg processing plant and that there was a potential for the quarrying activities to significantly contribute to this risk. This potential was assessed in detail as part of the 2015 ES air quality study.

On-going PM_{10} monitoring has continued to be undertaken by both Hanson and RCT since the preparation of the 2015 ES and has been subject to regular review and assessment by SGP. The results and conclusions are therefore presented in this following Chapter.

Potential air emissions from the exhaust emissions for mobile plant (termed non-road mobile plant (NRMM)) associated with extraction, loading and internal haulage were not considered to be significant and were not assessed with the ES 2015. Likewise, exhaust emissions from HGVs entering and leaving the site were considered unlikely to be significant and were not assessed.

Wherever possible the following Chapter presents any updated baseline information and revised assessment in the order as presented in the 2015 ES.

4.2 Update on Legislation, Guidance and Industry Good Practice

4.2.1 Legislation

There have not been any substantial changes to the air quality legislation referred to in the 2015 ES in relation to air quality and dust and the relevant objectives and standards referred to remain appropriate.

The applicable AQOs in relation to particulate matter remain as set out in the 2015 ES and reproduced here for reference:

Table 4-1: Air Quality Objectives

Pollutant	Objective	Date	Comment
PM_{10}	40 µg/m^3, annual mean	2004	
	50 µg/m^3, 24 hour mean, not to be exceeded >35 times per year	2004	
$PM_{2.5}$	25 µg/m^3, annual mean	2020	EU Ambient Air Directive Limit Value[1]
	15% reduction, urban background	2010-2020	Target, UK urban areas
Notes: The objectives apply to outdoor locations where members of the public are regularly present as follows: Annual mean: at locations where members of the public might be regularly exposed; including facades of residential properties, schools, hospitals, care homes etc 24-hour mean: at locations where the annual mean objectives apply together with hotels and garden s at residential properties			

1: There is no current regulatory standard for $PM_{2.5}$ within the UK Local Air Quality Management (LAQM) regime, and $PM_{2.5}$ is currently regulated at a national, rather than local, level.

It is noted that several strategy papers have however since been issued, the principal ones being the **Clean Air Strategy** published by Defra in January 2019[6] and the **Clean Air Plan for Wales** issued by the Welsh Government in August 2020[7].

The Defra published **Clean Air Strategy** sets out the UK Government's plans for dealing with all sources of air pollution. The strategy gives a detailed breakdown of the action that is required across the UK to meet the legally binding international targets to reduce emissions of NO_x and other pollutants.

The **Clean Air Plan for Wales** sets out the Welsh Government's plans for improving air quality over a 10-year pathway. This includes proposals for a new Clean Air Act for Wales to enhance existing legislation and introduce new powers to further tackle air pollution. A number of potential legislative proposals for inclusion in such a Clean Air Bill are set out in the recently published Welsh Government **White Paper**[8] which is currently out for consultation. Proposals include for requiring reviews of a Clean Air Plan or Strategy every 5 years, for the Welsh Government to set air pollution targets, introduction of an air quality target setting framework in Wales including for $PM_{2.5}$, consolidation of the existing legislative framework such as under LAQM and Smoke Control Areas, enhancement of the existing LAQM regime and revisions to smoke control legislation. It is estimated that the drafting of the Bill would commence in 2022 with final legislation to follow.

4.2.2 Guidance

The principal guidance referred to in the 2015 ES was the Minerals Technical Advice Note (Wales) 1: Aggregates, March 2004 (MTAN 1) which provided guidance on the means to reduce the air quality impacts of

[6] UK Government, Clean Air Strategy, published 14 January 2019, https://www.gov.uk/government/publications/clean-air-strategy-2019

[7] Welsh Government, Clean Air Plan for Wales, Healthy Air, Healthy Wales, Final, published August 2020;

[8] Welsh Government: White Paper on a Clean Air (Wales) Bill, issued 13 January 2021

aggregate production. Although the Planning Policy Wales has since been updated, MTAN 1 itself remains unchanged.

Since the 2015 ES, however the Institute of Air Quality Management (IAQM) has issued its' **Guidance on the Assessment of Mineral Dust Impacts for Planning**[9]. This document, issued in 2016, provides specific non-statutory guidance in relation to dust and mineral sites in relation to the planning regime. The guidance clarifies when a dust assessment is required and outlines a recommended methodology for carrying out impact assessments and determining the significance of impacts and effects. The guidance also sets out suggested approaches to mitigating emissions and impacts. Although the guidance is designed specifically for use in England, it is considered that it can be adapted appropriately for use in the devolved administrations such as Wales.

This document now forms the primary reference document for determining assessment methodologies in relation to mineral sites and dust.

The **IAQM Guidance on the Assessment of Dust from Demolition and Construction**[10] which provides supplementary planning guidance on the control of dust and emissions from construction and demolition and referred to in the 2015 ES, remains relevant to quarrying activities where these present similar risks of impacts to construction activities, e.g. during bund construction.

Other guidance referred to within the 2015 ES has since also been revised to various extents; the current relevant guidance being:

- IAQM Land-Use Planning & Development Control: planning for Air quality, 2017, v1.2: document provides specific non-statutory guidance on air quality and the planning system for new development;
- Welsh Government, Local Air Quality Management in Wales, Policy Guidance, June 2017: details national strategy policy in relation to the Local Air Quality Management (LAQM) regime;
- Defra, Local Air Quality Management, Technical Guidance (TG16), February 2018: details technical guidance in relation to the Local Air Quality Management (LAQM) regime.

4.2.3 Assessment Methodology

Irrespective of the updates and changes to the policy documents and guidance as detailed above the broad recommended approach to the assessment and evaluation of significance methodologies remain as applied to the air quality and dust assessment presented in the 2015 ES.

The principal approach remains in accordance with the source-pathway-receptor concept considering the potential magnitude of a release (the source potential), the effectiveness of the pathway (i.e., dispersion of a pollutant towards a receptor), and the sensitivity of a receptor.

Where there are significant changes that may affect the original assessment as presented these are considered below within the relevant sections.

4.3 Update of Baseline Conditions

The following section considers any changes to the site setting since the 2015 ES along with any updated information and data on air quality and dust monitoring.

4.3.1 Site Setting and Surroundings

There are no known changes to the site setting and surrounds with no new development in the locality that would present either additional sensitive receptors or sources of aerial pollutants and dust that require consideration.

[9] Institute of Air Quality Management (2016), Guidance on the Assessment of Mineral Dust Impacts for Planning, v1.1

[10] Institute of Air Quality Management (2014), Guidance on the Assessment of Dust from Demolition and Construction, v1.1

4.3.2 Existing Air Quality

The 2015 ES referred to baseline air quality data obtained via published sources where this included Defra issued predicted background pollutant mapping data, local RCT monitoring data and Hanson monitoring data for the site itself.

All this data has been since been updated by Defra, RCT and Hanson as briefly summarised below in Table 4-2.

Table 4-2: Status of Relevant Local Air Quality Data

	2015 ES: Air Quality	Current Status (March 2021)
Defra Air Quality Background Maps	Predicted background data provided for 1 km x 1 km grid across the UK based on 2011 ambient monitoring and meteorological data and information at the time on age and distribution of vehicle and emission factors. Data for 2014 presented in Chapter	Predicted background data has been updated and is currently based on 2018 ambient monitoring and meteorological data and updated information on age and distribution of vehicle and emission factors. Data for 2021 and a future year of 2025 presented below
Local Authority Monitoring Data	RCT air quality monitoring data for PM_{10} for monitoring points within the Glyncoch Estate where these were located at Greenfield Avenue (near Cefn Primary School), Upper Garth Avenue (location 63) and Lower Garth Avenue (location 109). Data for Greenfield Avenue available for 2010-2012 and that for Upper and Lower Garth Avenue 2009-2013. The monitors at locations 63 and 109 were 'indicative' monitors. Data for years 2009 to 2013 presented in Chapter. PM_{10} monitoring data for a recently established location on Upper Garth Avenue presented (Site 130, installed 16th July 2014). Site 130 used a TEOM FDMS, an approved European Reference Method. Data up to 12th November 2014 presented in 2015 ES.	Indicative monitor at Lower Garth Avenue (location 109) remains in place and results reported annually by RCT. However, the primary monitoring station is now Site 130. Data for 2015 to 2020 presented below
Local Authority Assessment and Review	Review of RCT's reports produced under their LAQM obligations presented in Chapter, including 2014 Detailed Assessment and 2014 Progress Report	Annual Air Quality Reports produced by RCT since 2015, including 2015, 2016, 2017, 2018, 2019 and 2020 Air Quality Progress Reports. Most recent key observations discussed below
Site Monitoring Data	Hanson onsite DustScan PM_{10} monitoring data for location between the Primary Crusher Feed Hopper and quarry northern boundary. Monitoring commenced December 2009; data for March 2012 to December 2014 presented in 2015 ES.	Onsite DustScan PM_{10} monitoring has continued at the location between the Primary Crusher Feed Hopper and quarry northern boundary. Monitoring presently on-going. Annual PM_{10} monitoring reports prepared by SGP on behalf of Hanson for up until November 2020; report for 2019-2020 provided in Appendix 4-1

The latest data and key results obtained from these sources since preparation of the 2015 ES are summarised below.

Air Quality Background Maps

Table 4-3Predicted Background Air Quality – Particulate Matter

Grid square	Location	Annual mean concentration (µg/m^3)			
		PM_{10}		$PM_{2.5}$	
		2021	2025	2021	2025
307500 191500	Site (north & Glyn Coch)	11.53	11.04	7.40	7.01
307500 192500	Site (south)	11.57	11.06	7.75	7.34
Mean		11.55	11.05	7.58	7.72
AQO		40		25	
%AQO		28.88	27.63	30.3	25.73

The predicted concentrations take into account existing sources of air emissions including the existing quarry and processing plant and local road network. The average background pollutant concentrations for the grid squares in which the Site and nearest receptors are located are all predicted to be reduced to those provided in the 2015 ES and remain substantially below the relevant AQOs.

Local Authority Monitoring Data

In 2009 RCT determined that indicative PM_{10} monitoring that had been undertaken at Glyncoch identified a risk of breaching the 24-hour daily mean (short-term) AQO for PM_{10} and that further in-depth monitoring was necessary to determine whether declaration of an Air Quality Management Area (AQMA) under their LAQM obligations was required[11]. A Detailed Assessment was subsequently undertaken by RCT[12]; this identified elevated levels of PM_{10} and noted that *Craig yr Hesg Quarry was a likely significant local source of PM_{10} within Glyncoch*, but concluded that further monitoring was required to clarify the situation. This report and RCT's findings, and those of the Air Quality Management Centre of the University of the West of England (UEW) who assisted RCT in the assessment, were reviewed in detail by SGP in the 2015 ES. SGP concluded in the 2015 ES that it was unlikely that the 24-hour daily mean had been exceeded.

The initial PM_{10} monitoring undertaken by RCT on Garth Avenue in the Glyncoch Estate had used Osiris monitors; these monitors form 'indicative' monitors and as such cannot be used to determine compliance with the UK AQOs. They are however capable of providing real-time measurements and provide information that can be used to assess the significance of potential PM_{10} sources and assist in determination as to whether an AQO is likely to be breached or not. In July 2014 RCT had also installed a TEOM FDMS on Upper Garth Avenue; this forms a European Reference method and enables direct comparison of PM_{10} concentrations with the UK AQOs. The 2015 ES

[11] Rhondda Cynon Taff County Borough Council, Part IV, Environment Act 1995, Local Air Quality Management, Progress Report, April 2010

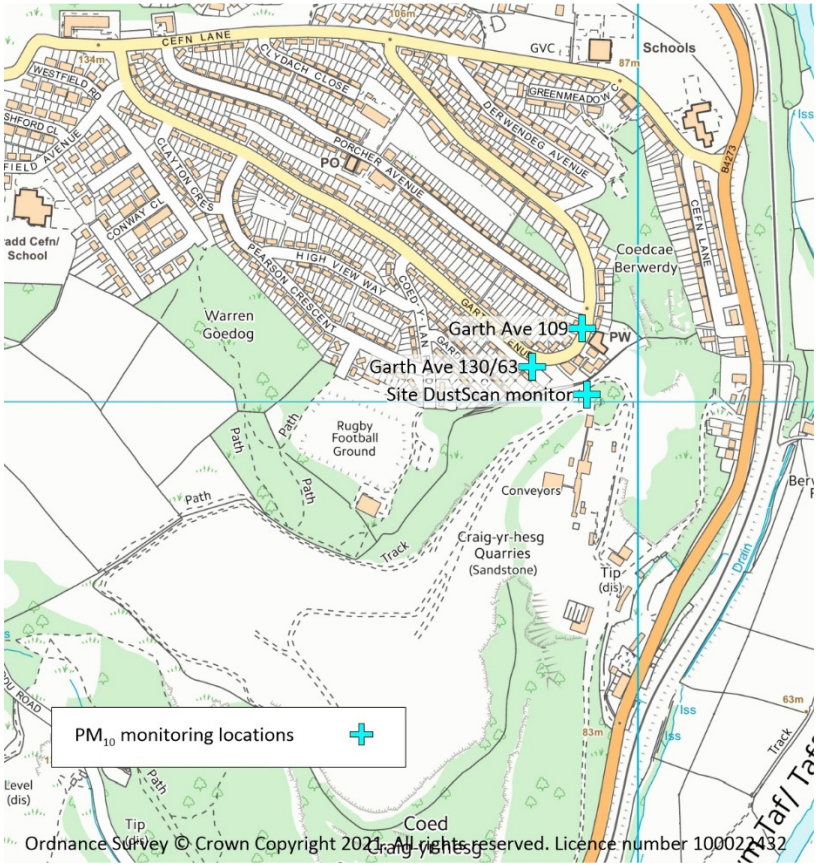
[12] Rhondda Cynon Taff County Borough Council, Part IV, Environment Act 1995, Local Air Quality Management, Detailed Assessment of Fine Particulate Matter, April 2014

reviewed available data from this monitor for the period July to November 2014.

Continuous monitoring has since continued to be undertaken by RCT at this location as noted below in Table 4-4.

The locations of the monitors are provided below in **Figure 4-1.**

Figure 4-1 PM_{10} Monitoring Locations



The results obtained from this monitor and the two 'indicative' analysers for 2015 to 2019 are summarised below in Tables 4-4 and 4-5.

Table 4-4 RCT Monitored Annual Mean PM_{10} Concentrations

	Annual mean (µg/m^3)[1]				
Site ID	2015	2016	2017	2018	2019
130	17.86	13.45	18.2	25.1	14.4 φ
63	23.16*	17.41*	17.0*φ	-	22.3 φ
109	22.52*	22.37*	22.3* φ	-	-

There are no exceedances of the PM_{10} annul mean objective of 40 µg/m^3

1: Data as presented in RCT air quality reports

*: Measurement corrected using local TEOM FDMS derived factor

φ: Data capture <75%

Table 4-5: RCT Monitored 24-Hour Mean PM_{10} Concentrations

	PM_{10} 24-Hour Means > 50 µg/m^3 (1, 2)				
Site ID	2015	2016	2017	2018	2019
130	13 (34.3)	4 (25.0)	10 (33.8)	13 (48.2)	2 (22.7) φ
63	15 (42.8)*	9 (32.0)*	3 (31.3)* φ	-	-
109	22 (41.5)*	18 (41.5)*	14 (44.1)* φ	-	15 (46.1)* φ

There are no exceedances of the PM_{10} 24-hour mean objective (50 µg/m^3 not to be exceeded more than 35 times/year)

1: Data as presented in RCT air quality reports

2: Number in brackets is the 90.41th percentile of 24-hour means

*: Measurement corrected using local TEOM FDMS derived factor

φ: less than 75% data capture

Data for 2020 has been obtained from the Air Quality in Wales website[13], an Annual Air Quality Progress Report not being available at the time of preparation of this Chapter. This reports the 2020 annual mean PM_{10} concentrations to have been 14.44 µg/m^3 and there to have been 4 exceedances across the year *(data up to 30th June 23020 verified; data thereafter currently provisional at the time of writing).*

The measured annul mean PM_{10} concentrations at all 3 locations, and in particular at location 130 that uses the EU Reference method, have been well below the long-term UK AQO (<75%) between 2015 and 2020. Similarly, there have not been any exceedances of the short-term UK AQO.

On the basis of the on-going monitoring results RCT has not progressed to declare an AQMA due to PM_{10} concentrations at Glyncoch and subsequent RCT Air Quality Progress reports state: *…concentrations of PM_{10} throughout Rhonnda Cynon Taf are likely to be below the relevant AQOs, therefore no further action is required at this time*[14].

The results are discussed further in the context of the Site below in Section 4.5.

Site PM_{10} Monitoring Data

Hanson has continued to operate the Dustscan PM_{10} monitor that was installed on site in December 2009. The monitor is located close to the quarry northern boundary with Glyncoch (at national grid reference 307915, 192015). The monitor collects PM_{10} continuously over a period of several days, with filter cartridges generally being changed weekly. The monitoring does not meet EU equivalence requirements for daily PM_{10} monitoring and is not located at a specific point of relevant exposure. However, it does provide useful long term indicative data at a strategic position between potential high-risk sources associated with the quarry processing plant and the nearest residential population in Glyncoch.

The results have continued to be collated and reported on an annual basis by SGP, with reports having been provided up until November 2020; the latest report for the period November 2019-Novemner 2020 is provided in **Appendix 4-1**.

Results for the years 2015-2020 are summarised below in Table 4.6 and compared to the results obtained from the RCT location 130 over the same time period. Because the Dustscan monitoring periods are not necessarily

[13] https://airquality.gov.wales

[14] Rhondda Cynon Taf, 2020 Air Quality Progress Report, October 2020

constant, the mean results are calculated as time weighted averages (results for each monitoring round are multiplied by the minutes of monitoring, summed together and the divided by the total minutes of monitoring in all rounds).

The number of potential daily exceedances cannot be accurately determined from the Dustscan data due to the smoothing effects of the multiple day monitoring periods. A period average concentration of in excess of 30 µg/m^3 has therefore been used as a threshold value to indicate that there *could have been* one or more days within the relevant DustScan monitoring period when the 24-hour limit could have been exceeded.

Table 4-6: Site DustScan Monitored PM_{10} Concentrations[1]

	2015-2016	2016-2017	2017-2018[3]	2018-2019[3]	2019-2020[4]
On-site PM_{10} monitor					
% data capture	81.5	75.52	55.5	57.21	47.6
PM_{10} average over period	14.48	15.32	15.28	16.33	13.44
PM_{10} time-weighted average	14.52	14.64	15.42	18.02	12.56
% of long-term AQO[2]	36.3%	36.6%	38.6%	45.1%	31.4%
PM_{10} maximum recorded	35.84	71.26	35.54	46.56	51.69
number rounds >50 µg/m^3	0	1	0	0	1
number rounds >30 µg/m^3	1	3	3	6	2
RCT location 130 data hourly PM_{10}					
% data capture	98	96	64	24[5]	98
long-term (annual) average over period	13.7	18.93	21.50	13.4	15.2
% long-term AQO	34.4%	47.3%	54%	33.5%	38%
number of daily exceedances	4	10	13	0	6
% of short-term AQO	11.4%	28.6%	37%	0%	17%

1: Full results are presented in SGP reports R1337-R10, R2613B-R01-R04, reporting periods are from / to mid-November each year

2: Results cannot be directly compared to the UK AQO

3: It is to be noted that due to a malfunction with the on-site monitoring unit it is possible PM_{10} concentrations were over-estimated over parts of the monitoring periods

4: Monitoring period covers the period of the Coronavirus pandemic and as such should be treated with caution when compared to other years to determine any trends etc

5: Low data capture achieved at RCT Upper Garth Avenue across monitoring period

The available data shows reasonable correlation between the site data and the nearby RCT monitoring station at Garth Avenue with neither data sets indicating actual or likely breaches of either the long-term annual mean or short-term 24-hour AQOs for PM_{10}.

The results are discussed further in the context of the Site below in Section 4.5.

Dust Deposition Monitoring

A period of dust deposition monitoring was undertaken over the period October to December 2014 to inform the 2015 ES. Routine deposition dust monitoring is not a requirement of the existing planning permission at the Site. However, given the absence of any particular changes of note in the locality there is no reason to suspect that background dust deposition rates would have changed substantially.

Nevertheless, for completeness, a short-term three-month dust monitoring exercise is being undertaken comprising deposition and directional dust at several downwind locations, which, where feasible, replicated the original 2014 monitoring locations.

The results to date are provided in **Appendix 4.3**. Measured dust deposition rates across the March to April 2021 period are all within the ranges previously measured and reported in 2014. This is consistent with expectations that there are no particular changes of note in the locality that would lead to an expectation that background dust deposition rates would have changed substantially since the previously monitoring. It remains concluded therefore that the 2014 data as presented remains appropriate to inform existing deposition dust conditions at the Site.

Local Wind Speed and Direction Data

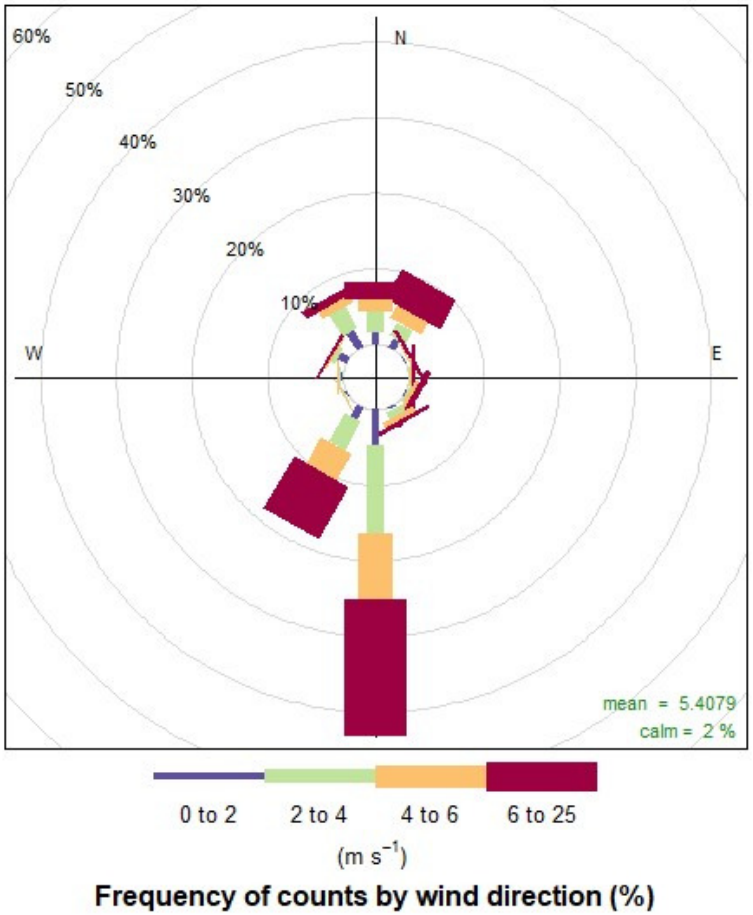
The 2015 ES noted that on-site weather station records consistently showed significantly different wind directions to available Met Office data from the nearest appropriate monitoring stations at St Athans and Cardiff Airport, located about 24km to the south-southwest and 24km to the south respectively. It was therefore concluded that the site measured wind data should be used in assessment of potential dust impacts on local receptors. It was equally noted however the onsite data was limited, the 2015 ES including a windrose obtained from site from 2013, for which 70% data capture had been obtained.

Monitoring for wind speed and direction has continued on site, the weather station remaining located at the northern end of the quarry adjacent to the Primary Crusher. The original meteorological station that had been installed at the site was replaced with a new station in 2019 following technical issues with the original station. Given these technical issues only data from the new installation has been referred to in order to inform this update assessment.

The derived wind rose from the site data for the years 2019-2021 is provided in **Figure 4-2**.

The data show the prevailing wind direction to be from sectors 180˚ through to 220˚, i.e. southerly / south-south westerly. This is slightly atypical of standard UK conditions, which are predominantly south westerly. This is also slightly different to that referred to in the 2015 ES.

Figure 4-2 Site Measured Windrose (04.01.19-04.01.21)



4.4 Update of Effects and Significance

4.4.1 Sources of Dust

Existing Operations

There have not been any changes to the site activities since the 2015 ES that would significantly affect the previously identified potential sources of airborne dust associated with the quarrying and processing activities at the quarry. The Primary Crusher feed hopper located at the northern end of the processing plant remains regarded as the most likely source for fugitive dust leaving the site, and additional measures to mitigate dust from this source are discussed in Section 4.6 below.

Some improvements have been made to the dust suppression methods employed in this area and alongside the nearby haul road; these along with other improvement measures, are discussed below.

An asphalt plant (roadstone coating plant (RCP)) was erected and commissioned on site in 2016 which replaced an earlier plant that had been decommissioned in 2009. The potential impacts associated with the proposed installation of the replacement RCP were considered as part of a separate air quality assessment and discussed in the 2015 ES.

A new haul route has recently been constructed between the extraction and processing areas following quarrying to create a corridor between the two areas. This serves to reduce the use of the haul road that runs from the lower level of the processing area to the Primary Crusher feed hopper (referred to as Haulage Road B on the Permit) and then to the main quarry via Haulage Road C. Haulage Road B is now therefore used primarily to enable vehicular access to the feed hopper and aggregates stockpiles to the east of the processing plant. As such the northern most section that runs closest to the site boundary is subject to limited traffic movement and much of the more frequented section between the yard area and stockpiles is provided with concrete surfacing. This is not therefore considered a likely significant potential source of dust.

The RCP was initially operated under a separate Environmental Permit to that held for the wider quarry processing activities, where the latter comprises the crushing and screening (using static plant) of sandstone products. These have now been consolidated into a single permit issued by RCT (PPC/009-3.5-HQPEL/0104D dated 10th June 2020). The permit also covers the various activities directly associated with the processes and as such the permitted facility includes the internal haulage routes to the primary crusher, the wheel wash and the site access / exit haul route from the B4273 (termed in the Permit as the Regulated Facility).

As previously the Permit requires the management and operation of the permitted activities and plant using best available techniques to prevent, or where that is not practicable, reduce emissions from the plant. The Permit includes several conditions relating to particulate matter emissions, odour emissions, dust suppression, haul road maintenance and record keeping.

The Permit conditions include, as previously, specific requirements relating to the routine monitoring of the exhaust emissions from the RCP stack and the secondary and tertiary crushers and screen house stack to ensure compliance with specified emission limit values for particulate matter.

The site has also continued to be operated under the various requirements of the existing planning permission in relation to the management and control of dust, and in particular those detailed in Condition 30.

Inspections

The site continues to be subject to inspections by RCT under the Environmental Permit. These are typically undertaken on an annual basis, the most recent being in January 2021. SGP has reviewed the inspection reports from February 2020 and January 2021 which both covered full inspections covering the processing plant and associated stockpiles and yard areas, haulage roads, stack monitoring reports, complaints, maintenance, and EMS documentation. In February 2020 the site was reported as being compliant with the majority of requirements although a number of non-compliance issues were raised. These have since been rectified. The January 2021 inspection similarly reports the site as being compliant with the majority of requirements, although notes a number of non-compliant issues with the fixed processing plant. Site management have advised SGP that these have since been, or are in the process of, being rectified.

Complaints

The RCT Pollution Control Officer has advised SGP that there have been several specific complaints received by RCT regarding alleged particulate matter arising from the Site in the last 5 years. These have related to alleged deposition of particulate matter on property and within internal domestic spaces, visible emissions from plant buildings and blasting, deposition of mineral from haulage vehicles onto the highways.

One complaint in July 2019 was related to dust observed along Berw Road and resulted in a written warning to Hanson[15]. It is understood this was associated with very low water levels in the settling lagoons following a period of extended dry weather resulting in the exit road sprays and wheel wash running dry. Appropriate measures were taken by the operator such that no further action was taken.

A complaint in November 2016 was related to visible particulate matter understood to have arisen from the RCP and resulted in a written warning to Hanson[16]. The particulate matter plume is understood to have arisen due to a breakdown in the abatement plant, is reported as not having crossed the installation boundary and appropriate actions are reported as having been taken by the operator such that no further action was taken.

[15] Rhondda Cynon Taf, letter to Hanson Quarry Products Europe Ltd, ref: PPC/009/617058, dated 11th July 2019

[16] Rhondda Cynon Taf, letter to Hanson Quarry Products Europe Ltd, ref: PPC/009, dated 22nd November 2016

4.5 Risk of Impacts

4.5.1 Dust

Summary of 2015 ES Assessment

The dust assessment for each representative receptor took into account the likely activities and duration, distance over which impacts may occur, degree of screening afforded at the time, and long-term frequency of wind directions. This considered both those receptors nearest the proposed extension area and those nearest the existing processing plant.

The assessment concluded that the potential risk of dust impacts would be *moderate* at most in the absence of mitigation measures at the closest receptors. This was predicted for the closest receptors at Conway Close (in relation to the proposed extension activities) and No 113 Garth Avenue (in relation to the existing processing activities) and fell to *slight* to *negligible* for receptors further away.

The essence of the guidance in relation to mineral dust is that dust emissions can be controlled by effective site management and it was noted that nuisance dust was not currently considered to be a significant issue outside the site. Assuming that the specified management and monitoring arrangements were to be maintained and applied to the proposed quarry extension then it was considered there would be no long-term significant impacts for nuisance dust at any receptors.

Update Assessment

There have not been any particular changes to the site setting, site activities or screening provided that would affect the 2015 ES dust assessment.

The assessment was however based on the limited on-site measured wind speed and direction data available at the time. Additional wind direction monitoring data is now available, and which shows slightly different prevailing conditions to those described in the 2015 ES. In addition, the IAQM guidance on mineral dust and planning[4] has since been published and which contains an illustrative example procedure for a dust assessment. The guidance is clear that other assessment methodologies are valid provided they follow the underlying IAQM procedures, are based on sound scientific principals and are appropriate for the application. The 2015 ES dust assessment followed a broadly similar methodology to that presented in the guidance meeting the requirements above and providing a valid approach. However, in the light of the updated wind direction data and newly published guidance specific to the mineral extraction activities, the assessment has been revised for this Chapter.

In accordance with the IAQM guidance the revised assessment of impacts and their effects considers the *residual emissions* from a development taking into account the controls that are to be incorporated into the design of a scheme. This enables assessment of whether the controls are sufficient or whether additional mitigation may be required. The assessment therefore takes into account both the in-built design measures, such as provision of soil bunds to the proposed extension areas, as well as the existing management and control measures that would continue to be applied as well those that would be implemented within the extension area.

The dust assessment methodology is provided in **Appendix 4-2**.

The updated assessment has been undertaken for the same receptors as for the 2015 ES and as shown in **Figure 4-3**. The results of the assessment are summarised in Table 4-7 and 4-8; full details are provided in **Appendix 4-4.** The assessment considers all primary sources associated with both the proposed extension and the continuation of existing activities where this includes, where applicable, soil stripping, storage and restoration; drilling and blasting; loading and tipping; internal haulage; crushing and screening; aggregates stocking; asphalt plant; on-road transport; and wind-blow across bare ground and stockpiles.

Figure 4-3: Dust / PM_{10} Receptor Locations

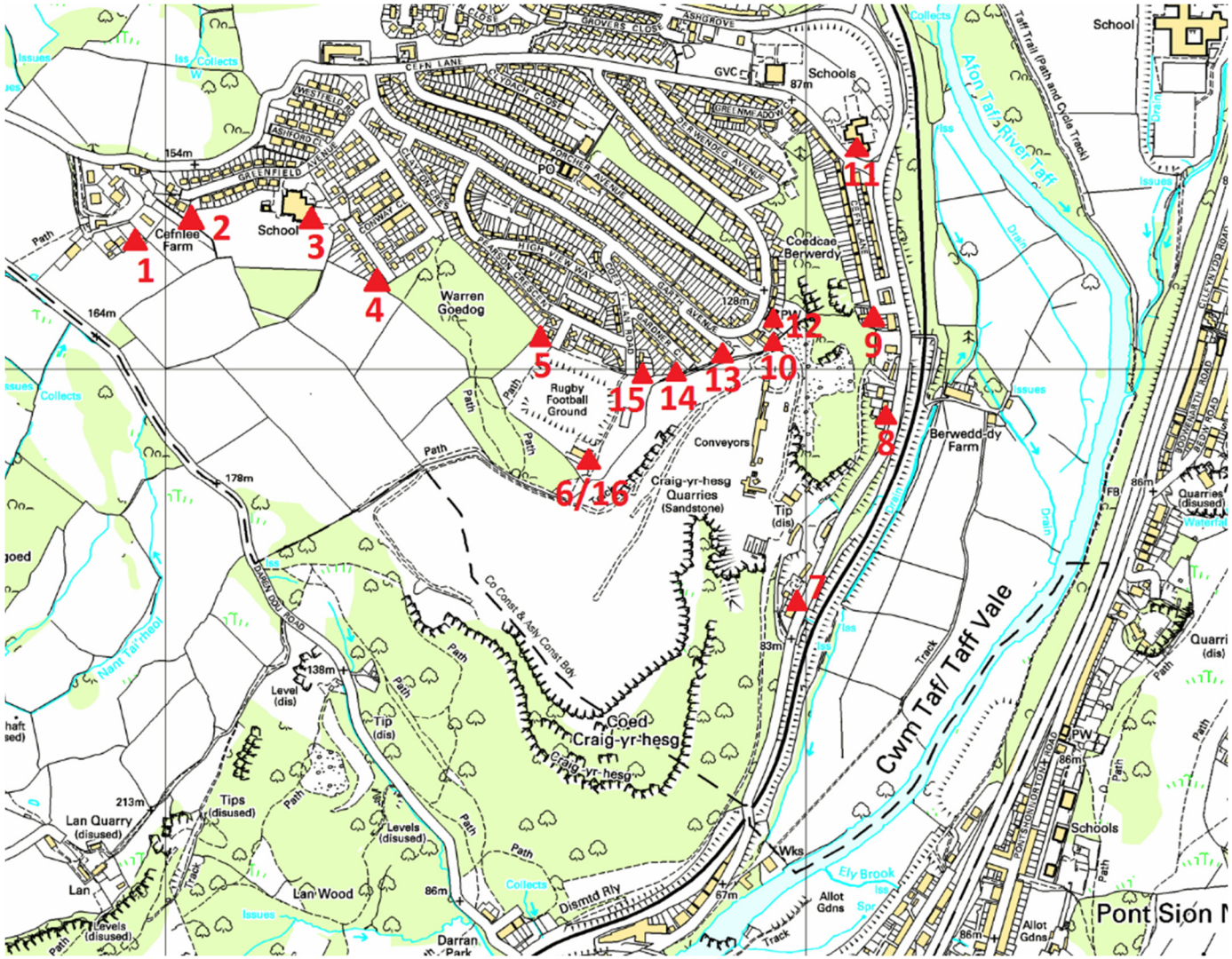


Table 4-7: Estimated Risks of Dust from Proposed Quarry Extension

	Receptor	Primary Source	Minimum Distance (m)	Residual Pathway Effectiveness	Risk of Impact / Exposure	Magnitude of Dust Effect
R1	Cefn Cae / Cefnlee farm	Phases 2 & 3	265m	ineffective	negligible	negligible
R2	No 48 Greenfield Avenue	Phases 2 & 3	265m	slightly effective	low	slight adverse
R3	Cefn Primary School	Phases 1-3	255m	slightly effective	negligible	negligible
R4	Conway Close	Phases 1 & 2	175m	moderately effective	low	slight
R5	Pen-Bryn	Phase 1	220m	ineffective	negligible	negligible
R6	Club House, Rugby Football Ground	Phase 1	180m	ineffective	negligible	negligible

Table 4-8: Estimated Risks of Dust from Existing and Continuing Quarry Operations

	Receptor	Primary Source	Minimum Distance (m)	Residual Pathway Effectiveness	Risk of Impact / Exposure	Magnitude of Dust Effect
R7	Rogart Terrace	stockpiles & yard	100m	ineffective	negligible	negligible
R8	Craig yr hesg House	process plant	170m	Ineffective	negligible	negligible
R9	No 10 Glyncoad Terrace, Cefn Lane	primary crusher feed hopper	170m	ineffective	negligible	negligible
R10	Garth Avenue Old People Flats 5-12	haul road and primary crusher feed hopper	50m	moderately effective	low / negligible	slight adverse / negligible
R11	Craig yr Hesg Primary School	haul road and primary crusher feed hopper	300m	ineffective	negligible	negligible

	Receptor	Primary Source	Minimum Distance (m)	Residual Pathway Effectiveness	Risk of Impact / Exposure	Magnitude of Dust Effect
R12	Spar Supermarket, Garth Avenue	haul road and primary crusher feed hopper	50m	moderately effective	low	slight adverse
R13	No 113 Garth Avenue	haul road	45m	ineffective	negligible	negligible
R14	No 24 Gardener Close	haul road	60m	ineffective	negligible	negligible
R15	No 28 Coed Y Lan Road	haul road	120m	ineffective	negligible	negligible
R16	Glyncoch RFC	quarry void and haul road	90m	ineffective	negligible	negligible

Table 4-9: Estimated Risks of Dust from Proposed and Existing Quarry Operations on Ecological Receptors

	Receptor	Primary Source	Minimum Distance (m)	Residual Pathway Effectiveness	Risk of Impact / Exposure	Magnitude of Dust Effect
E1	Craig yr Hesg / Lan Wood LNR / SINC	quarry void, processing areas, extension	0m (adjacent)	highly effective	low	negligible
E2	Taff and Rhonda Rivers SINC	processing and access road	270m	ineffective	negligible	negligible

In summary, taking account of the designed-in mitigation measures, there is a risk of *slight adverse* effects, at most, arising from fugitive dust at the nearby residential receptors.

The overall significance with regards to disamenity dust is considered **not significant.**

The IAQM guidance also includes a methodology for assessing ecological receptors and hence this is also included above in Table 4-9. There have equally been no changes to nearby ecological receptors since the 2015 ES, with the nearest statutory designated nature conservation site being Nant Gelliwion Woodland SSSI about 3km to the southwest of the site and outside any possible influence. Two local designated sites do lie within 400m of the site, Craig yr Hesg / Lan Wood LNR / SINC which adjoins the site to the southwest, south and east and Taff and Rhondda Rivers SINC which lies to the east.

The resulting predicted effects due to dust remains *negligible* at these sites and the overall significance with regards to dust deposition and ecological receptors remains **not significant**.

4.5.2 Fine Particulates (PM_{10})

Summary of 2015 ES Assessment

Following guidance provided by the relevant Defra LAQM guidance at the time in relation to the updating and screening assessment process for fugitive and uncontrolled releases including the quarry[17] the assessment of fine particulates considered sensitive receptors up to 200m from the existing and proposed site boundary.

The 2015 ES conservatively assumed that there was, at worse, an average 5.2 $\mu g/m^3$ contribution of PM_{10} (as an annual mean) from the site to the background concentrations at the nearest receptors. This was based on a contribution of 4.5 $\mu g/m^3$ that had been derived from the calculated difference in measured PM_{10} concentrations at the RCT/UWE monitoring location at Garth Avenue between weekdays and Sundays when the quarry wasn't operating and the maximum predicted asphalt plant contribution of 0.7 $\mu g/m^3$.

This was consistent with former guidance[18] that suggested that sources such as quarries could add up to 5 $\mu g/m^3$ to annual mean background PM_{10} concentrations at locations close to the source.

With respect to receptors near to the proposed extension area, but remote from the processing area, an average 2 $\mu g/m^3$ increase in PM_{10} as a result of quarrying was assumed. This was again consistent with studies of air quality around large quarries that have found a more typical ~2 $\mu g/m^3$ increase in PM_{10} concentrations.

The impacts of such potential increases in annual mean PM_{10} concentrations at nearby receptors were then assessed in accordance with the IAQM guidance that was in place at the time in relation to air quality and planning, taking into account the predicted 'change' in PM_{10} concentrations and resulting total concentrations. This resulted in predicted *negligible* impacts from PM_{10} for human health at receptor surrounding the proposed extension area and *negligible* to possibly *slight adverse* at receptors near the continuing existing quarry operations and processing plant.

Update Assessment

Current Defra guidance[19] in relation to the updating and screening process under the LAQM regime continues to advise that, where the background annual mean PM_{10} concentrations are less than 28 $\mu g/m^3$, only receptors within 200m of a source should be considered.

[17] Defra, Local Air Quality Management, Technical Guidance, LAQM.TG(09), 2009

[18] Defra, Local Air Quality Management, Technical Guidance, LAQM.TG(02), 2002

[19] Defra, Local Air Quality Management, Technical Guidance (TG16), February 2018

This guidance is specifically provided for Local Authorities in reviewing and assessing their areas under the LAQM regime. Although this remains relevant to the assessment in relation to the assessment of the existing and proposed extension activities, more specific non-statutory guidance is also now provided by the IAQM[4] in relation to the assessment of mineral sites under the planning regime.

The IAQM guidance concurs with previous guidance that the greatest potential for elevated PM_{10} concentrations occur within 100m of a source but provides a screening distance of up to 400m of the source for an assessment. In this case however, as there are receptors within 200m of the source and which were considered in the previous assessment, this approach remains appropriate.

The IAQM guidance[4] advises that where existing background ambient PM_{10} concentrations are less than 17 µg/m^3 there is little risk that additional contributions from mineral operations would lead to an exceedance of the long-term AQO. Defra predicted background annual mean PM_{10} concentrations for the general locality are in the range of 11.53-12.05 µg/m^3 for 2020 (see Table 4-3), well below 17 µg/m^3.

Extensive RCT PM_{10} monitoring data is also now available for Garth Avenue and measured annual mean PM_{10} concentrations have been consistently well below the AQO for 2015-2020 being in the range 13.45 - 25.1 µg/m^3. These findings are therefore consistent with the advice of IAQM.

The IAQM guidance also notes that there may be a number of days per year with particularly intense operations which increase the number of days with a concentration greater than 50 µg/m^3 but do not have a significant impact on annual mean concentrations.

Occasional exceedances of the short-term limit value of 50 µg/m^3 have been recorded at Upper Garth Avenue, to which it is possible the quarry is a contributary source. However, the number of days per year the exceedances have been recorded are well below the AQO of 35 days per annum, in the range 2 to 13 between 2015 and 2020.

To further update the assessment the extensive additional Garth Avenue PM_{10} monitoring data has also been reviewed to estimate the potential contributions to total concentrations from the quarry.

As for the 2015 ES, calculations have been made comparing the results obtained from Monday to Saturday (the quarry being consented to operate between the hours of 07.00 to 19.00 Monday to Friday and 07.00 to 16.00 on Saturdays) to those obtained for Sundays (when the quarry is not operational). In accordance with Defra LAQM guidance[14] days where <75% data capture was obtained for a 24-hour period, these periods have been removed from the calculations.

The average hourly PM_{10} concentrations recorded across Mondays to Saturdays and across Sundays for each year the period 2015-2020 are provided below.

Table 4-10: Average PM_{10} concentrations across period at RCT Garth Avenue Monitoring Location[1]

Year	Mondays-Saturdays	Sundays	Difference	Comment
	µg/m^3			
2015	18.27	14.27	4.00	
2016	14.06	9.74	4.32	
2017	16.75	10.41	6.34	
2018	*7.35*	*6.48*	*0.87*	*<75% data capture for period*
2019	*15.19*	*9.95*	*5.24*	*<75% data capture for period*
2020	14.89	11.66	3.23	Covers period of COVID-19 pandemic
average	**15.99**	**11.52**	**4.47**	Discounting 2018 & 2019

1: Calculations exclude any 24-hour periods where data capture <75%

The differences between Monday to Saturdays compared to Sundays across the period were 3.23 µg/m^3 to 6.34 µg/m^3 (discounting 2018 and 2019 for which low data capture was recorded) with an overall average difference of 4.47 µg/m^3. This is the maximum possible average contribution to PM_{10} from the quarry recorded at the monitoring location, with other sources such as road transport and wider industry also likely to be reduced on Sundays. Of particular note is the difference recorded in 2020, which includes the period of the COVID-19 pandemic[20] was reduced at 3.23 µg/m^3. The site itself continued operating throughout this period other than the loss of one day. The reduced difference could therefore be an indication of the reductions in contributions to background PM_{10} concentrations from other sources such as transport emissions.

Based on these results it remains reasonable to assume a maximum possible average increase of 2 µg/m^3 to PM_{10} concentrations for receptors near to the extension area but distant from the processing plant.

The significance assessment matrix for assessing potential impacts at individual receptors provided in the IAQM guidance[21] has also been updated since the 2015 ES. The revised matrix is as per Table 4-11.

Table 4-11: Impact Descriptor for Individual receptors[1]

Concentration at receptor[2]	% Change in concentration relative to Air Quality Assessment Level (AQAL)[3]			
	1	2-5	6-10	>10
75% or less of AQAL	negligible	negligible	slight	moderate
76-94% of AQAL	negligible	slight	moderate	moderate
95-102% of AQAL	slight	moderate	moderate	substantial
103-109% of AQAL	moderate	moderate	substantial	substantial
110% or more of AQAL	moderate	substantial	substantial	substantial

1: Reproduced from Table 6.3 in IAQM guidance; see reference document for full footnotes and explanations

2: As long-term average concentration

3: Rounded to nearest whole number; change of 0% (i.e. <0.5% = *negligible*)

The predicted impacts on receptors from PM_{10} from the proposed extension and existing quarry operations as presented in the 2015 ES are therefore revised in

[20] COVID-19: Following the outbreak of a global pandemic of the Coronavirus disease 2019 (COVID-19) due to the SAR-CoV-2 virus, the UK Government declared several restrictions on non-essential travel and movements during March 2020. These restrictions continued to varying extents across 2020 with resulting implications on road traffic, industry, general activity and hence emissions of ambient air pollutants.

[21] IAQM Land-Use Planning & Development Control: planning for Air quality, 2017, v1.2

line with the latest data and the revised IAQM significance assessment methodology below in Table 4-12.

Table 4-12: Assessment of Potential Significance of PM_{10} from Quarrying

Impact Area	Background Conc.	Increase	Predicted Conc.	Impact Descriptor
housing within 200m of quarry extension (6 houses)	11.53 (LAQM map for 2021)[1]	+2.0 (5% of AQO)	13.53	negligible
housing, shop and fast food outlet within 200m of existing quarry operations	11.53 (LAQM map for 2021)[1]	+4.5 (11% of AQO)	16.03	moderate
		+3.23 (8% of AQO)	14.76	slight

1: The Defra predicted background PM_{10} concentration for 2021 is 11.53 µg/m^3. The average measured PM_{10} concentration at Garth Avenue, excluding Sundays , is 11.52 µg/m^3.

A possible contribution of 4.47 µg/m^3 to the annual mean concentrations at the closest part of Garth Avenue therefore represents 11% of the long-term AQO. Resulting total PM_{10} concentrations have remained well below the AQO (<75%). When compared to a baseline of 'no existing quarry activities' the possible impact descriptor at the nearest receptors could therefore be described as *moderate adverse*.

As noted above however this is the estimated maximum average increase, and other possible weekday sources have not been excluded from this calculation. A possible contribution of 3.23 µg/m^3, as noted for 2020, would be 8% of the AQO, resulting in potentially *slight adverse* impacts.

Potential contributions would be reduced away from the quarry and in particular for those receptors considered in relation to the proposed extension which are remote from the processing area. Potential impacts would be *negligible*.

4.5.3 HGV Emissions

The Scoping Opinion issued by RCT to inform the preparation of the 2015 ES did not require the air quality study to include a HGV emissions assessment, and in this context the 2015 ES concluded that exhaust emissions from HGV's entering and leaving the site are unlikely to be significant.

Similar comments were made in the 'Response to Well-Being and Environmental Health Issues' Report (2016) which noted that:

> *Environmental Protection UK and the Institute of Air Quality Management provide guidelines for determining whether a development is likely to be of sufficient scale to warrant an air quality assessment. With respect to HGV flows, it is suggested that a requirement for an assessment is only indicated where the development would lead to an increase of more than 25 vehicle movements per day through an Air Quality Management Area, or more than 100 vehicle movements elsewhere. Given that the proposals involve only an increase in the permitted reserve and where the increased reserve would not in itself result in a change to output and associated traffic movements, there is no basis for suspecting significant health impacts resulting from traffic movements (ref para 8.4.23).*

The Planning Officer's Report to RCT's Planning Committee on the application (February 2019) raised no technical issues with respect to exhaust emissions.

However, for completeness, and by way on an update it is relevant to note that the majority f HGV traffic travelling to and from the quarry passes through a small area of the Pontypridd Air Quality Management Area (AQMA), declared due to potential or existing breaches of the long-term Air Quality Objectives for NO_2.

RCT has installed a network of monitoring stations which include includes a combination of continuous analysers and passive diffusion tubes for monitoring NO_2 within, and close to, the Pontypridd Town Centre AQMA, the locations of which are summarised below in Table 4.13 and shown in **Figure 4.3**.

Table 4-13 RCT NO_2 monitoring sites: Pontypridd Town Centre AQMA

Site ID	Location	Grid reference	Type of Location[1]
Continuous Analysers			
120	Pontypridd	307286 190433	roadside
Passive Diffusion Tubes			
79	High St	307202 189878	roadside
80	Morgan St	307345 190531	roadside
81	Sardis Bridge	307123 190022	roadside
83	Ceridwen Terrace	307481 190369	roadside
84	Gelliwasted Rd	307264 190403	roadside

1: type as defined by Defra and detailed in RCT 2020 ASR

Sites 79-81, 84 and 120 are all located within the existing AQMA, whereas site 83 is located is located outside the extent of the AQMA.

Annual mean NO_2 concentrations for these diffusion tubes for 2015-2019 are as detailed below:

Table 4-14 RCT Monitored Annual Mean NO_2 Concentrations

	Annual mean (µg/m^3)[1]				
Site ID	2015	2016	2017	2018	2019
Continuous Analysers					
120	35.9	38.6	31.36	31.67	30.2
Passive Diffusion Tubes					
79	36.3	39.1	35.7	32.3	30.0
80	37.0	**41.3**	35.5	30.7	28.8
81	37.0	39.6	39.0	31.1	32.7
83	36.0	39.4	34.8	32.6	31.5
84	**52.2**	**56.1**	**50.0**	**45.0**	**41.2**

Where there are exceedances of the NO_2 annual mean objective of 40 µg/m^3 these are shown in **bold**

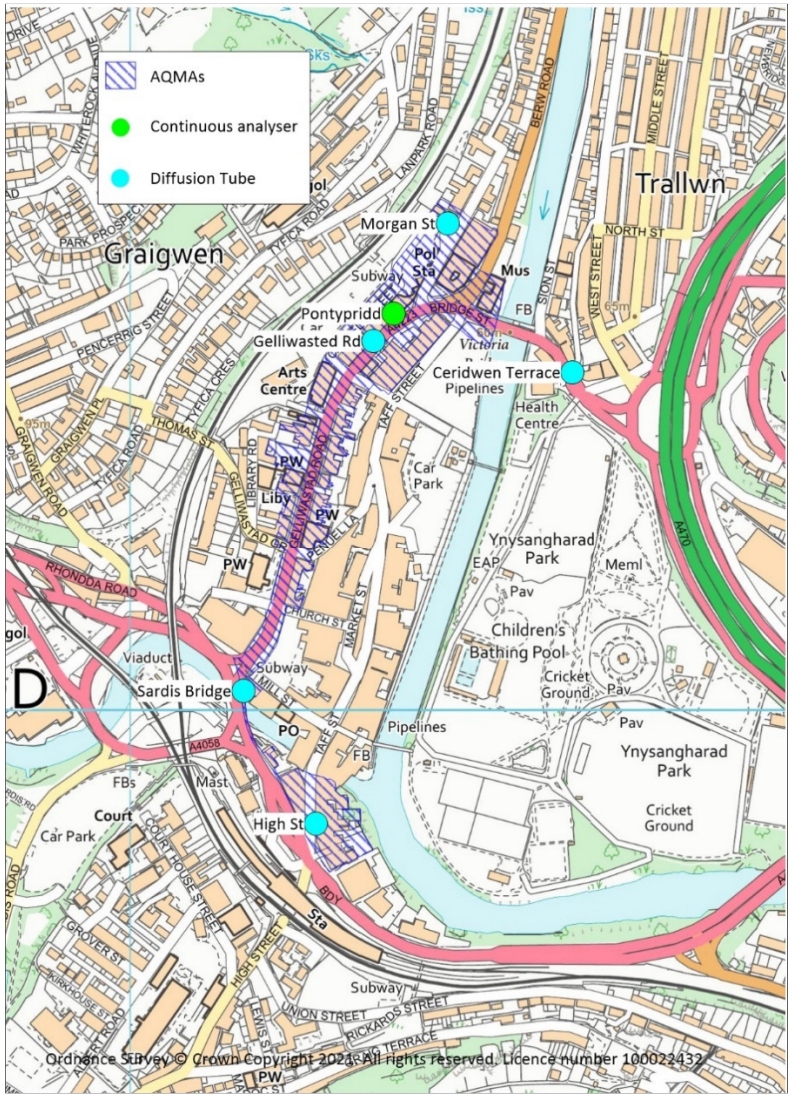
1: Data as presented in RCT air quality reports

Detailed consideration of the NO_2 monitoring results is provided in the RCT 2020 Air Quality Progress Report. The Report notes that the annual mean levels of NO_2 have consistently reduced within the Pontypridd Town Centre AQMA over the recent past. This reduction appears to be observed along all the main roads within the AQMA, with only a small part of the existing AQMA, encompassed by Site No. 84 (Gelliwastad Rd West), showing a current breach of the annual mean AQO for NO_2. All monitoring locations appear to show a noticeable decrease in annual mean levels of NO_2, observed since 2009, with apparent consistent improvement since the most recent peak level in 2016. The 2020 Report concludes that, dependent upon the outcome of prior consultation, RCT proposes to reduce the current extent of the AQMA. The proposed amended AQMA is provided in **Appendix 4.5.**

As noted above, almost all HGVs travelling to / from the Site do so via the B4273 to the south and Bridge Street / Ceridwen Terrace to / from the A470. Thereafter the majority distribute towards the south.

With reference to **Figure 4.3**, all existing HGV movements are therefore through a short stretch of the Pontypridd Town Centre AQMA. Whilst these movements are above the IAQM threshold of +25 annual average daily traffic (AADT) movements for HGVs that would indicate the need for an air quality assessment for a new development, these movements are already experienced on the local road network, and there would not be any increase arising from the proposals. Furthermore, as noted by the RCT 2020 Report, monitored annual mean NO_2 concentrations within the AQMA have been observed to be falling, with the result that reduction of the size of the AQMA is being considered.

Figure 4-3 Pontypridd AQMA NO_2 Monitoring Locations



The only stretch of road along which the Site-related HGVs travel for which NO_2 monitoring data is available is Ceridwen Terrace (monitoring ref: 83). There is no NO_2 monitoring data for the B4273 / Bridge Street junction. Annual mean NO_2 concentrations at Ceridwen Terrace have remained well below the long-term AQO since 2016 at 31.5-34.8 µg/m^3 and this area is not located within the AQMA.

On the basis that there would not be any increases in existing HGV movements due to the Proposed Development, it is not considered the proposals would have any influence of the proposed amendment to the Pontypridd Town Centre AQMA.

The overall effect of quarry vehicle emissions on local air quality during an extended period of operations at the quarry therefore remains as being deemed **not significant.**

4.6 Mitigation and Management Measures

The existing quarrying and processing activities continue to be operated in accordance with the required measures for the control of dust as detailed in the planning permission, along with the specific requirements of the Environmental Permit, as detailed in the 2015 ES.

In particular efforts have been maintained to minimise the generation of dust in and near the Primary Crusher feed hopper and associated haul road. The sensitivity of the land uses to the immediate north of the Primary Crusher feed hopper have historically been identified, and extensive improvement works have been undertaken, including the implementation of a PM_{10} Emissions Action Plan (2009). These improvements have continued with the installation of additional sprays at the feed hopper and along the haul road and provision on an automatic system.

In addition, condition 31 of the ROMP schedule of conditions requires that prior to the commencement of any alternative means of access from the plant area to the primary crusher, a scheme shall be submitted to the LPA for additional dust minimisation measures along the site boundary in the vicinity of the primary crusher.

In practice, whilst there is now an alternative means of access from the plant area to the main quarry operational area, the access from the quarry to the primary crusher is largely unchanged. Nevertheless, Hanson are happy to adhere to the spirit of this condition and have proposed a scheme of additional planting along the site boundary north of the primary crusher designed to further control fugitive dust. The scheme is produced as **Appendix 4.6** to the SES and will be separately submitted to RCT.

Proposed mitigation measures in relation to the proposed extension remain as detailed in the 2015 ES.

In addition, a Dust and Particulate Management Plan and Dust Monitoring Plan[22] (referred to hereafter as a DMP) was submitted separately to RCT in relation to the Western Extension proposals. This document sought to draw together the management and monitoring measures that were to be implemented specifically in relation to fugitive nuisance dust taking into account the existing planning permission (Condition 30) and Permit controls discussed above. This proposed DMP has been slightly revised to reflect the latest air quality data and is provided in **Appendix 4-7**.

The mitigation of PM_{10} emissions will be achieved primarily by the means of the standard mitigation measures for general dust along with the site-specific additional measures employed under the Permit in relation to the processing plant outlined above. Additional mitigation measures with respect to PM_{10} are not deemed necessary.

[22] Hanson UK: Craig yr Hesg Quarry, Dust and Particulate Management Plan and Dust Monitoring Plan, dated 16.08.2017; submitted to H. Winsall, Principal Planning officer, RCT, with letter ref: 407.00027.00386, 16th August 2017

It is proposed to cease the on-site PM_{10} monitoring and instead contribute towards the costs of the RCT monitoring at Garth Avenue, subject to incorporation of the arrangements in a formal legal agreement[18].

There has been no requirement for nuisance dust monitoring around the site to date and given the identified low risk of dust soiling at receptors outside the site resulting from the extension proposals, the 2015 ES did not include for such monitoring. The subsequent submitted DMP did however include for nuisance dust monitoring during certain periods of the proposed extension activities and this is therefore retained as detailed in **Appendix 4-7.**

The on-site weather station will be retained and records kept; these may assist in the investigation of complaints or records of elevated PM_{10} levels to help determine or eliminate sources.

4.7 Residual Effects

The latest IAQM guidance sets out a framework for assessing the significance of predicted effects.

Where *negligible* impacts are predicted the overall effects will be ***not significant***. In general, where *slight* impacts at receptors are predicted the resulting effects would be considered to be ***not significant***. *Moderate* and *substantial* impacts could result in ***significant*** effects. However, the judgement of the overall significance of the air quality effects of the proposals is informed by the predicted impacts and effects at individual receptors and takes account of a number of factors, such as, but not limited to:

- the existing and future air quality in the absence of a Proposed Development;
- the extent of current and future population exposure to the impacts and the severity of those impacts, whether in relation to ambient pollutant concentrations or dust soiling;
- whether the predicted impacts potentially result in failure to achieve compliance, or enhance compliance, with EU Ambient Air Directive values and / or UK AQOs and national and / or local air quality action plans;
- whether the predicted impacts potentially result in the need for declaration of a new or extended AQMA, or removal of an existing AQMA;
- whether the predicted impacts potentially result in permanent or temporary damage or improvements to nature conservation sites of local, national or international importance and the geographical extent of those impacts; and,
- the influence and validity of any assumptions adopted when undertaking the prediction of impacts.

With respect to the proposed continuation of existing activities and the proposed lateral extension of workings the following key observations can therefore be made with respect to this update:

- a review of the available PM_{10} monitoring data suggest potential impacts at the nearest receptors due to contributions to PM_{10} concentrations from the existing quarry activities, when compared to a baseline of 'no quarry activity' could be *slight* to *moderate* adverse at most; reducing to *negligible slight* at receptors further away;
- receptors are more distant to the proposed extension and as such potential contributions to PM_{10} concentrations are predicted to be *negligible*;
- extensive PM_{10} monitoring has been undertaken in the locality and confirmed that PM_{10} concentrations at Garth Avenue remain well below both the long-term and short-term AQOs; the data has confirmed that RCT does not need to progress to declare an AQMA in the area.

On this basis, it remains concluded that the existing operations and proposed extension would not result in significant adverse impacts on local air quality due to PM_{10} emissions, subject to the retention of the existing measures taken to manage fugitive dust, and hence also PM_{10}, emissions.

It remains concluded that assuming the specified management and monitoring arrangements are maintained and applied to the proposed quarry extension then there are considered to be no long-term significant impacts for air quality or nuisance dust.

4.8 Air Quality Summary and Conclusions

The 2015 ES described the air quality assessment that had been undertaken in considering the impacts of the existing quarry and the proposed westward extension of the quarry on potential receptors in the vicinity. These included the occupants of houses and a school to the north and northwest of Glyncoch.

The assessment primarily considered potential impacts that may arise due to fugitive dust, which can result in soiling of property and surface, and PM_{10}, a component of airborne particulate matter, which has human health effects.

This review has presented the latest available information on the existing conditions at the site, where relevant to the assessment, and air quality monitoring data. There have not been any particular changes to the site itself or the local site setting that would significantly alter the original assessment, with no new sensitive receptors or new sources identified, the asphalt plant that has since been installed at the site having been considered as part of the original assessment.

However, both onsite and offsite PM_{10} monitoring has been continued by Hanson and RCT since preparation of the 2015 ES, that carried out by RCT using an 'EU Reference Method' that enables direct comparison to the AQOs. The latest data has therefore been reviewed, and the PM_{10} assessment revised accordingly.

The on-going PM_{10} monitoring has confirmed that there are no actual or likely breaches of either the long-term annual mean or short-term 24-hour AQOs for PM_{10} at Garth Avenue. This therefore supports the original 2015 ES conclusions, following the review of the data that was available at that time, that the overall effect of an extension to the life of the quarry operations and the proposed extension is deemed acceptable in terms of human health, as air quality objectives outside the site will continue to be met.

Nevertheless, it remains acknowledged that the quarry forms a potential source of particulate emissions that will require continued management and monitoring. As such a Dust Management and Particulate Monitoring Plan has been submitted to RCT in relation to the proposals and this is deemed to remain appropriate subject to minor updating.

It will additionally remain a requirement of the existing Environmental Permit covering the quarry processes and asphalt production that best practicable means are used to control emissions, and the Permit will continue to be reviewed and enforced by RCT.

The dust assessment has also been reviewed, taking into account latest information. Nuisance dust continues not to be considered a significant issue outside the existing quarry. In addition, in relation to the extension area, due to the separation distances between the potential receptors and the quarry extension area and the local presence of screening woodland, it remains the conclusion that with adherence to the existing and additional recommended mitigation measures the potential impacts from wind-blown dust associated with the quarry extension will generally be negligible.

Overall, with the on-going application of standard good practice measures, along with the additional site-specific enhanced measures, the residual risk of adverse effects due to disamenity dust is *slight adverse* at most all receptors. Daily inspections and observations, along with rapid rectification of any identified equipment malfunctions, would be continued to minimise these risks. The resulting significance of disamenity resulting from fugitive dust is assessed as **not significant**.

5.0 TRAFFIC

5.1 Introduction

In response to the Inspector's comments regarding the age of the traffic survey information and subsequent changes to Policy since the ES was prepared in 2015, this Chapter of the previous ES submitted and considered as part of the planning application has been updated.

The following paragraphs confirm the findings of the updated review and reaffirm the conclusion of the 2015 ES which demonstrated the impact of the proposed extension to Craig yr Hesg Quarry to be acceptable in terms of highway and transport matters.

5.2 Policy Guidance

Paragraph 5.14.4 of Planning Policy Wales Edition 11 (PPW) advises: *"…Mineral working is different from other forms of development in that:*

• extraction can only take place where the mineral is found to occur;…"

Paragraph 5.14.23 of PPW confirms: *"Aggregates suitable for road surfacing construction and maintenance, where high specification aggregates are required for skid resistance, are of importance to the UK[82] and significant resources occur in Wales. The UK and regional need for such minerals should be accorded significant weight provided environmental impacts can be limited to acceptable levels."*

In terms of assessing the transport impact of mineral sites, paragraph 5.14.49 of PPW states: *"Whilst rail and waterway are the preferred options for transporting bulky minerals, if road transport is the only means available to serve new mineral development, the capacity of the road network to deal safely with the movement of minerals and related products is a relevant consideration. As mineral development usually takes place in rural locations where the road network may be inadequate to accommodate a significant number of heavy vehicles, the impact of traffic generated by mineral development needs careful consideration and a traffic impact assessment may be required."*

This advice in PPW11 repeats the same general advice as set out in Minerals Planning Policy Wales (MPPW) which was extant at the time of the 2015 ES (ref paragraphs 42 43 and 69 of MPPW).

The assessment contained within the 2015 ES provided a traffic impact assessment which considered the capacity of the road network and its ability to safely accommodate the proposed development.

In accordance with the requirements of PPW11 and the Inspector, the previous assessment has been re-visited to take into account the findings of a site visit undertaken in January 2021 and more recent traffic survey data recorded between Friday 27 November and Thursday 03 December 2020 using an Automatic Traffic Counter positioned in the same location as that for the historic surveys previously referred to in the 2015 ES.

5.3 Site Access

The improvements to the Quarry access, which were scheduled to be undertaken when the 2015 ES was prepared, have now been completed in accordance with planning permission reference 13/1039/10, which was issued in March 2014. As a result, all Quarry traffic now uses the southern access, which is subject to a 10 mph speed limit, although the northern access remains in place for emergency use only.

The bellmouth of the access extends approximately 29m between its tangent points with the western edge of the B4273, which is approximately 6.8m wide at the access point and subject to a 40 mph speed limit. The access itself is controlled by Give Way markings and associated signage.

Visibility at the access exceeds the 2.4m x 120m distances in both directions specified at condition 12 of the planning decision. This superseded the 4.5m x 120m specified on the drawings submitted with the planning application and referenced within the 2015 ES.

There are sound technical reasons for adopting the reduced 2.4m distance, as demonstrated by reference to current design guidance.

Paragraph 7.7.8 of Manual for Streets confirms *"Using an X distances in excess of 2.4 m is not generally required in built-up areas".* Paragraph 7.7.9 highlights the 2.4m X distance may be considered beneficial to highway safety where junction capacity is not a constraint, as in this case:

"Longer X distances enable drivers to look for gaps as they approach the junction. This increases junction capacity for the minor arm, and so may be justified in some circumstances, but it also increases the possibility that drivers on the minor approach will fail to take account of other road users, particularly pedestrians and cyclists. Longer X distances may also result in more shunt accidents on the minor arm. TRL Report No. 184[20] found that accident risk increased with greater minor-road sight distance."

Planning Policy Wales Technical Advice Note 18: Transport (TAN 18) of March 2007 remains extant.

Paragraph B.5 of TAN 18 advises: *"A minimum X-distance of 2.4 metres should normally be used in most situations, as this represents a reasonable maximum distance between the front of the car and the driver's eye*."

Paragraph B.7 of TAN 18 confirms: *"Using an X-distance in excess of 2.4m is not generally required in built-up areas or other areas in circumstances when junction capacity is not a relevant consideration.*

X-distances on non-trunk roads should be kept to the minimum necessary for safe operation where harm is likely to be caused to the landscape or historic environment, especially in National Parks, Areas of Outstanding Natural Beauty and conservation areas."

It is apparent that there have been no changes to relevant design guidance which would result in the existing site access now being considered unacceptable since it was approved and constructed.

Having considered the foregoing, it is apparent that the existing access remains appropriate in the context of current design guidance.

5.4 Baseline Conditions

Output from the quarry averages some 400,000 tonnes per annum, which is distributed in HGVs via the local highway network.

Approval was granted in November 2013 (13/0825/23), for the construction of a replacement asphalt plant within the site. The asphalt plant was under construction when the 2015 ES was written. The approved asphalt plant is now operational.

With the exception of vehicles associated with the production of coated roadstone, HGV movement to/from the site are restricted by planning condition to 07:00 – 19:00 Monday to Friday and 07:00 – 16:00 on Saturday, with no working on Sundays or Bank Holidays (condition 15). The time limits do not apply to the asphalt plant, due to the increasing practise of undertaking highway maintenance at night.

Almost all HGVs travelling to/from the Quarry do so via the B4273 to the south of the site, where they continue to Pontypridd before heading east to join the A470 at its grade-separated roundabout interchange, at which point they distribute primarily towards the south, where the larger conurbations in South Wales and M4 Motorway may be accessed.

5.5 Assessment of Traffic Effects

5.5.1 Study Area

As with the 2015 ES, the study area for the assessment of traffic effects includes the site access, the B4273 to the south down to the signal-controlled junction with the A4223, and the A4223 link to the A470 dual carriageway.

The access to the site and description of the B4273 is provided in Section 5.3 above.

It was noted during the January 2021 site visit that there have been some changes to the local road network since the 2015 ES was prepared. There have been some changes to parking restrictions, signage and speed enforcement. At present, there is also a diversion in place following damage to White Bridge during the floods of 2020, which has resulted in its closure to all traffic.

The following text reflects the situation observed during the January 2021 site visit. Whilst many of the carriageway widths etc. remain the same, these have been retained in the update for completeness.

Continuing south from the Quarry access along the B4273 into Pontypridd, the carriageway width varies between 6.4m and 8.9m. Approximately 260m to the south of the main access, the B4273 crosses over a railway line through a left-right bend on a bridge.

Immediately to the south of the bridge the speed limit reduces to 30 mph and the route becomes more urban in character, with terraced housing and on-street parking on the west side.

In the vicinity of the on-street parking, the effective carriageway width reduces to 4.65m. However, due to the vertical and horizontal alignment, drivers travelling northbound are able to clearly see oncoming traffic rounding the bend at the bridge to the north above the parked cars, providing good inter-visibility between road users.

Approximately 250m southwest of the bridge over the railway line, the carriageway passes below another rail bridge. On the approach to the bridge signage alerts road users to the existence of speed cameras. A pedestrian footway is introduced on the east side of the carriageway as it approaches and passes under the railway bridge, continuing to the A4223 and beyond. Double yellow lines are introduced on both sides of the carriageway at the bridge.

This railway bridge is immediately to the north of the bridge over the River Taff, which has a 7.5 tonne maximum gross weight limit in place and connects to The Parade. However, the bridge over the River Taff, known as White Bridge due to its colour, is currently closed as a result of damage during the floods in 2020. At present, it is not known when the bridge is likely to reopen.

Immediately beyond White Bridge, signage alerts road users to the fact that the 30 mph speed limit is enforced by average speed cameras.

From this point the B4273 runs parallel to and west of the River Taff to the signal- controlled junction with the A4223.

To the southwest of White Bridge, there is further terraced housing extending approximately 110m to the junction with Craigyrhesg Road. The on-street parking along their frontages reduces the effective carriageway width to a minimum of 4.25m. Where vehicles were not parked the width of the carriageway is approximately 6.5m.

Observations on site revealed that some vehicles passed each other with care, whilst others gave way on a give and take basis over the narrowest section.

Beyond the southern end of the terraced housing there are on-carriageway bus stops and further on-street parking between the Craigyrhesg Road and Lewis Terrace junctions. The nominal width of the carriageway beyond the first average speed camera increases to 8.9m, with a clear width of 6.8m where vehicles were parked on the west side of the route.

Continuing southbound, housing is reintroduced on the west side of the carriageway. Double yellow lines continue on the east side past Lewis Terrace and around the left-hand bend beyond when travelling southbound. Doubly yellow lines are also provided on the west side around the bend beyond the permitted parking areas.

Beyond the bend, single yellow lines imposing parking restrictions between 7am to 7pm Monday to Saturday line both sides of the carriageway, which has a nominal width of 7.3m, narrowing to 6.1m on the approach to the A4223. However, there are two lay-bys on the east side of the carriageway, which were occupied by several vehicles during the site visit. There are also further on-carriageway bus stops on both sides of the road.

As the B4273 approaches the A4223, double yellow lines are introduced, and the southbound lane widens to provide two traffic lanes at the signal stop line.

The nearside lane is marked for left turning traffic onto the A4223 to cross the River Taff towards the A470 and also ahead movements to Taff Street. The offside lane is marked for right turning vehicles only, onto the A4223 Gelliwastad Road, which continues south towards the intersection with the A4058.

The majority of Quarry vehicles turn left to cross the River Taff and follow the A4223 for approximately 220m to its grade-separated roundabout junction with the A470 dual carriageway, which is partially signal controlled.

The configuration of the junction allows access to the north facing traffic lanes of the A470 dual carriageway. However, the A470 is elevated above the junction and as a result, in order to access the south facing traffic lanes of the dual carriageway, drivers travel along parallel access roads adjacent to the main route on each side for approximately 0.5km to the grade-separated junction between the A470 and A4058, where access to and from the southern section of the A470 is available.

5.5.2 Traffic Conditions

The 2015 ES referred to two traffic counts provided by the Highway Authority on the B4273, to the south of the Quarry access, in 2012 and 2013. The Highway Authority has not undertaken any more recent surveys on the route. Therefore, in order to update the historic information, following consultation with the Highway Authority, a new traffic survey was undertaken, at the same location as the previous surveys, between Friday 27 November and Thursday 03 December 2020 using an Automatic Traffic Counter. This period fell between the lockdowns imposed in Wales, when travel was not restricted.

The following provides a direct comparison between the historic and updated traffic survey results. The historic results remain as reported in the 2015 ES and have been retained for ease of reference, as they are used when assessing the operational capacity of the network, because those flows were generally higher than were recorded in 2020.

Weighbridge information analysed by the operator has also revealed that the average payload of vehicles servicing the Quarry is higher than had been previously considered. This has the effect of reducing the number of vehicles required to transport the equivalent output.

As a result, the findings of the 2015 ES remain robust in terms of the impact assessment of the proposed development. Using the lower traffic flows observed in 2020 and assessing a reduced level of Quarry traffic would simply reveal that the network retains more spare capacity than was previously established and deemed acceptable by the Highway Authority, which raised no objection to the findings of the 2015 ES.

2012 and 2013 Traffic Surveys

Previously, a 7 day survey undertaken from 09/03/2012 and a 5 day survey undertaken from 01/03/2013 were provided by the Highway Authority and formed the basis of the 2015 ES.

In terms of the 7 day survey, the results revealed that the daily traffic flows between Monday and Friday over the 24 hour period ranged between 11,114 and 11918 vehicles, giving a day to day variation of 804 movements, with an average over the 5 days of 11,584. The flow on Saturday was lower at 8,364 vehicles, including 454 (4.8%) HGVs.

The HGV proportion during the 5 day week averaged 7.3%, which equates to 846 vehicles per day.

The AM peak hour flow between Monday and Friday was found to occur between 08:00 – 09:00 with an average of 946 vehicles (246 northbound / 700 southbound), of which 71 (7.5%) were HGVs. The day to day variation during the AM peak hour was 67 vehicles from totals of between 910 and 977 movements.

The PM peak hour occurred between 17:00 – 18:00 with an average flow of 974 vehicles (638 northbound / 336 southbound), of which 46 (4.7%) were HGVs. The PM peak hour flows ranged between 930 and 1010 movements, giving a daily variation of 80 vehicles.

During the weekday working hours of the Quarry (07:00 – 19:00) the traffic flows varied between 8,915 (Monday) and 9,480 (Friday), giving a range of 565 vehicles. The 5 day average flow during the operating hours was 9,222 vehicles, of which 742 (8%) were HGVs

The peak hour flows during the period were as described above. The hourly traffic flows varied between 579 and 1010 movements throughout the working week of the Quarry, giving an hourly variation of 431 vehicles.

On Saturday, the traffic flow between 07:00 – 16:00 was 5556 vehicles, of which 285 (5.1%) were HGVs. The hourly flows on Saturday varied between 251 and 843 movements during this period, giving an hourly variation of 592 vehicles.

The 5 day traffic survey commencing on 01/03/2013 recorded data from Friday 1st March to Tuesday 5th March inclusive. The average weekday flows from the Friday, Monday and Tuesday data revealed a daily traffic flow of 11,649 movements over the 24 hour period from totals of between 10,903 and 12,240 vehicles; giving a day to day variation of 1,337 vehicles. The flow on Saturday was lower at 10,297 vehicles, including 493 (4.8%) HGVs.

The HGV proportion during the 3 weekdays surveyed averaged 7.3%, which equates to 847 vehicles per day.

The AM peak hour flow on the three weekdays surveyed was found to occur between 08:00 – 09:00 with an average of 939 vehicles (247 northbound / 692 southbound), of which 75 (8%) were HGVs. The day to day variation during the AM peak hour was 103 vehicles from totals of between 902 and 1005 movements.

The PM peak hour occurred between 17:00 – 18:00 with an average flow of 962 vehicles (633 northbound / 329 southbound), of which 41 (4.3%) were HGVs. The PM peak hour flows ranged between 926 and 992 movements, giving a daily variation of 66 vehicles.

During the working hours of the Quarry (07:00 – 19:00) the weekday flows varied between 8,759 (Monday) and 9,655 (Friday), giving a range of 896 vehicles. The 3 day average flow during the operating hours was 9,301 vehicles, of which 739 (7.9%) were HGVs

The peak hour flows during the period were as described above. The hourly traffic flows varied between 546 and 1,015 movements throughout the working week of the Quarry, giving an hourly variation of 469 vehicles.

On Saturday, the traffic flow between 07:00 – 16:00 was 5,788 vehicles, of which 390 (6.7%) were HGVs. The hourly flows on Saturday varied between 261 and 831 movements during this period, giving an hourly variation of 570 vehicles.

As can be seen from the survey results above, the total traffic volumes between the two surveys are broadly similar. During some periods of the 2013 survey the traffic volumes were higher and vice versa.

The highest daily flow during the operating hours of the Quarry was recorded in 2013 (9,489 vehicles), as was the highest hourly flow (1,015 (605 northbound / 410 southbound). These peaks are within 0.1% (9 vehicles) and 0.5% (5 vehicles) respectively of the comparable peaks recorded in 2012, which suggests a normal daily variation, rather than any particular traffic growth pattern.

Updated 2020 Traffic Survey

In order to update the historic information, following consultation with the Highway Authority, a new traffic survey was undertaken, at the same location as the previous surveys, between Friday 27 November and Thursday 03 December 2020 using an Automatic Traffic Counter. This period fell between the lockdowns imposed in Wales, when travel was not restricted.

The more recent results from the 2020 Automatic Traffic Count revealed that over the 7 day survey, the daily traffic flows between Monday and Friday over the 24 hour period ranged between 8,663 and 9,728 vehicles, giving a day to day variation of 1,065 movements, with an average over the 5 days of 9,142. The flow on Saturday was lower at 7,198 vehicles, including 202 (2.8%) HGVs.

The HGV proportion during the 5 day week averaged 3.5%, which equates to 318 vehicles per day.

The AM peak hour flow between Monday and Friday was found to occur between 08:00 – 09:00 with an average of 702 vehicles (256 northbound / 446 southbound), of which 35 (5%) were HGVs. The day to day variation during the AM peak hour was 122 vehicles from totals of between 659 and 781 movements.

The PM peak hour occurred between 16:00 – 17:00 with an average flow of 778 vehicles (511 northbound / 267 southbound), of which 27 (3.5%) were HGVs. The PM peak hour flows ranged between 699 and 815 movements, giving a daily variation of 116 vehicles.

During the weekday working hours of the Quarry (07:00 – 19:00) the traffic flows varied between 7,446 (Monday) and 8,221 (Friday), giving a range of 775 vehicles. The 5 day average flow during the operating hours was 7,777 vehicles, of which 288 (3.7%) were HGVs

The peak hour flows during the period were as described above. The hourly traffic flows varied between 488 and 859 movements throughout the working week of the Quarry, giving an hourly variation of 371 vehicles.

On Saturday, the traffic flow between 07:00 – 16:00 was 4848 vehicles, of which 149 (3.1%) were HGVs. The hourly flows on Saturday varied between 258 and 680 movements during this period, giving an hourly variation of 422 vehicles.

By comparing the 2020 survey data with that recorded during 2012 and 2013, it is apparent that the daily and peak hourly flows are lower, as are the number of HGV movements. It is likely that these reductions are a result of seasonal variations, suppressed travel arising from the Covid 19 outbreak and potentially the closure of White Bridge, as vehicles divert to other routes when leaving the residential estate it connects to.

In terms of the traffic attracted to Craig yr Hesg Quarry, based on 5.75 working days per week, when excluding public holidays and planned shut-downs for extended breaks (such as at Christmas), it is established that there is a total of 287.5 working days per annum.

Based on the average output of 400,000 tonnes material being transported in 20 tonne average payloads (as was assumed in the 2015 ES), this equates to 70 loads per full working day, which results in 140 total HGV movements per day on the local highway network. If it is assumed notionally that the movements are distributed throughout the operating hours, then this would result in an average of 6 loads / 12 movements per hour when taking into account the normal operating hours at the site of 07:00 – 19:00 during the week. In practice, loading tends to be concentrated in the period 07.00 – 17.00 which would give an average of 7 loads / 14 movements per hour.

However, analysis of weighbridge information by Hanson has revealed that due to a significant proportion of material being transported in large bulk loads within articulated HGVs, the average payload was found to be 24 tonnes. Based on the increased payload, the average daily traffic flow is calculated to be 58 loads / 116 HGV movements per day. This equates to an average of 5 loads / 10 movements per hour over a 12 hour working day and 6 loads / 12 movements per hour when averaged over the 10 hour period 07:00 – 17:00 during which the majority of transport activity occurs.

Weighbridge data was also reviewed between Friday 27 November and Thursday 03 December 2020 for comparison with the recent ATC survey.

It was found that 52 loads / 104 HGV movements occurred on Friday, 4 loads / 8 HGV movements on Saturday, 50 loads / 100 HGV movements on Monday, 33 loads / 66 HGV movements on Tuesday, 40 loads / 80 HGV movements on Wednesday, and 41 loads / 82 HGV movements on Thursday. These figures give a daily average of 39 loads / 78 HGV movements, or 44 loads / 88 HGV movements if the low Saturday figure is excluded. [Note: a total of 39 loads per day x 287.5 days x 24 tonnes per load = 269,100 tonnes per annum, which falls significantly below the 400,000 tonnes per annum average.]

The highest AM peak hour flow recorded during the 2020 ATC survey occurred between 08:00 – 09:00 on Friday 27 November (781 vehicles including 39

HGVs). During this hour, a total of 4 loads / 8 HGV movements occurred at Craig yr Hesg Quarry.

The comparable PM peak hour occurred between 16:00 – 17:00 on Thursday 03 December (859 movements including 29 HGVs). The HGV activity at Craig yr Hesg Quarry during this hour was 1 load / 2 HGV movements.

Based on the 847 recorded HGV movements per day during the 2013 traffic survey, the percentage of HGVs attributable to Craig yr Hesg Quarry is calculated to be approximately 16.5% based on 140 movements per day associated with an average payload of 20 tonnes, reducing to 13.7% based on the higher payload of 24 tonnes, which results in an average of 116 movements per day at the Quarry.

Due to the lower traffic flows recorded during the 2020 ATC survey, it was found that the proportion of Craig yr Hesg Quarry HGVs within the total HGV flow, assuming all Quarry HGVs travelled to / from the south of the access, thereby crossing the ATC site, varied between approximately 4% on Saturday and 32.9% on Friday. Over the whole 7 day period, the proportion of HGVs associated with the Quarry was calculated to be approximately 23%, increasing to approximately 24.5% over the 6 operational days, which excludes the observed Sunday HGV flow.

As is apparent from the observed traffic data, both the hourly and daily total of vehicle movements associated with the Quarry fall well within the normal variations in traffic volumes on the adjoining highway network during the respective time periods.

In order to assess the operational capacity of the B4273, the peak hour traffic volume of 1015 movements established from the earlier 2013 traffic survey, has been compared with the design capacity published in Table 2 of TA 79/99 "*Traffic Capacity of Urban Roads*".

Based on Table 1 of TA 79/99, the characteristics of the B4273 are most closely matched to a UAP3 route, which has kerbside bus stops, on-street parking and frontage access.

Table 2 of TA 79/99 confirms the hourly capacity of a 6.1m carriageway of that type is 900 vehicles (one way), increasing to 1110 at 6.75m width and 1300 at a 7.3m width. The flows in Table 2 are based on a 60/40 directional split of traffic with HGV proportions of up to 15%. When allowing for the additional 40%, as the figures in Table 2 represent the higher 60% proportion of the total flow, the total two-way capacity increases to 1,500 vehicles at 6.1m, 1,850 at 6.75m and 2,167 at 7,3m carriageway widths.

By comparing these capacities, with the peak hour flow of 1015 movements (605 northbound / 410 southbound), it is apparent that the minimum one-way capacity of 900 vehicles for a 6.1m wide carriageway is approximately 48% higher than the observed flow, as is the combined flow of 1500 when compared with the two-way peak of 1015 movements observed during the 2013 traffic survey.

Based on this information, it is apparent that the current peak hour flows represent approximately 67% of the design capacity of the B4273, leaving a reserve capacity of approximately 33%, which suggests road capacity is not a material concern regarding the determination of the planning application.

Traffic growth predictions from TEMPro suggest that between 2013 and 2048, when the residual stone reserves at the Quarry would be exhausted following the anticipated completion of extraction in 2047, within the RCT Middle Layer Super Output Area (MSOA) 015 where the count was undertaken, traffic flows are predicted to increase by 30.63% between 15:00 – 16:00, which coincides with the recorded peak of 1015 movements. Based on this growth prediction, the peak hour traffic flow in 2048 would be 1326 movements.

Repeating the calculation for the 16:00 – 17:00 time period in 2020 when the peak of 859 movements were recorded, TEMPro predicted a growth of 17.49% by 2048, resulting in a flow of 1009 movements.

By comparing both figures with the lower hourly capacity of 1500 movements previously established, it is apparent that the B4273 would retain a reserve or spare capacity of at least 174 vehicles (11.6%) in the 2048 peak hour, assuming the predicted growth is achieved.

As a result, it is concluded that highway capacity is not considered to be a constraint in this case.

5.5.3 Highway Safety Effects

In order to establish whether the activities at Craig yr Hesg Quarry may have resulted in compromised highway safety, the Crashmap database was reviewed for the most recent 5 year period available (2015 to 2019 inclusive – 2020 data has not yet been validated and released). This updates the personal injury collision data for April 2008 to March 2013 included within the traffic assessment which formed part of the 2015 ES.

The area of search included the length of the B4273 from south of the Abercynon Road junction, approximately 0.6km north of the Quarry HGV egress, to the A4223 south of the quarry; along the A4223 to the A470 and along the parallel access roads to the southern junction between the A470 and A4058.

Within this area a total of 17 personal injury collisions had been recorded, of which 15 were classified as slight and 2 as serious.

A review of the collision data revealed that none of the recorded collisions had any HGV involvement and none occurred at the access to Craig yr Hesg Quarry.

In the event there is a particular feature of the highway network that results in compromised safety, it is common to find a number of collisions in the same location that share similar characteristics.

In the absence of any recorded collisions involving HGVs on the local roads within the last five years, on a network that routinely accommodates HGV traffic, applying the evidence-based approach advocated in current highway design guidance indicates the existing road network can safely accommodate the HGV traffic associated with the existing activities at Craig yr Hesg Quarry and other businesses which attract such vehicles.

5.6 Development Proposals

5.6.1 Application Details

In the context of transport and highways issues, the key features of the development are summarised as follows:

- Continuation of permitted activities for an additional period of 25 years.
- The predicted output/throughput at the site is assumed for the purposes of this study to remain at recent levels of approximately 400,000 tonnes per annum on average.
- The combined activities at Craig yr Hesg Quarry are assumed to continue to attract in the order of between116 and 140 HGV movements per average day on the local highway network, which is consistent with recent and historic activities on site.
- The existing, recently improved site access arrangements would be retained throughout.
- The types of HGVs serving the site would be consistent with current and historic operations, which have been safely accommodated on the local highway network.
- The majority of HGVs except for the occasional vehicle making a local delivery to satisfy demand in the area would travel to/from the south along the B4273 to the A4223, then to/from the west to join the A470, where the majority would head to/from the south via the dual carriageway route.
- The operating hours would remain in accordance with the existing planning permission and current/recent activities.
- In effect, in terms of highway and transport matters, the proposed development would not in itself change the current situation beyond the fact that existing hourly, daily, annual traffic movements to/from the site would continue to supply established markets with the nationally important aggregate for an additional period of 25 years beyond the currently permitted end date for operations, assuming an average output of 400,000 tpa is maintained.

5.6.2 Trip Generation

As described within Section 5.5.2, in terms of the traffic attracted to Craig yr Hesg Quarry, based on 5.75 working days per week, when excluding public holidays and planned shut-downs for extended breaks (such as at Christmas), it is established that there is a total of 287.5 working days per annum.

Based on an assumption of the average output of 400,000 tonnes material being transported in 20 tonne average payloads, this equates to 70 loads per full working day, which results in 140 total HGV movements per day on the local highway network. However, weighbridge data indicates the actual average payload is 24 tonnes, which gives an average of 58 loads / 116 HGV movements per day.

These movements would be distributed throughout the day, with a notional 6 loads / 12 movements per hour when taking into account the maximum permitted operating hours at the site of 07:00 – 19:00 during the week, or 7 loads / 14 movements over the typical loading period of 07.00 – 17.00 based on the 140 movements per day. This reduces to an average of 5 loads / 10 movements per hour over a 12 hour working day and 6 loads / 12 movements per hour when averaged over the 10 hour period 07:00 – 17:00 during which the majority of transport activity occurs based on 116 movements per day.

Other than occasional vehicles meeting local demand, all traffic heads to/from the south along the B4273, A4223 and A470.

5.7 Development Impacts

5.7.1 Environmental Impacts

In terms of the environmental effects of the proposed development related to transport matters, these are limited to noise and emissions typically associated with vehicles plus highway cleanliness. The noise, air quality and dust implications of the proposed development are considered in the relevant chapters of this SES.]

In this case, the potentially sensitive receptors are limited to the properties adjacent to the access road and those along the access route described above.

In terms of the limited number of HGVs making local deliveries, if the materials being delivered from the site were sourced from elsewhere, the same types of vehicle would still travel along the local routes, albeit from further afield, with the HGV's thus travelling over a wider area of the network.

There have been no substantive changes to the local road network since the planning conditions at the site were last reviewed in 2013, and therefore there is no reason to believe that the highway impacts would change significantly if output continues at typical levels of around 400,000 tpa.. Any changes that may occur during the intervening period between 2023 and the end life of the development would naturally take into account the existing activities at the Quarry and the associated traffic movements.

5.7.2 Highway Capacity Impacts

The existing Quarry is permitted to distribute aggregate until 31st December 2023. During this period, it is assumed for the purposes of the traffic assessment that there would not be any significant variation in existing output rates or associated vehicle movements, although there will be fluctuations to reflect market demand on a daily basis, as is apparent from the traffic survey and weighbridge data previously detailed.

As the proposed development would, in effect, simply represent a continuation of current activities for 25 years beyond the current end date, the only potential changes in terms of highway matters are limited to traffic growth associated with other development or revisions to the highway network.

The impacts of traffic growth were considered under section 5.5.2 of this chapter and it was found that the cumulative traffic flows with the continuation of activity at the Quarry was acceptable.

Having considered the foregoing, it is concluded that in practical terms, the proposed development would have no adverse impact on highway capacity

when compared with the existing situation, which has been shown to be satisfactory.

Notwithstanding this, a review of the main access route to the site confirms that based on the highest hourly flow recoded from the 2013 and 2020 traffic surveys, in the proposed 2048 design year, when operations at the site will have been very largely completed, the B4273 retains a reserve or spare capacity of 174 vehicles, which equates to 11.6%. This supports the conclusion above that the impact of the proposed development on highway capacity would be acceptable.

5.7.3 Highway Safety Impacts

It is apparent from the review of recorded collisions over the most recent (updated) 5-year period available (2015 – 2019), that the existing road network is capable of accommodating HGV activity associated with both the site and other businesses in the area which routinely attract such vehicles,

The most recent 5 years data period includes a period when operations at the quarry were ongoing at the levels assumed to continue into the future, resulting in similar traffic volumes on a day to day and annual basis.

In the absence of any recorded collisions involving HGVs on the local road network within the last five years data period on the routes that routinely accommodate the HGV traffic from the Quarry, applying the evidence-based approach advocated in current highway design guidance indicates there is no reason to believe that the HGV activity associated with the ongoing activities at the site would have an unacceptable impact or represent an increased level of risk to safety**.**

5.8 Mitigation Measures

A designed-in mitigation measure has already been implemented via the construction of the new two-way access to the quarry which delivered improved visibility and geometry at the connection to the B4273 when compared with the historic situation at the Quarry when the 2015 ES was prepared.

The existing road network currently accommodates the traffic associated with the activities at Craig yr Hesg Quarry, which are assumed to continue as existing for the life of operations associated with the proposed quarry extension.

As has been established, the existing road network retains sufficient capacity to accommodate the traffic and has a sufficient level of geometric design to facilitate safe access, as demonstrated by the lack of accidents involving HGVs within the study area in recent years.

In general terms, the highway network is therefore considered to be acceptable, and no geometric improvements are required to accommodate the ongoing activities at Craig yr Hesg Quarry beyond routine maintenance of the new quarry access road and its visibility splays.

5.9 Residual Impacts

Following completion of the development there should be no residual impacts in terms of transport matters.

5.10 Summary

The assessment of the impact on the local highway network of the proposed northwest extension at Craig yr Hesg Quarry has considered the extant planning permission and the implications of the proposed activities going forward.

The proposals effectively represent a continuation of current activities as the proposed hours of operation, method of transport and types of vehicle used would not materially change. Whilst there has been a relatively recent revision to the existing access configuration when compared with that prevailing when the 2015 ES was prepared, these works represent an improvement to the network in terms of safety.

Traffic movements associated with the quarry are currently permitted and can continue to the end date of the current planning permission.

The safety performance of the site access and local highway network, which continue to accommodate daily HGV movements, has been reviewed using updated collision records. The records confirm that there have been no recorded accidents at the site access and no recorded accidents involving HGVs on the neighbouring highway network.

The typical rate of extraction would result in an average of between 58 loads / 116 movements and 70 loads/140 HGV movements per day on the local road network depending upon whether the average payload continues at recently established or previously assumed levels respectively.

In accordance with the ongoing and historic operations, the majority of HGVs travelling to/from the site would travel to/from the south via the B4273, A4223 and A470.

Updated traffic flow information on the B4273 (2020) confirms current flows are lower than those previously recorded in 2013. Based on the highest flows, it was established that the B4273 currently operates at 67% of its design capacity and therefore retains a reserve or spare capacity of approximately 500 vehicles, or 33% of its design flow, under peak hour conditions. As a result of predicted traffic growth, in the proposed design year of 2048, when exports from the Quarry would cease, the reserve capacity would remain at a minimum of 174 vehicles and 11.6% when compared with the peak hour capacity of the route.

If assessed based on the more recent 2020 flows, the level of spare capacity available currently and in the 2048 design year is increased.

As a result, highway link capacity is not considered to be a constraint to the ongoing development activities at Craig yr Hesg Quarry.

5.11 Traffic Conclusions

Following completion of the review and update of the highway and transport implications of the proposed development it is concluded that:

- The recently improved site access is acceptable to serve the proposed development;
- The quantum of proposed development traffic is already accommodated on the local road network, which has been demonstrated to retain substantial spare capacity;
- There are no recent records of accidents involving HGV's in the vicinity of the quarry or on the identified access route to/from the A470; and

Accordingly, it is concluded that the proposed development is acceptable in terms of highway and transport considerations.

This conclusion was supported by the Council, when considering the 2015 ES which accompanied the planning application as it raised no objection on highway grounds having assessed this application for the proposed western extension to Craig yr Hesg Quarry in the context of current national planning policy as recently as July 2020 when the decision was taken to refuse permission, albeit for matters unrelated to highway impact.

6.0 HYDROLOGY AND HYDROGEOLOGY

Chapter 9.0 of the 2015 ES comprises a Hydrological and Hydrogeological Impact Assessment (HIA). The HIA is supported by 4 x appendices produced within ES Volume 2 as Appendices 9.1 – 9.4, including a 'Surface Water and Drainage Assessment Report' as Appendix 9.3.

Section 9.4.3 of the HIA provides a description of the hydrology of the site and defined study area, and, under a sub-heading 'Flooding', includes reference to Welsh Government Technical Advice Note 15: Development and Flood Risk (TAN15) and the related Maps which show the existing quarry and proposed extension area to be located entirely within Flood Zone A (considered to be at low risk of fluvial and / or coastal flooding).

Within that section, under the subheading 'Run-off' it is confirmed that run off calculations have been undertaken as part of a Surface Water and Drainage Assessment included in Appendix 9.3. The text continues by confirming that the rates and volumes for the 1 in 100 year 6 hour storm event are summarised in table 9.9 within the ES, where the calculations include an allowance for climate change.

The reference given for the climate change allowance is 'DCLG guidance', cross referenced in section 9.13 of the ES as the National Planning Policy Framework (NPPF) and Technical Guidance to the NPPF. This cross reference is incorrect, and reference should have been made to the guidance set out in TAN15, as referred to earlier in the ES chapter.

A similar incorrect cross reference appears in the Surface Water and Drainage Assessment (Appendix 9.3) which also refers to NPPF and Technical Guidance to the NPPF within the References Section 7 of the Assessment.

However, no issues arise from these incorrect cross references since both TAN15 (para 2.5) and the Technical Guidance accompanying NPPF (2012, para 13), make the same worst-case assumptions regarding a 30% increase in peak rainfall intensity attributable to climate change. This 30% increase has been built into the calculations set out in Section 4 of the Surface Water and Drainage Assessment (ref 'flood risk and run-off) as further highlighted in the conclusions Section 6 of the assessment.

Thus, whilst there is an incorrect reference to NPPF (and its accompanying Technical Guidance), the assessment was undertaken in accordance with guidance set out in TAN15 in terms of climate change allowance: it is simply that the guidance cross reference is incorrect. Importantly, the calculations undertaken as part of the HIA are consistent with the guidance set out in TAN15, and the conclusions reached are appropriate.

7.0 CULTURAL HERITAGE

7.1 Introduction

Cotswold Archaeology is the heritage consultant for Hanson UK in relation to the proposed western extension / consolidation scheme at Craig yr Hesg Quarry and produced the Cultural Heritage chapter for the Environmental Statement which accompanied the May 2015 planning application (the '2015 ES Chapter').

Following the lodging of an appeal against the refusal of the application (for reasons unrelated to cultural heritage issues), the Planning Inspectorate has undertaken an assessment of the Environmental Statement, and reference is made to the fact that the 2015 ES Chapter refers to heritage planning policy which was current at the time, but which has now been superseded. The purpose of this Chapter is to clarify the changes in question, and to consider whether these materially alter the conclusions of the 2015 ES Chapter.

7.2 Historic Environment (Wales) Act (1990)

With regard to potential development effects upon listed buildings and conservation areas, the 2015 Chapter refers to the 'Planning ('Listed Buildings and Conservation Areas Act' 1990. This statute remains in place and relevant, although it is amended by the Historic Environment (Wales) Act 2016 which was enacted by the National Assembly for Wales in February 2016 and became law after receiving Royal Assent in March 2016. It amends the two pieces of UK legislation – the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990 – that currently provide the framework for the protection and management of the historic environment in Wales.

The Historic Environment (Wales) Act 2016 has three main aims:

- to give more effective protection to Listed Buildings and Scheduled Monuments;
- to improve the sustainable management of the historic environment; and
- to introduce greater transparency and accountability into decisions taken on the historic environment.

The key amendments to the Planning (Listed Buildings and Conservation Areas) Act 1990 include an extension to the definition of a Scheduled Monument, the introduction of enforcement orders to stop unauthorised works to Scheduled Monuments or Listed Buildings, and the formulation of a comprehensive register of parks and gardens of historic interest in Wales and a statutory list of historic place names.

The revisions to the Planning (Listed Buildings and Conservation Areas) Act 1990 put in place by the Historic Environment (Wales) Act do not alter the conclusions of the 2015 ES Chapter, namely that the proposed development would not affect the settings of the listed buildings in the environs of the site.

7.3 Planning Policy Wales

With regard to planning policy for Wales, the 2015 ES Chapter refers to Planning Policy Wales (PPW) Edition 7, July 2014 (Chapter 6). There have been several iterations of PPW in the intervening period, with the current issue being Edition 11 of February 2021 (part of Chapter 6, 'Distinctive and Natural Places').

However, the key emphasis of the policy remains the importance of protecting the historic environment: encompassing designated historic assets (Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens, and Special Landscape Areas) and non-designated historic assets (including buried archaeological remains).

The revisions to PPW since the 2015 ES Chapter do not alter the conclusions of the Chapter that the proposed development would not result in a significant adverse effect on the cultural heritage resource.

7.4 Technical Advice Note 24 – The Historic Environment (2017)

The 2015 ES Chapter refers to the former Welsh Office Circulars 60/96 (Planning and the Historic Environment: Archaeology), 61/96 (Planning and the Historic Environment: Historic Buildings and Conservation Areas) and 1/98 (Planning and the Historic Environment: Directions by the Secretary of State for Wales.

The guidance contained in these long-standing Circulars was replaced in May 2017 by Technical Advice Note 24: The Historic Environment which provides guidance on the various elements of the Historic Environment, including:

- World Heritage Sites
- Scheduled Monuments
- Archaeological Remains
- Listed Buildings
- Conservation Areas
- Historic Parks And Gardens
- Historic Landscapes
- Historic Assets of Special Local Interest

It also provides further guidance on the 'setting' of historic assets with a cross reference to guidance published by CADW and Welsh Government in May 2017 (discussed further below).

Given that the site is not affected by any designated cultural heritage assets, it would not affect the settings of assets in the environs, and any below ground archaeology can be addressed by a conventional programme of archaeological monitoring (ref ES Chapter section 14.7), the adoption of TAN 24 does not alter the conclusions of the 2015 ES Chapter.

7.5 The Hedgerows Regulations (1997)

The 2015 ES Chapter refers to the Hedgerows Regulations 1997 with regard to the criteria for 'important' hedgerows. This remains the relevant legislation.

7.6 Setting of Historic Assets in Wales 2017

The 2015 ES Chapter was compiled prior to the production of guidance from Cadw and Welsh Government, published in May 2017. regarding the 'setting' of historic assets ('Setting of Historic Assets in Wales').

Prior to the adoption of this guidance, the English Heritage (as it was then) guidance on 'The Setting of Heritage Assets' (First Edition, 2011) was used as a standard guide to this subject, and this was the case here. That guidance has itself been the subject of a Second (2017) Edition.

The first Edition of the English Heritage guidance used for the 2015 ES Chapter provided a suitable and rigorous methodology for assessing the setting of historic assets, and the effects of change on their significance. The publication of the 2017 guidance does not alter the conclusions of the 2015 ES Chapter, noting the conclusions on setting referred to above.

7.7 Local Planning Policy

Local planning policy is contained in the 'Rhondda Cynon Taf Local Development Plan up to 2021' which was adopted by Rhondda Cynon Taf County Borough Council in March 2011. Relevant policies relating to the historic environment include Policy AW7 'Protection and Enhancement of the Historic Environment'. The local development plan adopted in 2011 remains the current development plan.

Further guidance on the safeguarding of the historic environment within the boundaries of Rhondda Cynon Taf County Borough Council is provided in 'Supplementary Planning Guidance: the Historic Built Environment', which was adopted in March 2011. This remains the relevant supplementary planning guidance on the historic environment.

7.8 Cultural Heritage Conclusions

There have been a number of changes in heritage statute and related policy since the completion of the 2015 ES Chapter, and these are clarified above.

Following this review, it is concluded that the identified changes do not alter the conclusions of the 2015 ES Chapter.

8.0 SOCIO-ECONOMIC, WELL-BEING AND HEALTH ISSUES

8.1 Introduction

A dedicated socio-economic, well-being and health issues chapter was not included as part of the 2015 ES, and such a study was not requested by RCT in the EIA Scoping Opinion which preceded the preparation of the 2015 EIA and ES.

However, a 'response to health and wellbeing issues raised during public consultation' on the application was provided in 2016. This considered a range of issues raised in response to the application by consultees and other interested parties which had been summarised by RCT in a memorandum setting out a schedule of issues and themes to which the Applicants were invited to respond.

The ensuing Report (June 2016, hereafter referred to as the 2016 Report) was structured to:

(i) Summarise the community consultation which had been undertaken.

(ii) Detail the environmental controls, mitigation measures, monitoring proposals, and general environmental and amenity protection measures set out in the planning application and ES.

(iii) Highlight the amenity benefits of the scheme as set out in the application.

(iv) Provide a response to the themes, issues and questions set out in the RCT memorandum.

(v) Identify additional mitigation measures in response to the identified concerns; and

(vi) Provide a holistic overview of the health and well-being concerns and conclusions which could objectively be drawn.

The content of the 2016 Report is not repeated in this SES but there have been a number of legislative changes and planning policy updates relevant to the topic (notably via PPW10 and the current PPW11, discussed in more detail in Chapter 9.0 below), together with some minor changes to the previously quoted economic benefits. These issues are thus briefly referred to below for completeness, together with a summary of issues raised by consultees in response to the application and the 2016 Report.

It should also be noted that the 2016 Report was prepared as a response to the schedule of 'issues and themes' set out by RCT, and the Report was structured accordingly to address each of the items listed. As a result, it did not follow the structure of a conventional ES chapter in describing the planning policy context, relevant guidance, and an assessment methodology since the terms of the study were prescribed by the requirements set by RCT.

However, the study embraced the principles of a 'source- pathway -receptor' model in identifying effects that are plausible and directly attributable to the proposed development and then assessing potential human health effects, whether negative or positive. In so doing, it reviewed a comprehensive suite of public health and well-being issues (notably noise, blast vibration, air quality, dust and other well-being issues relevant to the consideration of the topic) in a way which was satisfactory to RCT and the regulatory bodies.

For consistency, this SES chapter seeks only to update the 2016 Report as identified. However, for completeness, it is considered that the conclusions of the 2016 Report as updated in this chapter would be the same were such information on policy context, guidance and methodology information included in the assessment.

8.2 Planning Policy Context

8.2.1 Welsh National Planning Policy

Achieving a healthier Wales, whereby people's physical and mental well-being is maximised and choices/behaviours that benefit future health are understood, is one of seven goals outlined in the Well-being of Future Generations (Wales) Act 2015 (Welsh Assembly 2015).

Planning Policy Wales Edition 11 (PPW11) (Welsh Government 2021) aims to deliver the vision set out by the Well-being of Future Generations Act. As such, "promoting healthier places" is identified as one of several key themes which collectively contribute to placemaking in Wales. It is recognised that the built and natural environment is a key determinant of health and wellbeing, whereby the planning system, and planning authorities themselves, have a role to play in the prevention of health impacts caused or exacerbated by a range of social, economic, environmental and cultural factors which determine health. As a result, the planning system must consider the impacts of all proposed developments on existing communities to maximise health protection, wellbeing and safeguard amenity.

In addition, within PPW11, health protection is mentioned in the context of the following specific determinants of health relevant to the proposed development:

- Paragraph 3.55 states that for land which has been previously developed on, it may be appropriate to secure remediation (if land is contaminated) to reduce risks to human health.
- Paragraph 5.14.2 states that there is a requirement to ensure the adequate supply of minerals with the protection of human health, safety and general wellbeing.
- Paragraph 6.7.2 states that national air quality objectives represent a pragmatic threshold above which government considers the health risks associated with air pollution are unacceptable. It further notes that '*air just barely compliant with these objectives is not 'clean' and still carries long term population health risks*'. From a public health perspective, the primary pollutants of concern are nitrogen dioxide and particulate matter, which currently have no safe threshold defined, and therefore the lower the concentration of those pollutants the lower the risks of adverse health effects. As a result, PPW11 confirms that it is desirable to keep levels of pollution as low as possible.
- Paragraph 6.7.3 states that certain sounds can be problematic, can affect amenity and be prejudicial to health or a nuisance. In addition, it is recognised that lower levels of noise can still be annoying or disruptive with impacts on amenity, and as such, amenity should be protected through the planning process wherever necessary.

It should also be noted that the same advice was set out in the previous version of PPW10 which was extant at the time of determination of the application in July 2020.

8.3 Determination of the Application

Responses to the extension application from consultees were set out in the Planning Officers Reports presented to RCT's Planning Committee in February and July 2020, and included:

> *"The Council's Public Health, Protection & Community Services consider that processes at the quarry can be managed to ensure a limited impact upon the level of air quality and neighbour amenity in respect of particulate matter and therefore the application is considered to be acceptable in this respect."*

The Reports also confirmed that the Council's Public Health, Protection & Community Services *"provided advice on what information is required to ensure impacts from the quarry in terms of air quality, noise and well-being can be limited, including a particulate matter management plan. Have suggested a financial contribution is made towards the Council carrying out air quality monitoring in the area* (agreed by Hanson). *Have suggested that vibration levels and air overpressure limits are set in order to minimise any impact on the local community."*

Public Health Wales noted that *"[…] there are no proposals to increase throughput or output at the site […] which averages 400,000 tonnes per annum. With regards local air quality impacts, the Air Quality Progress Report 2019 shows latest PM_{10} monitoring data (from Upper Garth Avenue, Gyncoch, for January to September 2018) in the locality is good and that PM_{10} concentrations comply with both long- and short-term health based national air quality objectives. As such and providing there is no increase in activity at the quarry site, adverse air quality impacts – and consequently human health impacts - are unlikely. This is confirmed by the Air Quality Progress Report 2019."*

The responses were summarised further in the July Committee Report to the effect that:

> *"Public Health Wales consider the current air quality in terms of PM_{10} particulates in the area to be 'good' and therefore in their opinion the community is not currently experiencing the effects of poor air quality. They and Cwm Taf University Health Board have indicated that based on current levels of activity adverse air quality impacts and consequently human health impacts are unlikely."*

No specific issues regarding health and well-being were therefore cited in the single reason for refusing the application.

8.4 Economic Benefits

The economic benefits of the development were highlighted in Section 6.0 of the 2016 Report, including the contribution made by the quarry to employment and the local economy.

The figures quoted have slightly changed in the intervening period, but with the quarry continuing to directly employ 19 personnel with a further 10 indirect personnel associated with haulage, maintenance and servicing etc and between 50 and 60 external hauliers collecting material from the quarry.

As of 2020, the annual wage bill at the quarry is some £1,155,000 (£700,000 referred to in the 2016 Report), with expenditure on contractors of around £160,000 per annum (£345,000 referred to in the 2016 Report). Expenditure on spares and repairs/maintenance etc. continues to amount to an average of £800,000, predominantly spent on businesses with Offices in South Wales. Expenditure on plant hire amounts to an average of over £150,000 per annum (£130,000 referred to in the 216 Report), again predominantly spent with businesses with Offices in South Wales. Business rates payable to RCT continue at an average of £88,000 per annum. Aggregates tax remains payable, although the aggregates levy fund is no longer operated by the Welsh Government.

As was the case in 2016, the quarry thus directly and indirectly injects over £2 million per annum into the local economy (£2.3m).

The 2016 Report also made reference to the importance of the supply of HSA aggregate, which is acknowledged to be a resource of UK importance. However, in this respect, the continued availability of supply of aggregate from the quarry for construction will be particularly beneficial as the country emerges from the Covid 19 pandemic, with a need to grow the economy, and where construction and capital projects are anticipated to be a key feature of such growth.

This is similarly the case with employment, where the retention of employment is important at a time of growing rates of unemployment arising from the Covid 19 pandemic.

9.0 PLANNING POLICY

9.1 Introduction

The May 2015 application was accompanied by a Planning Application Statement (PAS), within which chapter 8.0 included a detailed assessment of planning policy relevant to the consideration of the planning application and proposed development.

At the time of submission of the planning application in May 2015, the development plan comprised the Rhondda Cynon Taff Local Development Plan adopted in March 2011. This remains the adopted development plan as at the date of drafting this SES (April 2021), with no material progress having been made by RCT towards the preparation and adoption of a replacement / reviewed LDP.

However, as noted in the PINS assessment of the ES accompanying the May 2015 application, there have been changes to national planning policy in the intervening period.

At the time of submission of the application, national planning policy was contained within Edition 7 of Planning Policy Wales (July 2014) [PPW7]. PPW7 set out general planning policy considerations but did not expressly deal with mineral planning policy. This was separately contained within Minerals Planning Policy Wales (December 2000) [MPPW], supported by Minerals Technical Advice Note (Wales) 1: Aggregates (March 2004) [MTAN1].

The key elements of minerals planning policy set out in MPPW were incorporated as a separate chapter 14.0 into an updated edition 8 of PPW issued in January 2016 [PPW8]. Upon the issuing of PPW8, MPPW was cancelled. However, MTAN1 remains extant.

No material changes were made to mineral planning policy in Planning Policy Wales Edition 9 issued in November 2016 [PPW9].

The Assessment of the ES undertaken by PINS as set out in their letter dated 28th January 2021 noted that some of the planning policy documents had been superseded, with Planning Policy Wales Edition 10 (December 2018) [PPW10] in force as at the date of the assessment. PPW10 has itself been superseded by Planning Policy Wales Edition 11 (PPW11) issued on 24th February 2021. Like PPW10, PPW11 makes no material change to mineral planning policy as set out in previous versions of PPW, but the document follows the substantial restructuring as included in PPW10 to ensure that it is fully aligned with the sustainable development requirements of the Planning (Wales) Act 2015 and the well-being goals defined in the Well Being and Future Generations (Wales) Act 2015.

However, in terms of mineral planning policy, section 5.14 of PPW11 makes no changes to the text of an identical section 5.14 as set out in PPW10. This in turn generally re-states policy previously set out in Chapter 14.0 of PPW9 and PPW 8, which in turn repeats long standing advice drawn from MPPW regarding:

- the need for a balance between ensuring an adequate supply of minerals with the protection of amenity;
- the need for efficient use of minerals;
- safeguarding mineral resources;
- ensuring supply;
- assessing supply and demand;
- the need for planning authorities to provide a clear guide as to where mineral extraction is likely to be acceptable;
- the significant weight to be accorded to the supply of aggregates suitable for road surfacing as a resource of UK importance; and
- the measures to reduce the impacts of mineral extraction, including, of relevance to the Craig yr Hesg western extension, the re-stating of advice on buffer zones to be read in conjunction with the further advice set out in MTAN1.

In essence therefore, whilst the PAS which accompanied the 2015 western extension application assessed the scheme in the context of planning policy set out in the then extant MPPW, mineral planning policy has not materially

changed via subsequent iterations of PPW, and the current PPW11 continues the key themes of this long-standing advice.

Similarly, given that MTAN1 remains extant, the key elements of planning policy in that document, as assessed in the PAS, remain relevant in terms of maintaining the supply of aggregates, reducing the impact of aggregates production via specific advice relating to noise, dust, blast vibration and visual impact, and a need to achieve a high standard of restoration. Of particular relevance to the appeal which has prompted the preparation of this SES is the advice in MTAN1 relating to 'buffer zones' (ref paragraphs 70 and 71 of MTAN1), which again continues long standing principles regarding the way in which buffer zones should be applied, as discussed further in section 7.4 below.

The consideration of these issues, as set out in the 2015 PAS thus remains applicable in terms of the general analysis of the themes and the conclusions drawn. The text from the 2015 PAS relating to MTAN1 is thus not repeated in this SES, nor is there a detailed analysis of the key elements of mineral planning policy set out in PPW11 given that this has not materially changed from the policy set out in the former MPPW (albeit of course with different paragraph references). However, to draw matters together, the key minerals planning policy elements from PPW11 and MTAN1 are set out in an overview provided in the conclusions section 8.5 below.

A change which has occurred in the intervening period relates to the consideration of the need for the development in the context of the Regional Technical Statement (RTS) which was in place at the time and which informed the preparation of the LDP. Since the submission of the 2015 application, a Second Review of the RTS has been undertaken (RTS2), the content of which is considered in section 7.4 below together with an update of the 'need' for the development.

Subject to this, given that the main themes of mineral planning policy have not changed, the key planning policy changes relate to the planning policy framework provided by PPW11 and supporting legislation, as discussed below.

9.2 National Planning Policy Context

The Well Being of Future Generations (Wales) Act 2015 (WBFGA) places a duty on public bodies that they must carry out sustainable development. The principle of sustainable development has been at the heart of planning policies since Planning Policy Wales (PPW) was first published in 2002. However, the concept has been expanded and reinforced under the WBFGA to require a process of improving the economic, social, environmental and cultural wellbeing of Wales (Section 2), by taking action in accordance with the sustainable development principle (defined in Section 5), aimed at achieving the well-being goals (listed in Section 4). The WBFGA (Section 3.0) also requires public bodies to set well-being objectives designed to maximise their contribution towards achieving each of the wellbeing goals.

The seven well-being goals seek to secure a prosperous Wales, a resilient Wales, a healthier Wales, a more equal Wales, a Wales of cohesive communities, a Wales of vibrant culture and thriving Welsh language, and a globally responsible Wales. The relevance of the goals will vary depending on the function being exercised by the public body, but they guide the overarching requirements for public bodies to exercise their functions in order to achieve sustainable development.

Section 2 of the WBFGA defines sustainable development as the process of improving the economic, social, environmental and cultural well-being of Wales by taking action in accordance with the sustainable development principle aimed at achieving the well-being goals. Section 5 of the WBFGA defines the sustainable development principle as acting in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. In order to act in that manner, account must be taken of

(i) the importance of balancing short-term needs, with the need to safeguard the ability to meet long term needs;

(ii) the need to take an integrated approach by considering how the wellbeing objectives of the public may impact on each of the wellbeing goals;

(iii) the importance of involving other persons with an interest in achieving the wellbeing goals;

(iv) the need to act in collaboration to meet wellbeing objectives; and

(v) deploying resources to prevent problems occurring or getting worse.

These are referred to as the 'five ways of working' with elaboration in Planning Policy Wales Edition 11 (PPW11) highlighting the need for policy and development plans to consider the long-term; the integration of policy issues to ensure balanced decisions; collaboration with public bodies and interested parties to secure availability of evidence and assessments; involvement of the public and stakeholders through the planning system; and limiting environmental impacts in the wider public interest.

The Planning (Wales) Act 2015 introduced a statutory requirement for any statutory body carrying out a planning function to exercise those functions as part of carrying out sustainable development in accordance with the WBFGA for the purpose of ensuring that the development and use of land contribute to improving the economic, social, environmental and cultural well-being of Wales. The planning system is therefore necessary and central to achieving sustainable development in Wales.

The Environment (Wales) Act 2016 introduces the concept of 'Sustainable Management of Natural Resources' (SMNR) and sets out a framework to achieve this as part of decision making. Natural Resources as defined, includes animals, plants and other organisms, minerals and geological features (reference Part 1 Section 2). Sustainable management of natural resources is defined as using natural resources in a way and at a rate that promotes the achievement of sustainable objectives to meet the needs of current generations without compromising the ability of future generations to meet their needs, and to contribute to the achievement of the wellbeing goals in Section 4 of the WBFGA.

9.3 PPW11 February 2021

PPW11 issued in February 2021 represents a minor redrafting of PPW10 to provide advice on 'the socio-economic duty' on public bodies introduced by the Equalities Act 2010 (ref para 1.17), issues arising from the Covid pandemic (ref paras 2.21-2.23), and a number of other minor drafting amendments, but it makes no substantive alterations to the previous PPW10 issued in December 2018. PPW10 was itself redrafted from the previous PPW9 to ensure that it was fully aligned with the sustainable development requirements of the Planning (Wales) Act 2015 and the well-being goals defined in the WBFGA which underpin sustainable development. Consistent with PPW10, PPW11 seeks to build upon the five ways of working set out in the WBFGA, noting that the planning system is one of the key policy decision making and delivery mechanisms, and it should seek to maximise the delivery of outcomes against all aspects of well-being/sustainable development, thus seeking the maximise the contribution towards the goals of the WBFGA.

It sets 5 key principles for planning of:

(i) Growing our economy in a sustainable manner;
(ii) Making the best use of resources
(iii) Facilitating accessible and healthy environments
(iv) Creating and sustaining communities
(v) Maximising environmental protection and limiting environmental impact (ref PPW11 Figure 4).

These 5 key principles are designed to enable the goals and ways of working set out in the WBFGA and Environment (Wales) Act to be realised through planning, and they provide a context and catalyst for the positive delivery of the planning system across Wales (para 2.14).

The proposed extension development would provide continuity of supply of a high specification aggregate (HSA), acknowledged as being of UK importance in terms of the special properties of the aggregate, and where supplies to the

construction industry are a key element which underpins sustainable economic growth (principle 1). This will be particularly important as the country and economy strives to recover from the Covid pandemic.

The processing of the stone at the quarry is geared towards making the best use of the resource available by focusing on the production of single size chippings used in road surfacing, with the on-site asphalt plant able to draw upon these resources in its manufacturing process (principle 2).

The comprehensive restoration scheme and the nature conservation focus of that scheme contribute to facilitating a healthy environment, with the amenity controls during the operational development designed to ensure that effects are maintained within acceptable limits (principle 3).

The continuity of direct and indirect employment and associated economic activity is aligned with sustaining communities, noting that the economic benefits would be felt beyond the development site boundaries (principle 4).

The environmental effects of the development have been comprehensively assessed and would be minimised by the mitigation and compensation measures which are proposed, noting the requirement to minimise impacts to "acceptable levels". This would continue well-established measures at the existing quarry which have been proven to work effectively (principle 5).

PPW 11 is structured around the themes of sustainable 'place making', with four elements of 'strategic and spatial choices', 'active and social places', 'productive and enterprising places', and 'distinctive and natural places'. It emphasises that in responding to the key principles for the planning system, development proposals must seek to deliver development that addresses the national sustainable placemaking outcomes, albeit recognising that "*not every development will be able to demonstrate they can meet all of these outcomes*" (ref para 2.20).

The approach of PPW11 is to firstly to assess proposals against the 'strategic and spatial choices' issues and the 'national sustainable placemaking outcomes'; then to consider the detailed impact and contribution to 'active and social places', 'productive and enterprising places', and 'distinctive and natural places', noting that the consideration within each of these themes will vary on a case by case basis depending on the proposal concerned. Finally, the process should result in a proposal which contributes to the creation or sustaining of sustainable places and which delivers on the national sustainable placemaking outcomes (ref PPW11 Figure 5).

It also confirms that in assessing the sustainable benefits of development, "social, economic environmental and cultural benefits" should be considered in the decision-making process to ensure a balanced assessment in carried out and to implement the WBFGA and sustainable development principles. There may be occasions when one type of benefit of a development proposal outweighs others.

PPW11 seeks to ensure that decisions on development proposals take place in the context of securing sustainable development based on achieving economic, social, cultural and environmental benefits, with development to be designed to achieve 'sustainable places', and where development can contribute to the seven wellbeing goals of the WBFGA, and the 'sustainable management of natural resources' required by the Environment (Wales) Act 2016. These are complex inter-relationships, but they are capable of being distilled as part of a consideration of the Craig yr Hesg development.

In terms of the WBFGA goals, the extraction of HSA and the use of that material for high specification uses contributes to the globally responsible, prosperous and resilient goals. By complying with all environmental objective limits protective of health, potential local health impacts are prevented, no evidence of harm impact has been presented by any party, and no health objection has been submitted by any health stakeholder or the Planning Officer.

The comprehensive restoration scheme and the nature conservation focus of that scheme contribute to the globally responsible and resilient goals, but also expands and enhances local amenity of value to health and wellbeing, and facilitating healthy, vibrant and sustainable communities.

The economic activity associated with the development contributes to the prosperous, more equal and cohesive communities' goals, and specifically in

maintaining existing direct, indirect, induced and catalytic income and employment, with significant local and regional socio-economic health ramifications.

The restoration scheme together with the community benefits in the form of the creation of rights of way and tree planting enhancements, contributes to facilitating the delivery of a more resilient, healthier, more equal and cohesive community, while further supporting vibrant culture (recreation) goals.

The mitigation measures in terms of air quality and dust controls (including the Dust Mitigation and Management Plan) remove any material impact on public health and contribute towards the delivery of the resilient and healthier goals.

Overall, the development would deliver sustainability benefits in terms of economic considerations via the use of a resource of HSA which is a resource of UK importance for which there is an acknowledged need. The environmental considerations include the mitigation of effects to 'acceptable levels'.

9.4 Regional Technical Statement / 'Need'

MTAN 1 requires the two Regional Aggregate Working Parties (RAWPS) in Wales to produce a Regional Technical Statement (RTS) to ensure that adequate supply can be maintained, taking into account the sustainability objectives set out in MTAN1. The relevant parts of the RTS should then be incorporated into the individual development plans of the respective Authorities (reference paragraph 50).

A RTS for the area covered by the South Wales RAWP was produced in October 2008. The RTS considered future demand in the region based upon both existing consumption patterns and a 'per capita'/population approach. The regional assessment of demand was then 'apportioned'/subdivided between the constituent MPA's as the contribution towards regional aggregate demand which they should make via allocations in their LDPs.

In relation to RCT, the RTS concluded that early consideration should be given to the need to allocate additional reserves likely to be required in the later part of the 15 year plan period (ref recommendation in section 4.28). It further noted that in preparing LDPs, consideration should be given to whether the factors in 'Box 1' give rise to any requirement for resource allocations. 'Box 1 notes that:

> *This guidance deals only with the apparent requirements for crushed rock and sand and gravel resources to be made available on the basis of total requirements compared with the current total of permitted reserves in the relevant area and therefore does not take fully into account factors that may be material to the ensuring an adequate supply of aggregates obtained from appropriately located sources. Such factors include:-*
>
> - *The technical capability of one type of material to interchange for another.*
> - *The relative environmental cost of substitution of one type of material by another.*
> - *The relative environmental effects of changing patterns of supply.*
> - *Whether adequate production capacity can be maintained to meet the required supply.*
>
> *In preparing Local Development Plans, planning authorities need to take these factors into account in determining whether resource allocations are required.*

As part of the preparation of the RCT LDP, Hanson promoted an extension to Craig yr Hesg quarry as a candidate 'preferred area' for future quarrying on the basis that reserves at the existing quarry were likely to be exhausted during the Plan period, and additional reserves needed to be released to allow continuity of production of this important high specification aggregate material. These representations were accepted, and consistent with the context provided by the RTS, the adopted LDP (2011) makes provision for a western extension to the quarry within a 'preferred area of area of known mineral resources' (ref Policy SSA 25).

A 1st Review of the RTS was published in August 2014 as a 'main document' together with Regional Annexes A and B covering the North Wales and South

Wales RAWP areas (RTS1). In contrast to the initial RTS, the 1st Review assesses future demand solely based upon average sales and figures for each MPA in the preceding 10 years (2001 – 2010), and projects the average sales forward for the 15-year period covered by the RTS.

RTS1 provides a general strategy for the future supply of aggregates based on a minimum supply requirement of 25 years (15 year period of the RTS + 10 year minimum crushed rock landbank throughout the 15 year period), with recommendations to each Mineral Planning Authority regarding the minimum quantity of crushed rock aggregate which needs to be provided for within their area (minimum provision), and the total tonnage for any new allocations which need to be made in their Local Development Plans to meet that minimum provision. These calculations are based upon average sales over a 10 year period (2000 - 2010) and the amount of permitted reserves (landbank) available at 31st December 2010. Particular mention is made of 'high specification aggregate' (HSA) which serves different markets and is required for distribution over greater distances, notably the skid resistance aggregates derived from the Pennant Sandstone which are essential for road surfacing applications throughout England and Wales (ref RTS1 para 2.8).

In relation to circumstances in RCT, the Regional Annex does not differentiate between general rock aggregate from limestone quarries within RCT (Forest Wood and Hendy Quarry), and the high specification aggregate (HSA) from Craig yr Hesg, but assumes combined ongoing sales of some 0.69m tonnes of rock per annum (sandstone and limestone). This results in a requirement as at December 2010 for a minimum provision of 17.25m tonnes of rock, calculated over the 25-year time horizon. When compared with a landbank of 13m tonnes at December 2010, this gave a residual requirement for a minimum allocation in the RCT LDP of 4.25m tonnes.

The RTS1 Regional Annex further notes that a new permission for an extension to Forest Wood Quarry has been granted since December 2010 and a preferred area has been identified in the LDP (Craig yr Hesg). It thus concludes that the crushed rock shortfall is already covered by the permission and the allocation and that no further allocations are specifically required by the RTS. RTS1 does however emphasise that the allocation requirements are minimum amounts required to meet the RTS requirements and that any applications which exceed the minimum requirements should not be rejected purely on the grounds of exceeding the minimum requirements (ref RTS1 Table 5.3).

It is thus apparent that RTS1 relied upon the release of additional reserves at Craig yr Hesg to meet future demand for crushed rock over the RTS1 period, but where the importance of the HSA adds further weight to the importance of the release of the additional reserves.

MTAN1 requires the RTS to be reviewed at 5 yearly intervals, and a second review of the RTS was published in October 2020 (RTS2). RTS2 was endorsed by the Minister on 24th March 2021 and it will form the basis of mineral resource provision to be made in LDP reviews, noting that a LDP review for RCT is scheduled to progress during 2021.

As noted above, the methodology used in RTS1 was based primarily on historical sales averages, combined with an assessment of the various 'drivers' of potential future change. For RTS2, this has been combined with an attempt to reflect planned future development requirements using housing construction activity as a general proxy for future economic activity which itself will require aggregate raw material (recognising that housing only accounts for a proportion of that activity).

Using this methodology, for RCT, there is an annualised apportionment of 0.753m tonnes of crushed rock, which for the 25 year provision period of RTS2 (15 years plus a minimum 10 year landbank at the end of the period), requires a minimum provision of 18.816m tonnes. With permitted reserves of 9.83m tonnes at 31st December 2016, this equates to a residual requirement to make an allocation for 8.986m tonnes of new crushed rock reserves in RCT.

However, it should be noted that the 8.896mt was the minimum required allocation as at the end of 2016. The replacement LDP for RCT is scheduled for adoption in 2024, by which time the Authority's crushed rock landbank will have reduced by 8 years or around 6.0m tonnes if consumption remains at around 0.75mt per annum.

The accompanying text notes that:

> "*There is already a preferred area for the extension of Craig-yr-Hesg Quarry, amounting to approximately 10 million tonnes. An application to develop that extension was refused in 2019, against officer advice, but may be appealed. That, however, is specifically for HSA Sandstone resources, which would not be able to substitute for any shortage of Carboniferous Limestone*……" (ref page 58).

Consistent with RTS1, the text also notes that:

> "Where allocation requirements are shown these are the minimum amounts required to meet the RTS requirements. In many cases an application for an individual new permission will exceed these amounts, in the interests of economic viability. Such applications should not be rejected purely on the grounds of exceeding the minimum requirements shown here. In some cases, the suggested allocations may already have been partially or entirely fulfilled, either by new *permissions granted since 2016, or by allocations that have already been identified in LDPs*". (ref footnote to Table 5.7 in the RTS2 main document).

The emerging position for RCT via RTS2 is that there is a need to make provision for some 9 m tonnes (8.986m tonnes) of additional crushed rock aggregate reserves, calculated as at December 2016. As noted below, the 'preferred area' at Craig yr Hesg Quarry identified in the adopted development plan is currently the only means by which this identified requirement could be fulfilled.

In July 2019 the South Wales Aggregates Working Party published a 2018 Annual Report setting out information on sales and reserves as at 31st December 2018. For RCT this indicated a landbank of permitted reserves of 14 years based on average sales over a the 10-year period from 2009. However, the Report notes that the 3-year average sales for the period 2016-2018 were higher in RCT than the 10 year average which would indicate a landbank of 12 years.

The analysis set out in the Planning Officers Report to the February Committee notes that utilising the 3-year average as a base, given that it is indicative of rising sales in RCT, the extension area would add approximately 14.67 years to the landbank giving a total of approximately 27 years. This would be just adequate to cover the 25-year provision period of RTS2.

It is also relevant to note that the RCT Revised LDP is only proposed to cover a 10 year period (2020 – 2030), such that the provision of crushed rock aggregate t be made in the Plan would be based on 20 years supply (10 year Plan period +a 10 year landbank at the end of the Plan period), rather than a 15 year Plan period plus a 10 year landbank (as assumed by RTS2). However, with an RTS2 base date of 2016, the landbank quoted in RTS2 will have reduced by some 5 years by the start of the Revised LDP period, such that the required allocation to maintain a minimum 10 year crushed rock landbank throughout the (10 year) life of the LDP would remain at around 9 million tonnes.

In that context, it should also be noted that the allocation requirements in RTS2 are 'minimum requirements', and that applications for the release of reserves should not be refused on the basis of any increase above the minimum amounts. This is because the 10 year landbank requirement for crushed rock identified in MTAN1 is itself a minimum requirement at any point in the life of a LDP.

9.5 Planning Policy Conclusions

PPW11 recognises that mineral extraction can only take place where the mineral is found to occur; it is transitional even though operations may occur over a long period of time; and any adverse effects on local amenity and the environment need to be mitigated to "acceptable limits" and minimised to an "acceptable standard" (para 15.14.42). A similar test is set out in the development plan with the requirement to mitigate effects to within an "acceptable proven safe limit" (ref policy CS10) and to avoid "significant" impact (policy AW5) and "significant" adverse risk (policy AW10).

The language of the development plan and PPW11 recognise that it is unlikely that the environmental effects of mineral extraction can be fully eliminated, and the requirement is thus to mitigate the environmental impacts of mineral extraction and for working to be "carefully controlled and monitored" (PPW11 para 5.14.42).

The potential amenity and environmental effects have been considered in detail in the ES and in the subsequent 'Response to Public Consultation: Well-Being and Environmental Health Issues Report June 2016', where the express focus of the designed-in mitigation measures and the recommendations for additional mitigation measures has been to ensure that the scheme could proceed in a way which demonstrably minimises environmental effects to within "acceptable limits and standards". It is contended that the development would satisfy this underlying requirement. The additional updated studies undertaken as part of this SES allow the same conclusion to be reached

Particular consideration has been given to the separation distances between the limits of extraction within the extension area and the closest residential properties in Glyncoch, noting the advice in MTAN1 that a minimum separation distance of 200m should be adopted "unless there are clear and justifiable reasons for reducing the distance" (para 71). Similar advice is provided in the RCT LDP which highlights the scope to allow for a reduction in the standard distance based upon the exceptional circumstances of a particular proposal (LDP para 4.97), noting also the comments made by the Inspector in his report following the LDP examination which expressly rejected the notion of rigid buffer zone distances.

In this case there are considered to be "clear and justifiable reasons" for reducing the buffer zone distance for mineral operations in the extension area from the recommended 200m to 175m in that:

(i) The noise and blast vibration limits which have been recommended in the EIA and those recommended by planning officers can be met;

(ii) the effects on amenity would be minimised by the screening landform; and

(iii) the operations within 175m would be short term (on the upper benches), intermittent and a comparatively small proportion of the extraction area, where the majority of works, both laterally and at depth within the quarry would be at a distance in excess of 200m.

Notwithstanding this conclusion on the way in which environmental effects can be "carefully controlled", planning policy requires that the determination of a planning application needs to consider wider issues as part of an overall planning balance. Uppermost in this is the acknowledged need set out in PPW11 to provide mineral resources to meet society's needs and to maintain a steady and adequate supply of minerals (para 5.14.1), further noting that "*it is essential to the economic health of the country that the construction industry is provided with an adequate supply of the minerals it needs*" (para 5.14.22). Moreover, and of significance to the HSA available at Craig yr Hesg Quarry, is the requirement that the UK and regional need for such minerals should be accorded "*significant weight*" provided environmental impacts can be limited to acceptable levels" (ref para 5.14.23). It is contended that environmental impacts could be limited to "acceptable levels" in this case, they do not present any material risk to public health, and that the project is thus entitled to be accorded the 'significant weight' referred to.

PPW11 also requires Planning Authorities to "*provide positively for the working of mineral resources"* (para 15.14.2), and "*each mineral planning authority should ensure that it makes an appropriate contribution to meeting local, regional and UK needs for primary minerals which reflects the nature and extent of resources in the area* " (ref para 15.14.10).

In the case of RCT, this need, and the contribution to local, regional and UK needs is reflected in the allocation of a 'preferred area of known mineral resources' as an extension to Craig yr Hesg Quarry as the only such allocation in the RCT LDP.

The underlying requirement of the development plan and PPW11 is to ensure that a proper balance is struck between the need for minerals and the protection of existing amenity and the environment. In this case, the need for the mineral is recognised and acknowledged at both a national and local level and is expressly planned for via the LDP preferred area allocation.

The other element of the balance – protection of amenity and the environment has been at the forefront of the project design and EIA mitigation measures, and the conclusion reached is that the environmental effects can be successfully minimised to "acceptable limits", and do not constitute any material risk to public health.

The overall planning policy conclusion is that the development would be in accordance with the development plan both in term of the preferred area allocation and fulfilment of a strategic mineral supply strategy of the Plan, but also in terms of the individual environmental protection policies which have been assessed. The development is thus entitled to a presumption in favour of planning permission being granted (ref Section 38(6) of the Planning and Compulsory Purchase Act 2004).

In addition, in terms of a wider planning balance, the weight to be afforded to the need for the development; the importance of continuity of supply; the special quality of the HSA; the economic importance of the development in terms of supply of the high specification aggregate; the absence of any material public health impact and the socio economic benefits of the development through maintained direct, indirect, induced and catalytic income and employment, are such that the balance should fall heavily in favour of the scheme.

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10.0 EIA SCOPING REPORT

In June 2014, a request was made to RCT for a formal 'scoping opinion' on the issues which should be addressed as part of an EIA to be undertaken in connection with the proposed western extension to Craig yr Hesg Quarry.

The Scoping Opinion was duly issued by RCT in November 2014, and the EIA was undertaken in accordance with the advice set out in that opinion.

The ES (May 2015), section 1.6, makes reference to the inclusion of the Scoping Opinion as Appendix 1.3 to the ES (Volume 2), and the opinion is included in that document accordingly.

However, section 1.6 of the ES incorrectly indicates that a Scoping Report which accompanied the request for a scoping opinion is produced as Appendix 1.1 to the ES. This is an error. Appendix 1.1 is a copy of the Environment Act (ROMP) schedule of conditions (April 2013).

This issue is not considered to have caused any prejudice since the Scoping Report was placed on the planning register at RCT (ref 14/5193/36), it is available on the RCT Planning website, and it is fully referenced in the scoping opinion. However, in order to address this error, the Scoping Report and accompanying plans is produced as **Appendix 9.1** to this SES.

11.0 CONCLUSIONS

This Supplementary Environmental Statement (SES) has been prepared in response to a request from the Planning Inspectorate to update the 2015 ES submitted in support of the Craig yr Hesg western extension and consolidation application with particular reference to:

- The ecology survey and noise monitoring and air quality data which date from 2014;
- The traffic surveys which were undertaken in 2012 and 2013; and
- The planning policy analysis, noting that Planning Policy Wales Edition 7 which was in place in 2015 has been replaced, as has other cultural heritage guidance.

The SES has been prepared to fulfill these requirements, and includes:

- The results of updated ecology surveys undertaken in September 2018 and January 2021, and an updated data search undertaken in December 2020.
- The results of an updated noise survey undertaken in March 2021.
- The results from ongoing air quality (PM_{10}) surveys undertaken since 2015 and set out in annual monitoring reports, supplemented by results from air quality monitoring undertaken by RCT and Hanson.
- The results from fugitive dust monitoring undertaken in March/April 2021.
- The results from an updated traffic survey undertaken in December 2020, and updated collision data from the most recently available period 2015 – 2019); and
- An updated planning policy analysis which considers planning policy and legislative changes since 2015, with particular regard to Planning Policy Wales Edition 11: February 2011 (PPW11).

A number of other more minor anomalies in the 2015 ES are referred to by the Planning Inspectorate and which are addressed in the SES.

In summary, the SES concludes that:

- Following updated site surveys in 2018 and 2021, no substantive ecological changes that could affect the conclusions reached in the 2015 ES have been identified. It is therefore considered that the findings of the 2015 Ecological Impact Assessment (EcIA) remain valid and appropriate in 2021.
- The updated noise monitoring undertaken in December 2020 and March has not identified any reason to revise the recommended noise limits as set out in the 2015 ES for the defined representative noise sensitive locations.
- There have been no material changes to the site itself or the local site setting that would significantly alter the original air quality assessment, with no new sensitive receptors or new sources identified.
- The on-going PM_{10} monitoring has confirmed that there are no actual or likely breaches of either the long-term annual mean or short-term 24-hour AQOs for PM_{10} at Garth Avenue. This therefore supports the original 2015 ES conclusions, following the review of the data that was available at that time, that the overall effect of an extension to the life of the quarry operations and the proposed extension is deemed acceptable in terms of human health, as air quality objectives outside the site will continue to be met.
- The dust assessment has also been reviewed, taking into account latest information. Nuisance dust continues not to be considered a significant issue outside the existing quarry. In addition, in relation to the extension area, due to the separation distances between the

potential receptors and the quarry extension area and the local presence of screening woodland, it remains the conclusion that with adherence to the existing and additional recommended mitigation measures the potential impacts from wind-blown dust associated with the quarry extension will generally be negligible.

- Updated traffic flow information on the B4273 (2020) confirms current flows are lower than those previously recorded in 2013. Based on the highest flows, it was established that the B4273 currently operates at 67% of its design capacity and therefore retains a reserve or spare capacity of approximately 500 vehicles, or 33% of its design flow, under peak hour conditions. If assessed based on the more recent 2020 flows, the level of spare capacity available currently and in the 2048 design year is increased. As a result, as concluded in the 2015 ES, highway link capacity is not considered to be a constraint to the ongoing development at Craig yr Hesg Quarry.

- PPW11 makes no material change to mineral planning policy as set out in previous versions of PPW, but the document follows the substantial restructuring as included in PPW10 to ensure that it is fully aligned with the sustainable development requirements of the Planning (Wales) Act 2015 and the well-being goals defined in the Well Being and Future Generations (Wales) Act 2015. However, whilst the Planning Application Statement which accompanied the 2015 western extension application assessed the scheme in the context of planning policy set out in the then extant PPW7 and Minerals Planning Policy Wales (both now cancelled and superseded), mineral planning policy has not materially changed via subsequent iterations of PPW, and the current PPW11 continues the key themes of this long-standing mineral planning policy advice.

Overall, the SES concludes that there have been no material changes in environmental circumstances or planning policy which alter the conclusions reached by the 2015 ES regarding the acceptability of the proposed development.