CRAIG YR HESG QUARRY
Western Extension

Supplementary Environmental Statement

Appendices

Volume 6

April 2021

SUPPLEMENTARY ENVIRONMENTAL STATEMENT

VOLUME 6

APPENDICES

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Ecology

2.1 Updated Data Search December 2020

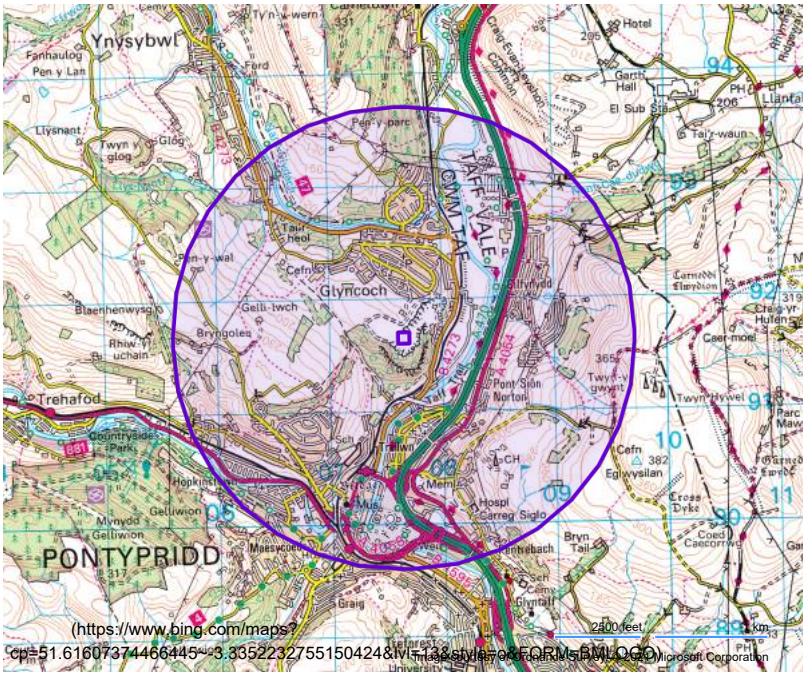
Aderyn

LERC Wales' Biodiversity Information & Reporting Database

Customer Reference: Craig-yr-hesg Quarry [PUBLIC]

LERC Reference: 0201-577

Date: 10-Dec-2020 14:48



Search Results Summary

Package C: Priority Species 2km Search for relevant species, designated sites and Phase I habitats within 2km of your location(s)

Species Records	**1500**
Pri. Species	584
Cons. Concern	237
Loc. Important	553
Species Status	**126**
Invasive Non-Native	126
Species Status	**126**
Sites	8
Habitats	23

Location

Location Type: Gridref
Details: ST076916
Area m^2: 13,296,628

Additional Access Names (Data Users)

Name	Organisation
Mark Frampton	Hanson
Chris Mitchell	SLR Consulting Ltd
Emma Clarke	SLR Consulting Ltd

Important Dates

Enquiry Created	10/12/2020
Enquiry Delivered	10/12/2020
Data Use Expires	10/12/2021

Important Issues

- Use of the data is governed by the Aderyn Terms & Conditions as agreed on the client's Data Enquiry and Release Form.
- Unless otherwise agreed, you must not share the data or the method for accessing it with anyone other than specified Data Users.
- Confidential information has been removed from this Public report.
- You should not amend any part of the downloaded records.
- Unless otherwise agreed, use of the data is valid until the Expiry Date (10/12/2021).
- The data was generated on the Enquiry Created date (10/12/2020) and is not live.
- Please contact us if you have any questions about using the data or wish to add further Data Users.

Notes

- The LERC Wales Aderyn commercial enquiries system uses a search system which reports species (usually high priority or protected species) within a specified search radius or buffer (as specified in the selected search package). With the exception of Package A (BARB searches), a search will also include high priority 'Mobile Species', such as bats, otters, amphibians and certain invertebrates, which lie outside the specified search radius. They have been selected as 'Mobile Species' as their territory (possibly due to foraging activity or life cycle) could intersect with the search radius.
- NRW have identified a number of species for which data is exempt from general release as decribed under Environmental Information Regulations. For further information click on this link (http://www.bis.org.uk/storage/library/NRW_Data_EFGR__resolution_release.pdf).
- For further ecological advice on records in this report please contact relevant County Recorder which can be found on LERC websites (where relevant).
- For detailed information on Designated Sites in Wales go to NRW website (https://naturalresourceswales.gov.uk/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en).
- Package A (BARB searches): If this is a Bats and Roof-nesting Birds report, please note that 'roof-nesting birds' includes all records (including non-breeding sightings) of the following species which habitually nest in buildings and roof-spaces: Common Kestrel (Falco tinnunculus), Peregrine (Falco peregrinus), Lesser Black-backed Gull (Larus fuscus), Herring Gull (Larus argentatus), Barn Owl (Tyto alba), Little Owl (Athene noctua), Common Swift (Apus apus), Jackdaw (Corvus monedula), Swallow (Hirundo rustica), House Martin (Delichon urbicum), Wren (Troglodytes troglodytes), Starling (Sturnus vulgaris), Black Redstart (Phoenicurus ochruros), Common Redstart (Phoenicurus phoenicurus), House Sparrow(Passer domesticus), Pied Wagtail (Motacilla alba).
- Please note that records of the same grid reference and species have been concatenated into a single row in all the provided data outputs. This process will be indicated in the 'date' column, which will state the number of records plus first and last year of recording, e.g. '2 records, between 2011 and 2013'. Other fields such as Recorder(s) and Comments will be concatenated. If you require the full details for each record, please contact the LERC.

Data Description

- **Distance:** Indicates the distance, in metres, between the grid reference of the record (using the central point of the grid square) and the centre of the search location.
- **Grid Reference:** Full grid reference based on the Ordnance Survey grid system. For any Sensitive Species Records, this cannot be released into the Public Domain.
- **Status:** Any local, national or international conservation statuses or legal protection which apply to this species and whether it is included in any Local Biodiversity Action Plans. See 'Abbreviations' for more details.

Abbreviations

- BA = Protection of Badgers Act
- UKBAP = UK Biodiversity Action Plan Priority Species
- UKBAP (R) = UK Biodiversity Action Plan Priority Species (Research only species)
- BDir1 = EC Birds Directive Annex 1 Species
- BDir21 = EC Birds Directive Annex 2.1 Species
- BDir22 = EC Birds Directive Annex 2.2 Species
- Bern = The Bern Convention on the Conservation of European Wildlife and Natural Habitats
- Bonn = The Bonn Convention on the Conservation of Migratory Species of Wild Animals Species
- CITES = Convention on International Trade in Endangered Species
- EPS = European Protected Species
- HDir = EU Habitats Directive Species
- NRW = Natural Resources Wales Priority Species
- RD1 (Wales) = Welsh Red Data Book listing based on IUCN guidelines
- RD1 (UK) = UK Red Data Book listing based on IUCN guidelines
- RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce)
- WBR (RSPB) = RSPB Welsh Red listed birds (not based on IUCN criteria)
- WBAm (RSPB) = RSPB Welsh Amber listed birds (not based on IUCN criteria)
- UKBR (RSPB) = RSPB UK Red listed birds (not based on IUCN criteria)
- UKBAm (RSPB) = RSPB UK Amber listed birds (not based on IUCN criteria)

Abbreviations (cont.)

- S7 = Environment Act (Wales) Section 7 Species
- WCA1.1 = Wildlife and Countryside Act Schedule 1 Part 1 Species
- WCA5 = Wildlife and Countryside Act Schedule 5 Species
- WCA8 = Wildlife and Countryside Act Schedule 8 Species
- WCA9 = Wildlife and Countryside Act Schedule 9 Species
- INNS = Invasive Non-Native Species
- WSG.P = Guidelines for the Selection of Wildlife Sites in South Wales - Primary species
- WSG.C = Guidelines for the Selection of Wildlife Sites in South Wales - Contributory species
- WVP = IUCN Threat Listing of Welsh Vascular Plants
- LBAP (xxx) = Local Biodiversity Action Plan Species (see key below)
- LI (SEWBReC) = Locally Important Species (as identified by local specialists) in SEWBReC area
- LI (BIS) = Locally Important Species (as identified by local specialists) in BIS area
- LI (BRYO-MON) = Locally or nationally scarce or rare bryophyte in Monmouthshire
- LI (VC##) = Locally Important Species (as identified by local specialists) in Vice County ##
- LI (VC##, LS) = Locally Scarce in Vice County ##
- LI (VC##, LR) = Locally Rare in Vice County ##
- LI (VC##, EX) = Extinct in Vice County ##
- LI (VC##, UR) = Under Recorded in Vice County ##

Local Biodiversity Action Plan abbreviations

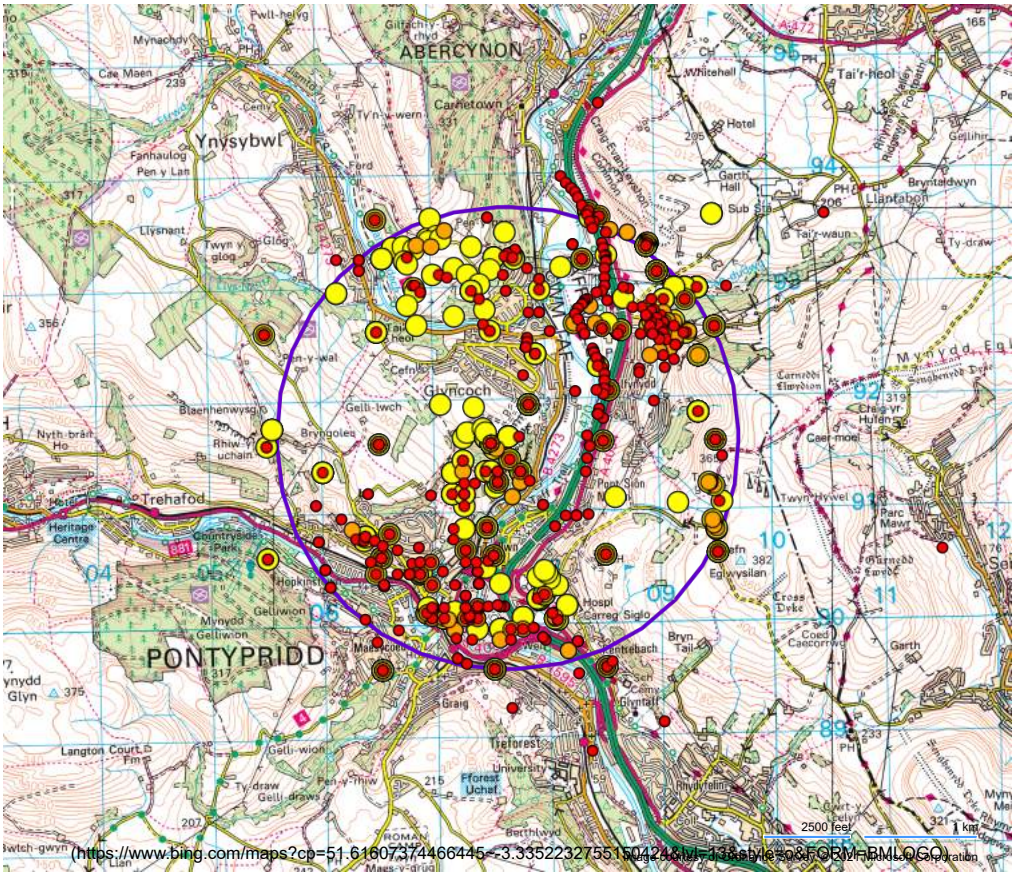
- ANG: Isle of Anglesey
- BBNP: Brecon Beacons National Park
- BGW: Blaenau Gwent
- BRG: Bridgend
- CDF: Cardiff
- CER: Ceredigion
- CLY: Caerphilly
- CON: Conwy
- CRM: Carmarthenshire
- DEN: Denbighshire
- FLI: Flintshire
- GWY: Gwynedd
- MON: Monmouthshire
- MTR: Merthyr Tydfil
- NEW: Newport
- NPT: Neath Port Talbot
- PEM: Pembrokeshire
- POW: Powys
- RCT: Rhondda Cynon Taff
- SNP: Snowdonia National Park
- SWN: Swansea
- TRA: Trunk Roads Estate
- TRF: Torfaen
- VoG: Vale of Glamorgan
- WRE: Wrexham

LERC Wales Aderyn Commercial Contacts

Email: BIS:info@bis.org.uk, Cofnod:info@cofnod.org.uk, SEWBReC:info@sewbrec.org.uk, WWBIC:info@wwbic.org.uk
Website: aderyn.lercwales.org.uk

Species Map

Species records are mapped below. Records are mapped as centred points (centre of grid reference polygon).



Icon	Name
●	Pri. Species
●	Cons. Concern
●	Loc. Important

Species

Species records are listed below. The distance listed below is the distance from the record polygon centroid to the search polygon centroid.

RECORDS OF PROTECTED AND PRIORITY SPECIES WITHIN SEARCH AREA

Protected and Priority Species = Species with European and UK Legal Protection, and Environment Act (Wales) Section 7 Priority Species.

Grid Ref.	Dist. (m)	Scientific Name	Taxon Group	Date	Abundance	Source	Verification
ST09	141	*Falco peregrinus* (Peregrine)	bird	2 records, between 2000 and 2003	2 (Chick)	NRW (Cardiff) Map Info Data; NPT South Wales Peregrine Watch 2003	Verified correct
ST0791	212	*Muscicapa striata* (Spotted Flycatcher)	bird	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Acanthis cabaret* (Lesser Redpoll)	bird	2 records, both from 1992		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Phylloscopus sibilatrix* (Wood Warbler)	bird	4 records, between 1992 and 2019	1; 1	MapMate Data (1cf); MapMate Data (New); Dr Mary Gillham Project records	Verified correct
ST0791	212	*Poecile montana* (Willow Tit)	bird	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Fringilla montifringilla* (Brambling)	bird	2 records, both from 1992		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Pyrrhula pyrrhula* (Bullfinch)	bird	3 records, between 1992 and 2010	2; 2	Dr Mary Gillham Project records; MapMate Data (New)	Unassessed
ST0791	212	*Linaria cannabina* (Linnet)	bird	2 records, between 1992 and 1993		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Boloria selene* (Small Pearl-bordered Fritillary)	insect - butterfly	5 records, between 1992 and 1996	2; 1; 1	Dr Mary Gillham Project records; MapMate Data (1dr)	Unassessed
ST0791	212	*Dendrocopos minor* (Lesser Spotted Woodpecker)	bird	4 records, between 1992 and 1994	1 (Adult Male); 1 (Adult Male)	Dr Mary Gillham Project records; Glamorgan Bird Club Records	Unassessed
ST09	212	*Falco peregrinus* (Peregrine)	bird	6 records, between 1992 and 2010	1; 1; 2; 2; 3	MapMate Data (New); MapMate Data (1cf); Dr Mary Gillham Project records	Verified correct
ST0791	212	*Euphydryas aurinia* (Marsh Fritillary)	insect - butterfly	5 records, between 1992 and 1996	p; 1; 1	NRW BAP Invertebrate data; Dr Mary Gillham Project records; MapMate Data (1ay); MapMate Data (1dr)	Unassessed
ST0791	212	*Cuculus canorus* (Cuckoo)	bird	2 records, between 1992 and 2019	1	Dr Mary Gillham Project records; MapMate Data (New)	Unassessed
ST0791	212	*Prunella modularis* (Dunnock)	bird	3 records, between 1992 and 2010	1; 1	Dr Mary Gillham Project records; MapMate Data (New)	Unassessed
ST0791	212	*Zootoca vivipara* (Common Lizard)	reptile	2 records, between 1992 and 2005	p (Adult)	MapMate Data (1cf); Dr Mary Gillham Project records	Verified correct
ST0791	212	*Ficedula hypoleuca* (Pied Flycatcher)	bird	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Turdus philomelos* (Song Thrush)	bird	4 records, between 1992 and 2010	2; 1; 1	Dr Mary Gillham Project records; MapMate Data (1cf); MapMate Data (New)	Unassessed
ST0791	212	*Lissotriton helveticus* (Palmate Newt)	amphibian	4 records, all from 2019	2 to 5; 2 to 5; 6 to 20; 6 to 20	LERC Wales App (Direct Import)	Unassessed
ST0791	212	*Hipparchia semele* (Grayling)	insect - butterfly	19/07/1996	1	MapMate Data (1dr)	Verified correct
ST0791	212	*Rana temporaria* (Common Frog)	amphibian	2 records, between 1992 and 2019		LERC Wales App (Direct Import); Dr Mary Gillham Project records	Unassessed
ST0791	212	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	2 records, between 1994 and 2019		SEWBReCORD; Dr Mary Gillham Project records	Unassessed
ST0791	212	*Anthus trivialis* (Tree Pipit)	bird	02/06/2019	Present	MapMate Data (New)	Verified correct
ST0791	212	*Spilosoma lutea* (Buff Ermine)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Amphipyra tragopoginis* (Mouse Moth)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed

ST0791	212	*Watsonalla binaria* (Oak Hook-tip)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Hoplodrina blanda* (Rustic)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Leucania comma* (Shoulder-striped Wainscot)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Ecliptopera silaceata* (Small Phoenix)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Spilosoma lubricipeda* (White Ermine)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Anguis fragilis* (Slow-worm)	reptile	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Passer domesticus* (House Sparrow)	bird	4 records, all from 2010	4; 4; 4; 4	MapMate Data (New)	Verified correct
ST0791	212	*Tyria jacobaeae* (Cinnabar)	insect - moth	21/06/2019	Present	MapMate Data (New)	Verified correct
ST0791	212	*Sturnus vulgaris* (Starling)	bird	2 records, both from 2010	4; 4	MapMate Data (New)	Verified correct
ST0783591840	265	*Vipera berus* (Adder)	reptile	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Zootoca vivipara* (Common Lizard)	reptile	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Anguis fragilis* (Slow-worm)	reptile	01/08/2009		David Clements Ecology	Unassessed
ST0791	265	*Meles meles* (Badger)	terrestrial mammal	01/08/2009		David Clements Ecology	Unassessed
ST0791	265	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Pyrrhula pyrrhula* (Bullfinch)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0791	265	*Pipistrellus pipistrellus agg.* (Pipistrelle agg.)	terrestrial mammal	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Prunella modularis* (Dunnock)	bird	01/08/2009		David Clements Ecology	Verified correct
ST09	265	*Falco peregrinus* (Peregrine)	bird	01/08/2009		David Clements Ecology	Verified correct
ST09	265	*Tyto alba* (Barn Owl)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Tyria jacobaeae* (Cinnabar)	insect - moth	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Hipparchia semele* (Grayling)	insect - butterfly	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Natrix helvetica* (Grass Snake)	reptile	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Larus argentatus* (Herring Gull)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Falco tinnunculus* (Kestrel)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Emberiza schoeniclus* (Reed Bunting)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Linaria cannabina* (Linnet)	bird	01/08/2009		David Clements Ecology	Verified correct
ST07669135	295	*Turdus philomelos* (Song Thrush)	bird	22/01/1987		Dr Mary Gillham Project records	Unassessed
ST077912	412	*Watsonalla binaria* (Oak Hook-tip)	insect - moth	6 records, between 1992 and 1997	1 (Adult); 1 (Adult); 3 (Adult); 3 (Adult); 4 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Satyrium w-album* (White-letter Hairstreak)	insect - butterfly	2 records, both from 1996	1; 1	MapMate Data (1dr)	Verified correct
ST077912	412	*Hipparchia semele* (Grayling)	insect - butterfly	28/07/2001	1 (Adult)	MapMate Data (1dr)	Verified correct

ST077912	412	*Ceramica pisi* (Broom Moth)	insect - moth	3 records, between 1996 and 1997	1; 1; 1	Glamorgan Moth Records	Verified correct
ST077912	412	*Hydraecia micacea* (Rosy Rustic)	insect - moth	12/09/1996	1	Glamorgan Moth Records	Verified correct
ST077912	412	*Spilosoma lutea* (Buff Ermine)	insect - moth	1996	p (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Leucania comma* (Shoulder-striped Wainscot)	insect - moth	4 records, between 1993 and 1997	p; p; 1; 1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Apamea remissa* (Dusky Brocade)	insect - moth	3 records, all from 1996	1; 1; 3	Glamorgan Moth Records	Verified correct
ST077912	412	*Tyria jacobaeae* (Cinnabar)	insect - moth	1996	p (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Timandra comae* (Blood-vein)	insect - moth	2 records, both from 1996	1; 1	Glamorgan Moth Records	Verified correct
ST077912	412	*Melanchra persicariae* (Dot Moth)	insect - moth	4 records, between 1996 and 1997	2; 1; 1; 1	Glamorgan Moth Records	Verified correct
ST077912	412	*Ecliptopera silaceata* (Small Phoenix)	insect - moth	3 records, between 1996 and 2006	1 (Adult); 2 (Adult); p (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Eugnorisma glareosa* (Autumnal Rustic)	insect - moth	3 records, all from 1996	2; 1; 1	Glamorgan Moth Records	Verified correct
ST077912	412	*Orthosia gracilis* (Powdered Quaker)	insect - moth	29/03/1998	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Caradrina morpheus* (Mottled Rustic)	insect - moth	05/07/1996	1	Glamorgan Moth Records	Verified correct
ST077912	412	*Acronicta rumicis* (Knot Grass)	insect - moth	5 records, between 1996 and 1997	p; 3; 1; 1 (Adult); 1	Glamorgan Moth Records	Verified correct
ST077912	412	*Hoplodrina blanda* (Rustic)	insect - moth	1993	p (Adult)	Glamorgan Moth Records	Unassessed
ST077912	412	*Diarsia rubi* (Small Square-spot)	insect - moth	03/09/1996	1	Glamorgan Moth Records	Verified correct
ST075912	412	*Dendrocopos minor* (Lesser Spotted Woodpecker)	bird	1994	1	MapMate Data (1cf)	Verified correct
ST077912	412	*Scotopteryx chenopodiata* (Shaded Broad-bar)	insect - moth	1992	p (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Amphipyra tragopoginis* (Mouse Moth)	insect - moth	09/08/1992	1 (Adult)	Glamorgan Moth Records	Verified correct
ST075912	412	*Muscicapa striata* (Spotted Flycatcher)	bird	28/04/1993	1	MapMate Data (1cf)	Verified correct
ST077912	412	*Spilosoma lubricipeda* (White Ermine)	insect - moth	11/06/1993	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Agrochola helvola* (Flounced Chestnut)	insect - moth	11/10/1997	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Stilbia anomala* (Anomalous)	insect - moth	16/09/1995	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Amphipoea oculea* (Ear Moth)	insect - moth	16/08/1997	1	Glamorgan Moth Records	Unassessed
ST077912	412	*Xestia castanea* (Neglected Rustic)	insect - moth	4 records, between 1995 and 1996	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074912	447	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0780092100	475	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	2012	1	People's Trust for Endangered Species	Unassessed
ST072913	500	*Prunella modularis* (Dunnock)	bird	21/10/2015	1	MapMate Data (New)	Verified correct
ST072913	500	*Dendrocopos minor* (Lesser Spotted Woodpecker)	bird	30/06/2011	1	MapMate Data (New)	Verified correct
ST075911	510	*Pyrrhula pyrrhula* (Bullfinch)	bird	2 records, between 1992 and 1993	17; 8	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Passer domesticus* (House Sparrow)	bird	1993	2	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Turdus philomelos* (Song Thrush)	bird	4 records, all from 1993		Dr Mary Gillham Project records	Unassessed

ST075911	510	*Linaria cannabina* (Linnet)	bird	1993	2	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Muscicapa striata* (Spotted Flycatcher)	bird	6 records, all from 1993	2; 5; 2	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Poecile montana* (Willow Tit)	bird	3 records, between 1992 and 1993	2	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Prunella modularis* (Dunnock)	bird	3 records, between 1992 and 1993	6; 13	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Dendrocopos minor* (Lesser Spotted Woodpecker)	bird	07/01/1994		Dr Mary Gillham Project records	Unassessed
ST075911	510	*Ficedula hypoleuca* (Pied Flycatcher)	bird	03/05/1993		Dr Mary Gillham Project records	Unassessed
ST075911	510	*Cuculus canorus* (Cuckoo)	bird	28/04/1993		Dr Mary Gillham Project records	Unassessed
ST075911	510	*Phylloscopus sibilatrix* (Wood Warbler)	bird	3 records, all from 1993	2	Dr Mary Gillham Project records	Unassessed
ST0791	519	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	2 records, both from 2014	1; 1	SEWBReCORD (Direct Import); SEWBReCORD	Unassessed
ST073911	583	*Lissotriton helveticus* (Palmate Newt)	amphibian	24/04/2020	21-100	LERC Wales App (Direct Import)	Unassessed
ST072911	640	*Euphydryas aurinia* (Marsh Fritillary)	insect - butterfly	3 records, between 1994 and 1996		NRW (Cardiff) Wider Countryside; NRW (Cardiff) Map Info Data; Welsh_Invertebrate_Database_WID_.csv (CCW000660000000C)	Verified correct
ST0891	671	*Chiroptera* (Unknown Bat)	terrestrial mammal	15/06/2004		NRW (Cardiff) Bat Casework File 2004	Unassessed
ST0891	671	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	2 records, between 1989 and 2004	30 (Adult)	NRW- HQ - Terr- Bat Roosts Database - Wales; NRW (Cardiff) Bat Casework File 2004	Unassessed
ST0791192285	687	*Anguis fragilis* (Slow-worm)	reptile	05/05/2016		iRecord	Verified correct
ST0791192285	687	*Tyria jacobaeae* (Cinnabar)	insect - moth	11/05/2015		iRecord	Verified correct
ST0791192285	687	*Spilosoma lutea* (Buff Ermine)	insect - moth	05/07/2015		iRecord	Verified correct
ST0791192285	687	*Acronicta rumicis* (Knot Grass)	insect - moth	16/05/2015		iRecord	Verified correct
ST083915	707	*Turdus philomelos* (Song Thrush)	bird	02/02/2005	1	Glamorgan Bird Club Records	Verified correct
ST0782392345	716	*Spilosoma lutea* (Buff Ermine)	insect - moth	07/09/2014		iRecord	Verified correct
ST0782392345	716	*Arctia caja* (Garden Tiger)	insect - moth	08/06/2014		iRecord	Verified correct
ST072910	721	*Zootoca vivipara* (Common Lizard)	reptile	15/06/2020		LERC Wales App (Direct Import)	Unassessed
ST072910	721	*Euphydryas aurinia* (Marsh Fritillary)	insect - butterfly	1995	1 (Adult)	MapMate Data (1dr)	Verified correct
ST072910	721	*Coenonympha pamphilus* (Small Heath)	insect - butterfly	02/06/2020		LERC Wales App (Direct Import)	Unassessed
ST0891	750	*Lutra lutra* (Otter)	terrestrial mammal	28/11/2018	1	South Wales Trunk Roads Agency TO81	Unassessed
ST0790	761	*Nyctalus noctula* (Noctule Bat)	terrestrial mammal	18/05/2014	1	Just Mammals	Unassessed
ST0891	761	*Chiroptera* (Unknown Bat)	terrestrial mammal	24/07/2003		NRW (Cardiff) Bat Casework File 2003	Unassessed
ST0790	761	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	08/05/2014	1	Just Mammals	Unassessed
ST0784092393	767	*Acronicta rumicis* (Knot Grass)	insect - moth	25/06/2017		iRecord	Verified correct
ST071910	781	*Tyria jacobaeae* (Cinnabar)	insect - moth	21/06/2019		LERC Wales App (Direct Import)	Unassessed
ST09	801	*Falco peregrinus* (Peregrine)	bird	13/03/2019	1	SEWBReCORD	Unassessed
ST0783192434	805	*Tyria jacobaeae* (Cinnabar)	insect - moth	03/06/2019		iRecord	Verified correct
ST072909	806	*Lissotriton helveticus* (Palmate Newt)	amphibian	22/04/2020	6 to 20	LERC Wales App (Direct Import)	Unassessed
ST0891	810	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0891	810	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed

ST0891	810	*Myotis* (Myotis Bat Species)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0891	829	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST084919	854	*Alcedo atthis* (Kingfisher)	bird	25/04/1998	1	Glamorgan Bird Club Records	Verified correct
ST09	857	*Milvus milvus* (Red Kite)	bird	08/11/2019	1	SEWBReCORD	Unassessed
ST0891	863	*Sturnus vulgaris* (Starling)	bird	08/11/2009	68	MapMate Data (New)	Verified correct
ST0891	863	*Turdus philomelos* (Song Thrush)	bird	6 records, all from 2010	5; 5; 5; 5; 1; 1	MapMate Data (New)	Verified correct
ST0891	863	*Prunella modularis* (Dunnock)	bird	5 records, between 2009 and 2010	2; 1; 2; 5; 5	MapMate Data (New)	Verified correct
ST0891	863	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	3 records, between 2009 and 2010	4; 2; 4	MapMate Data (New)	Unassessed
ST0891	863	*Turdus pilaris* (Fieldfare)	bird	08/11/2009	2	MapMate Data (New)	Verified correct
ST0792	863	*Chiroptera* (Unknown Bat)	terrestrial mammal	29/07/1996	180 (Adult)	NRW- HQ - Terr- Bat Roosts Database - Wales	Unassessed
ST0792	863	*Dendrocopos minor* (Lesser Spotted Woodpecker)	bird	29/05/1985	1	MapMate Data (1cf)	Verified correct
ST0891	863	*Passer domesticus* (House Sparrow)	bird	2 records, both from 2010	3; 3	MapMate Data (New)	Verified correct
ST0891	895	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	920	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	25/08/2018	3	LERC Wales App (Direct Import)	Unassessed
ST074907	922	*Tyria jacobaeae* (Cinnabar)	insect - moth	41 records, between 2004 and 2008	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 3 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 4 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST0792	922	*Chiroptera* (Unknown Bat)	terrestrial mammal	23/07/2003		NRW (Cardiff) Bat Casework File 2003	Unassessed
ST069910	922	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	15/04/2010	2	SEWBReC Casual Records	Unassessed
ST074907	922	*Spilosoma lutea* (Buff Ermine)	insect - moth	144 records, between 2003 and 2009	2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 3 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 3 (Adult); 3 (Adult); 3 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 3 (Adult); 6 (Adult); 1 (Adult); 1 (Adult); 5 (Adult); 1 (Adult); 1 (Adult); 3 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 4 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1; 1; 1; 1; 1; 2; 1; 1; 2; 1; 1; 1; 2; 1; 1; 1; 1; 1; 1; 1; 1; 1; 4; 1; 1; 1; 3; 1; 1; 1; 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Melanchra persicariae* (Dot Moth)	insect - moth	100 records, between 2003 and 2009	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 3 (Adult); 4 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 3 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 4 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 4 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 3 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 3 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 3 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 3 (Adult); 2 (Adult); 1 (Adult); 1; 1; 2; 2; 1; 1; 1; 2; 1; 2; 1; 1; 1; 1; 1; 2; 1; 1; 2; 1; 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Spilosoma lubricipeda* (White Ermine)	insect - moth	17 records, between 2003 and 2008	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Hydraecia micacea* (Rosy Rustic)	insect - moth	19 records, between 2003 and 2009	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Ecliptopera silaceata* (Small Phoenix)	insect - moth	29 records, between 2003 and 2009	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1; 1; 1; 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Lycia hirtaria* (Brindled Beauty)	insect - moth	7 records, between 2007 and 2009	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2; 3; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Tholera cespitis* (Hedge Rustic)	insect - moth	25/08/2003	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Arctia caja* (Garden Tiger)	insect - moth	15 records, between 2003 and 2009	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1; 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Hoplodrina blanda* (Rustic)	insect - moth	4 records, between 2003 and 2004	1 (Adult); 1 (Adult); 2 (Adult); 2 (Adult)	Glamorgan Moth Records	Unassessed
ST074907	922	*Diarsia rubi* (Small Square-spot)	insect - moth	2 records, both from 2003	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Ennomos fuscantaria* (Dusky Thorn)	insect - moth	4 records, between 2003 and 2006	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct

ST074907	922	*Acronicta rumicis* (Knot Grass)	insect - moth	14 records, between 2004 and 2007	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Helotropha leucostigma* (Crescent)	insect - moth	31/07/2003	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Timandra comae* (Blood-vein)	insect - moth	3 records, between 2003 and 2006	1 (Adult); 1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Xestia castanea* (Neglected Rustic)	insect - moth	15/09/2003	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Ennomos quercinaria* (August Thorn)	insect - moth	2 records, both from 2005	1 (Adult); 3 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Euxoa nigricans* (Garden Dart)	insect - moth	3 records, between 2003 and 2007	1 (Adult); 2 (Adult); 1 (Adult)	Glamorgan Moth Records	Unassessed
ST074907	922	*Epirrhoe galiata* (Galium Carpet)	insect - moth	31/07/2004	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Leucania comma* (Shoulder-striped Wainscot)	insect - moth	12 records, between 2003 and 2008	1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 2 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1; 1; 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Xestia agathina* (Heath Rustic)	insect - moth	06/09/2003	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Cirrhia icteritia* (Sallow)	insect - moth	3 records, between 2004 and 2008	1 (Adult); 1 (Adult); 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Ceramica pisi* (Broom Moth)	insect - moth	14 records, between 2003 and 2009	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1; 1; 1; 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Eugnorisma glareosa* (Autumnal Rustic)	insect - moth	3 records, between 2003 and 2004	1 (Adult); 1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Atethmia centrago* (Centre-barred Sallow)	insect - moth	2 records, between 2005 and 2006	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Mniotype adusta* (Dark Brocade)	insect - moth	27/05/2005	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Apamea remissa* (Dusky Brocade)	insect - moth	29/07/2005	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Amphipoea oculea* (Ear Moth)	insect - moth	24/07/2005	1 (Adult)	Glamorgan Moth Records	Unassessed
ST074907	922	*Xanthorhoe ferrugata* (Dark-barred Twin-spot Carpet)	insect - moth	3 records, all from 2008	1; 2; 1	MapMate Data (New)	Verified correct
ST074907	922	*Acronicta psi* (Grey Dagger)	insect - moth	17/07/2009	1	MapMate Data (New)	Unassessed
ST0891	924	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0890	943	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	26/09/2007 - 10/10/2007	80-100 (Not recorded)	NRW (Cardiff) Bat Casework File 2007	Unassessed
ST085919	949	*Prunella modularis* (Dunnock)	bird	20/08/2014		SEWBReCORD	Unassessed
ST0891	949	*Lutra lutra* (Otter)	terrestrial mammal	20/08/2014		SEWBReCORD	Verified correct
ST085919	949	*Larus argentatus* (Herring Gull)	bird	20/08/2014		SEWBReCORD	Unassessed
ST0892	950	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST08469216	964	*Prunella modularis* (Dunnock)	bird	17/07/1971		Dr Mary Gillham Project records	Unassessed
ST0892	977	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0890	985	*Chiroptera* (Unknown Bat)	terrestrial mammal	12/02/2009		NRW (Cardiff) Bat Casework File 2009	Unassessed
ST0892	989	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	989	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	990	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	991	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed

ST0892	991	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST082908	1,000	*Zootoca vivipara* (Common Lizard)	reptile	April 2007		SEWBReC Casual Records	Unassessed
ST082908	1,000	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	March 2007		SEWBReC Casual Records	Unassessed
ST082908	1,000	*Pyrrhula pyrrhula* (Bullfinch)	bird	May 2007		SEWBReC Casual Records	Verified correct
ST082908	1,000	*Anguis fragilis* (Slow-worm)	reptile	2007 - 2008		SEWBReC Casual Records	Unassessed
ST0892	1,007	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,007	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,007	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,019	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0792	1,020	*Myotis mystacinus* (Whiskered Bat)	terrestrial mammal	2011	1	Dwr Cymru/Welsh Water Miscellaneous Records	Unassessed
ST0790	1,029	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	29/05/2012	1	Just Mammals	Unassessed
ST0792	1,044	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	06/08/1984	150	Gwent Bat Enquiry Report Forms	Unassessed
ST0792	1,044	*Plecotus auritus* (Brown Long-eared Bat)	terrestrial mammal	06/08/1984	3	Gwent Bat Enquiry Report Forms	Unassessed
ST09	1,063	*Falco peregrinus* (Peregrine)	bird	17/07/2003	1 (Adult)	MapMate Data (3dq)	Verified correct
ST0892	1,073	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,096	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,096	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0790	1,118	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	29/05/2012	1	Just Mammals	Unassessed
ST0892	1,138	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0792	1,151	*Meles meles* (Badger)	terrestrial mammal	2 records, both from 2015		SEWBReCORD (Direct Import); SEWBReCORD	Unassessed
ST0691	1,160	*Passer domesticus* (House Sparrow)	bird	9 records, between 2009 and 2010	6; 15; 15; 18; 8; 8; 19; 19; 18	MapMate Data (New)	Verified correct
ST0691	1,160	*Prunella modularis* (Dunnock)	bird	9 records, between 2009 and 2010	3; 3; 7; 7; 3; 6; 3; 3; 6	MapMate Data (New)	Verified correct
ST0691	1,160	*Turdus philomelos* (Song Thrush)	bird	6 records, all from 2010	3; 3; 2; 2; 3; 3	MapMate Data (New)	Verified correct
ST0691	1,160	*Turdus iliacus* (Redwing)	bird	3 records, between 2009 and 2010	8; 2; 2	MapMate Data (New)	Verified correct
ST0790	1,160	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	2006		People's Trust for Endangered Species	Unassessed
ST0790	1,160	*Alcedo atthis* (Kingfisher)	bird	5 records, between 2004 and 2020	1; 1; 1; 1	MapMate Data (New); SEWBReCORD; MapMate Data (1v9)	Verified correct
ST0790	1,160	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	7 records, between 2009 and 2020	20; 21; 25; 10; 25; 20	Glamorgan Bird Club Records; SEWBReCORD; MapMate Data (New)	Unassessed
ST0691	1,160	*Sturnus vulgaris* (Starling)	bird	8 records, all from 2010	5; 2; 35; 5; 7; 2; 35; 7	MapMate Data (New)	Verified correct
ST0691	1,160	*Loxia curvirostra* (Common Crossbill)	bird	09/11/2009	3	MapMate Data (New)	Verified correct

ST0790	1,160	*Passer domesticus* (House Sparrow)	bird	2 records, between 2010 and 2020	2	SEWBReCORD; MapMate Data (New)	Unassessed
ST09	1,160	*Pandion haliaetus* (Osprey)	bird	02/04/2013	1	MapMate Data (New)	Verified correct
ST0790	1,160	*Pyrrhula pyrrhula* (Bullfinch)	bird	16/01/2015	1	Glamorgan Bird Club Records	Unassessed
ST0691	1,160	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0691	1,160	*Pyrrhula pyrrhula* (Bullfinch)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0691	1,160	*Acanthis cabaret* (Lesser Redpoll)	bird	09/11/2009	1	MapMate Data (New)	Verified correct
ST09	1,160	*Milvus milvus* (Red Kite)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0691	1,160	*Muscicapa striata* (Spotted Flycatcher)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0691	1,160	*Alauda arvensis* (Skylark)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0790	1,160	*Larus argentatus* (Herring Gull)	bird	09/11/2009	1	MapMate Data (New)	Verified correct
ST0790	1,160	*Motacilla flava* (Yellow Wagtail)	bird	21/05/2019	1	LERC Wales App (Direct Import)	Unassessed
ST0892	1,161	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,161	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST072905	1,170	*Dendrocopos minor* (Lesser Spotted Woodpecker)	bird	2 records, between 1972 and 1986	1; 1	MapMate Data (1cf)	Verified correct
ST072905	1,170	*Turdus pilaris* (Fieldfare)	bird	16/06/1973	1	MapMate Data (1cf)	Verified correct
ST072905	1,170	*Larus melanocephalus* (Mediterranean Gull)	bird	2 records, both from 2002	1 (Adult); 1 (1st Winter)	MapMate Data (1cf)	Verified correct
ST072905	1,170	*Fringilla montifringilla* (Brambling)	bird	05/04/2000	2	MapMate Data (1cf)	Verified correct
ST0792	1,200	*Chiroptera* (Unknown Bat)	terrestrial mammal	01/08/2002		NRW (Cardiff) Bat Casework File 2002	Unassessed
ST0892	1,202	*Alcedo atthis* (Kingfisher)	bird	01/06/2010	8	MapMate Data (New)	Verified correct
ST09	1,202	*Milvus milvus* (Red Kite)	bird	27/12/2010	1	MapMate Data (New)	Verified correct
ST0892	1,202	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	01/09/2001		Glamorgan Mammal Records	Unassessed
ST0892	1,202	*Falco tinnunculus* (Kestrel)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0892	1,202	*Sturnus vulgaris* (Starling)	bird	10/03/1971		Dr Mary Gillham Project records	Unassessed
ST0892	1,216	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,216	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0790	1,216	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	06/10/2009	5	Geri Foster Thomas Miscellaneous Records	Unassessed
ST0790	1,216	*Nyctalus noctula* (Noctule Bat)	terrestrial mammal	29/06/2006		UK BAP Records from NBN Gateway	Unassessed
ST079928	1,237	*Anguilla anguilla* (Eel)	bony fish (Actinopterygii)	2 records, between 1988 and 1991		Freshwater Fish Atlas	Unassessed
ST073928	1,237	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	14/07/1981	a (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST0790	1,237	*Nyctalus noctula* (Noctule Bat)	terrestrial mammal	29/06/2006		UK BAP Records from NBN Gateway	Unassessed
ST0892	1,260	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	2 records, both from 2015	1; 1	SEWBReCORD (Direct Import); SEWBReCORD	Unassessed
ST0892	1,264	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0790	1,265	*Chiroptera* (Unknown Bat)	terrestrial mammal	04/07/1995	60 (Adult)	NRW- HQ - Terr- Bat Roosts Database - Wales	Unassessed

ST0892	1,280	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0892	1,280	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	2 records, both from 2014	1; 1	SEWBReCORD (Direct Import); SEWBReCORD	Unassessed
ST086924	1,281	*Bombus humilis* (Brown-banded Carder-bee)	insect - hymenopteran	11/06/2010		Capita Symonds Data	Unassessed
ST0892	1,309	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST08669248	1,314	*Prunella modularis* (Dunnock)	bird	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST0891	1,315	*Myotis* (Myotis Bat Species)	terrestrial mammal	03/09/2010		NRW (Cardiff) Bat Casework File 2010	Unassessed
ST0790	1,318	*Lutra lutra* (Otter)	terrestrial mammal	August 2015	1	SoltysBrewster Records	Unassessed
ST0790	1,318	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	August 2015	1	SoltysBrewster Records	Unassessed
ST0790	1,318	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	August 2015	1	SoltysBrewster Records	Unassessed
ST0892	1,326	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0792	1,334	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	05/09/2007	1	NRW (Cardiff) Bat Casework File 2007	Unassessed
ST0792	1,334	*Chiroptera* (Unknown Bat)	terrestrial mammal	03/09/2007		NRW (Cardiff) Bat Casework File 2007	Unassessed
ST0792	1,335	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	28/07/2012	1	Dwr Cymru/Welsh Water Miscellaneous Records	Unassessed
ST06839058	1,341	*Anguis fragilis* (Slow-worm)	reptile	29/06/2014	1 Adult	D1505/001/03: Amphibian and Reptile records held in 'Record Pool' (Records for Wales)	Verified correct
ST06399106	1,385	*Passer domesticus* (House Sparrow)	bird	12/03/2016	16	SEWBReCORD	Unassessed
ST0690	1,389	*Chiroptera* (Unknown Bat)	terrestrial mammal	27/05/2004		NRW (Cardiff) Bat Casework File 2004	Unassessed
ST0793	1,414	*Chiroptera* (Unknown Bat)	terrestrial mammal	01/08/2007		NRW (Cardiff) Bat Casework File 2007	Unassessed
ST06899284	1,414	*Erynnis tages* (Dingy Skipper)	insect - butterfly	06/05/2020	Few	SEWBReCORD	Unassessed
ST0790	1,419	*Myotis* (Myotis Bat Species)	terrestrial mammal	15/05/2018		SoltysBrewster Records	Unassessed
ST0790	1,419	*Lutra lutra* (Otter)	terrestrial mammal	14/05/2018		SoltysBrewster Records	Unassessed
ST0790	1,419	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	2 records, both from 2018		SoltysBrewster Records	Unassessed
ST0790	1,419	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	2 records, both from 2018		SoltysBrewster Records	Unassessed
ST0790	1,419	*Nyctalus noctula* (Noctule Bat)	terrestrial mammal	15/05/2018		SoltysBrewster Records	Unassessed
ST07049036	1,420	*Acronicta psi* (Grey Dagger)	insect - moth	19/09/2014	1	SEWBReCORD	Verified correct
ST085927	1,421	*Lasiommata megera* (Wall)	insect - butterfly	16/10/2005	2 (Adult)	MapMate Data (1ay)	Verified correct
ST07139297	1,422	*Zootoca vivipara* (Common Lizard)	reptile	14/05/2017	2	SEWBReCORD	Verified correct
ST0690	1,427	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	3 records, all from 2008		Merlin Bio-Surveys Records	Unassessed
ST0658290704	1,427	*Anguis fragilis* (Slow-worm)	reptile	12/05/2008 - 13/06/2008	3	Merlin Bio-Surveys Records	Unassessed
ST0690	1,427	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	12/05/2008		Merlin Bio-Surveys Records	Unassessed
ST0892	1,430	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0890	1,430	*Poecile palustris* (Marsh Tit)	bird	22/04/2008	1	MapMate Data (New)	Unassessed
ST0890	1,430	*Prunella modularis* (Dunnock)	bird	3 records, between 2008 and 2010	1; 3; 3	MapMate Data (New)	Verified correct
ST0890	1,430	*Boloria euphrosyne* (Pearl-bordered Fritillary)	insect - butterfly	2 records, both from 1918		Welsh_Invertebrate_Database_WID_.csv (CCW0006600000009); NRW BAP Invertebrate data	Unassessed

ST0890	1,430	*Passer domesticus* (House Sparrow)	bird	2 records, both from 2010	4; 4	MapMate Data (New)	Verified correct
ST0692	1,430	*Hipparchia semele* (Grayling)	insect - butterfly	10/07/2016	2	MapMate Data (New)	Verified correct
ST0692	1,430	*Ceramica pisi* (Broom Moth)	insect - moth	18/09/2009	Present	MapMate Data (New)	Verified correct
ST0690	1,442	*Myotis* (Myotis Bat Species)	terrestrial mammal	1986		BRC - Mammal Records	Unassessed
ST0892	1,442	*Chiroptera* (Unknown Bat)	terrestrial mammal	19/07/2004		NRW (Cardiff) Bat Casework File 2004	Unassessed
ST088924	1,442	*Coenonympha pamphilus* (Small Heath)	insect - butterfly	20/05/2010 - 07/07/2010		Capita Symonds Data	Unassessed
ST0892	1,463	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0665490564	1,473	*Tyria jacobaeae* (Cinnabar)	insect - moth	18/07/2015		iRecord	Verified correct
ST07069300	1,476	*Zootoca vivipara* (Common Lizard)	reptile	25/03/2018	2	SEWBReCORD	Unassessed
ST0790	1,486	*Chiroptera* (Unknown Bat)	terrestrial mammal	06/08/2002		NRW (Cardiff) Bat Casework File 2002	Unassessed
ST090921	1,487	*Lepus europaeus* (Hare)	terrestrial mammal	29/03/2011	1 Count	Mixed Taxa Records WWBIC Region	Unassessed
ST06779044	1,489	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	30/09/2016	1	SEWBReCORD	Verified correct
ST07719314	1,497	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	04/09/2014	2	SEWBReCORD	Unassessed
ST076931	1,500	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST06849291	1,500	*Hipparchia semele* (Grayling)	insect - butterfly	10/07/2016	2	SEWBReCORD	Verified correct
ST06829290	1,502	*Vipera berus* (Adder)	reptile	04/09/2014	1	SEWBReCORD	Verified correct
ST0892	1,507	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST090922	1,523	*Zootoca vivipara* (Common Lizard)	reptile	18/05/2010 - 28/06/2010	5 (+)	Capita Symonds Data	Unassessed
ST090922	1,523	*Anguis fragilis* (Slow-worm)	reptile	18/05/2010 - 28/06/2010	4 (+)	Capita Symonds Data	Unassessed
ST07679317	1,525	*Bufo bufo* (Common Toad)	amphibian	04/06/2015	1 Adult	D1505/001/03: Amphibian and Reptile records held in 'Record Pool' (Records for Wales)	Verified correct
ST068903	1,526	*Larus argentatus* (Herring Gull)	bird	30/05/2020		LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Turdus philomelos* (Song Thrush)	bird	30/05/2020		LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Cossus cossus* (Goat Moth)	insect - moth	15/07/2013	1	MapMate Data (New)	Verified correct
ST089924	1,527	*Anguis fragilis* (Slow-worm)	reptile	18/05/2010 - 28/06/2010	9 (+)	Capita Symonds Data	Unassessed
ST089924	1,527	*Zootoca vivipara* (Common Lizard)	reptile	18/05/2010 - 28/06/2010	3 (+)	Capita Symonds Data	Unassessed
ST079901	1,529	*Passer domesticus* (House Sparrow)	bird	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST0878592689	1,539	*Passer domesticus* (House Sparrow)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST06519060	1,543	*Anguis fragilis* (Slow-worm)	reptile	13/03/2011		SEWBReC Casual Records	Unassessed
ST08939251	1,549	*Bombus humilis* (Brown-banded Carder-bee)	insect - hymenopteran	21/06/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST0790	1,552	*Chiroptera* (Unknown Bat)	terrestrial mammal	3 records, between 2003 and 2006		NRW (Cardiff) Bat Casework File 2004; NRW (Cardiff) Bat Casework File 2003; NRW (Cardiff) Bat Casework File 2006	Unassessed
ST0790	1,552	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	03/07/2008	1	NRW (Cardiff) Bat Casework File 2008	Unassessed
ST07899011	1,554	*Pyrrhula pyrrhula* (Bullfinch)	bird	31/05/1991	2 (+)	Dr Mary Gillham Project records	Unassessed
ST0901292399	1,554	*Linaria cannabina* (Linnet)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST07899011	1,554	*Prunella modularis* (Dunnock)	bird	31/05/1991		Dr Mary Gillham Project records	Unassessed

ST0900492418	1,557	*Prunella modularis* (Dunnock)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0690	1,562	*Chiroptera* (Unknown Bat)	terrestrial mammal	25/06/2004		NRW (Cardiff) Bat Casework File 2004	Unassessed
ST0690	1,565	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	23/08/2007	1	NRW (Cardiff) Bat Casework File 2007	Unassessed
ST09	1,568	*Falco peregrinus* (Peregrine)	bird	09/08/2018	2	SEWBReCORD	Unassessed
ST0892	1,572	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0889992611	1,576	*Turdus philomelos* (Song Thrush)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0890892602	1,578	*Turdus philomelos* (Song Thrush)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0690	1,581	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	01/04/2007	5	Valleys Bat Group Records	Unassessed
ST067903	1,581	*Anguilla anguilla* (Eel)	bony fish (Actinopterygii)	Summer 1969		Dr Mary Gillham Project records	Unassessed
ST089925	1,581	*Anguis fragilis* (Slow-worm)	reptile	18/05/2010 - 28/06/2010	6 (+)	Capita Symonds Data	Unassessed
ST0690	1,581	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	01/04/2007	5	Valleys Bat Group Records	Unassessed
ST0790	1,594	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	30/08/2018		SEWBReCORD	Unassessed
ST0886192686	1,594	*Prunella modularis* (Dunnock)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0914692212	1,598	*Ficedula hypoleuca* (Pied Flycatcher)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0790	1,603	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	2 records, both from 2007	3; 8	Valleys Bat Group Records	Unassessed
ST0790	1,603	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	2 records, both from 2007	3; 5	Valleys Bat Group Records	Unassessed
ST0790	1,603	*Nyctalus noctula* (Noctule Bat)	terrestrial mammal	15/06/2007	3	Valleys Bat Group Records	Unassessed
ST08699286	1,603	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	28/06/2011	1	Sturgess Ecology	Unassessed
ST0790	1,606	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	30/08/2018		SEWBReCORD	Unassessed
ST0790	1,606	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	2 records, both from 2018	1; 1	SEWBReCORD (Direct Import); SEWBReCORD	Unassessed
ST0636390688	1,607	*Acronicta psi* (Grey Dagger)	insect - moth	08/08/2015		iRecord	Verified correct
ST0636390688	1,607	*Acronicta rumicis* (Knot Grass)	insect - moth	6 records, between 2014 and 2017		iRecord	Verified correct
ST0636390688	1,607	*Melanchra persicariae* (Dot Moth)	insect - moth	13/09/2014		iRecord	Verified correct
ST0636390688	1,607	*Tyria jacobaeae* (Cinnabar)	insect - moth	4 records, between 2015 and 2017		iRecord	Verified correct
ST06369068	1,607	*Tyria jacobaeae* (Cinnabar)	insect - moth	2 records, both from 2019	50+; 50+	iRecord (Direct Import)	Unassessed
ST0636390688	1,607	*Anguis fragilis* (Slow-worm)	reptile	17/05/2014		iRecord	Verified correct
ST09079239	1,608	*Anguis fragilis* (Slow-worm)	reptile	23/07/2015	1 Adult	D1505/001/03: Amphibian and Reptile records held in 'Record Pool' (Records for Wales)	Verified correct
ST074900	1,612	*Falco tinnunculus* (Kestrel)	bird	18/09/2019	1	SEWBReCORD Sensitive Records	Unassessed
ST090924	1,613	*Tyria jacobaeae* (Cinnabar)	insect - moth	2 records, both from 2015	2	SEWBReCORD; Liam Olds Colliery Spoil Project Records	Verified correct
ST090924	1,613	*Lasiommata megera* (Wall)	insect - butterfly	20/05/2010 - 07/07/2010		Capita Symonds Data	Verified correct
ST090924	1,613	*Coenonympha pamphilus* (Small Heath)	insect - butterfly	03/06/2015		Liam Olds Colliery Spoil Project Records	Verified correct
ST0900992531	1,620	*Prunella modularis* (Dunnock)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct

ST09039249	1,623	*Bombus humilis* (Brown-banded Carder-bee)	insect - hymenopteran	26/05/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST0690	1,626	*Ixobrychus minutus* (Little Bittern)	bird	1880	1	MapMate Data (1cf)	Verified correct
ST0690	1,626	*Perdix perdix* (Grey Partridge)	bird	13/09/1975	6	MapMate Data (1cf)	Verified correct
ST0690	1,626	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	4 records, between 1968 and 2006		BRC - Mammal Records; People's Trust for Endangered Species	Unassessed
ST0690	1,626	*Dendrocopos minor* (Lesser Spotted Woodpecker)	bird	30/07/1974	1	MapMate Data (1cf)	Verified correct
ST0690	1,626	*Tyria jacobaeae* (Cinnabar)	insect - moth	2 records, between 2016 and 2019	50; Present	MapMate Data (New)	Verified correct
ST0690	1,626	*Phylloscopus sibilatrix* (Wood Warbler)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0690	1,626	*Acronicta rumicis* (Knot Grass)	insect - moth	10/09/2016	Present	MapMate Data (New)	Unassessed
ST0690	1,626	*Anthus trivialis* (Tree Pipit)	bird	19/04/1986	1	MapMate Data (1cf)	Verified correct
ST09	1,626	*Milvus milvus* (Red Kite)	bird	22/05/2010	2	MapMate Data (New)	Verified correct
ST0690	1,626	*Plecotus* (Long-eared Bat Species)	terrestrial mammal	1982		BRC - Mammal Records	Unassessed
ST0690	1,626	*Pipistrellus pipistrellus agg.* (Pipistrelle agg.)	terrestrial mammal	1984		BRC - Mammal Records	Unassessed
ST0690	1,626	*Chiroptera* (Unknown Bat)	terrestrial mammal	2 records, between 1993 and 2002	73 (Adult)	NRW (Cardiff) Bat Casework File 2002; NRW- HQ - Terr- Bat Roosts Database - Wales	Unassessed
ST08339312	1,626	*Motacilla flava* (Yellow Wagtail)	bird	31/05/1994	4 (+)	Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Turdus philomelos* (Song Thrush)	bird	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Cuculus canorus* (Cuckoo)	bird	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Passer domesticus* (House Sparrow)	bird	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST0690	1,626	*Turdus iliacus* (Redwing)	bird	27/09/1986	1	MapMate Data (1cf)	Verified correct
ST08339312	1,626	*Rana temporaria* (Common Frog)	amphibian	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Bufo bufo* (Common Toad)	amphibian	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST0790	1,628	*Pipistrellus nathusii* (Nathusius's Pipistrelle)	terrestrial mammal	06/09/2018	1	SEWBReCORD	Verified correct
ST0790	1,628	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	06/09/2018	<5	SEWBReCORD	Verified correct
ST0790	1,628	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	11/08/2011	2 Adult	D1666/001/01: Records captured from Licence Returns submitted to Natural Resources Wales (Mammal records captured during 2016 from survey licence return forms)	Verified correct
ST087928	1,628	*Alcedo atthis* (Kingfisher)	bird	November 2002	1	Glamorgan Bird Club Records	Verified correct
ST0790	1,628	*Myotis daubentonii* (Daubenton's Bat)	terrestrial mammal	06/09/2018	<5	SEWBReCORD	Verified correct
ST0790	1,629	*Lutra lutra* (Otter)	terrestrial mammal	09/05/2013		Wildwood Ecology Records	Unassessed
ST0899092582	1,632	*Ficedula hypoleuca* (Pied Flycatcher)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0895092642	1,635	*Pyrrhula pyrrhula* (Bullfinch)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0690	1,640	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	19/09/2012	29 (+)	SEWBReC Casual Records	Unassessed
ST0690	1,640	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	2011	1	Dwr Cymru/Welsh Water Miscellaneous Records	Unassessed
ST0893	1,641	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0790	1,649	*Chiroptera* (Unknown Bat)	terrestrial mammal	2 records, between 2007 and 2009	1	NRW (Cardiff) Bat Casework File 2007; NRW (Cardiff) Bat Casework File 2009	Unassessed

ST0790	1,649	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	05/11/2007		Glamorgan Mammal Records	Unassessed
ST091923	1,655	*Anguis fragilis* (Slow-worm)	reptile	18/05/2010 - 28/06/2010	6 (+)	Capita Symonds Data	Unassessed
ST091923	1,655	*Zootoca vivipara* (Common Lizard)	reptile	18/05/2010 - 28/06/2010	3 (+)	Capita Symonds Data	Unassessed
ST0896792655	1,657	*Ficedula hypoleuca* (Pied Flycatcher)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST090925	1,664	*Anguis fragilis* (Slow-worm)	reptile	18/05/2010 - 28/06/2010	10 (+)	Capita Symonds Data	Unassessed
ST0992	1,664	*Meles meles* (Badger)	terrestrial mammal	03/06/2010 - 30/09/2010		Capita Symonds Data	Unassessed
ST090925	1,664	*Zootoca vivipara* (Common Lizard)	reptile	18/05/2010 - 28/06/2010	1 (+)	Capita Symonds Data	Unassessed
ST090925	1,664	*Cuculus canorus* (Cuckoo)	bird	2 records, both from 2010		Capita Symonds Data	Unassessed
ST0903192612	1,683	*Phylloscopus sibilatrix* (Wood Warbler)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST06289066	1,683	*Tyria jacobaeae* (Cinnabar)	insect - moth	12/07/2014		iRecord	Verified correct
ST0893	1,697	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0893	1,697	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST05999126	1,699	*Linaria cannabina* (Linnet)	bird	10/09/1972		Dr Mary Gillham Project records	Unassessed
ST0690	1,700	*Chiroptera* (Unknown Bat)	terrestrial mammal	22/11/2014		SEWBReCORD	Unassessed
ST089927	1,703	*Boloria euphrosyne* (Pearl-bordered Fritillary)	insect - butterfly	1988		NRW (Cardiff) Map Info Data	Verified correct
ST093917	1,703	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	15/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST08018998	1,704	*Anguilla anguilla* (Eel)	bony fish (Actinopterygii)	1974		Dr Mary Gillham Project records	Unassessed
ST082932	1,709	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	2 records, both from 2010	100; 100	MapMate Data (New)	Verified correct
ST0790	1,709	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	25/01/2019		iRecord	Unassessed
ST082932	1,709	*Tyria jacobaeae* (Cinnabar)	insect - moth	19/05/2002	1 (Adult)	Glamorgan Moth Records	Verified correct
ST082932	1,709	*Spilosoma lubricipeda* (White Ermine)	insect - moth	19/05/2002	1 (Adult)	Glamorgan Moth Records	Verified correct
ST0893	1,711	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0690	1,711	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	01/06/2016	1	SEWBReCORD	Verified correct
ST0789	1,714	*Lutra lutra* (Otter)	terrestrial mammal	22/08/2015	1	SEWBReCORD	Unassessed
ST0728589966	1,723	*Alcedo atthis* (Kingfisher)	bird	12/11/2017	1	SEWBReCORD	Unassessed
ST073899	1,726	*Alcedo atthis* (Kingfisher)	bird	2 records, both from 2003	1; 1	Glamorgan Bird Club Records	Verified correct
ST0915092515	1,732	*Anthus trivialis* (Tree Pipit)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0893	1,735	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0690	1,746	*Nyctalus noctula* (Noctule Bat)	terrestrial mammal	2 records, both from 2013	1; 1	Just Mammals	Unassessed
ST0690	1,746	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	2 records, both from 2013	2; 1	Just Mammals	Unassessed
ST072899	1,746	*Larus argentatus* (Herring Gull)	bird	11/11/2015	8	BirdTrack 2015	Unassessed
ST0690	1,746	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	23/05/2013	1	Just Mammals	Unassessed

ST085931	1,749	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	28/01/2007	120	MapMate Data (5gv)	Verified correct
ST06779316	1,750	*Cuculus canorus* (Cuckoo)	bird	15/05/2016	3	SEWBReCORD	Unassessed
ST07278993	1,755	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	03/08/2018		LERC Wales App (Direct Import)	Unassessed
ST064903	1,769	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	15/04/2010	Rare	MapMate Data (New)	Verified correct
ST09229245	1,769	*Bombus humilis* (Brown-banded Carder-bee)	insect - hymenopteran	13/05/2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST08068992	1,774	*Rana temporaria* (Common Frog)	amphibian	March 1975		Dr Mary Gillham Project records	Unassessed
ST08068992	1,774	*Anguilla anguilla* (Eel)	bony fish (Actinopterygii)	March 1975		Dr Mary Gillham Project records	Unassessed
ST08068992	1,774	*Anguis fragilis* (Slow-worm)	reptile	March 1975		Dr Mary Gillham Project records	Unassessed
ST08068992	1,774	*Bufo bufo* (Common Toad)	amphibian	March 1975		Dr Mary Gillham Project records	Unassessed
ST090927	1,781	*Anguilla anguilla* (Eel)	bony fish (Actinopterygii)	13/08/1991		Freshwater Fish Atlas	Unassessed
ST092924	1,789	*Anguis fragilis* (Slow-worm)	reptile	18/05/2010 - 28/06/2010	19 (+)	Capita Symonds Data	Unassessed
ST092924	1,789	*Zootoca vivipara* (Common Lizard)	reptile	18/05/2010 - 28/06/2010	3 (+)	Capita Symonds Data	Unassessed
ST0690	1,791	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	27/06/2011	1	Merlin Bio-Surveys Records	Unassessed
ST0690	1,792	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	23/06/2011		Merlin Bio-Surveys Records	Unassessed
ST0893	1,792	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0893	1,792	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0690	1,793	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	22/06/2011		Merlin Bio-Surveys Records	Unassessed
ST0652590253	1,794	*Passer domesticus* (House Sparrow)	bird	21/06/2011		Merlin Bio-Surveys Records	Verified correct
ST0690	1,794	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	21/06/2011		Merlin Bio-Surveys Records	Unassessed
ST0789	1,800	*Myotis daubentonii* (Daubenton's Bat)	terrestrial mammal	06/10/2009	3	Geri Foster Thomas Miscellaneous Records	Unassessed
ST077898	1,803	*Turdus philomelos* (Song Thrush)	bird	08/05/2003	1 (Adult)	MapMate Data (1d8)	Verified correct
ST070899	1,803	*Passer domesticus* (House Sparrow)	bird	21/10/2011	4	MapMate Data (New)	Verified correct
ST06899000	1,810	*Prunella modularis* (Dunnock)	bird	12/04/2013		Just Mammals	Verified correct
ST078898	1,811	*Tyria jacobaeae* (Cinnabar)	insect - moth	2 records, both from 2020	6 to 20; 6 to 20	LERC Wales App (Direct Import)	Unassessed
ST0893	1,824	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0689	1,838	*Lutra lutra* (Otter)	terrestrial mammal	23/05/2013		Just Mammals	Unassessed
ST0689	1,838	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	23/05/2013	1	Just Mammals	Unassessed
ST0689	1,838	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	23/05/2013	1	Just Mammals	Unassessed
ST0592790971	1,852	*Tyria jacobaeae* (Cinnabar)	insect - moth	14/06/2014		iRecord	Verified correct
ST0592790971	1,852	*Erynnis tages* (Dingy Skipper)	insect - butterfly	16/05/2015		iRecord	Verified correct
ST0991	1,856	*Passer domesticus* (House Sparrow)	bird	5 records, between 2009 and 2015	1; 2; 2; 1; 9	BirdTrack 2015; Glamorgan Bird Club Records; MapMate Data (New)	Unassessed
ST0991	1,856	*Pyrrhula pyrrhula* (Bullfinch)	bird	3 records, between 2009 and 2010	1; 1; 1	MapMate Data (New)	Verified correct

ST0991	1,856	*Cuculus canorus* (Cuckoo)	bird	4 records, all from 2015	1; 1; 1; 1	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0991	1,856	*Linaria cannabina* (Linnet)	bird	4 records, all from 2010	11; 11; 1; 1	MapMate Data (New)	Unassessed
ST0991	1,856	*Prunella modularis* (Dunnock)	bird	4 records, between 2010 and 2015	1; 1; 2; 2	BirdTrack 2015; Glamorgan Bird Club Records; MapMate Data (New)	Unassessed
ST0793	1,856	*Loxia curvirostra* (Common Crossbill)	bird	16/10/2011	Present	MapMate Data (New)	Unassessed
ST0793	1,856	*Cuculus canorus* (Cuckoo)	bird	3 records, between 2005 and 2011	1; 1; p	MapMate Data (New); BBC Wales - Iolo's Welsh Safari Records. Public Participation Survey.	Verified correct
ST0991	1,856	*Anthus trivialis* (Tree Pipit)	bird	3 records, between 2010 and 2018	2; 2; 2	MapMate Data (New)	Verified correct
ST0991	1,856	*Alauda arvensis* (Skylark)	bird	4 records, all from 2010	9; 9; 8; 8	MapMate Data (New)	Verified correct
ST0991	1,856	*Sturnus vulgaris* (Starling)	bird	5 records, between 2009 and 2015	7; 1; 14; 14; 1	MapMate Data (New); Glamorgan Bird Club Records; BirdTrack 2015	Verified correct
ST0991	1,856	*Turdus philomelos* (Song Thrush)	bird	2 records, both from 2015	1; 1	Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST09	1,856	*Milvus milvus* (Red Kite)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0991	1,856	*Emberiza schoeniclus* (Reed Bunting)	bird	2 records, both from 2010	4; 4	MapMate Data (New)	Verified correct
ST07928977	1,895	*Alcedo atthis* (Kingfisher)	bird	04/02/2019	2	SEWBReCORD	Unassessed
ST0789	1,900	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	06/10/2009	10	Geri Foster Thomas Miscellaneous Records	Unassessed
ST0893	1,908	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST09W	1,909	*Prunella modularis* (Dunnock)	bird	26/01/2015	1	BirdTrack 2015	Unassessed
ST09W	1,909	*Turdus philomelos* (Song Thrush)	bird	26/01/2015	2	BirdTrack 2015	Unassessed
ST09W	1,909	*Pyrrhula pyrrhula* (Bullfinch)	bird	26/01/2015	3	BirdTrack 2015	Unassessed
ST09W	1,909	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST0693	1,911	*Chiroptera* (Unknown Bat)	terrestrial mammal	29/07/2004		NRW (Cardiff) Bat Casework File 2004	Unassessed
ST0693	1,911	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	2008		NRW (Cardiff) Bat Casework File 2008	Unassessed
ST095913	1,923	*Zootoca vivipara* (Common Lizard)	reptile	14/03/2016	1 Adult	D1117/001/01: ad hoc Cofnod Online Recording System records	Verified correct
ST0789	1,923	*Lutra lutra* (Otter)	terrestrial mammal	22/09/1992		NRW (Cardiff) Protected Species Data	Unassessed
ST0893	1,924	*Nyctalus noctula* (Noctule Bat)	terrestrial mammal	06/10/2009	1	Geri Foster Thomas Miscellaneous Records	Unassessed
ST0789	1,926	*Myotis mystacinus* (Whiskered Bat)	terrestrial mammal	28/10/2014	1	SEWBReCORD	Verified correct
ST07158977	1,939	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	12/11/2014	1	SEWBReCORD	Verified correct
ST092927	1,942	*Coenonympha pamphilus* (Small Heath)	insect - butterfly	1999	1 (Adult)	MapMate Data (1dr)	Verified correct
ST092927	1,942	*Turdus philomelos* (Song Thrush)	bird	23/06/2003	1	MapMate Data (1v9)	Verified correct
ST092927	1,942	*Emberiza citrinella* (Yellowhammer)	bird	1996	p	MapMate Data (1cf)	Verified correct
ST0893	1,955	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0893	1,970	*Lutra lutra* (Otter)	terrestrial mammal	16/01/2001		Merthyr Tydfil LBAP Miscellaneous Records	Unassessed
ST0590	1,972	*Chiroptera* (Unknown Bat)	terrestrial mammal	2010		People's Trust for Endangered Species	Unassessed
ST059906	1,972	*Erinaceus europaeus* (Hedgehog)	terrestrial mammal	2010		People's Trust for Endangered Species	Unassessed
ST0693	1,985	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	08/07/2009	20+ (+)	NRW (Cardiff) Bat Casework File 2009	Unassessed

ST0693	1,985	*Chiroptera* (Unknown Bat)	terrestrial mammal	07/09/2003		NRW (Cardiff) Bat Casework File 2003	Unassessed
ST0893	2,000	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST09529095	2,000	*Coenonympha pamphilus* (Small Heath)	insect - butterfly	20/05/2020	2	SEWBReCORD	Verified correct
ST0889	2,007	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	02/08/2013	1	SoltysBrewster Records	Unassessed
ST0889	2,007	*Myotis* (Myotis Bat Species)	terrestrial mammal	02/08/2013	1	SoltysBrewster Records	Unassessed
ST0889	2,007	*Plecotus auritus* (Brown Long-eared Bat)	terrestrial mammal	02/08/2013	1	SoltysBrewster Records	Unassessed
ST08909322	2,014	*Linaria cannabina* (Linnet)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Falco tinnunculus* (Kestrel)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST09	2,014	*Tyto alba* (Barn Owl)	bird	28/04/1971		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Alauda arvensis* (Skylark)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Emberiza citrinella* (Yellowhammer)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Cuculus canorus* (Cuckoo)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Sturnus vulgaris* (Starling)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Emberiza schoeniclus* (Reed Bunting)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Passer domesticus* (House Sparrow)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST09	2,036	*Falco columbarius* (Merlin)	bird	2 records, between 2002 and 2003	1; 1	MapMate Data (New)	Verified correct
ST0992	2,036	*Tyria jacobaeae* (Cinnabar)	insect - moth	05/07/2001	1 (Adult)	Glamorgan Moth Records	Verified correct
ST0992	2,036	*Xestia agathina* (Heath Rustic)	insect - moth	2 records, both from 2000	4 (Larvae); p (Larvae)	Glamorgan Moth Records	Verified correct
ST0893	2,036	*Turdus philomelos* (Song Thrush)	bird	12/05/2009	1	MapMate Data (New)	Verified correct
ST0992	2,036	*Rana temporaria* (Common Frog)	amphibian	15/06/2014		SEWBReCORD	Verified correct
ST0893	2,036	*Tyria jacobaeae* (Cinnabar)	insect - moth	29/06/2004	2 (Adult)	Glamorgan Moth Records	Verified correct
ST09	2,036	*Falco peregrinus* (Peregrine)	bird	12/05/2009	1	MapMate Data (New)	Verified correct
ST0992	2,036	*Boloria selene* (Small Pearl-bordered Fritillary)	insect - butterfly	15/06/2014		SEWBReCORD	Verified correct
ST08409354	2,040	*Turdus philomelos* (Song Thrush)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Phylloscopus sibilatrix* (Wood Warbler)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Rana temporaria* (Common Frog)	amphibian	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Pyrrhula pyrrhula* (Bullfinch)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Boloria euphrosyne* (Pearl-bordered Fritillary)	insect - butterfly	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Linaria cannabina* (Linnet)	bird	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Sturnus vulgaris* (Starling)	bird	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST0689	2,059	*Chiroptera* (Unknown Bat)	terrestrial mammal	13/09/2004		NRW (Cardiff) Bat Casework File 2004	Unassessed
ST06009040	2,063	*Phylloscopus sibilatrix* (Wood Warbler)	bird	04/06/1992 - 05/06/1992		NRW (Cardiff) Wider Countryside	Verified correct
ST06009040	2,063	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	04/06/1992 - 05/06/1992		NRW (Cardiff) Wider Countryside	Unassessed
ST06009040	2,063	*Pyrrhula pyrrhula* (Bullfinch)	bird	04/06/1992 - 05/06/1992		NRW (Cardiff) Wider Countryside	Verified correct
ST0893	2,070	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed

ST093928	2,081	*Hyacinthoides non-scripta* (Bluebell)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST0789	2,112	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	05/08/2013	1	Cardiff Bat Records	Unassessed
ST061931	2,122	*Zootoca vivipara* (Common Lizard)	reptile	16/08/2010	1 (+)	Capita Symonds Data	Unassessed
ST0893	2,125	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0690	2,126	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	24/06/2008		NRW (Cardiff) Bat Casework File 2008	Unassessed
ST0690	2,126	*Chiroptera* (Unknown Bat)	terrestrial mammal	20/06/2007		NRW (Cardiff) Bat Casework File 2007	Unassessed
ST0789	2,138	*Chiroptera* (Unknown Bat)	terrestrial mammal	01/11/2015	3	SEWBReCORD	Unassessed
ST0689	2,140	*Pipistrellus pipistrellus* (Common Pipistrelle)	terrestrial mammal	2011	1	Dwr Cymru/Welsh Water Miscellaneous Records	Unassessed
ST0789	2,155	*Larus argentatus* (Herring Gull)	bird	5 records, between 2015 and 2020	1; 1; 1; 8	SEWBReCORD; BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0789	2,155	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	8 records, between 2009 and 2020	11; 14; 2; 4; 20; 44; 20	SEWBReCORD; MapMate Data (New); Glamorgan Bird Club Records	Unassessed
ST0789	2,155	*Alcedo atthis* (Kingfisher)	bird	2 records, between 2002 and 2020	1	SEWBReCORD; Glamorgan Bird Club Records	Unassessed
ST0789	2,155	*Phylloscopus sibilatrix* (Wood Warbler)	bird	3 records, between 1979 and 2012	3; 1; 1	MapMate Data (New); MapMate Data (1cf)	Verified correct
ST08	2,155	*Accipiter gentilis* (Goshawk)	bird	17/07/2020	1	SEWBReCORD	Unassessed
ST0789	2,155	*Tyria jacobaeae* (Cinnabar)	insect - moth	17/07/2020		SEWBReCORD	Verified correct
ST0789	2,155	*Prunella modularis* (Dunnock)	bird	04/02/2011	1	MapMate Data (New)	Verified correct
ST0789	2,155	*Turdus philomelos* (Song Thrush)	bird	3 records, between 2015 and 2016	1; 1; 1	Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0591	2,155	*Rana temporaria* (Common Frog)	amphibian	29/04/2011	Present	MapMate Data (New)	Verified correct
ST0789	2,155	*Passer domesticus* (House Sparrow)	bird	17/01/2011	1	MapMate Data (New)	Verified correct
ST0789	2,155	*Turdus iliacus* (Redwing)	bird	2 records, between 1975 and 1979	p; p	MapMate Data (1cf)	Verified correct
ST0789	2,155	*Muscicapa striata* (Spotted Flycatcher)	bird	5 records, between 1974 and 1979	1; 1; 1; 1; 1	MapMate Data (1cf)	Verified correct
ST0789	2,155	*Turdus pilaris* (Fieldfare)	bird	21/10/1978	p	MapMate Data (1cf)	Verified correct
ST0591	2,155	*Falco tinnunculus* (Kestrel)	bird	03/03/1971		Dr Mary Gillham Project records	Unassessed
ST0591	2,155	*Sturnus vulgaris* (Starling)	bird	03/03/1971		Dr Mary Gillham Project records	Unassessed
ST0789	2,155	*Sturnus vulgaris* (Starling)	bird	19/09/1949	10	Dr Mary Gillham Project records	Unassessed
ST0893	2,155	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0990	2,178	*Emberiza schoeniclus* (Reed Bunting)	bird	2 records, both from 2015	1; 1	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0990	2,178	*Falco tinnunculus* (Kestrel)	bird	5 records, between 2010 and 2015	1; 1; 1	Glamorgan Bird Club Records; MapMate Data (New); BirdTrack 2015	Unassessed
ST0990	2,178	*Larus argentatus* (Herring Gull)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0990	2,178	*Vanellus vanellus* (Lapwing)	bird	2 records, between 1994 and 1999	4	Glamorgan Bird Club Records	Verified correct
ST0990	2,178	*Turdus iliacus* (Redwing)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0990	2,178	*Turdus pilaris* (Fieldfare)	bird	3 records, between 2015 and 2017	2	Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0990	2,178	*Sturnus vulgaris* (Starling)	bird	13/02/2017	40	Glamorgan Bird Club Records	Unassessed

ST09	2,178	*Falco subbuteo* (Hobby)	bird	2 records, between 2007 and 2017	1; 1	MapMate Data (1cf); MapMate Data (New)	Verified correct
ST0990	2,178	*Linaria cannabina* (Linnet)	bird	2 records, between 2010 and 2017	1; 2	Glamorgan Bird Club Records; MapMate Data (New)	Unassessed
ST09	2,178	*Milvus milvus* (Red Kite)	bird	06/11/2017	1	Glamorgan Bird Club Records	Unassessed
ST0990	2,178	*Alauda arvensis* (Skylark)	bird	2 records, both from 2015	2; 2	Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0693	2,179	*Turdus iliacus* (Redwing)	bird	07/03/1992	200	MapMate Data (1cf)	Verified correct
ST0693	2,179	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	19/08/1991	1 (Adult)	NRW- HQ - Terr- Bat Roosts Database - Wales	Unassessed
ST0893	2,183	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0893	2,183	*Pipistrellus* (Pipistrellus Bat Species)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0893	2,216	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0689	2,247	*Chiroptera* (Unknown Bat)	terrestrial mammal	02/03/2001	p	NRW (Cardiff) Bat Casework File 2001	Unassessed
ST0893	2,263	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	22/09/2011		Valleys Bat Group Records	Unassessed
ST0889	2,280	*Chiroptera* (Unknown Bat)	terrestrial mammal	2 records, between 1982 and 1984		Gwent Bat Enquiry Report Forms	Unassessed
ST0889	2,285	*Chiroptera* (Unknown Bat)	terrestrial mammal	2 records, both from 2011		SEWBReC Casual Records	Unassessed
ST09619286	2,310	*Boloria selene* (Small Pearl-bordered Fritillary)	insect - butterfly	09/09/1989		Dr Mary Gillham Project records	Unassessed
ST0592	2,312	*Pyrrhula pyrrhula* (Bullfinch)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0889	2,312	*Passer domesticus* (House Sparrow)	bird	10 records, all from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Prunella modularis* (Dunnock)	bird	2 records, both from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Pyrrhula pyrrhula* (Bullfinch)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST08	2,312	*Milvus milvus* (Red Kite)	bird	13/11/2015		Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Pipistrellus pipistrellus agg.* (Pipistrelle agg.)	terrestrial mammal	2 records, both from 1984		BRC - Mammal Records	Unassessed
ST0889	2,312	*Lutra lutra* (Otter)	terrestrial mammal	2005		BBC Wales - Iolo's Welsh Safari Records. Public Participation Survey.	Unassessed
ST0592	2,312	*Falco tinnunculus* (Kestrel)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0592	2,312	*Muscicapa striata* (Spotted Flycatcher)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0889	2,312	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	6 records, all from 2015	10; 8	Glamorgan Bird Club Records	Unassessed
ST09	2,312	*Accipiter gentilis* (Goshawk)	bird	2 records, both from 2010	Present; 1	MapMate Data (New)	Unassessed
ST0889	2,312	*Larus argentatus* (Herring Gull)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0889	2,312	*Alcedo atthis* (Kingfisher)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0689	2,438	*Acanthis cabaret* (Lesser Redpoll)	bird	15/11/2009	1	MapMate Data (New)	Verified correct
ST0590	2,438	*Phylloscopus sibilatrix* (Wood Warbler)	bird	02/06/2013	3	MapMate Data (New)	Verified correct
ST0689	2,438	*Pyrrhula pyrrhula* (Bullfinch)	bird	5 records, between 2009 and 2010	3; 2; 3; 2; 3	MapMate Data (New)	Verified correct
ST0689	2,438	*Prunella modularis* (Dunnock)	bird	3 records, between 2009 and 2010	4; 1; 4	MapMate Data (New)	Verified correct
ST0689	2,438	*Turdus philomelos* (Song Thrush)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct

ST0689	2,438	*Passer domesticus* (House Sparrow)	bird	5 records, between 2009 and 2010	3; 3; 2; 2; 2	MapMate Data (New)	Verified correct
ST0689	2,438	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	2 records, both from 2010	4; 4	MapMate Data (New)	Verified correct
ST0689	2,438	*Sturnus vulgaris* (Starling)	bird	5 records, between 2009 and 2010	1; 2; 2; 8; 1	MapMate Data (New)	Verified correct
ST0590	2,438	*Mustela putorius* (Polecat)	terrestrial mammal	23/04/2006	1	SEWBReC Casual Records	Unassessed
ST0590	2,438	*Tyria jacobaeae* (Cinnabar)	insect - moth	22/07/2016	Present	MapMate Data (New)	Verified correct
ST0689	2,438	*Vanellus vanellus* (Lapwing)	bird	27/12/1994	350	Glamorgan Bird Club Records	Verified correct
ST0590	2,438	*Cuculus canorus* (Cuckoo)	bird	03/06/2014	3	MapMate Data (New)	Verified correct
ST0590	2,438	*Pipistrellus pygmaeus* (Soprano Pipistrelle)	terrestrial mammal	16/03/2010	1	MapMate Data (New)	Unassessed
ST076891	2,500	*Boloria selene* (Small Pearl-bordered Fritillary)	insect - butterfly	23/06/1993	2 (Adult)	NRW (Cardiff) Wider Countryside	Unassessed
ST08Z	2,974	*Chroicocephalus ridibundus* (Black-headed Gull)	bird	18/11/2009	60	MapMate Data (New)	Verified correct
ST08Z	2,974	*Larus argentatus* (Herring Gull)	bird	18/11/2009	3	MapMate Data (New)	Verified correct
ST09	2,974	*Tyto alba* (Barn Owl)	bird	29/03/1991	1	MapMate Data (1cf)	Verified correct
ST083887	2,983	*Vipera berus* (Adder)	reptile	19/04/2007	1	NRW (Cardiff) Miscellaneous	Unassessed
ST19	3,398	*Tyto alba* (Barn Owl)	bird	01/06/2009	1	MapMate Data (New)	Verified correct
ST19	4,018	*Tyto alba* (Barn Owl)	bird	2 records, between 2005 and 2009	1; 1	MapMate Data (New); Glamorgan Bird Club Records	Verified correct

RECORDS OF SPECIES OF CONSERVATION CONCERN WITHIN SEARCH AREA

Species of Conservation Concern = Global Red List, British Red Data Book, Nationally Rare & Scarce, Welsh Red and Amber Birds & Welsh Vascular Plant Red Data List where these are not identified in Priority category.

Grid Ref.	Dist. (m)	Scientific Name	Taxon Group	Date	Abundance	Source	Verification
ST0791	212	*Aegithalos caudatus* (Long-tailed Tit)	bird	6 records, between 1992 and 2010	4; 4; 4; 3; 3	MapMate Data (1cf); Dr Mary Gillham Project records; MapMate Data (New)	Verified correct
ST0791	212	*Regulus regulus* (Goldcrest)	bird	3 records, between 1992 and 2009	1; 1	Dr Mary Gillham Project records; MapMate Data (1cf); MapMate Data (New)	Unassessed
ST0791	212	*Periparus ater* (Coal Tit)	bird	6 records, between 1992 and 2010	4; 4; 1; 1; 1	Dr Mary Gillham Project records; MapMate Data (New); MapMate Data (1cf)	Unassessed
ST0791	212	*Picus viridis* (Green Woodpecker)	bird	5 records, between 1992 and 2010	1; 1; 1	MapMate Data (New); Dr Mary Gillham Project records; MapMate Data (1cf)	Unassessed
ST0791	212	*Larus fuscus* (Lesser Black-backed Gull)	bird	4 records, all from 2010	13; 4; 13; 4	MapMate Data (New)	Verified correct
ST0791	212	*Phoenicurus phoenicurus* (Redstart)	bird	3 records, between 1992 and 2019	1; Present	MapMate Data (1cf); Dr Mary Gillham Project records; MapMate Data (New)	Verified correct
ST0791	212	*Sylvia borin* (Garden Warbler)	bird	3 records, between 1992 and 2019	1; 1	MapMate Data (1cf); Dr Mary Gillham Project records; MapMate Data (New)	Verified correct
ST0791	212	*Phylloscopus trochilus* (Willow Warbler)	bird	2 records, between 1992 and 2005	3	Dr Mary Gillham Project records; MapMate Data (1cf)	Unassessed
ST0791	212	*Cinclus cinclus* (Dipper)	bird	4 records, between 1992 and 2010	1; 1; 1	MapMate Data (New); Dr Mary Gillham Project records	Verified correct
ST0791	212	*Anas platyrhynchos* (Mallard)	bird	2 records, both from 2010	7; 7	MapMate Data (New)	Verified correct
ST075914	223	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	2 records, both from 1954	p	East Glamorgan Vascular Plant Data 2; BSBI Atlas 2000	Unassessed
ST0783591840	265	*Hirundo rustica* (Swallow)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Periparus ater* (Coal Tit)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Sylvia communis* (Whitethroat)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Regulus regulus* (Goldcrest)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Phylloscopus trochilus* (Willow Warbler)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Picus viridis* (Green Woodpecker)	bird	01/08/2009		David Clements Ecology	Verified correct
ST0783591840	265	*Larus fuscus* (Lesser Black-backed Gull)	bird	01/08/2009		David Clements Ecology	Verified correct
ST07669135	295	*Aegithalos caudatus* (Long-tailed Tit)	bird	22/01/1987		Dr Mary Gillham Project records	Unassessed
ST077912	412	*Sylvia borin* (Garden Warbler)	bird	06/04/2004	1	MapMate Data (1cf)	Verified correct
ST075911	510	*Picus viridis* (Green Woodpecker)	bird	3 records, all from 1993		Dr Mary Gillham Project records	Unassessed
ST075911	510	*Regulus regulus* (Goldcrest)	bird	7 records, between 1992 and 1993	3	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Periparus ater* (Coal Tit)	bird	4 records, between 1992 and 1993	26; 43; 2	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Phylloscopus trochilus* (Willow Warbler)	bird	5 records, all from 1993	10	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Aegithalos caudatus* (Long-tailed Tit)	bird	4 records, between 1992 and 1993	2; 6; 22	Dr Mary Gillham Project records	Unassessed

ST077911	510	*Cinclus cinclus* (Dipper)	bird	25/03/2007	1	Glamorgan Bird Club Records	Verified correct
ST075911	510	*Apus apus* (Swift)	bird	08/05/1993		Dr Mary Gillham Project records	Unassessed
ST075911	510	*Sylvia borin* (Garden Warbler)	bird	3 records, all from 1993	2	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Hirundo rustica* (Swallow)	bird	27/04/1993		Dr Mary Gillham Project records	Unassessed
ST075911	510	*Delichon urbicum* (House Martin)	bird	13/05/1993		Dr Mary Gillham Project records	Unassessed
ST072912	566	*Aegithalos caudatus* (Long-tailed Tit)	bird	21/10/2015	3	MapMate Data (New)	Verified correct
ST07689101	636	*Phalacrocorax carbo* (Cormorant)	bird	2 records, both from 1993	7	Dr Mary Gillham Project records	Unassessed
ST0891	863	*Periparus ater* (Coal Tit)	bird	3 records, between 2009 and 2010	1; 1; 1	MapMate Data (New)	Verified correct
ST0891	863	*Apus apus* (Swift)	bird	2 records, both from 2010	3; 3	MapMate Data (New)	Verified correct
ST0891	863	*Phalacrocorax carbo* (Cormorant)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0891	863	*Anas platyrhynchos* (Mallard)	bird	7 records, between 2009 and 2010	7; 2; 4; 4; 22; 7; 2	MapMate Data (New)	Verified correct
ST0891	863	*Aegithalos caudatus* (Long-tailed Tit)	bird	5 records, between 2009 and 2010	2; 2; 4; 13; 4	MapMate Data (New)	Verified correct
ST0891	863	*Larus fuscus* (Lesser Black-backed Gull)	bird	4 records, all from 2010	2; 2; 2; 2	MapMate Data (New)	Verified correct
ST0891	863	*Cinclus cinclus* (Dipper)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0891	863	*Delichon urbicum* (House Martin)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST074907	922	*Delichon urbicum* (House Martin)	bird	17/09/2008	20	MapMate Data (New)	Verified correct
ST085919	949	*Delichon urbicum* (House Martin)	bird	20/08/2014		SEWBReCORD	Unassessed
ST085919	949	*Cinclus cinclus* (Dipper)	bird	20/08/2014		SEWBReCORD	Unassessed
ST085919	949	*Anas platyrhynchos* (Mallard)	bird	20/08/2014		SEWBReCORD	Unassessed
ST082925	1,082	*Anas platyrhynchos* (Mallard)	bird	1980 - 1987		Dr Mary Gillham Project records	Unassessed
ST082925	1,082	*Cinclus cinclus* (Dipper)	bird	1980 - 1987		Dr Mary Gillham Project records	Unassessed
ST0691	1,160	*Periparus ater* (Coal Tit)	bird	5 records, between 2009 and 2010	1; 1; 2; 2; 1	MapMate Data (New)	Verified correct
ST0790	1,160	*Aegithalos caudatus* (Long-tailed Tit)	bird	6 records, between 2009 and 2015	2; 1; 3; 2; 1; 3	MapMate Data (New); Glamorgan Bird Club Records; BirdTrack 2015	Verified correct
ST0691	1,160	*Phylloscopus trochilus* (Willow Warbler)	bird	6 records, all from 2010	6; 1; 3; 1; 6; 3	MapMate Data (New)	Verified correct
ST0790	1,160	*Anas platyrhynchos* (Mallard)	bird	7 records, between 2009 and 2020	4; 3; 3; 1; 6; 2	Glamorgan Bird Club Records; SEWBReCORD; MapMate Data (New); BirdTrack 2015	Unassessed
ST0790	1,160	*Regulus regulus* (Goldcrest)	bird	2 records, both from 2015	1; 1	Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0790	1,160	*Apus apus* (Swift)	bird	7 records, between 2007 and 2020	2; 2; 1; 1; 12	Glamorgan Bird Club Records; SEWBReCORD; BirdTrack 2015; Swift Inventory; MapMate Data (New)	Unassessed
ST0790	1,160	*Phalacrocorax carbo* (Cormorant)	bird	3 records, between 2009 and 2015	1; 1; 1	Glamorgan Bird Club Records; MapMate Data (New); BirdTrack 2015	Unassessed
ST0691	1,160	*Picus viridis* (Green Woodpecker)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Unassessed
ST0790	1,160	*Riparia riparia* (Sand Martin)	bird	3 records, between 2019 and 2020	21-100; 6 to 20 (individuals)	SEWBReCORD; LERC Wales App (Direct Import)	Unassessed
ST0790	1,160	*Delichon urbicum* (House Martin)	bird	17/07/2020		SEWBReCORD	Unassessed
ST0691	1,160	*Larus fuscus* (Lesser Black-backed Gull)	bird	4 records, all from 2010	2; 2; 4; 4	MapMate Data (New)	Verified correct
ST0790	1,160	*Larus fuscus* (Lesser Black-backed Gull)	bird	3 records, between 2009 and 2010	1; 2; 2	MapMate Data (New)	Verified correct
ST0691	1,160	*Regulus regulus* (Goldcrest)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0691	1,160	*Apus apus* (Swift)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0790	1,160	*Cinclus cinclus* (Dipper)	bird	6 records, between 2003 and 2015	2; 1; 1; 2 (Adult); 1; 1	Glamorgan Bird Club Records; MapMate Data (New); MapMate Data (1v9)	Unassessed
ST0790	1,160	*Periparus ater* (Coal Tit)	bird	09/11/2009	2	MapMate Data (New)	Verified correct
ST0691	1,160	*Anthus pratensis* (Meadow Pipit)	bird	09/11/2009	1	MapMate Data (New)	Verified correct
ST0691	1,160	*Aegithalos caudatus* (Long-tailed Tit)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0691	1,160	*Hirundo rustica* (Swallow)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST072905	1,170	*Regulus regulus* (Goldcrest)	bird	2 records, both from 2003	1; 1 (Adult)	Glamorgan Bird Club Records; MapMate Data (1d8)	Verified correct
ST072905	1,170	*Oenanthe oenanthe* (Wheatear)	bird	23/03/1973	1	MapMate Data (1cf)	Verified correct
ST072905	1,170	*Apus apus* (Swift)	bird	28/04/2004	2	MapMate Data (1cf)	Verified correct
ST0892	1,202	*Phalacrocorax carbo* (Cormorant)	bird	17/10/2010	11	MapMate Data (New)	Verified correct
ST0892	1,202	*Picus viridis* (Green Woodpecker)	bird	08/07/2002	1	Glamorgan Bird Club Records	Verified correct
ST084925	1,204	*Picus viridis* (Green Woodpecker)	bird	04/06/2003	1 (Adult)	MapMate Data (3dq)	Verified correct
ST08409270	1,297	*Delichon urbicum* (House Martin)	bird	05/08/2014	300	SEWBReCORD	Unassessed
ST08669248	1,314	*Apus apus* (Swift)	bird	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST069904	1,389	*Apus apus* (Swift)	bird	2009		Swift Inventory	Unassessed
ST0893292260	1,420	*Sylvia communis* (Whitethroat)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0658290704	1,427	*Regulus regulus* (Goldcrest)	bird	12/05/2008		Merlin Bio-Surveys Records	Verified correct
ST0890	1,430	*Aegithalos caudatus* (Long-tailed Tit)	bird	22/04/2008	1	MapMate Data (New)	Verified correct
ST0890	1,430	*Regulus regulus* (Goldcrest)	bird	09/03/2017	2	Glamorgan Bird Club Records	Unassessed
ST0890	1,430	*Hirundo rustica* (Swallow)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0890	1,430	*Larus fuscus* (Lesser Black-backed Gull)	bird	2 records, both from 2010	4; 4	MapMate Data (New)	Verified correct
ST0890	1,430	*Delichon urbicum* (House Martin)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0890	1,430	*Sylvia communis* (Whitethroat)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0890	1,430	*Phylloscopus trochilus* (Willow Warbler)	bird	4 records, all from 2010	4; 2; 2; 4	MapMate Data (New)	Verified correct
ST07729314	1,497	*Monosapyga clavicornis* (Monosapyga clavicornis)	insect - hymenopteran	23/05/2018		SEWBReCORD	Verified correct
ST0772693148	1,500	*Polydrusus formosus* (Polydrusus formosus)	insect - beetle (Coleoptera)	30/06/2015	1	SEWBReCORD	Verified correct
ST0901092285	1,501	*Phylloscopus trochilus* (Willow Warbler)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct

ST068903	1,526	*Delichon urbicum* (House Martin)	bird	30/05/2020		LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Apus apus* (Swift)	bird	30/05/2020	2 to 5	LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Larus fuscus* (Lesser Black-backed Gull)	bird	30/05/2020		LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Hirundo rustica* (Swallow)	bird	30/05/2020		LERC Wales App (Direct Import)	Unassessed
ST079901	1,529	*Sagittaria sagittifolia* (Arrowhead)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Phylloscopus trochilus* (Willow Warbler)	bird	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST0893092549	1,564	*Hirundo rustica* (Swallow)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST069902	1,565	*Apus apus* (Swift)	bird	12/07/2017	20 at least	SEWBReCORD	Unassessed
ST0908992298	1,578	*Sylvia communis* (Whitethroat)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0897492564	1,609	*Picus viridis* (Green Woodpecker)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST090924	1,613	*Anoscopus albifrons* (Anoscopus albifrons)	insect - true bug (Hemiptera)	12/08/2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST0690	1,626	*Apus apus* (Swift)	bird	3 records, between 2007 and 2020	1; 3; 2 to 5 (individuals)	Glamorgan Bird Club Records; MapMate Data (New); LERC Wales App (Direct Import)	Unassessed
ST0690	1,626	*Hirundo rustica* (Swallow)	bird	22/04/2016	300	Glamorgan Bird Club Records	Unassessed
ST0690	1,626	*Delichon urbicum* (House Martin)	bird	22/04/2016	20	Glamorgan Bird Club Records	Unassessed
ST0690	1,626	*Larus marinus* (Great Black-backed Gull)	bird	06/04/2004	1	MapMate Data (1cf)	Verified correct
ST0690	1,626	*Sylvia communis* (Whitethroat)	bird	2 records, both from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0690	1,626	*Cinclus cinclus* (Dipper)	bird	2 records, between 2003 and 2009	1 (Adult); 2	MapMate Data (1v9); MapMate Data (New)	Verified correct
ST0690	1,626	*Phylloscopus trochilus* (Willow Warbler)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST08339312	1,626	*Sylvia communis* (Whitethroat)	bird	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST073900	1,628	*Regulus regulus* (Goldcrest)	bird	1975		Dr Mary Gillham Project records	Unassessed
ST0892892680	1,642	*Cinclus cinclus* (Dipper)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST062907	1,664	*Adiantum capillus-veneris* (Maidenhair Fern)	fern	27/07/1999	Present	MapMate Data (New)	Verified correct
ST090925	1,664	*Picus viridis* (Green Woodpecker)	bird	28/06/2010		Capita Symonds Data	Verified correct
ST0915392401	1,680	*Anthus pratensis* (Meadow Pipit)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0913992466	1,698	*Anthus pratensis* (Meadow Pipit)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0908592562	1,700	*Phylloscopus trochilus* (Willow Warbler)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0916392431	1,703	*Phoenicurus phoenicurus* (Redstart)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST0905092637	1,713	*Phylloscopus trochilus* (Willow Warbler)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST073899	1,726	*Cinclus cinclus* (Dipper)	bird	2 records, between 2003 and 2007	1; 2	Glamorgan Bird Club Records	Verified correct
ST073899	1,726	*Picus viridis* (Green Woodpecker)	bird	29/12/2003	1	Glamorgan Bird Club Records	Verified correct
ST06999325	1,734	*Illosporiopsis christiansenii* (Illosporiopsis christiansenii)	lichen	01/12/2019	lots	SEWBReCORD	Unassessed
ST0914192543	1,738	*Phylloscopus trochilus* (Willow Warbler)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST072899	1,746	*Anas platyrhynchos* (Mallard)	bird	11/11/2015	6	BirdTrack 2015	Unassessed
ST072899	1,746	*Phalacrocorax carbo* (Cormorant)	bird	11/11/2015	1	BirdTrack 2015	Unassessed
ST08048994	1,750	*Sagittaria sagittifolia* (Arrowhead)	flowering plant	1970 - 1975		Dr Mary Gillham Project records	Unassessed
ST08048993	1,760	*Phylloscopus trochilus* (Willow Warbler)	bird	18/06/1992		Dr Mary Gillham Project records	Unassessed
ST064903	1,769	*Anas platyrhynchos* (Mallard)	bird	15/04/2010	2	MapMate Data (New)	Verified correct
ST07098994	1,793	*Sagittaria sagittifolia* (Arrowhead)	flowering plant	1971		Dr Mary Gillham Project records	Unassessed
ST06869326	1,796	*Andrena humilis* (Buff-tailed Mining Bee)	insect - hymenopteran	10/05/2017	several	SEWBReCORD	Verified correct
ST076898	1,800	*Apus apus* (Swift)	bird	05/05/2015	1	BirdTrack 2015	Unassessed
ST093922	1,803	*Sonchus palustris* (Marsh Sow-thistle)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST077898	1,803	*Cinclus cinclus* (Dipper)	bird	25/11/2003	2 (Adult)	MapMate Data (1v9)	Verified correct
ST070899	1,803	*Regulus regulus* (Goldcrest)	bird	21/10/2011	2	MapMate Data (New)	Verified correct
ST06899000	1,810	*Cinclus cinclus* (Dipper)	bird	12/04/2013		Just Mammals	Verified correct
ST06899000	1,810	*Anas platyrhynchos* (Mallard)	bird	12/04/2013		Just Mammals	Verified correct
ST06899000	1,810	*Aegithalos caudatus* (Long-tailed Tit)	bird	12/04/2013		Just Mammals	Verified correct
ST0927692465	1,819	*Phylloscopus trochilus* (Willow Warbler)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST07119339	1,825	*Picus viridis* (Green Woodpecker)	bird	31/07/2015	4	SEWBReCORD	Unassessed
ST069899	1,838	*Cinclus cinclus* (Dipper)	bird	06/03/2015	1	BirdTrack 2015	Unassessed
ST0991	1,856	*Anthus pratensis* (Meadow Pipit)	bird	7 records, between 2009 and 2010	2; 9; 9; 1; 1; 2; 9	MapMate Data (New)	Verified correct
ST0991	1,856	*Periparus ater* (Coal Tit)	bird	8 records, all from 2015	2; 2; 1; 1; 2; 2; 1; 1	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0991	1,856	*Phoenicurus phoenicurus* (Redstart)	bird	27/04/2018	1	MapMate Data (New)	Verified correct
ST0991	1,856	*Delichon urbicum* (House Martin)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0991	1,856	*Cinclus cinclus* (Dipper)	bird	27/04/2018	1	MapMate Data (New)	Verified correct
ST0991	1,856	*Hirundo rustica* (Swallow)	bird	4 records, all from 2010	1; 1; 7; 7	MapMate Data (New)	Verified correct
ST0991	1,856	*Phylloscopus trochilus* (Willow Warbler)	bird	4 records, all from 2010	7; 9; 7; 9	MapMate Data (New)	Verified correct
ST0991	1,856	*Sylvia borin* (Garden Warbler)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Unassessed
ST0991	1,856	*Larus fuscus* (Lesser Black-backed Gull)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0991	1,856	*Sylvia communis* (Whitethroat)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST09439112	1,861	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST071898	1,868	*Apus apus* (Swift)	bird	22/04/2016	10	SEWBReCORD	Unassessed
ST071898	1,868	*Delichon urbicum* (House Martin)	bird	22/04/2016	15	SEWBReCORD	Unassessed
ST09449111	1,873	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST075897	1,902	*Apus apus* (Swift)	bird	10/06/2015		SEWBReCORD	Unassessed

ST09479109	1,907	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Anas platyrhynchos* (Mallard)	bird	26/01/2015	2	BirdTrack 2015	Unassessed
ST09W	1,909	*Picus viridis* (Green Woodpecker)	bird	20/02/1995		Glamorgan Bird Club Records	Verified correct
ST09W	1,909	*Regulus regulus* (Goldcrest)	bird	26/01/2015	8	BirdTrack 2015	Unassessed
ST09W	1,909	*Cinclus cinclus* (Dipper)	bird	26/01/2015	1	BirdTrack 2015	Unassessed
ST09W	1,909	*Anthus pratensis* (Meadow Pipit)	bird	26/01/2015	2	BirdTrack 2015	Unassessed
ST09W	1,909	*Phalacrocorax carbo* (Cormorant)	bird	26/01/2015	10	BirdTrack 2015	Unassessed
ST09W	1,909	*Brassica oleracea* (Wild Cabbage)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Periparus ater* (Coal Tit)	bird	26/01/2015	2	BirdTrack 2015	Unassessed
ST09W	1,909	*Aegithalos caudatus* (Long-tailed Tit)	bird	26/01/2015	4	BirdTrack 2015	Unassessed
ST092927	1,942	*Apus apus* (Swift)	bird	20/04/1999	1	MapMate Data (1cf)	Verified correct
ST092927	1,942	*Hirundo rustica* (Swallow)	bird	23/06/2003	1	MapMate Data (1v9)	Verified correct
ST08589337	1,962	*Aegithalos caudatus* (Long-tailed Tit)	bird	19/12/2017	>5	SEWBReCORD	Unassessed
ST09469078	2,010	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST08909322	2,014	*Apus apus* (Swift)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Anthus pratensis* (Meadow Pipit)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Hirundo rustica* (Swallow)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Oenanthe oenanthe* (Wheatear)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST087933	2,025	*Oenanthe oenanthe* (Wheatear)	bird	01/06/2010	6	MapMate Data (New)	Unassessed
ST087933	2,025	*Phoenicurus phoenicurus* (Redstart)	bird	01/06/2010	2	MapMate Data (New)	Verified correct
ST09469074	2,028	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST09479076	2,028	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0893	2,036	*Phylloscopus trochilus* (Willow Warbler)	bird	12/05/2009	3	MapMate Data (New)	Verified correct
ST0893	2,036	*Sylvia borin* (Garden Warbler)	bird	04/06/1994	7	MapMate Data (1cf)	Verified correct
ST0893	2,036	*Riparia riparia* (Sand Martin)	bird	12/05/2009	25	MapMate Data (New)	Verified correct
ST0893	2,036	*Hirundo rustica* (Swallow)	bird	12/05/2009	20	MapMate Data (New)	Verified correct
ST0893	2,036	*Cinclus cinclus* (Dipper)	bird	12/05/2009	1	MapMate Data (New)	Verified correct
ST0992	2,036	*Schistidium elegantulum* (Elegant Grimmia)	moss	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0893	2,036	*Apus apus* (Swift)	bird	12/05/2009	40	MapMate Data (New)	Verified correct
ST08409354	2,040	*Aegithalos caudatus* (Long-tailed Tit)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Regulus regulus* (Goldcrest)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Phylloscopus trochilus* (Willow Warbler)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Hirundo rustica* (Swallow)	bird	06/07/1971	20 (+)	Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Delichon urbicum* (House Martin)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Sylvia communis* (Whitethroat)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Riparia riparia* (Sand Martin)	bird	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Anthus pratensis* (Meadow Pipit)	bird	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Hirundo rustica* (Swallow)	bird	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Picus viridis* (Green Woodpecker)	bird	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST081896	2,061	*Apus apus* (Swift)	bird	27/04/2017	3	MapMate Data (New)	Verified correct
ST081896	2,061	*Phalacrocorax carbo* (Cormorant)	bird	2 records, both from 2010	1; 2	MapMate Data (New)	Verified correct
ST09499071	2,068	*Sibthorpia europaea* (Cornish Moneywort)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0789	2,155	*Delichon urbicum* (House Martin)	bird	6 records, between 1978 and 2020	2; 12; 1; 1; 2	BirdTrack 2015; SEWBReCORD; MapMate Data (New); MapMate Data (1cf); Glamorgan Bird Club Records	Unassessed
ST0789	2,155	*Larus fuscus* (Lesser Black-backed Gull)	bird	7 records, between 2009 and 2020	1; 1; 1; 1; 1; 2	SEWBReCORD; MapMate Data (New); BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0789	2,155	*Picus viridis* (Green Woodpecker)	bird	17/07/2020		SEWBReCORD	Unassessed
ST0789	2,155	*Anas platyrhynchos* (Mallard)	bird	5 records, between 2015 and 2020	32; 2; 6; 32	SEWBReCORD; BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0789	2,155	*Apus apus* (Swift)	bird	13 records, between 1979 and 2020	3; 2; 6; 1; 2; 2; 1; 1; 2; 1; 1; 1	SEWBReCORD; MapMate Data (New); Glamorgan Bird Club Records; MapMate Data (1cf); BirdTrack 2015	Unassessed
ST0789	2,155	*Phalacrocorax carbo* (Cormorant)	bird	5 records, between 2009 and 2017	1; 1; 1; 3; 1	Glamorgan Bird Club Records; MapMate Data (New)	Unassessed
ST0789	2,155	*Sylvia borin* (Garden Warbler)	bird	2 records, between 1976 and 2012	1; 1	MapMate Data (New); MapMate Data (1cf)	Unassessed
ST0789	2,155	*Riparia riparia* (Sand Martin)	bird	2 records, between 2009 and 2011	3; 4	MapMate Data (New)	Verified correct
ST0789	2,155	*Hirundo rustica* (Swallow)	bird	2 records, between 2010 and 2011	4; 2	MapMate Data (New)	Verified correct
ST0789	2,155	*Aegithalos caudatus* (Long-tailed Tit)	bird	3 records, between 2010 and 2016	2; 2; 2	Glamorgan Bird Club Records; MapMate Data (New)	Unassessed
ST0789	2,155	*Phylloscopus trochilus* (Willow Warbler)	bird	2 records, between 1979 and 2011	1; 1	MapMate Data (New); MapMate Data (1cf)	Verified correct
ST0789	2,155	*Regulus regulus* (Goldcrest)	bird	17/07/2020		SEWBReCORD	Unassessed
ST0789	2,155	*Gallinago gallinago* (Snipe)	bird	4 records, between 1986 and 1994	36; 52; 66; 44	MapMate Data (1cf)	Verified correct
ST0789	2,155	*Oenanthe oenanthe* (Wheatear)	bird	29/03/1975	1	MapMate Data (1cf)	Verified correct
ST0789	2,155	*Cinclus cinclus* (Dipper)	bird	3 records, all from 2015	1; 1; 1	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0789	2,155	*Lymnocryptes minimus* (Jack Snipe)	bird	1986	p	MapMate Data (1cf)	Verified correct
ST0789	2,155	*Haematopus ostralegus* (Oystercatcher)	bird	23/02/2000	1 (Adult)	MapMate Data (1cf)	Verified correct
ST0990	2,178	*Regulus regulus* (Goldcrest)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0990	2,178	*Picus viridis* (Green Woodpecker)	bird	22/05/2017	1	Glamorgan Bird Club Records	Unassessed

ST0990	2,178	*Oenanthe oenanthe* (Wheatear)	bird	5 records, between 2016 and 2017	1; 2; 1; 1; 1	Glamorgan Bird Club Records	Unassessed
ST0990	2,178	*Anthus pratensis* (Meadow Pipit)	bird	11 records, between 2010 and 2016	1; 6; 7; 1; 6; 7; 1	Glamorgan Bird Club Records; MapMate Data (New); BirdTrack 2015	Unassessed
ST0990	2,178	*Larus fuscus* (Lesser Black-backed Gull)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0693	2,179	*Sylvia communis* (Whitethroat)	bird	23/06/2008	2	Glamorgan Bird Club Records	Verified correct
ST0889	2,312	*Anas platyrhynchos* (Mallard)	bird	11 records, all from 2015	5; 8; 8	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Phalacrocorax carbo* (Cormorant)	bird	9 records, between 2011 and 2015	4	BirdTrack 2015; MapMate Data (New); Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Regulus regulus* (Goldcrest)	bird	3 records, all from 2015	1; 2; 1	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Periparus ater* (Coal Tit)	bird	2 records, both from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Aegithalos caudatus* (Long-tailed Tit)	bird	4 records, all from 2015	8; 8	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Delichon urbicum* (House Martin)	bird	4 records, all from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Riparia riparia* (Sand Martin)	bird	6 records, all from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Cinclus cinclus* (Dipper)	bird	4 records, all from 2015	2; 1; 2; 1	BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0889	2,312	*Hirundo rustica* (Swallow)	bird	4 records, all from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0592	2,312	*Phoenicurus phoenicurus* (Redstart)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0889	2,312	*Apus apus* (Swift)	bird	9 records, between 2011 and 2015	3; 16; 3; 16; 3	MapMate Data (New); Glamorgan Bird Club Records; BirdTrack 2015	Verified correct
ST0889	2,312	*Larus fuscus* (Lesser Black-backed Gull)	bird	4 records, all from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0689	2,438	*Anas platyrhynchos* (Mallard)	bird	03/02/2010	2	MapMate Data (New)	Verified correct
ST0689	2,438	*Periparus ater* (Coal Tit)	bird	5 records, between 2009 and 2015	1; 4; 1; 4; 2	Glamorgan Bird Club Records; MapMate Data (New); BirdTrack 2015	Unassessed
ST0689	2,438	*Cinclus cinclus* (Dipper)	bird	5 records, between 2010 and 2017	1; 1; 1; 2; 1	MapMate Data (New); Glamorgan Bird Club Records	Verified correct
ST0689	2,438	*Phylloscopus trochilus* (Willow Warbler)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST0689	2,438	*Larus fuscus* (Lesser Black-backed Gull)	bird	4 records, all from 2010	1; 4; 1; 4	MapMate Data (New)	Verified correct
ST0689	2,438	*Aegithalos caudatus* (Long-tailed Tit)	bird	3 records, between 2009 and 2010	2; 2; 2	MapMate Data (New)	Verified correct
ST0689	2,438	*Picus viridis* (Green Woodpecker)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Unassessed
ST0689	2,438	*Riparia riparia* (Sand Martin)	bird	01/08/2010	1	MapMate Data (New)	Verified correct
ST0689	2,438	*Hirundo rustica* (Swallow)	bird	22/04/2016	100	Glamorgan Bird Club Records	Unassessed
ST0689	2,438	*Apus apus* (Swift)	bird	22/04/2016	1	Glamorgan Bird Club Records	Unassessed

RECORDS OF LOCALLY IMPORTANT SPECIES WITHIN SEARCH AREA

Locally Important Species = LBAP Species not identified as Priority or SOCC. Locally Important species as specified by local experts.

Grid Ref.	Dist. (m)	Scientific Name	Taxon Group	Date	Abundance	Source	Verification
ST076915	100	*Luzula sylvatica* (Great Wood-rush)	flowering plant	19/09/1989	la (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Vaccinium myrtillus* (Bilberry)	flowering plant	2 records, both from 1989	la (DAFOR)	NRW (Swansea) Woodland Surveys in South Wales Region; NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Kindbergia praelonga* (Common Feather-moss)	moss	19/09/1989		NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	19/09/1989	o (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	2 records, both from 1989	r (DAFOR)	NRW (Swansea) Woodland Surveys in South Wales Region; NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Equisetum sylvaticum* (Wood Horsetail)	horsetail	2 records, both from 1989	la (DAFOR)	NRW (Swansea) Woodland Surveys in South Wales Region; NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Valeriana dioica* (Marsh Valerian)	flowering plant	2 records, both from 1989	r (DAFOR)	NRW (Swansea) Woodland Surveys in South Wales Region; NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Veronica montana* (Wood Speedwell)	flowering plant	19/09/1989	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Umbilicus rupestris* (Navelwort)	flowering plant	19/09/1989	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Solidago virgaurea* (Goldenrod)	flowering plant	19/09/1989	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	19/09/1989	r (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST076915	100	*Carex pilulifera* (Pill Sedge)	flowering plant	19/09/1989	r (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST07459159	203	*Umbilicus rupestris* (Navelwort)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0791	212	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	2 records, between 2001 and 2019	la (DAFOR)	Marsh Fritillary Site Survey; SEWBReCORD	Unassessed
ST0791	212	*Salix caprea x cinerea = S. x reichardtii* (Willow)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0791	212	*Vaccinium myrtillus* (Bilberry)	flowering plant	3 records, between 1994 and 2019	Present	MapMate Data (New); SEWBReCORD; Dr Mary Gillham Project records	Unassessed
ST0791	212	*Hypericum pulchrum* (Slender St John's-wort)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0791	212	*Solidago virgaurea* (Goldenrod)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0791	212	*Aira caryophyllea* (Silver Hair-grass)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0791	212	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0791	212	*Veronica montana* (Wood Speedwell)	flowering plant	2 records, both from 2018	Present; Present	MapMate Data (New)	Unassessed
ST0791	212	*Trifolium medium* (Zigzag Clover)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed

ST0791	212	*Luzula sylvatica* (Great Wood-rush)	flowering plant	2 records, between 1994 and 2019		Dr Mary Gillham Project records; SEWBReCORD	Unassessed
ST0791	212	*Carex pilulifera* (Pill Sedge)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST0791	212	*Viola palustris* (Marsh Violet)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Turdus viscivorus* (Mistle Thrush)	bird	3 records, between 1992 and 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Viburnum opulus* (Guelder-rose)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Valeriana dioica* (Marsh Valerian)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Trichocolea tomentella* (Handsome Woollywort)	liverwort	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Frangula alnus* (Alder Buckthorn)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Anemone nemorosa* (Wood Anemone)	flowering plant	2 records, both from 2019		LERC Wales App (Direct Import); SEWBReCORD	Unassessed
ST0791	212	*Equisetum sylvaticum* (Wood Horsetail)	horsetail	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Carex paniculata* (Greater Tussock-sedge)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Carex otrubae* (False Fox-sedge)	flowering plant	23/03/2019		SEWBReCORD	Unassessed
ST0791	212	*Carex sylvatica* (Wood-sedge)	flowering plant	23/03/2019		SEWBReCORD	Unassessed
ST0791	212	*Allium ursinum* (Ramsons)	flowering plant	23/03/2019		SEWBReCORD	Unassessed
ST0791	212	*Eriophorum angustifolium* (Common Cottongrass)	flowering plant	23/03/2019		SEWBReCORD	Unassessed
ST0791	212	*Oxalis acetosella* (Wood-sorrel)	flowering plant	23/03/2019		SEWBReCORD	Unassessed
ST0791	212	*Melampyrum pratense* (Common Cow-wheat)	flowering plant	February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791	212	*Hydria undulata* (Scallop Shell)	insect - moth	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Rhagium mordax* (Rhagium mordax)	insect - beetle (Coleoptera)	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0791	212	*Chloris chloris* (Greenfinch)	bird	2 records, both from 2010	2; 2	MapMate Data (New)	Verified correct
ST074915	224	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	04/06/1981		NRW (Cardiff) Wider Countryside	Unassessed
ST074915	224	*Eriophorum angustifolium* (Common Cottongrass)	flowering plant	04/06/1981		NRW (Cardiff) Wider Countryside	Unassessed
ST074915	224	*Umbilicus rupestris* (Navelwort)	flowering plant	04/06/1981		NRW (Cardiff) Wider Countryside	Unassessed
ST074915	224	*Vaccinium myrtillus* (Bilberry)	flowering plant	04/06/1981		NRW (Cardiff) Wider Countryside	Unassessed
ST074915	224	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	04/06/1981		NRW (Cardiff) Wider Countryside	Unassessed
ST074915	224	*Pedicularis sylvatica* (Lousewort)	flowering plant	04/06/1981		NRW (Cardiff) Wider Countryside	Unassessed
ST07429162	226	*Vaccinium myrtillus* (Bilberry)	flowering plant	19/09/1989		NRW (Cardiff) Wider Countryside	Unassessed
ST07529145	231	*Luzula sylvatica* (Great Wood-rush)	flowering plant	19/09/1989		NRW (Cardiff) Wider Countryside	Unassessed
ST0783591840	265	*Solidago virgaurea* (Goldenrod)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Petasites hybridus* (Butterbur)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Luzula sylvatica* (Great Wood-rush)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Leontodon saxatilis* (Lesser Hawkbit)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Juncus inflexus* (Hard Rush)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Hypericum pulchrum* (Slender St John's-wort)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Filago minima* (Small Cudweed)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Epilobium tetragonum* (Square-stalked Willowherb)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Tilia cordata* (Small-leaved Lime)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	01/08/2009		David Clements Ecology	Unassessed
ST07669135	295	*Chloris chloris* (Greenfinch)	bird	22/01/1987		Dr Mary Gillham Project records	Unassessed
ST07669135	295	*Carex sylvatica* (Wood-sedge)	flowering plant	22/01/1987		Dr Mary Gillham Project records	Unassessed
ST07669135	295	*Luzula sylvatica* (Great Wood-rush)	flowering plant	22/01/1987		Dr Mary Gillham Project records	Unassessed
ST07669135	295	*Veronica officinalis* (Heath Speedwell)	flowering plant	22/01/1987		Dr Mary Gillham Project records	Unassessed
ST07349182	352	*Conopodium majus* (Pignut)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST07289159	369	*Vaccinium myrtillus* (Bilberry)	flowering plant	19/09/1989		NRW (Cardiff) Wider Countryside	Unassessed
ST072915	412	*Veronica montana* (Wood Speedwell)	flowering plant	25/04/2020		LERC Wales App (Direct Import)	Unassessed
ST077912	412	*Hypena crassalis* (Beautiful Snout)	insect - moth	2 records, between 1997 and 1998	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Apamea unanimis* (Small Clouded Brindle)	insect - moth	3 records, all from 1996	2 (Adult); 1 (Adult); 2 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Craniophora ligustri* (Coronet)	insect - moth	06/07/1998	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Lithophane socia* (Pale Pinion)	insect - moth	31/03/1997	1 (Adult)	Glamorgan Moth Records	Verified correct

ST077912	412	*Acasis viretata* (Yellow-barred Brindle)	insect - moth	3 records, between 1996 and 1997	1 (Adult); 1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Eupithecia dodoneata* (Oak-tree Pug)	insect - moth	27/05/1997	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Hydria undulata* (Scallop Shell)	insect - moth	04/08/1992	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Hydriomena ruberata* (Ruddy Highflyer)	insect - moth	2 records, both from 1996	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Unassessed
ST077912	412	*Mesoleuca albicillata* (Beautiful Carpet)	insect - moth	3 records, all from 1996	1 (Adult); 1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Epirrhoe rivata* (Wood Carpet)	insect - moth	2 records, both from 1996	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Scopula immutata* (Lesser Cream Wave)	insect - moth	15/06/1996	2 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Pyrausta aurata* (Small Purple & Gold)	insect - moth	16/08/1997	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Eudonia truncicolella* (Ground-moss Grey)	insect - moth	16/08/1997	1 (Adult)	Glamorgan Moth Records	Verified correct
ST077912	412	*Catoptria pinella* (Pearl Grass-veneer)	insect - moth	2 records, both from 1996	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST07499125	424	*Viburnum opulus* (Guelder-rose)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST074912	447	*Equisetum sylvaticum* (Wood Horsetail)	horsetail	02/05/1999	p	BSBI Atlas 2000	Unassessed
ST074912	447	*Conopodium majus* (Pignut)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST074912	447	*Ulmus procera* (English Elm)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST074912	447	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST072913	500	*Erynnis tages tages* (Dingy Skipper)	insect - butterfly	4 records, all from 2020		LERC Wales App (Direct Import); LERC Wales App - old versions	Unassessed
ST072913	500	*Vaccinium myrtillus* (Bilberry)	flowering plant	21/10/2015	Locally Frequent	MapMate Data (New)	Verified correct
ST075911	510	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST075911	510	*Carex pilulifera* (Pill Sedge)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST075911	510	*Turdus viscivorus* (Mistle Thrush)	bird	2 records, both from 1993	2	Dr Mary Gillham Project records	Unassessed
ST075911	510	*Chloris chloris* (Greenfinch)	bird	6 records, all from 1993	2	Dr Mary Gillham Project records	Unassessed
ST07529110	559	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST070918	633	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	12/05/2012	Present	MapMate Data (New)	Unassessed
ST071912	640	*Scapania nemorea* (Grove Earwort)	liverwort	21/10/2015	Occasional	MapMate Data (New)	Verified correct
ST071912	640	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	21/10/2015	Occasional	MapMate Data (New)	Verified correct
ST071912	640	*Kindbergia praelonga* (Common Feather-moss)	moss	21/10/2015	Locally Abundant	MapMate Data (New)	Verified correct
ST071912	640	*Oxalis acetosella* (Wood-sorrel)	flowering plant	21/10/2015	Locally Frequent	MapMate Data (New)	Verified correct
ST071912	640	*Dactylorhiza maculata* (Heath Spotted-orchid)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST071912	640	*Erica tetralix* (Cross-leaved Heath)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST071912	640	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	17/09/1994 - 15/10/1994		NRW (Cardiff) Wider Countryside	Unassessed
ST0791192285	687	*Amblyptilia acanthadactyla* (Beautiful Plume)	insect - moth	03/08/2015		iRecord	Verified correct
ST0791192285	687	*Catoptria pinella* (Pearl Grass-veneer)	insect - moth	23/07/2016		iRecord	Verified correct
ST0791192285	687	*Apeira syringaria* (Lilac Beauty)	insect - moth	07/07/2017		iRecord	Verified correct
ST072910	721	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	2 records, both from 2019		LERC Wales App (Direct Import)	Unassessed
ST072910	721	*Vaccinium myrtillus* (Bilberry)	flowering plant	21/10/2015	Occasional	MapMate Data (New)	Verified correct
ST072910	721	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	28/06/2019		LERC Wales App (Direct Import)	Unassessed
ST071910	781	*Bombus pratorum* (Early Bumblebee)	insect - hymenopteran	21/06/2019		LERC Wales App (Direct Import)	Unassessed
ST071910	781	*Kindbergia praelonga* (Common Feather-moss)	moss	21/10/2015	Locally Frequent	MapMate Data (New)	Verified correct
ST071910	781	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	21/10/2015	Occasional	MapMate Data (New)	Verified correct
ST071910	781	*Anagallis tenella* (Bog Pimpernel)	flowering plant	21/10/2015	Occasional	MapMate Data (New)	Verified correct
ST071910	781	*Bombus lucorum* (White-Tailed Bumblebee)	insect - hymenopteran	21/06/2019		LERC Wales App (Direct Import)	Unassessed
ST071910	781	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	21/06/2019	6 to 20	LERC Wales App (Direct Import)	Unassessed
ST072909	806	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	23/04/2020		LERC Wales App (Direct Import)	Unassessed
ST0891	863	*Ardea cinerea* (Grey Heron)	bird	08/11/2009	1	MapMate Data (New)	Verified correct
ST0792	863	*Catoptria pinella* (Pearl Grass-veneer)	insect - moth	23/07/2016	Present	MapMate Data (New)	Unassessed
ST0891	863	*Turdus viscivorus* (Mistle Thrush)	bird	08/11/2009	1	MapMate Data (New)	Verified correct
ST074907	922	*Craniophora ligustri* (Coronet)	insect - moth	18 records, between 2003 and 2009	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 1; 1; 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Horisme tersata* (Fern)	insect - moth	29/05/2003	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Pyrausta aurata* (Small Purple & Gold)	insect - moth	2 records, between 2004 and 2005	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct

ST074907	922	*Pyrausta purpuralis* (Common Purple & Gold)	insect - moth	2 records, both from 2004	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Argynnis aglaja* (Dark Green Fritillary)	insect - butterfly	13/07/2003	1 (Adult)	MapMate Data (1cf)	Verified correct
ST074907	922	*Zeuzera pyrina* (Leopard Moth)	insect - moth	2 records, both from 2007	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Acasis viretata* (Yellow-barred Brindle)	insect - moth	2 records, between 2004 and 2009	1 (Adult); 1	Glamorgan Moth Records; MapMate Data (New)	Verified correct
ST074907	922	*Apeira syringaria* (Lilac Beauty)	insect - moth	5 records, between 2004 and 2007	1 (Adult); 1 (Adult); 1 (Adult); 1 (Adult); 2 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Calopteryx splendens* (Banded Demoiselle)	insect - dragonfly (Odonata)	25/06/2006	1 (Adult Male)	MapMate Data (1cf)	Verified correct
ST074907	922	*Catoptria pinella* (Pearl Grass-veneer)	insect - moth	31/07/2004	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Scopula immutata* (Lesser Cream Wave)	insect - moth	08/08/2003	2 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Diarsia dahlii* (Barred Chestnut)	insect - moth	05/08/2006	1 (Adult)	Glamorgan Moth Records	Unassessed
ST074907	922	*Pammene regiana* (Regal Piercer)	insect - moth	2 records, both from 2006	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Schrankia costaestrigalis* (Pinion-streaked Snout)	insect - moth	05/08/2006	1 (Adult)	Glamorgan Moth Records	Verified correct
ST074907	922	*Hypena crassalis* (Beautiful Snout)	insect - moth	05/07/2009	1	MapMate Data (New)	Verified correct
ST074907	922	*Calopteryx virgo* (Beautiful Demoiselle)	insect - dragonfly (Odonata)	18/05/2008	1	MapMate Data (New)	Unassessed
ST085919	949	*Ardea cinerea* (Grey Heron)	bird	20/08/2014		SEWBReCORD	Unassessed
ST085919	949	*Petasites hybridus* (Butterbur)	flowering plant	20/08/2014		SEWBReCORD	Unassessed
ST085919	949	*Kindbergia praelonga* (Common Feather-moss)	moss	20/08/2014		SEWBReCORD	Verified correct
ST085919	949	*Tanacetum vulgare* (Tansy)	flowering plant	20/08/2014		SEWBReCORD	Unassessed
ST085919	949	*Scrophularia auriculata* (Water Figwort)	flowering plant	20/08/2014		SEWBReCORD	Unassessed
ST08469216	964	*Stachys palustris* (Marsh Woundwort)	flowering plant	17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08469216	964	*Petasites hybridus* (Butterbur)	flowering plant	17/07/1971		Dr Mary Gillham Project records	Unassessed
ST072907	985	*Conopodium majus* (Pignut)	flowering plant	16/05/2020		LERC Wales App (Direct Import)	Unassessed
ST072907	985	*Allium ursinum* (Ramsons)	flowering plant	22/04/2020		LERC Wales App (Direct Import)	Unassessed
ST07469268	1,052	*Lamiastrum galeobdolon subsp. montanum* (Yellow Archangel)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST082925	1,082	*Ardea cinerea* (Grey Heron)	bird	3 records, between 1985 and 1987	11; 13; 11	Dr Mary Gillham Project records	Unassessed
ST07189263	1,089	*Luzula sylvatica* (Great Wood-rush)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST08599100	1,144	*Rhagium mordax* (Rhagium mordax)	insect - beetle (Coleoptera)	14/05/2018		iRecord	Verified correct
ST0691	1,160	*Chloris chloris* (Greenfinch)	bird	9 records, between 2009 and 2010	4; 7; 4; 7; 2; 2; 4; 2; 2	MapMate Data (New)	Verified correct
ST0691	1,160	*Turdus viscivorus* (Mistle Thrush)	bird	3 records, between 2009 and 2010	2; 2; 1	MapMate Data (New)	Verified correct
ST0790	1,160	*Umbilicus rupestris* (Navelwort)	flowering plant	13/03/2016	Present	MapMate Data (New)	Unassessed
ST0790	1,160	*Turdus viscivorus* (Mistle Thrush)	bird	16/01/2015	1	Glamorgan Bird Club Records	Unassessed
ST072905	1,170	*Turdus viscivorus* (Mistle Thrush)	bird	14/02/2003	2	MapMate Data (1v9)	Verified correct
ST068925	1,204	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	02/07/2001	o (DAFOR)	Marsh Fritillary Site Survey	Unassessed
ST073928	1,237	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	14/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST073928	1,237	*Viola palustris* (Marsh Violet)	flowering plant	14/07/1981	a (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST079928	1,237	*Salmo trutta subsp. fario* (Brown Trout)	bony fish (Actinopterygii)	2 records, between 1988 and 1997		Freshwater Fish Atlas	Unassessed
ST073928	1,237	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	14/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST073928	1,237	*Conopodium majus* (Pignut)	flowering plant	14/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST073928	1,237	*Hypericum pulchrum* (Slender St John's-wort)	flowering plant	14/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST085925	1,273	*Ardea cinerea* (Grey Heron)	bird	02/07/2020	1	SEWBReCORD	Unassessed
ST07429039	1,275	*Ardea cinerea* (Grey Heron)	bird	26/12/2017		SEWBReCORD	Unassessed
ST07419291	1,287	*Hygrocybe flavipes* (Yellow Foot Waxcap)	fungus	08/10/2017	1	SEWBReCORD	Unassessed
ST08669248	1,314	*Hydrocotyle vulgaris* (Marsh Pennywort)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08669248	1,314	*Stachys palustris* (Marsh Woundwort)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08669248	1,314	*Equisetum sylvaticum* (Wood Horsetail)	horsetail	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08669248	1,314	*Juncus inflexus* (Hard Rush)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08669248	1,314	*Berula erecta* (Lesser Water-parsnip)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08669248	1,314	*Dactylorhiza maculata subsp. ericetorum* (Heath Spotted-Orchid)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST07959036	1,320	*Vaccinium myrtillus* (Bilberry)	flowering plant	08/10/2016	Present	MapMate Data (New)	Unassessed

ST07979033	1,354	*Solidago virgaurea* (Goldenrod)	flowering plant	08/10/2016	Present	MapMate Data (New)	Unassessed
ST07899030	1,367	*Sorbus aria agg.* (Whitebeam agg.)	flowering plant	21/06/1991		Dr Mary Gillham Project records	Unassessed
ST07319299	1,386	*Dimerella lutea* (Dimerella lutea)	lichen	01/04/2020	lots	SEWBReCORD	Unassessed
ST06779273	1,394	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST07559025	1,398	*Lathraea squamaria* (Toothwort)	flowering plant	23/04/2019		LERC Wales App (Direct Import)	Unassessed
ST08009029	1,401	*Solidago virgaurea* (Goldenrod)	flowering plant	08/10/2016	Present	MapMate Data (New)	Unassessed
ST07519304	1,402	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	12/05/2019	lots	SEWBReCORD	Unassessed
ST0658290704	1,427	*Turdus viscivorus* (Mistle Thrush)	bird	12/05/2008		Merlin Bio-Surveys Records	Verified correct
ST0658290704	1,427	*Leontodon hispidus* (Rough Hawkbit)	flowering plant	12/05/2008		Merlin Bio-Surveys Records	Unassessed
ST0890	1,430	*Chloris chloris* (Greenfinch)	bird	7 records, between 2008 and 2010	2; 1; 1; 1; 2; 2; 1	MapMate Data (New)	Verified correct
ST0890	1,430	*Juncus inflexus* (Hard Rush)	flowering plant	13/03/2016	Present	MapMate Data (New)	Unassessed
ST0692	1,430	*Oxalis acetosella* (Wood-sorrel)	flowering plant	12/05/2012	Present	MapMate Data (New)	Unassessed
ST0890	1,430	*Vaccinium myrtillus* (Bilberry)	flowering plant	13/03/2016	Present	MapMate Data (New)	Unassessed
ST0692	1,430	*Venusia blomeri* (Blomer's Rivulet)	insect - moth	1918	1 (Adult)	Glamorgan Moth Records	Verified correct
ST0692	1,430	*Venusia cambrica* (Welsh Wave)	insect - moth	2 records, both from 1918	1 (Adult); 1 (Adult)	Glamorgan Moth Records	Verified correct
ST0890	1,430	*Dicranum majus* (Greater Fork-moss)	moss	13/01/2015	Present	MapMate Data (New)	Unassessed
ST0890	1,430	*Kindbergia praelonga* (Common Feather-moss)	moss	13/01/2015	Present	MapMate Data (New)	Unassessed
ST0692	1,430	*Veronica montana* (Wood Speedwell)	flowering plant	12/05/2012	Present	MapMate Data (New)	Unassessed
ST068928	1,442	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	20/06/2014	1	SEWBReCORD	Verified correct
ST08069023	1,474	*Solidago virgaurea* (Goldenrod)	flowering plant	08/10/2016	Present	MapMate Data (New)	Unassessed
ST07199305	1,477	*Hypnum cupressiforme var. lacunosum* (Roof Plait-moss)	moss	21/04/2020	Few	SEWBReCORD	Verified correct
ST08009021	1,478	*Umbilicus rupestris* (Navelwort)	flowering plant	08/10/2016	Present	MapMate Data (New)	Unassessed
ST06839288	1,480	*Sympetrum sanguineum* (Ruddy Darter)	insect - dragonfly (Odonata)	04/09/2014	1	SEWBReCORD	Unassessed
ST07729313	1,487	*Sympetrum sanguineum* (Ruddy Darter)	insect - dragonfly (Odonata)	06/08/2015	1	SEWBReCORD	Unassessed
ST081930	1,487	*Erysimum cheiranthoides* (Treacle-mustard)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST07719314	1,497	*Rhagium bifasciatum* (Rhagium bifasciatum)	insect - beetle (Coleoptera)	21/05/2020	one	SEWBReCORD	Verified correct
ST07719314	1,497	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	05/06/2020	one	SEWBReCORD	Verified correct
ST09R	1,499	*Narcissus pseudonarcissus subsp. pseudonarcissus* (Daffodil)	flowering plant	30/04/1988		East Glamorgan Vascular Plant Data 2	Unassessed
ST0772693148	1,500	*Mesoleuca albicillata* (Beautiful Carpet)	insect - moth	18/07/2015	1	SEWBReCORD	Verified correct
ST075931	1,504	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST075931	1,504	*Anemone nemorosa* (Wood Anemone)	flowering plant	24/04/2016	Present	MapMate Data (New)	Verified correct
ST075931	1,504	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST075931	1,504	*Conopodium majus* (Pignut)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST06859035	1,519	*Polymixis flavicincta* (Large Ranunculus)	insect - moth	26/09/2018	1	LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Pyrausta aurata* (Small Purple & Gold)	insect - moth	2 records, both from 2020	2 to 5	LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	30/05/2020		LERC Wales App (Direct Import)	Unassessed
ST068903	1,526	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	30/05/2020		LERC Wales App (Direct Import)	Unassessed
ST08699276	1,528	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	19/04/2020		SEWBReCORD	Verified correct
ST079901	1,529	*Berula erecta* (Lesser Water-parsnip)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Bidens tripartita* (Trifid Bur-marigold)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Stachys palustris* (Marsh Woundwort)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Ranunculus sceleratus* (Celery-leaved Buttercup)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Viburnum opulus* (Guelder-rose)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Ulmus minor* (Elm)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Lestes sponsa* (Emerald Damselfly)	insect - dragonfly (Odonata)	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST08939251	1,549	*Bombus lapidarius* (Large Red Tailed Bumblebee)	insect - hymenopteran	21/06/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST08939251	1,549	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	21/06/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST08939251	1,549	*Bombus hortorum* (Small Garden Bumblebee)	insect - hymenopteran	21/06/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST07899011	1,554	*Viburnum opulus* (Guelder-rose)	flowering plant	31/05/1991		Dr Mary Gillham Project records	Unassessed

ST07899011	1,554	*Berula erecta* (Lesser Water-parsnip)	flowering plant	31/05/1991		Dr Mary Gillham Project records	Unassessed
ST07899011	1,554	*Lythrum salicaria* (Purple-loosestrife)	flowering plant	31/05/1991		Dr Mary Gillham Project records	Unassessed
ST07909010	1,566	*Sparganium natans* (Least Bur-reed)	flowering plant	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST07909010	1,566	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	28/08/1979 - 30/08/1979		Dr Mary Gillham Project records	Unassessed
ST07909010	1,566	*Bidens tripartita* (Trifid Bur-marigold)	flowering plant	28/08/1979 - 30/08/1979		Dr Mary Gillham Project records	Unassessed
ST07909010	1,566	*Stachys palustris* (Marsh Woundwort)	flowering plant	2 records, between 1979 and 1988		Dr Mary Gillham Project records	Unassessed
ST08969252	1,580	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	16/08/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST09009250	1,602	*Conocephalus fuscus* (Long-winged Cone-head)	insect - orthopteran	26/08/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST0636390688	1,607	*Leptophyes punctatissima* (Speckled Bush-cricket)	insect - orthopteran	35 records, between 2014 and 2019		iRecord	Verified correct
ST0636390688	1,607	*Pyrausta aurata* (Small Purple & Gold)	insect - moth	9 records, between 2014 and 2019		iRecord	Verified correct
ST0636390688	1,607	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	4 records, between 2015 and 2016		iRecord	Verified correct
ST0636390688	1,607	*Polymixis flavicincta* (Large Ranunculus)	insect - moth	03/10/2015		iRecord	Verified correct
ST0636390688	1,607	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	3 records, between 2016 and 2017		iRecord	Verified correct
ST090924	1,613	*Polystichum setiferum* (Soft Shield-fern)	fern	11/01/2017		iRecord	Unassessed
ST090924	1,613	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	30/06/2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST090924	1,613	*Bombus hortorum* (Small Garden Bumblebee)	insect - hymenopteran	03/06/2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST090924	1,613	*Bombus jonellus* (Heath Bumblebee)	insect - hymenopteran	20/05/2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST090924	1,613	*Bombus sylvestris* (Forest Cuckoo Bee)	insect - hymenopteran	2 records, both from 2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST090924	1,613	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	23/04/2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST09039249	1,623	*Erynnis tages tages* (Dingy Skipper)	insect - butterfly	26/05/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST0690	1,626	*Pyrausta aurata* (Small Purple & Gold)	insect - moth	13/08/2016	Present	MapMate Data (New)	Unassessed
ST0690	1,626	*Larus michahellis* (Yellow-legged Gull)	bird	27/09/2002	1 (Adult)	MapMate Data (1cf)	Verified correct
ST0690	1,626	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	02/05/2000	p (Adult)	MapMate Data (1ay)	Verified correct
ST0690	1,626	*Bombus lapidarius* (Large Red Tailed Bumblebee)	insect - hymenopteran	30/03/2019	1	LERC Wales App (Direct Import)	Unassessed
ST08339312	1,626	*Ranunculus sceleratus* (Celery-leaved Buttercup)	flowering plant	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Viburnum opulus* (Guelder-rose)	flowering plant	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Scirpus sylvaticus* (Wood Club-rush)	flowering plant	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Nymphaea alba* (White Water-lily)	flowering plant	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST073932	1,628	*Moehringia trinervia* (Three-nerved Sandwort)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST0899492589	1,640	*Turdus viscivorus* (Mistle Thrush)	bird	10/05/2010 - 31/05/2010		Capita Symonds Data	Verified correct
ST063906	1,640	*Pyrausta aurata* (Small Purple & Gold)	insect - moth	07/08/2010	10	MapMate Data (New)	Verified correct
ST091909	1,655	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	02/07/2001	o (DAFOR)	Marsh Fritillary Site Survey	Unassessed
ST09139238	1,657	*Erynnis tages tages* (Dingy Skipper)	insect - butterfly	09/06/2015		Liam Olds Colliery Spoil Project Records	Verified correct
ST09079251	1,667	*Bombus pratorum* (Early Bumblebee)	insect - hymenopteran	21/06/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST081900	1,676	*Juncus inflexus* (Hard Rush)	flowering plant	May 1995		Dr Mary Gillham Project records	Unassessed
ST081900	1,676	*Vaccinium myrtillus* (Bilberry)	flowering plant	May 1995		Dr Mary Gillham Project records	Unassessed
ST06779309	1,689	*Trifolium medium* (Zigzag Clover)	flowering plant	07/06/2020	loads	SEWBReCORD	Unassessed
ST05999126	1,699	*Echium vulgare* (Viper's-bugloss)	flowering plant	10/09/1972		Dr Mary Gillham Project records	Unassessed
ST05999126	1,699	*Arenaria serpyllifolia* (Thyme-Leaved Sandwort)	flowering plant	10/09/1972		Dr Mary Gillham Project records	Unassessed
ST05999126	1,699	*Filago minima* (Small Cudweed)	flowering plant	10/09/1972		Dr Mary Gillham Project records	Unassessed
ST05999126	1,699	*Leontodon saxatilis* (Lesser Hawkbit)	flowering plant	10/09/1972		Dr Mary Gillham Project records	Unassessed
ST05999126	1,699	*Veronica polita* (Grey Field-speedwell)	flowering plant	10/09/1972		Dr Mary Gillham Project records	Unassessed
ST05999126	1,699	*Linum catharticum* (Fairy Flax)	flowering plant	10/09/1972		Dr Mary Gillham Project records	Unassessed
ST093917	1,703	*Anagallis tenella* (Bog Pimpernel)	flowering plant	15/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST093917	1,703	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	15/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST093917	1,703	*Carex panicea* (Carnation Sedge)	flowering plant	15/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed

ST093917	1,703	*Hydrocotyle vulgaris* (Marsh Pennywort)	flowering plant	15/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST093917	1,703	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	15/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST077899	1,703	*Bombus vestalis* (Vestal (Southern) Cuckoo Bee)	insect - hymenopteran	13/06/2020	2 to 5	LERC Wales App (Direct Import)	Unassessed
ST093917	1,703	*Narthecium ossifragum* (Bog Asphodel)	flowering plant	15/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST093917	1,703	*Oreopteris limbosperma* (Lemon-scented Fern)	fern	15/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST093917	1,703	*Oxalis acetosella* (Wood-sorrel)	flowering plant	15/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST077899	1,703	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	12/09/2020		LERC Wales App (Direct Import)	Unassessed
ST077899	1,703	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	13/06/2020		LERC Wales App (Direct Import)	Unassessed
ST093917	1,703	*Danthonia decumbens* (Heath-grass)	flowering plant	15/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST093917	1,703	*Vaccinium myrtillus* (Bilberry)	flowering plant	15/07/1981	a (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST093917	1,703	*Viola palustris* (Marsh Violet)	flowering plant	15/07/1981	a (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST07159001	1,708	*Lythrum portula* (Water-purslane)	flowering plant	1875 - 1903		Dr Mary Gillham Project records	Unassessed
ST09139250	1,714	*Bombus vestalis* (Vestal (Southern) Cuckoo Bee)	insect - hymenopteran	21/06/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST07659336	1,715	*Dimerella lutea* (Dimerella lutea)	lichen	12/05/2020	Few	SEWBReCORD	Unassessed
ST06759312	1,726	*Veronica officinalis* (Heath Speedwell)	flowering plant	17/05/2020	lots	SEWBReCORD	Unassessed
ST085931	1,749	*Ardea cinerea* (Grey Heron)	bird	27/07/2005	1	MapMate Data (1d8)	Verified correct
ST09149256	1,753	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	05/05/2016		Liam Olds Colliery Spoil Project Records	Unassessed
ST06919005	1,756	*Ceratocapnos claviculata* (Climbing Corydalis)	flowering plant	1973		Dr Mary Gillham Project records	Unassessed
ST08048993	1,760	*Luzula multiflora* (Heath Wood-rush)	flowering plant	18/06/1992		Dr Mary Gillham Project records	Unassessed
ST08048993	1,760	*Tanacetum vulgare* (Tansy)	flowering plant	18/06/1992		Dr Mary Gillham Project records	Unassessed
ST08048993	1,760	*Reseda luteola* (Weld)	flowering plant	18/06/1992		Dr Mary Gillham Project records	Unassessed
ST07089332	1,768	*Ceterach officinarum* (Rustyback)	fern	17/07/2016	1	SEWBReCORD	Unassessed
ST064903	1,769	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	15/04/2010	3	MapMate Data (New)	Unassessed
ST08068992	1,774	*Callitriche hamulata* (Intermediate Water-starwort)	flowering plant	13/11/1974		Dr Mary Gillham Project records	Unassessed
ST08068992	1,774	*Viburnum opulus* (Guelder-rose)	flowering plant	17/05/1988		Dr Mary Gillham Project records	Unassessed
ST06839322	1,774	*Silene flos-cuculi* (Ragged-Robin)	flowering plant	04/06/2020	lots	SEWBReCORD	Unassessed
ST06979329	1,778	*Umbilicus rupestris* (Navelwort)	flowering plant	17/05/2020	lots	SEWBReCORD	Unassessed
ST090927	1,781	*Veronica officinalis* (Heath Speedwell)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST090927	1,781	*Polygala serpyllifolia* (Heath Milkwort)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST090927	1,781	*Danthonia decumbens* (Heath-grass)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST090927	1,781	*Luzula multiflora* (Heath Wood-rush)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST090927	1,781	*Aphanes arvensis* (Parsley-piert)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST092924	1,789	*Argynnis aglaja* (Dark Green Fritillary)	insect - butterfly	30/06/2015		Liam Olds Colliery Spoil Project Records	Verified correct
ST070933	1,803	*Carex sylvatica* (Wood-sedge)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST070899	1,803	*Geranium rotundifolium* (Round-leaved Crane's-bill)	flowering plant	21/10/2011	Frequent	MapMate Data (New)	Verified correct
ST093922	1,803	*Tripleurospermum inodorum* (Scentless Mayweed)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Bromus commutatus* (Meadow Brome)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Epilobium tetragonum* (Square-stalked Willowherb)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Veronica officinalis* (Heath Speedwell)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Veronica agrestis* (Green Field-speedwell)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Ranunculus sceleratus* (Celery-leaved Buttercup)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Jasione montana* (Sheep's-bit)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Carex flacca* (Glaucous Sedge)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Chenopodium polyspermum* (Many-seeded Goosefoot)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Leontodon hispidus* (Rough Hawkbit)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Vaccinium myrtillus* (Bilberry)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST093922	1,803	*Arenaria serpyllifolia* (Thyme-Leaved Sandwort)	flowering plant	30/06/2015		SEWBReCORD	Unassessed
ST075898	1,803	*Bombus sylvestris* (Forest Cuckoo Bee)	insect - hymenopteran	30/04/2018		SEWBReCORD	Verified correct
ST075898	1,803	*Bombus lapidarius* (Large Red Tailed Bumblebee)	insect - hymenopteran	30/04/2018		SEWBReCORD	Verified correct
ST093922	1,803	*Linum catharticum* (Fairy Flax)	flowering plant	30/06/2015		SEWBReCORD	Unassessed

ST075898	1,803	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	30/04/2018		SEWBReCORD	Verified correct
ST070899	1,803	*Linum catharticum* (Fairy Flax)	flowering plant	21/10/2011	Occasional	MapMate Data (New)	Verified correct
ST070899	1,803	*Hypnum cupressiforme var. lacunosum* (Roof Plait-moss)	moss	21/10/2011	Locally Frequent	MapMate Data (New)	Verified correct
ST070899	1,803	*Viburnum opulus* (Guelder-rose)	flowering plant	21/10/2011	Occasional	MapMate Data (New)	Verified correct
ST070899	1,803	*Kindbergia praelonga* (Common Feather-moss)	moss	21/10/2015	Occasional	MapMate Data (New)	Verified correct
ST06899000	1,810	*Trifolium campestre* (Hop Trefoil)	flowering plant	12/04/2013		Just Mammals	Unassessed
ST06969332	1,810	*Rhizocarpon viridiatrum* (Rhizocarpon viridiatrum)	lichen	07/01/2018	1	SEWBReCORD	Unassessed
ST06899000	1,810	*Tilia cordata* (Small-leaved Lime)	flowering plant	12/04/2013		Just Mammals	Unassessed
ST06899000	1,810	*Euphorbia amygdaloides* (Wood Spurge)	flowering plant	12/04/2013		Just Mammals	Unassessed
ST06899000	1,810	*Alchemilla vulgaris agg.* (Lady's-Mantle agg.)	flowering plant	12/04/2013		Just Mammals	Unassessed
ST073898	1,825	*Lathraea squamaria* (Toothwort)	flowering plant	30/03/2019		LERC Wales App (Direct Import)	Unassessed
ST067932	1,836	*Anagallis tenella* (Bog Pimpernel)	flowering plant	30/06/2019	lots	SEWBReCORD	Unassessed
ST0991	1,856	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0991	1,856	*Vaccinium myrtillus* (Bilberry)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0991	1,856	*Saxicola rubetra* (Whinchat)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Unassessed
ST065931	1,860	*Anemone nemorosa* (Wood Anemone)	flowering plant	24/04/2016	Present	MapMate Data (New)	Verified correct
ST065931	1,860	*Conopodium majus* (Pignut)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST065931	1,860	*Veronica montana* (Wood Speedwell)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST065931	1,860	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST065931	1,860	*Polystichum setiferum* (Soft Shield-fern)	fern	24/04/2016	Present	MapMate Data (New)	Unassessed
ST09439112	1,861	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST066932	1,887	*Polystichum setiferum* (Soft Shield-fern)	fern	24/04/2016	Present	MapMate Data (New)	Unassessed
ST09479109	1,907	*Oxalis acetosella* (Wood-sorrel)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Agrimonia eupatoria* (Agrimony)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Frangula alnus* (Alder Buckthorn)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Ceterach officinarum* (Rustyback)	fern	2004	Present	MapMate Data (New)	Verified correct
ST09W	1,909	*Juncus inflexus* (Hard Rush)	flowering plant	3 records, between 1987 and 2004	Present; Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Erysimum cheiri* (Wallflower)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Pedicularis sylvatica* (Lousewort)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Conopodium majus* (Pignut)	flowering plant	3 records, between 1988 and 2004	Present; Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Sherardia arvensis* (Field Madder)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Filago minima* (Small Cudweed)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Ardea cinerea* (Grey Heron)	bird	26/01/2015	1	BirdTrack 2015	Unassessed
ST09W	1,909	*Bromus hordeaceus x lepidus = B. x pseudothominei* (Lesser Soft-brome)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Hydrocotyle vulgaris* (Marsh Pennywort)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Anagallis tenella* (Bog Pimpernel)	flowering plant	3 records, between 1988 and 2004	Present; Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Veronica montana* (Wood Speedwell)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Veronica scutellata* (Marsh Speedwell)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Carex flacca* (Glaucous Sedge)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Ranunculus omiophyllus* (Round-leaved Crowfoot)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Viburnum lantana* (Wayfaring-tree)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Erica tetralix* (Cross-leaved Heath)	flowering plant	2 records, both from 1988	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Potamogeton polygonifolius* (Bog Pondweed)	flowering plant	2 records, both from 1988	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Stachys palustris* (Marsh Woundwort)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Arenaria serpyllifolia agg.* (Thyme-Leaved Sandwort agg.)	flowering plant	04/07/1987	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Pulicaria dysenterica* (Common Fleabane)	flowering plant	2 records, between 1987 and 2004	Present; Present	MapMate Data (New)	Unassessed

ST09W	1,909	*Aira caryophyllea* (Silver Hair-grass)	flowering plant	3 records, between 1987 and 2004	Present; Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Moehringia trinervia* (Three-nerved Sandwort)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Echium vulgare* (Viper's-bugloss)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Vaccinium myrtillus* (Bilberry)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Carex viridula subsp. brachyrrhyncha* (Long-stalked Yellow-sedge)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Silene flos-cuculi* (Ragged-Robin)	flowering plant	3 records, between 1987 and 2004	Present; Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Luzula multiflora* (Heath Wood-rush)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Eriophorum angustifolium* (Common Cottongrass)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Viola palustris* (Marsh Violet)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Barbarea vulgaris* (Winter-cress)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Trifolium medium* (Zigzag Clover)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Polygala vulgaris* (Common Milkwort)	flowering plant	07/05/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Linum catharticum* (Fairy Flax)	flowering plant	2 records, between 1987 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Turdus viscivorus* (Mistle Thrush)	bird	26/01/2015	1	BirdTrack 2015	Unassessed
ST09W	1,909	*Viola arvensis* (Field Pansy)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Lactuca virosa* (Great Lettuce)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Tanacetum vulgare* (Tansy)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Reseda luteola* (Weld)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Petasites hybridus* (Butterbur)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Lamiastrum galeobdolon subsp. montanum* (Yellow Archangel)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Salix alba* (White Willow)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Myosotis laxa* (Tufted Forget-me-not)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Acer campestre* (Field Maple)	flowering plant	2004	Present	MapMate Data (New)	Verified correct
ST09W	1,909	*Leontodon saxatilis* (Lesser Hawkbit)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Rorippa sylvestris* (Creeping Yellow-cress)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Matricaria chamomilla* (Scented Mayweed)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Persicaria lapathifolia* (Pale Persicaria)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Ononis repens* (Common Restharrow)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Allium vineale* (Wild Onion)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Artemisia absinthium* (Wormwood)	flowering plant	2 records, between 1987 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Avena fatua* (Wild-oat)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Oxalis acetosella* (Wood-sorrel)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Odontites vernus* (Red Bartsia)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Carex otrubae* (False Fox-sedge)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Tragopogon pratensis subsp. minor* (Goat's-Beard)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Myosoton aquaticum* (Water Chickweed)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Ballota nigra* (Black Horehound)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Stachys sylvatica x palustris = S. x ambigua* (Hybrid Woundwort)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Arenaria serpyllifolia subsp. serpyllifolia* (Thyme-leaved Sandwort)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Danthonia decumbens* (Heath-grass)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Anemone nemorosa* (Wood Anemone)	flowering plant	07/05/1988	Present	MapMate Data (New)	Verified correct
ST09W	1,909	*Myosotis secunda* (Creeping Forget-me-not)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Plantago media* (Hoary Plantain)	flowering plant	04/07/1987	Present	MapMate Data (New)	Unassessed

ST09W	1,909	*Pedicularis palustris* (Marsh Lousewort)	flowering plant	18/06/1988	Present	MapMate Data (New)	Unassessed
ST061928	1,921	*Lamiastrum galeobdolon subsp. montanum* (Yellow Archangel)	flowering plant	12/05/2012	Present	MapMate Data (New)	Unassessed
ST091928	1,921	*Hypericum pulchrum* (Slender St John's-wort)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST091928	1,921	*Moehringia trinervia* (Three-nerved Sandwort)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST091928	1,921	*Mentha arvensis* (Corn Mint)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST061928	1,921	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	12/05/2012	Present	MapMate Data (New)	Unassessed
ST092927	1,942	*Turdus viscivorus* (Mistle Thrush)	bird	23/06/2003	1	MapMate Data (1v9)	Verified correct
ST06989349	1,961	*Trifolium arvense* (Hare's-foot Clover)	flowering plant	25/07/2015	lots	SEWBReCORD	Unassessed
ST08419348	1,988	*Stellaria neglecta* (Greater Chickweed)	flowering plant	19/04/2020		SEWBReCORD	Unassessed
ST08419348	1,988	*Myosotis ramosissima* (Early Forget-me-not)	flowering plant	19/04/2020		SEWBReCORD	Unassessed
ST092928	2,000	*Narthecium ossifragum* (Bog Asphodel)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST092928	2,000	*Oreopteris limbosperma* (Lemon-scented Fern)	fern	15/06/2014		Glamorgan Botany Group	Unassessed
ST092928	2,000	*Veronica scutellata* (Marsh Speedwell)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST092928	2,000	*Jubula hutchinsiae* (Hutchins' Hollywort)	liverwort	02/05/2016	Present	MapMate Data (New)	Unassessed
ST09469078	2,010	*Myosotis secunda* (Creeping Forget-me-not)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST08909322	2,014	*Myosotis secunda* (Creeping Forget-me-not)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Linum catharticum* (Fairy Flax)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Oreopteris limbosperma* (Lemon-scented Fern)	fern	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Carex panicea* (Carnation Sedge)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Vicia lathyroides* (Spring Vetch)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Eriophorum angustifolium* (Common Cottongrass)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Silene flos-cuculi* (Ragged-Robin)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Luzula pilosa* (Hairy Wood-rush)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Luzula multiflora* (Heath Wood-rush)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Dactylorhiza purpurella* (Northern Marsh-orchid)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Hydrocotyle vulgaris* (Marsh Pennywort)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Myosotis discolor* (Changing Forget-me-not)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Tripleurospermum inodorum* (Scentless Mayweed)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Trichophorum caespitosum* (Deergrass)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Erica tetralix* (Cross-leaved Heath)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Turdus viscivorus* (Mistle Thrush)	bird	28/04/1971		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Carex muricata subsp. muricata* (Large-fruited Prickly-sedge)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Ranunculus omiophyllus* (Round-leaved Crowfoot)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Scutellaria minor* (Lesser Skullcap)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Scutellaria galericulata* (Skullcap)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Carex canescens* (White Sedge)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Aira caryophyllea* (Silver Hair-grass)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Populus nigra* (Black-poplar)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Dactylorhiza maculata subsp. ericetorum* (Heath Spotted-Orchid)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Polygala serpyllifolia* (Heath Milkwort)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Carduus tenuiflorus* (Slender Thistle)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Conopodium majus* (Pignut)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Arenaria serpyllifolia* (Thyme-Leaved Sandwort)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Pedicularis sylvatica* (Lousewort)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Oxalis acetosella* (Wood-sorrel)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Veronica officinalis* (Heath Speedwell)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Vaccinium myrtillus* (Bilberry)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Salmo trutta subsp. fario* (Brown Trout)	bony fish (Actinopterygii)	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Equisetum telmateia* (Great Horsetail)	horsetail	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Saxicola rubetra* (Whinchat)	bird	14/06/1967		Dr Mary Gillham Project records	Unassessed

ST08909322	2,014	*Viola palustris* (Marsh Violet)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Carex flacca* (Glaucous Sedge)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST08909322	2,014	*Epilobium tetragonum* (Square-stalked Willowherb)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST095909	2,025	*Sphagnum teres* (Rigid Bog-moss)	moss	17/10/1975	Present	MapMate Data (New)	Verified correct
ST0992	2,036	*Lejeunea cavifolia* (Micheli's Least Pouncewort)	liverwort	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0893	2,036	*Ardea cinerea* (Grey Heron)	bird	12/05/2009	1	MapMate Data (New)	Verified correct
ST0992	2,036	*Oreopteris limbosperma* (Lemon-scented Fern)	fern	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Colura calyptrifolia* (Fingered Cowlwort)	liverwort	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0992	2,036	*Hygroamblystegium fluviatile* (Brook-side Feather-moss)	moss	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0992	2,036	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	15/06/2014	1	SEWBReCORD	Verified correct
ST0992	2,036	*Dicranum majus* (Greater Fork-moss)	moss	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0992	2,036	*Veronica scutellata* (Marsh Speedwell)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Vaccinium myrtillus* (Bilberry)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Dactylorhiza maculata* (Heath Spotted-orchid)	flowering plant	15/06/2014	20-50	SEWBReCORD	Verified correct
ST0992	2,036	*Viola palustris* (Marsh Violet)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Solidago virgaurea* (Goldenrod)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Anagallis tenella* (Bog Pimpernel)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Oxystegus tenuirostris* (Narrow-fruited Crisp-moss)	moss	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0992	2,036	*Danthonia decumbens* (Heath-grass)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Racomitrium fasciculare* (Green Mountain Fringe-moss)	moss	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0992	2,036	*Pedicularis sylvatica* (Lousewort)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Kindbergia praelonga* (Common Feather-moss)	moss	02/05/2016	Present	MapMate Data (New)	Unassessed
ST0992	2,036	*Conopodium majus* (Pignut)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Trifolium medium* (Zigzag Clover)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST0992	2,036	*Juncus inflexus* (Hard Rush)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Erica tetralix* (Cross-leaved Heath)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Narthecium ossifragum* (Bog Asphodel)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Mentha arvensis* (Corn Mint)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0992	2,036	*Luzula multiflora* (Heath Wood-rush)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST08409354	2,040	*Berula erecta* (Lesser Water-parsnip)	flowering plant	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Filago minima* (Small Cudweed)	flowering plant	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Jasione montana* (Sheep's-bit)	flowering plant	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08409354	2,040	*Silene flos-cuculi* (Ragged-Robin)	flowering plant	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Polygala serpyllifolia* (Heath Milkwort)	flowering plant	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Linum catharticum* (Fairy Flax)	flowering plant	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST08929325	2,050	*Leontodon saxatilis* (Lesser Hawkbit)	flowering plant	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST09499071	2,068	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST09499070	2,073	*Ranunculus omiophyllus* (Round-leaved Crowfoot)	flowering plant	04/05/2019		LERC Wales App (Direct Import)	Unassessed
ST093928	2,081	*Pedicularis sylvatica* (Lousewort)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Narthecium ossifragum* (Bog Asphodel)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Vaccinium myrtillus* (Bilberry)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Erica tetralix* (Cross-leaved Heath)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Dactylorhiza maculata* (Heath Spotted-orchid)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Viola palustris* (Marsh Violet)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Solidago virgaurea* (Goldenrod)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Conopodium majus* (Pignut)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Carex laevigata* (Smooth-stalked Sedge)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Succisa pratensis* (Devil's-bit Scabious)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Eriophorum angustifolium* (Common Cottongrass)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Moehringia trinervia* (Three-nerved Sandwort)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Stachys officinalis* (Betony)	flowering plant	15/06/2014		Glamorgan Botany Group	Unassessed
ST093928	2,081	*Oreopteris limbosperma* (Lemon-scented Fern)	fern	15/06/2014		Glamorgan Botany Group	Unassessed

ST055916	2,100	*Viola palustris* (Marsh Violet)	flowering plant	13/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST055916	2,100	*Viburnum opulus* (Guelder-rose)	flowering plant	13/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST055916	2,100	*Vaccinium myrtillus* (Bilberry)	flowering plant	13/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST055916	2,100	*Danthonia decumbens* (Heath-grass)	flowering plant	13/07/1981	occ (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST055916	2,100	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	13/07/1981	f (DAFOR)	NRW (Cardiff) Wider Countryside	Unassessed
ST0789	2,155	*Turdus viscivorus* (Mistle Thrush)	bird	2 records, between 2010 and 2020	1	SEWBReCORD; MapMate Data (New)	Unassessed
ST0789	2,155	*Ardea cinerea* (Grey Heron)	bird	5 records, between 2010 and 2017	1; 1; 1; 2; 2	Glamorgan Bird Club Records; MapMate Data (New); BirdTrack 2015	Unassessed
ST0789	2,155	*Bombus lucorum* (White-Tailed Bumblebee)	insect - hymenopteran	17/07/2020		SEWBReCORD	Verified correct
ST0789	2,155	*Bombus terrestris* (Buff-Tailed Bumblebee)	insect - hymenopteran	17/07/2020		SEWBReCORD	Verified correct
ST0789	2,155	*Bombus pascuorum* (Common Carder Bee)	insect - hymenopteran	17/07/2020		SEWBReCORD	Verified correct
ST0789	2,155	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	21/06/2001	1 (Adult)	MapMate Data (1cf)	Verified correct
ST0789	2,155	*Saxicola rubetra* (Whinchat)	bird	14/04/1979	1	MapMate Data (1cf)	Verified correct
ST0591	2,155	*Umbilicus rupestris* (Navelwort)	flowering plant	03/03/1971		Dr Mary Gillham Project records	Unassessed
ST0990	2,178	*Saxicola rubetra* (Whinchat)	bird	19/09/2017	1	MapMate Data (New)	Verified correct
ST0990	2,178	*Turdus viscivorus* (Mistle Thrush)	bird	2 records, both from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0990	2,178	*Ceratocapnos claviculata* (Climbing Corydalis)	flowering plant	1970 - 1975		Dr Mary Gillham Project records	Unassessed
ST0990	2,178	*Vaccinium myrtillus* (Bilberry)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0990	2,178	*Polystichum setiferum* (Soft Shield-fern)	fern	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0990	2,178	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0693	2,179	*Cordulegaster boltonii* (Golden-ringed Dragonfly)	insect - dragonfly (Odonata)	24/07/2001	2 (Adult)	MapMate Data (1cf)	Verified correct
ST0693	2,179	*Turdus viscivorus* (Mistle Thrush)	bird	09/07/1992	21	MapMate Data (1cf)	Verified correct
ST0889	2,312	*Chloris chloris* (Greenfinch)	bird	4 records, all from 2015		Glamorgan Bird Club Records; BirdTrack 2015	Unassessed
ST0889	2,312	*Ardea cinerea* (Grey Heron)	bird	4 records, all from 2015		BirdTrack 2015; Glamorgan Bird Club Records	Unassessed
ST0592	2,312	*Chloris chloris* (Greenfinch)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0689	2,438	*Moehringia trinervia* (Three-nerved Sandwort)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0689	2,438	*Chloris chloris* (Greenfinch)	bird	4 records, all from 2010	2; 2; 2; 2	MapMate Data (New)	Verified correct
ST0590	2,438	*Hypericum pulchrum* (Slender St John's-wort)	flowering plant	17/09/2011	Present	MapMate Data (New)	Unassessed
ST0689	2,438	*Ardea cinerea* (Grey Heron)	bird	2 records, both from 2010	1; 1	MapMate Data (New)	Verified correct
ST0689	2,438	*Calliergonella lindbergii* (Lindberg's Plait-moss)	moss	09/09/2017	Present	MapMate Data (New)	Unassessed
ST0689	2,438	*Kindbergia praelonga* (Common Feather-moss)	moss	2 records, both from 2017	Present	MapMate Data (New); SEWBReCORD	Unassessed
ST0689	2,438	*Turdus viscivorus* (Mistle Thrush)	bird	20/04/2017	1	Glamorgan Bird Club Records	Unassessed
ST0689	2,438	*Viburnum opulus* (Guelder-rose)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0689	2,438	*Cornus sanguinea* (Dogwood)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0590	2,438	*Anagallis tenella* (Bog Pimpernel)	flowering plant	17/09/2011	Present	MapMate Data (New)	Unassessed
ST0689	2,438	*Lysimachia nemorum* (Yellow Pimpernel)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0689	2,438	*Veronica montana* (Wood Speedwell)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0993	2,616	*Hypnum cupressiforme var. lacunosum* (Roof Plait-moss)	moss	04/02/2016	Frequent	MapMate Data (New)	Unassessed
ST0993	2,616	*Racomitrium ericoides* (Dense Fringe-moss)	moss	04/02/2016	Abundant	MapMate Data (New)	Unassessed
ST0993	2,616	*Cephaloziella divaricata* (Common Threadwort)	liverwort	04/02/2016	Present	MapMate Data (New)	Unassessed

INVASIVE NON-NATIVE SPECIES WITHIN SEARCH AREA

Grid Ref.	Dist. (m)	Scientific Name	Taxon Group	Date	Abundance	Source	Verification
ST0791	212	*Hyacinthoides hispanica* (Spanish Bluebell)	flowering plant	23/03/2019		SEWBReCORD	Unassessed
ST0791	212	*Sciurus carolinensis* (Grey Squirrel)	terrestrial mammal	August 1992 - February 1994		Dr Mary Gillham Project records	Unassessed
ST0783591840	265	*Sciurus carolinensis* (Grey Squirrel)	terrestrial mammal	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Fallopia japonica* (Japanese Knotweed)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST0783591840	265	*Epilobium brunnescens* (New Zealand Willowherb)	flowering plant	01/08/2009		David Clements Ecology	Unassessed
ST07669135	295	*Crocosmia pottsii x aurea = C. x crocosmiiflora* (Montbretia)	flowering plant	22/01/1987		Dr Mary Gillham Project records	Unassessed
ST075910	608	*Crocosmia pottsii x aurea = C. x crocosmiiflora* (Montbretia)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed
ST075910	608	*Lamiastrum galeobdolon subsp. argentatum* (Variegated Yellow Archangel)	flowering plant	28/05/2018	Present	MapMate Data (New)	Unassessed

ST071910	781	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	21/06/2019		LERC Wales App (Direct Import)	Unassessed
ST0822791114	787	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2013		South Wales Trunk Roads Agency TO81	Unassessed
ST0822591110	789	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2013		South Wales Trunk Roads Agency TO81	Unassessed
ST085919	949	*Fallopia japonica* (Japanese Knotweed)	flowering plant	20/08/2014		SEWBReCORD	Unassessed
ST085919	949	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	20/08/2014		SEWBReCORD	Unassessed
ST08469216	964	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08469216	964	*Fallopia japonica* (Japanese Knotweed)	flowering plant	17/07/1971		Dr Mary Gillham Project records	Unassessed
ST0782690668	997	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2013		South Wales Trunk Roads Agency TO81	Unassessed
ST08119253	1,000	*Fallopia japonica* (Japanese Knotweed)	flowering plant	30/07/2015	lots	SEWBReCORD	Unassessed
ST0864392069	1,078	*Fallopia japonica* (Japanese Knotweed)	flowering plant	09/03/2014		Plant Tracker	Verified correct
ST082925	1,082	*Fallopia japonica* (Japanese Knotweed)	flowering plant	12/02/1998	p	EA River Habitat Survey Data	Unassessed
ST084924	1,132	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	20/05/2010 - 07/07/2010		Capita Symonds Data	Unassessed
ST079927	1,140	*Fallopia japonica* (Japanese Knotweed)	flowering plant	13/02/1998	p	EA River Habitat Survey Data	Unassessed
ST0761490510	1,140	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2013		South Wales Trunk Roads Agency TO81	Unassessed
ST0823892633	1,146	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	31/08/2014		Plant Tracker	Verified correct
ST0790	1,160	*Prunus laurocerasus* (Cherry Laurel)	flowering plant	08/10/2016	Present	MapMate Data (New)	Unassessed
ST0830792632	1,182	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	30/08/2014		Plant Tracker	Verified correct
ST0830992743	1,276	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	01/10/2014		Plant Tracker	Verified correct
ST08669248	1,314	*Fallopia japonica* (Japanese Knotweed)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08669248	1,314	*Mimulus guttatus* (Monkeyflower)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST08669248	1,314	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	06/07/1971 - 17/07/1971		Dr Mary Gillham Project records	Unassessed
ST074903	1,315	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	13/06/2020		LERC Wales App (Direct Import)	Unassessed
ST07359036	1,318	*Fallopia japonica* (Japanese Knotweed)	flowering plant	August 2015	1	SoltysBrewster Records	Unassessed
ST07359036	1,318	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	August 2015	1	SoltysBrewster Records	Unassessed
ST0824292855	1,343	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	01/10/2014		Plant Tracker	Verified correct
ST0658290704	1,427	*Fallopia japonica* (Japanese Knotweed)	flowering plant	12/05/2008		Merlin Bio-Surveys Records	Unassessed
ST0890	1,430	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	13/03/2016	Present	MapMate Data (New)	Unassessed
ST0890	1,430	*Prunus laurocerasus* (Cherry Laurel)	flowering plant	13/03/2016	Present	MapMate Data (New)	Unassessed
ST0778193075	1,431	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	16/10/2018		iRecord	Verified correct
ST073902	1,432	*Fallopia japonica* (Japanese Knotweed)	flowering plant	12/02/1998	p	EA River Habitat Survey Data	Unassessed
ST0630791129	1,440	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	2 records, both from 2013		iRecord	Verified correct
ST071902	1,486	*Cotoneaster horizontalis* (Wall Cotoneaster)	flowering plant	21/10/2011	Rare	MapMate Data (New)	Verified correct
ST07719314	1,497	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	2 records, both from 2020	one; one	SEWBReCORD	Verified correct
ST067928	1,500	*Fallopia japonica* (Japanese Knotweed)	flowering plant	24/06/1996	p	EA River Habitat Survey Data	Unassessed
ST08099019	1,521	*Prunus laurocerasus* (Cherry Laurel)	flowering plant	08/10/2016	Present	MapMate Data (New)	Unassessed
ST08699276	1,528	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	19/04/2020	10's	SEWBReCORD	Verified correct
ST079901	1,529	*Elodea canadensis* (Canadian Waterweed)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST079901	1,529	*Fallopia japonica* (Japanese Knotweed)	flowering plant	Summer 1971		Dr Mary Gillham Project records	Unassessed
ST0887692586	1,543	*Fallopia japonica* (Japanese Knotweed)	flowering plant	08/06/2018		Plant Tracker	Unassessed
ST0789290124	1,545	*Fallopia japonica* (Japanese Knotweed)	flowering plant	12/05/2018		Plant Tracker	Unassessed
ST07899011	1,554	*Fallopia japonica* (Japanese Knotweed)	flowering plant	31/05/1991		Dr Mary Gillham Project records	Unassessed
ST07899011	1,554	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	31/05/1991		Dr Mary Gillham Project records	Unassessed
ST07899011	1,554	*Cotoneaster bullatus* (Hollyberry Cotoneaster)	flowering plant	31/05/1991		Dr Mary Gillham Project records	Unassessed
ST088926	1,562	*Fallopia japonica* (Japanese Knotweed)	flowering plant	03/06/2010		Capita Symonds Data	Unassessed
ST088926	1,562	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	03/06/2010		Capita Symonds Data	Unassessed
ST066928	1,562	*Fallopia japonica* (Japanese Knotweed)	flowering plant	13/02/1998	p	EA River Habitat Survey Data	Unassessed
ST07909010	1,566	*Elodea canadensis* (Canadian Waterweed)	flowering plant	2 records, between 1979 and 1988		Dr Mary Gillham Project records	Unassessed
ST07909010	1,566	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	09/08/1988		Dr Mary Gillham Project records	Unassessed
ST067903	1,581	*Potamopyrgus antipodarum* (Jenkins' Spire Snail)	mollusc	Summer 1969		Dr Mary Gillham Project records	Unassessed
ST089925	1,581	*Fallopia japonica* (Japanese Knotweed)	flowering plant	03/06/2010		Capita Symonds Data	Unassessed
ST075900	1,603	*Sciurus carolinensis* (Grey Squirrel)	terrestrial mammal	23/09/2020		LERC Wales App (Direct Import)	Unassessed
ST075900	1,603	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	13/06/2020		LERC Wales App (Direct Import)	Unassessed
ST0636390688	1,607	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	16 records, between 2013 and 2019		iRecord	Verified correct
ST068902	1,612	*Sciurus carolinensis* (Grey Squirrel)	terrestrial mammal	2 records, both from 2007	2 (Adult)	Richard Dodd Wales Mammal Records	Unassessed
ST090924	1,613	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	13/05/2015		Liam Olds Colliery Spoil Project Records	Unassessed
ST08339312	1,626	*Fallopia japonica* (Japanese Knotweed)	flowering plant	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST0690	1,626	*Branta canadensis* (Canada Goose)	bird	10/05/2010	5	MapMate Data (New)	Unassessed
ST08339312	1,626	*Myriophyllum aquaticum* (Parrot's-feather)	flowering plant	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST08339312	1,626	*Lagarosiphon major* (Curly Waterweed)	flowering plant	31/05/1994		Dr Mary Gillham Project records	Unassessed
ST07518999	1,660	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	19/11/2009	50	SEWBReCORD	Unassessed
ST0895592677	1,661	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	2 records, both from 2011	p; p (Adult)	Misc Records by Christian Owen; Christian Owen	Unassessed
ST0854493066	1,675	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	13/06/2018		Plant Tracker	Unassessed
ST081900	1,676	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	May 1995		Dr Mary Gillham Project records	Unassessed
ST0854293073	1,680	*Fallopia japonica* (Japanese Knotweed)	flowering plant	13/06/2018		Plant Tracker	Unassessed
ST0898092707	1,699	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	08/06/2018		Plant Tracker	Unassessed

ST090926	1,721	*Fallopia japonica* (Japanese Knotweed)	flowering plant	03/06/2010		Capita Symonds Data	Unassessed
ST064903	1,769	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	15/04/2010	Locally Abundant	MapMate Data (New)	Verified correct
ST0794689906	1,769	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2013		South Wales Trunk Roads Agency TO81	Unassessed
ST064903	1,769	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2 records, both from 2010	Abundant; Occasional	MapMate Data (New)	Verified correct
ST0795189905	1,771	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2013		South Wales Trunk Roads Agency TO81	Unassessed
ST081899	1,772	*Planaria torva* (Planaria torva)	flatworm (Turbellaria)	13/09/1974 - 20/09/1974		Dr Mary Gillham Project records	Unassessed
ST081899	1,772	*Potamopyrgus antipodarum* (Jenkins' Spire Snail)	mollusc	13/09/1974 - 20/09/1974		Dr Mary Gillham Project records	Unassessed
ST08068992	1,774	*Fallopia japonica* (Japanese Knotweed)	flowering plant	15/11/1974		Dr Mary Gillham Project records	Unassessed
ST08068992	1,774	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	2 records, both from 1974		Dr Mary Gillham Project records	Unassessed
ST08068992	1,774	*Potamopyrgus antipodarum* (Jenkins' Spire Snail)	mollusc	13/11/1974		Dr Mary Gillham Project records	Unassessed
ST090927	1,781	*Neovison vison* (American Mink)	terrestrial mammal	03/06/2010 - 30/09/2010		Capita Symonds Data	Unassessed
ST068900	1,789	*Fallopia japonica* (Japanese Knotweed)	flowering plant	11/02/1997	p	EA River Habitat Survey Data	Unassessed
ST07118993	1,796	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	09/10/2015		iRecord	Verified correct
ST076898	1,800	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	2 records, both from 2020	6 to 20; 6 to 20	LERC Wales App (Direct Import)	Unassessed
ST07128992	1,803	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	07/01/2016	200	SEWBReCORD	Unassessed
ST070899	1,803	*Leycesteria formosa* (Himalayan Honeysuckle)	flowering plant	21/10/2011	Rare	MapMate Data (New)	Verified correct
ST070899	1,803	*Cotoneaster simonsii* (Himalayan Cotoneaster)	flowering plant	21/10/2011	Rare	MapMate Data (New)	Verified correct
ST0684490035	1,805	*Crocosmia pottsii x aurea = C. x crocosmiiflora* (Montbretia)	flowering plant	18/11/2016		Just Mammals	Unassessed
ST0684490035	1,805	*Fallopia japonica* (Japanese Knotweed)	flowering plant	18/11/2016		Just Mammals	Unassessed
ST0684490035	1,805	*Prunus laurocerasus* (Cherry Laurel)	flowering plant	18/11/2016		Just Mammals	Unassessed
ST06899000	1,810	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	12/04/2013		Just Mammals	Unassessed
ST06899000	1,810	*Fallopia japonica* (Japanese Knotweed)	flowering plant	12/04/2013		Just Mammals	Unassessed
ST07488984	1,812	*Harmonia axyridis* (Harlequin Ladybird)	insect - beetle (Coleoptera)	17/05/2014		iRecord	Verified correct
ST0850993254	1,820	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	13/06/2018		Plant Tracker	Unassessed
ST069899	1,838	*Neovison vison* (American Mink)	terrestrial mammal	26/06/2013		Just Mammals	Unassessed
ST0991	1,856	*Epilobium brunnescens* (New Zealand Willowherb)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST065931	1,860	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	24/04/2016	Present	MapMate Data (New)	Unassessed
ST065931	1,860	*Fallopia japonica* (Japanese Knotweed)	flowering plant	24/04/2016	Present	MapMate Data (New)	Verified correct
ST0844593369	1,894	*Heracleum mantegazzianum* (Giant Hogweed)	flowering plant	02/07/2018		Plant Tracker	Unassessed
ST06878991	1,900	*Neovison vison* (American Mink)	terrestrial mammal	25/11/2015		SEWBReCORD	Unassessed
ST09W	1,909	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	3 records, between 1988 and 2004	Present; Present; Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Fallopia japonica* (Japanese Knotweed)	flowering plant	2 records, between 1988 and 2004	Present; Present	MapMate Data (New)	Verified correct
ST09W	1,909	*Epilobium brunnescens* (New Zealand Willowherb)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST09W	1,909	*Crocosmia pottsii x aurea = C. x crocosmiiflora* (Montbretia)	flowering plant	2004	Present	MapMate Data (New)	Unassessed
ST0840293409	1,913	*Fallopia japonica* (Japanese Knotweed)	flowering plant	13/06/2018		Plant Tracker	Unassessed
ST059906	1,972	*Sciurus carolinensis* (Grey Squirrel)	terrestrial mammal	2010		People's Trust for Endangered Species	Unassessed
ST0644893222	1,979	*Fallopia japonica* (Japanese Knotweed)	flowering plant	30/08/2012		Plant Tracker	Verified correct
ST062930	1,980	*Fallopia japonica* (Japanese Knotweed)	flowering plant	16/08/2010		Capita Symonds Data	Unassessed
ST08909322	2,014	*Epilobium brunnescens* (New Zealand Willowherb)	flowering plant	14/06/1967		Dr Mary Gillham Project records	Unassessed
ST0992	2,036	*Fallopia japonica* (Japanese Knotweed)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST0893	2,036	*Neovison vison* (American Mink)	terrestrial mammal	12/05/2009	2	MapMate Data (New)	Verified correct
ST0992	2,036	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	15/06/2014		SEWBReCORD	Verified correct
ST08409354	2,040	*Fallopia japonica* (Japanese Knotweed)	flowering plant	06/07/1971		Dr Mary Gillham Project records	Unassessed
ST061930	2,052	*Fallopia japonica* (Japanese Knotweed)	flowering plant	16/08/2010		Capita Symonds Data	Unassessed
ST06009040	2,063	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	04/06/1992 - 05/06/1992		NRW (Cardiff) Wider Countryside	Unassessed
ST0789	2,155	*Branta canadensis* (Canada Goose)	bird	17/07/2020		SEWBReCORD	Unassessed
ST0789	2,155	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	17/07/2020		SEWBReCORD	Unassessed
ST0990	2,178	*Epilobium brunnescens* (New Zealand Willowherb)	flowering plant	05/03/2013	Present	MapMate Data (New)	Unassessed
ST0689	2,438	*Impatiens glandulifera* (Himalayan Balsam)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0689	2,438	*Cotoneaster simonsii* (Himalayan Cotoneaster)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0689	2,438	*Fallopia japonica* (Japanese Knotweed)	flowering plant	09/09/2017		SEWBReCORD	Verified correct
ST0689	2,438	*Cotoneaster horizontalis* (Wall Cotoneaster)	flowering plant	09/09/2017		SEWBReCORD	Verified correct

Species List & Statuses

Unique species within this report are listed below along with their full statuses.

PRIORITY SPECIES

Scientific Name	Common Name	Category	Status
Acanthis cabaret	Lesser Redpoll	Priority Species (CAT1)	S7, WBR(RSPB), LBAP (CON), LBAP (DEN, POW, VOG), UKBR(RSPB)
Accipiter gentilis	Goshawk	Priority Species (CAT1)	WCA1.1, WCA9, CITES, LBAP (CLY, CON, POW, VOG)
Acronicta psi	Grey Dagger	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Acronicta rumicis	Knot Grass	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Agrochola helvola	Flounced Chestnut	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Alauda arvensis	Skylark	Priority Species (CAT1)	BDir22, S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG), WBAm(RSPB), UKBR(RSPB)
Alcedo atthis	Kingfisher	Priority Species (CAT1)	BDir1, WCA1.1, Bern, LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA), WBAm(RSPB), UKBAm(RSPB)
Amphipoea oculea	Ear Moth	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Amphipyra tragopoginis	Mouse Moth	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Anguilla anguilla	Eel	Priority Species (CAT1)	S7, RDB1 (UK) - CR, LBAP (CLY, CON, GWY, VOG)
Anguis fragilis	Slow-worm	Priority Species (CAT1)	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, VOG)
Anthus trivialis	Tree Pipit	Priority Species (CAT1)	S7, Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB), UKBR(RSPB)
Apamea remissa	Dusky Brocade	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Arctia caja	Garden Tiger	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Atethmia centrago	Centre-barred Sallow	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Boloria euphrosyne	Pearl-bordered Fritillary	Priority Species (CAT1)	WCA5, S7, RDB1 (UK) - EN, LBAP (BBNP, CER, CON, DEN, FLI, PEM, POW), LI(SEWBReC), LI(VC43)
Boloria selene	Small Pearl-bordered Fritillary	Priority Species (CAT1)	S7, RDB1 (UK) - NT, LBAP (BGW, BRG, CON, DEN, FLI, GWY, MTR, NEW, POW, RCT, SNP, SWN, TRF, VOG), LI(SEWBReC), LI(VC43)
Bombus humilis	Brown-banded Carder-bee	Priority Species (CAT1)	S7, LBAP (CER, CON, FLI, GWY, PEM, POW, VOG)
Bufo bufo	Common Toad	Priority Species (CAT1)	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, TRA, VOG)
Caradrina morpheus	Mottled Rustic	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Ceramica pisi	Broom Moth	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Chiroptera	Unknown Bat	Priority Species (CAT1)	EPS, WCA5, LBAP (ANG, DEN, FLI, RCT, SNP, TRA, TRF)
Chroicocephalus ridibundus	Black-headed Gull	Priority Species (CAT1)	BDir22, S7, WBR(RSPB), LBAP (GWY, VOG), UKBAm(RSPB)
Cirrhia icteritia	Sallow	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Coenonympha pamphilus	Small Heath	Priority Species (CAT1)	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
Cossus cossus	Goat Moth	Priority Species (CAT1)	S7, LBAP (BRG, NEW, POW)
Cuculus canorus	Cuckoo	Priority Species (CAT1)	S7, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, VOG), UKBR(RSPB)
Dendrocopos minor	Lesser Spotted Woodpecker	Priority Species (CAT1)	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)
Diarsia rubi	Small Square-spot	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Ecliptopera silaceata	Small Phoenix	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Emberiza citrinella	Yellowhammer	Priority Species (CAT1)	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, VOG), UKBR(RSPB)
Emberiza schoeniclus	Reed Bunting	Priority Species (CAT1)	S7, Bern, LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), WBAm(RSPB), UKBAm(RSPB)
Ennomos fuscantaria	Dusky Thorn	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Ennomos quercinaria	August Thorn	Priority Species (CAT1)	S7, LBAP (GWY, VOG), LI(BIS)
Epirrhoe galiata	Galium Carpet	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Erinaceus europaeus	Hedgehog	Priority Species (CAT1)	S7, Bern, LBAP (ANG, BGW, BRG, CON, FLI, GWY, NEW, POW, RCT, VOG)
Erynnis tages	Dingy Skipper	Priority Species (CAT1)	S7, RDB1 (UK) - VU, LBAP (BGW, BRG, CON, FLI, GWY, SWN, VOG), LI(SEWBReC)
Eugnorisma glareosa	Autumnal Rustic	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Euphydryas aurinia	Marsh Fritillary	Priority Species (CAT1)	HDir, WCA5, S7, Bern, RDB1 (UK) - VU, LBAP (ANG, BBNP, CER, CON, CRM, GWY, PEM, POW, SNP, TRA, VOG), LI(SEWBReC)
Euxoa nigricans	Garden Dart	Priority Species (CAT1)	S7, LBAP (GWY)
Falco columbarius	Merlin	Priority Species (CAT1)	BDir1, WCA1.1, Bern, CITES, LBAP (CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBR(RSPB)
Falco peregrinus	Peregrine	Priority Species (CAT1)	BDir1, WCA1.1, Bern, CITES, LBAP (ANG, CLY, CON, GWY, PEM, POW, TRF, VOG), LI(VC43)
Falco subbuteo	Hobby	Priority Species (CAT1)	WCA1.1, Bern, CITES, LBAP (CON, GWY, POW, VOG), WBAm(RSPB), LI(VC43)
Falco tinnunculus	Kestrel	Priority Species (CAT1)	S7, Bern, CITES, WBR(RSPB), LBAP (ANG, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), LI(VC43), UKBAm(RSPB)
Ficedula hypoleuca	Pied Flycatcher	Priority Species (CAT1)	S7, WBR(RSPB), LBAP (CON, GWY, POW, SNP, VOG), UKBR(RSPB)
Fringilla montifringilla	Brambling	Priority Species (CAT1)	WCA1.1, LBAP (CON)
Helotropha leucostigma	Crescent	Priority Species (CAT1)	S7, LI(BIS)
Hipparchia semele	Grayling	Priority Species (CAT1)	S7, RDB1 (UK) - VU, LBAP (BRG, CDF, GWY, RCT, VOG), LI(SEWBReC), LI(VC43)
Hoplodrina blanda	Rustic	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Hyacinthoides non-scripta	Bluebell	Priority Species (CAT1)	WCA8, LBAP (ANG, CLY, CON, FLI, SNP, TRA, TRF)
Hydraecia micacea	Rosy Rustic	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Ixobrychus minutus	Little Bittern	Priority Species (CAT1)	BDir1, WCA1.1, Bern
Larus argentatus	Herring Gull	Priority Species (CAT1)	BDir22, S7, WBR(RSPB), LBAP (CON, GWY, POW, VOG), UKBR(RSPB)
Larus melanocephalus	Mediterranean Gull	Priority Species (CAT1)	BDir1, WCA1.1, Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)
Lasiommata megera	Wall	Priority Species (CAT1)	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
Lepus europaeus	Hare	Priority Species (CAT1)	S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG)
Leucania comma	Shoulder-striped Wainscot	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Linaria cannabina	Linnet	Priority Species (CAT1)	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, DEN, FLI, PEM, VOG), LBAP (CON, GWY), UKBR(RSPB)
Lissotriton helveticus	Palmate Newt	Priority Species (CAT1)	WCA5, Bern, LBAP (ANG, CLY, CON, DEN, FLI, POW, TRA), LI(BIS)
Loxia curvirostra	Common Crossbill	Priority Species (CAT1)	WCA1.1, Bern, LBAP (CON, POW), LI(VC43)

Lutra lutra	Otter	Priority Species (CAT1)	EPS, HDir, WCA5, S7, Bern, CITES, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG, WRE)
Lycia hirtaria	Brindled Beauty	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Melanchra persicariae	Dot Moth	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Meles meles	Badger	Priority Species (CAT1)	BA, Bern, LBAP (CLY, CON, DEN, FLI, PEM, POW, TRF, WRE)
Milvus milvus	Red Kite	Priority Species (CAT1)	BDir1, WCA1.1, WCA9, CITES, LBAP (CON, CRM, GWY, POW), WBAm(RSPB)
Mniotype adusta	Dark Brocade	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Motacilla flava	Yellow Wagtail	Priority Species (CAT1)	S7, Bern, WBR(RSPB), LBAP (CON, DEN, FLI, POW, TRA, VOG), LI(VC43), UKBR(RSPB)
Muscicapa striata	Spotted Flycatcher	Priority Species (CAT1)	S7, Bern, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), UKBR(RSPB)
Mustela putorius	Polecat	Priority Species (CAT1)	HDir, S7, Bern, RDB2 (UK), LBAP (BGW, BRG, CON, FLI, GWY, NEW, POW, SNP, VOG)
Myotis daubentonii	Daubenton's Bat	Priority Species (CAT1)	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF)
Myotis mystacinus	Whiskered Bat	Priority Species (CAT1)	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, DEN, FLI, GWY, POW, SNP, TRA, TRF)
Myotis	Myotis Bat Species	Priority Species (CAT1)	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Natrix helvetica	Grass Snake	Priority Species (CAT1)	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, VOG), LBAP (ANG, CLY, DEN, FLI, POW, SNP, TRA, VOG)
Nyctalus noctula	Noctule Bat	Priority Species (CAT1)	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
Orthosia gracilis	Powdered Quaker	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Pandion haliaetus	Osprey	Priority Species (CAT1)	BDir1, WCA1.1, CITES, LBAP (GWY), WBAm(RSPB), UKBAm(RSPB)
Passer domesticus	House Sparrow	Priority Species (CAT1)	S7, LBAP (CLY, CON, FLI, GWY, VOG), WBAm(RSPB), UKBR(RSPB)
Perdix perdix	Grey Partridge	Priority Species (CAT1)	BDir21, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, DEN, FLI, GWY, POW, TRF, VOG), LI(VC43), UKBR(RSPB)
Phylloscopus sibilatrix	Wood Warbler	Priority Species (CAT1)	S7, WBR(RSPB), LBAP (CON, GWY, SNP, VOG), UKBR(RSPB)
Pipistrellus nathusii	Nathusius's Pipistrelle	Priority Species (CAT1)	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Pipistrellus pipistrellus agg.	Pipistrelle agg.	Priority Species (CAT1)	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Pipistrellus pipistrellus	Common Pipistrelle	Priority Species (CAT1)	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Pipistrellus pygmaeus	Soprano Pipistrelle	Priority Species (CAT1)	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Pipistrellus	Pipistrellus Bat Species	Priority Species (CAT1)	EPS, WCA5, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Plecotus auritus	Brown Long-eared Bat	Priority Species (CAT1)	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
Plecotus	Long-eared Bat Species	Priority Species (CAT1)	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Poecile montana	Willow Tit	Priority Species (CAT1)	S7, Bern, WBR(RSPB), LBAP (BBNP, DEN, FLI, POW, VOG), LBAP (CON, GWY), LI(VC43), UKBR(RSPB)
Poecile palustris	Marsh Tit	Priority Species (CAT1)	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)
Prunella modularis	Dunnock	Priority Species (CAT1)	S7, Bern, LBAP (CON, POW, VOG), UKBAm(RSPB)
Pyrrhula pyrrhula	Bullfinch	Priority Species (CAT1)	S7, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, TRF, VOG), UKBAm(RSPB)
Rana temporaria	Common Frog	Priority Species (CAT1)	HDir, WCA5, Bern, LBAP (ANG, CLY, CON, FLI, POW, TRA)
Satyrium w-album	White-letter Hairstreak	Priority Species (CAT1)	WCA5, S7, RDB1 (UK) - EN, LBAP (BRG, FLI, NEW, SWN, VOG), LI(SEWBReC)
Scotopteryx chenopodiata	Shaded Broad-bar	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Spilosoma lubricipeda	White Ermine	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Spilosoma lutea	Buff Ermine	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Stilbia anomala	Anomalous	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Sturnus vulgaris	Starling	Priority Species (CAT1)	BDir22, S7, Bern, WBR(RSPB), LBAP (BBNP, CON, FLI, GWY, VOG), UKBR(RSPB)
Tholera cespitis	Hedge Rustic	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Timandra comae	Blood-vein	Priority Species (CAT1)	S7, LBAP (VOG)
Turdus iliacus	Redwing	Priority Species (CAT1)	BDir22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)
Turdus philomelos	Song Thrush	Priority Species (CAT1)	BDir22, S7, Bern, LBAP (ANG, BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG, WRE), WBAm(RSPB), UKBR(RSPB)
Turdus pilaris	Fieldfare	Priority Species (CAT1)	BDir22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)
Tyria jacobaeae	Cinnabar	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Tyto alba	Barn Owl	Priority Species (CAT1)	WCA1.1, WCA9, Bern, CITES, LBAP (ANG, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, VOG, WRE), WBAm(RSPB), LI(VC43)
Vanellus vanellus	Lapwing	Priority Species (CAT1)	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRF, VOG), LI(VC43), UKBR(RSPB)
Vipera berus	Adder	Priority Species (CAT1)	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
Watsonalla binaria	Oak Hook-tip	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Xanthorhoe ferrugata	Dark-barred Twin-spot Carpet	Priority Species (CAT1)	S7, LBAP (GWY, VOG)
Xestia agathina	Heath Rustic	Priority Species (CAT1)	S7, LBAP (BRG, GWY)
Xestia castanea	Neglected Rustic	Priority Species (CAT1)	S7, LBAP (GWY)
Zootoca vivipara	Common Lizard	Priority Species (CAT1)	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)

SPECIES OF CONSERVATION CONCERN

Scientific Name	Common Name	Category	Status
Adiantum capillus-veneris	Maidenhair Fern	Species of Conservation Concern (CAT2)	RDB2 (UK) - S, LBAP (VOG), LI(SEWBReC)
Aegithalos caudatus	Long-tailed Tit	Species of Conservation Concern (CAT2)	WBAm(RSPB)
Anas platyrhynchos	Mallard	Species of Conservation Concern (CAT2)	BDir21, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)
Andrena humilis	Buff-tailed Mining Bee	Species of Conservation Concern (CAT2)	RDB2 (UK) - NB
Anoscopus albifrons	Anoscopus albifrons	Species of Conservation Concern (CAT2)	RDB2 (UK) - NB
Anthus pratensis	Meadow Pipit	Species of Conservation Concern (CAT2)	Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)
Apus apus	Swift	Species of Conservation Concern (CAT2)	LBAP (BRG, RCT, VOG), WBAm(RSPB), UKBAm(RSPB)
Brassica oleracea	Wild Cabbage	Species of Conservation Concern (CAT2)	RDB2 (UK) - S, LBAP (ANG, CON, VOG), LI(SEWBReC), LI(VC47), LI(VC49, LS), LI(VC50, LR), LI(VC52, LS)
Cinclus cinclus	Dipper	Species of Conservation Concern (CAT2)	Bern, LBAP (BRG, CLY, CON, MTR, POW, RCT, TRA), WBAm(RSPB), UKBAm(RSPB)
Delichon urbicum	House Martin	Species of Conservation Concern (CAT2)	Bern, LBAP (BRG, CON, POW, RCT, VOG), WBAm(RSPB), UKBAm(RSPB)

Gallinago gallinago	Snipe	Species of Conservation Concern (CAT2)	BDir21, LBAP (ANG, CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBAm(RSPB)
Haematopus ostralegus	Oystercatcher	Species of Conservation Concern (CAT2)	BDir22, LBAP (CON, GWY), WBAm(RSPB), LI(VC43), UKBAm(RSPB)
Hirundo rustica	Swallow	Species of Conservation Concern (CAT2)	Bern, LBAP (ANG, CON, GWY, POW, VOG), WBAm(RSPB)
Illosporiopsis christiansenii	Illosporiopsis christiansenii	Species of Conservation Concern (CAT2)	RDB2 (UK) - S
Larus fuscus	Lesser Black-backed Gull	Species of Conservation Concern (CAT2)	BDir22, LBAP (CON, GWY, PEM, POW, SNP), WBAm(RSPB), UKBAm(RSPB)
Larus marinus	Great Black-backed Gull	Species of Conservation Concern (CAT2)	BDir22, WBR(RSPB), UKBAm(RSPB)
Lymnocryptes minimus	Jack Snipe	Species of Conservation Concern (CAT2)	BDir21, LBAP (CON, POW), WBAm(RSPB)
Monosapyga clavicornis	Monosapyga clavicornis	Species of Conservation Concern (CAT2)	RDB2 (UK) - NB
Oenanthe oenanthe	Wheatear	Species of Conservation Concern (CAT2)	Bern, LBAP (BRG, CON, POW), WBAm(RSPB)
Periparus ater	Coal Tit	Species of Conservation Concern (CAT2)	Bern, LBAP (CON, POW), WBAm(RSPB)
Phalacrocorax carbo	Cormorant	Species of Conservation Concern (CAT2)	LBAP (CON, GWY, POW), WBAm(RSPB)
Phoenicurus phoenicurus	Redstart	Species of Conservation Concern (CAT2)	Bern, LBAP (CON, GWY, POW, SNP), WBAm(RSPB), UKBAm(RSPB)
Phylloscopus trochilus	Willow Warbler	Species of Conservation Concern (CAT2)	WBR(RSPB), LBAP (CON), UKBAm(RSPB)
Picus viridis	Green Woodpecker	Species of Conservation Concern (CAT2)	Bern, LBAP (CLY, CON, DEN, FLI, GWY, PEM, POW, SNP), WBAm(RSPB)
Polydrusus formosus	Polydrusus formosus	Species of Conservation Concern (CAT2)	RDB2 (UK) - NA
Regulus regulus	Goldcrest	Species of Conservation Concern (CAT2)	Bern, LBAP (CON, POW), WBAm(RSPB)
Riparia riparia	Sand Martin	Species of Conservation Concern (CAT2)	Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB)
Sagittaria sagittifolia	Arrowhead	Species of Conservation Concern (CAT2)	RDB1 (Wales) - VU, LI(SEWBReC)
Schistidium elegantulum	Elegant Grimmia	Species of Conservation Concern (CAT2)	RDB1 (Wales) - WL, LI(VC45, LR), LI(WWBIC)
Sibthorpia europaea	Cornish Moneywort	Species of Conservation Concern (CAT2)	RDB2 (UK) - S, LBAP (BGW, CDF, CLY, RCT), LI(SEWBReC)
Sonchus palustris	Marsh Sow-thistle	Species of Conservation Concern (CAT2)	RDB2 (UK) - S
Sylvia borin	Garden Warbler	Species of Conservation Concern (CAT2)	LBAP (BRG, CON, POW), WBAm(RSPB)
Sylvia communis	Whitethroat	Species of Conservation Concern (CAT2)	LBAP (CON, POW), WBAm(RSPB)

LOCALLY IMPORTANT SPECIES

Scientific Name	Common Name	Category	Status
Acasis viretata	Yellow-barred Brindle	Locally Important Species (CAT3)	LI(BIS)
Acer campestre	Field Maple	Locally Important Species (CAT3)	LI(VC48, LS), LI(VC49, LS)
Agrimonia eupatoria	Agrimony	Locally Important Species (CAT3)	LI(VC47)
Aira caryophyllea	Silver Hair-grass	Locally Important Species (CAT3)	LI(VC47)
Alchemilla vulgaris agg.	Lady's-Mantle agg.	Locally Important Species (CAT3)	LI(VC47)
Allium ursinum	Ramsons	Locally Important Species (CAT3)	LI(VC47)
Allium vineale	Wild Onion	Locally Important Species (CAT3)	LI(VC47), LI(VC48, LR), LI(VC51, LS)
Amblyptilia acanthadactyla	Beautiful Plume	Locally Important Species (CAT3)	LI(BIS)
Anagallis tenella	Bog Pimpernel	Locally Important Species (CAT3)	LI(VC47)
Anemone nemorosa	Wood Anemone	Locally Important Species (CAT3)	LI(VC47)
Apamea unanimis	Small Clouded Brindle	Locally Important Species (CAT3)	LI(BIS)
Apeira syringaria	Lilac Beauty	Locally Important Species (CAT3)	LI(BIS)
Aphanes arvensis	Parsley-piert	Locally Important Species (CAT3)	LI(VC47)
Ardea cinerea	Grey Heron	Locally Important Species (CAT3)	LBAP (BRG, RCT)
Arenaria serpyllifolia agg.	Thyme-Leaved Sandwort agg.	Locally Important Species (CAT3)	LI(VC47)
Arenaria serpyllifolia subsp. serpyllifolia	Thyme-leaved Sandwort	Locally Important Species (CAT3)	LI(VC47)
Arenaria serpyllifolia	Thyme-Leaved Sandwort	Locally Important Species (CAT3)	LI(VC47)
Argynnis aglaja	Dark Green Fritillary	Locally Important Species (CAT3)	LBAP (BRG, FLI, GWY, TRF), LI(SEWBReC), LI(VC43)
Artemisia absinthium	Wormwood	Locally Important Species (CAT3)	LI(VC48, LS)
Avena fatua	Wild-oat	Locally Important Species (CAT3)	LI(VC49, LR)
Ballota nigra	Black Horehound	Locally Important Species (CAT3)	LI(SEWBReC)
Barbarea vulgaris	Winter-cress	Locally Important Species (CAT3)	LI(VC48, LS)
Berula erecta	Lesser Water-parsnip	Locally Important Species (CAT3)	LI(VC48, LR)
Bidens tripartita	Trifid Bur-marigold	Locally Important Species (CAT3)	LI(VC47), LI(VC48, LS), LI(VC49, LR), LI(VC50, LS), LI(VC51, LS)
Bombus hortorum	Small Garden Bumblebee	Locally Important Species (CAT3)	LBAP (FLI, MTR)
Bombus jonellus	Heath Bumblebee	Locally Important Species (CAT3)	LBAP (FLI, MTR)
Bombus lapidarius	Large Red Tailed Bumblebee	Locally Important Species (CAT3)	LBAP (FLI, MTR)
Bombus lucorum	White-Tailed Bumblebee	Locally Important Species (CAT3)	LBAP (FLI, MTR)
Bombus pascuorum	Common Carder Bee	Locally Important Species (CAT3)	LBAP (FLI, MTR)
Bombus pratorum	Early Bumblebee	Locally Important Species (CAT3)	LBAP (FLI, MTR)
Bombus sylvestris	Forest Cuckoo Bee	Locally Important Species (CAT3)	LBAP (MTR)
Bombus terrestris	Buff-Tailed Bumblebee	Locally Important Species (CAT3)	LBAP (FLI, MTR)
Bombus vestalis	Vestal (Southern) Cuckoo Bee	Locally Important Species (CAT3)	LBAP (MTR)
Bromus commutatus	Meadow Brome	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC50, LR), LI(VC51, LR), LI(VC52, LR)
Bromus hordeaceus x lepidus = B. x pseudothominei	Lesser Soft-brome	Locally Important Species (CAT3)	LBAP (GWY), LI(SEWBReC), LI(VC49, LS), LI(VC52, LS)
Calliergonella lindbergii	Lindberg's Plait-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LBAP (CON, FLI)
Callitriche hamulata	Intermediate Water-starwort	Locally Important Species (CAT3)	LI(VC47), LI(VC50, LS), LI(VC51, LS)
Calopteryx splendens	Banded Demoiselle	Locally Important Species (CAT3)	LBAP (CLY, SNP), LI(BIS), LI(SEWBReC)
Calopteryx virgo	Beautiful Demoiselle	Locally Important Species (CAT3)	LBAP (CLY, SNP), LI(BIS), LI(SEWBReC)
Carduus tenuiflorus	Slender Thistle	Locally Important Species (CAT3)	LI(VC48, LR), LI(VC50, LR)
Carex canescens	White Sedge	Locally Important Species (CAT3)	LI(VC51, LR), LI(VC52, LS)

Carex flacca	Glaucous Sedge	Locally Important Species (CAT3)	LI(VC47)
Carex laevigata	Smooth-stalked Sedge	Locally Important Species (CAT3)	LI(VC47), LI(VC50, LS), LI(VC51, LS)
Carex muricata subsp. muricata	Large-fruited Prickly-sedge	Locally Important Species (CAT3)	RDB1 (Wales) - CR, RDB1 (UK) - NT, RDB2 (UK) - R, LI(VC50, LR)
Carex otrubae	False Fox-sedge	Locally Important Species (CAT3)	LI(VC43), LI(VC47)
Carex panicea	Carnation Sedge	Locally Important Species (CAT3)	LI(VC47)
Carex paniculata	Greater Tussock-sedge	Locally Important Species (CAT3)	LI(VC47)
Carex pilulifera	Pill Sedge	Locally Important Species (CAT3)	LI(VC43), LI(VC51, LS)
Carex sylvatica	Wood-sedge	Locally Important Species (CAT3)	LI(VC47)
Carex viridula subsp. brachyrrhyncha	Long-stalked Yellow-sedge	Locally Important Species (CAT3)	LBAP (BRG, DEN, VOG), LI(SEWBReC), LI(VC47), LI(VC49, LS), LI(VC51, LS)
Catoptria pinella	Pearl Grass-veneer	Locally Important Species (CAT3)	LI(BIS)
Cephaloziella divaricata	Common Threadwort	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC51, LR)
Ceratocapnos claviculata	Climbing Corydalis	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC47)
Ceterach officinarum	Rustyback	Locally Important Species (CAT3)	LI(VC50, LS), LI(VC51, LS)
Chenopodium polyspermum	Many-seeded Goosefoot	Locally Important Species (CAT3)	LI(VC47), LI(VC49, LR), LI(VC50, LR), LI(VC51, LS), LI(VC52, LR)
Chloris chloris	Greenfinch	Locally Important Species (CAT3)	Bern, LBAP (CON, POW)
Colura calyptrifolia	Fingered Cowlwort	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC52, LR)
Conocephalus fuscus	Long-winged Cone-head	Locally Important Species (CAT3)	LI(SEWBReC)
Conopodium majus	Pignut	Locally Important Species (CAT3)	LI(VC47)
Cordulegaster boltonii	Golden-ringed Dragonfly	Locally Important Species (CAT3)	LBAP (CLY, SNP), LI(BIS), LI(SEWBReC)
Cornus sanguinea	Dogwood	Locally Important Species (CAT3)	LI(VC52, LS)
Craniophora ligustri	Coronet	Locally Important Species (CAT3)	LBAP (BRG)
Dactylorhiza maculata subsp. ericetorum	Heath Spotted-Orchid	Locally Important Species (CAT3)	LBAP (CLY, RCT, TRA)
Dactylorhiza maculata	Heath Spotted-orchid	Locally Important Species (CAT3)	LBAP (CLY, RCT, TRA), LI(VC47), LI(VC50, LS)
Dactylorhiza purpurella	Northern Marsh-orchid	Locally Important Species (CAT3)	LBAP (BRG, TRA), LI(SEWBReC), LI(VC47), LI(VC50, LS), LI(VC51, LS)
Danthonia decumbens	Heath-grass	Locally Important Species (CAT3)	LI(VC47)
Diarsia dahlii	Barred Chestnut	Locally Important Species (CAT3)	LBAP (BRG)
Dicranum majus	Greater Fork-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC51, LR)
Dimerella lutea	Dimerella lutea	Locally Important Species (CAT3)	RDB1 (Wales) - NT, LI(VC42, N), LI(VC43, N), LI(VC47, R)
Echium vulgare	Viper's-bugloss	Locally Important Species (CAT3)	LBAP (BGW, GWY), LI(SEWBReC), LI(VC47), LI(VC48, LS), LI(VC49, LS), LI(VC50, LS), LI(VC51, LS), LI(VC52, LS)
Epilobium tetragonum	Square-stalked Willowherb	Locally Important Species (CAT3)	LI(VC47), LI(VC48, LR), LI(VC49, LR)
Epirrhoe rivata	Wood Carpet	Locally Important Species (CAT3)	LI(BIS)
Equisetum sylvaticum	Wood Horsetail	Locally Important Species (CAT3)	LI(VC47), LI(VC49, LS), LI(VC52, LR)
Equisetum telmateia	Great Horsetail	Locally Important Species (CAT3)	LI(VC43), LI(VC47), LI(VC48, LS)
Erica tetralix	Cross-leaved Heath	Locally Important Species (CAT3)	LI(VC47)
Eriophorum angustifolium	Common Cottongrass	Locally Important Species (CAT3)	LI(VC47)
Erynnis tages tages	Dingy Skipper	Locally Important Species (CAT3)	LBAP (FLI), LI(SEWBREC)
Erysimum cheiranthoides	Treacle-mustard	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC49, LS), LI(VC51, LR)
Erysimum cheiri	Wallflower	Locally Important Species (CAT3)	LI(VC47)
Eudonia truncicolella	Ground-moss Grey	Locally Important Species (CAT3)	LI(BIS)
Euphorbia amygdaloides	Wood Spurge	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC43), LI(VC47), LI(VC50, LR), LI(VC51, LS)
Eupithecia dodoneata	Oak-tree Pug	Locally Important Species (CAT3)	LI(BIS)
Filago minima	Small Cudweed	Locally Important Species (CAT3)	LBAP (BRG, CON, DEN), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC48, LR), LI(VC49, LS), LI(VC50, LR), LI(VC51, LR), LI(VC52, LS)
Frangula alnus	Alder Buckthorn	Locally Important Species (CAT3)	LBAP (GWY, NEW), LI(SEWBReC), LI(VC47), LI(VC48, LR), LI(VC49, LR), LI(VC50, LR), LI(VC51, LR)
Geranium rotundifolium	Round-leaved Crane's-bill	Locally Important Species (CAT3)	LBAP (BGW), LI(SEWBReC), LI(VC52, LR)
Horisme tersata	Fern	Locally Important Species (CAT3)	LBAP (BRG)
Hydria undulata	Scallop Shell	Locally Important Species (CAT3)	LI(BIS)
Hydriomena ruberata	Ruddy Highflyer	Locally Important Species (CAT3)	LI(BIS)
Hydrocotyle vulgaris	Marsh Pennywort	Locally Important Species (CAT3)	LI(VC47)
Hygroamblystegium fluviatile	Brook-side Feather-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LBAP (CON), LI(VC52, EX)
Hygrocybe flavipes	Yellow Foot Waxcap	Locally Important Species (CAT3)	LBAP (CDF, DEN, GWY)
Hypena crassalis	Beautiful Snout	Locally Important Species (CAT3)	LI(BIS)
Hypericum pulchrum	Slender St John's-wort	Locally Important Species (CAT3)	LI(VC47)
Hypnum cupressiforme var. lacunosum	Roof Plait-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC45, LR), LI(WWBIC)
Jasione montana	Sheep's-bit	Locally Important Species (CAT3)	LI(VC47)
Jubula hutchinsiae	Hutchins' Hollywort	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC35, LR), LI(VC42, LR), LI(VC43, LR), LI(VC45, LS), LI(VC46, LR), LI(VC47, LR), LI(VC50, LR), LI(WWBIC)
Juncus inflexus	Hard Rush	Locally Important Species (CAT3)	LI(VC48, LR)
Kindbergia praelonga	Common Feather-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LBAP (CON)
Lactuca virosa	Great Lettuce	Locally Important Species (CAT3)	LBAP (CON), LI(SEWBReC), LI(VC50, LR)
Lamiastrum galeobdolon subsp. montanum	Yellow Archangel	Locally Important Species (CAT3)	WCA9, LI(VC48, LS), LI(VC49, LS)
Larus michahellis	Yellow-legged Gull	Locally Important Species (CAT3)	UKBAm(RSPB)
Lathraea squamaria	Toothwort	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC47), LI(VC48, LR), LI(VC49, LR), LI(VC50, LS), LI(VC51, LS)
Lejeunea cavifolia	Micheli's Least Pouncewort	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC51, LR)
Leontodon hispidus	Rough Hawkbit	Locally Important Species (CAT3)	LI(VC52, LS)
Leontodon saxatilis	Lesser Hawkbit	Locally Important Species (CAT3)	LI(VC47)
Leptophyes punctatissima	Speckled Bush-cricket	Locally Important Species (CAT3)	LI(SEWBReC)
Lestes sponsa	Emerald Damselfly	Locally Important Species (CAT3)	LBAP (CLY, SNP), LI(SEWBReC), LI(VC42), LI(VC43), LI(VC47), LI(VC50)
Linum catharticum	Fairy Flax	Locally Important Species (CAT3)	LI(VC47)

Lithophane socia	Pale Pinion	Locally Important Species (CAT3)	LI(BIS)
Luzula multiflora	Heath Wood-rush	Locally Important Species (CAT3)	LI(VC47)
Luzula pilosa	Hairy Wood-rush	Locally Important Species (CAT3)	LI(VC47)
Luzula sylvatica	Great Wood-rush	Locally Important Species (CAT3)	LI(VC47)
Lysimachia nemorum	Yellow Pimpernel	Locally Important Species (CAT3)	LI(VC47)
Lythrum portula	Water-purslane	Locally Important Species (CAT3)	LI(VC47), LI(VC51, LS)
Lythrum salicaria	Purple-loosestrife	Locally Important Species (CAT3)	LI(VC43), LI(VC47)
Matricaria chamomilla	Scented Mayweed	Locally Important Species (CAT3)	LI(VC48, LS)
Melampyrum pratense	Common Cow-wheat	Locally Important Species (CAT3)	LI(VC47)
Mentha arvensis	Corn Mint	Locally Important Species (CAT3)	LI(VC50, LR)
Mesoleuca albicillata	Beautiful Carpet	Locally Important Species (CAT3)	LI(BIS)
Moehringia trinervia	Three-nerved Sandwort	Locally Important Species (CAT3)	LI(VC47)
Myosotis discolor	Changing Forget-me-not	Locally Important Species (CAT3)	LI(VC47)
Myosotis laxa	Tufted Forget-me-not	Locally Important Species (CAT3)	LI(VC47)
Myosotis ramosissima	Early Forget-me-not	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC47), LI(VC48, LS)
Myosotis secunda	Creeping Forget-me-not	Locally Important Species (CAT3)	LI(VC47)
Myosoton aquaticum	Water Chickweed	Locally Important Species (CAT3)	LBAP (BRG), LI(SEWBReC), LI(VC43), LI(VC49, LR), LI(VC51, LS)
Narcissus pseudonarcissus subsp. pseudonarcissus	Daffodil	Locally Important Species (CAT3)	LBAP (TRF), LI(SEWBReC), LI(VC43)
Narthecium ossifragum	Bog Asphodel	Locally Important Species (CAT3)	LI(VC47), LI(VC51, LS)
Nymphaea alba	White Water-lily	Locally Important Species (CAT3)	LBAP (GWY), LI(SEWBReC), LI(VC49, LS)
Odontites vernus	Red Bartsia	Locally Important Species (CAT3)	LI(VC47)
Ononis repens	Common Restharrow	Locally Important Species (CAT3)	LI(VC47)
Oreopteris limbosperma	Lemon-scented Fern	Locally Important Species (CAT3)	LI(VC51, LS), LI(VC52, LR)
Oxalis acetosella	Wood-sorrel	Locally Important Species (CAT3)	LI(VC47)
Oxystegus tenuirostris	Narrow-fruited Crisp-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC51, LR)
Pammene regiana	Regal Piercer	Locally Important Species (CAT3)	LI(BIS)
Pedicularis palustris	Marsh Lousewort	Locally Important Species (CAT3)	LI(VC47), LI(VC50, LS), LI(VC51, LR)
Pedicularis sylvatica	Lousewort	Locally Important Species (CAT3)	LI(VC47)
Persicaria lapathifolia	Pale Persicaria	Locally Important Species (CAT3)	LI(VC48, LS)
Petasites hybridus	Butterbur	Locally Important Species (CAT3)	LI(VC48, LS), LI(VC50, LR)
Plantago media	Hoary Plantain	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC43), LI(VC48, LR), LI(VC49, LR), LI(VC50, LS), LI(VC52, LR)
Polygala serpyllifolia	Heath Milkwort	Locally Important Species (CAT3)	LI(VC47)
Polygala vulgaris	Common Milkwort	Locally Important Species (CAT3)	LI(VC47)
Polymixis flavicincta	Large Ranunculus	Locally Important Species (CAT3)	LBAP (BRG)
Polystichum setiferum	Soft Shield-fern	Locally Important Species (CAT3)	LI(VC52)
Populus nigra	Black-poplar	Locally Important Species (CAT3)	LBAP (CRM, DEN, FLI, SNP, TRA, WRE), LI(SEWBReC), LI(VC52)
Potamogeton polygonifolius	Bog Pondweed	Locally Important Species (CAT3)	LI(VC47)
Pulicaria dysenterica	Common Fleabane	Locally Important Species (CAT3)	LI(VC48, LS)
Pyrausta aurata	Small Purple & Gold	Locally Important Species (CAT3)	LI(BIS)
Pyrausta purpuralis	Common Purple & Gold	Locally Important Species (CAT3)	LI(BIS)
Racomitrium ericoides	Dense Fringe-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC52, EX)
Racomitrium fasciculare	Green Mountain Fringe-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC52, LR)
Ranunculus omiophyllus	Round-leaved Crowfoot	Locally Important Species (CAT3)	LI(VC47)
Ranunculus sceleratus	Celery-leaved Buttercup	Locally Important Species (CAT3)	LI(VC43), LI(VC48, LS)
Reseda luteola	Weld	Locally Important Species (CAT3)	LI(VC48, LS)
Rhagium bifasciatum	Rhagium bifasciatum	Locally Important Species (CAT3)	LBAP (TRF)
Rhagium mordax	Rhagium mordax	Locally Important Species (CAT3)	LBAP (TRF)
Rhizocarpon viridiatrum	Rhizocarpon viridiatrum	Locally Important Species (CAT3)	RDB1 (Wales) - LC, RDB2 (UK) - S, LI(VC47, RU)
Rorippa sylvestris	Creeping Yellow-cress	Locally Important Species (CAT3)	LI(VC47), LI(VC48, LS), LI(VC49, LR), LI(VC52, LR)
Salix alba	White Willow	Locally Important Species (CAT3)	LI(VC49, LR)
Salix caprea x cinerea = S. x reichardtii	Willow	Locally Important Species (CAT3)	LI(VC52, LR)
Salmo trutta subsp. fario	Brown Trout	Locally Important Species (CAT3)	LBAP (BGW, CLY, MTR, RCT, TRA, TRF), LI(BIS)
Saxicola rubetra	Whinchat	Locally Important Species (CAT3)	Bern, LBAP (BRG, CON, DEN, FLI, GWY, PEM, POW, RCT), UKBR(RSPB)
Scapania nemorea	Grove Earwort	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC51, LR)
Schrankia costaestrigalis	Pinion-streaked Snout	Locally Important Species (CAT3)	LI(BIS)
Scirpus sylvaticus	Wood Club-rush	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC50, LR)
Scopula immutata	Lesser Cream Wave	Locally Important Species (CAT3)	LI(BIS)
Scrophularia auriculata	Water Figwort	Locally Important Species (CAT3)	LI(VC48, LR), LI(VC52, LS)
Scutellaria galericulata	Skullcap	Locally Important Species (CAT3)	LI(VC51, LR)
Scutellaria minor	Lesser Skullcap	Locally Important Species (CAT3)	LI(VC50, LR), LI(VC51, LR)
Sherardia arvensis	Field Madder	Locally Important Species (CAT3)	LI(VC47), LI(VC48, LS)
Silene flos-cuculi	Ragged-Robin	Locally Important Species (CAT3)	LI(VC47)
Solidago virgaurea	Goldenrod	Locally Important Species (CAT3)	LI(VC47)
Sorbus aria agg.	Whitebeam agg.	Locally Important Species (CAT3)	LI(VC48, LR)
Sparganium natans	Least Bur-reed	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC47), LI(VC49, LR), LI(VC51, LR), LI(VC52, LS)
Sphagnum teres	Rigid Bog-moss	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC35, LR), LI(VC41, LR)
Stachys officinalis	Betony	Locally Important Species (CAT3)	LI(VC47)

Stachys palustris	Marsh Woundwort	Locally Important Species (CAT3)	LI(VC47)
Stachys sylvatica x palustris = S. x ambigua	Hybrid Woundwort	Locally Important Species (CAT3)	LBAP (GWY), LI(SEWBReC), LI(VC48, LS), LI(VC49, LS)
Stellaria neglecta	Greater Chickweed	Locally Important Species (CAT3)	LI(VC47), LI(VC48, LS)
Succisa pratensis	Devil's-bit Scabious	Locally Important Species (CAT3)	LI(VC47)
Sympetrum sanguineum	Ruddy Darter	Locally Important Species (CAT3)	LBAP (CLY, SNP), LI(SEWBReC), LI(VC42), LI(VC43), LI(VC47), LI(VC50)
Tanacetum vulgare	Tansy	Locally Important Species (CAT3)	LI(VC48, LS)
Tilia cordata	Small-leaved Lime	Locally Important Species (CAT3)	LI(VC43), LI(VC47), LI(VC49, LR), LI(VC51, LR)
Tragopogon pratensis subsp. minor	Goat's-Beard	Locally Important Species (CAT3)	LI(VC48, LS)
Trichocolea tomentella	Handsome Woollywort	Locally Important Species (CAT3)	RDB1 (Wales) - LC, LI(VC35, LS), LI(VC41, LR), LI(VC52, EX)
Trichophorum caespitosum	Deergrass	Locally Important Species (CAT3)	LI(VC50, LR)
Trifolium arvense	Hare's-foot Clover	Locally Important Species (CAT3)	LI(VC43), LI(VC47)
Trifolium campestre	Hop Trefoil	Locally Important Species (CAT3)	LI(VC47)
Trifolium medium	Zigzag Clover	Locally Important Species (CAT3)	LI(VC48, LS)
Tripleurospermum inodorum	Scentless Mayweed	Locally Important Species (CAT3)	LI(VC48, LS)
Turdus viscivorus	Mistle Thrush	Locally Important Species (CAT3)	BDir22, Bern, UKBR(RSPB)
Ulmus minor	Elm	Locally Important Species (CAT3)	LI(SEWBReC)
Ulmus procera	English Elm	Locally Important Species (CAT3)	LI(VC48, LS)
Umbilicus rupestris	Navelwort	Locally Important Species (CAT3)	LI(VC51, LS)
Vaccinium myrtillus	Bilberry	Locally Important Species (CAT3)	LI(VC47)
Valeriana dioica	Marsh Valerian	Locally Important Species (CAT3)	LI(VC47), LI(VC48, LS), LI(VC49, LR), LI(VC50, LS)
Venusia blomeri	Blomer's Rivulet	Locally Important Species (CAT3)	LBAP (BRG, CLY, NPT), LI(BIS)
Venusia cambrica	Welsh Wave	Locally Important Species (CAT3)	LI(BIS)
Veronica agrestis	Green Field-speedwell	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC48, LS)
Veronica montana	Wood Speedwell	Locally Important Species (CAT3)	LI(VC47)
Veronica officinalis	Heath Speedwell	Locally Important Species (CAT3)	LI(VC47)
Veronica polita	Grey Field-speedwell	Locally Important Species (CAT3)	LI(SEWBReC)
Veronica scutellata	Marsh Speedwell	Locally Important Species (CAT3)	LI(VC47)
Viburnum lantana	Wayfaring-tree	Locally Important Species (CAT3)	LI(SEWBReC), LI(VC51, LS)
Viburnum opulus	Guelder-rose	Locally Important Species (CAT3)	LI(VC52, LS)
Vicia lathyroides	Spring Vetch	Locally Important Species (CAT3)	LBAP (CON, GWY), LI(SEWBReC), LI(VC48, LR), LI(VC49, LS), LI(VC50, LR), LI(VC51, LS), LI(VC52, LS)
Viola arvensis	Field Pansy	Locally Important Species (CAT3)	LI(VC48, LS)
Viola palustris	Marsh Violet	Locally Important Species (CAT3)	LI(VC47)
Zeuzera pyrina	Leopard Moth	Locally Important Species (CAT3)	LI(BIS)

INVASIVE NON-NATIVE

Scientific Name	Common Name	Category	Status
Branta canadensis	Canada Goose	Other Species (CAT4)	BDir21, WCA9, INNS
Cotoneaster bullatus	Hollyberry Cotoneaster	Other Species (CAT4)	WCA9, INNS
Cotoneaster horizontalis	Wall Cotoneaster	Other Species (CAT4)	WCA9, INNS
Cotoneaster simonsii	Himalayan Cotoneaster	Other Species (CAT4)	WCA9, INNS
Crocosmia pottsii x aurea = C. x crocosmiiflora	Montbretia	Other Species (CAT4)	WCA9, INNS
Elodea canadensis	Canadian Waterweed	Other Species (CAT4)	INNS
Epilobium brunnescens	New Zealand Willowherb	Other Species (CAT4)	INNS
Fallopia japonica	Japanese Knotweed	Other Species (CAT4)	WCA9, INNS
Harmonia axyridis	Harlequin Ladybird	Other Species (CAT4)	INNS
Heracleum mantegazzianum	Giant Hogweed	Other Species (CAT4)	WCA9, INNS
Hyacinthoides hispanica	Spanish Bluebell	Other Species (CAT4)	INNS
Impatiens glandulifera	Himalayan Balsam	Other Species (CAT4)	WCA9, INNS
Lagarosiphon major	Curly Waterweed	Other Species (CAT4)	WCA9, INNS
Lamiastrum galeobdolon subsp. argentatum	Variegated Yellow Archangel	Other Species (CAT4)	WCA9, INNS
Leycesteria formosa	Himalayan Honeysuckle	Other Species (CAT4)	INNS
Mimulus guttatus	Monkeyflower	Other Species (CAT4)	INNS
Myriophyllum aquaticum	Parrot's-feather	Other Species (CAT4)	WCA9, INNS
Neovison vison	American Mink	Other Species (CAT4)	WCA9, INNS
Planaria torva	Planaria torva	Other Species (CAT4)	INNS
Potamopyrgus antipodarum	Jenkins' Spire Snail	Other Species (CAT4)	INNS
Prunus laurocerasus	Cherry Laurel	Other Species (CAT4)	INNS
Sciurus carolinensis	Grey Squirrel	Other Species (CAT4)	WCA9, INNS

Designated Sites

Below is a summarised list of sites within the search area (based on the largest buffer).

SINC information is not held for Rhondda-Cynon-Taf. For further information, please contact the county ecologist. (richard.j.wistow@rctcbc.gov.uk (mailto:Richard.J.Wistow@rctcbc.gov.uk))

Type	Count	Intersection Area	Percentage	Description
Local Nature Reserve	1	Local - Statutory	192,108.00m^2	1.44%
Regionally Important Geodiversity Site	2	Local - Non-statutory	332,781.00m^2	2.50%
Ancient Semi Natural Woodland	72	Priority Area	1,012,054.00m^2	7.61%
Restored Ancient Woodland Site	22	Priority Area	728,075.00m^2	5.48%
Plantation on Ancient Woodland Site	8	Priority Area	90,627.00m^2	0.68%
Ancient Woodland Site of Unknown Category	3	Priority Area	23,052.00m^2	0.17%
NRW Priority Area (Woodland - PAWS)	8	Priority Area	90,627.00m^2	0.68%

Ancient Semi Natural Woodland

These are broadleaf woodlands comprising mainly native tree and shrub species which are believed to have been in existence for over 400 years. The ground vegetation will reflect the naturalness of these woodlands and will frequently feature species which provide clear indication of long and continued woodland cover. They will have been woodland for centuries and contribute substantially to our natural and cultural heritage.

Restored Ancient Woodland Site

These are woodlands which are predominately broadleaves now and are believed to have been continually wooded for over 400 years. They will have gone through a phase when canopy cover will have been more than 50% non-native conifer tree species and now have a canopy cover of more than 50% broadleaf. Please note that the information sources do not identify whether broadleaved trees are site native and therefore an assumption has been made that they are native. The use of the term restored ancient woodland describes woodland which appears using remote sensing techniques to have returned to a more natural condition. The inventory designation does not mean that the woodland is fully restored or that it is in good ecological condition. Active restoration work may well be essential to consolidate the improvement in condition or to improve it further.

Plantation on Ancient Woodland Site

These are sites which are believed to have been continuously wooded for over 400 years. They have been replanted with native or non-native species, most commonly with conifers. They currently have a canopy cover of more than 50% non-native conifer tree species. They will have varying levels of remnant features of ASNW.

Ancient Woodland Site of Unknown Category

Woodlands which may be ASNW, RAWS or PAWS. These areas are predominantly in transition where the existing tree cover is described as shrubs, young trees, felled or ground prepared for planting.

Local Nature Reserve

Craig-yr-hesg (90 m)

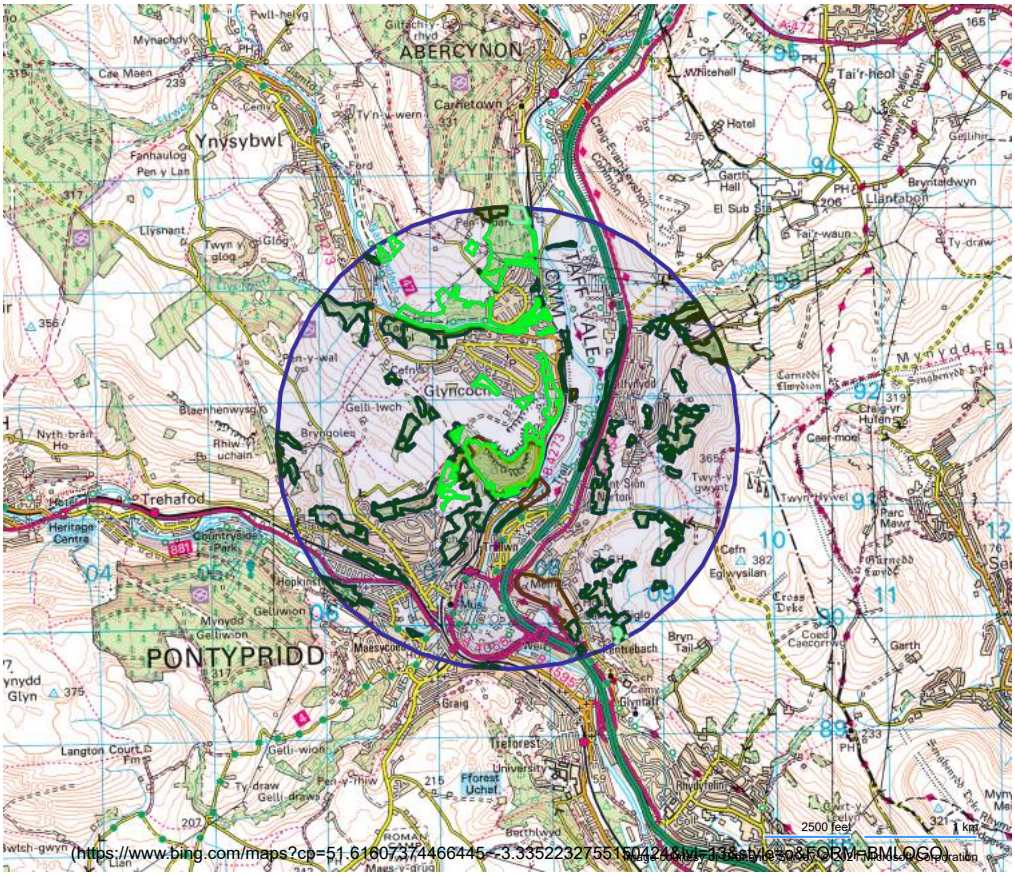
NRW Priority Area (Woodland - PAWS)

NRW Priority habitat areas are large scale areas which were prioritised for targeted conservation work, based on factors including the habitats within them.

Regionally Important Geodiversity Site

Craig Yr Hesg And The Berw Falls (66 m)
Gorsedd Stones Coed-pen-maen (1159 m)

Designated Sites Map



Col.	Name
	Local Nature Reserve (192,108m^2)
	RCT Wildlife Sites / SINCs - INFO NOT HELD BY ADERYN - Contact RCT Ecologists (13,296,628m^2)
	Regionally Important Geodiversity Site (332,781m^2)
	Ancient Semi Natural Woodland (1,012,054m^2)
	Restored Ancient Woodland Site (728,075m^2)
	Plantation on Ancient Woodland Site (90,627m^2)
	Ancient Woodland Site of Unknown Category (23,052m^2)
	NRW Priority Area (Woodland - PAWS) (90,627m^2)

Habitats

Below are listed habitats within the search areas (based on the largest buffer). Habitats marked in red may contain Priority habitats. Habitats are listed in order of intersection size (decending). **Common habitats are not returned.**.

Code	Count	Intersection Area	Percentage	Description
A1.1.1	920	2,430,420.00m^2	4.70%	Semi-natural broadleaved woodland
B6	1584	1,605,743.00m^2	3.11%	Poor semi-improved grassland
C1.1	189	1,239,243.00m^2	2.40%	Bracken
A2.1	3607	1,190,789.00m^2	2.30%	Dense scrub
J4	2790	685,904.00m^2	1.33%	Bare ground
A1.2.2	122	632,589.00m^2	1.22%	Planted coniferous woodland
B1.1	35	470,964.00m^2	0.91%	Unimproved acid grassland
B1.2	311	401,225.00m^2	0.78%	Semi-improved acid grassland
G1	322	369,543.00m^2	0.72%	Standing water
J1.2	15	284,846.00m^2	0.55%	Amenity grassland
B5.2	3	75,621.00m^2	0.15%	Marshy grassland Molinia dominated
D1.1	12	59,635.00m^2	0.12%	Dry acid heath
B5	71	51,071.00m^2	< 0.01%	Marshy grassland
I2.2	15	26,569.00m^2	< 0.01%	Spoil
A1.1.2	45	8,300.00m^2	< 0.01%	Planted broadleaved woodland
A4	4	8,175.00m^2	< 0.01%	Recently felled woodland
B2.2	13	5,349.00m^2	< 0.01%	Semi-improved neutral grassland
D5	1	3,616.00m^2	< 0.01%	Wet heath/acid grassland mosaic
D2	7	1,775.00m^2	< 0.01%	Wet heath
J2.1	33	1,397.00m^2	< 0.01%	Intact hedge
I2.1	3	675.00m^2	< 0.01%	Quarry
C3.1	13	625.00m^2	< 0.01%	Tall ruderal herb
I1.4.1	1	325.00m^2	< 0.01%	Acid/neutral rock

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3.0 Noise

3.1 Extracts from MTAN1 (paras 85-88)

3.2 Instrumentation and Calibration Noise Surveys December 2020 and March 2021

3.3 Attended noise survey results December 2020 and March 2021

3.4 Installed Sound Level Meter Results Conway Close March 2021

3.5 Installed Sound Level Meter Results Cefn Heulog March 2021

Appendix 3-1 MTAN1 Paragraphs 85 to 88

Noise

85. Where aggregates extraction and related operations occur close to areas that are sensitive to noise, particularly residential areas, noise impact must be minimised to acceptable levels. The effects of noise should be fully considered in formulating future proposals for aggregates extraction and noise emissions should be monitored throughout the permitted mineral activity. **Where the effects cannot be adequately controlled or mitigated, planning permission should be refused**.

86. Minerals Planning Guidance Note 11: The Control of Noise at Surface Mineral Workings (1993) provides advice on the monitoring and assessment of noise levels and much is still applicable (see paragraph 4 for cancellations). The Technical Advice Note (TAN) for Noise[53] provides advice on how the planning system can be used to minimise the adverse impact of noise. Although the TAN does not deal specifically with noise from surface mineral extraction sites, general points are applicable and explanations of noise measurement terms are also relevant. Noise can also be controlled under Part III of the Environmental Protection Act 1990, which requires local authorities to inspect their areas to detect any statutory nuisances and to investigate complaints. Action can be taken through the courts, if necessary, to secure the abatement of a statutory noise nuisance.

[53]Planning Guidance (Wales) Technical Advice Note (Wales) 11 Noise, Welsh Office, October 1997

87. The aggregates industry should aim to keep noise emissions at a level that reflects the highest possible environmental standards, taking all reasonable steps to achieve quieter working while having regard to the principles of BATNEEC – the best available technique not entailing excessive cost. MPAs should have regard to the background noise levels and the threshold at which significant effects are likely at noise sensitive areas and properties when considering the acceptability of proposals or setting noise limits in a planning condition. Conditions on planning permissions should identify the noise sensitive properties at which noise limits are set and establish a scheme of monitoring that identifies how, where and when noise is to be measured and how the results will be used and assessed.

88. **Noise limits** –noise limits should relate to the background noise levels[54], subject to a maximum daytime noise limit of 55 dB(A) where background noise levels exceed 45 dB(A). 55 dB(A) is the lower limit of the daytime noise levels where serious annoyance is caused. Where background noise is less than 45 dB(A), noise limits should be defined as background noise levels plus 10 dB(A). Night-time working limits should not exceed 42 dB(A) at noise sensitive properties. Daytime working is defined as 0700-1900 hours and night-time as 1900-0700 hours. Noise limits should be set in terms of LAeq,T over a 1-hour measuring period. LAeq, is the noise index used to describe the "average" level of noise that varies with time (T) and should be measured "free-field" that is, at least 3.5 metres away from a façade to prevent reflection of noise by any façade that faces the noise source. During temporary and short-term operations higher levels may be reasonable but should not exceed 67dB(A) for periods of up to 8 weeks in a year at specified noise sensitive properties.

[54]Background noise is normally measured as $L_{A90,T}$ or the noise level exceeded for 90% of the specified measurement period (T).

Appendix 3-2 Instrumentation & Calibration

SAMPLE NOISE SURVEYS DECEMBER 2020

Date and Locations of Survey

Tuesday 8 December 2020, Wednesday 9 December 2020

In the vicinity of Craig yr Hesg Quarry, Pontypridd, South Wales at receptor locations: Conway Close, Pen y Bryn, Garth Avenue, Rogart Terrace)

Survey carried out by

Rachel Canham

Weather Conditions

Tuesday 8 December 2020: Overcast, dry, cool (8^{o}C), still

Wednesday 9 December 2020:Some cloud, dry although ground damp, cold (1^{o}C), light breeze

Instrumentation and Calibration

The sensitivity of the meter was verified on site immediately before and after the survey. The measured calibration levels were as follows:

Instrumentation (serial number)	Survey Date	Start Cal	End Cal
Norsonic 140 Sound Level Meter (1403136)	8 December 2020	113.6 dB(A)	113.7 dB(A)
Norsonic 1251 Calibrator (31992)			
Norsonic 140 Sound Level Meter (1403136)	9 December 2020	113.7 dB(A)	113.8 dB(A)
Norsonic 1251 Calibrator (31992)			

The meter and calibrator are tested monthly against Norsonic Calibrators, type 1253 (serial number 22906) and type 1256 (serial number 125626100) both with UKAS approved laboratory certificates of calibration. In addition, the meter and calibrator undergo traceable calibration at an external laboratory every two years.

Appendix 3-2 (continued)

SAMPLE NOISE SURVEYS MARCH 2021

Dates and Location of Surveys

Thursday 04 March 2021 and Tuesday 09 March 2021

In the vicinity of Craig yr Hesg Quarry, Pontypridd, South Wales

Surveys carried out by

Hannah Karban (WBM)

Weather Conditions

Thursday 04 March 2021: Overcast, dry, light wind <1m/s, estimate ENE, cool ~5℃

Tuesday 9 March 2021: Overcast, dry, cool (7°C), light breeze <1m/s, estimate SSW

Instrumentation used (Serial Number)

Norsonic 140 Sound Level Meter (1403138) and Norsonic 1251 Calibrator (31991) on Thursday 04 March 2021.

Norsonic 140 Sound Level Meter (1403137) and Norsonic 1251 Calibrator (31993) on Tuesday 09 March 2021.

Calibration

The sensitivity of the meters was verified on site immediately before and after each survey. The measured calibration levels were as follows:

Survey Date	Start Calibration	End Calibration
Thursday 04 March 2021	113.8 dB(A)	113.8 dB(A)
Tuesday 09 March 2021	113.7 dB(A)	113.7 dB(A)

The meters and calibrators are tested monthly against Norsonic Calibrators, type 1253 (serial number 22906) and type 1256 (serial number 125626100) both with UKAS approved laboratory certificates of calibration. In addition, the meters and calibrators undergo traceable calibration at an external laboratory every two years.

Survey Details

Seven attended sample measurements of 15-minute duration were taken at locations near to the sound level meters installed at the two dwellings on 04 and 09 March 2021.

Four attended sample measurements of 15-minute duration were taken at receptor locations Pen y Bryn and Garth Avenue on 09 March 2021.

The sound level meter microphone was at a height of about 1.4 metre above local ground level, with a windshield used throughout the measurements. Photos of the installed meter measurement locations are available if required.

Appendix 3-2 (continued)

INSTALLED SOUND LEVEL METERS MARCH 2021

Dates and Location of Surveys

Thursday 04 March 2021 to Tuesday 09 March 2021

In the vicinity of Craig yr Hesg Quarry, Pontypridd, South Wales

Sound Level Meters Installed and Collected by

Hannah Karban (WBM)

Instrumentation used (Serial Number)

Conway Close: RION NL-52 Sound Level Meter (420715) & RION NC-74 Calibrator (34425556).

Cefn Heulog: RION NL-52 Sound Level Meter (420716) & RION NC-74 Calibrator (34425557).

Calibration

The sensitivity of the meters was verified on site immediately before and after the survey. The measured calibration levels were as follows:

Install Location	Start Calibration	End Calibration
Conway Close	93.9 dB(A)	93.8 dB(A)
Cefn Heulog	93.7 dB(A)	93.6 dB(A)

The meters and calibrators are tested monthly against Norsonic Calibrators, type 1253 (serial number 22906) and type 1256 (serial number 125626100) both with UKAS approved laboratory certificates of calibration. In addition, the meters and calibrators undergo traceable calibration at an external laboratory every two years.

Survey Details

The sound level meter microphones were at a height of about 1.5 metre above local ground level, with a windshield used throughout the measurements. The RION microphones were fitted with a RION WS-15 Outdoor Microphone Protection System. Photos of the measurement locations and install positions are available if required.

Appendix 3-3 Attended Noise Survey Results

SAMPLE NOISE SURVEYS DECEMBER 2020

Attended sample measurements of up to 15 minutes duration were taken on 08 and 09 December 2020 at the monitoring locations described below:

Location	Description
Conway Close	By pavement and low wall south of No.23 Conway Close
Pen y Bryn	By break in fence at edge of road, west of No. 5
Garth Avenue	Edge of grass bank above shop, end of roadway east of No. 113 Garth Avenue
Rogart Terrace	On path by site access road, west of 1 Rogart Terrace, about 5 metres to site access road

For each measurement, the microphone was at a height of around 1.3m above local ground level, with a windshield used throughout. The rock drill was not in use during the surveys however all other items of plant and processes were operating normally.

Results and Observations 08 December 2020

Location	Start Time (hh:mm)	Duration T (mm:ss)	Results dB		Comments / Observations
			$L_{A90,T}$	$L_{Aeq,T}$	
Rogart Terrace	14:15	15:00	53	57	Noise mainly due to road traffic on local road, distant road traffic, distant aircraft, some birdsong/calls. Some plant noise from site around 52 dB, distant broadband reversing alarms. Site vehicles on road at 14:18 (HGV) & 14:19 (car). HGV starts to leave at 14:27, stops on access road, leaves site at 14:30.
Rogart Terrace	14:31	01:51	54	57	Short sample. Vehicle leaving site 14:31. Other vehicle audible at 14:32
Garth Avenue	16:34	15:00	48	53	Noise due to distant road traffic, birdsong, occasional local vehicle, alarm at adjacent house, distant aircraft. Crusher plant audible also loading material. Site noise 48-51 dB
Pen y Bryn	17:01	15:00	35	41	Distant road traffic, dogs barking, extract at house, voices from children on bikes in field, local vehicle movements, distant sirens, distant aircraft
Conway Close	17:28	15:00	40	41	Distant road traffic, local vehicle movement (parking)
Rogart Terrace	18:10	15:00	53	57	Mainly road traffic, distant aircraft. No obvious site activity noise, no vehicles on site access road.
Garth Avenue	18:38	15:00	48	51	Distant and local road traffic, distant aircraft. Primary crusher audible - operation and material loading, bangs/crashes and rumbles (49-53 dB)

Appendix 3-3 (continued)

SAMPLE NOISE SURVEYS DECEMBER 2020

Results and Observations 09 December 2020

Location	Start Time (hh:mm)	Duration T (mm:ss)	Results dB		Comments / Observations
			$L_{A90,T}$	$L_{Aeq,T}$	
Garth Avenue	07:49	15:00	55	57	Noise dominated by distant and local traffic noise. Also birdsong, distant aircraft. Site activity audible (plant, broadband reversing alarms) but below road traffic noise. Site noise estimated to be around 53 dB.
Rogart Terrace	08:18	15:00	56	59	Local road traffic noise, some birdsong / calls, helicopter. Activity on site not clearly audible over road traffic, audible in lulls only at around 53 dB. 5 vehicles on access road (HGVS at 08:19, 08:28, 08:31 and vans at 08:24 and 08:27).
Pen y Bryn	08:48	15:00	36	40	Distant road traffic, some birdsong/calls, local activity (people leaving houses, starting cars, engines running). Broadband alarm and vehicle movement (<39 dB) possibly due to site
Conway Close	09:10	15:00	45	47	Distant road traffic. Site activities inaudible
Garth Avenue	10:27	15:00	50	54	Distant road traffic, distant aircraft, delivery at shop throughout sample. Crusher plant audible also loading material and broadband reversing alarm, estimated noise levels 51 dB, occasionally higher during material loading
Rogart Terrace	13:50	15:00	54	57	Mainly road traffic. Site activities audible (plant around 52-53 dB, some banging, reversing alarms). Site vehicle movements at 13:52, 13:55 and 13:55.
Garth Avenue	14:16	15:00	48	52	Road traffic, birdsong. Site activities audible including crusher (51-53 dB), material loading, site vehicles, broadband reversing alarm(48-49 dB)
Pen y Bryn	14:43	15:00	35	54	Distant road traffic, local activity (cars, digging in garden, locals chatting). Site inaudible
Conway Close	15:08	15:00	42	45	Distant road traffic, some birdsong, local vehicle manoeuvring. Site inaudible
Rogart Terrace	15:44	07:10	56	59	Road traffic, some birdsong/calls. 2 site vehicles on access road (2 x HGVs both at 15:49). Other site activities inaudible. Sample stopped early due to rain

Appendix 3-3 (continued)

SAMPLE NOISE SURVEYS MARCH 2021

Attended sample measurements of 15 minutes duration were taken on 04 and 09 March 2021 at the following locations:

Location	Description
26 Conway Close	Rear garden of 26 Conway Close
Cefn Heulog	Garden of Cefn Heulog
Pen y Bryn	By break in fence at edge of road, west of No. 5
Garth Avenue	Edge of grass bank above shop, end of roadway east of No. 113 Garth Avenue

The measurements at 26 Conway Close and Cefn Heulog were undertaken on 04 and 09 March 2021 at times when the quarry was operating normally.

The measurements at Pen y Bryn and Garth Avenue were undertaken on 09 March 2021. The quarry was not operational during these measurements.

Results & Observations Thursday 04 March 2021: Dry, light wind <1m/s, estimate ENE, cool ~5°C, cloudy

Location	Start Time (hh:mm)	Results dB		Comments / Observations
		$L_{A90,T}$	$L_{Aeq,T}$	
26 Conway Close	14:21	40	50	Dog bark next door, birdsong, distant road traffic, distant horn, distant child's voice, distant water sounds from dwelling, distant power tools, aircraft. Quarry activity inaudible.
	14:36	40	50	
Cefn Heulog	15:18	41	48	Distant road traffic, birdsong.
	15:33	42	56	Distant road traffic, birdsong, car door talking by meter, TV from house.
	16:03	42	46	Distant road traffic, birdsong, quiet voices from dwelling, distant motorbike, distant metal banging from further down road.

Appendix 3-3 (continued)

SAMPLE NOISE SURVEYS MARCH 2021

Results and Observations Tuesday 09 March 2021: Dry, light wind <1m/s, estimate SSW, cool ~7℃, cloudy

Location	Start Time (hh:mm)	Results dB		Comments / Observations
		$L_{A90,T}$	$L_{Aeq,T}$	
26 Conway Close	16:50	32	53	Distant road traffic, birdsong, dog bark and growl. Quarry activity inaudible.
Cefn Heulog	17:15	34	54	Birdsong, car door, distant road traffic.
Pen y Bryn	17:58	34	42	Distant road traffic, car move off, distant metal gate, distant child's voice, distant coughing, distant door shut, distant scream, birdsong, distant emergency vehicle siren, birdcalls, cars on Pearson Cres, emergency vehicle siren close by (short), distant vehicle horn, distant idling fire engine, passerby, distant dog bark, mobile phone playing from passerby, passersby talking.
	18:13	35	43	Distant idling fire engine, distant talking, distant aircraft, birdsong, distant children's voices, slight breeze in trees, distant motorbike, dog bark, horn, vehicles on Pearson Cres, distant coughing, passing vehicle, dog panting, passersby, e-scooters.
Garth Avenue	18:38	46	49	Distant road traffic, birdsong, road traffic on Garth Avenue, distant child voices, birds rustling leaves & wings, distant door slam, motorbike on Garth Ave, distant horn, clatters from Garth Ave, buzz off light/electricity, van start and move off on Garth Ave.
	18:53	44	47	Distant road traffic, road traffic on Garth Ave, distant aircraft, birds, voices on Garth Ave, metal gate, distant voices on Garth Ave, cars start on Garth Ave, distant motorbike.

Appendix 3-4 Installed Sound Level Meter Results

Rear Garden of 26 Conway Close

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
04-Mar-21	Thursday	14:45	39	50
04-Mar-21	Thursday	15:00	40	42
04-Mar-21	Thursday	15:15	39	43
04-Mar-21	Thursday	15:30	41	43
04-Mar-21	Thursday	15:45	41	42
04-Mar-21	Thursday	16:00	41	42
04-Mar-21	Thursday	16:15	42	43
04-Mar-21	Thursday	16:30	42	43
04-Mar-21	Thursday	16:45	41	43
04-Mar-21	Thursday	17:00	42	44
04-Mar-21	Thursday	17:15	42	44
04-Mar-21	Thursday	17:30	40	41
04-Mar-21	Thursday	17:45	41	43
04-Mar-21	Thursday	18:00	39	42
04-Mar-21	Thursday	18:15	38	41
04-Mar-21	Thursday	18:30	38	39
04-Mar-21	Thursday	18:45	37	38
04-Mar-21	Thursday	19:00	36	38
04-Mar-21	Thursday	19:15	35	49
04-Mar-21	Thursday	19:30	35	42
04-Mar-21	Thursday	19:45	35	38
04-Mar-21	Thursday	20:00	37	39
04-Mar-21	Thursday	20:15	38	41
04-Mar-21	Thursday	20:30	36	41
04-Mar-21	Thursday	20:45	37	42
04-Mar-21	Thursday	21:00	38	40
04-Mar-21	Thursday	21:15	38	40
04-Mar-21	Thursday	21:30	36	39
04-Mar-21	Thursday	21:45	35	38
04-Mar-21	Thursday	22:00	38	40
04-Mar-21	Thursday	22:15	36	38
04-Mar-21	Thursday	22:30	35	38
04-Mar-21	Thursday	22:45	36	38
04-Mar-21	Thursday	23:00	35	37
04-Mar-21	Thursday	23:15	34	37
04-Mar-21	Thursday	23:30	34	36
04-Mar-21	Thursday	23:45	35	38
05-Mar-21	Friday	00:00	35	38
05-Mar-21	Friday	00:15	33	35
05-Mar-21	Friday	00:30	31	33
05-Mar-21	Friday	00:45	30	33
05-Mar-21	Friday	01:00	31	35
05-Mar-21	Friday	01:15	32	34
05-Mar-21	Friday	01:30	32	35
05-Mar-21	Friday	01:45	30	33
05-Mar-21	Friday	02:00	30	32
05-Mar-21	Friday	02:15	30	32
05-Mar-21	Friday	02:30	30	32
05-Mar-21	Friday	02:45	30	37

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
05-Mar-21	Friday	03:00	30	32
05-Mar-21	Friday	03:15	31	33
05-Mar-21	Friday	03:30	31	33
05-Mar-21	Friday	03:45	31	33
05-Mar-21	Friday	04:00	32	35
05-Mar-21	Friday	04:15	33	35
05-Mar-21	Friday	04:30	33	35
05-Mar-21	Friday	04:45	33	35
05-Mar-21	Friday	05:00	33	35
05-Mar-21	Friday	05:15	35	37
05-Mar-21	Friday	05:30	35	37
05-Mar-21	Friday	05:45	36	37
05-Mar-21	Friday	06:00	38	40
05-Mar-21	Friday	06:15	38	40
05-Mar-21	Friday	06:30	39	41
05-Mar-21	Friday	06:45	40	42
05-Mar-21	Friday	07:00	40	42
05-Mar-21	Friday	07:15	40	45
05-Mar-21	Friday	07:30	40	43
05-Mar-21	Friday	07:45	41	43
05-Mar-21	Friday	08:00	41	43
05-Mar-21	Friday	08:15	40	43
05-Mar-21	Friday	08:30	39	42
05-Mar-21	Friday	08:45	39	41
05-Mar-21	Friday	09:00	39	42
05-Mar-21	Friday	09:15	40	41
05-Mar-21	Friday	09:30	40	42
05-Mar-21	Friday	09:45	39	42
05-Mar-21	Friday	10:00	40	45
05-Mar-21	Friday	10:15	40	44
05-Mar-21	Friday	10:30	40	43
05-Mar-21	Friday	10:45	39	41
05-Mar-21	Friday	11:00	39	42
05-Mar-21	Friday	11:15	40	43
05-Mar-21	Friday	11:30	40	46
05-Mar-21	Friday	11:45	39	48
05-Mar-21	Friday	12:00	39	41
05-Mar-21	Friday	12:15	39	45
05-Mar-21	Friday	12:30	39	42
05-Mar-21	Friday	12:45	39	49
05-Mar-21	Friday	13:00	38	45
05-Mar-21	Friday	13:15	39	46
05-Mar-21	Friday	13:30	40	50
05-Mar-21	Friday	13:45	38	44
05-Mar-21	Friday	14:00	40	66
05-Mar-21	Friday	14:15	40	61
05-Mar-21	Friday	14:30	39	47
05-Mar-21	Friday	14:45	38	41
05-Mar-21	Friday	15:00	39	41
05-Mar-21	Friday	15:15	38	40
05-Mar-21	Friday	15:30	38	41
05-Mar-21	Friday	15:45	40	45
05-Mar-21	Friday	16:00	40	42
05-Mar-21	Friday	16:15	39	44
05-Mar-21	Friday	16:30	40	45

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
05-Mar-21	Friday	16:45	39	41
05-Mar-21	Friday	17:00	40	43
05-Mar-21	Friday	17:15	40	41
05-Mar-21	Friday	17:30	40	44
05-Mar-21	Friday	17:45	40	41
05-Mar-21	Friday	18:00	39	42
05-Mar-21	Friday	18:15	38	41
05-Mar-21	Friday	18:30	38	40
05-Mar-21	Friday	18:45	37	39
05-Mar-21	Friday	19:00	36	39
05-Mar-21	Friday	19:15	37	40
05-Mar-21	Friday	19:30	37	41
05-Mar-21	Friday	19:45	35	42
05-Mar-21	Friday	20:00	36	38
05-Mar-21	Friday	20:15	37	38
05-Mar-21	Friday	20:30	34	36
05-Mar-21	Friday	20:45	34	36
05-Mar-21	Friday	21:00	34	36
05-Mar-21	Friday	21:15	33	45
05-Mar-21	Friday	21:30	32	34
05-Mar-21	Friday	21:45	32	34
05-Mar-21	Friday	22:00	32	35
05-Mar-21	Friday	22:15	31	33
05-Mar-21	Friday	22:30	29	34
05-Mar-21	Friday	22:45	31	33
05-Mar-21	Friday	23:00	31	35
05-Mar-21	Friday	23:15	30	32
05-Mar-21	Friday	23:30	29	31
05-Mar-21	Friday	23:45	29	31
06-Mar-21	Saturday	00:00	29	31
06-Mar-21	Saturday	00:15	29	32
06-Mar-21	Saturday	00:30	28	30
06-Mar-21	Saturday	00:45	27	29
06-Mar-21	Saturday	01:00	27	29
06-Mar-21	Saturday	01:15	28	30
06-Mar-21	Saturday	01:30	29	31
06-Mar-21	Saturday	01:45	29	31
06-Mar-21	Saturday	02:00	28	31
06-Mar-21	Saturday	02:15	29	31
06-Mar-21	Saturday	02:30	30	30
06-Mar-21	Saturday	02:45	29	30
06-Mar-21	Saturday	03:00	30	31
06-Mar-21	Saturday	03:15	30	31
06-Mar-21	Saturday	03:30	30	32
06-Mar-21	Saturday	03:45	30	32
06-Mar-21	Saturday	04:00	31	34
06-Mar-21	Saturday	04:15	31	33
06-Mar-21	Saturday	04:30	32	35
06-Mar-21	Saturday	04:45	32	46
06-Mar-21	Saturday	05:00	33	35
06-Mar-21	Saturday	05:15	33	36
06-Mar-21	Saturday	05:30	33	35
06-Mar-21	Saturday	05:45	35	39
06-Mar-21	Saturday	06:00	36	41
06-Mar-21	Saturday	06:15	36	41

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
06-Mar-21	Saturday	06:30	37	41
06-Mar-21	Saturday	06:45	37	42
06-Mar-21	Saturday	07:00	37	42
06-Mar-21	Saturday	07:15	39	42
06-Mar-21	Saturday	07:30	37	44
06-Mar-21	Saturday	07:45	37	42
06-Mar-21	Saturday	08:00	36	39
06-Mar-21	Saturday	08:15	35	41
06-Mar-21	Saturday	08:30	35	42
06-Mar-21	Saturday	08:45	33	40
06-Mar-21	Saturday	09:00	33	38
06-Mar-21	Saturday	09:15	33	37
06-Mar-21	Saturday	09:30	35	40
06-Mar-21	Saturday	09:45	35	42
06-Mar-21	Saturday	10:00	34	37
06-Mar-21	Saturday	10:15	36	40
06-Mar-21	Saturday	10:30	35	38
06-Mar-21	Saturday	10:45	35	39
06-Mar-21	Saturday	11:00	34	37
06-Mar-21	Saturday	11:15	34	36
06-Mar-21	Saturday	11:30	34	38
06-Mar-21	Saturday	11:45	34	38
06-Mar-21	Saturday	12:00	34	39
06-Mar-21	Saturday	12:15	34	38
06-Mar-21	Saturday	12:30	35	38
06-Mar-21	Saturday	12:45	33	40
06-Mar-21	Saturday	13:00	33	42
06-Mar-21	Saturday	13:15	34	45
06-Mar-21	Saturday	13:30	35	43
06-Mar-21	Saturday	13:45	33	41
06-Mar-21	Saturday	14:00	34	47
06-Mar-21	Saturday	14:15	39	67
06-Mar-21	Saturday	14:30	35	62
06-Mar-21	Saturday	14:45	35	58
06-Mar-21	Saturday	15:00	39	56
06-Mar-21	Saturday	15:15	47	57
06-Mar-21	Saturday	15:30	37	58
06-Mar-21	Saturday	15:45	38	51
06-Mar-21	Saturday	16:00	35	52
06-Mar-21	Saturday	16:15	34	45
06-Mar-21	Saturday	16:30	34	39
06-Mar-21	Saturday	16:45	35	42
06-Mar-21	Saturday	17:00	34	37
06-Mar-21	Saturday	17:15	34	37
06-Mar-21	Saturday	17:30	36	43
06-Mar-21	Saturday	17:45	38	46
06-Mar-21	Saturday	18:00	37	45
06-Mar-21	Saturday	18:15	38	41
06-Mar-21	Saturday	18:30	39	42
06-Mar-21	Saturday	18:45	37	39
06-Mar-21	Saturday	19:00	36	38
06-Mar-21	Saturday	19:15	37	42
06-Mar-21	Saturday	19:30	38	41
06-Mar-21	Saturday	19:45	37	42
06-Mar-21	Saturday	20:00	37	42

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
06-Mar-21	Saturday	20:15	36	39
06-Mar-21	Saturday	20:30	36	39
06-Mar-21	Saturday	20:45	36	38
06-Mar-21	Saturday	21:00	36	39
06-Mar-21	Saturday	21:15	37	39
06-Mar-21	Saturday	21:30	36	38
06-Mar-21	Saturday	21:45	35	38
06-Mar-21	Saturday	22:00	34	36
06-Mar-21	Saturday	22:15	34	37
06-Mar-21	Saturday	22:30	34	37
06-Mar-21	Saturday	22:45	34	36
06-Mar-21	Saturday	23:00	33	36
06-Mar-21	Saturday	23:15	32	36
06-Mar-21	Saturday	23:30	30	33
06-Mar-21	Saturday	23:45	31	33
07-Mar-21	Sunday	00:00	30	33
07-Mar-21	Sunday	00:15	31	33
07-Mar-21	Sunday	00:30	31	33
07-Mar-21	Sunday	00:45	31	32
07-Mar-21	Sunday	01:00	31	32
07-Mar-21	Sunday	01:15	30	31
07-Mar-21	Sunday	01:30	30	32
07-Mar-21	Sunday	01:45	30	32
07-Mar-21	Sunday	02:00	30	32
07-Mar-21	Sunday	02:15	30	31
07-Mar-21	Sunday	02:30	30	31
07-Mar-21	Sunday	02:45	28	32
07-Mar-21	Sunday	03:00	28	31
07-Mar-21	Sunday	03:15	30	32
07-Mar-21	Sunday	03:30	30	32
07-Mar-21	Sunday	03:45	30	31
07-Mar-21	Sunday	04:00	30	32
07-Mar-21	Sunday	04:15	31	33
07-Mar-21	Sunday	04:30	31	33
07-Mar-21	Sunday	04:45	32	34
07-Mar-21	Sunday	05:00	31	36
07-Mar-21	Sunday	05:15	33	35
07-Mar-21	Sunday	05:30	34	35
07-Mar-21	Sunday	05:45	33	36
07-Mar-21	Sunday	06:00	36	39
07-Mar-21	Sunday	06:15	36	38
07-Mar-21	Sunday	06:30	36	38
07-Mar-21	Sunday	06:45	37	41
07-Mar-21	Sunday	07:00	38	40
07-Mar-21	Sunday	07:15	37	41
07-Mar-21	Sunday	07:30	38	48
07-Mar-21	Sunday	07:45	36	40
07-Mar-21	Sunday	08:00	37	42
07-Mar-21	Sunday	08:15	39	42
07-Mar-21	Sunday	08:30	39	42
07-Mar-21	Sunday	08:45	37	42
07-Mar-21	Sunday	09:00	36	40
07-Mar-21	Sunday	09:15	36	49
07-Mar-21	Sunday	09:30	35	43
07-Mar-21	Sunday	09:45	33	43

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
07-Mar-21	Sunday	10:00	35	38
07-Mar-21	Sunday	10:15	34	45
07-Mar-21	Sunday	10:30	34	41
07-Mar-21	Sunday	10:45	34	38
07-Mar-21	Sunday	11:00	33	51
07-Mar-21	Sunday	11:15	34	44
07-Mar-21	Sunday	11:30	33	43
07-Mar-21	Sunday	11:45	33	38
07-Mar-21	Sunday	12:00	33	49
07-Mar-21	Sunday	12:15	33	50
07-Mar-21	Sunday	12:30	35	47
07-Mar-21	Sunday	12:45	33	47
07-Mar-21	Sunday	13:00	34	38
07-Mar-21	Sunday	13:15	34	42
07-Mar-21	Sunday	13:30	35	43
07-Mar-21	Sunday	13:45	34	45
07-Mar-21	Sunday	14:00	34	41
07-Mar-21	Sunday	14:15	33	41
07-Mar-21	Sunday	14:30	33	41
07-Mar-21	Sunday	14:45	34	41
07-Mar-21	Sunday	15:00	34	42
07-Mar-21	Sunday	15:15	32	36
07-Mar-21	Sunday	15:30	32	37
07-Mar-21	Sunday	15:45	33	36
07-Mar-21	Sunday	16:00	34	37
07-Mar-21	Sunday	16:15	35	41
07-Mar-21	Sunday	16:30	34	38
07-Mar-21	Sunday	16:45	34	36
07-Mar-21	Sunday	17:00	34	36
07-Mar-21	Sunday	17:15	35	40
07-Mar-21	Sunday	17:30	36	41
07-Mar-21	Sunday	17:45	37	41
07-Mar-21	Sunday	18:00	38	43
07-Mar-21	Sunday	18:15	39	44
07-Mar-21	Sunday	18:30	38	41
07-Mar-21	Sunday	18:45	38	40
07-Mar-21	Sunday	19:00	38	40
07-Mar-21	Sunday	19:15	37	40
07-Mar-21	Sunday	19:30	37	39
07-Mar-21	Sunday	19:45	36	38
07-Mar-21	Sunday	20:00	35	38
07-Mar-21	Sunday	20:15	36	38
07-Mar-21	Sunday	20:30	35	37
07-Mar-21	Sunday	20:45	35	37
07-Mar-21	Sunday	21:00	35	37
07-Mar-21	Sunday	21:15	37	38
07-Mar-21	Sunday	21:30	35	37
07-Mar-21	Sunday	21:45	35	37
07-Mar-21	Sunday	22:00	35	38
07-Mar-21	Sunday	22:15	34	36
07-Mar-21	Sunday	22:30	33	36
07-Mar-21	Sunday	22:45	34	35
07-Mar-21	Sunday	23:00	31	34
07-Mar-21	Sunday	23:15	31	33
07-Mar-21	Sunday	23:30	32	34

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
07-Mar-21	Sunday	23:45	30	34
08-Mar-21	Monday	00:00	31	43
08-Mar-21	Monday	00:15	31	33
08-Mar-21	Monday	00:30	32	34
08-Mar-21	Monday	00:45	28	32
08-Mar-21	Monday	01:00	29	31
08-Mar-21	Monday	01:15	28	31
08-Mar-21	Monday	01:30	30	31
08-Mar-21	Monday	01:45	29	31
08-Mar-21	Monday	02:00	28	31
08-Mar-21	Monday	02:15	30	32
08-Mar-21	Monday	02:30	27	30
08-Mar-21	Monday	02:45	28	30
08-Mar-21	Monday	03:00	29	32
08-Mar-21	Monday	03:15	28	31
08-Mar-21	Monday	03:30	30	32
08-Mar-21	Monday	03:45	30	32
08-Mar-21	Monday	04:00	30	33
08-Mar-21	Monday	04:15	33	35
08-Mar-21	Monday	04:30	33	34
08-Mar-21	Monday	04:45	33	35
08-Mar-21	Monday	05:00	33	35
08-Mar-21	Monday	05:15	36	38
08-Mar-21	Monday	05:30	37	39
08-Mar-21	Monday	05:45	38	39
08-Mar-21	Monday	06:00	39	41
08-Mar-21	Monday	06:15	40	42
08-Mar-21	Monday	06:30	38	41
08-Mar-21	Monday	06:45	39	42
08-Mar-21	Monday	07:00	40	46
08-Mar-21	Monday	07:15	41	42
08-Mar-21	Monday	07:30	40	43
08-Mar-21	Monday	07:45	43	45
08-Mar-21	Monday	08:00	41	43
08-Mar-21	Monday	08:15	40	44
08-Mar-21	Monday	08:30	40	43
08-Mar-21	Monday	08:45	38	44
08-Mar-21	Monday	09:00	37	40
08-Mar-21	Monday	09:15	36	40
08-Mar-21	Monday	09:30	34	39
08-Mar-21	Monday	09:45	35	39
08-Mar-21	Monday	10:00	37	50
08-Mar-21	Monday	10:15	44	53
08-Mar-21	Monday	10:30	38	54
08-Mar-21	Monday	10:45	32	60
08-Mar-21	Monday	11:00	31	35
08-Mar-21	Monday	11:15	32	39
08-Mar-21	Monday	11:30	33	53
08-Mar-21	Monday	11:45	33	52
08-Mar-21	Monday	12:00	31	50
08-Mar-21	Monday	12:15	33	51
08-Mar-21	Monday	12:30	38	54
08-Mar-21	Monday	12:45	32	38
08-Mar-21	Monday	13:00	31	41
08-Mar-21	Monday	13:15	31	44

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
08-Mar-21	Monday	13:30	33	49
08-Mar-21	Monday	13:45	39	50
08-Mar-21	Monday	14:00	33	46
08-Mar-21	Monday	14:15	35	48
08-Mar-21	Monday	14:30	36	45
08-Mar-21	Monday	14:45	37	52
08-Mar-21	Monday	15:00	37	50
08-Mar-21	Monday	15:15	36	51
08-Mar-21	Monday	15:30	36	45
08-Mar-21	Monday	15:45	36	44
08-Mar-21	Monday	16:00	39	47
08-Mar-21	Monday	16:15	35	44
08-Mar-21	Monday	16:30	34	42
08-Mar-21	Monday	16:45	35	40
08-Mar-21	Monday	17:00	34	43
08-Mar-21	Monday	17:15	34	40
08-Mar-21	Monday	17:30	36	61
08-Mar-21	Monday	17:45	33	41
08-Mar-21	Monday	18:00	35	45
08-Mar-21	Monday	18:15	37	41
08-Mar-21	Monday	18:30	35	46
08-Mar-21	Monday	18:45	33	35
08-Mar-21	Monday	19:00	33	35
08-Mar-21	Monday	19:15	32	34
08-Mar-21	Monday	19:30	32	35
08-Mar-21	Monday	19:45	34	37
08-Mar-21	Monday	20:00	34	43
08-Mar-21	Monday	20:15	33	36
08-Mar-21	Monday	20:30	33	36
08-Mar-21	Monday	20:45	34	37
08-Mar-21	Monday	21:00	34	37
08-Mar-21	Monday	21:15	34	37
08-Mar-21	Monday	21:30	34	37
08-Mar-21	Monday	21:45	34	36
08-Mar-21	Monday	22:00	36	39
08-Mar-21	Monday	22:15	35	37
08-Mar-21	Monday	22:30	33	34
08-Mar-21	Monday	22:45	33	35
08-Mar-21	Monday	23:00	33	36
08-Mar-21	Monday	23:15	33	35
08-Mar-21	Monday	23:30	32	35
08-Mar-21	Monday	23:45	33	36
09-Mar-21	Tuesday	00:00	33	39
09-Mar-21	Tuesday	00:15	33	36
09-Mar-21	Tuesday	00:30	32	33
09-Mar-21	Tuesday	00:45	31	36
09-Mar-21	Tuesday	01:00	32	34
09-Mar-21	Tuesday	01:15	31	33
09-Mar-21	Tuesday	01:30	30	34
09-Mar-21	Tuesday	01:45	31	34
09-Mar-21	Tuesday	02:00	33	35
09-Mar-21	Tuesday	02:15	32	34
09-Mar-21	Tuesday	02:30	32	34
09-Mar-21	Tuesday	02:45	32	33
09-Mar-21	Tuesday	03:00	31	33

Results from Installed Meter at 26 Conway Close March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
09-Mar-21	Tuesday	03:15	32	34
09-Mar-21	Tuesday	03:30	31	33
09-Mar-21	Tuesday	03:45	31	33
09-Mar-21	Tuesday	04:00	33	35
09-Mar-21	Tuesday	04:15	33	37
09-Mar-21	Tuesday	04:30	34	37
09-Mar-21	Tuesday	04:45	32	34
09-Mar-21	Tuesday	05:00	32	35
09-Mar-21	Tuesday	05:15	38	42
09-Mar-21	Tuesday	05:30	39	41
09-Mar-21	Tuesday	05:45	38	41
09-Mar-21	Tuesday	06:00	41	42
09-Mar-21	Tuesday	06:15	39	41
09-Mar-21	Tuesday	06:30	42	45
09-Mar-21	Tuesday	06:45	44	47
09-Mar-21	Tuesday	07:00	40	43
09-Mar-21	Tuesday	07:15	44	46
09-Mar-21	Tuesday	07:30	42	45
09-Mar-21	Tuesday	07:45	40	46
09-Mar-21	Tuesday	08:00	41	44
09-Mar-21	Tuesday	08:15	39	43
09-Mar-21	Tuesday	08:30	37	45
09-Mar-21	Tuesday	08:45	36	44
09-Mar-21	Tuesday	09:00	35	44
09-Mar-21	Tuesday	09:15	34	45
09-Mar-21	Tuesday	09:30	32	41
09-Mar-21	Tuesday	09:45	32	42
09-Mar-21	Tuesday	10:00	32	44
09-Mar-21	Tuesday	10:15	32	46
09-Mar-21	Tuesday	10:30	33	41
09-Mar-21	Tuesday	10:45	32	40
09-Mar-21	Tuesday	11:00	32	40
09-Mar-21	Tuesday	11:15	33	43
09-Mar-21	Tuesday	11:30	32	37
09-Mar-21	Tuesday	11:45	32	37
09-Mar-21	Tuesday	12:00	33	46
09-Mar-21	Tuesday	12:15	36	50
09-Mar-21	Tuesday	12:30	35	42
09-Mar-21	Tuesday	12:45	36	42
09-Mar-21	Tuesday	13:00	33	41
09-Mar-21	Tuesday	13:15	34	40
09-Mar-21	Tuesday	13:30	34	38
09-Mar-21	Tuesday	13:45	34	43
09-Mar-21	Tuesday	14:00	32	36
09-Mar-21	Tuesday	14:15	33	45
09-Mar-21	Tuesday	14:30	32	39
09-Mar-21	Tuesday	14:45	33	43
09-Mar-21	Tuesday	15:00	32	39
09-Mar-21	Tuesday	15:15	30	37
09-Mar-21	Tuesday	15:30	31	40
09-Mar-21	Tuesday	15:45	30	44
09-Mar-21	Tuesday	16:00	30	35
09-Mar-21	Tuesday	16:15	31	40
09-Mar-21	Tuesday	16:30	32	39

Appendix 3-5 Installed Sound Level Meter Results

Rear Garden of Cefn Heulog

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
04-Mar-21	Thursday	15:45	41	52
04-Mar-21	Thursday	16:00	41	46
04-Mar-21	Thursday	16:15	42	44
04-Mar-21	Thursday	16:30	42	44
04-Mar-21	Thursday	16:45	41	44
04-Mar-21	Thursday	17:00	41	43
04-Mar-21	Thursday	17:15	41	44
04-Mar-21	Thursday	17:30	39	41
04-Mar-21	Thursday	17:45	39	43
04-Mar-21	Thursday	18:00	39	44
04-Mar-21	Thursday	18:15	38	44
04-Mar-21	Thursday	18:30	37	39
04-Mar-21	Thursday	18:45	36	37
04-Mar-21	Thursday	19:00	35	39
04-Mar-21	Thursday	19:15	33	36
04-Mar-21	Thursday	19:30	34	39
04-Mar-21	Thursday	19:45	33	35
04-Mar-21	Thursday	20:00	34	37
04-Mar-21	Thursday	20:15	38	40
04-Mar-21	Thursday	20:30	36	39
04-Mar-21	Thursday	20:45	36	39
04-Mar-21	Thursday	21:00	37	41
04-Mar-21	Thursday	21:15	39	42
04-Mar-21	Thursday	21:30	40	41
04-Mar-21	Thursday	21:45	37	41
04-Mar-21	Thursday	22:00	38	41
04-Mar-21	Thursday	22:15	36	40
04-Mar-21	Thursday	22:30	35	40
04-Mar-21	Thursday	22:45	34	40
04-Mar-21	Thursday	23:00	35	38
04-Mar-21	Thursday	23:15	33	35
04-Mar-21	Thursday	23:30	35	37
04-Mar-21	Thursday	23:45	34	39
05-Mar-21	Friday	00:00	33	38
05-Mar-21	Friday	00:15	32	35
05-Mar-21	Friday	00:30	29	32
05-Mar-21	Friday	00:45	29	32
05-Mar-21	Friday	01:00	31	36
05-Mar-21	Friday	01:15	31	35
05-Mar-21	Friday	01:30	32	36
05-Mar-21	Friday	01:45	29	34
05-Mar-21	Friday	02:00	30	32
05-Mar-21	Friday	02:15	29	31
05-Mar-21	Friday	02:30	29	31
05-Mar-21	Friday	02:45	28	37
05-Mar-21	Friday	03:00	29	30

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
05-Mar-21	Friday	03:15	30	32
05-Mar-21	Friday	03:30	30	32
05-Mar-21	Friday	03:45	29	32
05-Mar-21	Friday	04:00	30	33
05-Mar-21	Friday	04:15	32	34
05-Mar-21	Friday	04:30	32	34
05-Mar-21	Friday	04:45	32	35
05-Mar-21	Friday	05:00	33	36
05-Mar-21	Friday	05:15	34	37
05-Mar-21	Friday	05:30	35	37
05-Mar-21	Friday	05:45	36	40
05-Mar-21	Friday	06:00	41	45
05-Mar-21	Friday	06:15	41	48
05-Mar-21	Friday	06:30	41	44
05-Mar-21	Friday	06:45	42	45
05-Mar-21	Friday	07:00	43	45
05-Mar-21	Friday	07:15	41	46
05-Mar-21	Friday	07:30	41	44
05-Mar-21	Friday	07:45	41	46
05-Mar-21	Friday	08:00	41	44
05-Mar-21	Friday	08:15	40	43
05-Mar-21	Friday	08:30	40	42
05-Mar-21	Friday	08:45	39	42
05-Mar-21	Friday	09:00	40	45
05-Mar-21	Friday	09:15	40	43
05-Mar-21	Friday	09:30	40	44
05-Mar-21	Friday	09:45	41	48
05-Mar-21	Friday	10:00	40	46
05-Mar-21	Friday	10:15	40	43
05-Mar-21	Friday	10:30	40	47
05-Mar-21	Friday	10:45	38	44
05-Mar-21	Friday	11:00	39	44
05-Mar-21	Friday	11:15	40	45
05-Mar-21	Friday	11:30	39	43
05-Mar-21	Friday	11:45	40	43
05-Mar-21	Friday	12:00	40	45
05-Mar-21	Friday	12:15	39	43
05-Mar-21	Friday	12:30	39	42
05-Mar-21	Friday	12:45	39	43
05-Mar-21	Friday	13:00	38	42
05-Mar-21	Friday	13:15	40	43
05-Mar-21	Friday	13:30	39	41
05-Mar-21	Friday	13:45	38	40
05-Mar-21	Friday	14:00	39	41
05-Mar-21	Friday	14:15	39	42
05-Mar-21	Friday	14:30	38	42
05-Mar-21	Friday	14:45	38	41
05-Mar-21	Friday	15:00	39	44
05-Mar-21	Friday	15:15	39	41
05-Mar-21	Friday	15:30	39	43
05-Mar-21	Friday	15:45	40	45
05-Mar-21	Friday	16:00	40	43

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
05-Mar-21	Friday	16:15	38	41
05-Mar-21	Friday	16:30	39	43
05-Mar-21	Friday	16:45	38	47
05-Mar-21	Friday	17:00	40	45
05-Mar-21	Friday	17:15	39	41
05-Mar-21	Friday	17:30	40	42
05-Mar-21	Friday	17:45	38	40
05-Mar-21	Friday	18:00	41	46
05-Mar-21	Friday	18:15	41	45
05-Mar-21	Friday	18:30	38	42
05-Mar-21	Friday	18:45	37	40
05-Mar-21	Friday	19:00	37	40
05-Mar-21	Friday	19:15	38	41
05-Mar-21	Friday	19:30	37	40
05-Mar-21	Friday	19:45	36	39
05-Mar-21	Friday	20:00	36	40
05-Mar-21	Friday	20:15	37	40
05-Mar-21	Friday	20:30	36	39
05-Mar-21	Friday	20:45	34	39
05-Mar-21	Friday	21:00	35	39
05-Mar-21	Friday	21:15	32	45
05-Mar-21	Friday	21:30	33	39
05-Mar-21	Friday	21:45	32	38
05-Mar-21	Friday	22:00	32	34
05-Mar-21	Friday	22:15	31	33
05-Mar-21	Friday	22:30	28	32
05-Mar-21	Friday	22:45	30	34
05-Mar-21	Friday	23:00	31	34
05-Mar-21	Friday	23:15	29	31
05-Mar-21	Friday	23:30	27	31
05-Mar-21	Friday	23:45	28	30
06-Mar-21	Saturday	00:00	27	30
06-Mar-21	Saturday	00:15	28	32
06-Mar-21	Saturday	00:30	26	28
06-Mar-21	Saturday	00:45	26	34
06-Mar-21	Saturday	01:00	24	31
06-Mar-21	Saturday	01:15	26	29
06-Mar-21	Saturday	01:30	26	29
06-Mar-21	Saturday	01:45	26	30
06-Mar-21	Saturday	02:00	26	31
06-Mar-21	Saturday	02:15	27	30
06-Mar-21	Saturday	02:30	26	28
06-Mar-21	Saturday	02:45	26	28
06-Mar-21	Saturday	03:00	27	30
06-Mar-21	Saturday	03:15	28	30
06-Mar-21	Saturday	03:30	28	31
06-Mar-21	Saturday	03:45	28	31
06-Mar-21	Saturday	04:00	30	34
06-Mar-21	Saturday	04:15	30	33
06-Mar-21	Saturday	04:30	32	36
06-Mar-21	Saturday	04:45	33	36
06-Mar-21	Saturday	05:00	33	39

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
06-Mar-21	Saturday	05:15	32	37
06-Mar-21	Saturday	05:30	32	35
06-Mar-21	Saturday	05:45	35	38
06-Mar-21	Saturday	06:00	39	47
06-Mar-21	Saturday	06:15	38	45
06-Mar-21	Saturday	06:30	40	44
06-Mar-21	Saturday	06:45	41	46
06-Mar-21	Saturday	07:00	41	45
06-Mar-21	Saturday	07:15	42	45
06-Mar-21	Saturday	07:30	41	46
06-Mar-21	Saturday	07:45	40	46
06-Mar-21	Saturday	08:00	40	45
06-Mar-21	Saturday	08:15	37	42
06-Mar-21	Saturday	08:30	38	43
06-Mar-21	Saturday	08:45	36	48
06-Mar-21	Saturday	09:00	33	44
06-Mar-21	Saturday	09:15	34	43
06-Mar-21	Saturday	09:30	35	45
06-Mar-21	Saturday	09:45	35	40
06-Mar-21	Saturday	10:00	36	43
06-Mar-21	Saturday	10:15	35	40
06-Mar-21	Saturday	10:30	36	44
06-Mar-21	Saturday	10:45	35	45
06-Mar-21	Saturday	11:00	34	48
06-Mar-21	Saturday	11:15	34	38
06-Mar-21	Saturday	11:30	34	41
06-Mar-21	Saturday	11:45	35	40
06-Mar-21	Saturday	12:00	35	38
06-Mar-21	Saturday	12:15	35	46
06-Mar-21	Saturday	12:30	38	45
06-Mar-21	Saturday	12:45	39	42
06-Mar-21	Saturday	13:00	39	42
06-Mar-21	Saturday	13:15	35	42
06-Mar-21	Saturday	13:30	36	45
06-Mar-21	Saturday	13:45	36	40
06-Mar-21	Saturday	14:00	36	41
06-Mar-21	Saturday	14:15	35	40
06-Mar-21	Saturday	14:30	34	46
06-Mar-21	Saturday	14:45	35	43
06-Mar-21	Saturday	15:00	37	41
06-Mar-21	Saturday	15:15	34	41
06-Mar-21	Saturday	15:30	35	43
06-Mar-21	Saturday	15:45	36	44
06-Mar-21	Saturday	16:00	34	43
06-Mar-21	Saturday	16:15	36	42
06-Mar-21	Saturday	16:30	34	39
06-Mar-21	Saturday	16:45	36	44
06-Mar-21	Saturday	17:00	34	40
06-Mar-21	Saturday	17:15	34	41
06-Mar-21	Saturday	17:30	36	42
06-Mar-21	Saturday	17:45	37	42
06-Mar-21	Saturday	18:00	37	45

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90,\ T}$	$L_{Aeq,T}$
06-Mar-21	Saturday	18:15	39	47
06-Mar-21	Saturday	18:30	41	45
06-Mar-21	Saturday	18:45	37	41
06-Mar-21	Saturday	19:00	36	40
06-Mar-21	Saturday	19:15	37	40
06-Mar-21	Saturday	19:30	38	41
06-Mar-21	Saturday	19:45	37	41
06-Mar-21	Saturday	20:00	38	41
06-Mar-21	Saturday	20:15	38	41
06-Mar-21	Saturday	20:30	38	41
06-Mar-21	Saturday	20:45	38	41
06-Mar-21	Saturday	21:00	35	39
06-Mar-21	Saturday	21:15	35	37
06-Mar-21	Saturday	21:30	33	36
06-Mar-21	Saturday	21:45	34	37
06-Mar-21	Saturday	22:00	33	35
06-Mar-21	Saturday	22:15	36	40
06-Mar-21	Saturday	22:30	33	36
06-Mar-21	Saturday	22:45	31	34
06-Mar-21	Saturday	23:00	31	34
06-Mar-21	Saturday	23:15	29	32
06-Mar-21	Saturday	23:30	27	30
06-Mar-21	Saturday	23:45	28	30
07-Mar-21	Sunday	00:00	29	31
07-Mar-21	Sunday	00:15	29	32
07-Mar-21	Sunday	00:30	29	31
07-Mar-21	Sunday	00:45	28	30
07-Mar-21	Sunday	01:00	28	31
07-Mar-21	Sunday	01:15	27	29
07-Mar-21	Sunday	01:30	27	30
07-Mar-21	Sunday	01:45	27	36
07-Mar-21	Sunday	02:00	26	28
07-Mar-21	Sunday	02:15	27	28
07-Mar-21	Sunday	02:30	28	29
07-Mar-21	Sunday	02:45	26	32
07-Mar-21	Sunday	03:00	26	28
07-Mar-21	Sunday	03:15	25	29
07-Mar-21	Sunday	03:30	27	29
07-Mar-21	Sunday	03:45	26	28
07-Mar-21	Sunday	04:00	26	29
07-Mar-21	Sunday	04:15	28	31
07-Mar-21	Sunday	04:30	30	32
07-Mar-21	Sunday	04:45	30	33
07-Mar-21	Sunday	05:00	29	35
07-Mar-21	Sunday	05:15	32	35
07-Mar-21	Sunday	05:30	32	35
07-Mar-21	Sunday	05:45	32	38
07-Mar-21	Sunday	06:00	35	48
07-Mar-21	Sunday	06:15	37	45
07-Mar-21	Sunday	06:30	34	43
07-Mar-21	Sunday	06:45	40	46
07-Mar-21	Sunday	07:00	41	44

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90,\ T}$	$L_{Aeq,T}$
07-Mar-21	Sunday	07:15	40	44
07-Mar-21	Sunday	07:30	40	45
07-Mar-21	Sunday	07:45	40	44
07-Mar-21	Sunday	08:00	37	43
07-Mar-21	Sunday	08:15	38	45
07-Mar-21	Sunday	08:30	38	42
07-Mar-21	Sunday	08:45	38	47
07-Mar-21	Sunday	09:00	35	43
07-Mar-21	Sunday	09:15	35	46
07-Mar-21	Sunday	09:30	32	41
07-Mar-21	Sunday	09:45	32	41
07-Mar-21	Sunday	10:00	34	41
07-Mar-21	Sunday	10:15	33	47
07-Mar-21	Sunday	10:30	34	40
07-Mar-21	Sunday	10:45	35	42
07-Mar-21	Sunday	11:00	33	40
07-Mar-21	Sunday	11:15	30	42
07-Mar-21	Sunday	11:30	35	45
07-Mar-21	Sunday	11:45	32	41
07-Mar-21	Sunday	12:00	33	41
07-Mar-21	Sunday	12:15	33	39
07-Mar-21	Sunday	12:30	31	42
07-Mar-21	Sunday	12:45	32	42
07-Mar-21	Sunday	13:00	37	42
07-Mar-21	Sunday	13:15	32	39
07-Mar-21	Sunday	13:30	31	41
07-Mar-21	Sunday	13:45	31	38
07-Mar-21	Sunday	14:00	31	40
07-Mar-21	Sunday	14:15	31	40
07-Mar-21	Sunday	14:30	31	39
07-Mar-21	Sunday	14:45	32	39
07-Mar-21	Sunday	15:00	32	37
07-Mar-21	Sunday	15:15	31	42
07-Mar-21	Sunday	15:30	32	42
07-Mar-21	Sunday	15:45	31	38
07-Mar-21	Sunday	16:00	32	36
07-Mar-21	Sunday	16:15	33	37
07-Mar-21	Sunday	16:30	33	45
07-Mar-21	Sunday	16:45	34	44
07-Mar-21	Sunday	17:00	33	41
07-Mar-21	Sunday	17:15	34	43
07-Mar-21	Sunday	17:30	34	41
07-Mar-21	Sunday	17:45	35	38
07-Mar-21	Sunday	18:00	36	43
07-Mar-21	Sunday	18:15	38	45
07-Mar-21	Sunday	18:30	38	44
07-Mar-21	Sunday	18:45	41	42
07-Mar-21	Sunday	19:00	39	41
07-Mar-21	Sunday	19:15	38	41
07-Mar-21	Sunday	19:30	38	41
07-Mar-21	Sunday	19:45	36	40
07-Mar-21	Sunday	20:00	35	39

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
07-Mar-21	Sunday	20:15	35	39
07-Mar-21	Sunday	20:30	35	39
07-Mar-21	Sunday	20:45	36	40
07-Mar-21	Sunday	21:00	35	39
07-Mar-21	Sunday	21:15	37	40
07-Mar-21	Sunday	21:30	35	39
07-Mar-21	Sunday	21:45	33	39
07-Mar-21	Sunday	22:00	35	39
07-Mar-21	Sunday	22:15	33	39
07-Mar-21	Sunday	22:30	32	34
07-Mar-21	Sunday	22:45	32	35
07-Mar-21	Sunday	23:00	30	32
07-Mar-21	Sunday	23:15	30	32
07-Mar-21	Sunday	23:30	29	32
07-Mar-21	Sunday	23:45	28	31
08-Mar-21	Monday	00:00	28	32
08-Mar-21	Monday	00:15	28	36
08-Mar-21	Monday	00:30	29	35
08-Mar-21	Monday	00:45	26	32
08-Mar-21	Monday	01:00	26	29
08-Mar-21	Monday	01:15	24	26
08-Mar-21	Monday	01:30	24	27
08-Mar-21	Monday	01:45	25	28
08-Mar-21	Monday	02:00	24	29
08-Mar-21	Monday	02:15	26	29
08-Mar-21	Monday	02:30	25	28
08-Mar-21	Monday	02:45	25	28
08-Mar-21	Monday	03:00	24	27
08-Mar-21	Monday	03:15	25	28
08-Mar-21	Monday	03:30	27	29
08-Mar-21	Monday	03:45	26	29
08-Mar-21	Monday	04:00	26	31
08-Mar-21	Monday	04:15	32	35
08-Mar-21	Monday	04:30	33	37
08-Mar-21	Monday	04:45	32	36
08-Mar-21	Monday	05:00	33	36
08-Mar-21	Monday	05:15	32	35
08-Mar-21	Monday	05:30	34	36
08-Mar-21	Monday	05:45	34	39
08-Mar-21	Monday	06:00	43	49
08-Mar-21	Monday	06:15	42	48
08-Mar-21	Monday	06:30	39	44
08-Mar-21	Monday	06:45	39	45
08-Mar-21	Monday	07:00	42	45
08-Mar-21	Monday	07:15	44	47
08-Mar-21	Monday	07:30	42	44
08-Mar-21	Monday	07:45	41	45
08-Mar-21	Monday	08:00	38	46
08-Mar-21	Monday	08:15	37	44
08-Mar-21	Monday	08:30	38	44
08-Mar-21	Monday	08:45	36	42
08-Mar-21	Monday	09:00	34	44

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
08-Mar-21	Monday	09:15	33	44
08-Mar-21	Monday	09:30	33	43
08-Mar-21	Monday	09:45	33	47
08-Mar-21	Monday	10:00	32	44
08-Mar-21	Monday	10:15	40	53
08-Mar-21	Monday	10:30	32	48
08-Mar-21	Monday	10:45	29	38
08-Mar-21	Monday	11:00	32	43
08-Mar-21	Monday	11:15	31	40
08-Mar-21	Monday	11:30	32	41
08-Mar-21	Monday	11:45	31	39
08-Mar-21	Monday	12:00	29	41
08-Mar-21	Monday	12:15	29	46
08-Mar-21	Monday	12:30	29	39
08-Mar-21	Monday	12:45	29	36
08-Mar-21	Monday	13:00	33	39
08-Mar-21	Monday	13:15	31	38
08-Mar-21	Monday	13:30	33	43
08-Mar-21	Monday	13:45	33	41
08-Mar-21	Monday	14:00	33	47
08-Mar-21	Monday	14:15	31	37
08-Mar-21	Monday	14:30	32	44
08-Mar-21	Monday	14:45	33	44
08-Mar-21	Monday	15:00	35	43
08-Mar-21	Monday	15:15	34	45
08-Mar-21	Monday	15:30	34	38
08-Mar-21	Monday	15:45	32	39
08-Mar-21	Monday	16:00	33	40
08-Mar-21	Monday	16:15	33	45
08-Mar-21	Monday	16:30	33	42
08-Mar-21	Monday	16:45	32	40
08-Mar-21	Monday	17:00	34	44
08-Mar-21	Monday	17:15	42	48
08-Mar-21	Monday	17:30	43	50
08-Mar-21	Monday	17:45	31	42
08-Mar-21	Monday	18:00	39	51
08-Mar-21	Monday	18:15	39	50
08-Mar-21	Monday	18:30	35	47
08-Mar-21	Monday	18:45	29	38
08-Mar-21	Monday	19:00	31	38
08-Mar-21	Monday	19:15	29	38
08-Mar-21	Monday	19:30	29	39
08-Mar-21	Monday	19:45	29	38
08-Mar-21	Monday	20:00	28	38
08-Mar-21	Monday	20:15	28	38
08-Mar-21	Monday	20:30	30	38
08-Mar-21	Monday	20:45	31	38
08-Mar-21	Monday	21:00	33	39
08-Mar-21	Monday	21:15	35	43
08-Mar-21	Monday	21:30	33	42
08-Mar-21	Monday	21:45	33	38
08-Mar-21	Monday	22:00	33	35

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
08-Mar-21	Monday	22:15	33	35
08-Mar-21	Monday	22:30	32	34
08-Mar-21	Monday	22:45	31	33
08-Mar-21	Monday	23:00	31	33
08-Mar-21	Monday	23:15	30	33
08-Mar-21	Monday	23:30	30	33
08-Mar-21	Monday	23:45	31	34
09-Mar-21	Tuesday	00:00	31	34
09-Mar-21	Tuesday	00:15	31	35
09-Mar-21	Tuesday	00:30	29	31
09-Mar-21	Tuesday	00:45	29	31
09-Mar-21	Tuesday	01:00	29	36
09-Mar-21	Tuesday	01:15	28	30
09-Mar-21	Tuesday	01:30	27	30
09-Mar-21	Tuesday	01:45	29	32
09-Mar-21	Tuesday	02:00	30	33
09-Mar-21	Tuesday	02:15	30	32
09-Mar-21	Tuesday	02:30	31	33
09-Mar-21	Tuesday	02:45	29	31
09-Mar-21	Tuesday	03:00	28	32
09-Mar-21	Tuesday	03:15	29	33
09-Mar-21	Tuesday	03:30	29	31
09-Mar-21	Tuesday	03:45	29	32
09-Mar-21	Tuesday	04:00	30	33
09-Mar-21	Tuesday	04:15	32	36
09-Mar-21	Tuesday	04:30	33	35
09-Mar-21	Tuesday	04:45	30	33
09-Mar-21	Tuesday	05:00	32	35
09-Mar-21	Tuesday	05:15	38	42
09-Mar-21	Tuesday	05:30	39	42
09-Mar-21	Tuesday	05:45	39	43
09-Mar-21	Tuesday	06:00	44	50
09-Mar-21	Tuesday	06:15	41	48
09-Mar-21	Tuesday	06:30	45	49
09-Mar-21	Tuesday	06:45	46	49
09-Mar-21	Tuesday	07:00	42	47
09-Mar-21	Tuesday	07:15	46	49
09-Mar-21	Tuesday	07:30	44	48
09-Mar-21	Tuesday	07:45	40	45
09-Mar-21	Tuesday	08:00	40	45
09-Mar-21	Tuesday	08:15	37	41
09-Mar-21	Tuesday	08:30	34	45
09-Mar-21	Tuesday	08:45	34	46
09-Mar-21	Tuesday	09:00	32	40
09-Mar-21	Tuesday	09:15	33	41
09-Mar-21	Tuesday	09:30	32	43
09-Mar-21	Tuesday	09:45	32	43
09-Mar-21	Tuesday	10:00	34	42
09-Mar-21	Tuesday	10:15	34	42
09-Mar-21	Tuesday	10:30	33	41
09-Mar-21	Tuesday	10:45	33	40
09-Mar-21	Tuesday	11:00	34	40

Results from Installed Meter at Cefn Heulog March 2021				
Date	Day	Start Time	Results dB T = 15 minutes	
			$L_{A90, T}$	$L_{Aeq,T}$
09-Mar-21	Tuesday	11:15	36	42
09-Mar-21	Tuesday	11:30	37	44
09-Mar-21	Tuesday	11:45	34	42
09-Mar-21	Tuesday	12:00	37	43
09-Mar-21	Tuesday	12:15	35	42
09-Mar-21	Tuesday	12:30	34	41
09-Mar-21	Tuesday	12:45	34	41
09-Mar-21	Tuesday	13:00	33	40
09-Mar-21	Tuesday	13:15	34	38
09-Mar-21	Tuesday	13:30	38	44
09-Mar-21	Tuesday	13:45	35	41
09-Mar-21	Tuesday	14:00	33	40
09-Mar-21	Tuesday	14:15	33	41
09-Mar-21	Tuesday	14:30	31	35
09-Mar-21	Tuesday	14:45	31	41
09-Mar-21	Tuesday	15:00	32	42
09-Mar-21	Tuesday	15:15	31	36
09-Mar-21	Tuesday	15:30	31	37
09-Mar-21	Tuesday	15:45	31	41
09-Mar-21	Tuesday	16:00	31	38
09-Mar-21	Tuesday	16:15	32	44
09-Mar-21	Tuesday	16:30	33	39
09-Mar-21	Tuesday	16:45	34	40
09-Mar-21	Tuesday	17:00	33	44
09-Mar-21	Tuesday	17:15	37	55

4.0 Air Quality

4.1 SGP Annual Monitoring Report November 2020

4.2 Dust Assessment Methodology

4.3 Fugitive Dust Monitoring Sampling 2021

4.4 Dust Assessment Results

4.5 RCT Proposed Amended Pontypridd AQMA

4.6 ROMP 'Condition 31' Scheme of additional planting

4.7 Revised Dust and Particulate Management Plan and Dust Monitoring Plan

Contaminated Land
Air Quality
Environmental Audit

SMITH GRANT Environmental Consultancy LLP

Partnership No: OC 300776

Craig yr Hesg Quarry, Pontypridd
Review of PM10 Monitoring Data:
14th November 2019 to
19th November 2020

for: Hanson UK Ltd

March 2021

R2613B-R04-v2

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DOCUMENT CONTROL SHEET

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Client:	Hanson UK Ltd
Report Reference Number:	R2613B-R04
Report Status:	Final
Version:	v2
Date:	March 2021

for: Smith Grant LLP

	Name	Position	Signature	Date
Drafted By	D Lloyd BSc MSc	Consultant	pp	06.03.21
Checked	K E Hawkins BSc MSc CEnv MIEMA MIAQM	Chairman		06.03.21

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V2	Final	06.03.21	Final following minor edits

Contents

Figures

Appendices

1. Introduction

1.1. Hanson UK (Hanson) operates a sandstone quarry and associated processes at Craig Yr Hesg, Ynysybwl Road, Pontypridd, South Wales.

1.2. The northern side of the quarry includes the quarry haul route and Primary Crusher Feed Hopper which have previously been identified as potentially significant dust sources requiring control. The Glyncoch housing estate, which lies beyond the northern boundary of the quarry, is considered a potentially sensitive receptor with respect to fine particulate (PM_{10}) emissions to atmosphere given the proximity of the quarry.

1.3. In 2009 Smith Grant LLP (SGP) was instructed by Hanson to review dust emissions from the site and make recommendations for improvement measures as part of the Review of Minerals Permissions (ROMP) application being submitted by Hanson to the mineral planning authority, Rhondda Cynon Taff Borough Council (RCT). As part of the dust emissions review Hanson commenced airborne particulate (PM_{10}) monitoring at the site. The subsequent ROMP Consent Notice, Ref. 08/1380/10, dated 24th April 2013, included Condition 32 requiring the provision for a further 12-month programme of airborne particulate (PM_{10}) monitoring following the implementation of improved dust control measures at the quarry. Hanson has since voluntarily continued to monitor airborne particulates at the site.

1.4. SGP has subsequently produced a series of reports presenting the results of the airborne particulate monitoring as summarised in Section 2. This following report presents the results of the PM_{10} monitoring for the 12-month period 14th November 2019 to the end of 14th November 2020.

1.5. It should be noted that this report spans a period of monitoring affected by the global pandemic of the Coronavirus disease[1]. As such any comparison of data for this period with previous data should be treated with caution.

[1] 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. At the time of preparation of this report some of these restrictions remained in place with resulting implications on the construction industry and associated supply network.

2. Previous Reporting

2.1. As part of the ROMP application, Smith Grant LLP (SGP) was instructed by Hanson to review dust emissions from the site and make recommendations for improvement measures. The results of airborne particulate monitoring over the period January 2010 to November 2013 were reported in two SGP reports, as detailed below:

- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: January 2010 to March 2012, dated May 2012 (ref: R1337-R04-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: 14th March 2012 to 14th November 2013, dated February 2014 (ref: R1337-R07-v2)

2.2. The new planning conditions for the site imposed following the ROMP review included the provision for a 12-month programme of PM_{10} dust monitoring on completion of the implementation of improved dust control measures at the quarry. These measures were implemented over the period up to 15th November 2013. This date is held to be the start of the 12 months monitoring required under ROMP Planning Condition 32. The results of the 12 months of monitoring required under the Condition were reported in:

- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: 15th November 2013 to 14th November 2014, dated September 2015 (ref: R1337-R08-v3)

2.3. Hanson voluntarily continued to monitor airborne particulates at the site and instructed SGP to prepare further annual PM_{10} monitoring reports. Five reports were produced for the period November 2014 to November 2019 as detailed below:

- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: 15th November 2014 to 14th November 2015, dated February 2017 (ref: R1337-R09-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 15th November 2015 to 14th November 2016, dated February 2017 (ref: R1337-R010-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 15th November 2016 to 14th November 2017, dated November 2018 (ref: R2613B-R01-v2)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 15th November 2017 to 14th November 2018, dated August 2019 (ref: R2613B-R02-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 14th November 2018 to 14th November 2019, dated January 2021 (ref: R2613B-R03-v1; *currently in draft*)

2.4. All reports, other than R2613B-R03, have been submitted to RCT.

3. Data Sources

3.1. On-Site PM_{10} Monitoring Apparatus

3.1.1. Monitoring of fine particulates (PM_{10}) has continued to be conducted on-site using DustScan DS500 equipment. This provides a gravimetric measurement of filtered PM_{10} from the atmosphere pumped through the equipment during the monitoring period, which is typically designed to be a 1-week period. The PM_{10} concentration is expressed as a daily average, which must be regarded as indicative for the purposes of assessment. The method is not an approved European Reference Method[2] and the results cannot be directly compared to the national air quality standards for PM_{10}s which are expressed as an annual average (40 µg/m^3) and a maximum number of exceedances of the 24- hour mean PM_{10} concentration (35 days exceeding 50 µg/m^3).

3.1.2. The monitoring unit is located on the northern side of the quarry between the primary crusher feed hopper and main haul road to the south of the unit and residential properties in Glyncoch Estate to the north. The location is shown in Drawing D01. It has previously been agreed between Hanson and RCT that this location reflects the most sensitive part of the site due to the proximity between a key potential dust source and sensitive residential receptors. Southerly winds would be expected to carry any PM_{10} emissions from the quarry processing plant both to the monitor and towards the estate beyond. Southwesterly winds could carry particulates from the main quarry haul road leading to the feed hopper.

3.1.3. The DustScan unit collects gravimetric samples over periods of up to one week and is designed for low maintenance battery operation. The PM_{10} mass collected over the period of operation is divided by the number of days within that period in order to obtain a daily average figure.

3.1.4. A review of the PM_{10} monitoring equipment by DustScan in July 2019 determined that the unit may not have been correctly sealing, potentially resulting in an over-estimation of PM_{10} concentrations (i.e. through the sampling of Total Suspended Solids rather than PM_{10}). The equipment has since been repaired to ensure correct sampling into the future.

3.1.5. The unit is usually operated together with a vertical 360° "sticky strip" directional deposition monitor. This assesses dust deposition rates and source direction based on optical scanning to quantitatively measure dust soiling of the strip across 15° sectors over a period. The method is designed primarily to respond more to the coarser "nuisance" particulates that are likely to settle out closer to a source than the PM_{10} fraction, and whilst the gauge can provide an indication of

[2] As specified by BS EN 12341:1999, revised 2014 “Ambient air. Standard gravimetric measurement method for the determination of the PM_{10} or $PM_{2,5}$ mass concentration of suspended particulate matter”

the direction towards dust sources, they may not necessarily indicate accurately the source directions or amounts of the finest particulates.

3.2. Onsite Data Coverage

3.2.1. A total of 28 DustScan data reports have been produced over the period 14th November 2019 to 14th November 2020. Monitoring rounds do not precisely coincide with these dates, so the closest relevant dates for start and completion of the 12-month monitoring period are 14/11/2019 to 19/11/2020, with an overall interval of 370 days.

3.2.2. Site management has advised that the site was not closed due to the coronavirus pandemic other than for 1 day in March / April 2020. The site was closed, as usual, for several days across the Christmas 2019 / New Year 2020 period.

3.2.3. Monitoring has been carried out over a total of 176 days, amounting to a capture rate of 47.6% over the period. Gaps in coverage arise for various reasons including equipment failures and/or quarry stoppages. Data gaps are discussed further in Section 4.

3.3. Local / Regional Air Quality

3.3.1. PM_{10} concentrations vary considerably over time as a result of the contribution of natural and remote sources and the influence of weather, with high concentrations typically associated with high pressure weather systems and easterly airflows, particularly in winter months when natural dispersion of industrial, transport and domestic sources can be low and sources from solid and liquid fuel heating emissions can be high.

3.3.2. Where elevated concentrations of PM_{10} have been recorded by the DustScan station at the quarry, the data have been compared to available and appropriate data from local and regional automatic monitoring stations. These other data sources have also been referred to provide information where there are gaps in the DustScan data. Details of these stations are discussed below.

Upper Garth Avenue, Glyn Coch

3.3.3. RCT conducts airborne particulate (PM_{10}) monitoring in the residential area of Garth Avenue, Glyn Coch Estate as part of RCT's local monitoring network in accordance with its duties under Local Air Quality Management (LAQM). The primary monitoring station is Site 130 (Upper Garth Avenue) which uses a TEOM FDMS, an approved European Reference Method, and which has been operating since 16th July 2014. Site 130 recorded data throughout the monitoring period.

3.3.4. Data from Site 130 at Upper Garth Avenue has been obtained from the Air Quality in Wales website (https://airquality.gov.wales) through the data selector tool; this data is provided in hourly averages validated to the end of the period.

3.3.5. In accordance with LAQM TG16 Chapter 7[3], erroneous data from particulate monitoring instruments should be disregarded before undertaking data interpretation. From instruments that produce data on a 1-hour basis, 24-hour averages are only valid when calculated from at least 18 valid 1-hour averages i.e. days with at least 75% data capture.

3.3.6. The data capture rates of the valid 24-hour averages at Upper Garth Avenue from 14th November 2019 to 19th November 2020 are detailed in the table below.

Table 3.1: Data Capture at Automatic Monitor (14/11/19 – 19/11/20)

Monitor	Days of missing data	Data capture of valid 24-hour periods (%)	Annual PM_{10} mean ($\mu g/m^3$)
RCT Upper Garth Avenue (Site 130)	52	98	15.2

3.3.7. The data capture rate across the assessment period at Upper Garth Avenue was greater than that required under the LAQM regime for assessment against the UK objectives.

3.3.8. A second 'indicative' monitor is located at Site 109 on Lower Garth Avenue. Data from Site 109 is not available from the Air Quality in Wales website and is consequently not included for detailed analysis in this report.

Cardiff Centre and Newport

3.3.9. Monitors operated at Cardiff Centre and Newport are both part of the Automatic Urban and Rural Network (AURN) and are categorised as Urban Background sites. Details are provided below:

Table 3.2: Regional PM_{10} Monitoring Sites

Site Name	Ref	Type	Grid Reference; Altitude	Lat, Long	Distance (km), Orientation from Site
Cardiff Centre	UKA00217	AURN, Urban Background	318416, 176526; 12m aod	51.481780, -3.176250	18.6km SE
Newport	UKA00380	AURN, Urban Background	332410, 189604; 24m aod	51.601203, -2.977281	24.3km ESE

3.3.10. The Cardiff station is located on Frederick Street in the centre of Cardiff in a pedestrianised shopping area, surrounded by retail and business premises. The nearest busy road is approximately 200m west of the station.

[3] Department for Environment, Food and Rural Affairs (Defra), Local Air Quality Management, Technical Guidance (TG16), February 2018

3.3.11. The Newport station is located within the grounds of St Julian's School on the outskirts of Newport and lies about 60m from the M4.

3.3.12. Monitoring data from Cardiff Centre and Newport for 2018 and 2019 has been obtained from the Air Quality in Wales website through the data selector tool all data are validated. Comparison of the site data to the monitored data available from Cardiff Centre and Newport enables examination of the possibility that raised concentrations are due to regional or national pollution episodes.

National Reports

3.3.13. Each year the UK is required to submit air quality data to the European Commission to assess compliance with European Directives on air quality. The latest UK submission for 2019[4] has been referred to for further information regarding national pollution events over some of the reporting period.

3.4. Meteorological Records

3.4.1. An automatic site weather station is installed on the roof of the primary crusher feed hopper, and provides hourly measurements of temperature, atmospheric pressure, humidity, rainfall and wind speed and direction. Wind speed and direction data is available for the entire of the period.

3.5. Data Analysis Tools

3.5.1. The computer software R has been used to carry out data analysis of the monitoring data from Garth Avenue and Cardiff Centre through use of dedicated functions written to analyse air pollution data in the R 'package' called OpenAir[5,6].

[4] Defra, Air Pollution in the UK 2018, September 2019 and Defra, Air Pollution in the UK 2019, September 2020 available at: https://uk-air.defra.gov.uk/library/annualreport/index
[5] Carslaw, D.C. and K. Ropkins, (2012). openair — an R package for air quality data analysis. Environmental Modelling & Software. Volume 27-28, pp. 52–61.9.9
[6] Carslaw, D.C. (2018). The openair manual — open-source tools for analysing air pollution data. Manual for version 2.2-4, University of York.

4. Results and Interpretation

4.1. Site Annual PM_{10} Monitoring Results

4.1.1. All available DustScan PM_{10} data reports for the period are included as Appendix A.

4.1.2. The DustScan monitored PM_{10} results are summarised below and compared against Air Quality Objectives (AQOs) (40 µg/m^3 annual average; up to 35 exceedances of 50 µg/m^3 24 hour mean per annum):

Table 4.1: Summary of Site PM_{10} Results, 14 November 2019 to 14 November 2019

	value	comment	previous period (Nov 18- Nov 19)
no. of records	28	data capture 48%	34
concentration average of results (µg/m^3)	13.44	33.6 % of AQO	16.33 (40.8% of AQO)
concentration, as time-weighted average[1] (µg/m^3)	12.56	31.4 % of AQO	18.02 (45% of AQO)
maximum concentration (µg/m^3)	51.69	Averaged over 3.9 days	46.6
number of results > 50 µg/m^3	1	does not extrapolate to AQO as averaging effect of extended monitoring periods will smooth out daily highs and lows	0
number of days within rounds of >50 µg/m^3	3.9		0
number of results between 30 and 50 µg/m^3	1	30 µg/m^3 threshold for weekly monitoring is suggested as indicative that some daily averages within a typical weeks monitoring might exceed 50 µg/m^3	6
number of days within rounds of >30 µg/m^3 <50 30 µg/m^3	4.0		40.4

1: the sum of the products of each monitoring result and monitoring duration, divided by the total time monitored

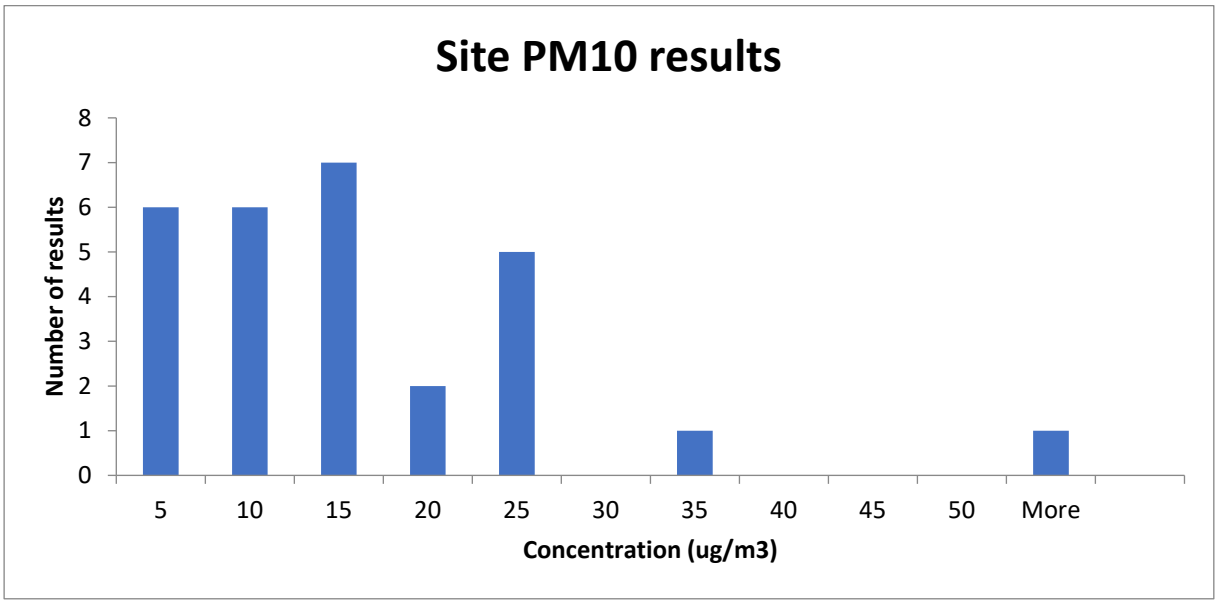

Figure 1: Frequency Distribution of Results

4.1.3. The Air Quality Pollution banding system, also known as the Daily Air Quality Index (DAQI) rates daily recorded PM_{10} levels on a 1 (Low) to 10 (Very High) scale. The DustScan results for the year indicate PM_{10} levels to fall within the Low (1-3) Band (<50 µg/m^3 for PM_{10} particles) with only one exception, indicating no long-term significant pollution or risk to public health.

4.2. Site Monitored Short-term Pollution Episodes

Onsite Peak Periods

4.2.1. The individual DustScan reports present average values over the monitoring period, which normally extends to 1 week. They can therefore only provide an indication as to the possible frequency of exceedances of the 24-hour target of 50 µg/m^3. Where the 50 µg/m^3 limit is exceeded within the weekly average then it is likely that the 24-hour target would have been exceeded over more than one day. The conservative assumption would be that the exceedance occurred on every day of the monitoring period.

4.2.2. Because the DustScan results are average to daily figures, it is also probable that for monitoring rounds that record over, say 30 µg/m^3, there could have been one or more days when PM_{10} concentrations would have exceeded the 50 µg/m^3 24-hour limit, particularly since weekend concentrations are usually relatively lower than weekday levels and would reduce the overall average concentration.

4.2.3. One monitoring round had daily average concentrations in excess of the 50 µg/m^3 limit and one between 30-50 µg/m^3, each referred to as 'peak' periods or Episodes.

4.2.4. For the purpose of assessing the data continuity and possibility of the episodes extending beyond the specific DustScan monitoring period, the data coverage of monitoring before and after the episode is summarised in Table 4.2 below.

Table 4.2: Data Continuity around Peak Periods

episode	start	end	average PM_{10} conc. (µg/m^3)	monitoring gaps around episode	
				before (days)	after (days)
1	19/03/2020 (13:50)	23/03/2020 (11:20)	51.7	0	10.9
2	03/04/2020 09:21	07/04/2020 09:16	32.7	11	0

4.2.5. PM_{10} data for the monitoring sites at Upper Garth Avenue, Cardiff Centre and Newport over the periods of the above episodes have been examined to determine whether it is likely that the elevated concentrations are representative of regional or national pollution episodes or are of more local origin. Mean PM_{10} concentrations over the periods equivalent to the site DustScan monitoring periods, based on available data, are summarised below:

Table 4.3: Comparison of episode mean PM_{10} results[1]

episode	site	Upper Garth Avenue	Cardiff	Newport
1	51.69	12.6	11.6	10.9
2	32.67	31.37	26.92	27.46

concentrations are µg/m^3

1: concentrations are period averages for the DustScan monitoring periods, not 24-hour averages

Episode 1

4.2.6. Episode 1 occurred between 19th and 23rd March when the onsite recorded daily mean concentration was 51.69 µg/m^3. Unfortunately, no on-site data was recorded for the following 11 days.

4.2.7. In contrast, data from Upper Garth Avenue for this period has a mean of 12.8 µg/m^3 with only two hours recorded over 40 µg/m^3. Likewise, no elevated levels were recorded at either Cardiff or Newport across this period. However, during the immediate days that followed measured concentrations at all the sites did rise significantly.

4.2.8. It is noted that this episode occurred just at the start of the implementation of the UK restrictions due to the Coronavirus disease[1]. A degree of voluntary restrictions also commenced before this date and it is therefore considered that any data from this period should be treated with caution.

4.2.9. The Dustscan directional dust deposition data has also been referred to for this period. The data indicates dust arising from the south to southwest over this period resulting in a 'High' impact risk across some sectors.

4.2.10. The on-site weather station indicates however that the wind direction over this episode was predominantly from the north east. There is therefore a discrepancy between the DustScan directional dust results indicating the dust arose from the south / southwest and the weather data suggesting the prevailing wind to have been northeasterly.

4.2.11. The available information therefore indicates a local contributory source to the elevated site-recorded PM_{10} concentrations over this period. Based on the available evidence it is considered that the quarry *could* have been a local contributory source.

Episode 2

4.2.12. Episode 2 occurred from 7th to 14th April when the on-site DustScan monitor recorded a daily mean of 32.67 µg/m^3. No directional dust data is available for this period.

4.2.13. Data from Upper Garth Avenue recorded a similar period mean of 31.37 µg/m^3 with broadly similar period mean levels of PM_{10} also recorded at Cardiff (26.92 µg/m^3) and Newport (27.46 µg/m^3) across this period. There were however significant variations in the recorded PM_{10} - concentrations over the period at the three stations, with elevated hourly readings recorded at Garth Avenue across the early part of the Episode and, to a lesser extent, at Newport across the middle of the monitoring period as shown in Figure 2.

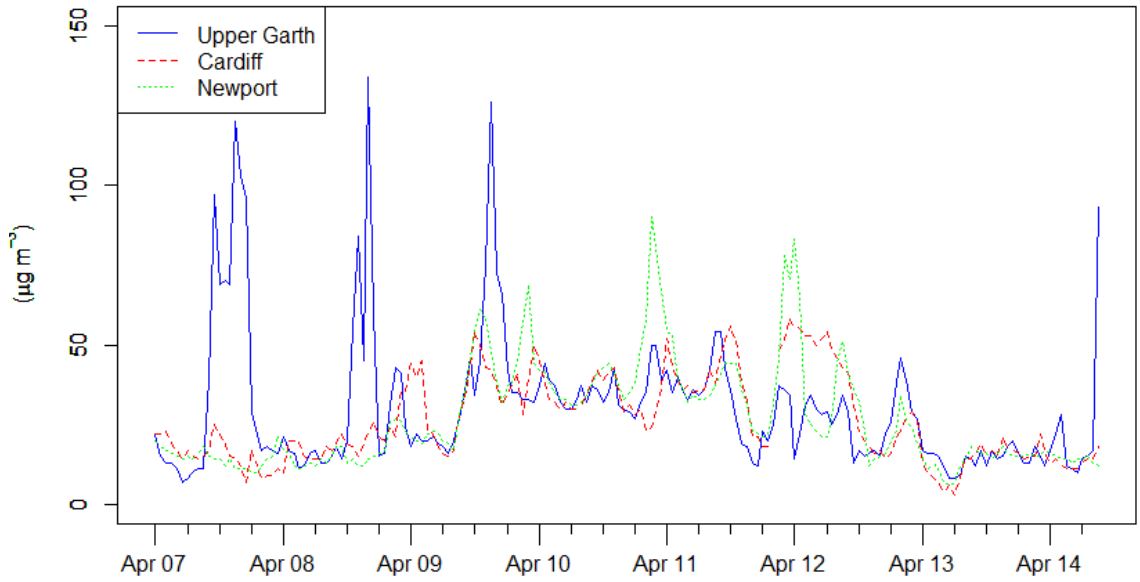

Figure 2. Hourly variation of PM_{10} over the period of Episode 2

4.2.14. The elevated hourly peak readings at Upper Garth Avenue did not however result in any exceedances of the 24-hour mean limit across this period.

4.2.15. The on-site weather data reports the wind direction over this episode to have been predominantly from the south.

4.2.16. The available data would therefore suggest the quarry could have been a local contributary source to the hourly peak concentrations recorded at Garth Avenue during the early part of this period.

Site data gaps of more than 1 day

4.2.17. Gaps in on-site data coverage of a day or more are listed below in Table 4.2. Where on-site data gaps of 1 day or more occur, the RCT Garth Avenue data has been reviewed to determine any potential exceedances of the 24-hour air quality objective. When site data gaps coincided with instances where the Upper Garth Avenue monitor was non-operational this has also been noted.

Table 4.2: Gaps of more than 1 day in site data coverage over the monitoring period

start	end	days	average RCT Upper Garth Avenue data over period[1]
15/11/19	29/11/19	14.9	21.4 µg/m^3, 2 exceedances of 24-hour limit
21/12/19	09/01/20	9.4	13.2 µg/m^3, no 24-hour exceedances
30/01/20	06/02/20	7.0	13.7 µg/m^3, no 24-hour exceedances
27/02/20	03/03/20	4.8	10.8 µg/m^3, no 24-hour exceedances
23/03/20	03/04/20	10.9	25.3 µg/m^3, 1 exceedance of 24-hour limit
14/04/20	09/06/20	56.1	21.3 µg/m^3, 2 exceedances of 24-hour limit
16/06/20	18/06/20	2.2	16.3 µg/m^3, no 24-hour exceedances
25/06/20	10/07/20	14.7	15.4 µg/m^3, 1 exceedance of 24-hour limit
13/07/20	17/07/20	3.6	10.7 µg/m^3, no 24-hour exceedances
24/07/20	30/07/20	6.22	8.1 µg/m^3, no 24-hour exceedances
06/08/20	25/08/20	19.1	no data available
01/09/20	04/09/20	2.7	no data available
11/09/20	25/09/20	14.2	10.2 µg/m^3, no 24-hour exceedances
26/09/20	22/10/20	26.0	6.6 µg/m^3, no 24-hour exceedances
Total		~192	

1: RCT data is average of 24-hour averages for the whole days covered by the site data gaps; where valid 24-hour averages have been calculated in accordance with Defra LAQM TG16 (75% valid data capture)

4.2.18. Where data is available for the RCT Upper Garth Avenue monitor in 2019-20, the data indicate that there were six occasions when the daily mean level of PM_{10} breached the 24-hour limit of 50 µg/m^3 during the gaps in the site monitoring. These are discussed further below.

4.3. RCT Garth Avenue Monitoring

4.3.1. As noted in section 3.3.3, data from RCT Site No. 130 (Upper Garth Avenue TEOM FDMS) were available throughout the period.

4.3.2. Overall, this is a data capture rate of 98% over the monitoring period. The mean PM_{10} concentration over this period was 15.2 µg/m^3, 38% of the annual average AQO. This value is higher than the site monitoring time-weighted average of 12.6 µg/m^3 over this same period.

4.3.3. Figure 5 shows the daily mean PM_{10} concentration for each day at Upper Garth Avenue throughout the period the monitor was operating. The data are shown as calendar plots, only valid 24-hour averages are shown.

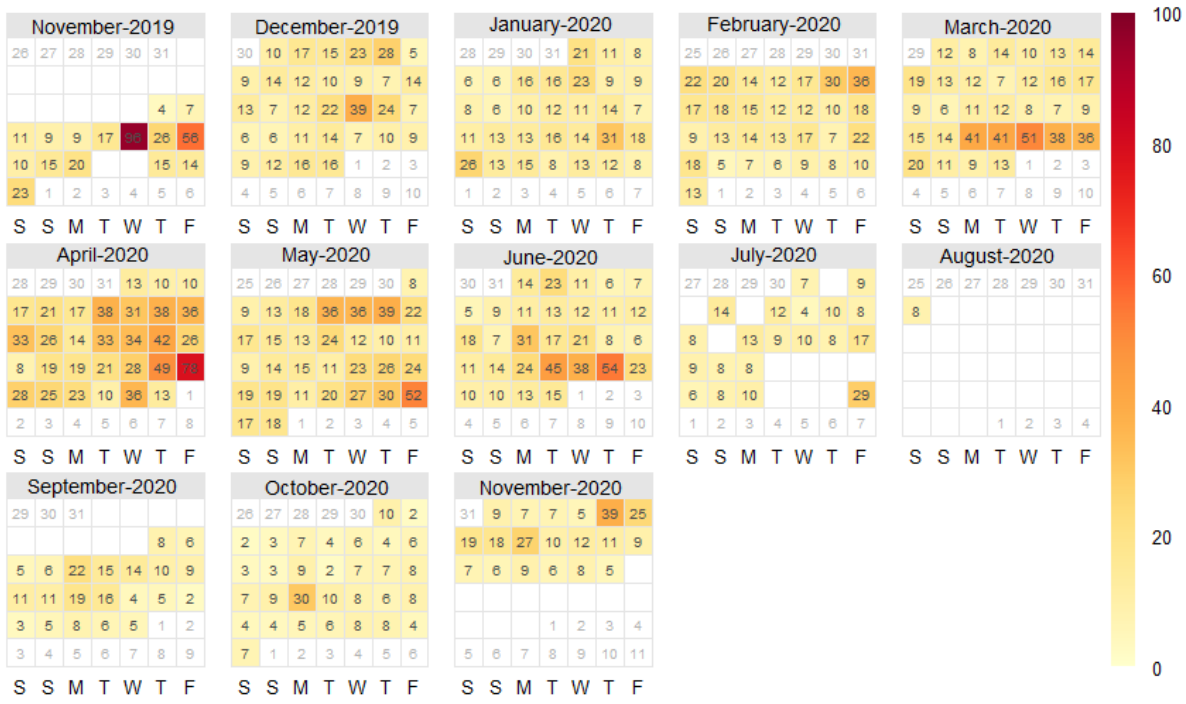

Figure 5: Calendar Plot of Daily PM_{10} values at Upper Garth Avenue from 14th November 2019 - 19th November 2020

4.3.4. A total of 6 days exceeded the 50 µg/m^3 24-hour mean PM_{10} limit, which is 17% of the 35 days exceedance per annum under the AQO.

4.3.5. All six exceedances correspond with gaps in the on-site DustScan data. However, some data are available for Cardiff and Newport for these events and the equivalent calendar plots for these data are included in Figure 6(i) and (ii).

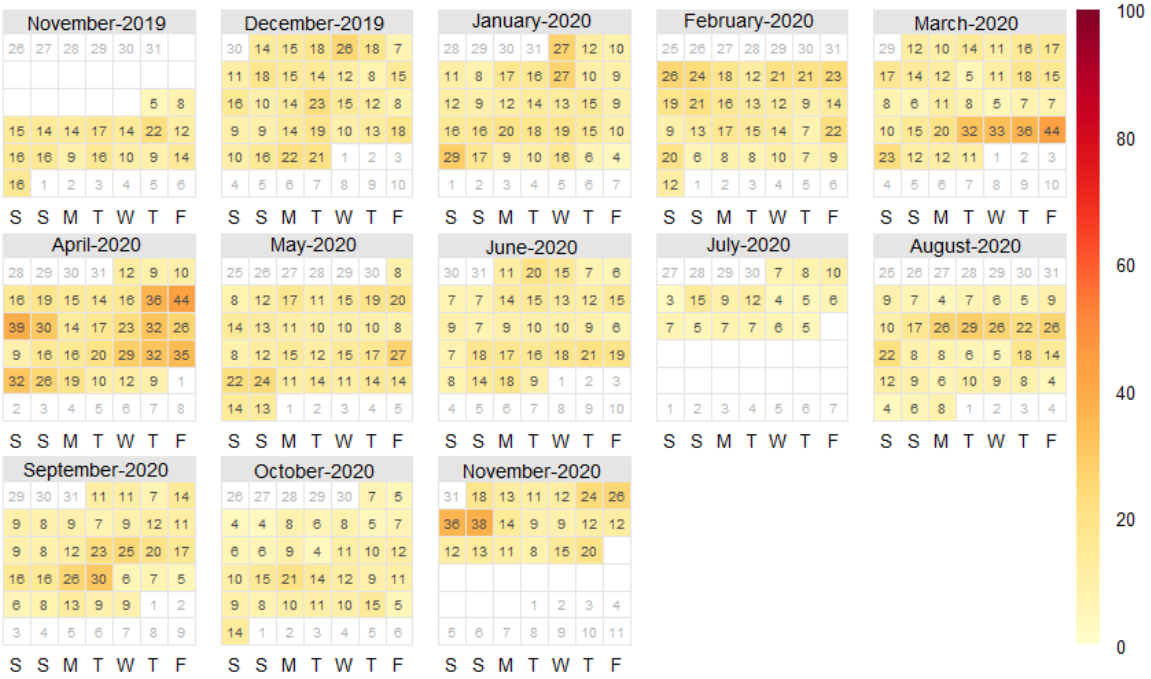

Figure 6(i) Calendar plot of data from Newport.

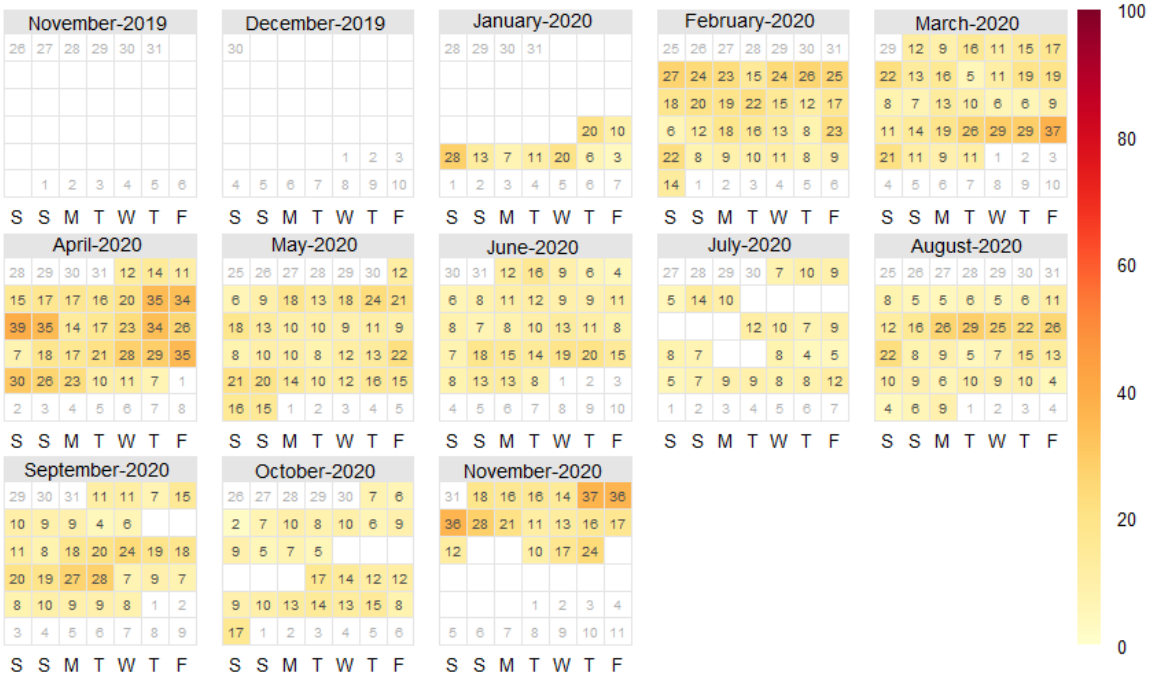

Figure 6(ii) Calendar plot of data from Cardiff Central.

4.3.6. The available data is summarised in Table 4.3.

Table 4.3 Review of Upper Garth Avenue 24-hour exceedances

date	concentration (µg/m^3)	Comments
20.11.19	95.7	Concentrations rise steeply from 08:00 to a peak at 09:00; followed by a slight fall at 12:00 and a second rise at 13:00; concentrations fall to below 50 µg/m^3 at 20:00; associated with strong southerly winds; no corresponding increase observed at Newport (no Cardiff data) Site measured directional dust recorded 'very low' dust impacts from all sectors.
22.11.19	56.0	Concentrations rise steeply from 07:00 to a peak at 10:00; followed by a slight fall at 15;00 and a second peak between 18:00 and 19:00 and sharp fall to be below 50 µg/m^3 at 20:00; associated with strong southerly winds; no corresponding increase observed at Newport (no Cardiff data). Site measured directional dust data indicates dust arising from the south through to southwest across this period (data spans 22.11.19-29.11.19) with a 'High Dust Impact Risk' from some sectors.
25.03.20	51.2	Concentrations began to rise steeply mid-morning to 90 µg/m^3 at 12:00. A small drop then occurred before they began to rise once more, peaking at 128 µg/m^3 at 19:00 in the evening before declining slowly. Wind was predominantly from the south. Higher concentrations than typical also observed at Cardiff and Newport. Site measured directional dust data indicates dust arising from the south / southwest across this period (data spans 19.03.20-26.03.20) with a 'High Dust Impact Risk' from some sectors.
24.04.20	78.1	After an overnight mean of 27 µg/m^3 concentrations began to rise after 09:00 to reach a peak of 208 µg/m^3 at 14:00 before declining to 40 µg/m^3 by 20:00. Concentrations then increased to 91 µg/m^3 by 23:00. Wind was predominantly from the south. Higher concentrations than typical also observed at Cardiff and Newport. No site measured directional dust data.
29.05.20	52.2	Concentrations began to rise sharply at 08:00 to reach a daily maximum of 144 µg/m^3 at 09:00. Concentrations remained high until 12:00 declining to 46 µg/m^3 at 14:00. Concentrations then began to rise producing a second peak of 101 µg/m^3 at 17:00 before once more declining until 20:00 in the evening. Winds during the day were strong and from the south and south-south east. No site measured directional dust data.

date	concentration ($\mu g/m^3$)	Comments
25.06.20	54.5	Concentrations began to rise steadily at 09:00 to reach 107 $\mu g/m^3$ at 11:00. After a slight drop the daily maximum of 149 $\mu g/m^3$ was reached at 15:00. Concentrations then dropped steadily until a third peak between 18:00 and 19:00 in the evening when 79 $\mu g/m^3$ was recorded. Winds during the day were strong and from the south. Site measured directional dust data indicates dust arising from the west-northwest though to east across this period (data spans 25.06.20-02.07.20) with a 'High to Very High Dust Impact Risk' from some sectors.

4.3.7. For the first two exceedances observed at Upper Garth Avenue there are no corresponding increases in PM_{10} concentrations seen in the Newport data and there are no data available form Cardiff. For the exceedances in March and April higher than typical PM_{10} concentrations were observed at both Newport and Cardiff suggesting that a more regional pollution event may have occurred. These months correspond to the start of the first national coronavirus lockdown and such events may have been associated with an increase in domestic solid fuel burning with people restricted to working from home. For the final two exceedances at Upper Garth Avenue in May and June there are no corresponding increases in PM_{10} concentrations seen in the Newport and Cardiff data.

4.3.8. The above exceedances all corresponded with strong southerly winds. It is noted that in general the PM_{10} concentrations across the relevant 24-hour periods discussed above demonstrate a 'diurnal' profile. The elevated concentrations are generally between the hours of 08:00 and 19:00, with occasional dips mid-day between 12:00 and 14:00, although the data for 24.04.20 also shows a sharp peak above 50 $\mu g/m^3$ at 22:00.

4.3.9. It is equally noted that not all occasions of southerly winds are associated with elevated particulate levels. It is also noted that for the episode on 25.06.20 the directional dust data that spans the period including that day suggests a source from the north-northwest though to east whereas the meteorological data would suggest a southerly source.

4.3.10. The available data suggest that the quarry may contribute to local PM_{10} concentrations at Upper Garth Avenue, with other contributory sources, but that when elevated levels occur this may also be in combination with regional events.

4.3.11. The above occurrences are notable by their infrequent nature and are well below the limit of 35 days exceedance per annum under the AQO.

5. Summary and Conclusions

5.1. This report covers the period of 14th November 2019 to 14th November 2020. The monitoring period covers the period of the coronavirus pandemic[1] (first UK lockdown commenced 23rd March 2020) and as such the data should therefore be treated with caution when determining any trends with preceding years. It is noted however that the site continued operating through-out this period other than the loss of one day.

5.2. Site data capture for the period was 47.6% with gaps occurring at intervals spread across the monitoring period. Onsite meteorological data was collected for the entire period.

5.3. The site monitoring is supported by hourly PM_{10} concentration data captured by RCT at Upper Garth Avenue in proximity to the site. There was 98% data capture at Upper Garth Avenue over the monitoring period. The data has been processed and validated by RCT.

5.4. The available site monitoring indicates a time weighted annual average concentration of 12.6 $\mu g/m^3$ over the entire period, which is 31.4% of the national long-term air quality objective (AQO; 40 $\mu g/m^3$) established for the protection of human health. The available Upper Garth Avenue results produced an annual average of 15.2 $\mu g/m^3$, 38% of the annual average AQO for the latter part of the period.

5.5. The on-site monitoring generates results over typical periods of a week and cannot be used directly to estimate exceedances of the short-term AQO which is established as a 24-hour limit (50 $\mu g/m^3$; not to be exceeded more than 35 times per annum). A period average concentration in excess of 30 $\mu g/m^3$ 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.

5.6. Two onsite pollution episodes have been identified from the on-site monitoring data were concentration values in excess of 30 $\mu g/m^3$ were recorded. Where possible these monitoring periods (referred to as Episodes) have been examined in further detail in combination with hourly PM_{10} concentration data captured at Upper Garth Avenue, and at the AURN monitoring sites at Cardiff Central and Newport, to assess whether it is likely that the elevated particulate concentrations are representative of regional or national pollution episodes or are of more local origin.

5.7. The average results for the year indicate PM_{10} levels to lie within the Low Band / Index 1 classification of the Welsh Government air quality pollution banding system, indicating no long-term significant pollution or risk to public health. The classification system rates daily recorded PM_{10} levels on a 1 (Low) to 10 (Very High) scale.

5.8. The results of the onsite monitoring are compared with previous monitoring periods in the following summary table.

Table 5.1: Comparison of PM_{10} monitoring over last 5 years

period	15/11/2015 to 14/11/2016	16/11/2016 to 17/11/2017	18/11/2017 to 14/11/2018[1]	14/11/2018 to 14/11/2019[1]	14/11/2019 to 19/11/2020[2]
on-site PM_{10} monitor					
report	R1337-R10	R2613B-R01	R2613B-R02	R2613B-R03	R2613B-R04
total days	369	366	361	365	372
actual days of monitoring	296.6	276.4	200.5	202.0	176.0
% 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 AQO	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 of rounds >50 µg/m³	0	1	0	0	1
number of rounds >30 µg/m³	1	3	3	6	2
RCT Upper Garth Avenue data hourly PM_{10}					
% data capture	98	96	64[3]	24[3]	98
long-term (annual) average over period	13.7	18.93	21.50	13.4	15.2
% of AQO	34.3%	47.3%	54%	33.5%	38%
no. of daily exceedances	4	10	13	0	6
% of AQO	11.4%	28.6%	37%	0%	17%

1: It is 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

2: 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

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

5.9. In conclusion, the on-site and Upper Garth Avenue data continues to indicate no actual or likely breach of either the long-term annual mean or short-term 24-hour AQOs for PM_{10}.

5.10. The available data has continued to demonstrate reasonable correlation between the site data and the nearby RCT monitoring station at Upper Garth Avenue, although the low data capture for the site should be noted.

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Drawing D01: Site and Local Monitoring Locations

Appendix A

DustScan PM_{10} 24h Average Data Reports

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3282	29/11/2019 10:48:30	05/12/2019 10:25:33	8617	**2.32**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3284	05/12/2019 10:26:09	12/12/2019 10:26:15	10080	**0.40**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3290	13/12/2019 08:08:00	19/12/2019 12:17:00	8889	**1.80**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3296	19/12/2019 12:17:22	31/12/2019 02:17:00	16679	**0.48**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3299	09/01/2020 11:30:17	16/01/2020 09:39:49	9969	**8.63**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3304	16/01/2020 09:40:29	23/01/2020 09:40:35	10080	**12.10**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3308	24/01/2020 08:49:51	30/01/2020 10:08:54	8719	**19.04**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3313	06/02/2020 11:03:34	13/02/2020 07:03:34	9840	**20.93**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3315	13/02/2020 11:59:21	20/02/2020 09:59:21	9960	**11.04**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3321	20/02/2020 13:32:45	27/02/2020 11:21:35	9948	**8.44**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3327	03/03/2020 06:23:32	05/03/2020 13:32:41	3309	**7.25**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3329	05/03/2020 13:33:34	12/03/2020 11:59:50	9986	**11.82**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3330	12/03/2020 12:01:45	19/03/2020 12:02:07	10080	**11.11**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3336	19/03/2020 13:50:00	23/03/2020 11:20:00	5610	**51.69**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3346	03/04/2020 09:21:51	07/04/2020 09:16:40	5754	**32.67**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3348	07/04/2020 07:16:00	14/04/2020 07:16:00	10080	**23.49**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3360	09/06/2020 10:05:50	16/06/2020 10:05:56	10080	**2.58**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3364	18/06/2020 14:25:48	25/06/2020 14:25:54	10080	**23.02**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3366	04/07/2020 00:00:00	04/07/2020 00:10:00	10	**200.00**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3367	10/07/2020 08:11:52	13/07/2020 19:23:42	4991	**13.62**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3370	17/07/2020 10:08:47	24/07/2020 10:08:53	10080	**20.04**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3374	30/07/2020 15:27:19	06/08/2020 15:27:25	10080	**12.50**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3376	25/08/2020 17:18:27	01/09/2020 17:18:36	10080	**14.88**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3386	04/09/2020 10:08:00	11/09/2020 10:09:00	10081	**16.86**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3388	25/09/2020 15:02:36	26/09/2020 11:02:36	1200	**6.67**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3390	22/10/2020 10:13:47	29/10/2020 10:13:50	10080	**9.72**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3392	30/10/2020 08:08:51	06/11/2020 08:08:53	10080	**2.78**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3394	06/11/2020 09:12:05	12/11/2020 14:59:55	8987	**20.92**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3398	12/11/2020 15:00:22	19/11/2020 13:50:56	10010	**9.59**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3399	19/11/2020 14:06:35	26/11/2020 14:06:41	10080	**9.33**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

Appendix B

DustScan Directional Data Reports

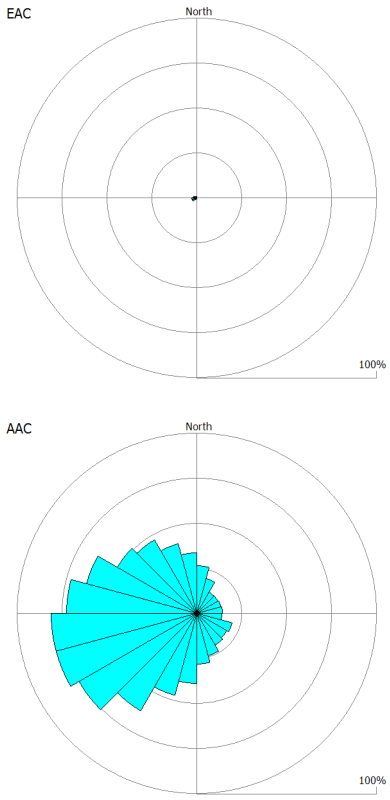
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	25-Oct-19	**Date In:**	01-Nov-19
Interval*:	7 days	**Our Ref:**	100207 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.0
Absolute Area Coverage (AAC%) / interval = 38.6
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 5.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.6	26.7	<0.1	3.8	Very Low
15°-30°	0.4	20.3	<0.1	2.9	Very Low
30°-45°	0.2	13.6	<0.1	1.9	Very Low
45°-60°	0.2	13.8	<0.1	2.0	Very Low
60°-75°	0.2	14.1	<0.1	2.0	Very Low
75°-90°	0.2	14.3	<0.1	2.0	Very Low
90°-105°	0.2	14.2	<0.1	2.0	Very Low
105°-120°	0.3	20.5	<0.1	2.9	Very Low
120°-135°	0.3	19.4	<0.1	2.8	Very Low
135°-150°	0.3	20.6	<0.1	2.9	Very Low
150°-165°	0.4	24.4	<0.1	3.5	Very Low
165°-180°	0.5	28.4	<0.1	4.1	Very Low
180°-195°	0.8	39.1	0.1	5.6	Very Low
195°-210°	1.1	47.2	0.2	6.7	Very Low
210°-225°	1.7	62.6	0.2	8.9	Very Low
225°-240°	2.5	75.9	0.4	10.8	Very Low
240°-255°	2.9	81.1	0.4	11.6	Very Low
255°-270°	3.2	81.2	0.5	11.6	Low
270°-285°	2.5	72.8	0.4	10.4	Very Low
285°-300°	1.9	63.6	0.3	9.1	Very Low
300°-315°	1.3	51.1	0.2	7.3	Very Low
315°-330°	1.1	47.4	0.2	6.8	Very Low
330°-345°	1.0	40.2	0.1	5.7	Very Low
345°-360°	0.8	33.6	0.1	4.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

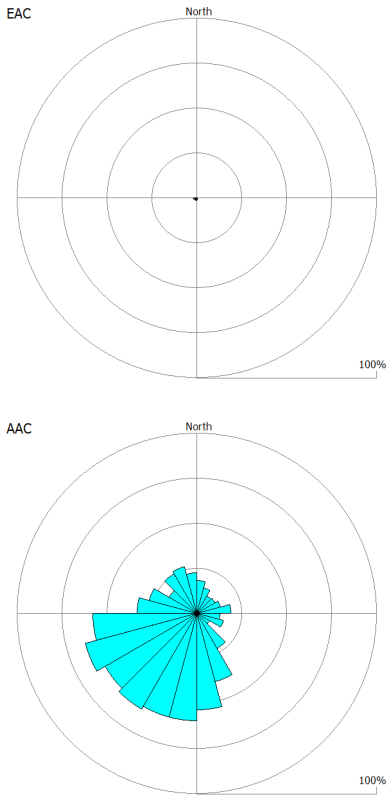
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	01-Nov-19	**Date In:**	08-Nov-19
Interval*:	7 days	**Our Ref:**	100406 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.7
Absolute Area Coverage (AAC%) / interval = 31.7
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 4.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	18.5	<0.1	2.6	Very Low
15°-30°	0.2	14.9	<0.1	2.1	Very Low
30°-45°	0.2	11.2	<0.1	1.6	Very Low
45°-60°	0.2	12.1	<0.1	1.7	Very Low
60°-75°	0.2	13.6	<0.1	1.9	Very Low
75°-90°	0.3	19.3	<0.1	2.8	Very Low
90°-105°	0.2	12.9	<0.1	1.8	Very Low
105°-120°	0.2	15.6	<0.1	2.2	Very Low
120°-135°	<0.1	8.2	<0.1	1.2	Very Low
135°-150°	0.4	22.6	<0.1	3.2	Very Low
150°-165°	0.8	39.4	0.1	5.6	Very Low
165°-180°	1.4	53.7	0.2	7.7	Very Low
180°-195°	1.6	60.0	0.2	8.6	Very Low
195°-210°	1.7	59.8	0.2	8.5	Very Low
210°-225°	1.8	61.7	0.3	8.8	Very Low
225°-240°	1.6	59.1	0.2	8.4	Very Low
240°-255°	2.0	64.6	0.3	9.2	Very Low
255°-270°	1.8	58.1	0.3	8.3	Very Low
270°-285°	0.7	33.4	0.1	4.8	Very Low
285°-300°	0.5	27.8	<0.1	4.0	Very Low
300°-315°	0.3	18.1	<0.1	2.6	Very Low
315°-330°	0.4	25.6	<0.1	3.7	Very Low
330°-345°	0.4	27.0	<0.1	3.9	Very Low
345°-360°	0.4	22.6	<0.1	3.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

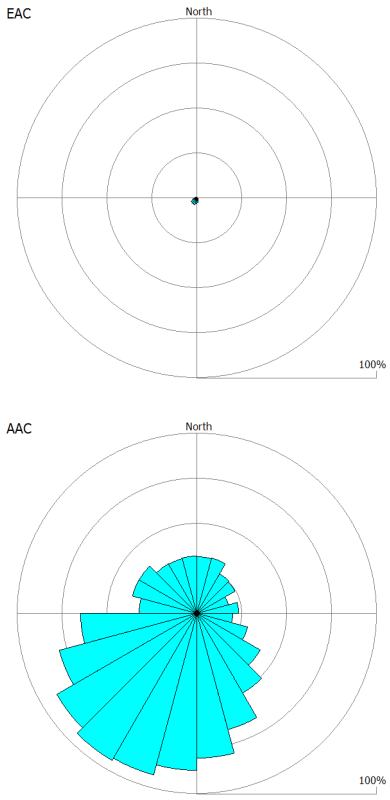
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	08-Nov-19	**Date In:**	15-Nov-19
Interval*:	7 days	**Our Ref:**	100628 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.4
Absolute Area Coverage (AAC%) / interval = 48.2
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 6.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.5	31.7	<0.1	4.5	Very Low
15°-30°	0.6	31.8	<0.1	4.5	Very Low
30°-45°	0.4	25.6	<0.1	3.7	Very Low
45°-60°	0.4	24.9	<0.1	3.6	Very Low
60°-75°	0.2	18.5	<0.1	2.6	Very Low
75°-90°	0.3	23.6	<0.1	3.4	Very Low
90°-105°	0.3	20.2	<0.1	2.9	Very Low
105°-120°	0.5	29.3	<0.1	4.2	Very Low
120°-135°	0.8	40.7	0.1	5.8	Very Low
135°-150°	1.1	51.3	0.2	7.3	Very Low
150°-165°	1.8	67.1	0.3	9.6	Very Low
165°-180°	2.7	80.4	0.4	11.5	Very Low
180°-195°	3.4	87.3	0.5	12.5	Low
195°-210°	4.1	93.1	0.6	13.3	Low
210°-225°	4.2	94.4	0.6	13.5	Low
225°-240°	3.6	90.3	0.5	12.9	Low
240°-255°	2.6	79.6	0.4	11.4	Very Low
255°-270°	1.8	64.8	0.3	9.3	Very Low
270°-285°	0.6	32.5	<0.1	4.6	Very Low
285°-300°	0.7	37.5	0.1	5.4	Very Low
300°-315°	0.7	37.4	0.1	5.3	Very Low
315°-330°	0.5	32.0	<0.1	4.6	Very Low
330°-345°	0.5	31.6	<0.1	4.5	Very Low
345°-360°	0.5	31.8	<0.1	4.5	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

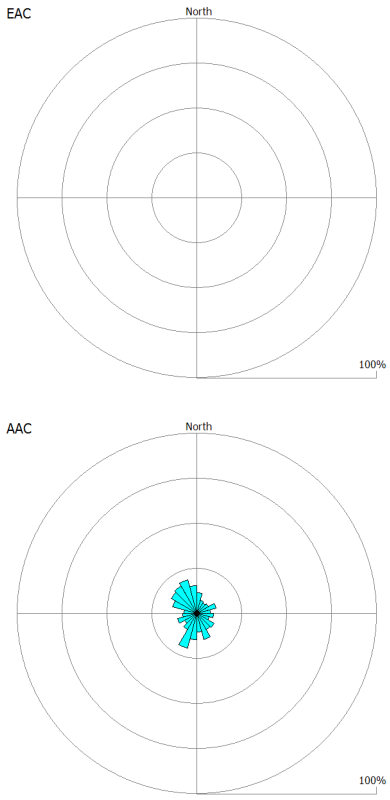
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	15-Nov-19	**Date In:**	22-Nov-19
Interval*:	7 days	**Our Ref:**	100741 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 11.7
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	11.6	<0.1	1.7	Very Low
15°-30°	0.1	7.8	<0.1	1.1	Very Low
30°-45°	<0.1	7.0	<0.1	1.0	Very Low
45°-60°	<0.1	7.5	<0.1	1.1	Very Low
60°-75°	0.2	11.3	<0.1	1.6	Very Low
75°-90°	0.1	7.6	<0.1	1.1	Very Low
90°-105°	0.1	9.6	<0.1	1.4	Very Low
105°-120°	<0.1	7.4	<0.1	1.1	Very Low
120°-135°	0.2	11.1	<0.1	1.6	Very Low
135°-150°	0.2	10.4	<0.1	1.5	Very Low
150°-165°	0.2	15.3	<0.1	2.2	Very Low
165°-180°	0.1	10.6	<0.1	1.5	Very Low
180°-195°	0.2	14.8	<0.1	2.1	Very Low
195°-210°	0.3	20.2	<0.1	2.9	Very Low
210°-225°	0.1	10.5	<0.1	1.5	Very Low
225°-240°	<0.1	7.9	<0.1	1.1	Very Low
240°-255°	0.1	11.1	<0.1	1.6	Very Low
255°-270°	<0.1	8.1	<0.1	1.2	Very Low
270°-285°	<0.1	7.3	<0.1	1.0	Very Low
285°-300°	0.2	14.0	<0.1	2.0	Very Low
300°-315°	0.2	16.5	<0.1	2.4	Very Low
315°-330°	0.3	17.7	<0.1	2.5	Very Low
330°-345°	0.3	19.4	<0.1	2.8	Very Low
345°-360°	0.3	15.5	<0.1	2.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

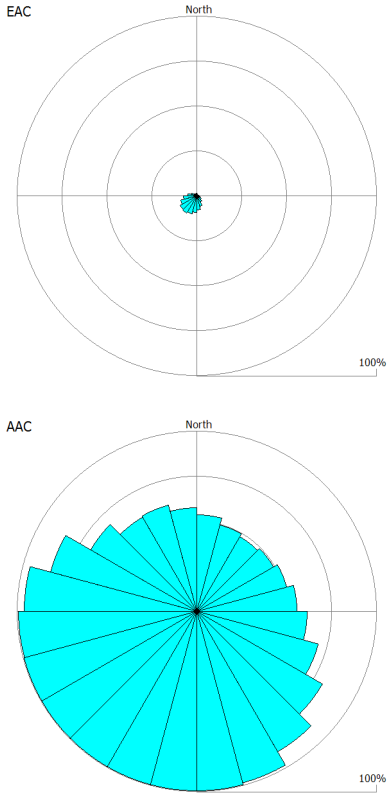
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	22-Nov-19	**Date In:**	29-Nov-19
Interval*:	7 days	**Our Ref:**	100977 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.4
Absolute Area Coverage (AAC%) / interval = 76.6
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 10.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.3	53.6	0.2	7.7	Very Low
15°-30°	1.1	49.7	0.2	7.1	Very Low
30°-45°	1.0	48.1	0.1	6.9	Very Low
45°-60°	0.9	49.4	0.1	7.1	Very Low
60°-75°	1.0	52.1	0.1	7.4	Very Low
75°-90°	1.1	55.9	0.2	8.0	Very Low
90°-105°	1.4	61.7	0.2	8.8	Very Low
105°-120°	1.9	70.1	0.3	10.0	Very Low
120°-135°	3.0	80.8	0.4	11.5	Very Low
135°-150°	4.2	90.2	0.6	12.9	Low
150°-165°	6.2	98.6	0.9	14.1	Medium
165°-180°	8.0	99.9	1.1	14.3	High
180°-195°	9.4	100.0	1.3	14.3	High
195°-210°	10.6	100.0	1.5	14.3	High
210°-225°	11.1	100.0	1.6	14.3	High
225°-240°	10.9	100.0	1.6	14.3	High
240°-255°	9.6	100.0	1.4	14.3	High
255°-270°	7.7	99.6	1.1	14.2	High
270°-285°	5.2	96.3	0.7	13.8	Medium
285°-300°	3.3	84.3	0.5	12.0	Low
300°-315°	2.1	68.5	0.3	9.8	Very Low
315°-330°	1.6	60.5	0.2	8.6	Very Low
330°-345°	1.6	61.3	0.2	8.8	Very Low
345°-360°	1.5	57.6	0.2	8.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

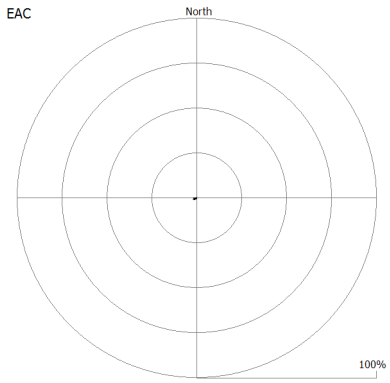
DS100 DIRECTIONAL DUST FLUX REPORT

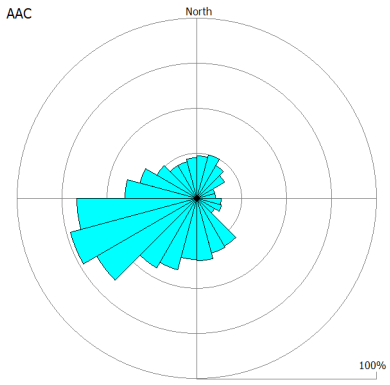
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	29-Nov-19	**Date In:**	06-Dec-19
Interval*:	7 days	**Our Ref:**	101102 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.6
Absolute Area Coverage (AAC%) / interval = 30.6
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 4.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.4	23.9	<0.1	3.4	Very Low
15°-30°	0.4	25.2	<0.1	3.6	Very Low
30°-45°	0.3	21.2	<0.1	3.0	Very Low
45°-60°	0.3	18.1	<0.1	2.6	Very Low
60°-75°	0.1	10.7	<0.1	1.5	Very Low
75°-90°	0.1	10.4	<0.1	1.5	Very Low
90°-105°	0.2	13.8	<0.1	2.0	Very Low
105°-120°	0.2	14.6	<0.1	2.1	Very Low
120°-135°	0.1	11.7	<0.1	1.7	Very Low
135°-150°	0.6	30.8	<0.1	4.4	Very Low
150°-165°	0.6	31.6	<0.1	4.5	Very Low
165°-180°	0.7	34.7	<0.1	5.0	Very Low
180°-195°	0.7	33.9	<0.1	4.8	Very Low
195°-210°	0.9	41.3	0.1	5.9	Very Low
210°-225°	1.0	44.7	0.1	6.4	Very Low
225°-240°	1.8	64.4	0.3	9.2	Very Low
240°-255°	2.3	73.2	0.3	10.5	Very Low
255°-270°	2.0	66.9	0.3	9.6	Very Low
270°-285°	0.9	40.3	0.1	5.8	Very Low
285°-300°	0.6	33.2	<0.1	4.7	Very Low
300°-315°	0.4	25.9	<0.1	3.7	Very Low
315°-330°	0.3	21.3	<0.1	3.0	Very Low
330°-345°	0.3	21.2	<0.1	3.0	Very Low
345°-360°	0.4	22.6	<0.1	3.2	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

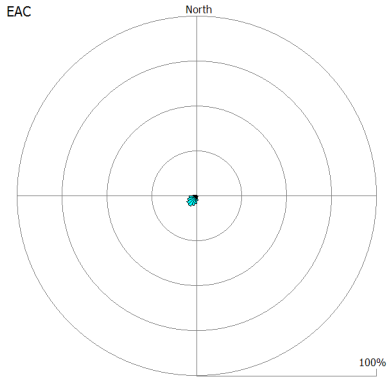
DS100 DIRECTIONAL DUST FLUX REPORT

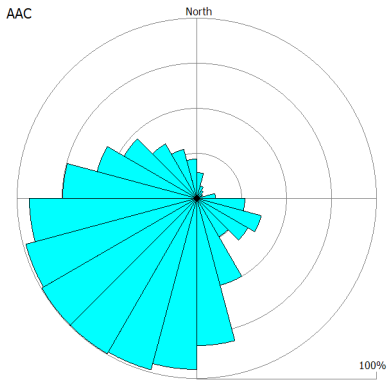
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	06-Dec-19	**Date In:**	13-Dec-19
Interval*:	7 days	**Our Ref:**	101349 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.9
Absolute Area Coverage (AAC%) / interval = 47.9
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 6.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	14.3	<0.1	2.0	Very Low
15°-30°	<0.1	7.1	<0.1	1.0	Very Low
30°-45°	<0.1	5.2	<0.1	0.7	Very Low
45°-60°	<0.1	3.7	<0.1	0.5	Very Low
60°-75°	<0.1	3.3	<0.1	0.5	Very Low
75°-90°	0.1	10.4	<0.1	1.5	Very Low
90°-105°	0.5	27.1	<0.1	3.9	Very Low
105°-120°	0.8	37.2	0.1	5.3	Very Low
120°-135°	0.7	32.9	<0.1	4.7	Very Low
135°-150°	0.4	24.7	<0.1	3.5	Very Low
150°-165°	1.1	50.0	0.2	7.1	Very Low
165°-180°	2.6	82.1	0.4	11.7	Very Low
180°-195°	4.3	95.4	0.6	13.6	Low
195°-210°	5.7	98.9	0.8	14.1	Medium
210°-225°	6.8	99.8	1.0	14.3	High
225°-240°	6.6	99.8	0.9	14.3	High
240°-255°	5.7	98.7	0.8	14.1	Medium
255°-270°	4.3	93.4	0.6	13.3	Low
270°-285°	2.3	74.9	0.3	10.7	Very Low
285°-300°	1.4	57.6	0.2	8.2	Very Low
300°-315°	1.0	47.1	0.1	6.7	Very Low
315°-330°	0.6	35.2	<0.1	5.0	Very Low
330°-345°	0.4	28.3	<0.1	4.0	Very Low
345°-360°	0.3	21.9	<0.1	3.1	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

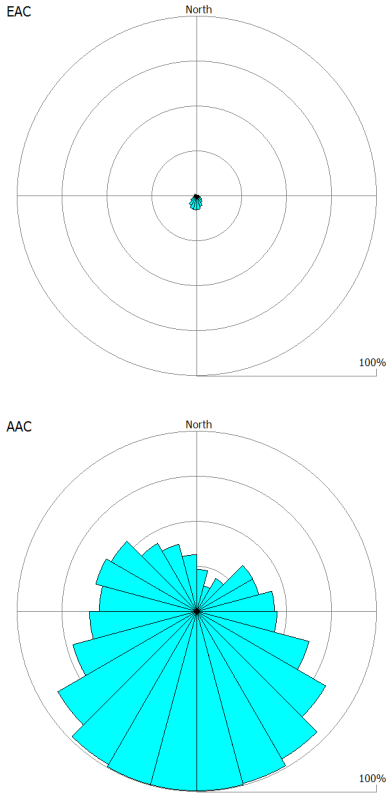
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	13-Dec-19	**Date In:**	20-Dec-19
Interval*:	7 days	**Our Ref:**	101491 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.8
Absolute Area Coverage (AAC%) / interval = 61.0
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 8.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.4	23.4	<0.1	3.3	Very Low
15°-30°	0.2	14.8	<0.1	2.1	Very Low
30°-45°	0.3	21.3	<0.1	3.0	Very Low
45°-60°	0.8	36.2	0.1	5.2	Very Low
60°-75°	0.9	36.1	0.1	5.2	Very Low
75°-90°	1.1	43.4	0.2	6.2	Very Low
90°-105°	1.1	44.7	0.2	6.4	Very Low
105°-120°	2.1	64.7	0.3	9.2	Very Low
120°-135°	3.3	83.2	0.5	11.9	Low
135°-150°	4.5	94.7	0.6	13.5	Low
150°-165°	6.3	99.1	0.9	14.2	High
165°-180°	7.7	99.9	1.1	14.3	High
180°-195°	8.2	100.0	1.2	14.3	High
195°-210°	7.8	100.0	1.1	14.3	High
210°-225°	6.4	98.3	0.9	14.0	Medium
225°-240°	4.2	89.5	0.6	12.8	Low
240°-255°	2.3	71.7	0.3	10.2	Very Low
255°-270°	1.8	59.8	0.3	8.5	Very Low
270°-285°	1.5	54.5	0.2	7.8	Very Low
285°-300°	1.7	58.3	0.2	8.3	Very Low
300°-315°	1.4	55.3	0.2	7.9	Very Low
315°-330°	1.1	43.8	0.2	6.3	Very Low
330°-345°	0.9	38.9	0.1	5.6	Very Low
345°-360°	0.7	31.8	<0.1	4.5	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

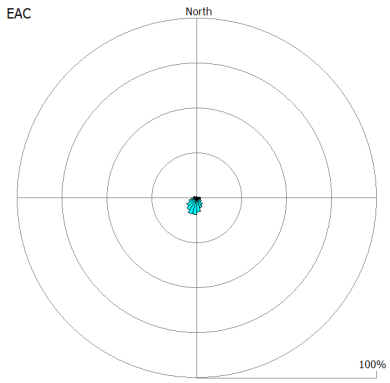
DS100 DIRECTIONAL DUST FLUX REPORT

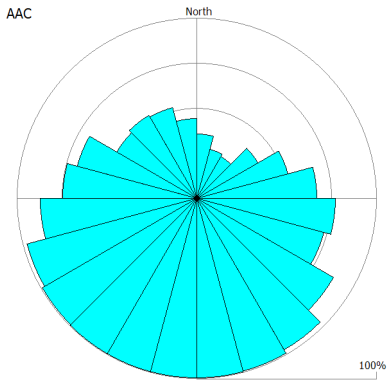
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	20-Dec-19	**Date In:**	09-Jan-20
Interval*:	20 days	**Our Ref:**	101800 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.4
Absolute Area Coverage (AAC%) / interval = 71.5
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 3.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.6	36.1	<0.1	1.8	N/A
15°-30°	0.4	28.4	<0.1	1.4	N/A
30°-45°	0.4	27.1	<0.1	1.4	N/A
45°-60°	0.8	39.5	<0.1	2.0	N/A
60°-75°	1.2	52.7	<0.1	2.6	N/A
75°-90°	1.9	66.9	<0.1	3.3	N/A
90°-105°	2.3	77.2	0.1	3.9	N/A
105°-120°	2.1	73.4	0.1	3.7	N/A
120°-135°	3.2	88.1	0.2	4.4	N/A
135°-150°	4.6	97.3	0.2	4.9	N/A
150°-165°	6.0	99.6	0.3	5.0	N/A
165°-180°	8.1	99.9	0.4	5.0	N/A
180°-195°	9.4	100.0	0.5	5.0	N/A
195°-210°	9.3	100.0	0.5	5.0	N/A
210°-225°	8.1	100.0	0.4	5.0	N/A
225°-240°	6.5	99.6	0.3	5.0	N/A
240°-255°	4.8	97.9	0.2	4.9	N/A
255°-270°	3.0	87.4	0.2	4.4	N/A
270°-285°	2.1	74.9	0.1	3.7	N/A
285°-300°	1.8	69.0	<0.1	3.4	N/A
300°-315°	1.0	51.8	<0.1	2.6	N/A
315°-330°	1.0	53.3	<0.1	2.7	N/A
330°-345°	1.0	52.3	<0.1	2.6	N/A
345°-360°	0.8	44.4	<0.1	2.2	N/A





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Sampling interval exceeded 14 days - Dust Impact Risk cannot be calculated

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

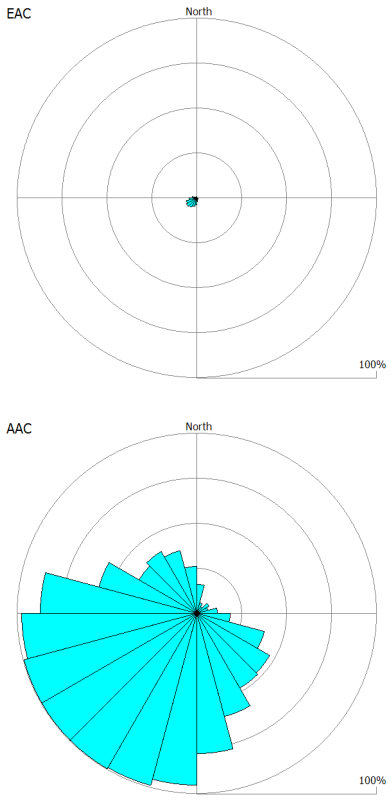
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	09-Jan-20	**Date In:**	16-Jan-20
Interval*:	7 days	**Our Ref:**	101877 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.0
Absolute Area Coverage (AAC%) / interval = 50.8
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 7.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	16.1	<0.1	2.3	Very Low
15°-30°	<0.1	6.2	<0.1	0.9	Very Low
30°-45°	<0.1	4.4	<0.1	0.6	Very Low
45°-60°	<0.1	8.1	<0.1	1.2	Very Low
60°-75°	<0.1	6.8	<0.1	1.0	Very Low
75°-90°	0.1	11.6	<0.1	1.7	Very Low
90°-105°	0.3	18.6	<0.1	2.7	Very Low
105°-120°	0.8	39.1	0.1	5.6	Very Low
120°-135°	1.1	47.0	0.2	6.7	Very Low
135°-150°	1.1	48.2	0.2	6.9	Very Low
150°-165°	1.4	59.5	0.2	8.5	Very Low
165°-180°	2.2	77.9	0.3	11.1	Very Low
180°-195°	4.0	95.6	0.6	13.7	Low
195°-210°	5.1	99.1	0.7	14.2	High
210°-225°	6.3	100.0	0.9	14.3	High
225°-240°	6.9	100.0	1.0	14.3	High
240°-255°	6.1	99.8	0.9	14.3	High
255°-270°	4.3	97.8	0.6	14.0	Low
270°-285°	2.7	87.5	0.4	12.5	Very Low
285°-300°	1.3	56.7	0.2	8.1	Very Low
300°-315°	0.6	37.3	<0.1	5.3	Very Low
315°-330°	0.8	40.0	0.1	5.7	Very Low
330°-345°	0.8	36.3	0.1	5.2	Very Low
345°-360°	0.5	26.3	<0.1	3.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

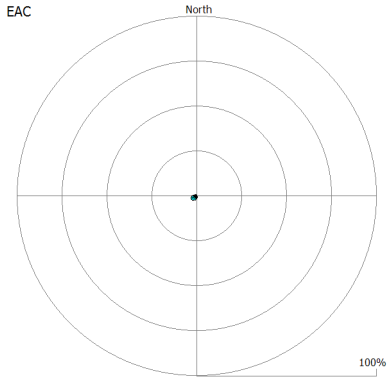
DS100 DIRECTIONAL DUST FLUX REPORT

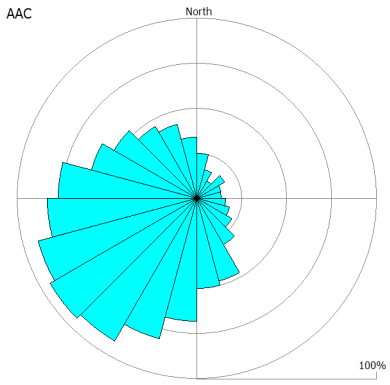
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	16-Jan-20	**Date In:**	22-Jan-20
Interval*:	6 days	**Our Ref:**	103093 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.3
Absolute Area Coverage (AAC%) / interval = 46.2
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 7.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.5	25.3	<0.1	4.2	Very Low
15°-30°	0.2	16.8	<0.1	2.8	Very Low
30°-45°	0.1	11.1	<0.1	1.9	Very Low
45°-60°	0.2	18.0	<0.1	3.0	Very Low
60°-75°	0.2	14.2	<0.1	2.4	Very Low
75°-90°	0.2	13.7	<0.1	2.3	Very Low
90°-105°	0.2	16.3	<0.1	2.7	Very Low
105°-120°	0.3	19.0	<0.1	3.2	Very Low
120°-135°	0.4	22.7	<0.1	3.8	Very Low
135°-150°	0.5	29.7	<0.1	5.0	Very Low
150°-165°	1.0	47.7	0.2	8.0	Very Low
165°-180°	1.1	50.2	0.2	8.4	Very Low
180°-195°	2.0	68.2	0.3	11.4	Very Low
195°-210°	2.7	80.8	0.4	13.5	Very Low
210°-225°	3.5	91.5	0.6	15.3	Low
225°-240°	3.9	94.4	0.6	15.7	Low
240°-255°	3.8	91.6	0.6	15.3	Low
255°-270°	3.0	83.5	0.5	13.9	Low
270°-285°	2.2	77.3	0.4	12.9	Very Low
285°-300°	1.5	60.8	0.3	10.1	Very Low
300°-315°	1.2	53.6	0.2	8.9	Very Low
315°-330°	1.0	46.3	0.2	7.7	Very Low
330°-345°	0.9	42.5	0.1	7.1	Very Low
345°-360°	0.7	34.2	0.1	5.7	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

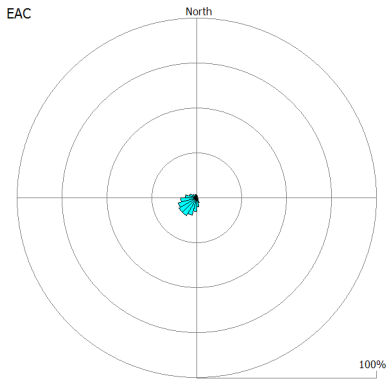
DS100 DIRECTIONAL DUST FLUX REPORT

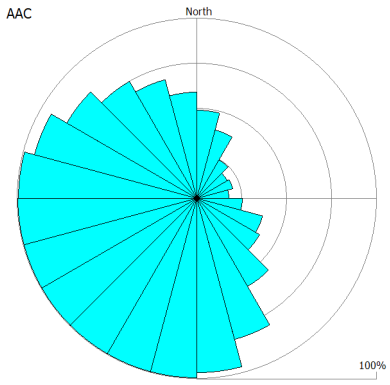
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	23-Jan-20	**Date In:**	30-Jan-20
Interval*:	7 days	**Our Ref:**	103243 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.0
Absolute Area Coverage (AAC%) / interval = 66.3
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 9.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.3	49.2	0.2	7.0	Very Low
15°-30°	0.9	39.6	0.1	5.7	Very Low
30°-45°	0.5	24.9	<0.1	3.6	Very Low
45°-60°	0.3	19.8	<0.1	2.8	Very Low
60°-75°	0.3	21.0	<0.1	3.0	Very Low
75°-90°	0.2	18.0	<0.1	2.6	Very Low
90°-105°	0.4	25.6	<0.1	3.7	Very Low
105°-120°	0.7	38.1	0.1	5.4	Very Low
120°-135°	0.8	40.4	0.1	5.8	Very Low
135°-150°	1.4	56.6	0.2	8.1	Very Low
150°-165°	3.0	81.2	0.4	11.6	Very Low
165°-180°	5.3	97.0	0.8	13.9	Medium
180°-195°	7.8	99.9	1.1	14.3	High
195°-210°	10.0	100.0	1.4	14.3	High
210°-225°	11.5	100.0	1.6	14.3	High
225°-240°	11.6	100.0	1.7	14.3	High
240°-255°	10.8	100.0	1.5	14.3	High
255°-270°	9.1	100.0	1.3	14.3	High
270°-285°	6.5	99.6	0.9	14.2	High
285°-300°	4.3	93.6	0.6	13.4	Low
300°-315°	2.9	83.9	0.4	12.0	Very Low
315°-330°	2.3	75.1	0.3	10.7	Very Low
330°-345°	2.0	68.4	0.3	9.8	Very Low
345°-360°	1.7	59.0	0.2	8.4	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

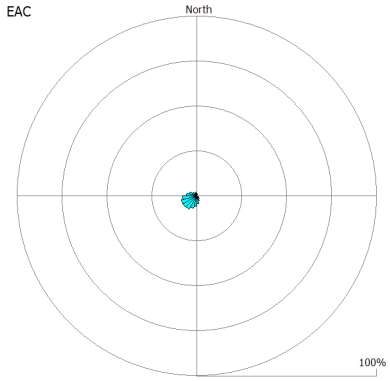
DS100 DIRECTIONAL DUST FLUX REPORT

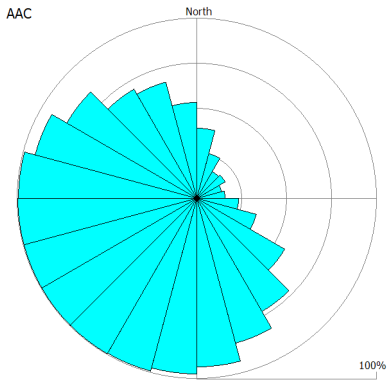
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	30-Jan-20	**Date In:**	06-Feb-20
Interval*:	7 days	**Our Ref:**	103508 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.5
Absolute Area Coverage (AAC%) / interval = 65.0
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 9.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.1	39.1	0.2	5.6	Very Low
15°-30°	0.6	26.0	<0.1	3.7	Very Low
30°-45°	0.3	17.5	<0.1	2.5	Very Low
45°-60°	0.3	18.4	<0.1	2.6	Very Low
60°-75°	0.2	14.5	<0.1	2.1	Very Low
75°-90°	0.3	16.0	<0.1	2.3	Very Low
90°-105°	0.5	23.3	<0.1	3.3	Very Low
105°-120°	0.7	34.3	0.1	4.9	Very Low
120°-135°	1.5	56.5	0.2	8.1	Very Low
135°-150°	2.3	72.6	0.3	10.4	Very Low
150°-165°	3.1	83.4	0.4	11.9	Very Low
165°-180°	4.5	93.8	0.6	13.4	Low
180°-195°	5.9	97.5	0.8	13.9	Medium
195°-210°	7.3	99.5	1.0	14.2	High
210°-225°	8.6	100.0	1.2	14.3	High
225°-240°	9.2	100.0	1.3	14.3	High
240°-255°	9.0	100.0	1.3	14.3	High
255°-270°	7.9	100.0	1.1	14.3	High
270°-285°	6.1	99.3	0.9	14.2	High
285°-300°	4.3	93.4	0.6	13.3	Low
300°-315°	3.2	83.6	0.5	11.9	Low
315°-330°	2.3	70.2	0.3	10.0	Very Low
330°-345°	2.2	67.0	0.3	9.6	Very Low
345°-360°	1.6	53.3	0.2	7.6	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

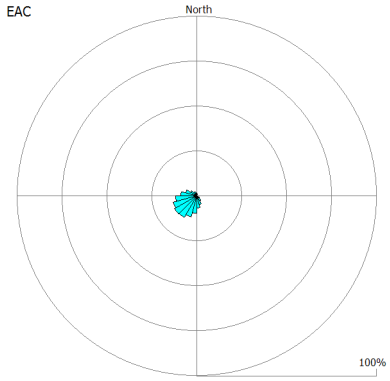
DS100 DIRECTIONAL DUST FLUX REPORT

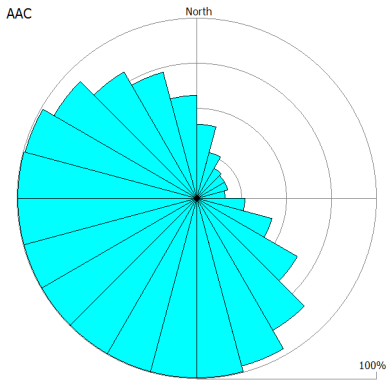
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	06-Feb-20	**Date In:**	13-Feb-20
Interval*:	7 days	**Our Ref:**	103602 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.2
Absolute Area Coverage (AAC%) / interval = 69.1
Effective Area Coverage (EAC%) / day = 0.7
Absolute Area Coverage (AAC%) / day = 9.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.2	41.4	0.2	5.9	Very Low
15°-30°	0.6	26.6	<0.1	3.8	Very Low
30°-45°	0.3	19.4	<0.1	2.8	Very Low
45°-60°	0.3	18.1	<0.1	2.6	Very Low
60°-75°	0.3	18.0	<0.1	2.6	Very Low
75°-90°	0.2	16.1	<0.1	2.3	Very Low
90°-105°	0.5	27.0	<0.1	3.9	Very Low
105°-120°	1.0	43.5	0.1	6.2	Very Low
120°-135°	2.0	64.8	0.3	9.3	Very Low
135°-150°	3.5	84.9	0.5	12.1	Low
150°-165°	5.2	96.6	0.7	13.8	Medium
165°-180°	7.1	99.9	1.0	14.3	High
180°-195°	9.8	100.0	1.4	14.3	High
195°-210°	12.2	100.0	1.7	14.3	High
210°-225°	14.0	100.0	2.0	14.3	Very High
225°-240°	14.5	100.0	2.1	14.3	Very High
240°-255°	13.9	100.0	2.0	14.3	Very High
255°-270°	12.0	100.0	1.7	14.3	High
270°-285°	9.3	100.0	1.3	14.3	High
285°-300°	6.5	99.2	0.9	14.2	High
300°-315°	4.2	92.0	0.6	13.1	Low
315°-330°	2.8	81.3	0.4	11.6	Very Low
330°-345°	2.4	72.8	0.3	10.4	Very Low
345°-360°	1.8	57.5	0.3	8.2	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

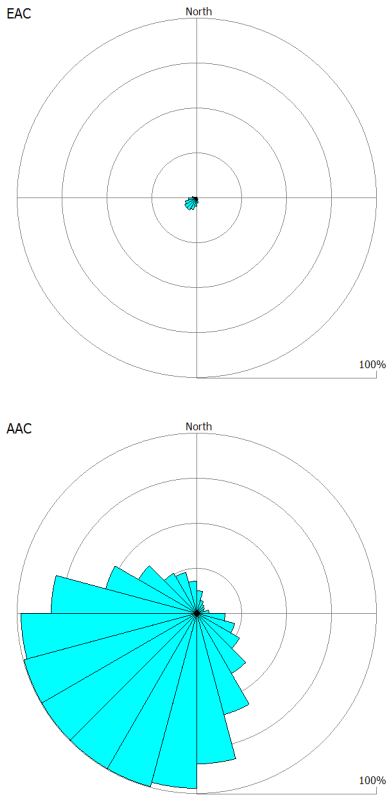
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	13-Feb-20	**Date In:**	20-Feb-20
Interval*:	7 days	**Our Ref:**	103799 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.2
Absolute Area Coverage (AAC%) / interval = 46.8
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 6.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	12.6	<0.1	1.8	Very Low
15°-30°	<0.1	7.8	<0.1	1.1	Very Low
30°-45°	<0.1	5.9	<0.1	0.8	Very Low
45°-60°	<0.1	5.1	<0.1	0.7	Very Low
60°-75°	<0.1	4.3	<0.1	0.6	Very Low
75°-90°	<0.1	6.9	<0.1	1.0	Very Low
90°-105°	0.2	16.0	<0.1	2.3	Very Low
105°-120°	0.4	21.8	<0.1	3.1	Very Low
120°-135°	0.6	27.8	<0.1	4.0	Very Low
135°-150°	1.0	38.7	0.1	5.5	Very Low
150°-165°	1.6	58.2	0.2	8.3	Very Low
165°-180°	3.0	83.9	0.4	12.0	Very Low
180°-195°	4.9	97.1	0.7	13.9	Medium
195°-210°	6.9	99.9	1.0	14.3	High
210°-225°	7.9	100.0	1.1	14.3	High
225°-240°	7.9	100.0	1.1	14.3	High
240°-255°	6.9	99.9	1.0	14.3	High
255°-270°	5.0	97.9	0.7	14.0	Medium
270°-285°	2.7	81.4	0.4	11.6	Very Low
285°-300°	1.2	52.8	0.2	7.5	Very Low
300°-315°	0.8	37.5	0.1	5.4	Very Low
315°-330°	0.4	25.9	<0.1	3.7	Very Low
330°-345°	0.4	23.8	<0.1	3.4	Very Low
345°-360°	0.3	18.1	<0.1	2.6	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

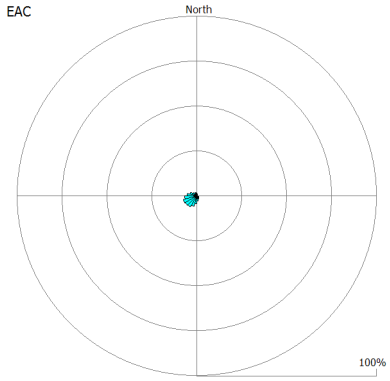
DS100 DIRECTIONAL DUST FLUX REPORT

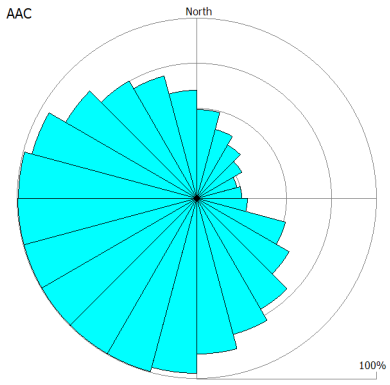
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	20-Feb-20	**Date In:**	27-Feb-20
Interval*:	7 days	**Our Ref:**	104023 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.1
Absolute Area Coverage (AAC%) / interval = 69.1
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 9.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.2	49.5	0.2	7.1	Very Low
15°-30°	0.8	39.6	0.1	5.7	Very Low
30°-45°	0.6	34.6	<0.1	4.9	Very Low
45°-60°	0.4	29.2	<0.1	4.2	Very Low
60°-75°	0.3	23.5	<0.1	3.4	Very Low
75°-90°	0.3	25.0	<0.1	3.6	Very Low
90°-105°	0.4	28.6	<0.1	4.1	Very Low
105°-120°	1.1	51.1	0.2	7.3	Very Low
120°-135°	1.5	59.5	0.2	8.5	Very Low
135°-150°	1.9	71.4	0.3	10.2	Very Low
150°-165°	2.4	78.2	0.3	11.2	Very Low
165°-180°	3.1	86.6	0.4	12.4	Very Low
180°-195°	4.6	97.2	0.7	13.9	Medium
195°-210°	6.2	99.9	0.9	14.3	High
210°-225°	7.3	100.0	1.0	14.3	High
225°-240°	7.8	100.0	1.1	14.3	High
240°-255°	8.1	100.0	1.2	14.3	High
255°-270°	7.1	99.9	1.0	14.3	High
270°-285°	5.5	99.3	0.8	14.2	High
285°-300°	4.2	95.2	0.6	13.6	Low
300°-315°	2.8	84.4	0.4	12.1	Very Low
315°-330°	2.2	75.7	0.3	10.8	Very Low
330°-345°	2.0	70.4	0.3	10.1	Very Low
345°-360°	1.6	60.1	0.2	8.6	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

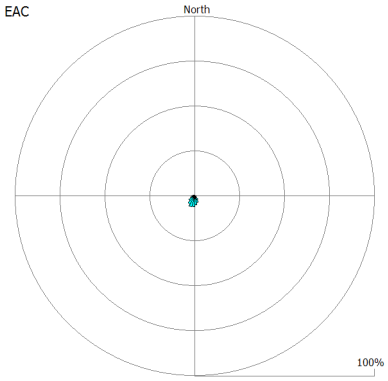
DS100 DIRECTIONAL DUST FLUX REPORT

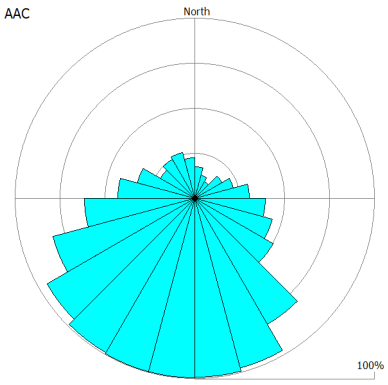
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	27-Feb-20	**Date In:**	06-Mar-20
Interval*:	8 days	**Our Ref:**	104188 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.0
Absolute Area Coverage (AAC%) / interval = 51.5
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 6.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	17.8	<0.1	2.2	Very Low
15°-30°	0.2	13.2	<0.1	1.7	Very Low
30°-45°	0.1	10.8	<0.1	1.4	Very Low
45°-60°	0.3	17.6	<0.1	2.2	Very Low
60°-75°	0.4	22.2	<0.1	2.8	Very Low
75°-90°	0.6	30.7	<0.1	3.8	Very Low
90°-105°	0.8	39.6	<0.1	4.9	Very Low
105°-120°	1.1	44.9	0.1	5.6	Very Low
120°-135°	1.1	50.6	0.1	6.3	Very Low
135°-150°	2.5	80.8	0.3	10.1	Very Low
150°-165°	4.2	97.7	0.5	12.2	Low
165°-180°	5.1	99.4	0.6	12.4	Medium
180°-195°	6.4	99.9	0.8	12.5	High
195°-210°	6.4	99.8	0.8	12.5	High
210°-225°	5.5	99.2	0.7	12.4	High
225°-240°	4.0	95.2	0.5	11.9	Low
240°-255°	2.8	81.8	0.4	10.2	Very Low
255°-270°	1.9	61.5	0.2	7.7	Very Low
270°-285°	1.1	42.9	0.1	5.4	Very Low
285°-300°	0.8	33.2	<0.1	4.2	Very Low
300°-315°	0.3	22.4	<0.1	2.8	Very Low
315°-330°	0.5	25.2	<0.1	3.1	Very Low
330°-345°	0.5	26.7	<0.1	3.3	Very Low
345°-360°	0.4	22.6	<0.1	2.8	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

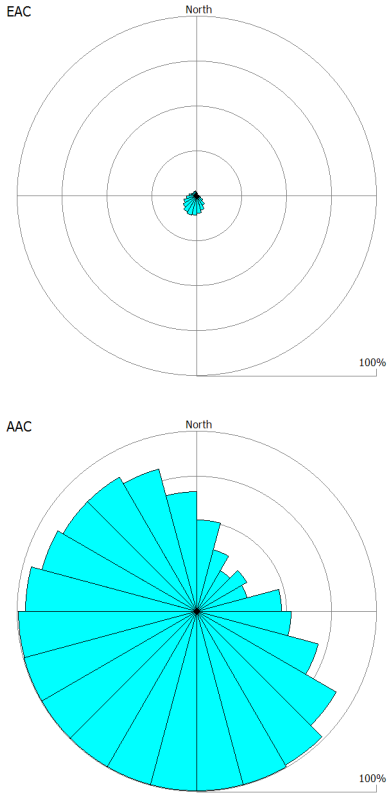
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	06-Mar-20	**Date In:**	12-Mar-20
Interval*:	6 days	**Our Ref:**	104365 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.7
Absolute Area Coverage (AAC%) / interval = 76.6
Effective Area Coverage (EAC%) / day = 0.8
Absolute Area Coverage (AAC%) / day = 12.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.6	51.0	0.3	8.5	Very Low
15°-30°	1.0	35.4	0.2	5.9	Very Low
30°-45°	0.6	26.3	<0.1	4.4	Very Low
45°-60°	0.8	32.3	0.1	5.4	Very Low
60°-75°	0.6	29.3	<0.1	4.9	Very Low
75°-90°	1.3	47.2	0.2	7.9	Very Low
90°-105°	1.6	52.7	0.3	8.8	Very Low
105°-120°	2.5	70.3	0.4	11.7	Very Low
120°-135°	3.9	89.6	0.7	14.9	Medium
135°-150°	6.2	98.7	1.0	16.4	Medium
150°-165°	8.5	100.0	1.4	16.7	High
165°-180°	9.8	100.0	1.6	16.7	High
180°-195°	10.9	100.0	1.8	16.7	High
195°-210°	11.3	100.0	1.9	16.7	High
210°-225°	10.5	100.0	1.7	16.7	High
225°-240°	9.0	100.0	1.5	16.7	High
240°-255°	7.7	100.0	1.3	16.7	High
255°-270°	6.0	99.3	1.0	16.6	High
270°-285°	4.3	95.4	0.7	15.9	Medium
285°-300°	3.6	89.6	0.6	14.9	Low
300°-315°	2.8	86.2	0.5	14.4	Low
315°-330°	2.9	86.3	0.5	14.4	Low
330°-345°	2.9	81.8	0.5	13.6	Low
345°-360°	2.3	66.8	0.4	11.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

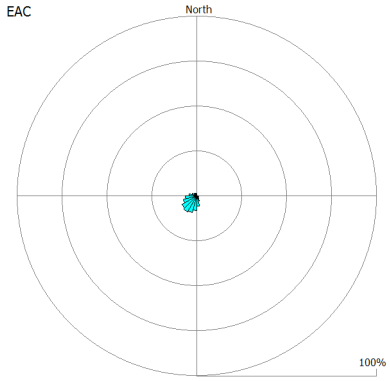
DS100 DIRECTIONAL DUST FLUX REPORT

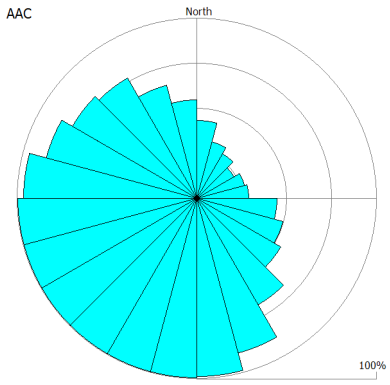
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	12-Mar-20	**Date In:**	19-Mar-20
Interval*:	7 days	**Our Ref:**	104516 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.6
Absolute Area Coverage (AAC%) / interval = 68.8
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 9.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.9	43.4	0.1	6.2	Very Low
15°-30°	0.6	32.5	<0.1	4.6	Very Low
30°-45°	0.5	28.8	<0.1	4.1	Very Low
45°-60°	0.4	24.2	<0.1	3.5	Very Low
60°-75°	0.4	27.5	<0.1	3.9	Very Low
75°-90°	0.5	29.3	<0.1	4.2	Very Low
90°-105°	1.0	45.0	0.1	6.4	Very Low
105°-120°	1.2	50.0	0.2	7.1	Very Low
120°-135°	1.4	54.1	0.2	7.7	Very Low
135°-150°	2.0	68.5	0.3	9.8	Very Low
150°-165°	3.4	89.0	0.5	12.7	Low
165°-180°	5.9	99.2	0.8	14.2	High
180°-195°	8.4	100.0	1.2	14.3	High
195°-210°	10.0	100.0	1.4	14.3	High
210°-225°	10.7	100.0	1.5	14.3	High
225°-240°	9.7	100.0	1.4	14.3	High
240°-255°	8.2	100.0	1.2	14.3	High
255°-270°	6.5	99.7	0.9	14.2	High
270°-285°	4.5	96.8	0.6	13.8	Low
285°-300°	3.1	86.9	0.4	12.4	Very Low
300°-315°	2.4	80.1	0.3	11.4	Very Low
315°-330°	2.1	77.2	0.3	11.0	Very Low
330°-345°	1.5	65.1	0.2	9.3	Very Low
345°-360°	1.2	55.0	0.2	7.9	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

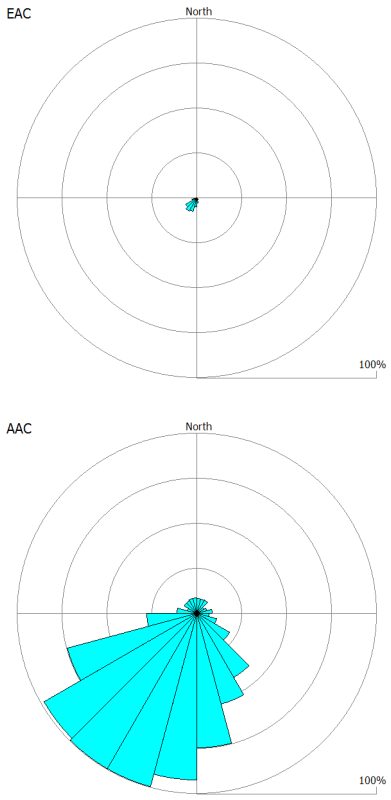
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	19-Mar-20	**Date In:**	26-Mar-20
Interval*:	7 days	**Our Ref:**	105932 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.7
Absolute Area Coverage (AAC%) / interval = 33.3
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 4.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.1	8.5	<0.1	1.2	Very Low
15°-30°	0.1	8.3	<0.1	1.2	Very Low
30°-45°	0.2	8.9	<0.1	1.3	Very Low
45°-60°	<0.1	4.7	<0.1	0.7	Very Low
60°-75°	0.1	6.0	<0.1	0.9	Very Low
75°-90°	0.2	8.8	<0.1	1.3	Very Low
90°-105°	0.1	6.9	<0.1	1.0	Very Low
105°-120°	0.2	11.8	<0.1	1.7	Very Low
120°-135°	0.4	21.2	<0.1	3.0	Very Low
135°-150°	1.3	41.2	0.2	5.9	Very Low
150°-165°	1.7	52.5	0.2	7.5	Very Low
165°-180°	3.2	74.9	0.5	10.7	Low
180°-195°	5.3	92.8	0.8	13.3	Medium
195°-210°	7.9	99.8	1.1	14.3	High
210°-225°	8.7	100.0	1.2	14.3	High
225°-240°	7.4	98.5	1.1	14.1	Medium
240°-255°	3.1	74.8	0.4	10.7	Very Low
255°-270°	0.7	28.2	<0.1	4.0	Very Low
270°-285°	0.3	11.3	<0.1	1.6	Very Low
285°-300°	<0.1	5.6	<0.1	0.8	Very Low
300°-315°	0.2	8.6	<0.1	1.2	Very Low
315°-330°	0.1	8.6	<0.1	1.2	Very Low
330°-345°	0.1	8.9	<0.1	1.3	Very Low
345°-360°	0.1	8.6	<0.1	1.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

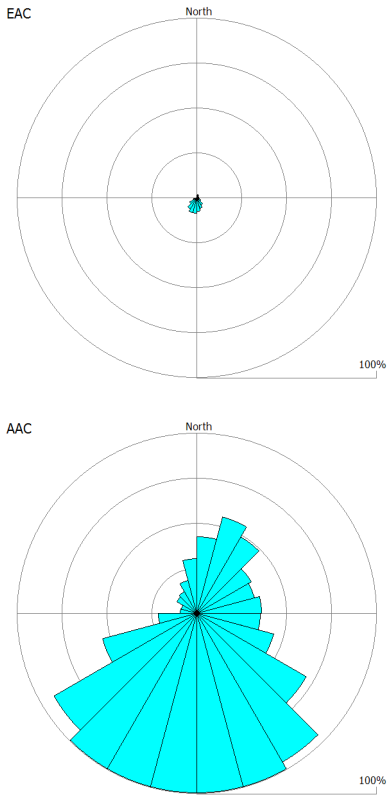
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	26-Mar-20	**Date In:**	02-Apr-20
Interval*:	7 days	**Our Ref:**	105933 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.8
Absolute Area Coverage (AAC%) / interval = 52.6
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 7.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.4	42.8	0.2	6.1	Very Low
15°-30°	2.0	55.5	0.3	7.9	Very Low
30°-45°	1.6	49.2	0.2	7.0	Very Low
45°-60°	1.0	35.0	0.1	5.0	Very Low
60°-75°	1.1	33.6	0.2	4.8	Very Low
75°-90°	1.2	36.3	0.2	5.2	Very Low
90°-105°	1.3	35.7	0.2	5.1	Very Low
105°-120°	1.5	44.4	0.2	6.3	Very Low
120°-135°	2.7	70.6	0.4	10.1	Very Low
135°-150°	4.7	95.5	0.7	13.6	Medium
150°-165°	6.1	99.8	0.9	14.3	High
165°-180°	7.8	100.0	1.1	14.3	High
180°-195°	8.9	100.0	1.3	14.3	High
195°-210°	8.7	100.0	1.2	14.3	High
210°-225°	7.3	99.9	1.0	14.3	High
225°-240°	4.7	92.1	0.7	13.2	Medium
240°-255°	1.8	54.3	0.3	7.8	Very Low
255°-270°	0.5	21.6	<0.1	3.1	Very Low
270°-285°	0.2	9.4	<0.1	1.3	Very Low
285°-300°	0.1	9.2	<0.1	1.3	Very Low
300°-315°	0.2	13.1	<0.1	1.9	Very Low
315°-330°	0.2	14.1	<0.1	2.0	Very Low
330°-345°	0.4	19.1	<0.1	2.7	Very Low
345°-360°	0.9	30.7	0.1	4.4	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

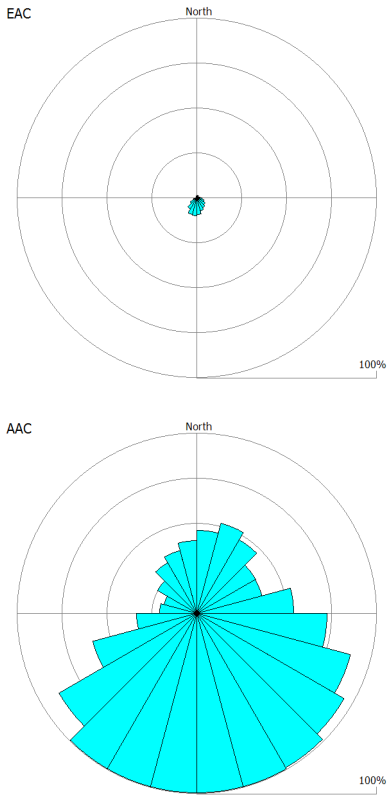
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	02-Apr-20	**Date In:**	09-Apr-20
Interval*:	7 days	**Our Ref:**	105934 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.5
Absolute Area Coverage (AAC%) / interval = 62.0
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 8.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.4	46.3	0.2	6.6	Very Low
15°-30°	1.7	51.9	0.2	7.4	Very Low
30°-45°	1.5	47.3	0.2	6.8	Very Low
45°-60°	1.1	37.9	0.2	5.4	Very Low
60°-75°	1.2	37.6	0.2	5.4	Very Low
75°-90°	1.8	54.1	0.3	7.7	Very Low
90°-105°	3.1	72.7	0.4	10.4	Very Low
105°-120°	4.5	88.9	0.6	12.7	Low
120°-135°	5.4	94.9	0.8	13.6	Medium
135°-150°	6.6	99.1	0.9	14.2	High
150°-165°	7.8	99.8	1.1	14.3	High
165°-180°	9.6	100.0	1.4	14.3	High
180°-195°	10.2	100.0	1.5	14.3	High
195°-210°	9.7	100.0	1.4	14.3	High
210°-225°	7.3	99.7	1.0	14.2	High
225°-240°	4.4	88.9	0.6	12.7	Low
240°-255°	2.1	60.0	0.3	8.6	Very Low
255°-270°	0.9	33.9	0.1	4.8	Very Low
270°-285°	0.5	20.8	<0.1	3.0	Very Low
285°-300°	0.4	18.9	<0.1	2.7	Very Low
300°-315°	0.6	25.6	<0.1	3.7	Very Low
315°-330°	0.8	32.7	0.1	4.7	Very Low
330°-345°	0.9	36.3	0.1	5.2	Very Low
345°-360°	1.1	40.7	0.2	5.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

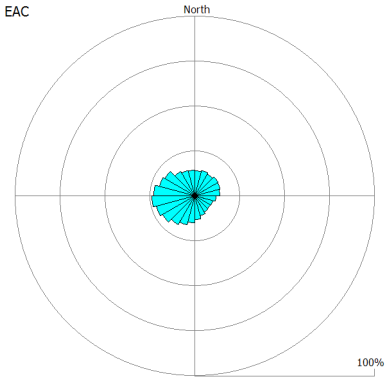
DS100 DIRECTIONAL DUST FLUX REPORT

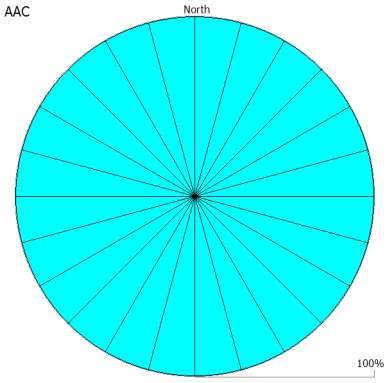
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	11-Jun-20	**Date In:**	18-Jun-20
Interval*:	7 days	**Our Ref:**	106051 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 15.9
Absolute Area Coverage (AAC%) / interval = 100.0
Effective Area Coverage (EAC%) / day = 2.3
Absolute Area Coverage (AAC%) / day = 14.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	14.1	100.0	2.0	14.3	Very High
15°-30°	14.7	100.0	2.1	14.3	Very High
30°-45°	14.2	100.0	2.0	14.3	Very High
45°-60°	15.2	100.0	2.2	14.3	Very High
60°-75°	15.0	100.0	2.1	14.3	Very High
75°-90°	14.2	100.0	2.0	14.3	Very High
90°-105°	11.9	100.0	1.7	14.3	High
105°-120°	10.6	100.0	1.5	14.3	High
120°-135°	10.2	100.0	1.5	14.3	High
135°-150°	10.4	100.0	1.5	14.3	High
150°-165°	11.5	100.0	1.6	14.3	High
165°-180°	13.3	100.0	1.9	14.3	High
180°-195°	15.3	100.0	2.2	14.3	Very High
195°-210°	17.1	100.0	2.4	14.3	Very High
210°-225°	18.7	100.0	2.7	14.3	Very High
225°-240°	20.8	100.0	3.0	14.3	Very High
240°-255°	22.3	100.0	3.2	14.3	Very High
255°-270°	24.1	100.0	3.4	14.3	Very High
270°-285°	23.2	100.0	3.3	14.3	Very High
285°-300°	20.6	100.0	2.9	14.3	Very High
300°-315°	19.4	100.0	2.8	14.3	Very High
315°-330°	16.1	100.0	2.3	14.3	Very High
330°-345°	14.8	100.0	2.1	14.3	Very High
345°-360°	14.4	100.0	2.1	14.3	Very High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

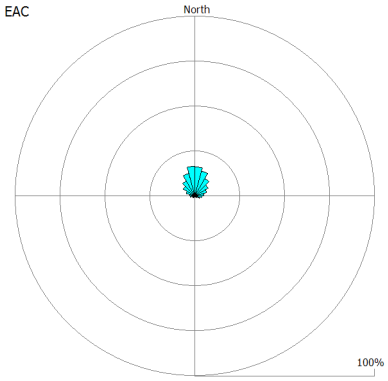
DS100 DIRECTIONAL DUST FLUX REPORT

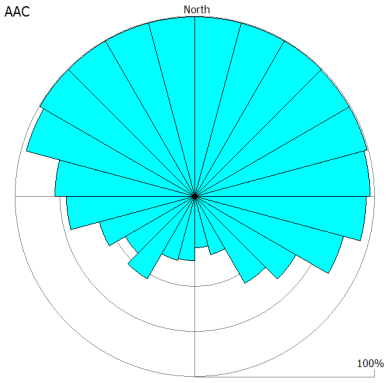
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	25-Jun-20	**Date In:**	02-Jul-20
Interval*:	7 days	**Our Ref:**	106484 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.8
Absolute Area Coverage (AAC%) / interval = 76.5
Effective Area Coverage (EAC%) / day = 0.8
Absolute Area Coverage (AAC%) / day = 10.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	16.3	100.0	2.3	14.3	Very High
15°-30°	14.5	100.0	2.1	14.3	Very High
30°-45°	11.2	100.0	1.6	14.3	High
45°-60°	8.7	99.5	1.2	14.2	High
60°-75°	6.9	99.5	1.0	14.2	High
75°-90°	5.1	97.8	0.7	14.0	Medium
90°-105°	4.0	95.6	0.6	13.7	Low
105°-120°	2.9	85.9	0.4	12.3	Very Low
120°-135°	1.8	65.2	0.3	9.3	Very Low
135°-150°	1.3	55.7	0.2	8.0	Very Low
150°-165°	0.8	33.7	0.1	4.8	Very Low
165°-180°	0.8	28.8	0.1	4.1	Very Low
180°-195°	1.0	36.0	0.1	5.1	Very Low
195°-210°	1.0	36.9	0.1	5.3	Very Low
210°-225°	1.7	53.0	0.2	7.6	Very Low
225°-240°	1.3	45.0	0.2	6.4	Very Low
240°-255°	1.8	55.4	0.3	7.9	Very Low
255°-270°	2.6	71.6	0.4	10.2	Very Low
270°-285°	2.9	78.2	0.4	11.2	Very Low
285°-300°	5.1	97.3	0.7	13.9	Medium
300°-315°	7.7	99.9	1.1	14.3	High
315°-330°	9.9	100.0	1.4	14.3	High
330°-345°	12.9	100.0	1.8	14.3	High
345°-360°	16.5	100.0	2.4	14.3	Very High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

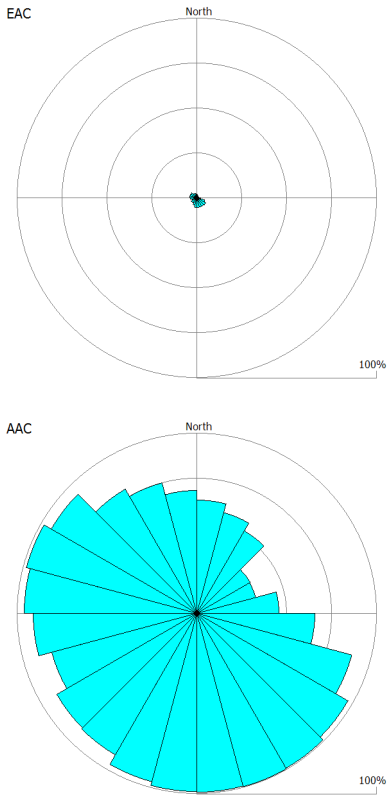
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	02-Jul-20	**Date In:**	09-Jul-20
Interval*:	7 days	**Our Ref:**	106663 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.4
Absolute Area Coverage (AAC%) / interval = 79.3
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 11.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.9	63.0	0.3	9.0	Very Low
15°-30°	1.7	58.2	0.2	8.3	Very Low
30°-45°	1.3	53.0	0.2	7.6	Very Low
45°-60°	0.8	34.4	0.1	4.9	Very Low
60°-75°	0.8	34.2	0.1	4.9	Very Low
75°-90°	1.1	46.0	0.2	6.6	Very Low
90°-105°	2.2	66.1	0.3	9.4	Very Low
105°-120°	4.8	89.4	0.7	12.8	Medium
120°-135°	5.9	97.3	0.8	13.9	Medium
135°-150°	5.7	99.6	0.8	14.2	High
150°-165°	5.6	99.7	0.8	14.2	High
165°-180°	5.5	99.5	0.8	14.2	High
180°-195°	5.5	99.0	0.8	14.1	High
195°-210°	4.6	97.0	0.7	13.9	Medium
210°-225°	3.5	90.8	0.5	13.0	Low
225°-240°	3.7	90.1	0.5	12.9	Low
240°-255°	3.2	83.8	0.5	12.0	Low
255°-270°	3.7	91.4	0.5	13.1	Low
270°-285°	4.1	96.1	0.6	13.7	Low
285°-300°	4.0	98.4	0.6	14.1	Low
300°-315°	4.1	93.7	0.6	13.4	Low
315°-330°	3.0	79.8	0.4	11.4	Very Low
330°-345°	2.5	75.3	0.4	10.8	Very Low
345°-360°	2.2	68.5	0.3	9.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

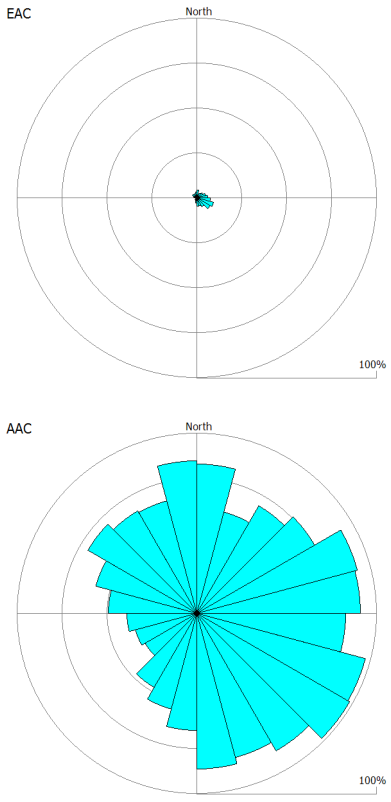
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	09-Jul-20	**Date In:**	16-Jul-20
Interval*:	7 days	**Our Ref:**	106902 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.8
Absolute Area Coverage (AAC%) / interval = 69.8
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 10.0

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	4.5	82.9	0.6	11.8	Low
15°-30°	2.6	58.5	0.4	8.4	Very Low
30°-45°	3.4	69.2	0.5	9.9	Low
45°-60°	4.0	75.9	0.6	10.8	Low
60°-75°	5.1	92.5	0.7	13.2	Medium
75°-90°	6.1	91.1	0.9	13.0	Medium
90°-105°	7.8	83.0	1.1	11.9	Medium
105°-120°	9.7	97.4	1.4	13.9	Medium
120°-135°	8.6	98.4	1.2	14.1	Medium
135°-150°	5.9	88.5	0.8	12.6	Medium
150°-165°	4.9	83.0	0.7	11.9	Medium
165°-180°	4.8	86.6	0.7	12.4	Medium
180°-195°	2.9	65.2	0.4	9.3	Very Low
195°-210°	2.0	55.1	0.3	7.9	Very Low
210°-225°	1.7	47.5	0.2	6.8	Very Low
225°-240°	0.8	33.3	0.1	4.8	Very Low
240°-255°	0.8	35.4	0.1	5.1	Very Low
255°-270°	1.1	39.2	0.2	5.6	Very Low
270°-285°	1.4	49.4	0.2	7.1	Very Low
285°-300°	2.0	58.4	0.3	8.3	Very Low
300°-315°	2.9	70.2	0.4	10.0	Very Low
315°-330°	2.8	65.8	0.4	9.4	Very Low
330°-345°	2.4	64.8	0.3	9.3	Very Low
345°-360°	3.4	85.0	0.5	12.1	Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	23-Jul-20	**Date In:**	30-Jul-20
Interval*:	7 days	**Our Ref:**	107554 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

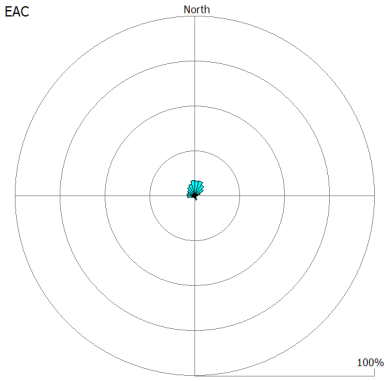
Effective Area Coverage (EAC%) / interval = 3.8

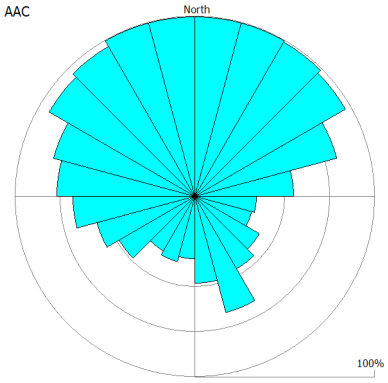
Absolute Area Coverage (AAC%) / interval = 68.0

Effective Area Coverage (EAC%) / day = 0.5

Absolute Area Coverage (AAC%) / day = 9.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	8.3	100.0	1.2	14.3	High
15°-30°	8.6	100.0	1.2	14.3	High
30°-45°	7.3	99.0	1.0	14.1	High
45°-60°	5.6	96.9	0.8	13.8	Medium
60°-75°	3.3	81.8	0.5	11.7	Low
75°-90°	1.6	55.3	0.2	7.9	Very Low
90°-105°	0.8	34.3	0.1	4.9	Very Low
105°-120°	0.9	33.1	0.1	4.7	Very Low
120°-135°	1.1	41.8	0.2	6.0	Very Low
135°-150°	1.4	46.5	0.2	6.6	Very Low
150°-165°	2.7	67.0	0.4	9.6	Very Low
165°-180°	1.8	48.3	0.3	6.9	Very Low
180°-195°	1.1	34.7	0.2	5.0	Very Low
195°-210°	1.2	37.8	0.2	5.4	Very Low
210°-225°	1.0	35.0	0.1	5.0	Very Low
225°-240°	1.7	48.8	0.2	7.0	Very Low
240°-255°	2.3	56.5	0.3	8.1	Very Low
255°-270°	4.0	68.0	0.6	9.7	Low
270°-285°	4.6	76.8	0.7	11.0	Medium
285°-300°	4.0	81.7	0.6	11.7	Low
300°-315°	5.0	93.6	0.7	13.4	Medium
315°-330°	5.9	96.3	0.8	13.8	Medium
330°-345°	7.1	99.9	1.0	14.3	High
345°-360°	8.7	100.0	1.2	14.3	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

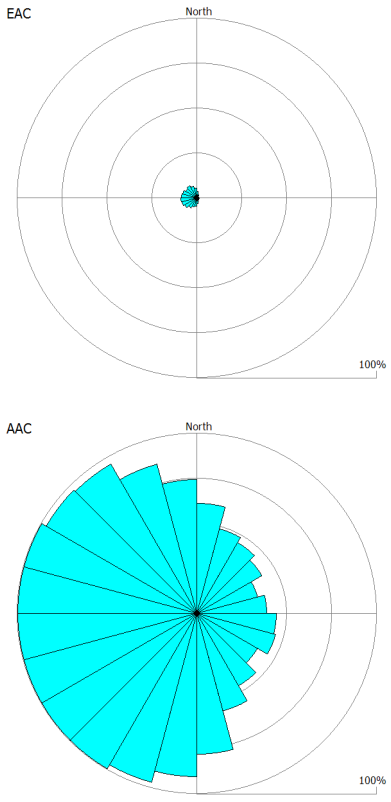
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	07-Aug-20	**Date In:**	14-Aug-20
Interval*:	7 days	**Our Ref:**	107797 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.6
Absolute Area Coverage (AAC%) / interval = 71.8
Effective Area Coverage (EAC%) / day = 0.7
Absolute Area Coverage (AAC%) / day = 10.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.8	61.1	0.5	8.7	Low
15°-30°	2.2	48.8	0.3	7.0	Very Low
30°-45°	1.9	45.4	0.3	6.5	Very Low
45°-60°	1.4	41.9	0.2	6.0	Very Low
60°-75°	1.2	35.2	0.2	5.0	Very Low
75°-90°	1.1	39.1	0.2	5.6	Very Low
90°-105°	1.5	44.4	0.2	6.3	Very Low
105°-120°	1.5	45.7	0.2	6.5	Very Low
120°-135°	1.2	39.3	0.2	5.6	Very Low
135°-150°	1.7	46.7	0.2	6.7	Very Low
150°-165°	2.2	56.2	0.3	8.0	Very Low
165°-180°	3.3	78.4	0.5	11.2	Low
180°-195°	5.0	90.9	0.7	13.0	Medium
195°-210°	5.7	97.4	0.8	13.9	Medium
210°-225°	6.7	99.9	1.0	14.3	High
225°-240°	7.9	100.0	1.1	14.3	High
240°-255°	8.7	100.0	1.2	14.3	High
255°-270°	9.2	100.0	1.3	14.3	High
270°-285°	8.9	100.0	1.3	14.3	High
285°-300°	8.4	100.0	1.2	14.3	High
300°-315°	7.4	96.8	1.1	13.8	Medium
315°-330°	7.9	95.9	1.1	13.7	Medium
330°-345°	6.8	86.0	1.0	12.3	Medium
345°-360°	5.5	74.4	0.8	10.6	Medium



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

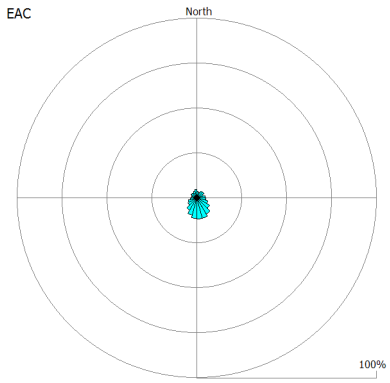
DS100 DIRECTIONAL DUST FLUX REPORT

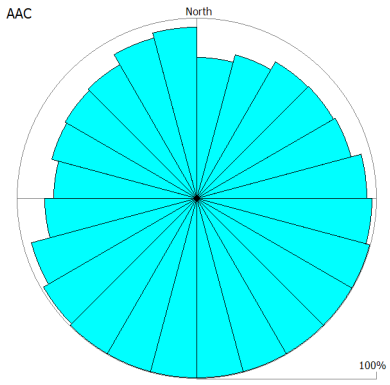
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	14-Aug-20	**Date In:**	03-Sep-20
Interval*:	20 days	**Our Ref:**	108352 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 6.1
Absolute Area Coverage (AAC%) / interval = 92.5
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 4.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.7	78.4	0.2	3.9	N/A
15°-30°	3.4	82.7	0.2	4.1	N/A
30°-45°	4.4	87.6	0.2	4.4	N/A
45°-60°	4.7	88.1	0.2	4.4	N/A
60°-75°	3.8	89.0	0.2	4.4	N/A
75°-90°	4.9	94.9	0.2	4.7	N/A
90°-105°	5.1	97.8	0.3	4.9	N/A
105°-120°	6.5	99.9	0.3	5.0	N/A
120°-135°	8.4	100.0	0.4	5.0	N/A
135°-150°	10.5	100.0	0.5	5.0	N/A
150°-165°	11.8	100.0	0.6	5.0	N/A
165°-180°	11.9	100.0	0.6	5.0	N/A
180°-195°	11.6	100.0	0.6	5.0	N/A
195°-210°	10.3	100.0	0.5	5.0	N/A
210°-225°	7.9	100.0	0.4	5.0	N/A
225°-240°	6.0	98.7	0.3	4.9	N/A
240°-255°	5.2	95.4	0.3	4.8	N/A
255°-270°	3.8	85.0	0.2	4.2	N/A
270°-285°	3.0	79.8	0.2	4.0	N/A
285°-300°	3.4	83.9	0.2	4.2	N/A
300°-315°	3.6	84.8	0.2	4.2	N/A
315°-330°	3.4	86.0	0.2	4.3	N/A
330°-345°	4.3	92.2	0.2	4.6	N/A
345°-360°	4.7	95.3	0.2	4.8	N/A





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Sampling interval exceeded 14 days - Dust Impact Risk cannot be calculated

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

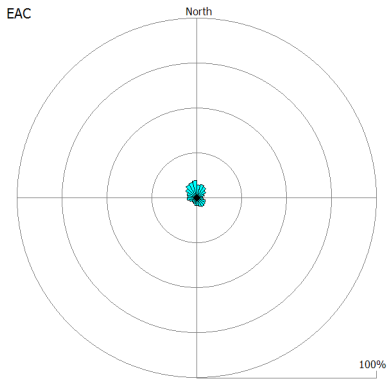
DS100 DIRECTIONAL DUST FLUX REPORT

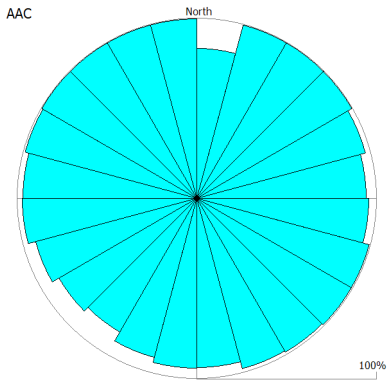
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	04-Sep-20	**Date In:**	25-Sep-20
Interval*:	21 days	**Our Ref:**	109383 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.7
Absolute Area Coverage (AAC%) / interval = 96.1
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 4.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	7.2	83.3	0.3	4.0	N/A
15°-30°	8.0	100.0	0.4	4.8	N/A
30°-45°	7.5	100.0	0.4	4.8	N/A
45°-60°	5.7	99.7	0.3	4.7	N/A
60°-75°	4.4	97.2	0.2	4.6	N/A
75°-90°	3.4	94.5	0.2	4.5	N/A
90°-105°	3.7	95.9	0.2	4.6	N/A
105°-120°	5.1	99.4	0.2	4.7	N/A
120°-135°	5.6	99.3	0.3	4.7	N/A
135°-150°	5.8	98.8	0.3	4.7	N/A
150°-165°	5.2	97.9	0.2	4.7	N/A
165°-180°	4.4	94.0	0.2	4.5	N/A
180°-195°	4.4	94.6	0.2	4.5	N/A
195°-210°	3.9	91.6	0.2	4.4	N/A
210°-225°	3.5	85.8	0.2	4.1	N/A
225°-240°	3.5	88.7	0.2	4.2	N/A
240°-255°	4.4	92.9	0.2	4.4	N/A
255°-270°	5.4	97.3	0.3	4.6	N/A
270°-285°	5.2	96.8	0.2	4.6	N/A
285°-300°	5.8	99.2	0.3	4.7	N/A
300°-315°	7.5	99.8	0.4	4.8	N/A
315°-330°	8.6	100.0	0.4	4.8	N/A
330°-345°	9.1	100.0	0.4	4.8	N/A
345°-360°	9.8	100.0	0.5	4.8	N/A





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Sampling interval exceeded 14 days - Dust Impact Risk cannot be calculated

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

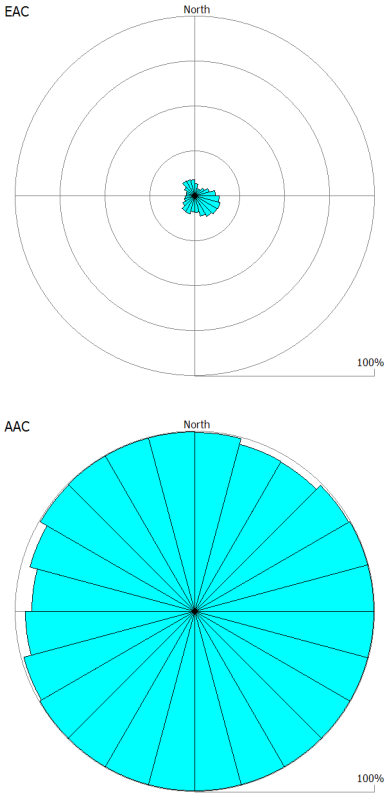
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	09-Oct-20	**Date In:**	22-Oct-20
Interval*:	13 days	**Our Ref:**	109868 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 9.0
Absolute Area Coverage (AAC%) / interval = 98.7
Effective Area Coverage (EAC%) / day = 0.7
Absolute Area Coverage (AAC%) / day = 7.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	7.1	99.6	0.5	7.7	Medium
15°-30°	4.6	96.1	0.4	7.4	Very Low
30°-45°	4.5	95.8	0.3	7.4	Very Low
45°-60°	6.3	99.1	0.5	7.6	Medium
60°-75°	8.3	99.9	0.6	7.7	Medium
75°-90°	11.6	100.0	0.9	7.7	High
90°-105°	13.9	100.0	1.1	7.7	High
105°-120°	14.8	100.0	1.1	7.7	High
120°-135°	14.6	100.0	1.1	7.7	High
135°-150°	13.5	100.0	1.0	7.7	High
150°-165°	12.0	100.0	0.9	7.7	High
165°-180°	9.6	100.0	0.7	7.7	High
180°-195°	9.2	100.0	0.7	7.7	High
195°-210°	10.5	100.0	0.8	7.7	High
210°-225°	10.1	99.9	0.8	7.7	High
225°-240°	8.0	99.8	0.6	7.7	Medium
240°-255°	6.4	98.6	0.5	7.6	Low
255°-270°	5.5	94.6	0.4	7.3	Very Low
270°-285°	4.9	91.0	0.4	7.0	Very Low
285°-300°	5.3	95.3	0.4	7.3	Very Low
300°-315°	7.1	99.3	0.5	7.6	Medium
315°-330°	9.7	100.0	0.7	7.7	High
330°-345°	9.4	100.0	0.7	7.7	High
345°-360°	9.2	100.0	0.7	7.7	High



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

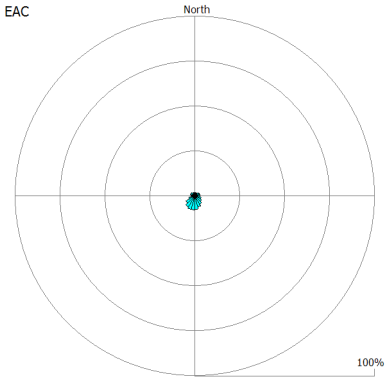
DS100 DIRECTIONAL DUST FLUX REPORT

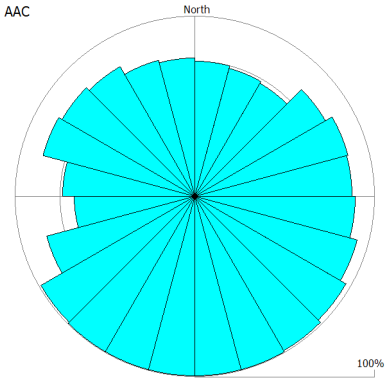
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	22-Oct-20	**Date In:**	29-Oct-20
Interval*:	7 days	**Our Ref:**	110038 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.0
Absolute Area Coverage (AAC%) / interval = 87.5
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 12.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	2.0	75.3	0.3	10.8	Very Low
15°-30°	2.0	73.6	0.3	10.5	Very Low
30°-45°	1.9	72.7	0.3	10.4	Very Low
45°-60°	2.7	84.2	0.4	12.0	Very Low
60°-75°	2.9	88.5	0.4	12.6	Very Low
75°-90°	2.9	87.5	0.4	12.5	Very Low
90°-105°	3.1	89.5	0.4	12.8	Very Low
105°-120°	3.7	93.8	0.5	13.4	Low
120°-135°	4.5	97.2	0.6	13.9	Low
135°-150°	5.5	99.2	0.8	14.2	High
150°-165°	6.8	99.8	1.0	14.3	High
165°-180°	7.6	100.0	1.1	14.3	High
180°-195°	8.2	100.0	1.2	14.3	High
195°-210°	8.0	100.0	1.1	14.3	High
210°-225°	7.3	100.0	1.0	14.3	High
225°-240°	5.8	99.2	0.8	14.2	High
240°-255°	3.8	85.5	0.5	12.2	Low
255°-270°	2.2	67.3	0.3	9.6	Very Low
270°-285°	2.3	73.9	0.3	10.6	Very Low
285°-300°	2.8	87.5	0.4	12.5	Very Low
300°-315°	2.6	85.6	0.4	12.2	Very Low
315°-330°	2.4	83.3	0.3	11.9	Very Low
330°-345°	2.1	78.5	0.3	11.2	Very Low
345°-360°	2.0	77.1	0.3	11.0	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

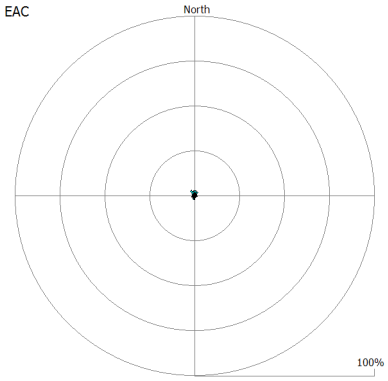
DS100 DIRECTIONAL DUST FLUX REPORT

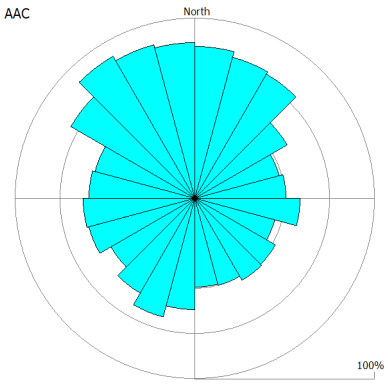
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	29-Oct-20	**Date In:**	06-Nov-20
Interval*:	8 days	**Our Ref:**	110239 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.9
Absolute Area Coverage (AAC%) / interval = 64.4
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 8.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	2.9	84.4	0.4	10.6	Very Low
15°-30°	2.7	81.3	0.3	10.2	Very Low
30°-45°	2.6	80.0	0.3	10.0	Very Low
45°-60°	1.4	59.5	0.2	7.4	Very Low
60°-75°	1.1	48.6	0.1	6.1	Very Low
75°-90°	1.1	50.8	0.1	6.4	Very Low
90°-105°	1.5	58.9	0.2	7.4	Very Low
105°-120°	0.9	46.3	0.1	5.8	Very Low
120°-135°	1.3	52.0	0.2	6.5	Very Low
135°-150°	1.3	52.7	0.2	6.6	Very Low
150°-165°	1.3	50.3	0.2	6.3	Very Low
165°-180°	1.2	49.4	0.1	6.2	Very Low
180°-195°	2.2	62.0	0.3	7.8	Very Low
195°-210°	2.4	68.3	0.3	8.5	Very Low
210°-225°	2.0	61.0	0.2	7.6	Very Low
225°-240°	1.6	54.3	0.2	6.8	Very Low
240°-255°	1.9	61.4	0.2	7.7	Very Low
255°-270°	1.7	62.1	0.2	7.8	Very Low
270°-285°	1.5	59.3	0.2	7.4	Very Low
285°-300°	1.4	57.5	0.2	7.2	Very Low
300°-315°	2.5	79.6	0.3	10.0	Very Low
315°-330°	3.6	91.4	0.4	11.4	Very Low
330°-345°	3.2	88.5	0.4	11.1	Very Low
345°-360°	3.1	86.6	0.4	10.8	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

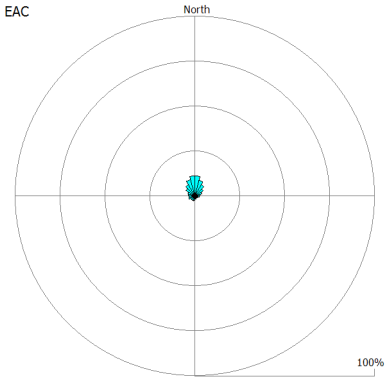
DS100 DIRECTIONAL DUST FLUX REPORT

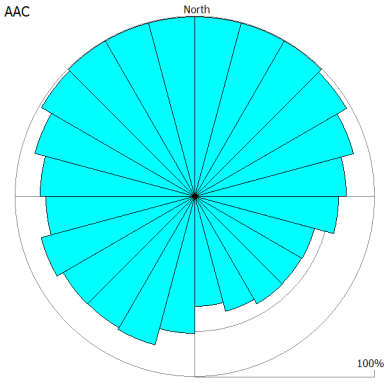
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	06-Nov-20	**Date In:**	12-Nov-20
Interval*:	6 days	**Our Ref:**	110406 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.7
Absolute Area Coverage (AAC%) / interval = 86.1
Effective Area Coverage (EAC%) / day = 0.8
Absolute Area Coverage (AAC%) / day = 14.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	11.2	100.0	1.9	16.7	High
15°-30°	9.1	100.0	1.5	16.7	High
30°-45°	7.2	99.8	1.2	16.6	High
45°-60°	5.6	97.9	0.9	16.3	Medium
60°-75°	3.9	91.6	0.7	15.3	Medium
75°-90°	2.9	84.3	0.5	14.0	Low
90°-105°	2.6	80.0	0.4	13.3	Very Low
105°-120°	2.0	69.0	0.3	11.5	Very Low
120°-135°	2.0	68.7	0.3	11.5	Very Low
135°-150°	1.7	68.9	0.3	11.5	Very Low
150°-165°	1.8	66.3	0.3	11.0	Very Low
165°-180°	1.4	61.3	0.2	10.2	Very Low
180°-195°	2.5	76.3	0.4	12.7	Very Low
195°-210°	3.2	85.5	0.5	14.2	Low
210°-225°	2.9	84.3	0.5	14.0	Low
225°-240°	3.0	84.8	0.5	14.1	Low
240°-255°	3.6	88.8	0.6	14.8	Low
255°-270°	3.4	83.0	0.6	13.8	Low
270°-285°	3.6	86.3	0.6	14.4	Low
285°-300°	4.1	92.3	0.7	15.4	Medium
300°-315°	5.8	98.9	1.0	16.5	Medium
315°-330°	7.4	99.9	1.2	16.6	High
330°-345°	9.5	99.8	1.6	16.6	High
345°-360°	11.1	100.0	1.9	16.7	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

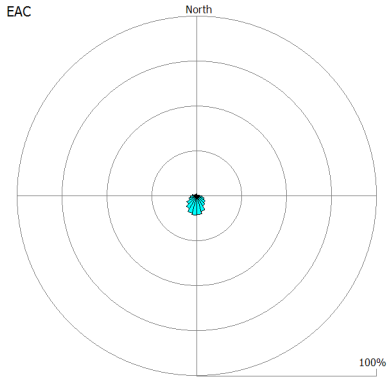
DS100 DIRECTIONAL DUST FLUX REPORT

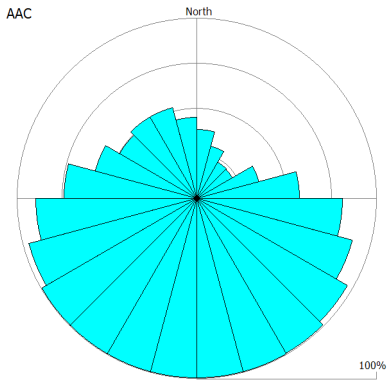
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	12-Nov-20	**Date In:**	19-Nov-20
Interval*:	7 days	**Our Ref:**	110595 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.1
Absolute Area Coverage (AAC%) / interval = 70.6
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 10.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.9	38.3	0.1	5.5	Very Low
15°-30°	0.6	30.3	<0.1	4.3	Very Low
30°-45°	0.4	23.5	<0.1	3.4	Very Low
45°-60°	0.4	22.9	<0.1	3.3	Very Low
60°-75°	0.8	35.7	0.1	5.1	Very Low
75°-90°	1.6	57.3	0.2	8.2	Very Low
90°-105°	3.0	81.2	0.4	11.6	Very Low
105°-120°	4.4	90.0	0.6	12.9	Low
120°-135°	5.5	97.0	0.8	13.9	Medium
135°-150°	6.8	99.4	1.0	14.2	High
150°-165°	9.2	100.0	1.3	14.3	High
165°-180°	10.5	100.0	1.5	14.3	High
180°-195°	11.0	100.0	1.6	14.3	High
195°-210°	10.2	100.0	1.5	14.3	High
210°-225°	8.5	100.0	1.2	14.3	High
225°-240°	6.7	99.9	1.0	14.3	High
240°-255°	4.7	96.9	0.7	13.8	Medium
255°-270°	3.7	89.9	0.5	12.8	Low
270°-285°	2.6	74.1	0.4	10.6	Very Low
285°-300°	1.6	58.9	0.2	8.4	Very Low
300°-315°	1.3	49.7	0.2	7.1	Very Low
315°-330°	1.4	52.2	0.2	7.5	Very Low
330°-345°	1.3	52.4	0.2	7.5	Very Low
345°-360°	1.1	45.3	0.2	6.5	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

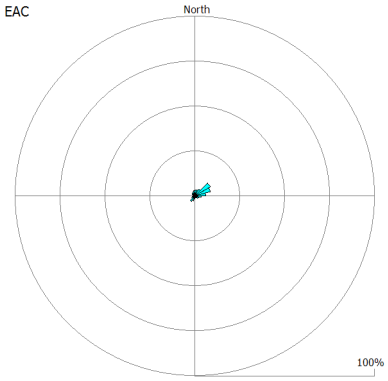
DS100 DIRECTIONAL DUST FLUX REPORT

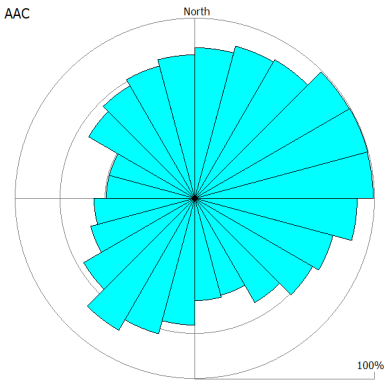
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	19-Nov-20	**Date In:**	26-Nov-20
Interval*:	7 days	**Our Ref:**	110738 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.2
Absolute Area Coverage (AAC%) / interval = 75.1
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 10.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.4	83.9	0.5	12.0	Low
15°-30°	3.7	87.7	0.5	12.5	Low
30°-45°	4.5	89.3	0.6	12.8	Low
45°-60°	10.1	99.5	1.4	14.2	High
60°-75°	9.1	100.0	1.3	14.3	High
75°-90°	6.3	99.3	0.9	14.2	High
90°-105°	3.8	90.5	0.5	12.9	Low
105°-120°	2.7	80.0	0.4	11.4	Very Low
120°-135°	2.3	75.7	0.3	10.8	Very Low
135°-150°	1.8	67.1	0.3	9.6	Very Low
150°-165°	1.2	55.9	0.2	8.0	Very Low
165°-180°	1.2	56.9	0.2	8.1	Very Low
180°-195°	2.0	70.6	0.3	10.1	Very Low
195°-210°	3.0	78.2	0.4	11.2	Very Low
210°-225°	3.7	85.0	0.5	12.1	Low
225°-240°	2.4	71.8	0.3	10.3	Very Low
240°-255°	1.5	60.1	0.2	8.6	Very Low
255°-270°	1.3	56.2	0.2	8.0	Very Low
270°-285°	1.3	49.6	0.2	7.1	Very Low
285°-300°	1.2	49.5	0.2	7.1	Very Low
300°-315°	2.0	68.4	0.3	9.8	Very Low
315°-330°	2.4	72.5	0.3	10.4	Very Low
330°-345°	2.6	76.2	0.4	10.9	Very Low
345°-360°	3.0	79.7	0.4	11.4	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

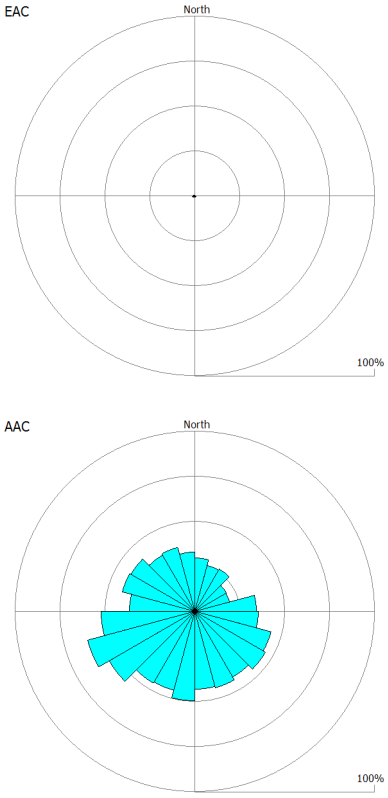
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	26-Nov-20	**Date In:**	03-Dec-20
Interval*:	7 days	**Our Ref:**	110915 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.8
Absolute Area Coverage (AAC%) / interval = 39.6
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 5.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.5	30.0	<0.1	4.3	Very Low
15°-30°	0.5	26.5	<0.1	3.8	Very Low
30°-45°	0.5	27.5	<0.1	3.9	Very Low
45°-60°	0.3	20.6	<0.1	2.9	Very Low
60°-75°	0.3	20.1	<0.1	2.9	Very Low
75°-90°	0.6	34.3	<0.1	4.9	Very Low
90°-105°	0.7	35.6	<0.1	5.1	Very Low
105°-120°	0.9	44.0	0.1	6.3	Very Low
120°-135°	1.0	45.6	0.1	6.5	Very Low
135°-150°	0.9	42.3	0.1	6.0	Very Low
150°-165°	0.9	44.1	0.1	6.3	Very Low
165°-180°	0.8	43.2	0.1	6.2	Very Low
180°-195°	1.0	50.0	0.1	7.1	Very Low
195°-210°	0.8	45.5	0.1	6.5	Very Low
210°-225°	0.8	46.2	0.1	6.6	Very Low
225°-240°	1.2	55.0	0.2	7.9	Very Low
240°-255°	1.5	61.8	0.2	8.8	Very Low
255°-270°	1.2	52.2	0.2	7.5	Very Low
270°-285°	0.6	36.5	<0.1	5.2	Very Low
285°-300°	0.8	42.0	0.1	6.0	Very Low
300°-315°	0.8	41.1	0.1	5.9	Very Low
315°-330°	0.6	36.2	<0.1	5.2	Very Low
330°-345°	0.6	37.1	<0.1	5.3	Very Low
345°-360°	0.5	33.2	<0.1	4.7	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

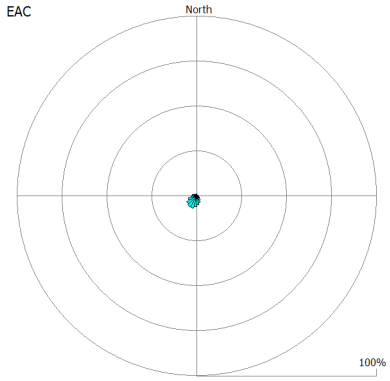
DS100 DIRECTIONAL DUST FLUX REPORT

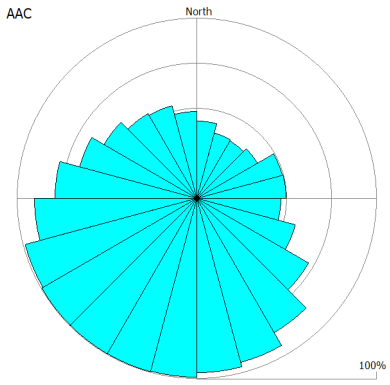
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	03-Dec-20	**Date In:**	10-Dec-20
Interval*:	7 days	**Our Ref:**	111108 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.8
Absolute Area Coverage (AAC%) / interval = 69.2
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 9.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.9	43.0	0.1	6.1	Very Low
15°-30°	0.7	37.5	<0.1	5.4	Very Low
30°-45°	0.7	37.0	<0.1	5.3	Very Low
45°-60°	0.7	39.3	0.1	5.6	Very Low
60°-75°	1.1	49.4	0.2	7.1	Very Low
75°-90°	1.0	49.8	0.1	7.1	Very Low
90°-105°	0.9	47.1	0.1	6.7	Very Low
105°-120°	1.2	56.9	0.2	8.1	Very Low
120°-135°	1.8	71.9	0.3	10.3	Very Low
135°-150°	3.0	86.4	0.4	12.3	Very Low
150°-165°	4.3	94.3	0.6	13.5	Low
165°-180°	5.3	96.9	0.8	13.8	Medium
180°-195°	6.4	99.6	0.9	14.2	High
195°-210°	7.3	99.9	1.0	14.3	High
210°-225°	7.2	99.9	1.0	14.3	High
225°-240°	6.6	99.9	0.9	14.3	High
240°-255°	5.3	99.0	0.8	14.1	High
255°-270°	3.6	90.6	0.5	12.9	Low
270°-285°	2.8	79.0	0.4	11.3	Very Low
285°-300°	2.0	67.8	0.3	9.7	Very Low
300°-315°	1.6	59.7	0.2	8.5	Very Low
315°-330°	1.3	54.4	0.2	7.8	Very Low
330°-345°	1.3	53.2	0.2	7.6	Very Low
345°-360°	1.1	48.3	0.2	6.9	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

Appendix 4.2
Air Quality Assessment Methodology

1. Dust Assessment

1.1 The assessment has been undertaken with reference to the IAQM qualitative frameworks for mineral dust and construction dust assessments[1],[2]. This uses the source-pathway-receptor concept and takes into account the size of source emissions (i.e. scale of the anticipated operations), the effectiveness of the pathway (i.e. dispersion of dust towards a receptor) through consideration of the frequency of dusty winds and the distance of the receptor from the dust source, and the sensitivity of the receptor.

1.2 The IAQM guidance on mineral dust advises that adverse dust impacts from sand and gravel sites are uncommon beyond 250m and beyond 400m from hard rock quarries, as measured from the nearest dust generating activities. The IAQM guidance on construction activities advises an assessment distance of 350m along with assessment of the roads used to access a site.

1.3 In this instance the application Site includes an existing wheel wash beyond which is a tarmacked entry / exit route. The Dust Impact Assessment has therefore considered receptors up to 400m from the boundary of the working areas and access road as far as the wheel wash and up to 50m of the edge of the access road up to a distance of 500m from the wheel wash.

1.4 Where there are no receptors within the Study Area the risk of impacts is *negligible* and there will be no significant effect.

1.5 The size of the source emissions is categorised as small, medium or large for each relevant operational activity (taking into account designed-in mitigation). This tales into account the likelihood of the activity to generate dust emissions and the extent of the activity, e.g. large bare surfaces.

1.6 The estimation of the pathway effectiveness considers the frequency of dusty winds and the distance of the receptor from the dust source. Examples are provided below:

[1] IAQM (2016). *Guidance on the Assessment of Mineral Dust Impacts for Planning, v1.1*. Institute of Air Quality Management, London
[2] Institute of Air Quality Management (2014), *Guidance on the Assessment of Dust from Demolition and Construction*. v1.1.

Table 1.1: Categories of Frequency of Potentially Dusty Winds

Frequency	Criteria
Infrequent	Frequency of winds (>5m/s) from the direction of the dust source on dry days are less than 5%
Moderately infrequent	Frequency of winds (>5m/s) from the direction of the dust source on dry days are between 5% and 12%
Frequent	Frequency of winds (>5m/s) from the direction of the dust source on dry days are between 12% and 20%
Very frequent	Frequency of winds (>5m/s) from the direction of the dust source on dry days are greater than 20%

Reference Table A3-2 of IAQM guidance

Table 1.2: Categories of Receptor Distance from Dust Source

Category	Criteria
Close	Receptor is <100m from dust source
Intermediate	Receptor is 100-200m from dust source
Distant	Receptor is 200-400m from dust source

1.7 Receptors beyond 400m are not assessed.

1.8 The effectiveness of the pathway (i.e. how effectively dust, and windblown dust, will be carried towards receptors) is based on the frequency of winds from the direction of the dust source and the distance of the receptor from the dust source, as follows:

Table 1.3: Pathway Effectiveness

		Frequency of potentially dusty winds			
		<5%	**5-12%**	**12-20%**	**>20%**
Receptor distance	**<100m**	slightly effective	moderately effective	highly effective	highly effective
	100-200m	ineffective	slightly effective	moderately effective	highly effective
	200-400m	ineffective	ineffective	slightly effective	moderately effective

Reference Table A3-4 of IAQM guidance

1.9 The risk of dust impacts at each receptor is assessed taking into account the pathway effectiveness and the size of the source emissions, as detailed below:

Table 1.4: Estimation of Dust Impact Risk

		Size of source emissions		
		small	**medium**	**large**
Pathway effectiveness	highly effective	low	medium	high
	moderately effective	low	low	medium
	slightly ineffective	negligible	low	low
	ineffective	negligible	negligible	low

Reference Table 2 of IAQM guidance

1.10 The likely magnitude of a dust impact on the individual receptor will depend on its sensitivity: **low**, **medium** or **high**. Receptors may vary in their sensitivity to nuisance dust as follows:

Table 1.5: Example sensitivity of receptors to dust deposition

Sensitivity		
High	**Medium**	**Low**
people and property		
hospitals and clinics, schools dwellings and gardens long-term car parks car showrooms, hi-tech industries, food processing, sensitive horticultural land	places of work parks	farms short-term car parks playing fields footpaths
ecological / nature conservation		
international designation (e.g. SAC, Ramsar or SPA site)	national designated site (e.g. SSSI)	local designated site (e.g. local nature reserve)

1.11 The descriptors of the likely magnitude of a dust impact on the individual receptor, taking into account its sensitivity and the estimated dust impact risk, are as follows:

Table 1.6: Descriptors of Magnitude of Dust Impact Effects

		Receptor sensitivity		
		Low	**Medium**	**High**
Dust impact risk	high risk	slight adverse	moderate adverse	substantial adverse
	medium risk	negligible	slight adverse	moderate adverse
	low risk	negligible	negligible	slight adverse
	negligible risk	negligible	negligible	negligible

Reference Table 3 of IAQM guidance

1.12 The assessment of the overall effect on the surrounding area and the significance of that effect takes into account the different effects at different receptors and number of affected receptors.

2. Vehicle Emissions Assessment

2.1 The assessment of vehicle emissions associated with the Proposed Development has been undertaken in accordance with the IAQM planning guidance[3] which is deemed appropriate. Relevant receptors include residential dwellings, schools and hospitals, areas of leisure use and ecologically sensitive sites.

2.2 The level of assessment required was determined through an initial screening review considering the predicted vehicle movements in association with the proposed activities, the routing of vehicles along the roads within the transport assessment study area and locations of sensitive receptors.

2.3 The following criteria were used to determine potentially affected roads:

- LDV (Light Duty Vehicle) flow change by 500 AADT (annual average daily traffic) or more outside an AQMA (Air Quality Management Area), or 100 AADT or more within or adjacent to an AQMA;
- HDV (Heavy Duty Vehicle) flows change by 100 AADT or more outside an AQMA, or 25 AADT or more within or adjacent to an AQMA;
- Road alignment changing by 5m or more;
- Introduction or removal of a junction.

2.4 Where these criteria are met and there are relevant receptors present further assessment is required. This may take the form of a Simple or Detailed Assessment. The IAQM guidance does not specify at what distance a receptor should be to an affected road to indicate the need for further assessment. However, pollution concentrations fall rapidly away from the roadside and are expected to return to background levels within 100m of a road source[4]. For the purposes of the assessment reference is made to HE DMRB[5] guidance which requires assessment of receptors within 200m of affected roads.

2.5 Where there are no receptors within 200m of affected roads, these roads have not been considered further and potential impacts of vehicle emissions can be considered *negligible* and as having an insignificant effect.

2.6 With regards to this planning application in relation to Craig yr Hesg Quarry the screening assessment concluded that further consideration of vehicle emissions was required, but a Detailed Assessment was not required.

[3] Institute of Air Quality Management (2017), *Land-use Planning & Development Control: Planning for Air Quality*. v1.2.
[4] Air Quality Consultants (2008), *NO2 Concentrations and Distance from Roads*, J504
5 Highways England (HE), Design Manual for Roads and Bridges (DMRB), LA 105 Air Quality, Revision 0, November 2019

Craig yr Hesg Quarry: Dust Deposition Monitoring

Preliminary Results

This following note describes the initial results received in relation to the dust deposition monitoring that is being undertaken to inform both the planning application for the proposed continuation of existing activities (the S73 application) and the Appeal in relation to the Western Extension planning application (planning ref: 15/0666/10).

Given there are no particular changes of note in the locality there is no expectation that background dust deposition rates would have changed substantially since the previous monitoring in 2014. The monitoring is however being carried out to provide up to date information and further supporting information for relevant air quality and dust assessment.

Where possible the monitoring replicates that undertaken in 2014; full details on the methodology and monitoring locations along with any deviations from the previous monitoring scope are provided below.

Dust Monitoring Equipment

The monitoring is being undertaken using combined deposition / directional dust gauges supplied by Socotec UK Ltd ('Socotec'; formerly ESG). These comprise 'Frisbee-type' dust deposition samplers with an adhesive 'sticky pad' directional dust sampler around the collection bottle.

Dust Monitoring Deployment

Deployment of the equipment was undertaken by Socotec, under supervision of Smith Grant LLP (SGP), on 4th March 2021. Three dust deposition monitors have been installed around the quarry boundaries and one at an off-site location.

The locations have been selected to determine baseline conditions at sensitive site boundaries replicating those used in 2014 where possible. The locations were also determined by on-site and off-site accessibility and equipment security taking into account existing and near-future activities that may result in equipment damage.

The monitoring locations are described below in Table 1 and shown in Figure 1; the previous 2014 locations are provided in Figure 2. Photographs are provided in Table 2.

Table 1: Dust Monitoring Locations

Monitor	Location	Grid reference	Comments
D1	26 Conway Close, rear garden backing onto field	307278, 192162	similar location to Station 1 in 2014
D2	north of Haul Road to Primary Crusher	307874, 191969	similar location to Station 2 in 2014

Monitor	Location	Grid reference	Comments
D3	quarry northern perimeter track	307728, 191871	east of Station 2 in 2014
D4	quarry northern permitter track	307482, 191868	west of Station 2 in 2014

It was not possible at the time to install any monitoring equipment on the southern quarry perimeter as no access to a suitable secure location was available.

Analysis

The first set of samples were collected by Socotec on 8th April 2021 and transported to Socotec's laboratory for analysis. Analysis was undertaken using UKAS accredited methodologies. The analysis of dust samples is reported in terms of deposited dust (mg/m^2/day) and daily percentage effective area coverage, essentially a measure of soiling, in eight sectors. The laboratory certificate (lab reference: FD/19683) is attached.

The dust results are considered in the context of the following thresholds, although taking into account that some locations are not necessarily representative of receptor locations:

- Deposited dust: 200 mg/m^2/day[1], [2]
- Soiling: 0.5 % EAC/day[3];

Preliminary Results

The results for the period 4th March 2021-8th April 2021 are summarised in the table below:

Table 2: Monitoring Data – March / April 2021

Ref	Location	Sampling period	Dust mass (mg)[1]	Dust deposition (mg/m^2/day)	Maximum %EAC/day[2]
D1	26 Conway Close,	35 days	21	15	0.1% from SE, S, SW and W
D2	north of Haul Road to Primary Crusher	35 days	352	253	0.4% from SW; 0.3% from S and W
D3	quarry northern perimeter track	35 days	86	62	0.1% from N, NE, E, S, SW, W and NW
D4	quarry northern permitter track	35 days	75	54	0.3% from SW

1: Detection limit: 0.5 mg; 2: Reported per sector

[1] Recommended as a Site Action Level, in the absence of any other information in the Institute of Air Quality Management's Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites, October 2018, v1.1
[2] Referred to as a 'custom and practice' guideline in Environment Agency (EA) Technical Guidance Note M17 (Monitoring), Monitoring Particulate Matter in Ambient Air around Waste Facilities, October 2014
[3] Referred to as a threshold for '*possible* complaints' in the Mayor of London's Supplementary Planning Guidance on The Control of Dust and Emissions during Construction and Demolition, July 2014

Location D2

The maximum dust mass and dust deposition was recorded at location D2, located to the north of the haul road to the primary crusher with maximum EAC rates from southerly through to westerly directions. At 253 mg/m^2/day the dust deposition is above the threshold of 200 mg/m^2/day typically referred to in respect to sensitive receptors, although the %EAC is below the relevant indicative threshold.

The raised dust deposition here is likely to be attributable to the dust raised by haulage movements. The measurements here do not reflect conditions outside the site boundary due to the intervening vegetation.

The dust deposition measurement is within the range of 144-311 mg/m^2/day reported in the 2014 monitoring programme at a similar location (Station 1).

Locations D1, D3 and D4

Dust deposition and EAC rates were low at locations D1, D3 and D4, all being less than 100 mg/m^2/day and less than 0.5% EAC per sector.

At 15 mg/m^2/day the dust deposition recorded at location D1, 26 Conway Close, is within the range of 8-21 mg/m^2/day reported in 2014 at this location (Station 4), and is consistent with expected background concentrations where distant from any particular dust sources.

At 54 and 62 mg/m^2/day the dust deposition rates at D3 and D4 are equally within the range of 15-89 mg/m^2/day reported on the quarry northern perimeter in 2014 (Station 2).

Conclusions

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 is concluded, therefore, that the 2014 data as presented remains appropriate to inform existing deposition dust conditions at the Site.

Figure 1: 2021 Dust Deposition Monitoring Locations

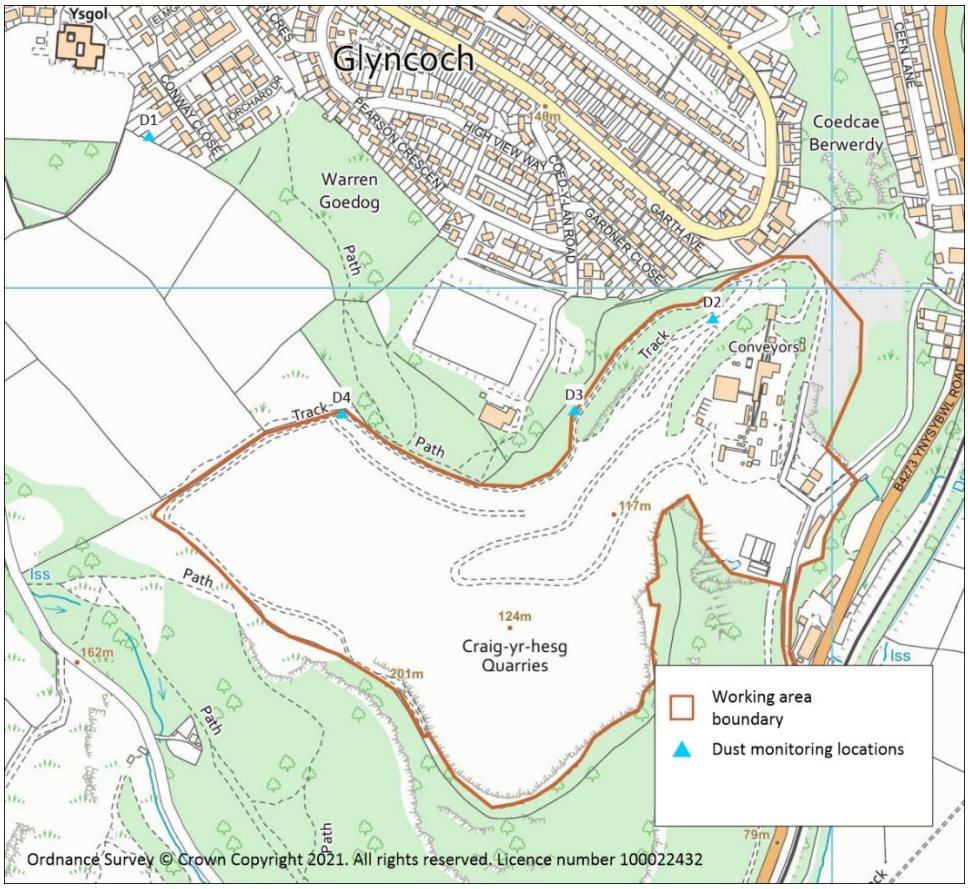
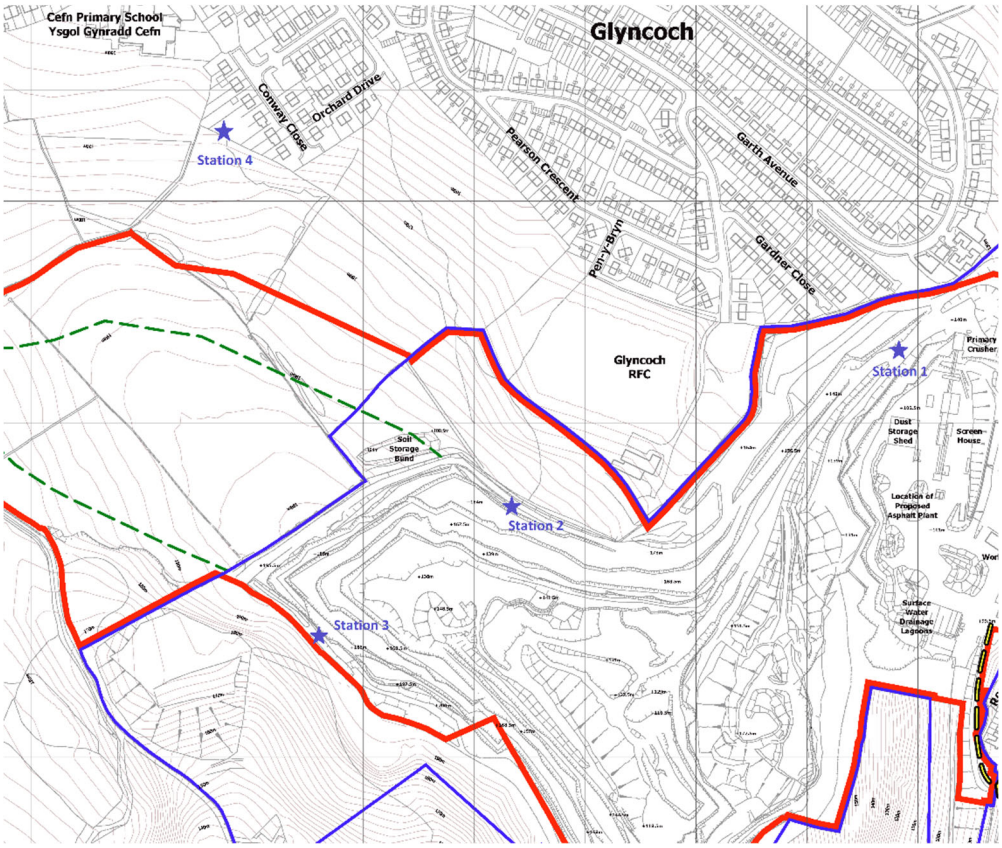


Figure 2: 2014 Dust Deposition Monitoring Locations



Photographic Record: 2021 Dust Monitoring Locations

Location D1: Rear garden of 26 Conway Close

Location D2: north of haul road to Primary Crusher feed hopper (located in a side area not currently subject to any haulage movements)

Location D3: quarry northern perimeter track

Location D4: quarry northern perimeter track

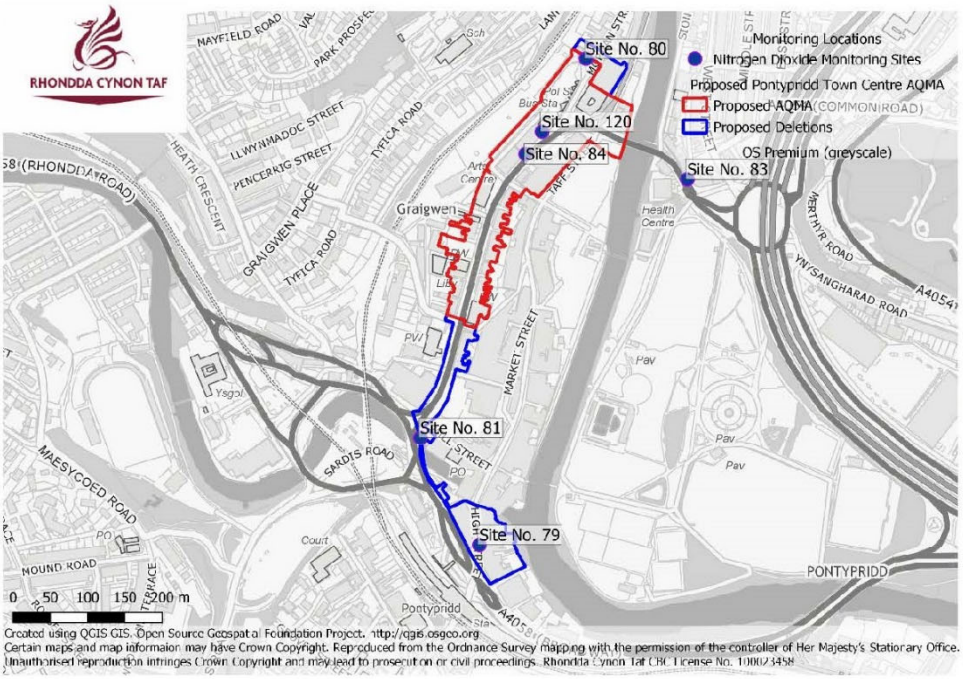
ID	description	receptor type	sensitivity	primary source	Dust Source Potential[1]	distance to source (m)	description	orientation to source	%frequency of winds to receptor	% frequency of winds to receptor (.5 m/s)	description	pathway effectiveness	screening	residual pathway effectiveness	risk of impact / exposure	magnitude of dust effect
Human Health Receptors																
Receptors nearest to Proposed Quarry Extension																
R1	Cefn Cae / Cefnlee Farm	residential	high	soil bund	small	230m	distant	SSE, SE	3.75	1.55	infrequent	ineffective	partial - hedges & trees	ineffective	negligible	negligible
				soil stripping / extraction - Phases 2&3	medium	265m	distant	SSE, SE	3.75	23.20	infrequent	ineffective	partial - hedges & trees; screening bund	ineffective	negligible	negligible
R2	No 48 Greenfield Avenue	residential	high	soil bund	small	210m	distant	S, SSE, SE	47.08	31.45	very frequent	moderately effective	partial - hedges & trees	slightly effective	negligible	negligible
				soil stripping / extraction - Phases 2 & 3	medium	265m	distant	S, SSE, SE	47.08	31.45	very frequent	moderately effective	partial - hedges & trees; screening bund	slightly effective	low	slight
R3	Cefn Primary School	residential	high	soil bund	small	190m	intermediate	SSW, S, SSE	62.53	32.26	very frequent	highly effective	effective - woodland	slightly effective	negligible	negligible
				soil stripping / extraction - Phases 1-3	medium	255m	distant	SSW, S, SSE	62.53	32.26	very frequent	moderately effective	effective - woodland	ineffective	negligible	negligible
R4	Conway Close	residential	high	soil bund	small	105m	intermediate	SW, SSW, S, SSE	64.07	33.11	very frequent	highly effective	none	highly effective	low	slight
				soil stripping / extraction - Phases 1&2	medium	175m	intermediate	SW, SSW, S, SSE	64.07	33.11	very frequent	highly effective	partial - screening bund	moderately effective	low	slight
R5	Pen-Bryn	residential	high	soil bund	small	190m	intermediate	SW, SSW, S	61.42	32.30	very frequent	highly effective	effective - woodland	slightly effective	negligible	negligible
				soil stripping / extraction - Phase 1	medium	220m	distant	SW, SSW, S	61.42	32.30	very frequent	moderately effective	effective - woodland	ineffective	negligible	negligible
R6	Club House, Rugby Football Ground	leisure	low	soil bund	small	160m	intermediate	W	0.78	0.22	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
				soil stripping / extraction - Phase 1	medium	180m	intermediate	W	0.78	0.22	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
Receptors nearest to Existing Processing Plant																
R7	Rogart Terrace, Ynysbwl Road	residential	high	access road	small	40m	near	WNW, W, WSW, SW, SSW, S	65.82	33.94	very frequent	highly effective	effective - woodland	slightly effective	negligible	negligible
				stockpiles and yard	small	100m	intermediate	NNW, NW, WNW	2.07	0.47	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
R8	Craig yr Hesg House, Ynysbwl Road	residential	high	processing area	medium / small	120m	intermediate	W, WSW, SW	61.42	32.30	very frequent	highly effective	effective - woodland	ineffective	negligible	negligible
R9	No 10 Glyncoch Terrace, Cefn Lane	residential	high	primary crusher feed hopper	medium / small	170m	intermediate	WSW	16.55	9.06	moderately frequent	slightyl effective	effective - woodland	ineffective	negligible	negligible
R10	Old Peoples Flats, units 1-12, Garth Avenue	residential	high	haul road	small	50m	near	SSW, SW	45.98	23.20	very frequent	highly effective	partial - trees	moderately effective	low	slight adverse
				primary crusher feed hopper	medium / small	50m	near	S	1.10	0.73	infrequent	slightly effective	partial - trees	moderately effective	low / negligible	slight adverse / negligible
R11	Craig yr Hesg Primary School	school	high	primary crusher feed hopper	medium / small	430m	n/a	S	1.10	0.73	infrequent	n/a	effective - Glyncoch Estate	n/a	n/a	n/a
R12	Spar Supermarket, Garth Avenue *(assuming residential use)*	commercial / residential	high	haul road	small	50m	near	S, SSW, SW	47.08	23.93	very frequent	highly effective	partial - trees	moderately effective	low	slight adverse
				primary crusher feed hopper	medium / small	50m	near	SSE, SE	1.74	0.97	infrequent	slightly effective	partial - trees	ineffective	negligible	negligible
R13	No 113 Garth Avenue	residential	high	haul road	small	45m	near	SE, SSE, S	2.84	1.70	infrequent	slighlty effective	partial - trees and bunds	ineffective	negligible	negligible
				primary crusher feed hopper	medium / small	45m	near	ESE, SE	2.19	1.20	infrequent	slightly effective	partial - trees	ineffective	negligible	negligible
R14	No 24 Gardner Close	residential	high	haul road	small	55m	near	SE, SSE, S, SSW	5.49	2.52	infrequent	slightly effective	effective - woodland	ineffective	negligible	negligible
				processing plant	small	115m	intermediate	ESE, SE, SSE	2.91	1.61	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
R15	No 28 Coed-y-Lan Road	residential	high	haul road	medium / small	120m	intermediate	ESE, SE, SSE	2.91	1.61	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
				quarry void	medium / small	150m	intermediate	S, SSW	3.75	1.55	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
R16	Club House, Rugby Football Ground	leisure	low	soil bund	small	160m	intermediate	W	-	-	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
				extraction - Phase 1	medium	180m	intermediate	W	-	-	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible
Ecological Receptors																
E1	Craig yr Hesg / Lan Wood	ecological - LNR / SINC	low	processing and access road	medium / small	adjacent	close	NE, N, NW and W	14.71	6.02	moderately infrequent	slighltly ineffective	none at boundary	slightly effective	low	negligible
E2	Taff and Rhonnda Rivers	ecological - SINC	low	processing and access road	medium / small	270m	distant	W	1.54	0.22	infrequent	ineffective	effective - woodland	ineffective	negligible	negligible

1 Potential source strength of nearest dust source taking into in-design mitigation, including management and control measures
2 Where necessary separate assessment undertaken for different dust sources

APPENDIX 4-5: Map of Proposed amended Pontypridd Town Centre AQMA

(extracted from RCT Air Quality Annual Progress Report, 2020; page 92)

Figure 2.25: Map of proposed amended Pontypridd Town Centre AQMA



GARTH AVE

E:307900

N:192000

N

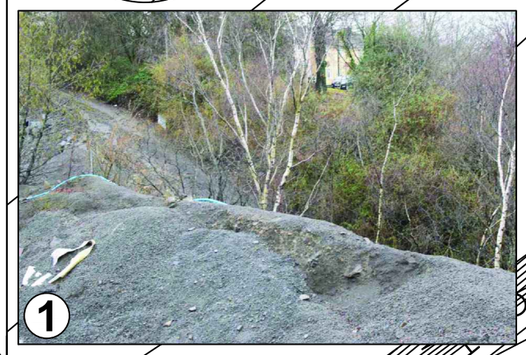
1

2

EXISTING VEGETATION AROUND SITE BOUNDARY

EXISTING TURNING CIRCLE, WITH AUTOMATED DUST SUPPRESSION SPRINKLERS / WATER JETS

PRIMARY CRUSHER



LEGEND

- CONTOURS (AT 1M INTERVAL)
- EXISTING PALISADE FENCE
- EXISTING BUILDING
- EXISTING VEGETATION / SCREENING
- PROPOSED ADDITIONAL INFILL SCREEN PLANTING
- PHOTOGRAPH LOCATION AND DIRECTION

EXISTING PALLISADE FENCING ALONG SITE BOUNDARY, WITH LOW BANK ADJACENT AND VEGETATION COVER / SCREENING (INCLUDING SILVER BIRCH).

PROPOSED ADDITIONAL SCREEN PLANTING TO CONSIST OF SINGLE OR (WHERE POSSIBLE) DOUBLE ROW OF LAYLANDII (*X CUPROCYPARIS LAYLANDII*) ALONG THE SOUTHERN EDGE OF THE EXISTING VEGETATION. THIS IS PROPOSED TO HELP MITIGATE DUST ARISING FROM OPERATIONS. THIS SPECIES IS PROPOSED DUE TO SPEED OF ESTABLISHMENT AND GROWTH, AS WELL AS TO PROVIDE YEAR ROUND SCREENING (I.E. EVERGREEN).

DUE TO STONY SUBSTRATE, ALL TREES TO BE PIT PLANTED, WITH INCORPORATION OF ORGANIC COMPOST INTO BACKFILL AND AS MULCH LAYER.

CONDITION 31

"*...SCHEME FOR ADDITIONAL DUST MINIMISATION MEASURES WHICH SHALL INCLUDE THE PROVISION OF ADDITIONAL SCREENING ALONG THE SITE BOUNDARY IN THE VICINITY OF THE PRIMARY CRUSHER...*"

Hanson HEIDELBERGCEMENT Group

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CRAIG YR HESG QUARRY

ROMP CONDITION 31

ADDITIONAL TREE SCREENING AT PRIMARY CRUSHER

CYH - C31

Scale 1:500 @ A3

Date MARCH 2021

210302_00027.00527.29.CYH_C31_HD.dwg

Hanson UK: Craig yr Hesg Quarry

Dust and Particulate Management Plan and Dust Monitoring Plan

1.0 Introduction

Current Dust Controls

1.1 The management of air quality and dust at Craig Yr Hesg Quarry is currently regulated by:

(i) An Environmental Permitting (England & Wales) Regulations, 2010, Part B permit (the 'Environmental Permit') which regulates the operation of processing plant, roadstone coating plant, stockpiles and related activities within the processing plant site;

(ii) Planning conditions imposed on the planning permission for quarrying, which were updated in April 2013 as part of an Environment Act 1995 'Review of Old Mining Permissions' (ROMP) application, where Condition 30 lists a series of measures designed to minimise dust emissions from the quarrying operation and related transportation on internal quarry site roads.

1.2 The planning application for an extension to Craig yr Hesg Quarry and the consolidation of the existing planning permissions (ref 15/0666/10, submitted in May 2015) anticipated that these established controls would continue in place via (i) the ongoing regulation imposed by the Permit, and (ii) a similar dust control planning condition to the current 'condition 30' which would be imposed on a planning permission for the extension/consolidation development. These controls work in tandem, with the Permit regulating operations within the processing plant site, and the planning condition regulating operations elsewhere within the quarry area.

Response to well-being and environmental health issues

1.3 During the processing of the extension /consolidation application (ref 15/06666/10), the Applicants provided a response to well-being and environmental health issues which had been raised by interested parties, and which had been collated by Rhondda Cynon Taff (RCT) as a 'memorandum of environmental health themes and issues'. These were comprehensively addressed in a June 2016 submission which included a 'schedule of environmental controls and commitments' which listed the management and mitigation measures proposed to regulate dust. The submission also provided information on existing site management controls which are designed to reinforce the mitigation measures through a routine programme of inspection, internal reporting and corrective action where appropriate.

RCT PM10 Particulate Monitoring

1.4 The consideration of air quality/particulate matter has been the subject of ongoing routine monitoring undertaken by RCT at a monitoring location in Garth Avenue in Glyncoch. The results are collated by RCT and are available for review.

Hanson PM10 Particulate Monitoring

1.5 From January 2010, the local air quality management monitoring undertaken by RCT has been supplemented by a parallel air quality/particulate monitoring study undertaken by Hanson at a location on the northern side of the quarry processing plant, between the primary crusher and main haul road and the residential properties in Glyncoch to the north. The Hanson monitoring was initially conceived as an exercise to assess the effectiveness of additional dust suppression measures which were installed at the plant site pursuant to a 'PM10 Emissions Action Plan' submitted to RCT in 2008. This Action Plan proposed a series of dust mitigation measures which were implemented during 2008 and 2009 (ref Appendix 12.1 to the Craig yr Hesg extension/consolidation application Environmental Statement (ES): May 2015, Volume 2 Appendices).

1.5 The voluntary monitoring undertaken by Hanson was subsequently formalised via a requirement imposed by Condition 32 of the Environment Act ROMP schedule of conditions which required Hanson to undertake a 12 month monitoring exercise, with the need for continuing monitoring to be the subject of review following the submission an initial annual report.

1.6 The required report for the period November 2013 – November 2014 was duly submitted, and in the absence of a response from RCT regarding the need or otherwise for continued monitoring, the monitoring has continued. Reports have been submitted to RCT for the subsequent periods of November 2014 - November 2015, November 2015 - November 2016 and November 2016 - November 2017. The later reports for the periods of 2017-2018 and 2018-2019 have been submitted separately to RCT parallel to this Appeal and that for 2019-2020 is included as Appendix 4-1 to the Supplementary Environmental Statement

1.7 The reports indicate a consistently slightly improving trend in air quality since 2013. The on-site and Upper Garth Avenue monitoring data indicates there have not been any actual or likely breaches of either the long-term annual mean or short-term 24-hour Air Quality Objectives (AQOs) for PM_{10}. The available data demonstrates reasonable correlation between the site data and the nearby RCT monitoring station at Upper Garth Avenue. The cessation of the on-site monitoring by Hanson is considered appropriate to avoid duplication with the separate monitoring undertaken by RCT.

Fugitive Nuisance Dust Monitoring

1.8 Fugitive dust monitoring (i.e. more general 'nuisance' dust) was undertaken as part of an Environmental Impact Assessment (EIA) air quality/dust study carried out as part of the 2015 quarry extension/consolidation application. The results were reported in Section 12.5 of the ES (reference tables 12-13 and 12-14 and figure 12.10). With the exception of the dust monitoring station located close the primary crusher haul road, the other stations recorded either low, typically rural background levels, or no evidence of significant dust deposition from the quarry or other sources.

1.9 These issues were further reviewed in Section 8.5 of the Hanson's response to well-being and environmental health issues: June 2016. However, RCT have suggested as part of a response the current application that notwithstanding these results and conclusions, it would be appropriate to undertake fugitive dust monitoring associated with operations within the extension area and any wider operations at the quarry which are not covered by the Environmental Permit,

particularly during defined events such as the construction of the perimeter screening bunds.

Dust Management and Monitoring Plan

1.10 In order to draw these issues together, this document comprises a 'Dust and Particulate Management Plan' and a 'Nuisance Dust Monitoring Plan'. It confirms the measures to be adopted to minimise dust emissions, and a nuisance dust monitoring plan which confirms the proposals for the monitoring of fugitive nuisance dust. It should be considered in conjunction with the Environmental Permit, which will continue to regulate prescribed activities within the processing plant site, and the separate arrangements for the ongoing monitoring of particulate matter (PM10).

1.11 This Dust And Particulate Management Plan and Dust Monitoring Plan, thus focuses on activities which have the potential to give rise to fugitive nuisance dust associated with activities within the proposed extension area (and existing quarry area), and related transportation. It also sets out proposals for the monitoring of fugitive nuisance dust at defined stages which are deemed to represent the highest risk of generating fugitive nuisance dust, primarily associated with the phased stripping of soil and overburden and the construction of the perimeter screen bunds.

2.0 Dust and Particulate Management

2.1 The Environmental Permit

2.1.1 As noted above, the Environmental Permit (reference PPC/009-3.5-HQPEL/0104D, as varied by Notice dated 10th June 2020) sets out detailed measures to regulate and monitor emissions to air from the crushing and screening plant and the roadstone coating plant at the site. In more general terms, the regulated facility is required to operate in such a way that "*all the appropriate preventative measures are taken against air pollution, in particular through the application of the best available techniques.* The Permit also requires that "*no significant air pollution is caused"*

2.1.2 The permit includes 86 conditions which prescribe detailed emission limits and controls, together with requirements to monitor the facility and keep records, as follows:

- Specific emission limits and standards (Conditions 1 – 20);
- The monitoring and investigation of emissions and the maintenance of records (conditions 13 – 33);
- The notification to the Regulator of any defined occurrence, (conditions 28-33);
- The operation of defined emission controls, including controls on the processing plant in terms of enclosure of plant items and the use of water sprays; air pollution abatement plant; controls on the roadstone coating plant; stockpiles; the use of additional water sprays at defined locations; the enclosure of load-out points; and controls on the importation of material for use in the roadstone plant (conditions 34 – 59);
- Controls on the use of any mobile crushing and screening plant (condition 72);

- Controls on transport and loading / unloading, including the sheeting of vehicles; conditioning of internal roads to prevent dust emissions; the hard surfacing of defined roads; the dampening down of other internal roads; and the use of a wheel wash (conditions 60 – 71);

- Control of emissions from chimneys, vents and process exhausts (conditions 77 – 79);

- General management techniques and controls, including supervision by trained personnel; maintaining plant in good operating condition with a maintenance programme; and the implementation of written procedures to address any non-compliance or complaints (conditions 107 – 113).

2.2 Relationship between Planning and Permit Controls

2.2.1 As itemised above, the Permit is detailed and comprehensive in terms of the controls which it imposes. In the context of these controls, the advice in Minerals Technical Advice Note 1 (MTAN1) paragraph 76 is that whilst planning conditions can control certain activities to protect against dust, care should be taken to avoid duplication of controls within the Permit. In the context of that advice, this Dust and Particulate Management Plan focuses on:

(i) Particulate and dust management controls associated with the quarrying operations and related haulage of stone from the quarry area to the processing plant, where the measures are primarily focussed on nuisance dust but which, through effective control, will also serve to minimise fine particulate emissions;

(ii) The internal management controls which are in place to identify any issues, and, if necessary, implement corrective action.

2.2.2 Condition 30 of the existing schedule of conditions imposed following the Environment Act ROMP Review (ref 08/1380/10, dated 24th April 2013) sets out a list of measures which are designed to minimise dust emissions. This list of dust mitigation measures was reviewed and updated as part of the response to well-being and environmental health issues (June 2016), and the schedule of environmental controls and commitments set out in that document. This in turn is supplemented by the daily and weekly inspection checklists which are in place at the quarry. These elements thus provide the framework for the dust management controls which are proposed in this Plan.

2.3 Proposed Particulate and Dust Management Controls

2.3.1 The following measures are proposed to regulate and minimise fugitive nuisance dust and particulate emissions from the quarry and related haulage operations:

(1) General Management Measures

- **Quality Management System and Environmental Management System** in place at the quarry, the latter accredited to the international standard ISO14001, which includes pro-active management systems to minimise environmental and amenity impacts and which require strict adherence to the terms of the planning permission and Permits.

- **Planning Conditions Monitoring**: there is provision in Regulations for a programme of regular monitoring visits to be undertaken by RCT Officers, at Hanson's cost, to check adherence to requirements of planning conditions.

- **Quarry Plant Environmental Permit Monitoring**: programme of regular monitoring in place by RCT Officers to check adherence to the requirements of the permit and assess the 'risk rating' of the installation.

(2) Site Management Measures

- **Daily visual assessment of emissions,** on an internal Hanson pro-forma (Appendix 1) which includes the dust extractor stack; water sprays; process buildings; conveyors; dust shed; stockpiles; loading; haul roads, wheel wash, and entrance road / exit (including sprays), with a record of any action required, action taken, and date completed, all recorded daily.

- **Daily general site inspection checklist,** again on a Hanson pro-forma (Appendix 2) which includes inspections of haul roads, edge protection, emissions, site security, compliance with internal traffic management, and adherence to vehicle sheeting requirements, with a record of any action required, action taken, and date completed, all recorded daily.

- **Weekly general site inspection checklist,** again on a Hanson pro-forma (Appendix 2) which includes inspections of signs, condition of structures, and cleanliness of site entrance notice board with a record of any action required, action taken, and date completed.

- **Complaints Register:** all complaints are logged, investigated, actioned as appropriate, and the complainant notified of the outcome, with a full written record retained.

(3) Soil Handling

- Soil handling to be undertaken during appropriate weather conditions

- Soil handling particularly in the extension area closest to Conway Close will be suspended when wind conditions are likely to result in dust being carried off site.

- Screening landform to be seeded / planted at the earliest opportunity to bind the surface

- Material to be used to construct screening landform to be conditioned with water to avoid drying out and disturbance by wind

(4) Quarry Operations

- Dry surfaces at highest point of quarry to be treated as necessary with rain gun attached to water bowser.

- Drop heights from excavator to dump truck to be minimised.

- Dump trucks to be evenly loaded to prevent spillage

- All site vehicles to be fitted with upswept exhausts and radiator fan shields.
- Water bowser to be used on stripped surfaces or other areas of bare ground to minimise effects of wind blow
- Drilling of shot holes to be undertaken by drilling rigs fitted with a dust collection system

(5) Haulage

- Main internal haul road from quarry to plant site to be conditioned as necessary by water bowser and / or emplaced fixed water sprays under dry conditions.
- Quarry haul roads to be provided which avoid abrupt changes in horizontal and vertical alignment.
- Regular compaction, grading and maintenance of haul routes
- All haul roads to be conditioned as necessary by water bowser under dry conditions
- Speed limit of 10mph to be enforced.
- An effective wheel wash will be maintained at the site, as required by Condition 15 of Planning Permission Ref. 13/1039/10, dated 14th March 2015 for improvements to the quarry entrance/ exit road. Details of a 'bath' type wheel wash were approved by the LPA in June 2014, but that wheel wash is to be replaced by a superior hydraulic wheel wash in August 2017. All HGV traffic exiting the site will be required to first pass through the wheel wash to ensure that no much or detritus is tracked out onto the public highway.

3.0 Fugitive/Nuisance Dust Monitoring

3.1 The main potential for fugitive nuisance dust during quarrying operations would be during soil stripping within the three defined phases of the extension development, and during the construction of the perimeter screen bunds during the first of those three phases. The aim is that the construction of the screen bunds would be undertaken over a period of no more than 8 weeks in a single calendar year.

3.2 Given that this is the identified key source of potential nuisance dust, it is proposed to monitor fugitive dust at three locations in the vicinity of the extension development / screen bund, as shown on Location Plan DMP1. Location 1 is at the rear of Conway Close and is representative of the closest properties to the extension area and the proposed site for the construction of the screen bunds. Location 2 is to the north of the extension area, close to the property at Cefn Heulog. Location 3 is to the south west of the quarry extension area and will be used to establish background dust deposition levels. Locations 1 and 3 correspond with locations 4 and 3 respectively on ES figure 12.10 where monitoring was carried out as part of the EIA undertaken in support of the extension/consolidation

application and benefit from baseline monitoring data captured in advance of the commencement of the extension development.

3.3 The monitoring would be undertaken using combined Frisbee deposit and adhesive strip dust gauges to measure total daily dust deposition and directional dust, consistent with the approach undertaken as part of the EIA dust/air quality study. Monitoring would be undertaken as follows, with dust samples collected at monthly intervals and sent for laboratory analysis:

(i) For a three month period immediately preceding the commencement of soil and overburden stripping in phases 1, 2 and 3;

(ii) For a twelve month period following the commencement of soil stripping within Phase 1 to cover the duration of the period of construction of the northern and western screening bunds, and the initial operational phase of development within the extension area;

(iii) For the duration of soil stripping operations within phases 2 and 3; and

(iv) At such other times and at such other locations as may be requested by the LPA (acting reasonably), for example in response to the receipt of complaints about nuisance dust from the site.

3.4 The results of the monitoring referred to in paragraph 3.3 above will be submitted to RCT as 'dust sample test reports' which will include the test result data and explanatory comments as appropriate. The test reports will cover sequential periods not exceeding 3 months in duration.

3.5 The dust results would be assessed in the context of a dust deposition rate of 200mg/m²/d and a soiling rate of 0.5% EAC (Effective Area Coverage) as indicative thresholds for possible nuisance. In the event that a dust sample test report indicates a dust deposition rate (averaged over the one month sampling period) at or in excess of that threshold, then this will trigger an investigation of the cause, using site records and data from the quarry weather station, with RCT being notified within a one month period of the outcome of the investigation and any new or additional mitigation measures to be taken. However, it is anticipated that any significant dust event would be identified via the routine daily visual assessments set out in section 2.3.1 (2) above, with the corrective action referred to. The dust monitoring results will be used to identify any increase or trend in dust deposition rates, verify (or otherwise) any complaints from neighbours, and provide a further basis for future remedial action / mitigation measures.

3.6 An automatic weather monitoring station will be maintained at the primary crusher, in a manner to ensure the accurate measurement of atmospheric temperature, wind direction, wind speed and precipitation, as is required by ROMP condition 33.

4.0 Particulate Matter Monitoring

4.1 It is the intention of RCT to continue their existing programme of air quality (PM10) monitoring via the station at Garth Avenue. In order to avoid duplication of monitoring, Hanson has agreed to make a contribution towards the cost of the ongoing monitoring, subject to them being absolved from the requirement to undertake any separate PM10 monitoring within the quarry and also to a number of qualifications relating to the review of the necessity for ongoing monitoring depending on the reported annual results.

4.2 These issues are to be incorporated into a formal legal agreement, where the air quality monitoring by RCT would then be undertaken in parallel with the particulate and dust management and fugitive nuisance dust monitoring proposals set out in this Plan.

5.0 Review of Particulate and Dust Management Plan and Fugitive Dust Monitoring

5.1 It is intended that this Plan should be a 'living document' which can respond to any issues which arise during the development, and which is capable of being updated and/or amended by agreement between the operator and the LPA in response to any changes in circumstances or opportunities for additional air quality / dust mitigation measures.

5.2 It is thus proposed that the Plan should be the subject of a formal review every two years from the date of the planning permission. This review would take the form of:

(i) An initial exchange of correspondence followed, if necessary (at RCT's discretion) by a meeting between the operator and representatives of RCT's Environmental Health Department in advance of the review date to assess the performance of the Plan over the preceding two year period;

(ii) The identification of anticipated quarry development works over the forthcoming two year period, with particular reference to any soil stripping or handling during the period;

(iii) The identification of any changes which should appropriately be made to the Plan;

(iv) The submission of an updated Plan for approval by RCT, or confirmation that no changes need to be made, as appropriate; and

(v) The implementation of the updated Plan in the event that updates are deemed to be required and are submitted and approved.

9.0 EIA Scoping

9.1 EIA Scoping Report June 2014

Hanson Aggregates UK

Proposed extension to Craig yr Hesg Quarry

Pontypridd

Environmental Impact Assessment Regulations 1999:

Regulation 10

Request for 'Scoping Opinion'

SLR Ref: 407.00088.00264

4th June 2014

CONTENTS

1.0 INTRODUCTION

1.1 Context

1.1 This Report provides information in support of a request submitted by Hanson UK to the Local Planning Authority, Rhondda Cynon Taf County Borough Council (RCT), which seeks a formal opinion from RCT on issues which should be addressed as part of an environmental impact assessment (EIA) which is to be undertaken in support of a planning application for an extension to Craig yr Hesg Quarry.

1.2 Planning History

1.2.1 Craig yr Hesg quarry is situated on the western side of the Taff Valley, some 1km north of the built up area of Pontypridd. The village of Glyncoch lies beyond the northern boundary of the quarry. Locally, the quarry is bounded to the north by the Glyncoch football ground and clubhouse; to the northwest by grazing land which comprises the proposed extension area; to the west and southwest by the prominent wooded ridgeline of Coed Craig Yr Hesg, which overlooks the town of Pontypridd; and to the east by a narrow corridor of woodland between the site and the B4273 Ynysybwl Road.

1.2.2 The quarry processing plant in the eastern area of the site, comprising a crushing and screening plant. The main quarry area lies to the west, with a series of quarry faces and benches which are being developed in a general north-westerly direction within the limits of the planning permission. Additional permitted reserves lie within land between the processing plant and main quarry void. This area currently contains stockpiles of processed fine aggregate, but following the relocation of those stocks, the area will be quarried as part of the approved development scheme.

1.2.3 The most recent planning permission for quarrying was granted in August 1993. The planning permission (reference 56/86/0827) was accompanied by a Section 106 legal agreement which, inter alia, provided for the relinquishment of the right to quarry and remove vegetation from a defined area of land to the south of the quarry (thereby protecting the integrity of the Craig Yr Hesg ridgeline above Pontypridd).

1.3 Pennant Sandstone Resource

1.3.1 The Quarry is producing aggregate from a deposit of Pennant Sandstone, which has properties of skid resistance and abrasion which make it particularly suitable for road surfacing in situations where a high degree of skid resistance is needed to minimise the risk of skidding related accidents. These properties are measured as 'polished stone value' (PSV), where aggregate with a PSV of over 60 is regarded as a high skid resistant aggregate. Material with a PSV of over 65 is needed for particularly stressed sites such as certain sections of motorway, interchanges, airport runways etc.

1.3.2 The Pennant Sandstone at Craig Yr Hesg quarry has a PSV of +68 to 70, making it one of the highest quality sources of skid resistant surfacing aggregate not only in South Wales, but the UK. Production at the quarry over the last 10 years has averaged some 400,000 tonnes per annum, and such output volumes are anticipated to continue. The products are marketed over a relatively wide geographical area, where stone from Craig Yr Hesg has been used in major highway projects in the south east of England, and more locally, the material has been used on recent projects at the Porth by-pass and the Newport southern distributor road. The

forthcoming planning application will be accompanied by a Planning Application Statement which will detail the markets served by the products available at the quarry.

1.4 Environment Act Review

1.4.1 In July 2010 an Environment Act Review application was submitted to RCT which was designed to update and modernise the planning conditions regulating operations at the Quarry for the 15 year review period. The Act provides for the conditions to be further reviewed and updated on a 15 year cycle. The application was accompanied by an EIA / Environmental Statement (ES), a series of updated quarry development plans, and a restoration strategy. Copies of the submitted and approved plans are produced as **Appendix 1.**

1.4.2 The ES comprehensively addressed the environmental and amenity issues associated with the permitted ongoing quarry operation and related activities, and provided a context for the preparation of a detailed schedule of modern planning conditions which will control operations for the 15 year Review period.

1.4.3 The application was determined in March 2013, with the decision notice issued on 24th April 2013 (ref 08/1380/10). A copy of the schedule of updated planning conditions is produced as **Appendix 2**. The updated schedule of 49 detailed conditions is comprehensive in terms of coverage of environmental issues, with conditions regulating the working scheme; hours of working, including restricted hours of working for rock drilling and blasting; noise limits for normal and temporary operations; limits on ground and airborne vibration from blasting; detailed controls and requirements designed to minimise dust emissions; requirements for noise, blast vibration and dust monitoring; measures to minimise the potential from ground and surface water contamination; measures to protect ecological / wildlife interest within the site; requirements for interim restoration and woodland planting; and a requirement to implement a detailed restoration scheme for the overall quarry.

1.4.4 These conditions are up to date and provide an important context for the forthcoming extension application in two respects. Firstly they provide a template for controls which could reasonably be imposed on a planning permission for the extension development, in terms of, in particular, noise and blast vibration limits. Secondly, given that such up to date controls are in place at the exiting quarry, there is no necessity or benefit for the forthcoming EIA to substantially re-visit environmental issues associated with the approved and already well regulated operations within the existing quarry.

1.4.5 The focus of the forthcoming EIA will thus be on environmental and amenity issues associated with the extension development, and the way in which the identified environmental and amenity effects of the extension development can be mitigated. Nevertheless, the boundary of the planning application site will be drawn to include the existing quarry and the extension areas within a ‘consolidation application’. This is to ensure that those elements of the existing quarry which will be relied upon as parts of the extension development are included within the development scheme (e.g. the plant and access).

1.4.6 The consolidation application approach also seeks to address a procedural issue which will be associated with subsequent Environment Act Reviews by avoiding the quarry being subject to two separate planning permissions, with potential confusion between controls and conditions set out on the two permission decision notices, and uncertainty as to which of the planning permissions will trigger an Environment Act

Review requirement. However, given that the effects of the existing quarry have recently been assessed as part of the Environment Act Review, and the effects are regulated by an up to date schedule of conditions and related regulatory controls, the intended focus of the forthcoming EIA and ES will be on the effects of quarrying within the proposed extension area. The suggested scope of the respective environmental studies has been devised accordingly (ref Section 6.0 of this Report).

1.4.6 The relationship between the existing quarry and the extension site will be explained further in the ES and the accompanying planning application statement. However, in the event of planning permission being granted for the extension development, the opportunity will be available to RCT to issue a single comprehensive planning permission which covers the extension site and the exiting quarry, and which reproduces, where appropriate, the existing planning conditions for the existing quarry together with new conditions regulating relevant issues within the extension area.

1.5 Local Development Plan

1.5.1 In March 2011, RCT adopted their Local Development Plan (LDP). As part of the preparation of the 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 aggregate material. These representations were accepted, and the adopted Plan makes provision for a north westerly extension to the quarry within a 'preferred area of area of known mineral resources' (ref Policy SSA 25). An extract from the LDP Proposals Map is produced as **Appendix 3**. The Craig yr Hesg Preferred Area is the only Preferred Area for quarrying identified in the LDP, which the Plan relies upon as part of RCTs contribution to regional supplies as required by MTAN1:Aggregates and the Regional Technical Statement.

1.5.2 The text of the LDP confirms that the identified area is "*an area of known resource with commercial potential.... (*which*)... is in high demand"* (ref para 6.184). It also notes that "*The Regional Technical Statement 2008 identifies a need to allocate additional reserves in Rhondda Cynon Taf to ensure a supply of hardstone resources over the period of the LDP....*" (ref para 6.129).

1.5.3 The proposed extension area is based upon the 'preferred area' identified within the LDP, but where the proposed surface area of quarrying would be confined to a smaller area than the overall 'preferred area' identified in the LDP.

1.6 Craig yr Hesg Quarry: Current Circumstances.

1.6.1 The operation at Craig yr Hesg Quarry is geared towards producing single size chippings which will be used either within an on-site coated roadstone plant (replacement roadstone plant to be erected during 2014), or marketed off site as "dry aggregate" for use in the manufacture of coated roadstone at plants elsewhere. Production of the high quality PSV aggregate averages some 400,000 tonnes per annum, although a significant proportion of this is comprised of fine aggregate (see para 1.62 below). Such production volumes are anticipated to continue.

1.6.2 A by-product of the processing of the stone is the generation of 'fine aggregate / dust' which has historically been marketed as a general construction fill material. However, as a result of competition from recycled aggregate and the aggregate levy (tax), the consequence has been that relatively large stockpiles of fine aggregate

have accumulated at the quarry. This in turn is causing operational problems in terms of space to accommodate the stockpiles.

1.6.3 The quarry is being developed into the area approved in the August 1993 planning permission, and it has now reached the full lateral limits approved as part of that permission. The remaining reserves are thus largely confined to the lower levels of the quarry, and beneath existing haul roads and benches. The approximate total reserve remaining to be worked at the quarry is some 6.19 million tonnes as at 1st January 2014, which will yield approximately 4.33m tonnes of stone and 1.86m tonnes of dust.

1.6.4 If the remaining reserve is fully quarried in accordance with the approved scheme, then it will be necessary to work the various faces and benches back to their final positions, and remove the haul roads and benches as part of these works. The effect of such operations would be to preclude access into the extension area, since the required internal access roads would no longer be available.

1.6.5 The application for the extension is thus being prepared at this stage in order to allow an orderly transition from the existing quarry into the extension area, in a way which is operationally appropriate in terms of internal access to the reserves. It is also geared towards satisfying an objective of the LDP to ensure continuity of supply of hardstone over the LDP plan period.

2.0 ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

2.1 The EIA Regulations categorise a range of developments into either 'Schedule 1' where EIA will always be required, and 'Schedule 2' where EIA may be required if the development "*is likely to have significant effects on the environment by virtue of factors such as its nature, size or location*". Mineral extraction is placed within Schedule 2.

2.2 The accompanying Circular 11/99 provides further guidance on indicative thresholds and criteria for identifying Schedule 2 development which requires EIA. In relation to mineral extraction the Circular confirms that "*the likelihood of significant effects will tend to depend on the scale and duration of the works, and the likely consequent impact of noise, dust, discharges of water and visual intrusion.....For quarries...EIA is more likely to be required if they would cover more than 15 hectares, or involve the extraction of more than 30,000 tonnes per year*".

2.3 The circumstances at Craig yr Hesg Quarry are that whilst the quarry extension area would only cover some 5 hectares, it would increase the surface area of the operational parts of the quarry to a total of some 25 hectares. In addition, it would allow the exiting quarry production of some 400,000 tonnes per annum to continue over a longer period. In terms of these thresholds, Hanson accepts at the outset that the proposals to be set out in the extension application will need to be the subject of an EIA. This will also be consistent with decisions taken on the Environment Act Review application which was similarly accompanied by an EIA / ES.

3.0 THE SCOPE AND CONTENT OF AN EIA / ES

3.1 Regulation 10 (1) of the EIA Regulations sets out a procedure whereby Applicants can seek a formal 'Scoping Opinion' from the Planning Authority as to the information to be provided in the Environmental Statement. Such an opinion also covers the methodologies to be adopted in undertaking the EIA, and the nature of scope of the respective studies.

3.2 Regulation 10 (2) requires that a request for a Scoping Opinion should be accompanied by:

(a) A plan sufficient to identify the land;
(b) A brief description of nature and purpose of the development and of its possible effects on the environment; and
(c) Such other information or representations as the person making the request may wish to provide or make.

3.3 The two main purposes of a scoping exercise are to:

(i) Focus the EIA on any significant environmental issues and potential impacts which require the most attention; and
(ii) Provide a means to discuss and agree the methodologies for the impact assessments.

3.4 The scoping exercise may also be useful in identifying those issues which do not require detailed study but which, where appropriate, should nevertheless be considered for completeness.

3.5 The following sections are intended to provide RCT and the relevant consultees with the information necessary to reach an opinion on the issues which should be addressed as part of the EIA.

4.0 THE SCOPING REPORT

4.1 The remainder of this Report comprises of the following sections:

- **Section 5.0 – description of the development**, which provides a brief summary of the extraction operations which will take place as part of the extension development;

- **Section 6.0 – potential environmental effects**, which provides an overview of the potential environmental effects which may be associated with the proposed development; the methodologies which it is intended to follow in undertaking the environmental studies; the topics which are deemed to warrant specific studies and, in contrast, the topics which are considered capable of being addressed in a straightforward way, without recourse to detailed studies; and

- **Section 7.0 – request for scoping opinion**, which represents the formal request for an opinion from RCT.

5.0 QUARRY DEVELOPMENT SCHEME

5.1 The currently approved quarry development plans are cross referenced in the schedule of planning conditions issued pursuant to the Environment Act Review of planning conditions issued in April 2013 (reference condition 5 of 08/1380/10, plan ref numbers A057337 SR 01 – 05). Copies of the approved plans are produced as **Appendix 1**.

5.2 As part of preliminary designs for the quarry extension, consideration has been given to limits of extraction within the defined 'preferred area' identified in the LDP. In particular, consideration has been given to the advice set out in Minerals Technical Advice Note 1 (MTAN1) that a minimum buffer zone of 200 metres should be established to hard rock quarries "*unless there are clear and justifiable reasons for reducing the distance*" (ref MTAN1 paragraph 71).

5.3 The approved limit of quarrying at Craig yr Hesg involves quarrying operations taking place within 140 metres of residential property at Coed y Lan Road, and the ongoing use of the primary crusher sited some 60 metres from the closest residential properties at Garth Avenue. The extension development would not change these circumstances. The 'preferred area' identified in the LDP indicates a site boundary at a distance of some 125 metres from residential property in Glyncoch (Conway Crescent) at the closest point, and some 160m from the closest building within Cefn Primary School. Information presented by Hanson as part of the evidence base of the LDP confirmed that blasting operations could proceed in closer proximity to residential properties than the notional 200m buffer zone, whilst complying with conventional blast vibration criteria (ref Vibrock 2004). Further information supplied by Hanson (Briefing Note 2008) highlighted the special characteristics of the high specification aggregate available at the quarry and extension area, and the importance of avoiding the sterilisation of resources via unnecessary stand-off distances. Nevertheless, the Minerals Background Paper (2009) accompanying the LDP indicates that "*the designation of the site does not afford the land, and specifically the entire boundary of the site guaranteed permission for extraction.....further evidence will be required to show how much of the site could be developed*", and the extent to which "clear and justifiable reasons" justify a reduction in a 200m separation distance (ref Background Paper section 2.8).

5.4 In this context, and a need to achieve a balance between the acknowledged need for the release of additional reserves of high quality aggregate, and the need to adequately protect the amenities of local residents and the school, a preliminary view has been reached that, for the purpose of the EIA, the scheme should be based upon the provision of a 200m buffer zone to Cefn Primary School, a 200m buffer zone to properties at Cefn Lee Farm; a 200m buffer zone to the closest properties at Pen y Bryn; and a 175m buffer zone to the closest residential properties at Conway Close within Glyn Coch. The reduced distance to Conway Close is based upon a need to achieve a logical quarry working area and to avoid substantial sterilisation of resources. It is however recognised that the ability to operate at such distances will need to be tested through the EIA process, with particular reference to noise and blast vibration. Radii of arcs showing these distances are shown on a sketch plan ref L.03A which is produced as **Appendix 4**, which also indicates the area which would then be available for quarrying.

5.5 The preliminary view reached is that if the quarry extension footprint were to be based upon the area shown, then it would be appropriate to create a screening landform along the north east and northern boundary of the extension area. An initial element of the project design will thus be to assess the nature of the screening

landform which would be appropriate; the height of the landform and required land take; the volume of material required to construct the landform; the source of the material to construct the landform; and the landscape treatment which would be appropriate for what may become a permanent feature. The requirements associated with the construction of the screening landform may increase, but not decrease some of the buffer zone distances referred to above.

5.6 Subject to this landform screening, the quarry development scheme itself will be relatively straightforward in that the existing faces and benches at the north western edge of the existing quarry will be developed into the extension area in a series of phases which will be illustrated on plans which will accompany the application. The scheme is anticipated to release a maximum reserve of some 8.7 million tonnes (subject to final designs). The schedule of application plans will also include an up to date topographic survey plan of the existing quarry, extension area, and adjoining land.

5.7 For the purposes of the EIA it can be assumed that current working practices will continue using the same plant and machinery to transport the aggregate to the processing plant which itself will be retained in its current location. It can also be assumed that production will be maintained at an average of some 400,000 tonnes per annum. The currently imposed depth limit of 100 metres AOD has also be assumed for the purposes of the extension development.

6.0 POTENTIAL ENVIRONMENTAL EFFECTS

6.1 Introduction

6.1.1 The topics which are likely to require attention as part of the EIA have been informed by the Applicants' experience of quarrying at Craig yr Hesg, by issues raised in connection with the review of planning conditions as part of the Environment Act 1995 Review where a full EIA was carried out, and by the Applicant's general experience of the environmental and amenity effects of operations at their other quarries in South Wales and elsewhere.

6.1.2 This has provided a framework for the preliminary consideration of potentially significant environmental effects. These effects are set out below under the respective topic headings, and it is hoped that this will assist the formal scoping opinion which will be issued by RCT.

6.1.3 The intended scope of the respective studies reflects the Applicants perception of the topics which require detailed attention, compared to other topics which can be addressed in a more straightforward way. This section of the report thus provides, for each topic, an overview of the environmental issues and potential effects; the proposed methodology of assessment; the potential for environmental effects; and the opportunities which may be available to mitigate the effects. In this way, the Scoping Report seeks to not only confirm the topics to be addressed as part of the EIA, but also the scope, breadth and content of the respective studies.

6.1.4 The intended scope has also been informed by the context provided by the recent Environment Act Review which has comprehensively assessed all environmental issues associated with quarrying, processing and related operations within the existing quarry, and where up to date planning conditions are in place to regulate the activities. It is thus not intended to repeat these studies as part of the forthcoming EIA, which instead will focus primarily on the environmental effects of the quarry extension development. Thus whilst the boundary of the planning application site will be drawn to encompass the existing quarry and extension area as a 'consolidation application', the primary focus of the EIA and ES will be on the effects of the extension development.

6.1.4 These issues are discussed further below, and can be further informed by the requested Scoping Opinion.

6.2 Landscape Visual Impact Assessment (LVIA)

6.2.1 The Landscape and Visual Impact Assessment will comprise two main elements, namely:

- Baseline studies
- Landscape and visual impact assessment.

6.2.2 The tasks within each of these main elements, necessary to complete the LVIA are described below. These elements will form the landscape input to the relevant chapter of the ES.

Baseline studies

6.2.3 Desk and field studies will be carried out to provide the landscape and visual baseline against which the effects of the quarry scheme will be assessed. This will include:

- Site visits for landscape survey; site and viewpoint photography in accordance with The Landscape Institute, *Landscape Institute Advice Note 01/11,* Photography and photomontage in Landscape and Visual Assessment, March 2011.
- Collection of baseline data required as part of advice on the design of the quarry extension, including 2m contours, topographic survey, aerial photograph, policies and designations, designated sites and features.
- Review published landscape assessments covering the landscape context of the site to inform the landscape and visual baseline study. On a national scale the *CCW LANDMAP* study will provide the context but the findings of other studies carried out by RCT will also be reviewed.
- Landscape survey and inspection of publicly accessible viewpoints of the site, including a photographic survey, based upon publicly accessible views of the site from nearby settlements, public roads, common land and public rights of way. **It would be helpful if the locations for the photographs which will form part of the LVIA could be agreed in advance with RCT.**
- Review of landscape designations and planning policies for the landscape, and of other landscape and historic landscape studies for the area.
- Evaluation of the features and elements of the landscape and their contribution to landscape character.
- Assessment of the sensitivity of the landscape and visual amenity, and ability to accommodate the changes likely to arise from the proposed workings.
- Identification of the extent of theoretical visibility of the extension area based on a field study of potentially sensitive views, with a supporting viewpoint analysis.
- Liaison with key consultees including relevant RCT Council Officers and Natural Resources Wales.

Landscape and Visual Impact Assessment

6.2.4 The methodology for assessing the landscape and visual effects will be based on the recommendations in the *Guidelines for Landscape and Visual Impact Assessment Third Edition*, published by the Landscape Institute and the Institute of Environmental Management and Assessment in 2013. The assessment work will involve a combination of desk studies and field surveys with subsequent analysis, and will comprise the following:

- A description of the scheme proposals focussing on those aspects which are of particular relevance to landscape and visual amenity.
- Consideration of the visual prominence of the extension site from known public vantage points to the west, north and east.
- An analysis of the potential effects on landscape and visual amenity resulting from the proposed extension site
- Recommendations for mitigation and enhancement measures. This will include mitigation proposals for visual screening along the extension site boundary, and on mitigating the visual effects of boundary fencing.
- Assessment of potentially significant effects on the landscape and on views, with mitigation proposals in place i.e. an assessment of the residual effects.

Landscaping and Restoration Strategy

6.2.5 The landscaping and restoration strategy for the site will aim to ensure that potentially adverse effects are avoided where practicable, or mitigation measures will be proposed as part of the quarry scheme to reduce or offset adverse effects. Liaison will take place as appropriate, with other members of the project team notably in relation to ecology and noise with regard to mitigation measures and enhancement opportunities which will be incorporated into either the landscaping proposals or the conceptual restoration strategy. The exercise will include:

- a landscaping and restoration strategy for the extension site;
- an indicative restoration concept for the whole Craig-yr-Hesg quarry site;
- consideration of opportunities for progressive restoration where desirable and consistent with the quarry working scheme;
- a description of proposals for soil storage, planting and screen bunds which are appropriate for the site and its landscape context;
- long term mitigation measures, or enhancements of landscape;
- preparation of the restoration chapter for inclusion within the ES; and
- preparation of restoration plans for inclusion within the package of planning application plans.

6.3 Ecology

Scope

6.3.1 The ecology study would be undertaken in accordance with the Ecological Impact Assessment (EcIA) guidelines, as set out by the Chartered Institute of Ecology and Environmental Management. This would/may involve the following staged tasks:-

(i) Desk Study and Consultation - Collection of baseline data from previous studies, published sources and discussion with County Ecologist;
(ii) Extended Phase 1 survey;
(iii) Follow-on survey for protected species and notable habitats, if required; and
iv) Preparation of an EcIA as a Chapter within the ES.

Note: It is proposed that the requirement for and scope of follow-on species surveys would be determined following the completion of a desk study, consultation and Phase 1 survey, but it would seem probable that, as a minimum, surveys in respect of reptiles (surveys in May or September) and bats (surveys to determine foraging value in spring, summer and autumn) may be required.

6.3.2 The proposals involve a north-west extension into land which comprises of grazing land with some pockets and linear strips of rougher vegetation. The smaller fields to the north east (where the screening landform / bund would be constructed) appear to be less improved and could be botanically richer or more generally suitable for wildlife such as ground-nesting birds. There is a pond shown on the OS map base to the north-west 160m from the northern limit of the proposed extension.

6.3.3 In view of the recent nature of the Environment Act Review and the EcIA undertaken as part of the accompanying EIA / ES, and ecological mitigation measures / planning conditions which are already in place at the existing quarry, it is not the intention to undertake a detailed ecological survey of the existing quarry. However, the exiting circumstances will be noted as a context for (i) the ecological survey of the extension

area, and (ii) an ecological input into the restoration strategy for the extension area which will be integrated into the existing approved restoration strategy for the exiting quarry.

6.4 Agricultural Land Quality and Soil Resources

6.4.1 The development will involve an extension into grazing land, and a study of the agricultural land quality and available soil resources will thus be undertaken. This will assist in informing the design of the screening landform in terms of the volumes of soil and soil forming material available to assist in the construction of the landform, and residual soil and soil forming material which will be available for progressive and /or final restoration.

6.4.2 The study will include undertaking a land classification in accordance with the current Agricultural Land Classification (ALC) system of England and Wales. This will be based upon a minimum of three auger borings per ha, and a soil profile pit in each representative soil type. Published information will be researched, and liaison will take place with Hanson's Geologist to review trial pit information.

6.4.3 The ES will include the results of the ALC and soil resource study including research of published and unpublished information, and the provision of ALC and survey location plans

6.4.4 Information on topsoil and subsoil depths will be provided to the project team to enable volume calculations.

6.5 Hydrology and Hydrogeology

Scope of Work

6.5.1. The 2010 Environment Act Review ES included the results of a hydrology / hydrogeology study undertaken by ESI Ltd, which, inter alia, noted that the regional groundwater level is below the current and proposed minimum allowable level for the base of the quarry (100m AOD). The risk of impact to springs in the area was considered to be low.

6.5.2 The hydrology and hydrogeology study will be updated to reflect the nature of the proposed development and the possibility of the lateral extension having a wider impact on ground and surface water. The study will be produced in a conventional format with a description of the baseline conditions; geology; hydrology; hydrogeology, including groundwater levels and flows; a conceptual model (if appropriate); impact assessment, including the identification of potential receptors and mitigation measures if required; and effects following cessation of quarrying, including site drainage during the extraction operations and following de-commissioning /restoration, with an on-site water management scheme.

Consideration of Likely Issues

6.5.3 From the previous hydro study, the geology at the site comprises the Carboniferous Pennant Sandstone of the Upper Coal Measures, which is designated as a minor aquifer and forms the excavated mineral. Glacial till and sands and gravels are present at the base of the sandstone escarpment and valley bottom, with alluvial deposits in the immediate vicinity of the River Taff.

6.5.4 Given that groundwater was found to be below the base of the minimum allowable quarry base level, groundwater dewatering of the aquifer in the extension area is not expected to be necessary. Impacts on groundwater level and receptors sensitive to changes in groundwater level are not expected to be a significant issue.

6.5.5 According to the Welsh Government's TAN15 Development Advice Maps the Site is in Flood Zone A, which is "considered to be at little or no risk of fluvial or coastal/tidal flooding". The site extension will alter the hydrology of the extension area meaning that more runoff will be generated within the mineral extraction area of the quarry. However, it is understood that:

- All runoff within the mineral extraction area is currently disposed of by soakage through the base of the pit, whereas runoff within the mineral processing area is dealt with through the existing surface water management system which discharges to the River Taff;
- There will be no increase in the amount of surface water discharge from the site as a result of the quarry extension;
- All runoff generated within the extended mineral extraction area will continue to be dealt with by drainage through the base of the pit.

As a result it is not anticipated that water management will be a significant issue.

Proposed Approach

6.5.6 Much of the work carried out for the previous hydrology /hydrogeology study will also be applicable to the extension area; however, more than four years have passed since these data were collected and it is thus proposed to update these and reassess them with respect to the extension area. This will be supplemented by a review of further monitoring data and the recently installed surface water management arrangements for the processing plant site.

6.5.7 The intended approach would comprise

Data Collation: To include a review of all available data and previous reports. Also to include collation and interpretation of all/any available groundwater and surface water monitoring data, and details of licensed and unlicensed abstractions and discharge consents.

Reporting: The results of the assessment would be set out within the ES with respect to the hydrogeological and hydrological regimes, which will identify any potential impacts on receptors and outline monitoring and mitigation requirements for the site, if necessary.

Flood Consequence Assessment and surface water management plan: Based on circumstances at the quarry, it is not anticipated that a stand-alone flood consequence assessment will be required. However, a basic hydrological assessment would be undertaken, to verify the current understanding that there will be no increase in flood risk, both to and off site.

6.5.8 Surface water run-off calculations will be undertaken using the Institute of Hydrology (IH)124 and Rational methods in-line with guidance. In addition, it is not anticipated that there will be any need to adapt the existing surface water management plan. However, the existing arrangements would be reviewed to confirm that this is the case.

6.6 Noise

6.6.1 A site inspection will be undertaken to identify noise sensitive locations, and measurements of existing noise levels will be undertaken at approximately six locations in the vicinity of the extension area, including Cefn Primary School. The precise number of monitoring locations will be established from the site inspection, but are likely to include the four properties which are subject to noise monitoring as a requirements of the Environment Act Review (ref Appendix 2 condition 18), namely No 36 Conway Close; No 3 Pen y Bryn; flat above shop Garth Avenue; and No 1 Rogart Terrace. Additional properties / locations would be monitored at an accessible position in the vicinity of the properties at Cefn Lee Farm and Cefn Primary School to the north of the extension area and a location in the vicinity of the properties at the southern end of Darren Ddu Road to the south west of the quarry. **It would be helpful if early agreement could be reached with RCT on the precise locations for noise monitoring.**

6.6.2 The existing noise levels at the chosen locations will be measured in terms of L_{Amax}, L_{A90} L_{A10} and L_{Aeq}, measured during two separate daytime visits, with longer term measurements undertaken if secure locations can be identified**. If RCT can assist in identifying and securing locations for longer term monitoring then this would be appreciated.**

6.6.3 The results from the baseline monitoring will be assessed, and nominal daytime noise limits will be suggested having regard to the advice set out in MTAN1 and current planning conditions regulating noise at the existing quarry (ref conditions 18 – 22 of permission 08/1380/10). Mobile plant noise measurements will be undertaken as a basis for predictions of noise which would result from operations in the extension area. Recommendations will be made, as appropriate, for mitigation measures designed to achieve compliance with the suggested noise criteria and which can be translated into planning conditions.

6.7 Blast Vibration

6.7.1 Conditions 23 – 27 of the Environment Act Review schedule of planning conditions (ref 08/1380/10) set out detailed controls which regulate blasting at the existing quarry, including limits on ground vibration which reflect the advice set out in MTAN1, and a requirement to monitor ground vibration from all blasts. These conditions provide a context for blasting operations in the extension area which it is anticipated would follow similar procedures and practices to those adopted in the existing quarry.

6.7.2 The study will thus review the blast monitoring records associated with blasting at the quarry and consider the recorded levels against the limits imposed on the planning conditions.

6.7.3 More specifically, the approach to the blasting vibration assessment will involve the identification of groups of receptors to be considered and, in order to achieve consistency with the noise study, it would be the intention, where possible, to use the same receptors as representative properties for both studies (ref para 6.6.1 above). Separate consideration will be given to the potential effects of blast vibration on a water main which runs along the western side of the proposed extension area.

6.7.4 The study will include measurements of vibration from two production blasts at Craig yr Hesg Quarry using up to 10-12 seismographs located in a line away from the blast panel so that simultaneous measurement of vibration magnitudes can be undertaken over a wider range of distances. This will include measuring vibration magnitudes

across the West Ynysbwl Fault to establish whether any attenuation/magnification is experienced. This would be undertaken by placing at least 4 monitoring locations either side of the fault.

6.7.5 Recent blasting at the quarry has used both conventional techniques, and a new 'hot shot' computer controlled method of blast initiation, which is designed to minimise ground vibration. The test blasts would thus monitor this new technique to allow conclusions to be drawn as to the benefits it offers in terms of minimising ground vibration by comparison with historic monitoring data from blasts using the conventional techniques.

6.7.6 A review of the available literature would be undertaken to determine suitable vibration criteria for the proposed extension development. This is likely to be the same as the extant planning condition 23 for the ROMP review dated March 2013, namely a peak particle velocity (PPV) of 6 mms^{-1} for 95% of blasts measured over any 6 month period, with no single blast to exceed 10mms^{-1}. This review would also include consideration of potential vibration propagation over and along fault lines.

6.7.7 The blast monitoring data collected as part of 6.7.4 above would be used to produce a regression line(s) for Craig yr Hesg Quarry which would, in turn be used to produce a table of maximum instantaneous charge weights for the quarry in order to meet the current condition 23 planning consent limits. Vibration magnitudes from production blasting on the extension site would be predicted and assessed against the latest Government advice and the relevant planning conditions.

6.7.8 Whilst part of the study will follow a "typical blasting vibration assessment" format, it is also intended to consider the results of actual blast vibration monitoring undertaken at the quarry over the last few years. This monitoring data will be used to consider the extent to which the blasting criteria can be met using higher charge weights than those indicated by the regression analysis, and which may be apparent from blast monitoring data. This is because of the statistical nature of the 95% confidence limits which are normally used to show the worst case situation, i.e. the upper 95% confidence limit line includes points above the regression line (50% confidence limit). However, by their very nature the 95% confidence limits will also include points below the regression line, as indicated by the lower 95% confidence limit line. The latter is never shown on regression line graphs as the worst case situation is usually illustrated. Thus, when predicting PPVs from blasting to a 95% confidence limit, results can obviously occur anywhere between the upper and lower 95% confidence limit lines.

6.7.9 This element of the assessment will be based on data presented by Hanson Aggregates regarding the blast monitoring results undertaken at the quarry over the last few years. Particular consideration will be given to the results of conventional blasts compared to 'hot shot' blasts and the extent to which the latter can minimise ground vibration. The significance of this will also be reviewed in the context of the advise in MTAN1 regarding circumstances where it may be permissible to reduce the conventional 200m separation distance between operational areas and sensitive receptors. Consideration will also be given to separate ground vibration criteria which would be appropriate to safeguard water-mains which are present to the west of the extension area.

6.7.3 Recommendations will be made for blast vibration limits which could be imposed on the extension development, together with more general controls associated with the times of blasting, restrictions on secondary blasting, and reduction of air over pressure.

6.8 Dust and Air Quality

6.8.1 The site has been subject to an ongoing process of air quality assessment and review with respect to fine particulate matter (PM10s), and PM10 monitoring has been carried out by Hanson since September 2009. A dust management plan was previously agreed with RCT, and has been revised as a consequence of the Environment Act Review procedure and updated planning conditions. Although the planning conditions referring to air quality issues quote prevention of nuisance and protection of the amenity of local residents as the reason for the conditions, it is understood from the consultations with RCT that public health is the key issue for PM10s, and that nuisance dust has not been a concern or source of complaint over recent years. In addition, an assessment of air quality impacts from the re-establishment of a roadstone coating plant at the quarry has been recently carried out, and Environmental Permit conditions for the plant operation have been agreed between RCT and Hanson.

6.8.2 RCT has been carrying out PM10 monitoring within the Glyncoch residential estate to the north of the quarry over several years due to concerns over particulate levels, and has recently jointly commissioned an investigation by consultants at the University of West of England. The report of this work has yet to be released to the public, and therefore the findings remain unknown. However, RCT is to install a new particulate monitor within the Glyncoch estate that will enable the direct comparison of measurements with the national and European standards.

6.8.3 In addition, Hanson are engaged in a programme of air quality monitoring designed to assess the effectiveness of additional dust suppression measures which have been introduced at the processing plant site. The 12 month monitoring programme will be completed in November 2014. Whilst the planning application for the extension development may be submitted prior to the availability of a full 12 months data from this study, it is anticipated that reasoned conclusions will be capable of being drawn from the data which is available at the time of completion of the accompanying ES. This data can be supplemented post submission if necessary.

6.8.3 It must be recognised that even if permission for the extension development is refused, the existing quarrying operations would continue for some 16 years. In these circumstances the approach will be to focus on the effects of changes to existing conditions resulting from the initial soil strip and screen bund / screening landform construction, and quarrying within the extension area. There will be no changes to the current processing plant arrangements and ancillary developments within the processing plant site which are controlled by existing planning conditions and an Environmental Permit.

6.8.4 The following key actions will be included as part of the study:

- site visit, to view the current and planned operations;
- walkover of surrounding area to view the extension site setting;
- review monitoring data, site weather station data, complaints history, permit conditions, inspection records, etc;
- review available RCT data and reports, including UWE report if and when released;
- assessment - dust;
- assessment - fine particulates;
- assessment - site mobile plant emissions (and cross reference to existing controls on fixed plant);
- recommendations for mitigation;

- assessment - residual effects.

6.8.5 Whilst there is adequate PM10 data available for the site, there is no existing information on levels of nuisance dust deposition, and no monitoring for the areas adjacent to the primary school or Conway Close. Depending upon the RCT Scoping Opinion, it may be helpful to carry out short term nuisance dust monitoring at locations to the north and west of the existing void with the opportunity to collect 3 months of monitoring data over the 2014 summer period. **Via the Scoping request, it would thus be helpful to agree with RCT the locations for such monitoring.**

6.8.6 Finally, RCT has declared an AQMA due to traffic-related NO2 levels in Pontypridd town centre, although traffic serving the quarry via the A483 only briefly passes across the northern edge of the designated area. The inclusion of road traffic-related emissions within the Environment Act Review EIA was not undertaken on the grounds that the quarry traffic was an existing activity that would not change, it was outside the quarry boundary, and the quarry traffic contribution to NO2 concentrations at sensitive road-side receptors is likely to be small. It is thus similarly not intended to include a traffic emissions assessment as part of the air quality study.

6.9 Traffic

6.9.1 Production of the high quality PSV aggregate has averaged some 400,000 tonnes per annum over the last 10 years, and such volumes are anticipated to continue. There are no restrictions on output from the quarry. The average output of 400,000 tonnes per annum equates to between circa 70 loads per day, based upon a 275 day working year, and average load sizes of 20 tonnes.

6.9.2 No changes are anticipated to the historic pattern of output, and the vast majority of traffic will continue to be routed southwards to Pontypridd and the principal road network (notably the A470).

6.9.3 In March 2014, planning permission was granted for improvements to the quarry entrance to provide a two way quarry entrance and exit (ref. 13/1039/10). This is designed to improve safety for traffic exiting the quarry.

6.9.4 In the context of the above, the traffic study will comprise.

- Review the existing / proposed access arrangements as a context to the ongoing development.
- Review the local road network between the site access and A470 junction.
- Review baseline traffic flows on the identified routes.
- Review recent highway safety using Personal Injury Accident data recorded over the last 5 years.
- Review the existing / historic traffic activity resulting from the site using client supplied data.
- Quantify the predicted number of traffic movements associated with the ongoing and proposed development using client supplied data.
- Identify the impact of the development traffic on the local highway network in terms of safety and link flow/capacity.

6.10 Cultural Heritage

6.10.1 The chapter will be compiled in line with the requirements of professional guidelines including those of the Institute for Archaeologists.

6.10.2 The 2010 Cotswold Archaeology heritage assessment for Craig yr Hesg Quarry as part of the Environment Act Review EIA will be utilised, and will largely inform the baseline assessment. It is noted that GGAT (the archaeological advisor to RCT Council) recommended that appropriate mitigation would comprise a watching brief on previously un-quarried areas of land in the site, and the current assumption is that similar advice will be forthcoming in relation to the extension area. In that respect, based upon the findings of the cultural heritage study undertaken as part of the Environment Act Review EIA, there is not anticipated to be any significant archaeological interest present within the extension site.

6.10.3 The cultural heritage assessment will thus comprise:

- Review and update of Cadw and HER records to ensure no change in baseline situation (and update if required).
- Site inspection for current land use and conditions.
- Assessment of the setting of the three Listed Buildings in the wider site vicinity, including inspection and photographic record from nearest public rights of way.
- Compilation of the ES chapter including illustrations and appendices as appropriate.
- Update to current national and development plan heritage policy and guidelines.
- Consultation with GGAT to confirm the level of works informing the ES, and the mitigation strategy.

7.0 SCOPING REQUEST

7.1 The purpose of this Report is to outline the nature of the proposed development, and to identify topics and issues which, at this preliminary stage, appear to be appropriate for consideration as part of an EIA. In particular, the Report has sought to provide a considered and proportionate approach to identifying those issues which are deemed to warrant particular attention, distinguishing these from other environmental topics, which, in the particular circumstances of the site and development, appear to be capable of being addressed in a more straightforward way. The information will hopefully be of assistance to RCT in producing a formal opinion on the scope of the EIA.

7.2 The approach is considered to be consistent with the requirements of the EIA Regulations, where Regulation 10 (6) requires the Planning Authority in adopting its scoping opinion, to have regard to the specific characteristics of the particular development and the environmental features likely to be affected by the development. The identification of the topics listed in Section 6.0 above and the intended approach to the assessment has thus been prepared in this context.

7.3 It is therefore hoped that this Scoping Report will be considered in the constructive way in which it is intended, and the Applicants look forward to the formal Scoping Opinion of RCT within the time period of 5 weeks required by Regulation 10 (4). The Applicants would particularly welcome advice from RCT on the locations for the LVIA photographs and locations for noise, blast vibration and dust monitoring, as highlighted in bold in the text of this Report.

7.4 In addition, in accordance with Regulation 12 (4) the Applicants request RCT (and all consultees notified) to make available any baseline information considered relevant to the EIA.

APPENDIX 1:

APPROVED QUARRY DEVELOPMENT PLANS AND RESTORATION STRATEGY

PLANS SR02 – SR05 AND FIGURE 9.1

Craig-yr-Hesg Quarry ROMP

Quarry Phasing: 2010

SR02

WYG Planning & Design
part of the WYG group

Hanson
HEIDELBERGCEMENTGroup

Key

- Planning permission boundary
- Current extent of quarry
- Active quarrying up to 2010
- Quarry faces
- Active quarry faces with direction of advance
- Main quarry haul road
- Lagoons
- Dust / fine material stockpiles with material movement flows
- Stockpiles
- Areas outside active quarrying area where progressive restoration or natural regeneration can occur

Pearson Crescent
Coed y Lan Road
Gardner Close
Glyncoch Football Club
Processing Plant
+100m
Premix
Weighbridge
Office
Cardiff to Aberdare / Merthyr Tydfil Railway Line
Ynysybwl Road (B4273)
Dust / fine material stockpile
+184m
+168m
+155m
+142m
+130m
+115m
+100m
+167m

North

0 0.2 0.4 0.6 0.8 100m

Scale 1:2,500 @ A3 Do not scale from this drawing

A057337 SR01-05.cdr **July 2009**

21 Park Place, Cardiff, CF10 3DQ
Tel: +44 (0) 29 2072 9000 Fax: +44 (0) 29 2039 5965
Email: info@wyg.com www.wyg.com

Craig-yr-Hesg Quarry ROMP

Quarry Phasing: 2014

SR03

WYG Planning & Design
part of the WYG group

Hanson
HEIDELBERGCEMENTGroup

Key

- Planning permission boundary
- Current extent of quarry
- Active quarrying: 2010 - 2014
- Quarry faces
- Active quarry faces with direction of advance
- Main quarry haul road
- Lagoons
- Dust / fine material stockpiles with material movement flows
- Stockpiles
- Areas outside active quarrying area where progressive restoration or natural regeneration can occur
- Movement of fine material stockpile

Pearson Crescent
Coed y Lan Road
Gardner Close
Glyncoch Football Club
Processing Plant
+100m
Premix
Weighbridge
Office
Dust / fine material stockpile
+184m
+168m
+155m
+142m
+130m
+115m
+100m
Dust / fine material stockpile
+145m
Cardiff to Aberdare / Merthyr Tydfil Railway Line
Ynysybwl Road (B4273)
Ynysybwl Road

North

0 0.2 0.4 0.6 0.8 100m

Scale 1:2,500 @ A3 Do not scale from this drawing

A057337 SR01-05.cdr July 2009

21 Park Place, Cardiff, CF10 3DQ
Tel: +44 (0) 29 2072 9000 Fax: +44 (0) 29 2039 5965
Email: info@wyg.com www.wyg.com

Craig-yr-Hesg Quarry ROMP

Quarry Phasing: 2016

SR04

WYG Planning & Design
part of the WYG group

Hanson
HEIDELBERGCEMENTGroup

Key

- Planning permission boundary
- Current extent of quarry
- Active quarrying: 2014 - 2016
- Quarry faces
- Active quarry faces with direction of advance
- Main quarry haul road
- Lagoons
- Dust / fine material stockpiles with material movement flows
- Stockpiles
- Areas outside active quarrying area where progressive restoration or natural regeneration can occur
- Movement of fine material stockpile

Pearson Crescent
Coed y Lan Road
Gardner Close
Glyncoch Football Club
+184m
+168m
+155m
+142m
+130m
+115m
+100m
+145m
+100m
+100m
Railway line
Cardiff to Aberdare / Merthyr Tydfil Railway
Ynysybwl Road (B4273)
Quarry Haul Road

North

0 0.2 0.4 0.6 0.8 100m

Scale 1:2,500 @ A3 Do not scale from this drawing

A057337 SR01-05.cdr **July 2009**

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Tel: +44 (0) 29 2072 9000 Fax: +44 (0) 29 2039 5965
Email: info@wyg.com www.wyg.com

Craig-yr-Hesg Quarry ROMP

Quarry Phasing:
Final extent of quarry SR05

WYG Planning & Design
part of the WYG group

Hanson
HEIDELBERGCEMENTGroup

Key

- Planning permission boundary
- Current extent of quarry
- Active quarrying after 2016
- Quarry faces
- Active quarry faces with direction of advance
- Main quarry haul road
- Lagoons
- Dust / fine material stockpiles with material movement flows
- Stockpiles
- Areas outside active quarrying area where progressive restoration or natural regeneration can occur

Pearson Crescent
Coed y Lan Road
Gardner Close
Glyncoch Football Club
+100m
+100m
+100m
+100m
+100m
+145m
Railway Line
Cardiff to Aberdare / Merthyr Tydfil Railway Line
Ynysybwl Road (B4273)
Bridleway Route

North

0 0.2 0.4 0.6 0.8 100m

Scale 1:2,500 @ A3 Do not scale from this drawing

A057337 SR01-05.cdr **July 2009**

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Tel: +44 (0) 29 2072 9000 Fax: +44 (0) 29 2039 5965
Email: info@wyg.com www.wyg.com

Craig-yr-Hesg Quarry ROMP

Final Restoration 9.1

WYG Planning & Design
part of the WYG group

Hanson
HEIDELBERGCEMENTGroup

Key

- Planning permission boundary
- Existing woodland and trees
- Additional planting to supplement existing
- Existing site boundary fence
- *Quarry Bench Treatment 1:* Bare Rock
- *Quarry Bench Treatment 2:* Quarry Waste
- *Quarry Bench Treatment 3:* Soiling - Natural Regenerating
- *Quarry Bench Treatment 4:* Soiling - Planting
- *Quarry Face:* 'Naturalistic' outcrup
- Scree slope
- Indicative contours, quarry waste
- Natural regeneration of quarry floor, species rich grassland
- Maintenance access track

Pearson Crescent
Coed y Lan Road
Gardner Close
Glyncoch Football Club
+100m
110m
105m
+102.5m
+145m
Darren Daw Road
Ynysybwl Road (B4273)
Cardiff to Aberdare / Merthyr Tydfil Railway line

North

0 20 40 60 80 100m

Scale 1:2,500 @ A3 Do not scale from this drawing

A057337 9a.cdr **September 2009**

21 Park Place, Cardiff, CF10 3DQ
Tel: +44 (0) 29 2072 9000 Fax: +44 (0) 29 2039 5965
Email: info@wyg.com www.wyg.com

APPENDIX 2:

ENVIRONMENT ACT REVIEW

SCHEDULE OF CONDITIONS MARCH 2013 (REF 08/1380/10)

Rhondda Cynon Taf County Borough Council

ENVIRONMENT ACT 1995
REVIEW OF MINERAL PLANNING PERMISSION - INITIAL REVIEW
DETERMINATION OF CONDITIONS

Client's Name and Address
M M Frampton
Hanson Aggregates
Machen Quarry
Commercial Road
Machen
CF83 8YP

Applicant's Name and Address (if different)

ARC Western Ltd
Hanson House
14 Castle Hill
Maidenhead
Berkshire
SL6 4JJ

Part I - Particulars of Application Number 08/1380/10

Proposal:	Application for determination of conditions for mineral site. The Environmental Act 1995 (Section 96 and paragraph 9 of schedule 13).
Location:	CRAIG-YR-HESG QUARRY, BERW ROAD, PONTYPRIDD, CF37 3BG
Grid Ref:	307979, 191738

Part II - Particulars of decision
Under Schedule 13, paragraph 9 of the above Act, the County Borough Council as Local Planning Authority HEREBY DETERMINES, in consequence of the Application for Determination of Conditions received from you on 19th August 2008 for Craig Yr Hesg Quarry, Berw Road, Pontypridd, CF37 3BG that the following conditions apply in substitution for the previous conditions applied to the "mineral site" as identified in the application.

CONDITIONS:

1 This consent for the winning and working of minerals or depositing of mineral waste shall expire on 31st December 2022.

Reason: To define the consent granted.

2 Following the expiry of the planning consent all extraction, processing and stockpiling of minerals and depositing of mineral waste shall cease.

Reason: To ensure that all forms of minerals development cease.

3 No later than 12 months following the expiry of the planning consent, or the earlier permanent cessation of winning and working of minerals, as agreed between the mineral operator and the Local Planning Authority, all plant, machinery, hard standings, ancillary workshops, buildings, structures or other works associated with the development shall be dismantled and removed from the site unless otherwise agreed in writing with the Local Planning Authority.

Reason: To ensure that all works associated with the development are removed, in the interests of the amenities of the local area, in accordance with Policy CS10 of the Rhondda Cynon Taf Local Development Plan.

4 No later than 12 months following the expiry of the planning consent or the earlier permanent cessation of winning and working of minerals, as agreed between the mineral operator and the Local Planning Authority, the sale and transportation of any residual stocks from the site shall cease.

Reason: To ensure that all mineral activities cease in the interests of the amenities of the local area in accordance with Policy CS10 of the Rhondda Cynon Taf Local Development Plan.

5 Unless otherwise agreed in writing by the Local Planning Authority, the working and restoration of the site shall be carried out only in accordance with the quarry phasing plans, drawing numbers A057337 SR02 – 05 inclusive dated July 2009. The sequence of mineral extraction shall be undertaken as illustrated on submitted plan ref numbers A057337 SR001 – 05 inclusive, with the final extraction limits to be confined to those shown on plan ref A057337 SR05. No extraction shall take place outside the limits shown by the Green line on plan Ref SR05a.

Reason: To enable the Local Planning Authority to control the development and to minimise its impact on the amenities of the local area in accordance with Policy CS10 of the Rhondda Cynon Taf Local Development Plan.

6 No excavation or extraction of minerals shall take place below 100m A.O.D. other than those works necessary for the construction of the quarry sump.

Reason: To define the consent granted.

7 The recovery, storage and management of soils encountered during the course of excavation and development of the north eastern part of the site shall be undertaken in accordance with the details provided on Plan Ref C/10m/0075 dated Aug 2007. Prior to the excavation or development of the site which would disturb any additional suitable overburden or

soil-making materials, a scheme for the recovery, storage and management of such materials (until such time as they shall be used in the restoration proposals for the site to be approved in accordance with Condition 45) below shall be submitted to and approved in writing by the Local Planning Authority. All works shall be carried out in accordance with the approved scheme, unless otherwise approved in writing by the Local Planning Authority.

Reason: To ensure the availability of the adequate material for the landscaping and restoration of the site in accordance with Policy CS10 of the Rhondda Cynon Taf Local Development Plan.

8 A copy of this consent and the approved plans showing the method and direction of working and restoration shall be displayed in the operator's site office at all times during the life of the site. Any subsequent approved amendments shall also be displayed.

Reason: To ensure the operator and site contractors are aware of the working programme and the conditions attached to carrying out the development.

9 The developer shall submit a revised working programme and phasing plans for the approval of the Local Planning Authority five years from the date of this consent, unless otherwise agreed in writing by the Local Planning Authority, should the Working Programme as previously agreed by the virtue of Condition 5 be proposed to be changed within this time.

Reason: To enable the Local Planning Authority to control the development and to minimise its impact on the amenities of the local area in accordance with Policy CS10 of the Rhondda Cynon Taf Local Development Plan.

10 Except in the case of emergency to maintain safe quarry working, no blasting shall take place at the site except between 10.00 a.m. – 16.00 p.m. Monday to Friday inclusive and there shall be no blasting on Saturdays, Sundays and Public Holidays, or unless otherwise agreed in writing by the Local Planning Authority.

For the purpose of this Condition 10, "emergency" means any circumstances in which the operator has a reasonable cause for apprehending injury to persons or serious damage to property.

Reason: To protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

11 In any part of the quarry in excess of 180m A.O.D., drilling operations shall be only be carried out between the hours of 10.00 and 16.00 on Monday to Friday, and not at any time on Saturdays or Sundays or Statutory Public Holidays unless otherwise agreed beforehand in writing with the Local Planning Authority.

Reason: To protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

12 In any part of the quarry below 180m A.O.D., drilling operations shall only be carried out between the hours of 07.00 and 18.00 Monday to Friday, and not at any time on Saturdays or Statutory Public Holidays unless otherwise agreed beforehand in writing with the Local Planning Authority.

Reason: To protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

13 Unless required to fulfil a specific contract, in which case notification shall be given to the Local Planning Authority at least two working days in advance of the contract being fulfilled, no vehicles associated with the production of ready mixed concrete shall enter or leave the area which is the subject of this planning permission on Sundays or Statutory Public Holidays unless otherwise agreed beforehand in writing with the Local Planning Authority.

Reason: To protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

14 Except in emergencies, to maintain safe quarry working (which shall be notified to the Local Planning Authority as soon as practicable), or unless the Local Planning Authority has otherwise agreed before hand in writing, quarrying operations shall only be carried out between the hours of 07.00 and 19.00 Monday to Friday and 07.00 and 16.00 on Saturday and not at any time on Sundays or Statutory Public Holidays.

For the purposes of this condition 14, 'quarrying operations' shall mean the operation of the primary crusher, the stockpiling and loading or unloading of materials associated with the primary crusher and the haulage of rock from the quarry faces to the primary crusher or any stockpile.

Reason: To protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development

Plan.

15 No vehicles other than those associated with the manufacture of coated road stone, the production of ready mix concrete or the servicing, maintenance and testing of plant and machinery shall enter/leave the Quarry except during the hours of 07.00 and 19:00 Mondays to Friday and 07.00 and 16.00 on Saturday.

Reason: To protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

16 No soils shall be stripped or replaced, no topsoil or subsoil mounds shall be formed or removed except between the following times:

08.00 to 17.00 hours Mondays to Fridays.
08.00 to 13.00 hours on Saturdays.

Reason: To protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

17 Except in the case of an emergency, to maintain safe quarry working, or with the prior written agreement of the Local Planning Authority, no development or activities other than water pumping, environmental monitoring, servicing, maintenance and testing of plant and equipment, activities associated with the production of coated roadstone or ready mixed concrete shall be undertaken on Sundays or Statutory Public Holidays.

Reason: To ensure that the noise emitted is not a source of nuisance, and to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

18 Between the hours of 07:00 and 19:00 the free field Equivalent Continuous Noise Level $L_{Aeq,T}$ due to operations within the site shall not exceed the relevant noise limit specified in Table 1 below at each selected noise sensitive property. Measurements taken to verify compliance shall have regard to the effects of extraneous noise and shall be corrected for any such effects.

Table 1

Receptor	No 36 Conway	No 3 Pen y Bryn	Flat above	No 1 Rogart Terrace

	Close		shop Garth Avenue	
Criteria	49dB $L_{Aeq,1hr}$	47 dB $L_{Aeq,1hr}$	54 dB $L_{Aeq,1hr}$	55 dB $L_{Aeq,1hr}$

Reason: To ensure that the noise emitted is not a source of nuisance, and to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

19 Between the hours of 19:00 and 07:00 the free field Equivalent Continuous Noise Level $L_{Aeq,T}$ due to operations in the site shall not exceed 42 dB $L_{Aeq,1hr}$ at each selected noise sensitive property specified in Table 1 above.

Reason: To ensure that the noise emitted is not a source of nuisance, and to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

20 Noise levels attributable to operations of a temporary nature on the periphery of the site such as the formation , removal or alteration of spoil tips, screening and storage embankments, measured at any noise sensitive property specified in Table 1 above , shall not exceed a level of 67dB $L_{Aeq,1hr}$ (free field) These noise limits shall only apply for a maximum of 8 weeks in any calendar year.

Reason: To ensure that the noise emitted is not a source of nuisance, and to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

21 Noise monitoring shall be undertaken at the properties listed in Table 1 or other representative properties biannually for the first 2 years from the date of this consent, then annually for the following three years. Thereafter, the frequency of monitoring shall be agreed with the Local Planning Authority. The results of monitoring shall be submitted to the Local Planning Authority, together with confirmation of action taken to remedy any breach of the limits set out in Table 1.

Reason: To ensure that the noise emitted is not a source of nuisance, and to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

22 Within three months of the date of this consent a noise management

scheme for the site shall be submitted to and approved in writing by the Local Planning Authority, which shall, if practicable, include the provision of measures to reduce noise levels from site operations including the provision of any perimeter bunds/barriers, and specify the locations and methodology for monitoring carried out as required by condition 21 above. All site operations and noise monitoring shall be carried out in accordance with the approved scheme, unless otherwise approved in writing by the Local Planning Authority.

Reason: To ensure that the noise emitted is not a source of nuisance, and to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

23 Blasting shall be undertaken in such a manner to ensure that ground vibration, measured as a maximum of three mutually perpendicular directions taken at the ground surface, does not exceed a peak particle velocity (ppv)of 6mms^{-1} per second in 95% of all blasts measured over any continuous six month period, and no single blast shall exceed a ppv of 10mms^{-1} per second. The measurement is to be taken at or near the foundations of any vibration sensitive building in the vicinity of the quarry existing at the date of this consent.

Reason: To limit ground vibration from blasting operations so as to protect the amenities of local residents and the structure of buildings in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

24 Blasting shall be designed in such a manner that air over pressure resulting from any blast does not exceed 120dB at any residential property.

Reason: To limit air overpressure from blasting operations so as to protect the amenities of local residents and the structure of buildings in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

25 Each individual blast shall be monitored in accordance with a Blast Monitoring Scheme to be submitted to the Local Planning Authority within 3 months of the date of this consent. That scheme shall include provision for the recording of details which shall include the location of the monitoring station(to be provided at a minimum of one of the properties listed at Para 10.3.1 of the Environmental Statement, or such other location previously agreed in writing with the Local Planning Authority); the position of the blast holes; weather conditions; the specification of the blast in terms of MIC, ppv data and total charge weight, and provision for the results to be made

available immediately to the Local Planning Authority on request. All monitoring shall be undertaken in accordance with the terms of the approved scheme for the duration of mining operations at the site.

Reason: To ensure adequate monitoring of blasting operations in the interests of the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

26 Blasting times shall be clearly advertised at the Quarry and a warning, audible at the site boundary, shall be sounded prior to any blasting operations taking place, and shall be sounded again immediately after blasting has finished.

Reason: To give reasonable warning of blasting operations in the interests of public safety and the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

27 There shall be no secondary breakage of stone by the use of explosives.

Reason: To limit blasting operations so as to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

28 The best practicable means shall be used to restrict the generation of dust: on the haul roads and access road and within the remainder of the quarry, as a result of the storage and transportation of any material at the site e.g. pre-coated bituminous road stone or as a result of blasting. The best practicable means shall include the provision for haul roads and access roads to be watered during dry weather to lay the dust.

Reason: To ensure that dust emitted is not a source of nuisance so as to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

29 At all times during the carrying out of operations, a water bowser or similar equipment shall be available on site, and shall be used to minimise the emission of dust from the operational area.

Reason: To ensure that dust emitted is not a source of nuisance so as to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

30 Measures shall be taken to minimise dust emissions from quarrying operations, in accordance with the following protocols:

(i) Soils and overburden shall not be handled during dry conditions which could result in the emission of visible dust unless the material has been suitably treated with water or other suitable agents.
(ii) Drilling of shot holes shall be undertaken by drilling rigs fitted with a suitable dust collection system;
(iii) Site roads within the quarry shall be dampened down as appropriate, using a water bowser, in accordance with the requirement of Condition 29;
(iv) The speed of haulage vehicles at the site will be restricted to 10mph.
(v) All site vehicles will be fitted with upswept exhausts and radiator fan shields.
(vi) Lorries will be loaded to avoid spillages.
(vii) All site traffic will be kept to the designated haul routes.
(viii) Any product or waste spillages will be cleared to avoid accumulations.
(ix) Drop heights will be minimised at loading and discharge points.
(x) Measures shall be taken to ensure that mud and other detritus from site operations shall not accumulate onto the public highway. Such measures shall include the weekly cleaning/sweeping of the public highway used to access the site, as well as additional cleaning/sweeping of the public highway, if, in the opinion of the Local Planning Authority, significant accumulations have occurred which require action.
(xi) Regular compaction, grading and maintenance of all on site non metalled roads used as a consequence of the quarrying operations.
(xii) All product and waste stockpiles shall be watered as and when necessary to minimise the suspension of dust.
(xiii) Existing vegetation along the site boundary to the north of the site which provides screening protection from dust shall be maintained unless a suitable screening replacement is otherwise approved in writing by the Local Planning Authority.
(xiv) Before entering onto the public highway the wheels, of all lorries travelling from the site shall be cleaned and, their loads shall be secured and fully covered and in such a condition as to avoid the deposit of slurry, mud, or other material upon the public highway.

Reason: To ensure that dust emitted is not a source of nuisance so as to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

31 Six months prior to the commencement of any alternative means of access from the plant area to the primary crusher there shall be submitted to and approved in writing by the Local Planning Authority a scheme for additional dust minimisation measures which shall include the provision of additional screening along the site boundary in the vicinity of the primary crusher. All

works shall be carried out in accordance with the approved scheme, unless otherwise agreed in writing by the Local Planning Authority.

Reason: To ensure that dust emitted is not a source of nuisance so as to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

32 The operator of the mineral activity shall undertake a further study of Fine Particulate Matter PM 10 at Craig Yr Hesg over a twelve consecutive month period to obtain 90% data capture, or less if agreed in writing with the Local Planning Authority, to assist in the evaluation of existing and new abatement techniques deployed at Craig Yr Hesg. The method, to be based upon previous assessment monitoring utilising Dutscan, and the monitoring location and commencement date, shall be agreed in writing in advance with the Local Planning Authority. The results of the exercise shall be reported to the Local Planning Authority within eight weeks of the end of the twelve month period. The need to continue the monitoring beyond the 12 month period shall be reviewed by the Local Planning Authority with the operator following submission of the aforementioned report. The 12 month period of monitoring shall commence within 3 months of the date of this consent.

Reason: To ensure informed management of the operations at the site to ensure that dust emitted is not a source of nuisance so as to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

33 The operator of the mineral activity shall maintain and operate an automatic weather monitoring station at the primary crusher, in a manner to ensure the accurate measurement of atmospheric temperature, wind direction, wind speed and precipitation. All data shall be recoded in an accessible format, to be agreed in writing by the Local Planning Authority, and kept at the site by the Operator for at least two years and made available for examination by any authorised officer as determined by the Local Planning Authority.

Reason: To ensure informed management of the operations at the site to ensure that dust emitted is not a source of nuisance so as to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

34 No floodlighting other than that in existence at the date of this consent, shall be used on the site without the prior written approval of the Local Planning Authority.

Reason: To prevent any unacceptable light pollution and to protect the amenities of local residents in accordance with Policies CS10 and AW10 of the Rhondda Cynon Taf Local Development Plan.

35 Any facilities for the storage of oils, fuels or chemicals on the site shall be sited in impervious bases and surrounded by impervious bund walls. The volume of the bunded compound shall be at least equivalent to the capacity of the tank plus 10%. If there is multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank, or the combined capacity of inter-connective tanks, plus 10%. All filling points, vents, gauges and site glasses shall be located within the bund. The drainage system of the bund shall be sealed with no discharge to any water course, land or underground strata. Associated pipe work shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.

Reason: To prevent pollution of nearby watercourses and drainage systems in accordance with Policy AW10 of the Rhondda Cynon Taf Local Development Plan.

36 Throughout the period of working, restoration and aftercare, the operator shall protect and support any ditch, stream, water course or culvert passing through the site and neither impair the flow nor render less effective drainage onto and from adjoining land. Satisfactory provision will be made to deal with any surface water run-off from the site and, in particular, no run-off water from the site shall be permitted to flow down the quarry access road and onto the Berw Road.

Reason: To prevent pollution of nearby watercourses and drainage systems in accordance with Policy AW10 of the Rhondda Cynon Taf Local Development Plan.

37 Settlement ponds at the site shall be kept clear of mud and silt as necessary so as to keep them in good order, and the discharge of waste, oil or other pollutant to any settlement pond, ditch, steam, watercourse or other culvert is not permitted.

Reason: To prevent pollution of nearby watercourses and drainage systems in accordance with Policy AW10 of the Rhondda Cynon Taf Local Development Plan.

38 No excavation shall take place below the depth of the water table until a Hydro geological Impact Appraisal for dewatering and a scheme of working has been submitted to and approved in writing by the Local Planning

Authority. All works shall be carried out in accordance with the approved scheme, unless otherwise approved in writing by the Local Planning Authority.

Reason: To prevent derogation of the ground water resource at the site in accordance with Policy AW10 of the Rhondda Cynon Taf Local Development Plan.

39 All the site, including topsoil and subsoil dumps shall, so far as practicable be kept free from noxious weeds, and all necessary steps shall be taken to suppress such weeds at an early stage of growth to prevent seeding and spreading.

Reason: To protect the environment in accordance with Policy AW10 of the Rhondda Cynon Taf Local Development Plan.

40 Unless otherwise agreed beforehand in writing with the Local Planning Authority all vehicular access to or from the site shall be via the existing entrance and exit points on the B4273 road.

Reason: To define the accesses on to the highway.

41 At least 14 days notice of commencement of soil stripping operations shall be given to the Local Planning Authority, and the developer shall afford access at all reasonable times to archaeologists nominated by the Local Planning Authority who shall be allowed to observe the excavations and record any items of interest and finds.

Reason: To facilitate recording of the sites archaeology so as to accord with Policy AW7 of the Rhondda Cynon Taf Local Development Plan.

42 Within 3 months of the date of this permissionn a Wildlife Protection Plan for the protection of existing landscaping, vegetation or woodland areas to be retained within (or immediately adjoining, the site shall be submitted to and approved in writing by the Local Planning Authority. The plan shall include the following matters:

a) An appropriate scale plan showing 'Wildlife Protection Zones' where protective measures will be installed or implemented if necessary ;

b) Details of any protective measures necessary (either physical measures and/or sensitive working practices) to avoid unacceptable impacts on wildlife;

c) Persons responsible for:

Compliance with legal statutory provisions relating to nature conservation, planning conditions relating to nature conservation, installation of physical protection measures, implementation of any sensitive working practices, regular inspection and maintenance of any physical protection measures provision of training and information about the importance of any 'Wildlife Protection Zones' to all personnel on site.

The approved Wildlife and Protection Plan shall be implemented for the duration of the permission.

Reason: To afford protection to animal and plant species in accordance with Policies AW5 and AW8 of the Rhondda Cynon Taf Local Development Plan.

43 Within 3 months of the date of this consent a scheme for the interim restoration of benches located outside active quarrying, additional woodland planting along the south western boundary of the quarry and the timescales for implementing the works shall be submitted to and approved in writing by the Local Planning Authority to include the following matters:-

- Locations for the proposed various treatments of the quarry benches
- Use of soils and native woodland restoration, natural regeneration, and heath land restoration to achieve the proposed restoration treatments shown within the green hatched areas of the quarry phasing drawings SR02 – SR05.

The restoration works shall be carried out in accordance with the approved interim restoration scheme, unless otherwise agreed in writing by the Local Planning Authority

Reason: In the interests of the amenity of the local area in accordance with Policy CS10 the Rhondda Cynon Taf Local Development Plan.

44 Unless modified by conditions and schemes under this consent the interim restoration scheme for quarry benches under condition 43 above and the final restoration scheme under condition 45 below shall be based upon the restoration concept plan ref A057337/9a.

Reason: In the interests of the amenity of the local area in accordance with Policy CS10 the Rhondda Cynon Taf Local Development Plan.

45 Not later than 31st December 2022 or the expiry of 6 months following the permanent cessation of the winning and working of minerals and the depositing of mineral waste, whichever is the sooner, the operator shall

submit for the written approval of the Local Planning Authority a detailed final restoration scheme, including drawings to illustrate the proposals for the final restoration of the quarry. The final restoration scheme shall be based upon the restoration concept plan ref A057337/9a and include, inter alia the following matters:

a) the nature of the intended after use of the site;
b) the location, depth and treatment of any dust/fine aggregate on the site;
c) the ripping of the quarry floor (other than where comprised of bedrock) and the re-spreading over the floor of the excavated area of any overburden, subsoil and topsoil previously stripped from the site, in that order;
d) the ripping of any compacted layers of final cover to ensure adequate drainage and aeration; such ripping should normally take place before placing of the topsoil;
e) the machinery to be used in soil re-spreading operations;
f) the final proposed levels of the site on a contour plan at 5m intervals and the gradient of the restored slopes which shall be graded to prevent ponding of, or erosion by surface water and to conform with the surrounding land;
g) the drainage of the restored land including the formation of suitably graded contours to promote natural drainage and the installation of artificial drainage where necessary, the position and design of ditches and watercourses where all such features shall be designed to achieve maximum ecological diversification;
h) the reinstatement of the plant site and access roads by clearing plant, buildings, machinery and concrete or brickwork, and other obstructions, replacing of subsoil and then topsoil previously stripped form the site;
i) details of the spreading of soils previously stripped and stored on the site including depths and placement areas;
j) the method of soil replacement and soil handling;
k) the provision of site security;
l) position and erection of boundary fencing,
m) The position of any roadways, footpaths and bridleways to be provided linked with existing Public Rights of Way, including the crossing and surfacing of such routes;

Unless otherwise approved in writing by the Local Planning Authority, the restoration works shall be carried out in accordance with the approved restoration scheme.

Reason: In the interests of the amenity of the local area in accordance with Policy CS10 the Rhondda Cynon Taf Local Development Plan.

46 The scheme detailed in Conditions 45 above shall be fully implemented

within two years of the date of approval of the scheme or by 31.12.2024, whichever is the sooner, unless otherwise agreed in writing by the Local Planning Authority.

Reason: In the interests of the amenity of the local area in accordance with Policy CS10 the Rhondda Cynon Taf Local Development Plan.

47 Prior to the commencement of the Final Restoration Scheme, the operator shall submit a scheme to deal with any potential contamination on the site. The scheme shall include such of the following steps as the Local Planning Authority shall reasonably deem necessary:

i) A desk-top study and walk-over survey shall be carried out by a competent person to identify and evaluate all potential sources and impacts of contamination relevant to the site. A report of the desk-top study and walk over survey shall be submitted to the Local Planning Authority without delay upon completion.

ii) Unless the report supplied under i) above satisfies the Local Planning Authority that it is not required, a site investigation shall be carried out by a competent person to fully and effectively characterise the nature and extent of any contamination and its implications.

iii) A scheme containing a written method statement for the remediation of any contamination revealed by the site investigation in ii) above shall be agreed in writing with the Local Planning Authority prior to commencement and all requirements shall be implemented and completed by a competent person in accordance with a timescale to be approved in writing by the Local Planning Authority.

iv) A suitable validation report of any remedial works carried out under iii) above shall be submitted to and approved by the Local Planning Authority.

If during restoration works any contamination should be encountered which was not previously identified and is derived from a different source and/or of a different type to those included in any remediation proposals in sub paragraph iii) of this condition then revised remediation proposals shall be submitted to and approved in writing by the Local Planning Authority, and thereafter implemented in accordance with an agreed timescale with the Local Planning Authority.

Reason: In the interests of health and safety and environmental amenty in accordance with Policy AW10 the Rhondda Cynon Taf Local Development Plan.

48 An aftercare scheme, for amenity after use that promotes the use of the site for nature conservation through a restoration strategy shall be submitted for the approval of the Local Planning Authority not less than 6 months prior to the date specified in Condition 46 above as the date by which the final restoration of the site is to be completed. The aftercare scheme shall include the following elements:

i) A five year period of aftercare following restoration;

ii) The inclusion of all areas affected by the quarrying activities, and areas outside the extraction area that have been used to store soil or overburden and areas subject to trafficking by mobile plant and equipment;

iii) The steps to be taken and the period during which they are to be undertaken and who shall be responsible for taking those steps;

iv) The timing and pattern of vegetation establishment (including grass seeding of restored areas with a suitable herbage mixture and application rates to achieve species rich grassland and heath land restoration, the distribution of native tree and shrub planting including stock types, sizes, spacing, method and position of planting.

v) cultivation practices for the preparation of soils;

vi)fertilising and lime application based on soil analysis, weed control

vii) land management techniques;

viii) the provision of boundary treatment.

ix) Entry onto the site shall be granted to officials of the Welsh Government at all times during soil stripping or replacement operations, restoration and aftercare of the site.

x) A habitat management plan which shall include;

a) The details of the provision of areas to be restored to nature conservation and their application to local biodiversity objectives(to include nesting sites for peregrine falcon and raven, roosting and hibernation areas for bats, native woodland restoration, natural species –rich grassland and heath land restoration
b) Description and evaluation of features to be managed.
c) Ecological trends and constraints that may influence management.
d) Aims and objectives of management.

e) Appropriate management options for achieving aims and objectives.
f) Prescription for management actions.
g) Work Schedule.
h) Personnel responsible for implementation of plan.
i) Monitoring and remedial/contingency measures triggered by monitoring.

Aftercare operations shall be carried out in accordance with the approved aftercare scheme, unless otherwise approved in writing by the Local Planning Authority.

Reason: In the interests of the amenity of the local area in accordance with Policy CS10 the Rhondda Cynon Taf Local Development Plan.

49 Before 31st March of every year during the aftercare period, unless otherwise agreed in writing with the Local Planning Authority, the site operator shall arrange a formal site meeting to review the aftercare operations which have taken place on the site during the previous year, and also the programme of management for the following year. The parties invited to this meeting shall include the site operator, the owners of the land (if not the operator), any other relevant occupiers, the Local Planning Authority and such relevant advisors and/or representatives of the Local Planning Authority as it shall nominate. At least one month before the date of each annual review meeting, the site operator shall provide a written report to the Local Planning Authority. The report shall contain details of the management and other operations carried out on the site in the previous year and those which are planned for the ensuing year.

Reason: In the interests of the amenity of the local area in accordance with Policy CS10 the Rhondda Cynon Taf Local Development Plan.

Dated: 24/04/2013 Signed _____
Service Director Planning

NOTES TO APPLICANT:

1 It is considered that the Site Liaison Committee is resurrected, as it provides a valuable forum for regular discussion and explanation of matters arising at the quarry, for the operator, the Local Planning Authority and local residents.

2 Any future amendments affecting ordinary watercourses will require an Ordinary Watercourse Consent from the Consulting Authority (Rhondda Cynon Taf) for the protection and/or support if necessary.

3 The site operator is reminded of their responsibility under the Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009.

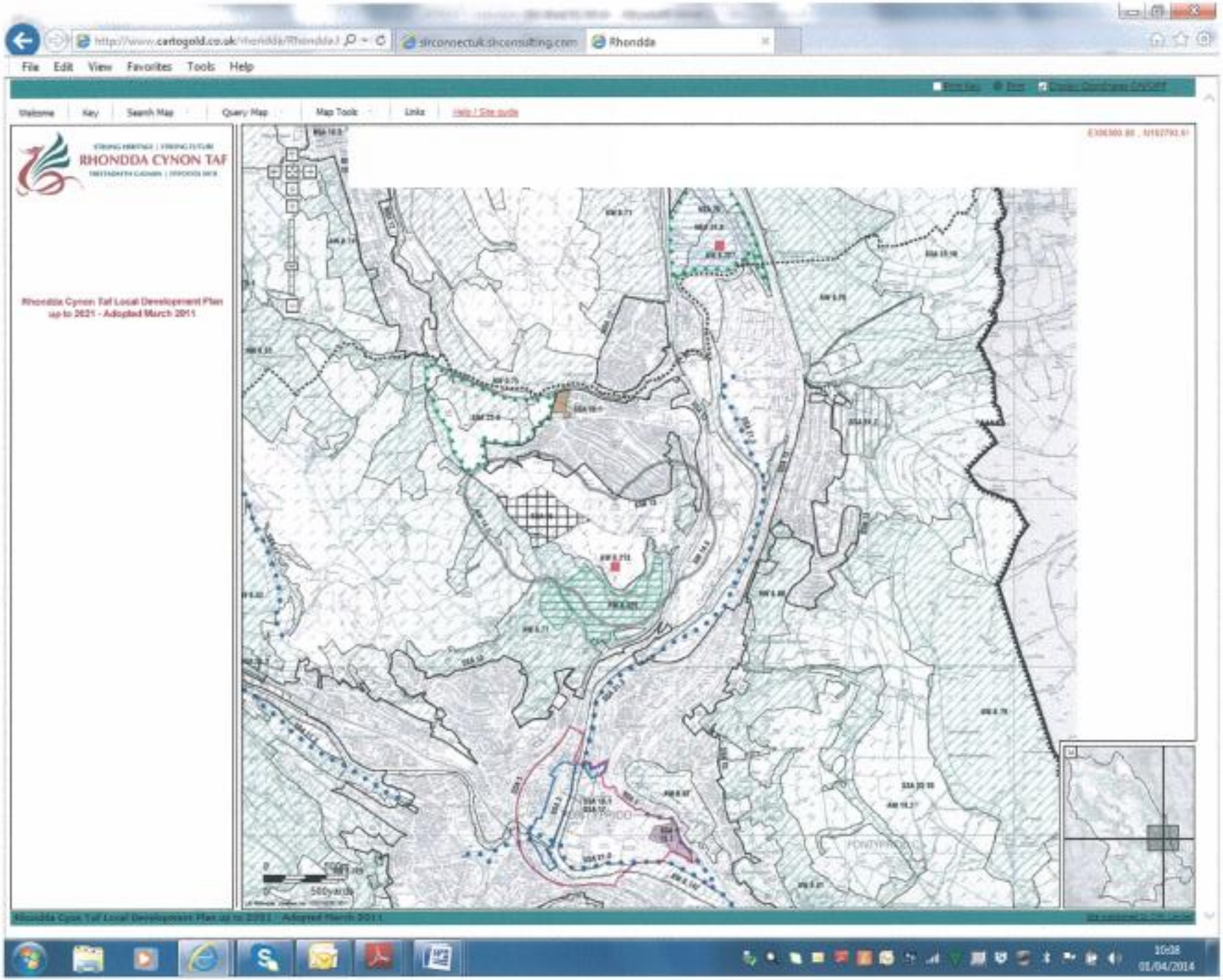
4 The Environment Agency Wales consider that a permit may be required under the Mining Waste Directive (Environment Protection Regulation 2010) for the management of waste generated at the site.

5 If any controlled waste is to be removed off site then the site operator must ensure a registered waste carrier is used to convey the waste material off site to a suitably authorised facility, in line with the Duty of Care regulations.

6 If the Applicant is aggrieved by the decision of the Local Planning Authority he/she may appeal to the National Assembly for Wales within 6 months of the date of this Notice. Appeals should be made on a form available from the Planning Inspectorate, Crown Buildings, Cathays Park, Cardiff, CF10 3NQ.

APPENDIX 3:

EXTRACT FROM RCT LOCAL DEVELOPMENT PLAN PROPOSALS MAP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Query Map
Map Tools
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Rhondda Cynon Taf Local Development Plan up to 2021 - Adopted March 2011
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Rhondda Cynon Taf Local Development Plan up to 2021 - Adopted March 2011
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APPENDIX 4:

BUFFER ZONE DISTANCES FIGURE L.03A

Hanson
HEIDELBERGCEMENTGroup

Craig-yr-Hesg Quarry

Proposed quarry development scheme **L.03**

Key

- Range of 200m Buffer Zone from Cefn Cae
- Range of 200m Buffer Zone from Cefn Primary School
- Range of 175m Buffer Zone from No.36 Conway Close
- Range of 200m Buffer Zone from No.6 Pen y Bryn
- Proposed extent of mineral extraction
- Extent of proposed screen landform
- Existing water main

0 20 40 60 80 100 m

Scale 1:1,250 @ A1 Do not scale from this drawing
Scale 1:2,500 @ A3

North

A070664 L03A.dwg **May 2014**

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