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Subject:	Wylfa Newydd DCO Examination Horizon - Deadline 2 Submissions
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Attachments:	8.8 Marine Works sub-CoCP.PDF 8.7 Main Power Station Site sub-CoCP.PDF 8.9 Off-Site Power Station Facilities sub-CoCP .pdf 8.10 Park and Ride sub-CoCP.PDF 8.13 Wylfa Newydd Code of Operational Practice.pdf

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Good Evening

Please find attached Horizon's Deadline 2 submissions relating to :

- Marine Works sub-CoCP
- Main Power Station Site sub-CoCP
- Off-site Power Station Facilities sub-CoCP
- Park and Ride sub-CoCP
- Wylfa Newydd Code of Operational Practice

Kind Regards

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WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

8.7 Main Power Station Site sub-CoCP

PINS Reference Number: EN010007

Application Reference Number: 8.7

4 December 2018

Revision 2.0
Examination Deadline 2

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Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Horizon Internal DCRM Number: WN0902-JAC-PAC-REP-00019

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1 Introduction

1.1 General

1.1.1 As the Wylfa Newydd DCO Project covers a number of discrete locations, the overarching Wylfa Newydd Code of Construction Practice (CoCP) (APP-414) covers project-wide aspects of the Wylfa Newydd DCO Project regardless of site/location. Sub-CoCPs are provided for each location and underpin the Wylfa Newydd CoCP (APP-414). Sub-CoCPs provide only the requirements relevant specifically to that location.

1.1.2 This document forms the Main Power Station Site sub-CoCP within the Wylfa Newydd DCO Project. It covers construction of those parts of the project within the Wylfa Newydd Development Area, including the Site Campus but excluding the Marine Works, which are addressed by the Marine Works sub-CoCP (APP-416).

1.1.3 Figures 1-1 and 1-2 show the areas covered by this sub-CoCP. The Wylfa Newydd Development Area is split between those areas of works covered by this sub-CoCP and those areas of works covered by the Marine Works sub-CoCP (APP-416) and A5025 Offline Highways Improvements sub-CoCP (APP-420) (note, the areas covered by the Marine Works sub-CoCP (APP-416) and the Power Station Access Road are excluded from this sub-CoCP). This sub-CoCP also covers the establishment of the three Site of Special Scientific Interest (SSSI) compensation areas (Ecological Compensation Sites), comprising the areas Cae Canol-dydd, Cors Gwawr and Ty du.

1.1.4 The delineation between the two areas covered by this sub-CoCP and the Marine Works sub-CoCP (APP-416) has been defined as the mean high water mark (at the time the works are undertaken). Where Marine Works span this line (such as blasting of the rock outcrop that will take place as part of the Marine Works), then the Marine Works sub-CoCP (APP-416) will apply.

1.1.5 The Power Station Access Road area is excluded from this sub-CoCP and incorporated under the A5025 Offline Highways Improvements sub-CoCP (APP-420) due to the nature of these works (Works No. 1J in the Draft Development Consent Order (APP-029)).

1.1.6 The principal works associated with this sub-CoCP are as follows:

- development of site compounds;
- construction of perimeter construction fencing and permanent fencing, and diversion of Public Rights of Way (PRoWs);
- species translocation and site clearance;
- watercourse realignment;
- construction of road crossings and haul roads;
- land remediation and operation of a remediation processing compound;
- construction and decommissioning of Site Campus and other temporary buildings;

- installation of plant and equipment to support construction (including cranes and site power);
- soil stripping, storage and re-use;
- bulk earthworks;
- deep excavation (of Unit 1 and Unit 2);
- excavation of other features such as culverts and building foundations;
- progressive mound creation;
- construction, commissioning and operation of concrete batching plant;
- construction of onshore elements of the Cooling Water System;
- dewatering;
- drainage works; and
- construction of the Power Station.

1.1.7 This document also covers the construction of the Spent Fuels Store and Spent Fuel Interim Storage Facility, which are to be built some years after the other works within the Wylfa Newydd Development Area.

1.1.8 Site-specific measures to mitigate the effects of the construction works are detailed within this sub-CoCP. Where the requirements of construction practice are covered adequately by the Wylfa Newydd CoCP (APP-414), those controls are not repeated in this sub-CoCP. Therefore, where no site-specific controls are specified here, reference should be made to the Wylfa Newydd CoCP (APP-414). If there is a conflict between the requirements of the Wylfa Newydd CoCP (APP-414) and this sub-CoCP, then those detailed in this sub-CoCP will prevail.

1.1.9 This sub-CoCP sets out the site-specific controls to be complied with, covering the following aspects of the Wylfa Newydd DCO Project construction:

- communications and community and stakeholder liaison;
- general site management;
- traffic and transport;
- public access management;
- air quality;
- noise and vibration;
- waste and materials management (including soils and land contamination);
- water management;
- ecology and landscape management; and
- cultural heritage.

Both this Main Power Station Site sub-CoCP and the Marine Works sub-CoCP (APP-416) should be read together along with the Wylfa Newydd CoCP (APP-414) to understand the full suite of requirements for the entirety of the Wylfa Newydd Development Area.

Figure 1-1 Area covered by the Main Power Station Site sub-CoCP

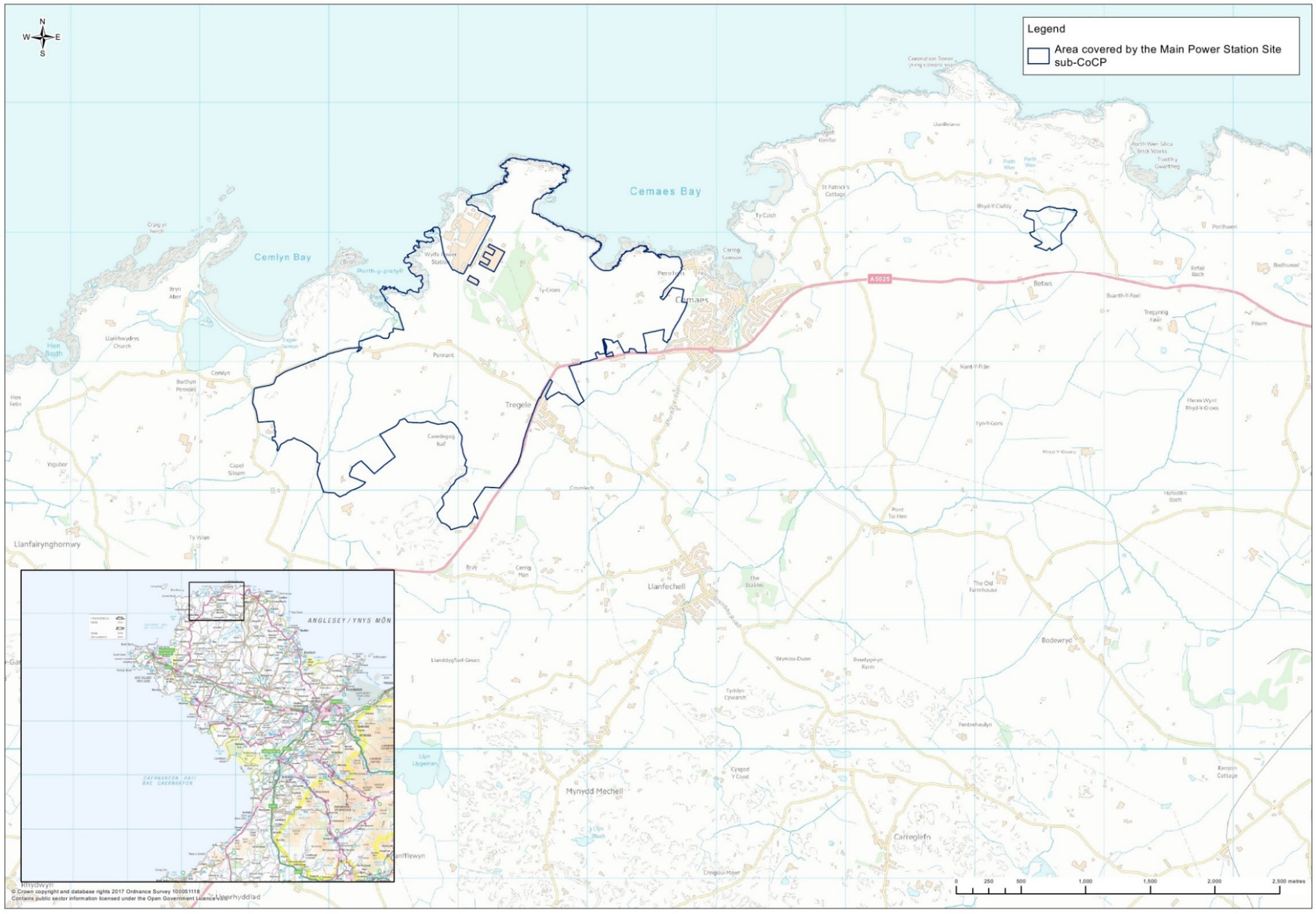
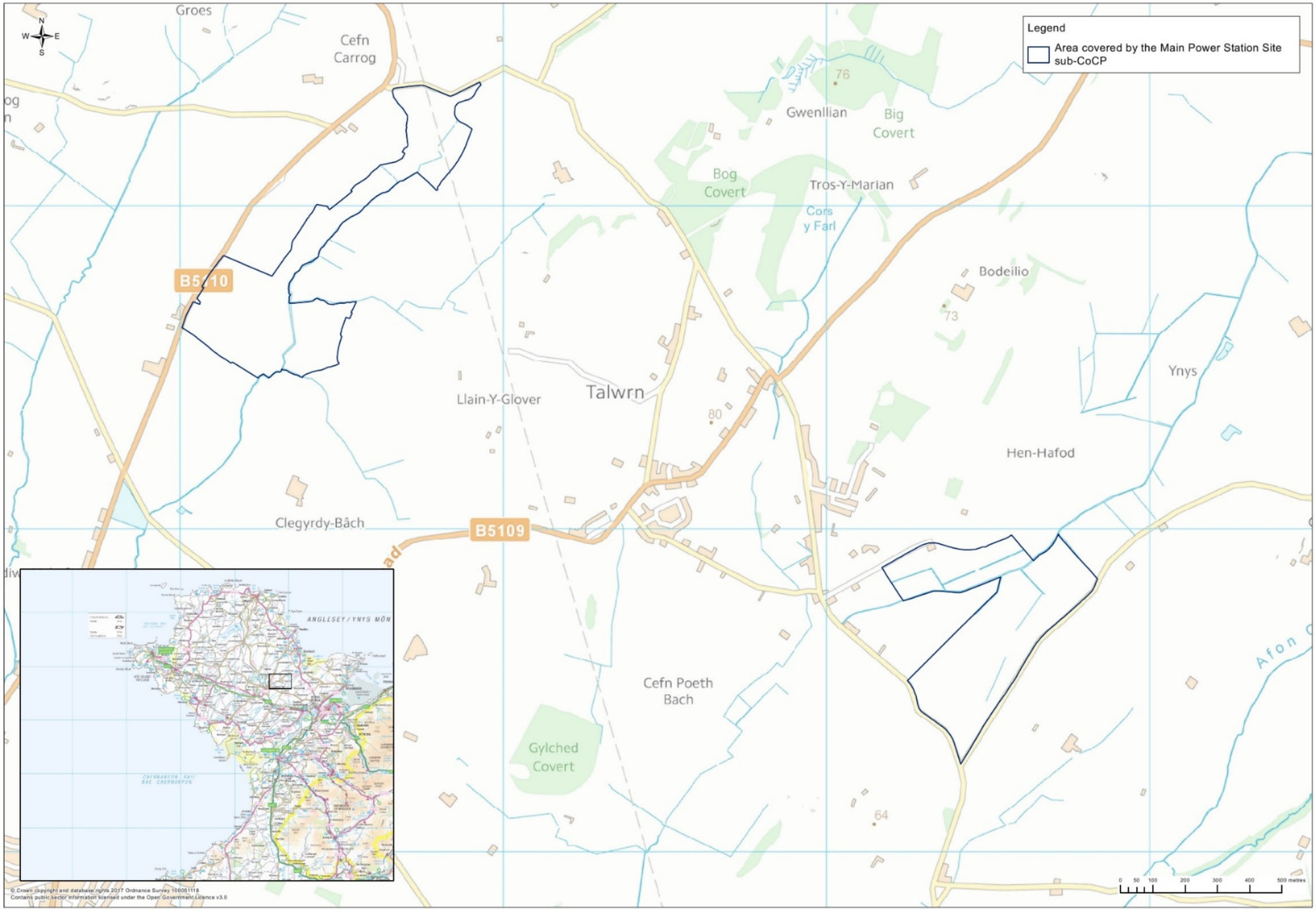


Figure 1-2 Further areas covered by the Main Power Station Site sub-CoCP



2 Approach to environmental management

2.1 General

2.1.1 This section is included here to maintain the structure of this sub-CoCP in accordance with the Wylfa Newydd CoCP (APP-414), in order to enable easier cross-referencing between the two documents and other sub-CoCPs. Refer to section 2 of the Wylfa Newydd CoCP (APP-414) for full information on Horizon's approach to environmental management which is consistent across the Wylfa Newydd DCO Project.

3 Communications and community/stakeholder liaison management strategy

3.1 General

3.1.1 Horizon's communications and community/stakeholder liaison management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

3.1.2 The general mitigation controls to be implemented for communications and community/stakeholder liaison are described in section 3 of the Wylfa Newydd CoCP (APP-414).

3.1.3 There are no further site-specific requirements in relation to communications and community/stakeholder liaison for this sub-CoCP.

4 General site management strategy

4.1 General

4.1.1 Horizon's general site management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

4.1.2 The general mitigation controls to be implemented for site management are described in section 4 of the Wylfa Newydd CoCP (APP-414).

4.1.3 In addition, the measures below outline specific requirements to be implemented during the Main Construction works.

4.2 Site-specific requirements

4.2.1 Horizon will develop suitable arrangements to enable viewing of the construction activity. Initially, this may be a temporary viewing platform available around six months after the start of construction, dependent on the availability of safe access and parking capacity. This facility is likely to evolve through the construction period, dependant on the positioning of activities through the different phases.

4.2.2 As stated in section 4.9 of the Wylfa Newydd CoCP (APP-414), the Workforce Management Strategy (APP-413) sets out the principles that Horizon will follow to manage and control the workforce, and Horizon will be required to prepare and implement a Code of Conduct in accordance with those principles. Specific protocols will be set out in the Code of Conduct for those residing at the Site Campus located within the Wylfa Newydd Development Area.

4.3 Working hours

4.3.1 For the Main Construction works, multiple shift working will be required, with 24-hour, seven-days-per-week working, in order to deliver a viable construction schedule.

4.3.2 The following site hours and shift patterns are expected for initial activities during Main Construction:

- earthworks (digging, hauling, dumping, back-filling, stockpiling) – between 07:00 and 19:00 hours;
- temp/perm road construction – between 07:00 and 19:00 hours;
- blasting – Monday to Friday between 10:00 and 16:00 hours, and Saturday between 10:00 and 13:00 hours;
- marine piling – between 07:00 and 18:00 hours;
- drilling and packing for blasting – between 07:00 and 19:00 hours;
- drilling/stuffing/grouting rock/soil nails – between 07:00 and 19:00 hours;

- moving/re-positioning rock in the excavations – between 07:00 and 19:00 hours;
- tunnelling – 24 hours a day, seven days a week;
- shotcreting – 24 hours a day, seven days a week;
- support operations (e.g. equipment/road maintenance, fuelling, dewatering) – between 07:00 and 19:00 hours, apart from dewatering (24 hours a day, seven days a week);
- marine dredging – 24 hours a day, seven days a week;
- Marine Off-Loading Facility construction – between 07:00 and 18:00 hours, except crane, barges, tugs which will be 24 hours a day, seven days a week;
- site establishment (facilities/utilities set-up) – between 07:00 and 19:00 hours;
- batch plant set-up – 24 hours a day, seven days a week;
- miscellaneous construction operations (training, canteens, facilities management, etc.) – 24 hours a day, seven days a week;
- commissioning – 24-hour operation, seven days a week; and
- Main Construction – fortnightly shift pattern – 11 days on, three days off. The three days off would be at the weekend with 50% of workers taking their leave each week.

4.3.3 Day shift start times would be phased in order to reduce traffic numbers and would typically be 07:00, 07:30 and 08:00 hours. Night time shift start times would typically be 16:30, 17:00 and 17:30 hours.

4.3.4 The day/night shift pattern during peak construction would likely be a split of 70% day and 30% night, which would be representative of normal working practice and broadly reflects the night shift workers equating to 50% of day shift workers.

4.3.5 If construction work is required at these sites outside these hours, this will be identified by Horizon and justified in a Section 61 Control of Pollution Act 1974 application, which will be made to the Isle of Anglesey County Council (IACC) in advance of the works.

4.3.6 The following site hours will be applicable for works on the Ecological Compensation Sites

- Monday to Friday: 07:00 to 19:00; and
- Saturday: 07:00 to 13:00.

4.4 Site lighting

4.4.1 Construction lighting will be designed to reduce sky glow, glare and light spill onto sensitive receptors (for example, bats, breeding and wintering birds, otter, water vole, notable mammals, red squirrel and chough), as well as night-time human viewers, for example local communities or those enjoying views of dark skies, to below thresholds where significant effects are

predicted, where practicable. Measures could potentially include directional lighting.

4.4.2 Construction lighting at Mound E will be designed in order to achieve a light level of no more than 0.1 lux at Cemlyn Bay lagoon.

4.4.3 To reduce light trespass onto Tyn-y-Maes bat barn and adjacent ecological mitigation area, no lighting will be used for the multi-use games area after 21:00 hours during winter months.

5 Traffic and transport management strategy

5.1 General

5.1.1 Horizon's traffic and transport management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

5.1.2 The general mitigation controls to be implemented for traffic and transport are described in section 5 of the Wylfa Newydd CoCP (APP-414).

5.1.3 In addition, the measures below outline specific requirements to be implemented during the Main Construction works.

5.2 Site-specific requirements

5.2.1 Electric vehicle charging points will be provided in the main staff car park to incentivise the use of sustainable transport, compatible with others across Anglesey and north Wales.

5.2.2 Where possible, use of the vehicle crossing points on the Existing Power Station access road will avoid 07:30 to 08:00 hours and 16:30 to 17:00 hours to limit the potential for effects on those working at the Existing Power Station facility.

5.2.3 Staggered shift times will be implemented to reduce peak hourly flows associated with private vehicle and bus movements.

5.2.4 Construction vehicles will be held and released at regular intervals to avoid convoying, as far as practicable, from the Wylfa Newydd Development Area.

5.2.5 There are no further site-specific mitigation measures relating to traffic and transportation, other than those contained in other sections of this document relating to specific aspects of traffic and transportation (such as air quality).

6 Public access management strategy

6.1 General

6.1.1 Horizon's public access management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

6.1.2 The general mitigation controls to be implemented for public access are described in section 6 of the Wylfa Newydd CoCP (APP-414).

6.1.3 In addition, the measures below outline specific requirements to be implemented during the Main Construction works.

6.2 Site-specific requirements

6.2.1 Access to Wylfa Head will be retained throughout construction by retaining PRoWs 20/056/1, 20/056/2, 20/002/2, 20/002/5, 20/002/3 and 20/002/4 along the north coast between Cemaes and Wylfa Head as a linear route, though a localised diversion of PRoW 20/056/1 may be required.

6.2.2 The footpath (20/004/2) from Cemaes to Tre'r Gof will be stopped up during construction with a temporary diversion implemented around the perimeter of the work site as soon as practicable. The temporary diversion will be removed on completion of the new final footpath, which will be implemented with the final landscape scheme on an alignment similar to the existing route.

6.2.3 Access to Porth Wylfa and Porth yr Ogof from the Wales Coast Path (WCP) will be retained throughout construction.

6.2.4 A diversion of the WCP will be provided as a continuous route throughout construction, around the construction fence between Cemlyn Bay and Cemaes. This route will be unsurfaced. Suitable structures across watercourses will be provided – these could take the form of a simple wooden bridge (they are only for walkers). Footpaths already cross these watercourses, and Horizon will be looking at structures of a similar scale.

6.2.5 The existing permissive path at Wylfa Head will be maintained throughout construction outside of the security fencing and will involve the creation of a permissive path route to provide a circular route around Wylfa Head.

6.2.6 Signage informing users of the diverted route of the Copper Trail will be in place prior to the diversion of the Copper Trail.

6.2.7 To mitigate for the effects of the diversion of the WCP during construction, information boards and interpretation boards will be erected at intervals along the route explaining what is happening, as part of a wider trail to encourage continued use of the link. The information boards will comprise a map and short interpretation about what is happening and what people can see from the board. The information on the boards will be updated three times during the construction programme as key phases are completed.

6.2.8 These information boards will be erected at three locations: i) as the WCP leaves Porth y Felin; ii) as the WCP leaves the temporary visitor viewing

area (the site of the proposed Visitor Centre, once constructed); and iii) at the link of the diverted WCP as it links to Penrhyn/remaining existing alignment along to Wylfa Head.

7 Air quality management strategy

7.1 General

7.1.1 Horizon's air quality management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

7.1.2 The general mitigation controls to be implemented for air quality are described in section 7 of the Wylfa Newydd CoCP (APP-414).

7.1.3 In addition, the measures below outline specific requirements to be implemented during the Main Construction works.

7.2 Dust emissions

7.2.1 In addition to the measures set out in section 7.3 of the Wylfa Newydd CoCP (APP-414), the following site-specific measures are also required.

- On-site haul routes will be inspected for integrity, and any necessary repairs to the surface will be instigated as soon as reasonably practicable.
- Hard surfaced haul routes will be installed, where practicable.
- Hard surfaced haul routes will be damped down with fixed or mobile sprinkler systems, or mobile water bowsers, and cleaned regularly.
- A maximum speed limit will be set for vehicles on surfaced and unsurfaced roads to secure health and safety of workers and keep airborne dusts within acceptable limits for sensitive receptors.
- Haul roads will be capped with suitable materials and techniques, which will have a lower potential for emitting dust than unsurfaced haul roads.
- Buildings will be soft stripped before demolition, retaining walls and windows in the rest of the building where possible, to provide a screen against dust.
- For use of on-site crushing equipment required during demolition activities, all crushing equipment will be designed and operated in accordance with the most recent version of the Process Guidance Note 3/16 for mobile crushing and screening [RD1], where relevant.
- Earthworks and exposed areas/soil stockpiles will be re-vegetated to stabilise surfaces as soon as practicable.
- Where soils will be stored for longer than 60 days, stockpiles and temporary landscape mounding will be seeded with an appropriate low-maintenance seed mix.
- Where it is not possible to re-vegetate or cover with topsoil, as soon as practicable, alternative methods of dust suppression will be used.
- Where practicable, these covers will only be removed in small areas during work and not all at once.

- Bulk cement and other fine powder materials will be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine powder materials, containers will be sealed after use and stored to prevent dust generation.
- An adequate area of hard surfaced road will be constructed between the wheel wash facility and the site exit, wherever site size and layout permits, acting as a final opportunity to remove remaining dirt and water from the vehicle wheels.
- Dust deposition on the Site Campus will be controlled by appropriate cleaning and maintenance, as required.

7.3 Design and operation of concrete batching plant

7.3.1 The design of the concrete batching plant will include embedded mitigation measures to prevent or reduce emissions of dust as part of the design. These will include enclosing the various parts of the plant, silos and cement powder delivery systems and fitting them with suitable dust mitigation systems.

7.3.2 The following good practice mitigation will be implemented during the operation of the concrete batching plant to prevent or reduce emissions of dust:

- preventing spillages and cleaning any spillages as soon as reasonably practicable;
- carrying out visual inspections to identify any issues which are causing dust emissions;
- cleaning of surfaces to prevent dust being blown out of the batching plant area, especially when it is windy;
- locating stockpiles or dusty activities as far as practicable from nearby sensitive receptors;
- use of water suppression during the loading and unloading of dry material and aggregates;
- use of water suppression to dampen stockpiles of aggregate (where appropriate);
- use of wheel wash facilities at the entrance/exit to the concrete batching plant working area;
- aggregate bays stocked to suitable heights beneath the bay wall tops to shield stockpiles from wind;
- bulk storage tanks and silos containing dry materials will be equipped with audible and/or visual high level alarms to warn of overfilling;
- displaced air from silos will be vented to a suitable designed dust arrestment plant;

- dust arrestment plant, such as bag filters will be installed on the loading and unloading of dry materials and aggregate; and
- reducing drop heights by using variable height covered conveyors and enclosed chutes as part of the loading and unloading processes.

7.3.3 For use of the concrete batching plant during construction activities, all concrete batching equipment will be designed and operated in accordance with the most recent version of the Process Guidance Note 3/1 [RD2], where relevant.

7.4 Odour emissions

7.4.1 The removal of the contents of the trichloroethane sump will be pumped straight into a tanker, as far as practicable. All materials will be removed off-site and sent to an appropriate disposal facility, or treated in a treatment system on-site, thus reducing the risk of exposure to the atmosphere and potential release of odour. Material visually/olfactorily impacted by hydrocarbons will also be removed from site following excavation, reducing the likelihood of odours from this source.

7.4.2 The package sewage treatment plant for Main Construction will be a modularised system that will be a predominately enclosed. The processes with the highest potential to emit odours, such as the preliminary treatment (screens), balance tanks, primary treatment, sludge storage and sludge treatment, will be covered with active extraction to maintain a slight negative pressure within the process units. The extracted air will be treated to reduce the odour concentrations in line with standard performance levels for odour control units on package sewage treatment plants. Horizon will carry out routine odour walkover surveys, along with other good practice measures, to assess the effectiveness of the odour control system.

7.4.3 The maintenance of package sewage plant will be carried out in line with the manufacturers' specifications and standard good practice measures.

7.4.4 Although the normal operation of package sewage plant is not expected to generate excessive odours, the general mitigation measures to be applied are:

- regular odour walkovers;
- development of odour complaint response protocols if high levels of odour are detected;
- a suitably qualified and experienced operator to carry out the de-sludging process;
- use of appropriate measures such as a fine spray of clean water or an odour-neutralising agent if odours are generated;
- use of spill kits;
- development of appropriate procedures to rapidly deal with process upsets, equipment malfunction and breakdown to reduce the risk of generating excessive odours; and

- appropriate replacement of the skip at the inlet to reduce the accumulation of material and reduce the risk of emissions.

7.5 Emissions from plant and machinery

7.5.1 Site power to support construction is scheduled to be available nine months after granting of the Development Consent Order and is a precursor for the establishment of site compounds and accommodation. The installation of the site power will reduce the need to use diesel generators to power the site compounds, site campus and the main concrete batching plant.

7.5.2 Oxides of nitrogen/nitrogen dioxide (NOx/NO_2) emissions management, monitoring and reporting will be implemented during construction. This includes a number of measures (in addition to those set out in the Wylfa Newydd CoCP [APP-414]) to achieve compliance with the appropriate environmental standards set out in table 7-4. The measures are:

- A Non-Road Mobile Machinery (NRMM) fleet mix that will include newer plant complying with the EU Stage IV emissions standards for NRMM (EC Directive 97/68/EC) (i.e. plant generally manufactured after 2014), which emit 80% less NOx than Stage IIIB plant. Horizon will implement a minimum of 90% of NRMM to meet the EU Stage IV emission standards.
- Relevant marine vessels undertaking the Marine Works to comply with the International Maritime Organisation MARPOL Annex VI Tier III NOx emission limits.
- Use of continuous NOx and NO_2 monitoring to track compliance against the Air Quality Objectives (AQO) and, critical levels. Monitoring to include appropriate feedback mechanisms (i.e. monitoring thresholds to act as trigger levels and subsequent responses to trigger exceedances) to ensure the construction activities and site operations can be adapted to respond to measured exceedances or elevated concentrations. The continuous NOx and NO_2 monitoring, access to monitoring data, monitoring thresholds and responses to trigger exceedances are described in detail in section 7.6 of this document.
- The continuous monitoring will be supplemented with passive NO_2 diffusion tube monitoring at a number of locations to track the changes in annual mean NO_2 concentrations – locations to be agreed with the IACC.

7.5.3 With regard to ecological receptors, the aim of the NOx/NO_2 emissions management, monitoring and reporting is to reduce the potential for NOx emissions (and associated deposition of nitrogen and acid) to cause adverse effects at Tre'r Gof SSSI and Cae Gwyn SSSI (and other relevant ecological receptors). This is primarily driven by the reduction of NOx emissions at source as described in paragraph 7.5.2. For Tre'r Gof SSSI and Cae Gwyn SSSI, potential adverse effects will be managed through the proposed air quality monitoring, combined with habitat management/botanical monitoring and direct mitigation measures set out in this sub-CoCP.

7.5.4 With regard to human receptors, the main achievement criteria for the NOx/NO_2 emissions management, monitoring and reporting will be to prevent an exceedance of the NO_2 AQOs (further details of the compliance targets and reporting is provided in section 7.6 of this document).

7.5.5 The NOx/NO_2 emissions management, monitoring and reporting set out here is the same as that described in the Marine Works sub-CoCP (APP-416).

7.6 Dust and air quality monitoring

7.6.1 The dust and air quality monitoring set out here are the same as that described in the Marine Works sub-CoCP (APP-416).

Number, location and type of monitoring stations

7.6.2 Horizon will undertake monitoring at six locations on or close to the boundary of the Wylfa Newydd Development Area. These are shown on figure 7-1 and are located at:

- Cemaes (A);
- Tregele (B);
- adjacent to Cae Gwyn Site of Special Scientific Interest (SSSI) (C);
- western boundary (south of Cemlyn Bay) (D);
- near or at Felin Cafnan (E); and
- Tre'r Gof SSSI (F).

7.6.3 The monitoring is proposed to be at locations close to the site boundary that are close to key human or ecological receptor locations. Off-site locations (e.g. locating a monitoring station within the garden of a residential property or on a public footpath) are not considered to be required as the boundary locations are close to the nearest human or ecological receptors and would be considered to represent relevant exposure locations. This avoids or reduces issues with security, access, risk of tampering or damage and other localised sources affecting the monitoring should it be located in the middle of a residential area (e.g. emissions from barbecues or bonfires etc.). Some exceptions may be possible, such as the Felin Cafnan location, where there is a lower risk of the above issues and where monitoring has been undertaken previously by the IACC.

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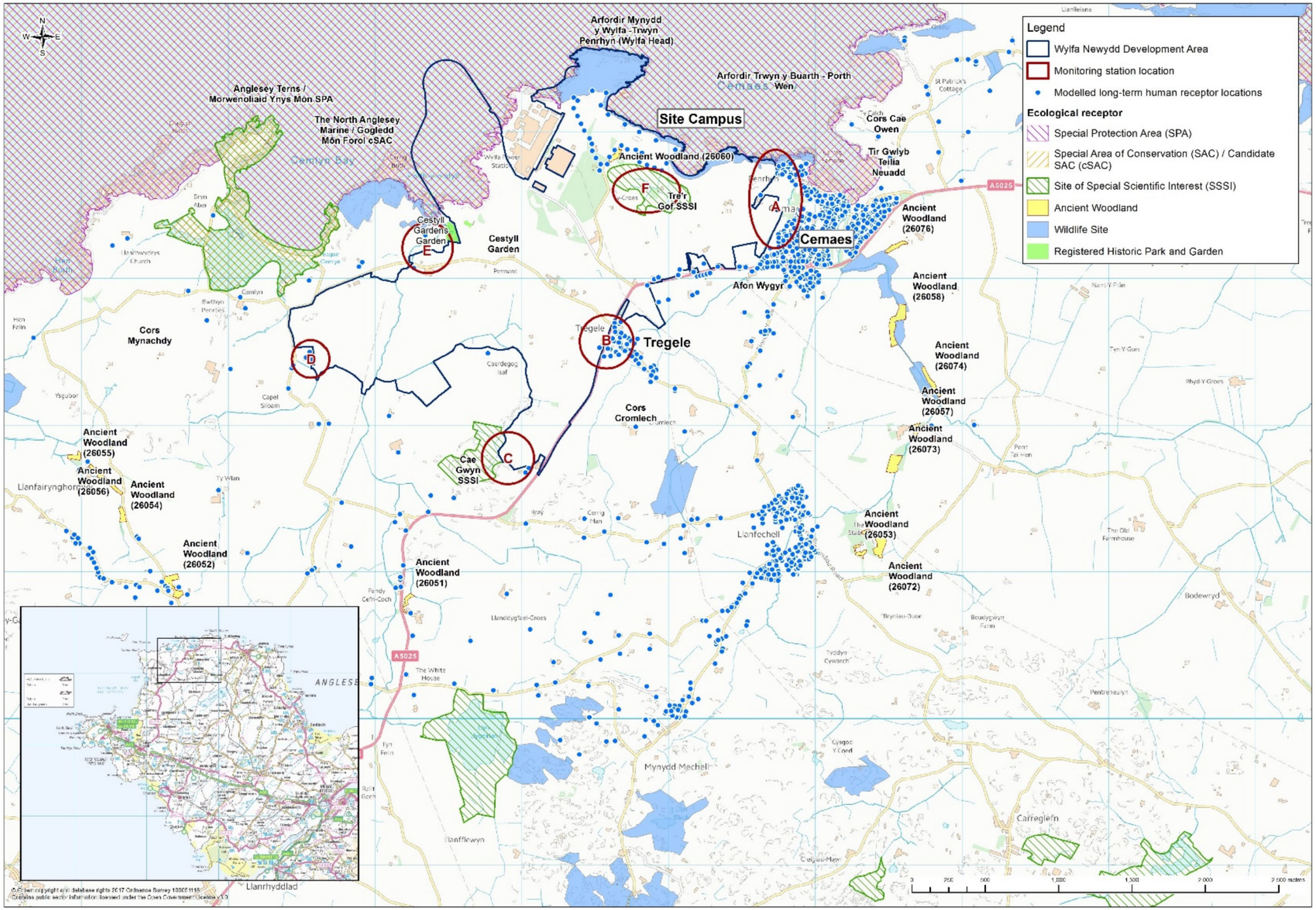
Figure 7-1 Dust and air quality monitoring locations



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7.6.4 As Horizon will use six locations distributed around the site boundary (see figure 7-1), an off-site control location is not considered to be necessary as there would always be monitoring locations upwind of the Wylfa Newydd Development Area during any one hour (i.e. to assist with the interpretation of data and identification of site sources should a trigger threshold be exceeded).

7.6.5 To reduce the risk of inconsistencies in the monitoring data between the motoring locations, it is proposed to install identical monitoring stations at each of the six locations. These would contain monitoring equipment to record the following:

- total particulates, PM_{10} and $PM_{2.5}$ – continuous analyser (Osiris) recording concentrations continuously;
- dust deposition – dust deposition gauge (Frisbee-type dust deposition gauge, monthly sample); and
- NOx/NO_2 – continuous analyser (chemiluminescent analyser recording concentrations continuously).

Monitoring data management system and web access to data

7.6.6 Due to the very large scale of the construction site and the number of varied parameters which require to be monitored, recorded and processed, all environmental monitoring data (e.g. air quality, noise, water etc.) will be managed by one central data management and control system.

7.6.7 Horizon will obtain the data from the continuous air quality analysers via a site wide data link or data cable around the site boundary. The data will be processed by the central data management and control system and subsequently outputted to a separate environmental database. External parties such as the IACC, Natural Resources Wales (NRW) or members of the public will have online access to the environmental database to view the data.

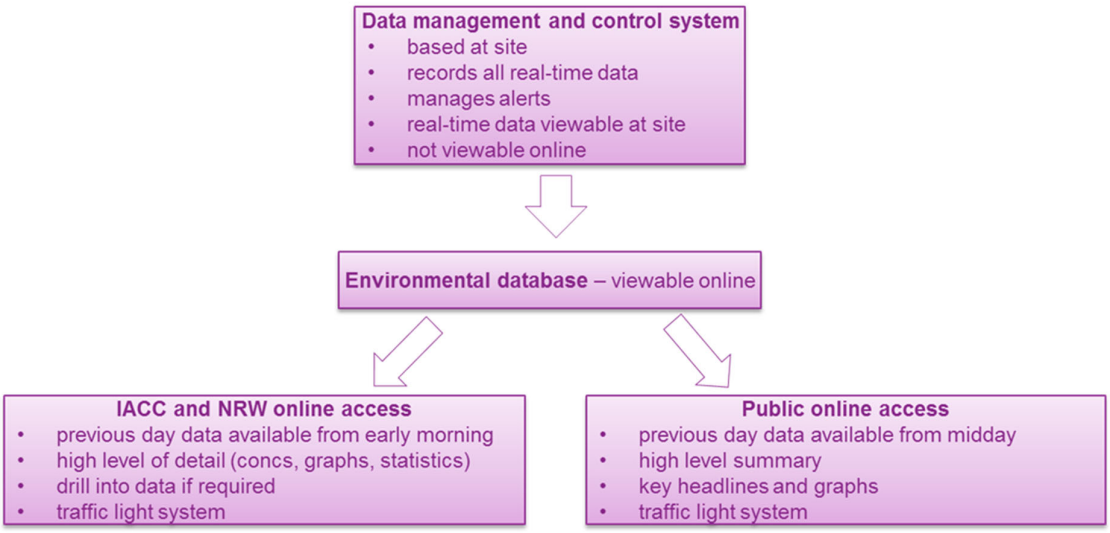
7.6.8 The extent and type of data available to the different external parties would vary depending on the following hierarchy.

- Regulators (IACC and NRW):
- Previous day data can be accessed the following morning (e.g. from 08:00) showing a relatively high level of detail (e.g. key statistics and graphs of each monitoring station, plus traffic light system of status (i.e. green, amber, red and black – see details below regarding monitoring thresholds to act as trigger levels). Ability to drill into the detailed data for each monitoring station.
- Other parties and members of the public:
- Previous day data can be accessed the following afternoon (e.g. from 12:00) showing a high-level summary (e.g. key headline statistics, key data graphs and traffic light system of status).

7.6.9 Real-time data will be available to be viewed by the IACC or NRW at the Wylfa Newydd Development Area on the central data management and control system or could be discussed remotely with Horizon (e.g. via telephone call or webex/video call communication).

7.6.10 A flow chart is provided in figure 7-2 showing the arrangement discussed above.

Figure 7-2 Flow chart showing management of continuous monitoring data and proposed access arrangements to the online system



Monitoring thresholds to act as trigger levels and responses to trigger exceedances

Total particulates, PM10 and PM2.5 (continuous real-time monitoring)

Human receptors

7.6.11 Table 7-1 sets out the proposed real-time triggers for PM_{10} concentrations which would be used by Horizon to undertake redress measures. These will be used to control long term increases in particulate concentrations as far as reasonably practicable and prevent exceedances of the relevant AQOs.

Table 7-1 Real time triggers for dust control based on PM_{10} concentrations

Averaging period	Real-time PM_{10} trigger concentration ($\mu g/m^3$)			Notes
	Amber	Red	Black	
One-hour average	100	200	N/A	Used to identify large short-term spikes in particulate concentrations from potential dust emission sources or events on site so that these can be controlled as soon as possible.
24-hour average	30	45	50 (AQO)	Used to track and manage compliance with the 24-hour mean AQO and aid in the identification of ongoing but lower level dust emissions not identified using the

Averaging period	Real-time PM_{10} trigger concentration ($\mu g/m^3$)			Notes
	Amber	Red	Black	
				one-hour average trigger. Based on the calculation of the average concentration commencing at midnight each night and requiring a minimum of six hours (i.e. if the average concentration by 6am or any time after that exceeds $30\mu g/m^3$ then an amber alert would be triggered). The calculation of the average concentration would reset at midnight each night (in accordance with the measurement of 24-hour means for compliance with the AQO). Black is used to identify if there has been a measured exceedance of the AQO (i.e. the average concentration calculated for the full 24-hour period starting and ending at midnight was greater than $50\mu g/m^3$).

7.6.12 The system will be set up to issue alerts to key staff members should one of the real-time amber or red trigger concentrations be exceeded. An agreed communication protocol will be setup whereby Horizon contacts the IACC once initial investigations have been undertaken to identify if the trigger was exceeded due to site activities or a wider regional issue or other local source.

7.6.13 Should an amber or red PM_{10} real-time trigger level be exceeded the following initial actions will be implemented by the person or team responsible for the environmental monitoring who receive the alert.

- The concentrations from the monitoring station (and other operating parameters) will be initially reviewed to check that the monitoring station was not malfunctioning, and the recorded concentration was valid. If valid, the investigation will continue as below.
- The concentrations at the other monitoring stations at the Wylfa Newydd Development Area will be compared to determine if the exceedance was caused by a regional increase in PM_{10} concentrations. The data for other monitoring stations on Anglesey and in north Wales would also be reviewed on the Air Quality in Wales website (https://airquality.gov.wales/).
- The meteorological conditions for the preceding hours (e.g. wind speed and direction) will be reviewed to determine if the wind direction is blowing from the Wylfa Newydd Development Area towards the monitoring station or if the wind is blowing from an off-site direction.
- Record the outcome of the above reviews and initiate the next steps based on the following outcomes:
  - site activities or sources are the likely cause of the elevated PM_{10} concentrations; or
  - it is a wider regional increase in PM_{10} concentrations or another localised source causing the trigger exceedance.

7.6.14 If site activities are identified as the cause of the exceedance of the trigger levels, the following actions will be undertaken:

- the IACC will be informed that a trigger has been exceeded due to site activities and investigative works/corrective actions are underway;
- wind direction will be reviewed in more detail to identify the likely on-site sources or specific work areas;
- the relevant site team(s) working in the likely work area(s) will be informed and a visual inspection of the activities will be carried out to identify or confirm the source(s) of dust emissions;
- the specific site works and current mitigation measures will be reviewed and further action taken, depending on the source(s) this would involve:
  - applying additional dust suppression, for example increasing the frequency of water application to the haul roads to damp these down, continuous spraying of water at working areas, aggregate stockpiles or on mounds, using coagulant to bind particles on dirt tracks/roads, setting up additional fixed or mobile water sprays; and
  - altering working methods such as reducing the number of plant or dump trucks working in the area, reducing the speed of vehicles on haul roads or travelling in working areas, temporarily moving working areas to alternative locations e.g. working on a different face of a landscape mound. Implementing lower speed limits for road traffic and wetting of site access roads would also be undertaken where site access roads are identified sources.
- visual inspection will be undertaken by the site team(s) and the monitoring data will continue to be reviewed to check the effectiveness of the actions;
- should the concentrations continue to increase and approach the red trigger, or the red trigger is exceeded, more stringent measures will be considered, including temporary suspension of the specific activity or activities identified as causing the dust emissions; and
- the IACC will be kept informed of progress at appropriate intervals as necessary, and dependent on the scale of the trigger exceedance or amber/red status.

7.6.15 The measures set out above would continue until the measured one-hour average concentrations drop to below the one-hour average amber trigger level for two consecutive periods, at which point the issue is considered to be resolved. On resolution of the issue, a short update can be provided to the IACC in an agreed format summarising the responses and outcome (e.g. in a short email or text message format). For the 24-hour average trigger, the aim of the measures will be to prevent the average concentration continuing to increase towards the AQO value of 50µg/m^3. Once a trigger has been exceeded due to site activities and measures have been implemented, the 24-hour average concentrations will be tracked on an hourly basis to determine the effectiveness of the measures.

7.6.16 The amber and red trigger levels for PM_{10} may be adjusted during the construction works in agreement with the IACC following review of the effectiveness of the thresholds to indicate the potential for adverse effects at off-site locations or if there is a high level of alerts being caused by external sources. The subsequent initial actions, investigative or corrective actions and communication protocols may also be adjusted based on operating experience and effectiveness (in agreement with the IACC).

7.6.17 All exceedances of the PM_{10} trigger levels, responses and outcomes will be recorded.

NOx and NO_2 (continuous real-time monitoring)

Human receptors

7.6.18 In order to prevent exceedances of the one-hour mean AQO value of 200µg/m^3, real-time amber and red triggers for NO_2 concentrations are also proposed as set out in table 7-2.

Table 7-2 Real time triggers for control of NOx emissions based on NO_2 concentrations (human receptors)

Averaging period	Real-time PM_{10} trigger concentration (µg/m^3)			Notes
	Amber	Red	Black	
One-hour average	100	180	200 (AQO)	Used to identify large short-term spikes in NO_2 concentrations from potential emission sources such as plant and machinery so that these can be controlled as soon as possible. The aim is to prevent exceedance of the one-hour mean AQO which permits 18 exceedances of 200µg/m^3 per calendar year

7.6.19 The system will be set up to issue alerts to key staff members should one of the real-time trigger concentrations be exceeded. An agreed communication protocol will be setup whereby Horizon contacts the IACC once initial investigations have been undertaken to identify if the trigger was exceeded due to site activities or a wider regional issue or other local source.

7.6.20 Should an amber or red NO_2 real-time trigger level be exceeded, the same initial actions for exceeding the PM_{10} real-time trigger levels would be implemented by the person or team responsible for the environmental monitoring who receive the alert.

7.6.21 If site activities are identified as the cause of the exceedance of the trigger levels, the following actions will be undertaken:

- the IACC would be informed so that it is aware a trigger has been exceeded and investigative works/corrective actions are underway;
- wind direction would be reviewed in detail to identify the likely on-site sources or specific work areas;
- the relevant site team(s) working in the likely work area(s) would be informed;

- a visual inspection would be carried out to identify or confirm the likely sources of NOx emissions;
- the specific site works and current mitigation measures shall be reviewed and further action taken, depending on the source(s) this would involve:
  - altering working methods such as reducing the number of plant or dump trucks working in the area(s) likely to be contributing to the elevated concentrations, including shutting down plant, starting with non-critical plant or those with the highest emissions first;
  - reducing the frequency of dump truck or other vehicle trips on the relevant haul roads;
  - temporarily switching plant to alternative work areas or locations e.g. working on a different face of a landscape mound.
- the monitoring data would continue to be reviewed to check the effectiveness of the actions;
- should the concentrations continue to increase and approach the red trigger, or the red trigger is exceeded, more stringent measures would be implemented (i.e. those measures which could have a significant effect on the programme and costs of the construction of the Power Station) including temporary suspension of works in the area(s) identified as causing the elevated NOx emissions. Longer term solutions would be considered as necessary at a strategic level in consultation with the IACC, including converting plant to be fuelled by liquid petroleum gas (LPG) or converting to electric/battery powered plant;
- the IACC would be kept informed of progress at appropriate intervals as necessary.

7.6.22 The measures set out above would continue until the measured concentrations drop to below the amber trigger level for two consecutive periods, at which point the issue is considered to be resolved. A short update can be provided to the IACC in an agreed format summarising the responses and outcome (e.g. in a short email or text format).

7.6.23 The amber and red trigger levels for NO_2 may be adjusted during the construction works in agreement with the IACC following review of the effectiveness of the thresholds to indicate the potential for adverse effects at off-site locations or if there is a high level of alerts being caused by external sources. The subsequent initial actions, investigative or corrective actions and communication protocols may also be adjusted based on operating experience and effectiveness (in agreement with the IACC).

7.6.24 All exceedances of the NO_2 triggers levels, responses and outcomes will be recorded.

Ecological receptors

7.6.25 The measurements of NOx recorded at Tre'r Gof SSSI will be used to inform management strategies for Tre'r Gof SSSI. The NOx monitoring will also be used to determine the potential for adverse effects to occur at Cae Gwyn SSSI and inform the need for further investigation in conjunction with NRW, and subsequent mitigation, if required.

7.6.26 Data for the 24-hour mean concentrations of NOx at the monitoring locations at or close to Tre'r Gof SSSI and Cae Gwyn SSSI will be provided to the Ecological Clerk of Works (ECoW). This will be used to inform the management of the ecological receptors, including appropriate feedback from the ECoW to the environmental monitoring and site operations teams where NOx has been identified as a potential cause of adverse effects through the botanical monitoring proposed in the Wylfa Newydd CoCP (APP-414) or via surveys undertaken by NRW.

7.6.27 The measured average concentration will also be recorded and tracked against the statutory annual mean critical level of 30µg/m3 as each calendar year progresses (this will be indicative in the first few months of each calendar year until there is sufficient data to calculate an annual mean equivalent using seasonal adjustment to predict an annual mean). The ECoW will be kept informed of the measured average / annual mean NOx concentrations to inform the need for further investigation.

Dust deposition (monthly samples, non-real-time monitoring)

Human receptors

7.6.28 Being retrospective, the dust deposition monitoring will form a secondary control mechanism to the primary monitoring control mechanisms (i.e. regular on-site and off-site inspection, continuous real-time monitoring of PM_{10} and associated amber and red triggers, recording of dust complaints and the subsequent responses to any issues identified by these processes) and will be used to:

- provide a quantification of the dust deposition to support the primary monitoring controls and good practice dust mitigation and control measures;
- assist in identifying specific work areas or processes where refinements are required to the working practices and dust controls;
- corroborate dust complaints which occurred during the sampling period; and
- understand if there are smaller or more gradual longer-term increases in dust deposition which may lead to loss of amenity and result in complaints.

7.6.29 The following checks and reviews will be implemented by the person or team responsible for the environmental monitoring once the dust deposition data has been received from the laboratory, collated and an exceedance of the amber or red trigger identified:

- check the observations in the laboratory test report for anything unusual about the sample which indicates it may not be valid;
- review the on-site and off-site visual inspection records to check if these identified any visible dust emissions from site activities or any noticeable dust deposition at off-site locations, and correlate these to the monitoring location(s) with the dust deposition trigger exceedance(s);
- review the log to check if there were any PM_{10} alerts during the sampling period,
- if there were PM_{10} alerts, note which monitoring stations and if they are the same as the monitoring location(s) with the dust deposition trigger exceedance(s);
- review the complaints log to check if there were complaints of dust during the sampling period and if these are in areas represented by the monitoring location(s) (or downwind of these areas) with the dust deposition trigger exceedance(s);
- review the actions undertaken in response to the visual inspections, PM_{10} alerts and dust complaints and the specific outcomes of those actions;
- if needed, review the meteorological conditions for the sampling period (e.g. wind speed and direction, rainfall and general observations) and if there were weather conditions which could potentially increase dust emissions from the site (e.g. very dry conditions with high wind speeds);
- record the outcome of the above review, for example using the following options (other outcomes are possible):
  - another localised or regional source was the likely cause of the elevated dust deposition measurements – no further action;
  - site activities or sources were the likely cause of the elevated dust deposition measurements;
  - the measured elevated dust deposition rates(s) were likely due to specific site activities or sources which were identified via the primary monitoring control mechanisms (i.e. visual inspections, PM_{10} alerts or dust complaints) and was addressed at the time of occurrence;
  - there were no obvious or discernible site activities or sources which were identified via the primary monitoring control mechanisms (i.e. there were no visual inspections, PM_{10} alerts or dust complaints which highlighted the potential for elevated dust deposition rates at or close to the monitoring locations which recorded the elevated dust deposition rates).

7.6.30 The IACC will be informed of the outcome of the review and, if required, further discussions would be arranged with the IACC to review existing and future site operations and agree the extent of further review or actions. This

would be informed by consideration of key statistics such as the trend in the measured dust deposition rates, the trend or pattern of complaints in relation to site operations (if any) or other related metrics or information which could inform the review process (e.g. the proposed schedule of works and activity levels in the areas closest to the measured elevated dust deposition rates, the trend in long-term particulate concentrations etc).

Ecological receptors

7.6.31 Ecological inspections will be undertaken at Tre'r Gof SSSI against which any adverse effects resulting from dust deposition during Main Construction can be identified. This will be used to identify if further action is required to prevent further dust deposition or damage to the vegetation. This will be achieved via additional mitigation, management or alteration of the dust-causing activities, and through appropriate direct management practices within Tre'r Gof SSSI. These inspections could be extended to the other ecological sites of lower sensitivity as required.

7.6.32 The amber and red trigger levels for dust deposition at ecological receptors are set out in table 7-3. The dust deposition data received from the laboratory will be collated and reviewed and the ECoW informed if there are any valid exceedances of the amber or red trigger values at monitoring locations representative of ecological receptors (i.e. the monitoring locations at Tre'r Gof SSSI and close to Cae Gwyn SSSI).

7.6.33 The measurements of dust deposition will be used to inform management strategies. The dust deposition data will also be used to determine the potential for adverse effects to occur at Cae Gwyn SSSI and inform the need for further investigation in conjunction with NRW, and subsequent mitigation, if required.

7.6.34 The ECoW will provide feedback to the environmental monitoring and site operations teams where dust deposition has been identified as a potential cause of adverse effects through the botanical surveys or related investigations.

Table 7-3 Non-real-time triggers for dust control based on monthly dust deposition rates (human receptors)

Averaging period	Dust deposition rate non-real-time trigger ($mg/m^2/day$)			Notes
	Amber	Red	Black	
Approximately one month	150	200	N/A	There is no statutory limit for dust deposition at ecological receptors.

Air quality reporting and compliance

7.6.35 Regular air quality monitoring reports will be made to the IACC and NRW. These reports will contain a summary of the monitoring results and key statistics for the monitoring period, and include a summary of the amber, red or black trigger exceedances during the monitoring period, number and type

of complaints received and a summary of actions taken to resolve any issues. The report will also be made available on-line to be viewed by other parties and members of the public in line with the Wylfa Newydd engagement framework – see the Wylfa Newydd CoCP (APP-414).

7.6.36 The reports will be issued on a monthly basis. The frequency of the reporting will be kept under review with the IACC and NRW and may reduce in frequency based on the potential for adverse air quality effects at later stages of the construction, or if the monitoring data supports this. For example, once the bulk earthworks are complete and First Nuclear Concrete (FNC) is poured when the potential for adverse air quality effects is reduced.

7.6.37 Horizon will adopt the longer-term compliance targets for comparison of the air quality monitoring data. These are separate to the short-term real-time amber and red triggers used to identify site sources, activities or processes and implement further mitigation or measures to reduce emissions. These are based on compliance with the AQOs and are set out in table 7-4.

Table 7-4 Compliance targets

Pollutant	Averaging Period	Compliance target	Notes
PM_{10}	Annual mean	40 (AQO)	
$PM_{2.5}$		25 (AQO)	
NO_2		40 (AQO)	
NOx		30 (AQO)	For the protection of vegetation and ecosystems
PM_{10}	24-hour mean	50 (AQO)	The AQO permits 35 exceedances of the 24-hour mean concentration of 50µg/m^3 per calendar year
NO_2	One-hour mean	200 (AQO)	The AQO permits 18 exceedances of the one-hour mean concentration of 200µg/m^3 per calendar year

7.6.38 The measured average concentration would be recorded and tracked against the compliance targets as each calendar year progresses (for the annual mean targets, the calculation of the annual mean would only be valid once sufficient data have been recorded). It is proposed that annualising of the data would be carried out once three months of data have been recorded in each calendar year (i.e. data from 01 January to 31 March) and updated on a monthly basis for the remainder of the year. Annualising of the data to predict the annual mean concentration at each monitoring station would follow the suggested approach set out in relevant guidance [RD3]. Tracking of the annual mean concentrations against the compliance targets would commence from 01 April in each calendar year.

7.6.39 The projected or measured annual mean concentrations and number of exceedances of the 24-hour mean and one-hour mean PM_{10} and NO_2 AQO values, respectively, will be included in the regular air quality monitoring reports which will be made to the IACC and NRW.

8 Noise and vibration management strategy

8.1 General

8.1.1 Horizon's noise and vibration management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

8.1.2 The general mitigation controls to be implemented for noise and vibration are described in section 8 of the Wylfa Newydd CoCP (APP-414).

8.1.3 In addition, the measures below outline specific requirements to be implemented during the Main Construction works.

8.2 Blasting mitigation

8.2.1 The blasting process would be designed to ensure that relevant vibration thresholds are complied with. The assessment of vibration from blasting is therefore based on compliance with the following guidelines:

- BS 6472-2 [RD4] set of satisfactory vibration magnitudes for residential receptors, offices and workshops; and
- BS 5228-2 [RD5] for buildings (including those of historic value that are considered structurally sound).

8.2.2 All blasting methods would therefore be designed to comply with the vibration threshold values set out below.

1. To prevent undue disturbance at residential dwellings, education facilities, bat roosts and barn owl roosts, the following vibration levels set out in BS 6472-2 [RD4], as measured outside the building, would apply:

   i) the vibration level shall not exceed:
      a. 6mm/s Peak Particle Velocity (PPV) for 95% of blasting events in any six-month period; or
      b. any higher limits agreed with the IACC on a case-by-case basis; and

   ii) the vibration level from any single event shall not exceed 10mm/s PPV.

2. To prevent undue disturbance at offices and workshops, the following vibration levels set out in BS 6472-2 [RD4], as measured outside the building, would apply:

   i) the vibration level shall not exceed 14mm/s PPV for 90% of blasting events in any three-month period; and

   ii) the vibration level from any single blasting event shall not exceed 21mm/s PPV.

3. To prevent the onset of minor cosmetic damage to buildings (including those of historic value that are considered structurally sound), the

following peak component particle velocities in the frequency range of the predominant pulse and measured on a structural element at the base of the building would apply (source: table B.2 of BS 5228-2 [RD5]:

i) At residential or light commercial buildings, 15mm/s at a frequency of 4Hz increasing linearly to 50mm/s at a frequency of 40Hz;

ii) At industrial and heavy commercial buildings, 50mm/s at frequencies of 4Hz and above; and

iii) Important buildings which are difficult to repair, or those thought to be structurally unsound, shall require special consideration on a case-by-case basis.

8.2.3 The above limits are based on up to three blasting events per day. If it is necessary to conduct more than three blasts per day, then the permitted vibration level of each blast would be reduced in accordance with the formula set out in section 6.2 of BS 6472-2 [RD4]. Blasts for the Main Construction works will be scheduled Monday to Friday between 10:00 and 16:00 hours, and Saturday between 10:00 and 13:00 hours, which is in line with Welsh Government minerals planning advice set out in Minerals Technical Advice Note 1 [RD6].

8.2.4 Additionally, suitable vibration threshold limits have been derived previously for the above Site Sensitive Receptors as part of conducting vibration trials during on-site rock fracturing activities. The selected thresholds vary from 5mm/s for National Grid installations up to 50mm/s for buried water utility structures.

8.3 Noise and vibration control measures

8.3.1 Horizon will undertake a vibration risk assessment as part of the Section 61 application for any construction activity involving vibratory or impact equipment to be used on the Power Station Site. This assessment will establish safe working distances for receptors in relation to construction vibration. This will ensure that any equipment that is identified as having potentially adverse vibration effects can be located sufficiently away from any sensitive receptors, so that any effects on such receptors can be reduced to negligible. Where works are required within the safe working distances, alternative equipment or working methods will be used to reduce vibration levels on sensitive receptors to the greatest extent practicable. Appropriate vibration monitoring will be carried out at the closest receptors to determine the success of these controls.

8.3.2 To improve efficiencies, some works will be carried out during the more sensitive evening, night-time and weekend periods. However, key potentially noisy activities will be restricted during these periods. For example, earthworks near receptor locations will not be carried out at night. Blasting events will also not be planned for these more sensitive periods. As part of

the Section 61 process, blasting times will be communicated to the local community in advance.

8.3.3 The following mitigation will also be applied on-site with regards to noise.

- A 7m screening bund is proposed along the east boundary of construction Zone 9, which is adjacent to the A5025, and this forms part of the embedded mitigation. To reduce construction noise effects from the haul route to Mound C and earthworks in Zone 9, this will be constructed very early in the programme, and in such a way that none of the dwellings in Tregele are regularly subject to noise levels over 62dB $L_{Aeq,\ 1\text{-hour}}$ for more than eight weeks. Appropriate and regular noise monitoring will be carried out at the dwellings closest to the bund, to ensure compliance with these thresholds.
- The strategic placement of material when building mounds A and C will create noise barriers that construction plant will work behind. This will require that the mound be built sequentially in layers, with the perimeter of the mound nearest to properties being built first, which will then provide attenuation whilst the remainder of that layer is completed behind.
- The distance to noise-sensitive receptors (e.g. bat barns, chough nesting sites) will be taken into account in choosing the location of construction compounds, so that standoff distances between noise sources and receptors are increased as far as reasonably practicable.
- Haul roads will be capped with suitable materials and techniques, which will have a lower potential for emitting noise and vibration than unsurfaced haul roads.

8.4 Noise and vibration monitoring

8.4.1 Horizon will install a web-based continuous noise monitoring scheme to be deployed throughout the construction works at the Wylfa Newydd Development Area. The IACC will have shared access to the monitoring data, with the opportunity for public access to relevant information, such as average noise levels.

8.4.2 Installation of monitoring equipment will be undertaken at up to six locations representative of the closest residential receptors to the Wylfa Newydd Development Area. The general locations are shown in figure 8-1 and are as follows:

- off-site locations (noise and vibration):
- Cemaes (location 1);
- Tregele (location 2);
- at, or in the vicinity of, Felin Cafnan (location 3);
- on-site monitoring locations (noise monitoring only):

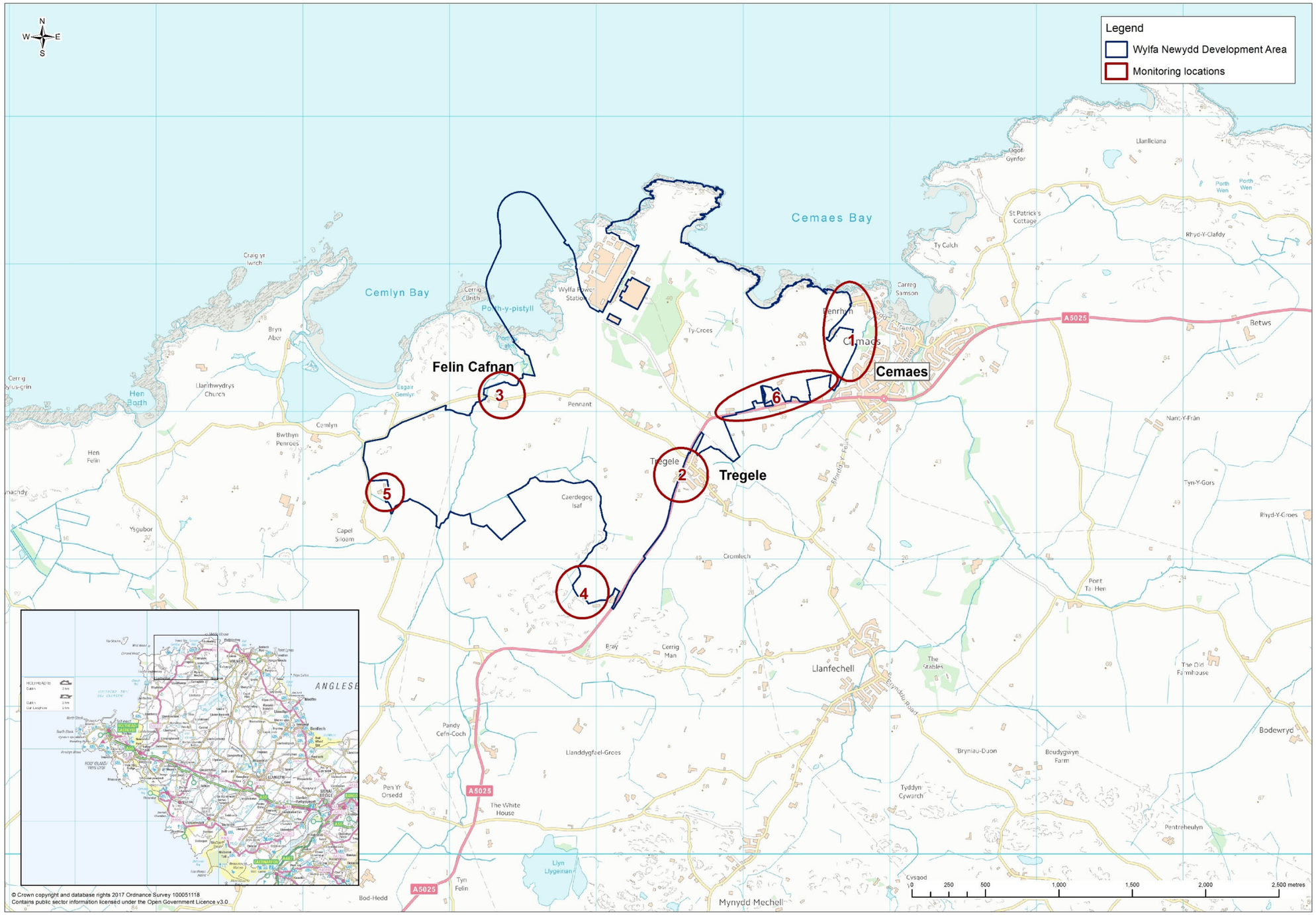
- adjacent to Cae Gwyn Site of Special Scientific Interest (SSSI)/new site entrance (location 4);
- the western boundary (south of Cemlyn Bay) (location 5); and
- the site boundary between Tregele and Cemaes (location 6).

8.4.3 Precise locations will be confirmed by the first Section 61 application, once initial site suitability visits have been undertaken. Provision of the noise and vibration monitoring at the off-site locations identified above is subject to agreeing permission to install and maintain the equipment, and suitable access arrangements, with land owners/occupiers. If permission or suitable access arrangements cannot be agreed, then alternative monitoring locations shall be proposed to the IACC. If equipment is damaged or tampered with then Horizon reserves the right to remove it and propose and arrange for it to be installed in another location following discussions with the IACC.

8.4.4 These continuous monitoring stations will be installed for the duration of the DCO construction programme.

8.4.5 Additional short-term measurements at key locations (ranging from hours to weeks) will be identified in each Section 61 application as required, and will take into account the characteristics of the works described by the specific Section 61 application.

Figure 8-1 Noise and vibration monitoring locations



9 Waste and materials management strategy, including soils and land contamination

9.1 General

9.1.1 Horizon's waste and materials management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

9.1.2 The general mitigation controls to be implemented for waste and materials (including soil management) are described in section 9 of the Wylfa Newydd CoCP (APP-414).

9.1.3 In addition, the measures below outline specific requirements to be implemented during the Main Construction works.

9.2 Land contamination

9.2.1 A contamination watching brief will be carried out by suitably qualified and experienced personnel when excavating areas of made ground.

9.2.2 Horizon will ensure that, during the remediation works for asbestos-containing materials, continuous air monitoring and testing will be undertaken by a certified P403 (Asbestos Fibre Counting) and P404 (Air Sampling and Clearance Testing for Asbestos) analyst who will be on-site to carry out the fibre monitoring.

9.2.3 If asbestos-containing materials are discovered in buildings, further intrusive surveys will be necessary in some buildings when vacated. Horizon will carry out further surveys and arrange for the removal and disposal of asbestos-containing materials as necessary.

9.3 Remediation activities

9.3.1 Areas of known land contamination set out within this section 9.3 relates to figure 9-1.

Soils and groundwater within APC7 - sump/valve chamber area

9.3.2 All sump and valve chamber infrastructure as identified (as 'TCE sump and valve chamber' on figure 9-1) and surrounding soils/made ground/superficial geology, identified as being contaminated and within a 5m radius and 1m depth greater than the base of the infrastructure (or to bedrock) will be excavated. Prior to excavation, remnant water/silt within the sump structure will be pumped out and removed from site for suitable disposal. Any groundwater ingress during the excavation works should be pumped and treated/disposed of off-site as appropriate.

9.3.3 Excavated material not removed from site will be appropriately managed between excavation and placement within the landscape mounds. The material will be stored separately from natural soils to reduce the potential

for cross-contamination. The sump and valve chamber infrastructure, and any impacted materials surrounding the structure, will be appropriately disposed of off-site. Any adjoining pipework (leading to the Existing Power Station) will be removed within the extents of the Wylfa Newydd Development Area and stopped off as agreed with the operators of the Existing Power Station.

9.3.4 Soils, made ground and superficial geology excavated from the area immediately around the sump will be reused within the landscaped mounds, provided it is determined to be 'suitable for use' in accordance with the CL:AIRE Code of Practice (CL:AIRE, 2011). However, as a precaution, this material will be placed at a depth greater than 1m below finished ground levels.

Soils and groundwater within APC7 - OT613

9.3.5 Any material visually impacted by hydrocarbons will be segregated and disposed of off-site. According to available laboratory analysis, material excavated from the area that is not visually impacted by hydrocarbons is potentially suitable for reuse within the landscaped mounds.

9.3.6 Excavation will be undertaken within a 5m radius around the area where hydrocarbons have been identified (the southwestern part of the OT613 trench – refer to figure 9-1) and extended to bedrock, with all overlying made ground/soil/superficial geology removed for either disposal or reuse as appropriate.

9.3.7 If visual or olfactory evidence of hydrocarbon contamination is encountered during remediation works, unexpected contamination procedures will be implemented.

9.3.8 Appropriate protocols will ensure that the excavated material is appropriately managed between excavation and disposal or placement within the landscape mounds. The material will be stored separately from natural soils to reduce the potential for cross-contamination. If groundwater ingress occurs during the excavation works, the water will be observed for visual and olfactory indicators of contamination. If hydrocarbon contamination is recorded, the groundwater will be pumped and treated to achieve discharge criteria, or otherwise disposed of off-site.

Soils and groundwater within APC7 - area of waste material and other areas of identified ACM-contaminated made ground

9.3.9 Known asbestos hotspots that would be subject to construction activities will be excavated under the direct supervision of an Asbestos Specialist. Excavations will continue until all visible asbestos is removed, and appropriate verification testing will be undertaken to confirm remediation has been successful. The excavated material will be transported to a remediation compound established on-site where the material will be handpicked for visible asbestos fragments. Once processed, the material will be tested to confirm that it is below the 0.1% hazardous waste threshold on a weight for

weight (w/w). Once confirmed, the material will be removed to a stockpile (located within the remediation compound) where it will be placed on a geomembrane, capped with a membrane and covered with inert material, where it will be stored prior to reuse within the core of the landscaped mounds.

9.3.10 Refer to figure 9-1 for known asbestos hotspots that would be subject to the above remediation.

9.3.11 Shallow groundwater is not anticipated within the asbestos remediation areas; however, if groundwater ingress occurs during the excavation works, the water will be observed for visual and olfactory indicators of contamination. If contamination is observed, the groundwater will be pumped and treated to achieve discharge criteria, or otherwise disposed of off-site.

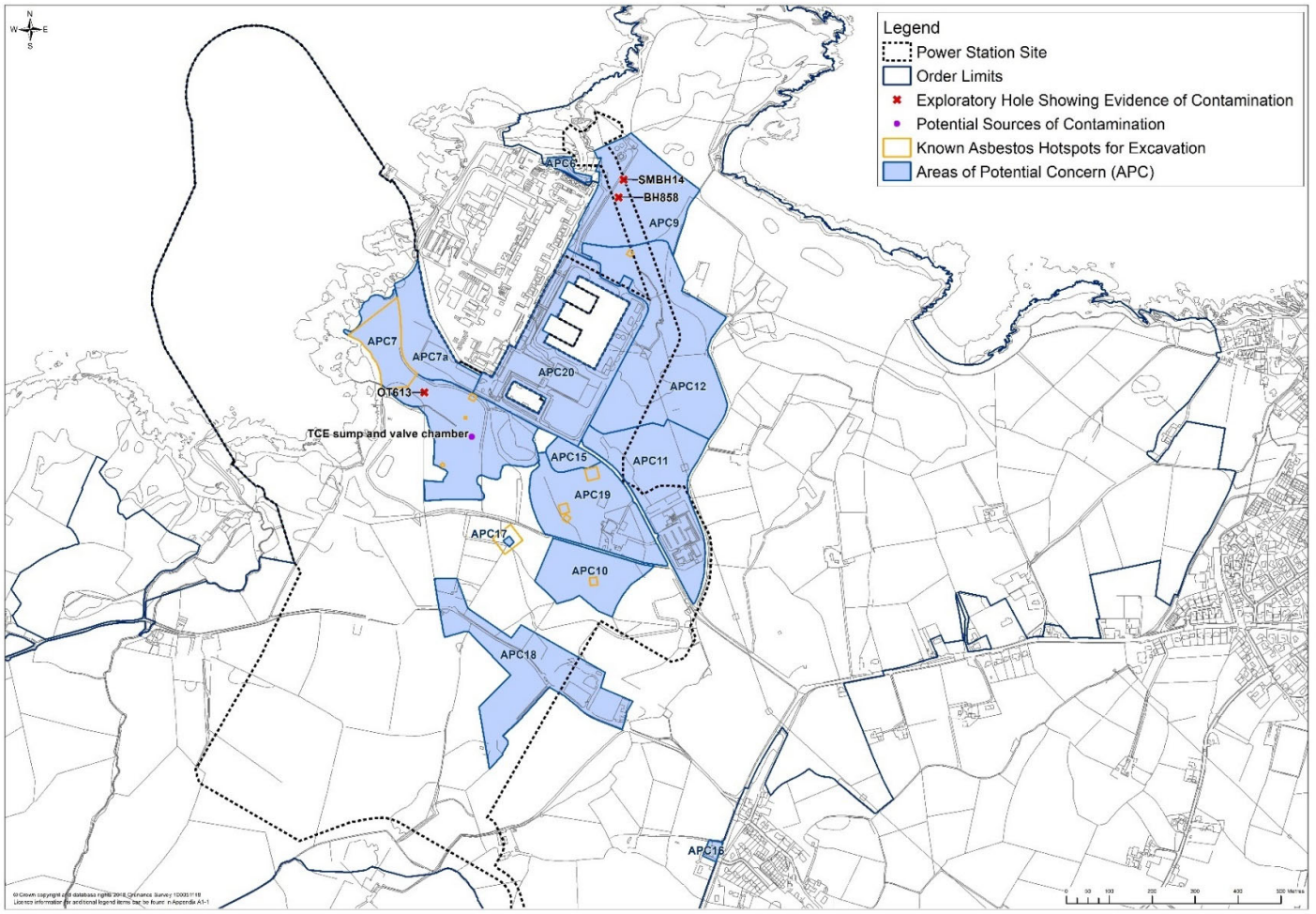
Groundwater within APC9 - SMBH14 and BH858 area

9.3.12 Due to an intermittent presence of free phase hydrocarbons and hydrocarbon exceedances in this area, Horizon will undertake appropriate baseline and construction phase monitoring to provide confirmation that contamination concentrations remain stable or are reducing.

APC6, APC7a and APC20

9.3.13 Prior to any activities which would cause significant ground disturbance taking place, a suitable ground investigation will be undertaken to provide information on the nature and extent of any contamination present so that appropriate risk assessments can be undertaken and remediation actions (where required) identified. If a suitable ground investigation has already been undertaken, regard must be had to the results prior to any further activities which would cause significant ground disturbance.

Figure 9-1 Remediation areas across the Wylfa Newydd Development Area



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9.4 Waste and materials management

9.4.1 All waste arising from the construction works will be managed in a responsible manner with the clear intention of applying Horizon's waste hierarchy and in line with all relevant waste legislation and regulations.

9.4.2 Horizon will implement its waste management arrangements before the construction works begin in accordance with the controls set out in the Wylfa Newydd CoCP (APP-414).

9.4.3 The activities related to waste management that are relevant to the construction works include, but not be restricted to:

- disposal of asbestos fragments from the processing activities of the remediation processing compound;
- disposal of organic matter associated with invasive non-native species from the processing activities of the remediation processing compound;
- disposal of sump, pipework and soils that are contaminated with trichloroethane;
- disposal of soils and made ground contaminated with hydrocarbons;
- disposal of contaminated silts that are not suitable for use;
- disposal of blasting packaging materials;
- disposal of contaminated sediments from any dewatering activities;
- disposal of tyres, vehicles, plant, equipment, electrics, electronics and lighting in accordance with the suite of end of life regulations;
- disposal of temporary structures and equipment associated with the Site Campus;
- disposal of temporary structures and equipment associated with the compounds, manufacturing and fabrication areas;
- disposal of temporary structures and equipment associated with the waste management and facilities management infrastructure;
- disposal of operational wastes from the Site Campus; and
- disposal of temporary fencing, lighting and associated cables.

9.5 Soil management

9.5.1 Topsoil from the Ecological Compensation Sites Cae Canol-dydd and Cors Gwawr will be stripped as per good practice construction and soil management techniques. The soils will be stored on-site for a maximum of three years under an Environmental Permit, prior to sustainable reuse. No soils would be stripped from Ty du.

9.6 Sites of geological importance

9.6.1 To mitigate potential effects resulting from excavations partially within the Porth Wnal Regionally Important Geological Site, Horizon will:

- install bilingual information boards at Wylfa Head on the GeoMôn geological trail in Cemaes to complement that installation and highlight the importance of the geology of the area (the Gwna Mélange in this area is the 'world type site', i.e. the benchmark for everywhere else);
- facilitate access, via formal request to Horizon, to the site for geologists for geological study of exposed cliff faces at Porth Wnal (subject to works and safety requirements) as exposure of new rock during excavations may provide new insight into the geological setting; and
- facilitate a Light Detection and Ranging (LiDAR) survey in the vicinity that will be undertaken of existing cliffs within the Porth Wnal Dolerite Regionally Important Geological Site prior to their destruction and access being restricted – this will enable future study/understanding of the setting of the site, including the part that will be lost.

9.7 Control of radioactive sources

9.7.1 Control of radioactive sources is achieved through a combination of stringent management arrangements and supervision of the use of the sources to ensure all the requirements of the Ionising Radiation Regulations 1999 are met. Horizon will ensure it understands at all times what sources are on the Power Station Site and where they are being used; when sources are not in use they will be kept in secure source stores to prevent loss or damage.

9.7.2 Contingency plans for foreseeable incidents will be in place and the response to these plans will be rehearsed. It should be noted that radiography sources are commonly and safely used at major construction sites, and Horizon will adopt good practice with regard to managing these sources of radioactivity. Radiological conditions will remain under constant assessment by Horizon's Radiation Protection Advisors (appointed in compliance with the Ionising Radiation Regulations 1999) to ensure control at all times.

10 Water management strategy

10.1 General

10.1.1 Horizon's water management strategy is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

10.1.2 The general mitigation controls to be implemented for water management are described in section 10 of the Wylfa Newydd CoCP (APP-414).

10.1.3 In addition, the measures below outline specific requirements to be implemented during the Main Construction works.

10.2 Surface water

Buffer zones

10.2.1 To protect surface waters, suitably demarcated buffer zones will be established adjacent to the following watercourses that have been identified as potentially most affected:

- a 15m buffer zone along the Nant Cemlyn and Nant Cemaes where the watercourses cross the Wylfa Newydd Development Area;
- a 15m buffer around watercourses draining into Tre'r Gof SSSI; and
- a 15m buffer zone along the Afon Cafnan and its main tributary (Nant Caerdegog Isaf).

10.2.2 Any temporary storage of waste vegetation rising from clearance on-site will not be located within 100m of Tre'r Gof or any other protected sites, to prevent surface water runoff of nutrients into Tre'r Gof.

10.2.3 For the watercourse realignment works on the Nant Caerdegog Isaf, a risk assessment method statement approach will be undertaken with relevant approval and consents for works from NRW.

10.2.4 Where unavoidable small-scale works are identified as being required within these buffer zones, detailed methodologies and risk assessments will be developed by Horizon that ensure those works can be undertaken without adversely affecting the designated areas or their special interest features. Examples of small scale works that may be required include installing appropriate types of fencing, vegetation management, appropriate drainage works and undertaking monitoring surveys within the buffer zones.

Management of runoff and discharges into watercourses

10.2.5 Appropriate drainage will be installed prior to Main Construction. This will include settlement ponds, appropriate treatment to manage flows and meet agreed water quality thresholds (Environmental Quality Standards). An application will be made for an Environmental Permit which will set limits on the concentration of substances which could be discharged to protect the receiving surface water.

10.2.6 Surface water runoff from exposed topsoil during construction and later from the newly formed landscape mounds will be managed by a treatment train of sustainable drainage system features. Sediment settlement ponds would be used in conjunction with other measures including silt traps, silt curtains, silt fences and vegetated channels. Ditches will be constructed around the base of the landscape mounds to allow flows to be captured and discharged to the drainage system. The discharge limit for suspended solids for each discharge point would be set in the construction Environmental Permit, with the limit set based on baseline conditions so that there would be no significant effect on the receiving water. The design has been prepared to meet a minimum treatment standard of between 40mg/l and 70mg/l total suspended solids (depending upon the background concentration in the receiving watercourse) during normal rainfall conditions. Chemical dosing may be required during the construction stage if there is insufficient settlement of solids in the settlement ponds (e.g. due to high flow rates).

10.2.7 There will be engineered containment for any fuel storage on-site during construction and operation, with the engineered facilities following good practice. Storage areas will be more than 15m away from watercourses and areas susceptible to flooding, and these storage areas would be suitably protected to avoid damage by plant and vehicles.

10.2.8 Foul water discharge will be to an existing Dŵr Cymru Welsh Water sewage treatment works and to the on-site package treatment plants. Foul water will not be discharged to the surface water environment.

10.2.9 Water will be pumped from the car park runoff system to a recharge trench along the boundary with Cae Gwyn SSSI.

10.2.10 For the Nant Cemlyn (which drains to the Cemlyn Lagoon), specific measures to manage the discharge of sediment will be undertaken during construction of Mound E. Flow would be diverted into the Afon Cafnan until vegetation establishes and risk of sediment discharge (as agreed with NRW) would be low.

- From the point of commencement of earthworks on the west of Mound E onwards, no water will be discharged into Nant Cemlyn via discharge E1 until vegetation has re-established and risk of sediment runoff is agreed with NRW to be low.
- A written scheme of baseline water quality monitoring in Nant Cemlyn would be agreed with NRW. This would commence at an appropriate time prior to the works commencing to better understand the background variability in suspended sediment concentrations and, therefore, to inform agreement on the state of the water quality it would be appropriate to discharge into Nant Cemlyn from the western face of Mound E. Discharge would only be returned to the Nant Cemlyn when an agreed water quality threshold has been met, which would be agreed in writing between Horizon and NRW.
- After establishment of vegetation, if there are any additional bulk earthworks on the west of Mound E resulting in a risk of sediment

discharge, no water will be discharged into Nant Cemlyn via discharge E1 until re-establishment has been again been agreed in writing with NRW.

- No polyelectrolyte dosing will be employed for discharge E1 into Nant Cemlyn.
- During the above period(s), all water to be diverted and discharged into the Afon Cafnan via discharge E2.

10.2.11 There will be no discharge of drainage from the construction areas to the Cae Gwyn SSSI.

Concrete batching plant specific requirements

10.2.12 Water used in the concrete batching plant for plant wash-down, cleaning and other similar activities will be recycled where possible (estimated to be 90% of the water used). Any excess water will be tankered off-site for treatment and disposal at a permitted waste facility.

Watercourse realignment works

10.2.13 For the watercourse realignment works on the Nant Caerdegog Isaf, a risk assessment will be undertaken, with relevant approval and consents for works from NRW.

10.2.14 The watercourse realignment will be constructed using techniques to control sediment release. These may include:

- leaving a minimum 2m “plug” of uncut channel at either end of the new channel until all work is completed and the realigned section is ready to be connected to the existing stream;
- completing all works along the bank of the new channel prior to connecting to the existing channel;
- using plant with a low ground bearing capacity to avoid damage to newly dug banks;
- completing any revegetation as early as practicable to reduce the potential for sediment from bare areas moving into the completed channel;
- compacting the stream bed sufficiently to reduce the risk of substantial loose sediment to be entrained;
- removing the 2m plug from the downstream end prior to the upstream end;
- if flows are high, consider delaying connection; and
- pump water from upstream of the connection to downstream prior to breaking through, with gradual cessation in pumping once the connection is made.

10.3 Mitigating flood risk at Cemaes

10.3.1 The outline landform and drainage scheme would be revised at detailed design stage so as not to exacerbate any existing flood risk.

10.4 Monitoring and surveys

10.4.1 Pre-construction building surveys and monitoring during construction will be carried out to determine the need for further mitigation in relation to any reduction in groundwater levels due to dewatering bringing about the potential for building subsidence to the Existing Power Station buildings. Options for further mitigation, as appropriate, will be discussed and agreed with Magnox.

10.4.2 Monitoring of the water environment will continue across the Wylfa Newydd Development Area up to the start of construction in order to improve the robustness of the baseline data. These monitoring data will then be used during detailed design to refine the drainage system to reduce potential effects on watercourse catchments in the Wylfa Newydd Development Area. Active management of the drainage system will include monitoring of every discharge point (a mixture of *in situ* sampling and laboratory analysis) and monitoring upstream and downstream of all outfall points to surface watercourses.

10.4.3 Frequency will be a mix of continuous (using turbidity meters), daily, weekly or monthly and dependent on the nature of the works and the weather (e.g. mounding would increase demands) but will continue into operation. Depending on the findings, additional mitigation may be required as agreed with the regulator. Options could include:

1. implementing dosing using polyelectrolytes;
2. installation of additional treatment capacity;
3. greater manual intervention/management of the system;
4. new drainage channels;
5. new pumping systems; and
6. automated treatment and/or pumping systems.

10.4.4 The drainage system will be designed to be as flexible as possible within the constraints of the current and future topography. This would allow changes to be made relatively easily and increase the potential for baseline conditions to be matched.

10.4.5 Appropriate monitoring will be undertaken to determine if there is an effect on private water supplies from dewatering activities. The monitoring will include continuous water level monitoring at selected groundwater monitoring boreholes with monthly or quarterly water level dips at others. Where practicable, existing boreholes will be used, although it is recognised that many of these will be lost during the construction works and some replacements may be required. Monitoring of the private water supplies will take place where necessary. Depending upon the findings of the

monitoring, additional mitigation may be required. Options for additional mitigation could include:

1. providing the property with water from a tanker during construction;
2. drilling the water supply well deeper/drilling a new supply well; and
3. providing the property with mains supply.

10.4.6 Appropriate monitoring will be undertaken to determine if there is an effect on Cae Gwyn SSSI. The monitoring will include continuous water level monitoring at selected groundwater monitoring boreholes with monthly or quarterly water level dips at others. Where practicable, existing boreholes would be used, although it is recognised that many of these will be lost during the construction works and some replacements may be required. The monitoring would include continuous monitoring of existing piezometers in Cae Gwyn if land access is granted. If the monitoring identifies an effect, additional mitigation options could include:

1. grouting major inflow fractures; and
2. artificial recharge.

10.4.7 Appropriate monitoring will be undertaken to determine if there is significant saline intrusion into the aquifer. The monitoring will include continuous water level monitoring at selected groundwater monitoring boreholes with monthly or quarterly water level dips at other locations and quarterly water quality sampling (for major ions) at selected locations. Monitoring of sump water quality (for major ions) would also be undertaken on a monthly or quarterly basis. Where practicable, existing boreholes will be used, although it is recognised that many of these will be lost during the construction works and some replacements may be required. If a significant effect is identified, additional mitigation may be required. Options could include:

1. grouting major inflow fractures; and
2. altering pumping regime.

10.4.8 Appropriate monitoring will be undertaken to determine if there is a significant departure from baseline conditions regarding rainfall/runoff response in watercourses. The monitoring will include continuous flow monitoring at existing surface water monitoring locations with weekly, monthly or quarterly spot flow measurements at other locations. If a significant effect is identified, then additional mitigation may be required. Options could include:

1. artificial recharge;
2. direct recharge to watercourses;
3. changes to drainage system; and
4. sealing of fractures in excavations.

10.4.9 Appropriate monitoring will be undertaken to determine if there is a significant departure from baseline conditions with regards the flow regime in watercourses affecting fluvial geomorphology. The monitoring will include continuous flow monitoring at existing surface monitoring points with weekly, monthly or quarterly spot gauging at other locations. Where monitoring

identifies a significant effect, additional mitigation may be required. Options could include:

1. changes to drainage system including outfalls; and
2. channel and/or stream bank modification.

10.4.10 Quarterly monitoring will be undertaken prior to and during the installation of the cooling water tunnels in the area to the north-east of the Existing Power Station where hydrocarbons have previously been detected in groundwater. Where practicable, existing boreholes will be used. If the monitoring identifies that the proposed installation of the cooling water tunnels will lead to a statistically significant increase in contaminant levels compared to baseline, additional mitigation would be required and agreed with the regulator. Options could include:

1. detailed quantitative risk assessment to provide further information on the risk posed by the changes in concentration; and
2. remediation of groundwater using an appropriate technique to reduce contaminant concentrations.

11 Ecology and landscape management strategies

11.1 General

11.1.1 Key landscape elements and habitats within the Wylfa Newydd Development Area will be managed according to principles set out in the Landscape and Habitat Management Strategy (APP-424 and APP-425) and Design and Access Statements (see Design and Access Statement – Volume 1 – Project-wide, APP-407, and Volume 2 – Power Station Site, APP-408).

11.1.2 Other general mitigation controls to be implemented for ecology and landscape are described in section 11 of the Wylfa Newydd CoCP (APP-414), with further site-specific measures that are not included in the Landscape and Habitat Management Strategy (APP-424 and APP-425) and Design and Access Statements (see Design and Access Statement – Volume 1 – Project-wide, APP-407, and Volume 2 – Power Station Site, APP-408), are set out within this sub-CoCP.

11.2 Site management

11.2.1 Enabling Works (such as vegetation clearance and dry stone wall removal), will be carried out in a directional manner as far as reasonably practicable to encourage movement of mobile ecological receptors towards the Notable Wildlife Enhancement Site and the Reptile Receptor Site, located to the west of the of the Wylfa Newydd Development Area, and discourage their movement towards features such as the A5025 road or residential areas of Cemaes.

11.2.2 Vegetation clearance will involve the management of other vegetation to ensure that it is no higher than 50mm above ground level.

11.3 Boundary fencing

11.3.1 To facilitate the safe passage of animals away from the Wylfa Newydd Development Area and to reduce the effects of habitat severance, boundary fencing will be permeable to small-mammal movement.

11.3.2 Weekly inspections will be undertaken of ecological fences close to watercourses. Any flood debris identified during inspections will be removed when safe to do so.

11.4 Mitigation of effects on terns

General

11.4.1 Works associated with Works No.12 in the draft DCO [APP-029] may not be undertaken on land to the west of Afon Cafnan and bound by the Order limits during the period 7th March – 15th August unless otherwise agreed with IACC in consultation with NRW.

11.4.2 Horizon's developed blast noise prediction model calculates that the large majority of rock blasting will result in received noise at the tern colony islands

of 60dB or less. This is below the threshold that has been observed to illicit any response.

11.4.3 These noise level commitments will apply from April 15th to August 15th (unless otherwise stated). The 15th April date will be guided by information from the North Wales Wildlife Trust on when the first terns/black-headed gulls typically arrive to set up a colony.

11.4.4 During construction works, noise levels will be measured at the tern colony either through direct monitoring on the islands or through calculations from monitoring from adjacent locations.

11.4.5 Where monitored noise levels are found to be above the various committed noise levels (below from paragraph 11.4.7 onwards), the following actions will be undertaken immediately:

- review works in the area likely to be causing the breach and consider any necessary mitigation actions (including, where necessary, temporary suspension of works until the actions set out below have been taken to reduce the noise to acceptable levels);
- confirm that monitored levels are not being impacted by other noise or vibration sources;
- determine whether the exceedance is due to a particular activity or item of equipment and:
    - if so, identify if the equipment can be substituted for an alternative piece of equipment and, if yes, do so;
    - if not, implement other available measures (which may include modifying the time of works, using an alternative construction methodology, or a combination of these);
- implement other feasible and reasonable measures (which may include modifying time of works, using an alternative construction methodology, or a combination of these); and
- continue monitoring (including additional monitoring, if required) to verify that the control measures have reduced the noise levels to acceptable levels at the relevant receptors.

11.4.6 The mitigation measures to be taken in the case of exceedance of committed levels are designed to succeed due to the redundancy built into the approach and alternatives available (i.e. suspend works, change equipment where possible, alter working methods, modify timing etc.). Monitoring would continue until the measures are shown to be successful.

During main earthworks

11.4.7 During the main earthworks (anticipated to be for the first two years, but to be kept under review), the following criteria will apply:

- Blasting on the site will only be undertaken when, considering wind factors, noise shielding and other mitigation, the predicted blast noise at

the colony will be less than 60dB or daily ambient noise at the colony (whichever is higher).

- Day-time construction noise at the colony will not exceed 59dB $L_{Aeq, 1\text{-}hour}$. This is based on a modelled noise level of 58.6dB $L_{Aeq, 1\text{-}hour}$.
- Night-time (19:00 to 07:00) maximum construction noise at the colony will not exceed 43dB $L_{Aeq, 1\text{-}hour}$. This is based on a modelled noise level of 42.8dB $L_{Aeq, 1\text{-}hour}$.

Subsequent seasons

11.4.8 During the subsequent seasons, anticipated to be year 3 onwards, the following criteria will apply:

- Blasting will only be undertaken when blast noise calculations (including weather conditions) predict noise levels at the colony of less than 54dB $L_{AF,max}$. This is based on the fact that main blasting will be complete and only minor or unforeseen blasting requirements will remain.

Establishment period

11.4.9 During main earthworks, in order to allow for the sensitivity of terns arriving and establishing their nesting colony, additional construction constraints (below) will be applied during the 'establishment period'.

11.4.10 The 'establishment period' is to be defined as follows.

- The tern nesting site will be monitored from April 1st each year (historically only very few terns arrive before early April each year).
- The establishment period will be four weeks, to be taken as starting on 15th April unless significant nest establishment is observed ahead of this date, in which case it will begin earlier.
- The activities that constitute the establishment of nesting territories by any tern species that is a qualifying feature of the Morwenoliaid Ynys Môn/Anglesey Terns Special Protection Area are aerial display flights over the nesting islands and/or performing courtship behaviour on the ground by scrape making. In addition to these activities taking place, the frequency of occurrence of such activity is important in defining the establishment period, and Horizon will agree the basis for determining the start of the establishment period (including observed activity and frequency of occurrence) with NRW.
- Trained observers (who will be professional, independent ornithologists with detailed knowledge of terns) will monitor black-headed gull to determine if their nesting behaviour appears to be affected by construction noise. If there is a lack or low numbers (based on black-headed gull status and trends) of recorded black-headed gull nesting attempts at the Cemlyn colony, the mitigation measures defined below will be initiated at an earlier point in time (i.e. prior to 15th April).

11.4.11 The constraint period would be as the 'establishment period' and apply for no more than four weeks but would end earlier if [>c.50%] of the Sandwich terns expected to be present in the colony are considered to have begun egg-laying and be sitting on nests (quantum to be agreed with NRW).

11.4.12 During the establishment period for the first two years of construction, the following criteria will apply:

- Blasting on the site will only be undertaken when, taking into account wind factors, noise shielding and other mitigation, the predicted blast noise at the colony will be less than 55dB $L_{AF,max}$ or the daily ambient noise at the colony (whichever is higher).
- Day-time construction noise at the colony will not exceed 55dB $L_{Aeq,\ 1\text{-}hour}$. During this period, Horizon will only undertake works on the far side Mound E that are not visible from the colony and minimise reworking of dumped material in this area. Noise modelling of this working pattern predicts 57.5dB $L_{Aeq,\ 1\text{-}hour}$. In order to achieve 55dB $L_{Aeq,\ 1\text{-}hour}$, works will avoid the most adverse wind conditions (light downwind) for noise transfer to the colony.
- Night-time (19:00 to 07:00) construction noise at the colony will not exceed 43dB $L_{Aeq,\ 1\text{-}hour}$. This is based on modelled noise level of 42.8dB $L_{Aeq,\ 1\text{-}hour}$.

Disturbance at the breeding tern colony from visual stimuli

11.4.13 Between 15th April and 15th May, there will be no works undertaken within 500m of the nesting islands and the areas on the shingle ridge that are known to be used occasionally by nesting terns. This period encompasses the main pre-laying and nest establishment period for all three tern species at Cemlyn Bay. Thereafter, there will be no bulk earthworks undertaken within 500m of any known active tern nests within the Morwenoliaid Ynys Môn/Anglesey Terns Special Protection Area.

Reactive monitoring

11.4.14 Throughout the nesting periods during the construction phase, if the colony exhibits fly-up disturbance reactions as a direct result of attributable noise events or shows a measurable increase in the incidence of disturbance events above those recorded during baseline observation works (undertaken over the 2017 and 2018 breeding seasons), then alternative methods of working or additional constraints will be applied (including the option of temporary suspension of works following the protocol defined in section11.4.5).

11.4.15 From the 2017/2018 observational surveys, Horizon have an recorded a baseline incidence of *c*. 1.6 fly ups per hour. If the independent observers record more than three fly ups per hour for which there is no obvious non-Horizon cause, they will get the most obvious disturbing activity ceased. If they record more than two in the next hour, they will get the next most disturbing activity stopped. The following days' works will be planned based

on experiences of this. Ceased activities will start again seven days later, under observation. If any erratic noisy activity causes an obvious fly up disturbance, it will be altered or ceased.

11.4.16 In order to attribute noise events responsible for an observed disturbance reaction of the type defined above to the construction works, Horizon will establish a real-time feedback mechanism between the observers and a nominated, dedicated site manager. The site manager will have full knowledge of all construction activities being undertaken and the authority to instigate the measures necessary on-site to prevent recurrence of the disturbing activity. This feedback mechanism will also allow for consideration of other potentially disturbing factors not related to the construction works (e.g. aircraft noise). If such third party disturbance is deemed to be responsible in its entirety for the observed disturbance, no action will be taken.

11.5 Drystone wall removal

11.5.1 Previous ecology surveys completed have identified a population of adders and common lizards within the Wylfa Newydd Development Area, and it is considered that these reptile species are present within drystone walls. Therefore, in line with the requirements in the Wylfa Newydd CoCP (APP-414), the demolition of this type of walling will take place between March and September, or between November and February with supervision by the Ecological Clerk of Works (ECoW).

11.5.2 The ECoW will review progress on the drystone wall demolition on a regular basis. During the works, if it becomes apparent that reptiles are not present, or are only present in hedge banks adjacent to areas of high quality habitat, such as semi-improved grassland, scrub and woodlands, then the working method will be changed to reflect this. In this scenario, the method proposed above will only be targeted at hedge banks with a high likelihood of supporting reptiles, with hedge banks adjacent to areas of arable or improved grassland (considered to provide poor habitat for reptiles) removed with no requirement for an ECoW to be present.

11.5.3 Stone will be saved from dismantled stone walls and cloddiau for future re-use in the final Power Station landscape scheme.

11.6 Specific receptors

11.6.1 Notable mammals predominantly give birth in the period between March and August and so will be protected by the good practice mitigation designed to protect breeding birds. However, brown hare can give birth as early as February, and hedgehog can have a late birthing peak in September. An ECoW will supervise the clearance of any habitats with high potential to support juvenile or pregnant brown hare and hedgehog in February and September (respectively).

11.6.2 Fish rescue will be carried out during the removal of freshwater habitat, such as the realignment of Nant Caerdegog Isaf. Fish will be returned to suitable habitat in the same waterbody unaffected by the works. No fish will be

moved between waterbodies. The achievement criteria will be a fish rescue with zero incidents of injury or mortality. Fish rescue will be undertaken by accredited and suitably qualified fisheries scientists.

11.7 Ecological Compensation Sites

11.7.1 Horizon is committed to delivering a compensation package, in order to offset a potential adverse effect on Tre'r Gof SSSI, which will create new areas of rich-fen habitat and enhance areas of existing rich-fen habitat at three sites on Anglesey. Habitat creation and management schemes for each site will be developed in line with the principles set out in the Landscape and Habitat Management Strategy (APP-424 and APP-425).

11.7.2 In order to manage environmental risks during construction, works will adopt an 'adaptive management' approach, including but not limited to the following:

- phasing of works, with incremental changes to topsoil stripping, drainage and other works, over two seasons;
- monitoring on and off-site before, during and following works;
- adaptive management of water flows; and
- enhanced revegetation, for example by planting or using nursery crops.

11.7.3 The above approach will allow for any issues to be identified and resolved as and when they arise. In addition to mitigating potential impacts, an adaptive approach will enable a responsive approach to habitat creation and enhancement, ensuring greater success of the compensation proposal. The adaptive management design, including triggers for instigating measures and assessing their performance, will be provided as part of detailed design.

11.8 Ancient woodland

11.8.1 Topsoil, coppice stools and timber from felled trees supporting the rare *Ramalina fraxinea* lichen will be translocated to a receptor site identified on Horizon-owned land.

11.9 Red squirrel

11.9.1 Pre-construction surveys will be carried out by an ECoW. If pre-construction surveys confirm the presence of active red squirrel dreys within, or immediately adjacent to, trees that will be felled, felling works will be delayed to avoid the period when pre-weaned young are present (potentially mid-February to mid-September);

11.9.2 Additional mitigation for red squirrel will comprise providing artificial nest boxes within Dame Sylvia Crowe's Mound (maximum of 10 boxes), plus supplementary food provision (on a monthly basis during the construction period). Annual monitoring will be undertaken in the Dame Sylvia Crowe's Mound during the construction period.

11.10 Chough

11.10.1 As set out in the Landscape and Habitat Management Strategy (APP-424 and APP-425), a management scheme for Wylfa Head will be developed with the objective of providing optimal foraging habitat for chough within the retained habitat on Wylfa Head.

11.10.2 In addition, food will be provided during construction to increase food availability in light of the decrease in foraging area.

11.10.3 Horizon will work with interested stakeholders to inform the wider population about the sensitivities and legal protection related to Chough nesting. This period is typically March and April.

11.10.4 Information on the designation and sensitivity of Wylfa Head, particularly around chough and their nestings (including their legal protection) will be provided in Site Campus worker information packs.

11.11 Mud snail

11.11.1 Mud snails will be translocated to an existing wetland within the Notable Wildlife Enhancement Site.

11.12 Great crested newt

11.12.1 Horizon's ECoW will conduct pre-construction great crested newt surveys in order to identify the great crested newt population size for the application of a European Protected Species Mitigation Licence.

11.12.2 Horizon confirms it will conduct great crested newt monitoring surveys during years one, three and six following translocations using the methods listed below:

- Habitat Suitability Index Survey (HSI), following the method outlined in Oldham *et al*. [RD7]; and
- two torch counts during the appropriate season.

11.13 Water vole

11.13.1 Pre-construction surveys will be completed by an ECoW before any works in close proximity to habitats with the potential to support water vole. If required, avoidance measures will involve the micro-siting of works to not disturb places of water vole shelter or refuge. Should this not be possible, NRW will be consulted with regard to the need to obtain a Conservation Licence to allow works to go ahead.

11.13.2 Horizon will conduct water vole monitoring surveys in years one, three and six following the diversion of the Nant Caerdegog Iaf watercourse.

11.14 Otter

11.14.1 Pre-construction surveys will be completed by an ECoW before any works in close proximity to habitats with the potential to support otter. If required, avoidance measures will involve the micro-siting of works to not disturb

areas including any otter holts or laying-up sites. Should this not be possible, NRW will be consulted with regard to the need to obtain a European Protected Species Mitigation Licence to allow works to go ahead.

11.15 Provision of bat and barn owl boxes

11.15.1 To compensate for the loss of potential roost features due to building demolition and tree felling, an appropriate number of bat boxes will be hung within an area of retained woodland to the east of the Power Station. The exact number and locations of the bat boxes will be determined by the ECoW at the time of their erection, but will be positioned to increase the likelihood of them being used by bats, providing a range of roosting conditions and allowing for effective monitoring. The boxes will be installed prior to commencement of building demolition and tree felling. Annual monitoring and replacement of damaged or missing boxes will be undertaken throughout the duration of the construction period.

11.15.2 Four barn owl nesting boxes will be provided prior to construction activities affecting those roosts to mitigate the possible effects of disturbance to breeding roosts. Occasional barn owl roosts that will be lost at Tyddyn-Gele and The Firs will be replaced through the provision of two barn owl boxes. A further two barn owl boxes will be provided to mitigate possible disturbance to roosts at Caerdegog Isaf and Cafnan Farm. Annual monitoring of each nesting box will be undertaken during the construction period.

11.16 Mitigation for bats during demolition work

11.16.1 The programme for building demolition will be dependent on the latest ecological survey information from pre-construction surveys and site ecological inspections. Removal of roof coverings will be undertaken outside of the bats' hibernation/breeding/maternity seasons under the supervision of the appointed licenced ecologists/ECOW, following the approval of a bat licence.

11.16.2 A mobile elevated work platform (or other suitable means) will be used to access the roofing and slating, and felt will be removed to uncover the building and render the structure uninhabitable for bats.

11.16.3 The Dame Sylvia Crowe's Mound woodland will be managed to enhance the habitat for a range of species, primarily bats and red squirrel. Retained habitats will be enhanced and managed, and extra bat boxes provided within an area of retained woodland to the east of the Power Station to reduce the effects of noise disturbance to existing roosts. The extra bat boxes will be suitable replacement for the species and roost-type potentially affected and will be installed prior to the commencement of Main Construction. The exact number and locations of the bat boxes will be determined by the ECoW at the time of their erection but will be positioned to increase the likelihood of them being used by bats, providing a range of roosting conditions and allowing for effective monitoring. Annual monitoring and replacement of damaged or missing boxes will be carried out throughout the duration of the construction period.

Horizon will conduct 10 years of bat monitoring surveys across a 15-year period, to ensure that monitoring extends beyond the construction period. This will comprise, for example, five annual visits followed by five biennial visits.

11.17 Effects of air quality on Tre'r Gof SSSI

11.17.1 To reduce the effects of air quality change and to supplement the ongoing management of the Tre'r Gof SSSI, a regime of annual cutting of vegetation will be implemented during construction to reduce the increased biomass which is predicted to occur as a result of increased nitrogen deposition. Studies have shown this to be an effective technique to reduce nitrogen levels and to control competitive graminoid species outcompeting less-nutrient-tolerant species.

11.17.2 As set out in the Wylfa Newydd CoCP (APP-414), Horizon will carry out botanical monitoring at Tre'r Gof SSSI to identify potential hydrological and air quality impacts.

11.18 Buffer zones around sensitive ecological receptors

11.18.1 To protect the most sensitive receptors, no construction works will take place within the boundary of either the Tre'r Gof SSSI or the Cae Gwyn SSSI. Furthermore, to protect these features and other sensitive receptors, suitably demarcated buffer zones will be established.

- For the north and west of the Tre'r Gof SSSI adjacent to the site Campus, the buffer zone will be 20m.
- To the south of the Tre'r Gof SSSI, the buffer zone will be established at 50m.
- For the more sensitive eastern end of the Tre'r Gof SSSI, the buffer zone will be established at 100m.
- There will be a 15m buffer zone along the boundary ditch flowing into the Cae Gwyn SSSI, separating construction activities from the designated habitats.
- Buffers around bat barns will be a minimum of 10m. Appropriate planting within this zone is required. This will be a hard buffer, with no works within it. The screening along the buffer zone will be proportionate to the potential noise and disturbance effects anticipated. Construction activities in areas adjacent to the buffer will reduce noise and visual disturbance, as far as practicable. These requirements apply to the two existing bat barns as well as the two proposed ones.

11.18.2 These buffer zones will protect the habitats of the SSSIs from effects likely to occur as a result of being adjacent to construction works (e.g. small scale runoff or fugitive dust deposition).

11.18.3 Where practicable, no storage areas, vegetation clearance or construction will take place within the SSSI buffer zones.

11.18.4 Where unavoidable small scale work is required to be undertaken within SSSI buffer zones, detailed methodologies and risk assessments will be developed by Horizon to ensure those works can be undertaken without adversely affecting the designated areas or their interest features. Small scale works might comprise of installing appropriate types of fencing, vegetation management, appropriate drainage works or monitoring surveys. Methodologies and risk assessments for the small scale works will be agreed with NRW prior to commencement.

11.19 Additional landscape and visual mitigation

11.19.1 Landscape management for the duration of Main Construction will be in line with the requirements of this sub-CoCP and the Landscape and Habitat Management Strategy (APP-424 and APP-425). This will include requirements for management and enhancement.

11.19.2 Landscape management during construction will include requirements for the management and enhancement of retained trees, scrub and hedgerows, from the area of Dame Sylvia Crowe designed woodland and new areas of landscaping to completed areas of landscape mounding and the control of unwanted plant species including invasive species.

Field boundaries

11.19.3 Stone walls and cloddiau will be reconstructed from stone saved during the Enabling Works, so as to support the reinstatement of the characteristic landscape features removed during the works.

11.19.4 A detailed survey will be undertaken of stone wall and cloddiau construction (vernacular detailing) and hedgerow/tree species for field boundaries to be removed, to help ensure a degree of authenticity and historical continuity in the reinstatement of these features as part of the final landscape scheme.

Protection of existing vegetation

11.19.5 Root protection areas of trees and vegetation within valley garden of Cestyll Garden will be determined by an arboriculturist and protected by establishing appropriate buffers that will be maintained throughout construction within the Wylfa Newydd Development Area, including construction of laydown areas. Establishment of buffer areas will take into account the recommendations of BS 5837:2012 *Trees in relation to design, demolition and construction* [RD8] and verified and monitored by an arboriculturist. Works within tree root protection areas will be avoided wherever practicable. If works within the root protection area of trees to be retained are deemed essential, works will be carried out using techniques provided in BS 5837:2012 [RD8], and the duration of those works will be restricted as far as possible.

Woodland felling

11.19.6 Phased timing of woodland felling to be implemented in the vicinity of the remediation processing compound, as far as is practicable, to allow existing woodland to provide temporary screening whilst the asbestos treatment area is in use.

Architectural mitigation

11.19.7 The detailed designs of temporary structures (such as colour, finishes and maximum storey height) will have regard to landscape and visual effects, and will be informed by the design principles set out in the Design and Access Statement (see Design and Access Statement – Volume 1 – Project-wide, APP-407, and Volume 2 – Power Station Site, APP-408).

11.19.8 The design of temporary buildings within the site compound and construction/laydown areas will seek to mitigate the visual impact of those buildings on the surrounding areas through the use of visually recessive colours, finishes and maximum heights.

11.19.9 A visually recessive perimeter fence colour will be selected to reduce visual effects, whilst still maintaining a safe and secure barrier.

Cabin heights

11.19.10 Cabin heights will be restricted to one storey for the main site compound for Site Preparation and Clearance Works activities only.

12 Cultural heritage management strategy

12.1 General

12.1.1 Horizon's cultural heritage management is based on the requirements set out in the Wylfa Newydd CoCP (APP-414) and any further controls set out in this sub-CoCP.

12.1.2 The general mitigation controls to be implemented for cultural heritage are described in section 12 of the Wylfa Newydd CoCP (APP-414).

12.1.3 The specific measures to be implemented during construction works in the Main Power Station Site are outlined below in table 12-1.

Air quality effects on Cestyll Garden

12.1.4 Air quality modelling has identified possible exceedance for NOx at Cestyll that may affect vegetation and therefore the value of Cestyll Garden. Horizon will work with the landowner to implement appropriate monitoring of soil pH and a visual inspection of the condition of plants during the bulk earthworks of the construction period..

Table 12-1 Mitigation treatment per cultural heritage asset

Asset	Mitigation
Rhwng y Dau Fynydd Burnt Mound (Asset 71)	Archaeological excavation of the heritage asset. Excavation will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a Written Scheme of Investigation (WSI) and agreed with Gwynedd Archaeological Planning Service (GAPS).
Rhwng Dau Fynydd Enclosure (Asset 209)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Possible burnt mound, Cafnan (Asset 212)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Possible burnt mound, Neuadd (Asset 311)	Archaeological excavation of the heritage asset. Excavation will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Possible burnt mound (west) (Asset 515)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.

Asset	Mitigation
Possible burnt mound (east) (Asset 516)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Pennant burnt mound and possible settlement site (Asset 520)	Archaeological excavation of the heritage asset. Excavation will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Linear anomalies and burnt mounds (Asset 528)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Prehistoric settlement and medieval or later field system (Asset 530)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Pits and linear features 1, Ty-croes (Asset 531)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Prehistoric pits, Tyddyn-Goronwy (Asset 532)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Ring gully and pits, Pennant (Asset 534)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Tregele Romano-British Enclosure (Asset 540)	Archaeological excavation of the heritage asset. Excavation will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Burnt mound and ditch system, Groesfechan (Asset 546)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), will be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.

Asset	Mitigation
Pont Cafnan Farm outbuildings (Asset 173)	A photographic survey will be undertaken, in accordance with the photographic survey for planning purposes guidance from GAPS [RD10] and *Understanding Historic Buildings: A Guide to Good Recording Practice* [RD11] to provide a permanent visual record of the following heritage assets, and their setting, in advance of Site Preparation and Clearance Works.
Cafnan House and outbuildings (Asset 181)	Photographic survey will be undertaken to record the current setting of this heritage asset. Historic landscape recording will also be undertaken be to Level 2 standards [RD12]. This will provide a drawn and photographic record of the setting of Cafnan House and outbuildings in its current form and condition.
Tyddyn-Gele, garage and outbuildings (Asset 263)	Level 3 Historic Buildings Recording will be undertaken to provide a permanent documentary (written, drawn and photographic) record of historic buildings in their current form and setting.
Felin Cafnan Corn Mill, Porth y Felin (Asset 137)	Photographic survey will be undertaken to document current setting and provide a permanent visual record of the current conditions of historic buildings and/or their settings.
Corn drying house at Felin Cafnan (Asset 141	Photographic survey will be undertaken to document current setting and provide a permanent visual record of the current conditions of historic buildings and/or their settings.
Mill house at Felin Cafnan, Cylch-y-Garn (Asset 144)	Photographic survey will be undertaken to document current setting and provide a permanent visual record of the current conditions of historic buildings and/or their settings.
Dame Sylvia Crowe's landscaping area (Historic Landscape Type (HLT) 3)	Historic landscape survey to Level 2 standards comprising a basic, accurate, descriptive and interpretive record of a landscape based on the results of field investigation and photographic survey to record the current setting of this heritage asset.
Field Boundaries (Asset 168)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Pre-18th Century Field System (Asset 204)	Strip, map and sample would be undertaken in accordance with the *standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Part of Field System (Asset 218)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Neuadd Field System (Asset 239)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Field Boundaries (Asset 276)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted

Asset	Mitigation
	strip, map and sampling.
Cafnan Field System IV (Asset 277)	Strip, map and sample. An effect on this asset has been identified through undertaking the assessment for the main site cultural heritage chapter. This asset lies outside the current mitigation areas that have been agreed by Horizon with GAPS. It is assumed that these will form part of the advance archaeological mitigation being undertaken by Horizon but confirmation is sought.
Field Boundaries (Asset 304)	Recording undertaken during trial trenching has mitigated the impact on this asset.
Field Boundary (Asset 306)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Field Boundary (Asset 312)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Possible Burnt Mound, north of Ty-croes (Asset 553)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
St. Patricks Church, Llanbadrig (Asset 26)	Photographic survey will be undertaken to record the current setting and provide a permanent visual record of the current conditions of this heritage asset
Capel Bethlehem, Cemaes (Asset 117)	Photographic survey will be undertaken to assess views across to the location of the Temporary Workers' Accommodation from Capel Bethlehem, Cemaes
Loss of Kitchen Garden and effects on Valley Garden at Cestyll Gardens	Mitigation for Valley Garden and Kitchen Garden and the essential setting includes: • Photographic survey of gardens; • Lv 2 Historic building recording; • Photographic survey of settings and inter-visibility between gardens, buildings and associated settings; and • Lv 2 topographic and landscape survey
Simdda-Wen, Garden, Tregele (Asset 139)	Photographic survey will be undertaken provide a permanent visual record of this heritage asset.
The Firs, Garden, Tregele (Asset 195)	Photographic survey will be undertaken to record the current setting and provide a permanent visual record of the current conditions of this heritage asset.
Rhwng y Ddau Fynydd, Tregele (Asset 225)	A historic building recording will be undertaken of the remaining outbuilding to a Level 2 standard [RD11]. This will provide a drawn and photographic record of this heritage asset.
Trackway from Tyddyn-Gele (Asset 269)	Archaeological earthwork survey and photographic survey will be undertaken to provide a permanent visual record of its current condition.

Asset	Mitigation
Well (Asset 273)	Photographic survey will be undertaken to provide a permanent visual record of the current conditions of this heritage asset.
Boundary Wall, Tai Hirion (Asset 727)	Photographic survey will be undertaken to provide a permanent visual record of the current conditions of this heritage asset.
Field Boundary, Tai Hirion (Asset 730)	Photographic survey will be undertaken provide a permanent visual record of the current conditions of this heritage asset.
Chain Home Guard Installation (Asset 65)	Photographic survey will be undertaken to provide a permanent visual record of the current conditions of this heritage asset.
Wylfa House, Former Site of, and Wylfa Garden, Remains of, Cemaes Bay (Asset 73)	A historic building recording will be undertaken of the remaining outbuilding to a Level 1 standard [RD11].
Receiving Tower, Chain Home Guard, Cemaes Bay (Asset 84)	Photographic survey will be undertaken to record the current setting and provide a permanent visual record of the current conditions of this heritage asset.
Limekiln, Porth-y-pistyll (Asset 106)	Level 3 Historic Buildings Recording to provide a permanent documentary (written, drawn and photographic) record of historic buildings in their current form and setting.
Simdde Wen (site of) (Wylfa Sports and Social Club) (Asset 147)	A historic building recording will be undertaken of the remaining outbuilding to a Level 1 standard [RD11].
Cattle Grid Lodge, Simdda-Wen (Asset 170)	Level 3 Historic Buildings Recording to provide a permanent documentary (written, drawn and photographic) record of historic buildings.
Swn y Mor House and Outbuildings (Asset 194)	Photographic survey will be undertaken to provide a permanent visual record of the current conditions of this heritage asset.
Council Depot, Tregele (Asset 206)	Photographic survey will be undertaken to provide a permanent visual record of the current conditions of this heritage asset.
Stone Field Barn South of Tregele (Asset 317)	Level 3 Historic Buildings Recording to provide a permanent documentary (written, drawn and photographic) record of historic buildings.
Groesfechan (Asset 341)	Photographic survey will be undertaken to record the current setting and provide a permanent visual record of the current conditions of this heritage asset.
Barn, north-east of Neuadd (Asset 823)	Level 3 Historic Buildings Recording to provide a permanent documentary (written, drawn and photographic) record of this historic building.
Cemlyn Coastal Strip (HLT 9)	A photographic survey and historic landscape survey will be undertaken to a Level 2 standards [RD12].
Fieldscape, north-west Mon (HLT10)	A photographic survey and historic landscape survey will be undertaken to a Level 2 standards [RD12].
Effects on archaeological and palaeoenvironmental remains	Peats and other deposits at Tre'r Gof SSSI with the potential presence of archaeological and palaeoenvironmental remains will be preserved *in situ* through the avoidance of works within the SSSI boundary and buffer zones and through the minimisation of any new drainage within this area.
Structures, Chain Home	Horizon will produce an Archaeological Mitigation Strategy in

Asset	Mitigation
Guard, Cemaes Bay (Asset 76)	consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Aerial Photograph site, Cemaes Bay (Asset 78)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Porth Wylfa Possible Circular Enclosure (Asset 96)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Park Lodge Enclosure (Asset 121)	Archaeological excavation of the heritage asset. Excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Park Lodge Enclosure (Asset 127)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Burnt Mounds and Pits (Asset 145)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Cafnan Field System (part of) (Asset 162)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Bristol Beaufighter VI X8194 (Asset 185)	Toolbox talks. Recording and removal of the remains of the asset under licence if discovered.
Pennant Enclosure (Asset 205)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Rhwng y Dday Fynydd Burnt Mound and Ring Ditch (Asset 207)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Caerdegog Isaf Burnt Mount (Asset 245)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Burnt Mound, Rhwng Dau Fynydd (Asset 251)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Penrallt Curvilinear Enclosure (Asset 272)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.

Asset	Mitigation
Neuadd Rectilinear Enclosure (Asset 281)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Possible Burnt Mound, Penrallt (Asset 314)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Tyddyn-Goronwy Prehistoric Settlement (Asset 517)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Caerdegog Isaf Ditches and Pit (Asset 523)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Possible Burnt Mount, South of The Firs (Asset 525)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Palaeoenvironmental Assessment Area 2 (Asset 527)	Palaeoenvironmental assessment followed by palaeoenvironmental analysis, if required.
Tregele Prehistoric Settlement and Burnt Mount 1 (Asset 529)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Burnt Spreads and Pits (Asset 535)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Three Burnt Mounds, Caerdegog Isaf (Asset 536)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Ring-ditch and Burnt Mound, Tyddyn-Gele (Asset 537)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Burnt Mounds, Rhwng y Ddau (Asset 538)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.

Asset	Mitigation
Burnt Mound and Field Boundaries, Tre'r Gof Uchaf (Asset 539)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Burnt Mound, Ditches and Pits, East of Tyddyn-Gele (Asset 547)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Burnt Mound, East of Caerdegog Isaf (Asset 549)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Ring-gully, Rhwng Dau Fynydd (Asset 550)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Pit, Postholes and Stakeholes, South-east of Tyddyn-Goronwy (Asset 559)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Burnt Mound and Stone Structure, north-east of Tyddyn-Gele (Asset 566)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Pits, north-west of Tregele (Asset 567)	Archaeological excavation of the heritage asset. Excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Possible Stone Platform, north-west of Tregele (Asset 568)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists[RD9] and a WSI and agreed with GAPS.
Porth yr Ogof Roman Activity (Asset 573)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Possible Burnt Mound, west of Porth Wylfa (Asset 578)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Pit, West of Porth Wylfa (Asset 579)	Archaeological excavation of the heritage asset. Excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Porth Wylfa Cist Cemetery (Asset 580)	Archaeological excavation of the heritage asset. Excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.

Asset	Mitigation
Porth Wylfa Gully and Postholes (Asset 581)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Ditch and Pits, South of Porth Wylfa (Asset 587)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Prehistoric Pit, north-east of Neuadd (Asset 590)	Recording undertaken during trial trenching has mitigated the impact on this asset.
Nant Orman, Cemaes (Asset 138)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Tre'r Gof Uchaf, Cemaes (Asset 163)	Level 3 Historic Building Recording already undertaken.
Ty'n y Maes, Cemaes Bay (Asset 74)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Earthworks, Chain Home Guard, Cemaes Bay (Asset 79)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Trackway (Asset 86)	Photographic survey would be undertaken in accordance with relevant guidance [RD9, RD10, RD11] and a WSI which would be agreed with GAPS.
Earthworks, Chain Home Guard, Cemaes Bay (Asset 98)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Earthworks, Chain Home Guard, Cemaes Bay (Asset 99)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Boathouse, Remains of, Porth-y-pistyll (Asset 100)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Earthworks, Chain Home Guard, Cemaes Bay (Asset 107)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.

Asset	Mitigation
Cwt, Former Site of, Porth-y-pistyll (Asset 109)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Mill Bay Landing Places (Asset 110)	Photographic survey would be undertaken in accordance with relevant guidance [RD9, RD10, RD11] and a WSI which would be agreed with GAPS.
Pen Pistyll, Former Site of, Porth-y-pistyll (Asset 113)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Park Lodge, Cemaes (Asset 114)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Ty Croes, Cemaes Bay (Asset 119)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Road from Tregele to Wylfa (Asset 122)	Photographic survey would be undertaken in accordance with relevant guidance [RD9, RD10, RD11] and a WSI which would be agreed with GAPS.
Earthworks, Chain Home Guard, Cemaes Bay (Asset 126)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Tai Hirion, Porth-y-pistyll (Asset 146)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
The Current Track to Simdda Wen and Tai Hirion (Asset 148)	Archaeological earthwork survey. Level 2 Historic Landscape survey and photographic survey would be undertaken in accordance with relevant guidance [RD10, RD13]
Structure, South of Simdda Wen (Asset 149)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Building, South-east of Simdda-wen (Asset 151)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.

Asset	Mitigation
Field Boundary (Asset 166)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Cae'r Brenhin, Former Site of, Tregele (Asset 167)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Tan yr Allt, Tregele (Asset 169)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Road from Tregele to Cafnan (Asset 176)	Level 2 archaeological earthwork survey. The Level 2 archaeological earthwork survey would be undertaken in accordance with relevant guidance [RD10, RD13].
Pennant, Tregele (Asset 177)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Bronydd, Tregele (Asset 183)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Pen y Groes, Former Site of, Tregele (Asset 189)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Chequers and Bryn Fferen, Tregele (Asset 191)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Trackway from Tyddyn to the A5025 (Asset 196)	Level 2 archaeological earthwork survey. The Level 2 archaeological earthwork survey would be undertaken in accordance with relevant guidance [RD10, RD13].
The Firs, Tregele (Asset 198)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Pen Lon, Tregele (Asset 199)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.

Asset	Mitigation
Mound (Asset 201)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Tyddyn Du and Pen y Groes Isaf, Tregele (Asset 210)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Trackway to Caerdegog Isaf (Asset 248)	Level 2 archaeological earthwork survey. The Level 2 archaeological earthwork survey would be undertaken in accordance with relevant guidance [RD10, RD13].
Ditch and Natural Features (Asset 254)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Field Boundary (Asset 259)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Trackway to Penrallt (Asset 261)	Level 2 archaeological earthwork survey. The Level 2 archaeological earthwork survey would be undertaken in accordance with relevant guidance [RD10, RD13].
Penrallt Farmhouse (site of) (Asset 265)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Possible Structure (Asset 268)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Ty Baner (Asset 271)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Field Boundary (Asset 274)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Field Boundary (Asset 305)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.

Asset	Mitigation
Pits and Ditches, South of Tregele (Asset 545)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Pits and Linear, north of Pen-lôn (Asset 572)	Recording undertaken during trial trenching has mitigated the impact on this asset.
Concentration of Linears and Pits, West of Porth Wylfa (Asset 576)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Pit, West of Porth Wylfa (Asset 577)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Palaeochannel, South of Porth Wylfa (Asset 584)	Palaeoenvironmental assessment followed by palaeoenvironmental analysis, if required.
Postholes, north of Neuadd (Asset 592)	Strip, map and sample (stripping of an area, plotting observed features onto a site plan and then partially excavating those features (sampling)), undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Pits, north of Neuadd (Asset 593)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Field Boundary, north-west of The Firs (Asset 726)	Photographic survey - Field Boundary, north-west of The Firs (Asset 726)
Pond, Site of, north-west of Caerdegog Isaf (Asset 728)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Field Boundary, east of Cestyll (Asset 731)	Photographic survey would be undertaken in accordance with relevant guidance [RD9, RD10, RD11] and a WSI which would be agreed with GAPS.
Track, Porth yr Ogof (Asset 747)	Photographic survey would be undertaken in accordance with relevant guidance [RD9, RD10, RD11] and a WSI which would be agreed with GAPS.
Building and Enclosure, north-east of Neuadd (Asset 758)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Building/Enclosure north of Neuadd (Asset 770)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.

Asset	Mitigation
Transmitter Mast, Chain Home Guard, Cemaes Bay (Asset 52)	Photographic survey would be undertaken in accordance with relevant guidance [RD9, RD10, RD11] and a WSI which would be agreed with GAPS.
Transmitter Mast, Chain Home Guard, Cemaes Bay (Asset 52)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Boat House, Cemaes Bay (Asset 57)	Level 2 Historic Building Recording already completed.
Bryn Tirion and Tre'r Gof Isaf (Asset 111)	Level 3 Historic Building Recording and photographic survey has already been undertaken.
Cestyll House, Former Site of, Porth-y-pistyll (Asset 132)	Archaeological earthwork survey of the heritage asset. The Level 2 archaeological earthwork survey would be undertaken in accordance with relevant guidance [RD10, RD13].
Cestyll House, Former Site of, Porth-y-pistyll (Asset 132)	Horizon will produce an Archaeological Mitigation Strategy in consultation with relevant stakeholders, to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Tyddyn-Goronwy, Cemaes (Asset 154)	Level 3 Historic Building Recording has already been undertaken.
Caerdegog Isaf and Outbuilding and Lower Farm and Outbuildings (Asset 286)	Photographic survey to document current setting of the asset. Photographic survey would be undertaken in accordance with relevant guidance [RD9, RD10, RD11] and a WSI which would be agreed with GAPS.
Cestyll Garden (HLT 2)	The Lady's Finger of Lancaster apple tree from Cestyll Garden will be translocated. The exact location will be listed in the Archaeological Mitigation Strategy, which will be produced in consultation with relevant stakeholders.
Trackway (Asset 299)	Level 2 archaeological earthwork survey. The Level 2 archaeological earthwork survey would be undertaken in accordance with relevant guidance [RD10, RD13].
Linears, Pits and Postholes, West of Porth Wylfa (Asset 575)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Sub-circular Pit, West of Tyddyn-Gele (Asset 565)	Recording undertaken during trial trenching has mitigated the impact on this asset.
Ditches, East of Ty-croes (Asset 558)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Cemaes (HLT 7)	Level 2 Historic Landscape Survey and Photographic Survey. The Level 2 historic landscape survey and photographic survey would be undertaken in accordance with relevant guidance [RD10, RD13].

Asset	Mitigation
Wylfa (HLT 8)	Level 2 Historic Landscape Survey and Photographic Survey. The Level 2 historic landscape survey and photographic survey would be undertaken in accordance with relevant guidance [RD10, RD13].
Field Boundaries (Asset 90)	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Field Boundaries (Asset 150) a	Archaeological excavation would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and a WSI and agreed with GAPS.
Field Boundaries (Asset 150) b	Recording undertaken during trial trenching has mitigated the impact on this asset.
Field Drains (Asset 200)	Recording undertaken during trial trenching has mitigated the impact on this asset.
Mynydd Ithel Field System (Asset 293)	Recording undertaken during trial trenching has mitigated the impact on this asset.
Possible Ditch (Asset 296)	Recording undertaken during trial trenching has mitigated the impact on this asset.
Quarry (Asset 322)	Strip, map and sample would be undertaken in accordance with the *Standard and guidance for archaeological excavation* from the Chartered Institute for Archaeologists [RD9] and WSI and agreed with GAPS.
Ecological Compensation Sites (All) Effect on HLTs	Photographic survey would be undertaken in accordance with relevant best practice guidance and a Written Schemes of Investigation which would be agreed with GAPS. Photographic survey would include the preparation and submission of reports to the Historic Environment Record and National Monument Record of Wales and the preparation of an ordered archive which would be submitted to an appropriate repository.
Ecological Compensation Sites (All) Effect on important hedgerows	A Level 2 Landscape survey would be undertaken to record the important hedgerows to be removed from each of the three Ecological Conservation Sites. Level 2 historic landscape survey would be undertaken in accordance with guidance provided by *Understanding the Archaeology of Landscapes: A Guide to Good Recording Practice* [RD13].

13 References

Table 13-1 Schedule of references

ID	Reference
RD1	Department for Environment, Food and Rural Affairs. 2012. *Process Guidance Note 3/16(12): Statutory guidance for mobile crushing and screening*. London: Department for Environment, Food and Rural Affairs.
RD2	Department for Environment, Food and Rural Affairs. 2012. *Process Guidance Note 3/01(12): Statutory guidance for blending, packing, loading, unloading and use of cement*. London: Department for Environment, Food and Rural Affairs.
RD3	Welsh Government. 2016. *Local Air Quality Management, Technical Guidance (TG16)*. London: Department for Environment, Food and Rural Affairs.
RD4	British Standards Institution. 2008. BS 6472-2 *Guide to Evaluation of human exposure to vibration in buildings. Blast-induced vibration*. London: British Standards Institution.
RD5	British Standards Institution. 2008. BS 5228-2:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites. Vibration*. London: British Standards Institution.
RD6	Welsh Assembly Government. 2004. *Minerals Technical Advice Note (Wales) 1: Aggregates*. Cardiff: Welsh Assembly Government. Available from: http://gov.wales/docs/desh/policy/040331aggregatesmtanen.pdf
RD7	Oldham, R.S., Keeble, J., Swan, M.J.S., & Jeffcote, M. (2000). Evaluating the suitability of habitat for the great crested newt Triturus cristatus. *Herpetological Journal* 10(4), 143-155.
RD8	British Standards Institution. 2012. BS 5837:2012 *Trees in relation to design, demolition and construction. Recommendations*. London: British Standards Institution.
RD9	Chartered Institute for Archaeologists. 2014. *Standard and guidance for archaeological excavation.* [Online]. [Accessed: January 2018]. Available from: http://www.archaeologists.net/sites/default/files/CIfAS&GExcavation_1.pdf
RD10	Gwynedd Archaeological Planning Service (GAPS). 2015. *Guidance for applicants undertaking general photographic surveys for planning purposes.* [Online]. [Accessed: 15 January 2017]. Available from: https://content.historicengland.org.uk/images books/publications/understanding-archaeology-of-landscapes/heag142-understanding-archaeology-of-landscapes.pdf

RD11	Historic England. 2016. *Understanding Historic Buildings: A Guide to Good Recording Practice*. [Online]. [Accessed: January 2018]. Available from https://historicengland.org.uk/images-books/publications/understanding-historic-buildings/
RD12	English Heritage. 2007. *Understanding the Archaeology of Landscapes: A guide to good recording practice.* London: English Heritage. [Online] [Accessed: 01/02/18] Available from: https://www.historicengland.org.uk/images-books/publications/understanding-archaeology-of-landscapes/
RD13	Historic England. 2017. *Understanding the Archaeology of Landscapes: A guide to good recording practice*. London: English Heritage. [Online]. [Accessed: 9 May 2017]. Available from: https://content.historicengland.org.uk/images-books/publications/understanding-archaeology-of-landscapes/understandingthearchaeologyoflandscapes.pdf