OUTLINE ENVIRONMENTAL MANAGEMENT PLAN

Padeswood Carbon Dioxide Spur Pipeline Proposed Development

Town and Country Planning Act 1990

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1. INTRODUCTION

1.1. OVERVIEW

1.1.1. This document presents the Outline Environmental Management Plan (OEMP) for the Padeswood Carbon Dioxide Spur Pipeline Proposed Development. It forms part of the Planning Application under the Town and Country Planning Act 1990 (as amended) to Flintshire County Council (FCC).

1.1.2. The Padeswood Spur Pipeline Proposed Development will connect to the Padeswood Carbon Capture and Storage (CCS) Project to transport their captured carbon dioxide to the Northop Hall Above Ground Installation (AGI). From there, the carbon dioxide will be transported for storage in depleted oil and gas fields in Liverpool Bay via the HyNet Carbon Dioxide Pipeline, a Nationally Significant Infrastructure Project subject to a separate Development Consent Order application (Planning Inspectorate reference number EN070007) consented in March 2024 by the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ). The aim of the wider HyNet Project is to reduce carbon dioxide emissions from industry and support economic growth in the North West of England and North Wales.

1.1.3. Further details of each element of the Padeswood Spur Pipeline Proposed Development are set out in the Planning, Design and Access Statement (Document Reference PW.2.3).

1.1.4. The OEMP will act as a control plan which sets out indicative methods to avoid, minimise, and mitigate likely environmental effects as a result of the Padeswood Spur Pipeline Proposed Development. It includes the minimum protocols to be followed in implementing these measures in accordance with environmental commitments during the Construction, Operational and Decommissioning Stages.

1.2. PURPOSE OF THE OEMP

1.2.1. This OEMP is designed to accompany the application for planning permission for the Padeswood Spur Pipeline Proposed Development. In accordance with the requirements of the EIA Regulations, documents submitted as part of the planning application, including the Environmental Statement and Habitats Regulations Assessment (Document Reference PW.4.4), include assessments of potential effects on the environment that may be caused during Construction, Operation and Decommissioning of the Padeswood Spur Pipeline

Proposed Development. These documents also describe proposed mitigation measures to ensure these effects are not significant.

1.2.2. This OEMP demonstrates how these mitigation measures will be implemented during the Construction, Operational, and Decommissioning Stages and describes any wider monitoring and auditing activities needed to ensure that mitigation measures proposed are undertaken and prove effective.

1.2.3. The details contained within the OEMP will be used to develop several Environmental Management Plans (EMPs), for the Padeswood Spur Pipeline Proposed Development, following the appointment of the Construction Contractor. For example, a detailed Construction Environmental Management Plan (CEMP) to cover the Construction Stage, and an Operation and Maintenance Environmental Management Plan (OMEMP) to cover the Operational Stage and a Decommissioning Environmental Management Plan (DEMP) for the Decommissioning Stage will be produced. The structure of these will be determined by the appointed Contractor at each stage. For ease of reference, these plans will be referred to as the 'detailed EMP'.

1.2.4. It is anticipated that the need for a detailed EMP to be produced will be conditioned through a planning condition attached to the final planning permission for the Padeswood Spur Pipeline Proposed Development. It is also anticipated that the planning condition will list the management plans that will be produced by the appointed Contractor and that will be appended to the detailed EMP. These are listed in Section 6.

1.2.5. The Construction Contractor will comply with environmental legislation at the time of construction, together with any additional environmental controls required as part of the planning application. Additionally, the Applicant will comply with environmental legislation throughout the Operational Stage, along with any environmental controls required as part of the planning permission. The detailed EMP will be designed to be compliant with relevant environmental legislation and the mitigation measures set out in this OEMP. Any additional consents including licences, permits or approvals reviewed will be listed in the detailed EMP.

1.2.6. The detailed EMP will be reviewed and approved by FCC in advance of starting works on-site.

1.2.7. The detailed EMP will include the following:

- Outline Environmental Management System (EMS) requirements (in accordance with BS EN ISO 14001;

- An overview of the Padeswood Spur Pipeline Proposed Development and construction programme;
- Mitigation measures to ensure the reduction of potential adverse impacts including measures to ensure nuisance levels from Construction, Operational, and Decommissioning activities are kept to a practicable minimum;
- Any site-specific method statements required;
- Corrective action and contingency plan procedures;
- Stakeholder requirements; and
- Links to other complementary plans and procedures.

1.2.8. The Applicant will put in place robust procedures to inform and supervise all those working on the Padeswood Spur Pipeline Proposed Development, including its supply chain, to make sure the control measures and commitments set out in this OEMP are adopted within the detailed EMP throughout the Construction, Operational and Decommissioning Stages. The overall responsibility for implementation of the detailed EMP will lie with the appointed Contractor(s) as a contractual responsibility to the Applicant, as the Applicant is ultimately responsible for compliance with the conditions of the planning consent.

1.2.9. The detailed EMP will be a live document that will be maintained by the Construction Contractor throughout the Construction Stage, the Applicant through the Operational Stage, and the Decommissioning Contractor through the Decommissioning Stage. The detailed EMP will be reviewed, and if necessary updated and re-submitted to the relevant LPA for approval of any changes.

1.2.10. Towards the end of the Construction Stage, anticipated to be 2028, the Construction Contractor will ensure a review of the Padeswood Spur Pipeline Proposed Development is conducted and the mitigation in the CEMP has been followed. The OMEMP and DEMP will be produced by the Applicant and the Decommissioning Contractor (respectively), for the Operational and Decommissioning Stages which will be substantially based on the measures included in this OEMP.

2. CONSTRUCTION PHASE – CONSTRUCTION ACTIVITIES AND PROGRAMME

2.1. PRE-CONSTRUCTION ACTIVITIES

2.1.1. Ahead of construction, a number of pre-construction activities will be carried out, and are likely to include the following:

- Photographic record of condition of any features likely to be affected;
- Topographical surveys;
- Geotechnical and ground stability surveys (including sampling of groundwater);
- Ecological pre-construction surveys and mitigation work;
- Route setting out in consultation with the landowner/occupier; and
- Site clearance and preparation.

2.1.2. Surveys and engagement with utility providers has been undertaken to identify known utilities within the Red Line Boundary. It is anticipated that none of the known utilities have any requirement for diversion as the depth of the Padeswood Carbon Dioxide Spur Pipeline should enable the existing utilities to be crossed without disturbance.

2.1.3. A temporary drainage system will be implemented prior to the start of any construction work where necessary.

2.2. CONSTRUCTION ACTIVITIES

2.2.1. Construction activities to be carried out will include:

- Establishment of temporary access tracks;
- Establishment of temporary Construction Compounds;
- Open Trench Construction, including: establishment of the Working Width; pipeline stringing and welding; trench excavation; pipe lowering; and trench backfill;
- Trenchless Crossings;
- AGI construction;
- Pre-Commissioning works, including cleaning of the pipeline and hydrostatic testing.

2.2.2. For further details on construction activities, refer to Chapter 3 – Description of the Padeswood Spur Pipeline Proposed Development (Document Reference: PW.3.2.3).

2.3. WORKING HOURS

2.3.1. Core working hours will be 08.00 to 18.00 Monday to Friday (excluding bank holidays) and from 08.00 to 13.00 on Saturdays. To maximise productivity within core working hours, the Construction Contractor will require a period of up to one hour before and up to one hour after core working hours for the start-up and close-down of activities. This will include, but not be limited to, deliveries, movement to place of work, unloading, maintenance and general preparation works. It will not include the operation of any plant or machinery likely to cause disturbance to local residents or businesses. These periods will not be considered an extension of core working hours.

ADDITIONAL HOURS

2.3.2. Exceptions will be required for extended hours or working outside core hours (including where necessary working on a weekend or Bank Holiday) for activities such as:

- The continuous drilling/tunnelling and pulling phases for trenchless crossings;
- Where daytime working would be excessively disruptive to normal traffic operation;
- Cleaning/testing of the pipeline; and
- Overnight traffic management measures.

2.3.3. Except in the case of an emergency, any work required to be undertaken outside core hours (not including non-intrusive surveys, repairs or maintenance) will be agreed in advance with FCC.

2.4. CONSTRUCTION SCHEDULE

2.4.1. A preliminary construction schedule is included in Table 2-1. Sections presented in the table may not align with the final phasing plan.

2.4.2. More details in the construction phasing, including a phasing plan, will be submitted to FCC as part of the detailed CEMP prior to construction.

2.4.3. The detailed CEMP will set out site-specific programme/timing constraints and considerations such as ecological seasonality or restrictions on working hours for noise.

Table 2-1 Preliminary Construction Schedule

Proposed Activity	Start	Finish
Mobilisation and Enabling Works	September 2026	December 2026

Trenchless Crossings	January 2027	January 2028
Pipeline Installation – Open Cut	May 2027	November 2027
Padeswood AGI & Northop Hall AGI Construction	October 2027	January 2028
Pre-Commissioning	January 2028	February 2028

3. CONSTRUCTION STAGE – SITE SECURITY, SAFETY AND WELFARE

3.1. CONSTRUCTION COMPOUND(S)

3.1.1. Temporary Construction Compounds will be required to facilitate construction activities, commissioning and landscaping works. There will be three types of Construction Compounds serving different types of construction works, these include:

- Central Compound;
- Trenchless Crossing Compounds, facilitating the works at trenchless crossings; and
- Localised Compounds; facilitating works at the AGIs.

3.1.2. The Central Compound will be in place for the duration of the construction programme. Trenchless Crossing and Localised Compounds will be in place only for works at each specific crossing/AGI respectively.

3.1.3. Temporary access will be provided to the Construction Compounds.

3.2. SITE LIGHTING

3.2.1. Site lighting will be provided by the Construction Contractor as appropriate to enable safe working conditions and security of the Construction Compounds.

3.2.2. The Construction Contractor will ensure that site lighting will be positioned and directed so as not to intrude unnecessarily on adjacent buildings, sensitive ecological receptors, structures used by protected species, and other land uses to prevent unnecessary disturbance to local residents, light sensitive species such as bats, and local transport infrastructure.

3.2.3. Lighting would not be continuous, rather it would be used in shifts at the lowest luminosity necessary for safe delivery of each task.

3.2.4. The Construction Contractor will be responsible for ensuring all lighting is switched off when not necessary for carrying out the works, or for health and safety, or security reasons. Site security will likely be posted at the Construction Compounds and will ensure an appropriate amount of lighting for the safe movement of personnel between welfare facilities.

3.3. WORKSITE FENCING AND HOARDINGS

3.3.1. The Construction Contractor will be responsible for installing, maintaining and removing all temporary hoardings and fencing during the Construction Stage.

3.3.2. All worksites will be securely fenced or otherwise demarcated from public access.

3.3.3. All fencing and hoarding will be suitable, taking into consideration location, construction activities and the surrounding landscape.

3.3.4. The style of fencing would be selected using local considerations, typically 'post-and-rope' fencing for arable land or appropriate stockproof fencing for grazed land. Urban sections or areas with increased levels of public interaction may use HERAS or similar. All temporary fencing will be removed upon completion of the works.

3.4. WELFARE FACILITIES

3.4.1. Welfare facilities will be made available at each Construction Compound. Welfare facilities may be shared between work sites where there is more than one compound in close proximity to minimise the construction footprint.

3.5. EMERGENCY PREPAREDNESS

3.5.1. Prior to the commencement of construction, the Construction Contractor will develop an emergency procedure in consultation with the emergency services for potential risks during construction and will be required to follow the procedure in any site emergency.

3.5.2. The procedures will contain emergency phone numbers and the method of notifying all other relevant statutory authorities, including emergency services, for action by the Construction Contractor and/or the Applicant. Contact numbers of the Construction Contractor's and the Applicant's key personnel will also be included.

3.6. EXTREME WEATHER EVENTS

3.6.1. The Construction Contractor will consider the impacts of extreme weather events and related conditions during construction. They will use a short to medium range weather forecasting service from the Met Office or other approved meteorological data and weather

forecast provider to inform short to medium term programme management, environmental control and mitigation measures.

3.6.2. The detailed CEMP will consider all measures deemed necessary and appropriate to manage extreme weather events and should specifically cover training of personnel and prevention and monitoring arrangements. As appropriate, method statements should also consider extreme weather events where risks have been identified.

4. PROJECT ENVIRONMENTAL REQUIREMENTS

4.1. CONSENTS AND PERMITS

4.1.1. The Padeswood Spur Pipeline Proposed Development will be delivered in compliance with all relevant legislation, consents and permits. The obtaining and discharging of all licences, consents and permits within the relevant timescales will be the responsibility of the Construction Contractor and the Applicant.

4.1.2. The Construction Contractor will set up and maintain a register with details of consents, permits and licences required for the construction of the Padeswood Spur Pipeline Proposed Development.

4.1.3. The Construction Contractor will obtain consents from the relevant local authorities and regulators for the applicable construction works. Applications will include details of the proposed working hours.

4.1.4. The required consents and permits may include, but may not be limited to:

- Dewatering consent;
- Derogation licences for protected species;
- Permits for in-water works;
- Consent for works in proximity to statutory designated ecological sites;
- European Protected Species License (EPSL);
- Bat Mitigation Class License;
- Fish removal consent; and
- Flood Risk Activity Permit.

4.2. POLLUTION INCIDENT CONTROL

4.2.1. The Construction Contractor will prepare and implement appropriate measures to control the risk of pollution due to construction activities, materials and extreme weather events.

4.2.2. The Construction Contractor will be required to investigate and provide a report to the Applicant in the event a pollution incident does occur, and should include the following:

- A description of the pollution incident, including its location, the type and quantity of contaminant and the likely receptor(s);
- Contributory causes;
- Adverse effects and the measures implemented to mitigate adverse effects; and
- Recommendations to reduce the risk of reoccurrence.

4.2.3. The Construction Contractor will consult with the relevant organisations, statutory bodies and other relevant parties when preparing response measures. The Construction Contractor should also ensure that environmental incidents are reported to the Natural Resources Wales incident hotline at the earliest opportunity.

5. CONSTRUCTION ENVIRONMENTAL MANAGEMENT

5.1. THE APPROACH

5.1.1. The detailed CEMP will be accompanied by a suite of management plans and procedures during the Construction Stage in line with the Environmental Statement.

5.1.2. The Applicant will require the Construction Contractor to monitor and manage works for which they are responsible. The Construction Contractor will need to demonstrate an appropriate level of awareness of site sensitivities (including environmental features), codes of practice, relevant legislation and guidance appropriate to the construction activities in which they are employed.

5.1.3. The detailed CEMP will set out as a minimum:

- A description of the relevant phase(s) of the Padeswood Spur Pipeline Proposed Development, and clear figures identifying receptors that could be affected by construction activities;
- An outline of the pre-construction and construction works;
- An organogram showing names, roles, responsibilities and communication methods;
- Protocol for external reporting and community relations;
- Staff competence and requirements for training personnel, identifying mechanisms on how these are achieved and maintained;
- Information on inductions (including environmental), site briefings and toolbox talks to ensure staff are briefed on environmental matters and procedures specific to their location;
- A protocol to manage change as work progresses, including procedures for updating, sign off and version control of environmental asset data and as built drawing requirements; and
- Emergency response, preparedness and non-conformance processes.

5.2. SITE CHECKS AND REPORTING

5.2.1. Regular site checks will be carried out by the Construction Contractor across the Padeswood Spur Pipeline Proposed Development to monitor works in accordance with the detailed CEMP and other associated plans and method statements.

5.2.2. The types of site monitoring would be associated with, but may not be limited to:

- Licenses, Permits and wider consents;
- Dust monitoring;
- Noise monitoring;
- Ground and surface water pollution prevention; and
- Vegetation and wildlife protection.

5.2.3. An internal site inspection programme will be produced and overseen by the Environmental Manager who will be present throughout the Construction Stage. The Environmental Manager will draw on appropriate suitably experienced environment specialists for specific tasks across the Padeswood Spur Pipeline Proposed Development. The Environmental Manager will monitor the works to ensure they proceed in accordance with relevant environmental planning conditions and adhere to the required mitigation measures as stipulated in the detailed CEMP. Should works deviate from the detailed CEMP, the Applicant will be informed along with the justification (e.g. site conditions at the time) and a report detailing the actions taken and any required next steps. The Environmental Manager will also be the main contact for environmental regulators such as the Local Authorities and National Resources Wales (NRW).

5.2.4. Where residual nuisance is identified following inspections, appropriate remediation measures will be put in place in accordance with measures outlined within the detailed CEMP. The frequency of inspections will be increased when activities with a high potential to cause nuisance are being carried out, or conditions increase the risk of nuisance for example, windy conditions increase dust mobility.

5.2.5. Environmental incidents, including Observations and Near Misses, that stop construction activities or any other issues arising from site inspections will be recorded. Findings will be disseminated to the wider construction team as appropriate, discussed during the

periodic management review meetings, and additional procedures put in place if required.

6. OUTLINE ENVIRONMENTAL MITIGATION

6.1.1. This section of the OEMP sets out the key mitigation and management measures recommended in the Environmental Statement and Register of Environmental Actions and Commitments (REAC) (Appendix A, Document Reference: PW.4.1.1). These measures are included as a minimum requirement, they illustrate how the monitoring strategy will be undertaken and who is responsible for each of the measures listed.

6.1.2. The detailed EMP will include management plans and mitigation measures that are based on the mitigation and control measures listed within the REAC (Appendix A, Document Reference: PW.4.1.1). The following management plans will be produced by the appointed Contractor and included within the detailed EMP:

- Noise and Vibration Management Plan;
- Public Right of Way Management Plan;
- Construction Traffic Management Plan;
- Dewatering Management Plan;
- Biosecurity Management Plan;
- Dust Management and Monitoring Plan;
- Groundwater Management and Monitoring Plan;
- Surface Water Management and Monitoring Plan;
- Materials Management Plan; and
- Waste Management Plan.

6.1.3. The tables listed in Section 6 of this OEMP extrapolate the key Construction, Operation and Decommissioning mitigation and control measures within the REAC (Appendix A, Document Reference: PW.4.1.1) and any associated addenda that will be incorporated into the topic specific management plans as part of the detailed EMP. Embedded mitigation is not included within these tables, but can be found within the REAC (Appendix A, Document Reference: PW.4.1.1).

6.1.4. For all design, Construction, Operational, Maintenance and Decommissioning environmental commitments refer to the REAC (Appendix A, Document Reference: PW.4.1.1).

Table 6-1 General Requirements

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-GN-001	The Construction Contractor(s) will set up and maintain a register with details of consents, permits and licences required for the Padeswood Spur Pipeline Proposed Development.	To keep an up-to-date record of all past and current consents, permits and licences to ensure the Padeswood Spur Pipeline Proposed Development is remaining compliant with the appropriate legislative measures.	Construction Contractor
PW-GN-002	The Construction Contractor(s) will prepare and implement appropriate measures to control the risk of pollution due to construction activities, materials and extreme weather events.	To avoid or otherwise minimise the risk of environmental effects due to unexpected pollution incidents.	Construction Contractor
PW-GN-003	The Construction Contractor(s) will be required to investigate and provide a report to The Applicant in the event a pollution incident does occur, including the following: • A description of the pollution incident, including its location, the type and quantity of contaminant and the likely receptor(s); • Contributory causes; • Adverse effects and the measures implemented to mitigate adverse effects; and • Recommendations to reduce the risk of reoccurrence. The Construction Contractor(s) will consult with the relevant organisations, statutory bodies and other relevant parties when preparing response measures. The Construction Contractor should also ensure that environmental incidents are reported to Natural Resources Wales incident hotline at the earliest opportunity.	To provide the opportunity for relevant organisation and stakeholders to input or comment on pollution response measures.	Construction Contractor
PW-GN-004	The Applicant will require the Construction Contractor(s) to monitor and manage works for which they are responsible	To demonstrate an appropriate level of awareness of site sensitivities (including environmental features), codes of practice, relevant legislation and guidance appropriate to the construction activities in which they are employed.	The Applicant / Construction Contractor
PW-GN-005	The Detailed CEMP will set out as a minimum: Description of the relevant phase(s) of the Padeswood Spur Pipeline Proposed Development, and clear figures identifying receptors that could be affected by construction activities; • An outline of the pre-construction and construction works; • An organogram showing names, roles, responsibilities and communication methods; • Protocol for external reporting and community relations; • Staff competence and requirements for training personnel, identifying mechanisms on how these are achieved and maintained; • Information on inductions (including environmental), site briefings and toolbox talks to ensure staff are briefed on environmental matters and procedures specific to their location; • A protocol to manage change as work progresses (e.g. updating evidence of compliance with the REAC, and detailed CEMP and having an audit trail of changes in line with the Construction Contractor(s) EMS), including procedures for updating, sign off and version control of environmental asset data and as built drawing requirements; and • Emergency response, preparedness and non-conformance processes.	To ensure that the Detailed CEMP is compliant, robust and fit for purpose	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-GN-006	The Applicant will require the Construction Contractor(s) to have an EMS certified to BS EN ISO 14001.	To ensure that the Construction Contractor has a certified environmental management system	The Applicant / Construction Contractor
PW-GN-007	Environmental incidents (including observations and near misses) and Site inspections will be recorded, documenting any corrective actions.	To keep an up-to-date record of all works being carried out, best practice examples and improvement requirements for the Construction Contractor to action.	Construction Contractor
PW-GN-008	The CEMP will set out construction mitigation and management measures outlined in the ES and REAC during the Construction Stage. These measures will illustrate how the monitoring strategy will be undertaken and who is responsible for each of the measures listed.	To ensure mitigation and management measures are followed correctly during the Construction Stage of works.	Construction Contractor
PW-GN-009	The Construction Contractor will ensure that the application of circular economy Principals will be followed, as implemented in the detailed CEMP, including: • Designing solutions to prevent the generation of waste where feasible, and to send waste for recovery, wherever possible. • Considering all stages of Construction, Operation and Decommissioning in a lifecycle approach. • Identification of resource streams that might be considered by-products (i.e. not wastes, as per applicable legislation) and reused or recycled.	Effective design for the future.	Construction Contractor
PW-GN-010	Any waste materials generated during the construction of the Padeswood Spur Pipeline Proposed Development will be disposed of satisfactorily and in accordance with Section 34 of the Environment Act 2021 (HM Government, 2021) and NRW relevant guidance on waste management. A Site Waste Management Plan for reducing, storing, handling, transporting and disposing of waste will be followed during construction. The Construction Contractor will be responsible for obtaining all required environmental permits, licences and consents from the relevant authorities where required. The Waste Hierarchy shall be adopted.	To identify opportunities to further reduce any waste. To reduce associated impacts such as potential harm to the environment. To monitor waste generation and disposal methods.	Construction Contractor
PW-GN-011	Waste storage areas will be incorporated into the Detailed Design. Waste segregation measures will be put in place by the Construction Contractor as implemented in the detailed CEMP and Site Waste Management Plan.	To maximise the potential for highest value reuse and recycling.	Construction Contractor
PW-GN-012	Carriers transporting waste from the site will be registered waste carriers and the movement of any Hazardous Waste from the site must be accompanied by Hazardous Waste consignment notes.	Construction methods with the potential to reduce adverse material asset and waste impacts	Construction Contractor

Table 6-2 Description of the Padeswood Spur Pipeline Proposed Development

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-PD-002	The height of additional permanent equipment to be installed at Northop Hall AGI will not exceed 5 m.	To reduce the impacts on landscape and visual amenity.	Construction Contractor
PW-PD-003	Cathodic Protection (CP) test posts, pipeline marker posts and aerial marker posts will be positioned to reduce disturbance as far as reasonably practicable. For example, locations within verges and field boundaries will be chosen.	To reduce the impacts on land use.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-PD-004	Leak Detection equipment will be installed on the pipeline and within the AGIs. 24-hour remote monitoring of pipeline operation will be undertaken to detect leaks and enable remote shut down of the pipeline if required.	To reduce GHG emissions from leaks.	The Applicant / Construction Contractor
PW-PD-005	The working width for open cut trenching installation will be kept as narrow as possible, to a maximum of 25 m, where reasonably practicable.	To avoid or otherwise minimise potential environmental impacts, such as vegetation clearance.	Construction Contractor
PW-PD-006	The Construction working width will be reinstated to allow previous use to resume where that will not impact on the operation and maintenance of the Padeswood Carbon Dioxide Spur Pipeline and subject to the restrictions imposed to protect the pipeline	To reduce the impact on land use.	Construction Contractor
PW-PD-007	In areas where trenched watercourse crossings are utilised, flows will be re-routed using a flume or pipe bypass. The water flow will be maintained through the bypass during construction. Care will be taken to ensure the watercourse is reinstated following completion of the works. The stream bed will be re-contoured to its original form, and the trench on both sides of the stream will be backfilled and reinstated.	To reduce the impact on watercourses.	Construction Contractor
PW-PD-008	Material used for bedding and backfilling of the pipeline trench will consist of imported clean sand or, where suitable, graded subsoils excavated from the trench. All bedding and backfilling material will be screened prior to use and should not contain any sharp objects, foreign material or vegetation. Each layer will be thoroughly compacted by suitable compacting equipment to provide a good bond between the undisturbed sides of the trench and the new material.	To reduce the impacts on soils; Re-use of excess materials and limit permanent removal of soils during Construction Stage.	Construction Contractor
PW-PD-009	The Padeswood Spur Pipeline Proposed Development will operate without the need for any permanent on-site staff at the AGIs, which will generally be operated remotely.	To reduce travel requirements and reduce GHG emissions through unnecessary travel.	The Applicant
PW-PD-010	Operating procedures will draw upon industry standard guidance to reduce fugitive emissions. This will include: • Identification of the plant components (valves, vents, flanges etc.) that may cause fugitive emissions; • Periodic monitoring to check the status of the identified components by using leak detectors; • Implementation of a leak detection and repair programme to minimise fugitive emissions, for each component for which leakages have been identified; and • Reporting results of monitoring and repairing activities.	To reduce GHG emissions from fugitive emissions.	The Applicant
PW-PD-011	Padeswood AGI will not be permanently lit; lighting will only operate should there be a security or safety reason (e.g. need for a maintenance visit during low light conditions). The perimeter lighting columns will be directed only into the facility area and will incorporate measures such as louvres and/or barn doors to reduce light spill on the occasions that the lighting is required. No permanent lighting will be installed along the rest of the pipeline length, or at Northop Hall AGI as part of the Padeswood Spur Pipeline Proposed Development.	To reduce disturbance to fauna and reduce landscape and visual impacts	The Applicant

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-PD-012	During normal operation, any emission of CO2 will be limited to planned maintenance activities. Provision for planned temporary venting of CO2 will be present at Padeswood AGI and Northop Hall AGI. Venting activities will involve PIG trap venting and manifold venting. Manifold venting will take place via the installation of an up to 10m tall temporary vent stack at the AGIs. This will be removed once the temporary venting activity has been completed	To allow for maintenance works to be completed safely and minimise GHG emissions	The Applicant
PW-PD-013	The Construction Contractor will be committed to promoting the use of local workforce and suppliers, wherever practicable.	To support the local economy	Construction Contractor

Table 6-3 Air Quality

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-AQ-001	All dust and air quality complaints will be recorded and causes identified. Appropriate practical measures will be taken to reduce emissions in a timely manner, the measures taken will be recorded. Any recorded complaints and subsequent measures taken will be made available for the local authority if called upon.	To monitor potential air quality effects and identify further required mitigation measures.	Construction Contractor
PW-AQ-002	Any exceptional incidents that cause dust and/or dust emissions (either on or off site) and any action taken to resolve the situation will be recorded.	Site management.	Construction Contractor
PW-AQ-003	Daily on and off-site inspections (up to a minimum of 50 m from the site boundary) will be undertaken; at the frequency agreed within the Dust Management Plan; the frequency of these inspections will be increased when site activities being undertaken have a high potential to produce dust.	Monitoring of dust producing activities during Construction.	Construction Contractor
PW-AQ-004	A Dust Monitoring Plan will be agreed with the local authority, using either dust deposition, dust flux or real-time PM10 continuous monitoring at the Centralised Compound.	Monitoring of dust producing activities during Construction.	Construction Contractor
PW-AQ-005	The Dust Monitoring Plan will be implemented on site by the Construction Contractor. This will include measures to control other emissions, in addition to dust and PM10 mitigation measures.	To control and monitor dust deposition, dust flux, real-time PM10 and other emissions.	Construction Contractor
PW-AQ-006	The site layout will be planned so that machinery and dust causing activities are located away from receptors, as far as reasonably practicable.	Where practicable avoiding or reducing likely air quality and dust effects on sensitive receptors	Construction Contractor
PW-AQ-007	Where construction is undertaken near sensitive receptors, such as residential properties and designated ecological sites (including ancient woodland), solid screens or barriers will be erected around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Where practicable avoiding or reducing likely air quality and dust effects on sensitive receptors.	Construction Contractor
PW-AQ-008	Earthworks and exposed areas or soil stockpiles will be managed to prevent wind-borne dust using measures such as covering, seeding or water suppression.	Where practicable avoiding or reducing likely air quality and dust effects on sensitive receptors.	Construction Contractor
PW-AQ-009	The Construction Contractor will ensure that all vehicle engines are switched off when not in use and ensure there is no idling.	Reduce emissions from vehicles and machinery during construction.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-AQ-010	Where reasonably practicable, more sustainable on-site energy generation will be investigated, rather than the use of diesel or petrol-powered generators.	Reduce emissions from vehicles and machinery during construction	Construction Contractor
PW-AQ-011	A maximum speed limit of 15 mph on surfaced roads and 10mph on unsurfaced haul roads and work areas will be signposted and imposed.	Reduce emissions from vehicles and machinery during construction	Construction Contractor
PW-AQ-012	The most practically sustainable form of transport for the delivery of goods and materials will be investigated and selected for use, so far as reasonably practical.	Reduce emissions from vehicles and machinery during construction	Construction Contractor
PW-AQ-013	Cutting, grinding or sawing equipment will only be used if fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems	To reduce risk of dust blowing around Site and to protect workers from inhalation.	Construction Contractor
PW-AQ-014	The Construction Contractor will ensure there is an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	To reduce risk of dust blowing around Site and to protect workers from inhalation.	Construction Contractor
PW-AQ-015	Covered skips will be used to reduce the risk of materials or dusty materials blowing out and contaminating the surrounding site.	Reduce risk of materials becoming loose and potential contamination of Site.	Construction Contractor
PW-AQ-016	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	To prevent further spread of spills and contamination to surrounding environment.	Construction Contractor
PW-AQ-017	There will be no bonfires or burning of waste materials.	Waste Management practices and reducing hazardous fumes.	Construction Contractor
PW-AQ-018	Following excavation works, return subsoil and topsoil at the earliest suitable time of year after construction has been completed.	To prevent impacts from Earthwork activities.	Construction Contractor
PW-AQ-019	Avoid scabbling (roughening of concrete surfaces) if possible.	Construction mitigation measures	Construction Contractor
PW-AQ-020	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.	Construction mitigation measures	Construction Contractor
PW-AQ-021	All construction plant and equipment will be maintained in good working order.	To prevent impacts from Trackout.	Construction Contractor
PW-AQ-022	Use water-assisted dust sweepers on the access and local roads, to remove, as necessary, any material tracked out of the site. The use of road sweepers along roads affected during the Construction Stage (i.e. Construction Traffic Routes routes) will be agreed with Flintshire County Council and the North and Mid Wales Trunk Road Agency.	To prevent impacts from Trackout.	Construction Contractor
PW-AQ-023	Avoid dry sweeping of large areas where possible.	To prevent impacts from Trackout.	Construction Contractor
PW-AQ-024	Ensure vehicles carrying materials are appropriately covered when entering and leaving sites to prevent escape of materials during transport.	To prevent impacts from Trackout.	Construction Contractor
PW-AQ-025	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	To prevent impacts from Trackout.	Construction Contractor
PW-AQ-026	Record all inspections of haul routes and any subsequent action in a site log book.	To prevent impacts from Trackout.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-AQ-027	Where works are undertaken in built-up areas, install haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	To prevent impacts from Trackout.	Construction Contractor
PW-AQ-028	Where trackout is likely to occur, such as access points to the local highway near sensitive receptors, temporary hard surfacing will be prepared. Upon review of on-site activities, wheel washing facilities will be implemented where they are deemed to be required.	To prevent impacts from Trackout.	Construction Contractor
PW-AQ-029	Maintenance venting will take place during the day. Meteorological conditions should be checked before commencement of pipeline maintenance.	Minimise likelihood of odours during Operation.	The Applicant
PW-AQ-030	When maintenance venting operations are planned to take place, signs will be placed on/near the nearby footpaths (301/55/10 and 301/56/10), warning of potential works and that odours may be experienced on the dates selected for maintenance venting.	Minimise likelihood of odours being detected during Operation.	The Applicant

Table 6-4 Climate Resilience

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-CR-001	A list of extreme weather-related incidents (for example, rainfall, heatwaves, snow and ice, etc.) will be maintained by the Applicant to assist in identifying thresholds which, when exceeded, require maintenance or alteration. Inspections will be carried out following an intense rainfall event or heatwave to monitor any damage and implement appropriate mitigation as necessary. A schedule of general inspections and principal inspections of each structure will be carried out to determine condition of the AGI and identify any potential maintenance requirements. Inspections will be undertaken following an intense rainfall event or heatwave to monitor any damage, maintain surface water drainage features and implement appropriate mitigation as necessary. The Padeswood Spur Pipeline Proposed Development will have an Operations and Maintenance Procedure for routine maintenance and inspection visits of the Carbon Dioxide Pipeline and the AGI to ensure their protection against potential climate impacts identified.	To ensure there is mitigation to prevent damage/degradation of the Padeswood Spur Pipeline Proposed Development arising from drought.	The Applicant
PW-CR-003	A lightning Protection Study will be performed during Detailed Design, and all necessary protective measures implemented.	To ensure there is mitigation to protect against damage/degradation of the Padeswood Spur Pipeline Proposed Development arising from lightning strikes	Construction Contractor
PW-CR-004	No permanent structures will be over five metres in height within the AGIs	To protect against damage/degradation of the Padeswood Spur Pipeline Proposed Development arising from lightning strikes	Construction Contractor
PW-CR-005	Permanent above ground features in the AGIs will be attached to concrete foundations and consideration will be taken during design with relation to wind loading in accordance with EN 1991-1-4 “Eurocode 1: Actions on structures".	To ensure wind loads are adequately accounted for.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-CR-006	The E&I kiosks will be weather-sealed, and the outdoor electrical and instrumentation equipment will be IP-rated.	To protect against damage/degradation of the Padeswood Spur Pipeline Proposed Development arising from storm conditions.	Construction Contractor
PW-CR-007	Consideration will be taken during design with relation to snow loading in accordance with "Eurocode 1: Actions on structures - Part 1-3: General actions — Snow loads".	To ensure snow loads are adequately accounted for.	Construction Contractor
PW-CR-008	Drainage from the Padeswood AGI will be linked to the wider Padeswood CCS Plant drainage system, which has been subject to a Flood Consequence Assessment.	To protect against flooding of the Padeswood AGI.	Construction Contractor
PW-CR-009	Above ground equipment will be specified with a high-quality external coating to protect from all credible external corrosive mechanisms, regardless of rainfall volume.	To protect against damage/degradation of the Padeswood Spur Pipeline Proposed Development arising from storm conditions.	Construction Contractor
PW-CR-010	Prior to Decommissioning, a Decommissioning Environmental Management Plan will be developed and agreed with relevant stakeholders.	Protect workers and the site from climate effects.	The Applicant

Table 6-5 Cultural Heritage

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-CH-001	Mitigation strategies will be developed following further archaeological evaluation across the Padeswood Spur Pipeline Proposed Development. The results of archaeological trial trenching (which is ongoing during the Pre-Application Consultation period) will determine if any mitigation measures will be required to protect, or record below ground archaeology.	N/A	N/A

Table 6-6 Biodiversity

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-BD-001	The design of the Padeswood Spur Pipeline Proposed Development has avoided sites and habitats subject to nature conservation designations where possible. Where significant crossings are required, such as the Wepre Brook (which is hydrologically connected to the River Dee Estuary SPA, SAC and Ramsar), trenchless installation techniques will be employed preventing the need for open-cut construction methods. Through use of trenchless installation techniques, impacts arising from construction upon habitats and species associated with designated sites will be avoided and reduced.	To avoid adverse impacts to designated sites and protected species and comply with conservation legislation	Construction Contractor
PW-BD-002	Where possible, Ancient Woodland has been excluded from the Padeswood Spur Pipeline Proposed Development. Trenchless installation techniques to avoid and reduce adverse effects on Ancient Woodland present within the Padeswood Spur Pipeline Proposed Development will be implemented.	To avoid adverse impacts to Ancient Woodland	Construction Contractor
PW-BD-003	Micro-siting techniques will be employed throughout the Detailed Design of the Padeswood Spur Pipeline Proposed Development, including during pre-construction and construction to avoid sensitive habitats, trees (including ancient	To minimise adverse impacts on designated sites/ habitats/ watercourses/trees.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	and veteran trees and trees covered by Tree Preservation Orders and trees within Conservation Areas), hedgerows, etc., as much as practicably possible. Where opportunities exist for routing through existing gaps in hedgerows, scrub and woodlands, avoiding the need to remove vegetation, these will be prioritised.		
PW-BD-004	All waterbodies identified during baseline surveys are outside the Red Line Boundary and will be retained and will not be temporarily or permanently lost to facilitate construction of the Padeswood Spur Pipeline Proposed Development. Where necessary the ECoW will advise on the need for the installation of temporary exclusion buffer to avoid/reduce potential adverse impacts to waterbodies and associated terrestrial bankside habitat and associated aquatic receptors from construction.	To avoid impacts to waterbodies and associated riparian and aquatic receptors.	Construction Contractor
PW-BD-005	Where hedgerow removal is required to facilitate the development, it is assumed that this will be kept to a maximum width of 17 m (this includes both hedgerows and the trees that site within hedgerows). Where the pipeline crosses vegetation at a 90 degree angle, losses will be a maximum of 12 m. All trees and hedgerows sited above any trenchless crossing point will be retained.	To minimise adverse impacts on Habitats of Principal Importance (HPI).	Construction Contractor
PW-BD-006	A minimal working width at watercourse crossings will be adopted, as far as practicable, to minimise potential impacts of open cut watercourse crossings.	To minimise and avoid impacts to aquatic habitats.	Construction Contractor
PW-BD-007	All entry and exit pits for all trenchless crossings will be sited a minimum of 8 m away from any main riverbank top (and any defence structure on that watercourse). Stand-off distances around watercourses will be implemented prior to the commencement of works and clearly demarcated through the use of physical barriers (fencing, tape or similar). A minimum 8m buffer will be demarcated around main river watercourses.	To avoid impacts to watercourses and associated riparian and aquatic receptors.	Construction Contractor
PW-BD-008	Plant, personnel and site traffic will be constrained to a prescribed working corridor through the use of temporary barriers, where practicable, to firstly avoid and secondly minimise damage to habitats, encroachment of the construction easement, and potential direct mortality and/or disturbance of fauna located within and adjacent to the construction corridor	To avoid impacts to habitats and species.	Construction Contractor
PW-BD-009	Prior to construction, a team of suitably qualified and experienced Ecological Clerk of Works (ECoWs) will be appointed to support, oversee and monitor the Construction Contractor with the implementation of measures defined within the OEMP. ECoWs may be required during construction to ensure appropriate oversight of multiple active works locations. Broadly, the ECoW will: • Provide ecological advice to the Construction Contractor over the entire construction programme, at all times as required. • Undertake or oversee pre-Construction surveys for protected species in the areas affected by the Padeswood Spur Pipeline Proposed Development. • Monitor ecological conditions during the Construction Stage to identify additional constraints that may arise as a result of natural changes to ecological baseline over time, e.g., the monitoring of badger activity within and in close proximity to construction works. • Provide ecological toolbox talks to site personnel to make them aware of ecological constraints and information; highlight mitigation to minimise impacts; and make site personnel aware of their responsibility with regards to wildlife and	To ensure implementation of mitigation measures, track compliance with commitments and legal requirements.	The Applicant / Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	sensitive habitats in the context of legislation and policy. Toolbox talks will include, as required, all ecological receptors considered within the ES as a minimum. · Monitor the implementation of mitigation measures during the Construction Stage to ensure compliance with protected species legislation, licensing, and commitments within the ES. The ECoW will have previous experience in similar ECoW roles and be approved by the Applicant. The ECoW will be appointed in advance of the main construction programme commencing to ensure pre-Construction surveys are undertaken and any advance mitigation measures required are implemented.		
PW-BD-010	All necessary permits, licences and consents will be applied for from relevant bodies in advance of construction or enabling works commencing. Only once licence/permit applications have been granted, and any initial licensed actions completed, can works commence. Licences and permits are likely to include, but are not limited to, derogation licences for protected species, permits for in-water works, etc. Consents are likely to be required for works in proximity to statutory designated sites (deemed granted through the planning process pending NRW approval).	To protect sites, habitat and fauna.	Construction Contractor
PW-BD-011	The Applicant will appoint a suitably qualified ECoW to conduct Environmental Compliance Audits during construction of the Padeswood Spur Pipeline Proposed Development. The 'Auditing ECoW' will undertake checks of the Construction Contractor and their ECoW(s) reporting on compliance of construction works, mitigation and activities on site against the ES and detailed Construction Environmental Management Plans (CEMPs), as well as any obtained licences, permits or assents. The ECoW will produce monthly reports (or otherwise agreed reporting deadlines in response to on-site activities) and provide written and verbal feedback to the Construction Contractor on performance and adherence with the ES, detailed CEMPs, licences, permits and assents throughout the construction period, as required.	To ensure implementation of mitigation measures and legal requirements.	The Applicant
PW-BD-012	A pre-commencement walkover survey will be completed by the ECoW (or appointed ecologist) of areas within the Red Line Boundary (extended where necessary to encompass a relevant zone of influence as determined by the ECoW/ecologist) of any areas that could not be accessed during baseline surveys completed in 2024 and 2025. The walkover survey shall include a ground level assessment of land in search of presence or activity of protected and or notable species. The walkover survey results will determine the need for additional survey, mitigation and/or licensing beyond that included within the ES; to be considered in advance of construction commencement. Results of surveys and any need for mitigation and licensing will be discussed with relevant stakeholders (e.g. NRW, FCC) where required, with updates captured within the detailed CEMP.	To update baseline survey results and protect species and habitats.	Construction Contractor
PW-BD-013	The need for pre-Construction surveys to update baseline results across the Red Line Boundary will be assessed by the appointed ecologist/ECoW following confirmation of Detailed Design of the Padeswood Spur Pipeline Proposed Development. Pre-Construction surveys may be necessary to update baseline results in advance application of protected species licenses/permits/ exemptions	To protect species.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	required to facilitate construction of the Padeswood Spur Pipeline Proposed Development.		
PW-BD-014	Site/vegetation clearance and tree felling will be kept to a minimum as far as practicable to reduce the impacts of habitat loss and fragmentation. Areas of clearance, particularly those within temporary works, shall be identified within a works plan and agreed with the ECoW. Site clearance of dense vegetation will be undertaken carefully (where possible using hand tools) and by experienced contractors to reduce the risk of mortality to wildlife. Care will be afforded to dense stands of bramble or similar vegetation, which may be used by sheltering hedgehog or other wildlife, particularly during the winter months. Where trees and other woody vegetation are to be felled/ cleared, the felled material will, where practicable, be used to create hibernacula within appropriate retained habitats rather than being chipped. Locations will be identified by the appointed ECoW during construction.	To reduce impacts to flora and fauna, reduce habitat loss and fragmentation.	Construction Contractor
PW-BD-015	Where temporary lighting is required during construction, a suitable lighting design (where necessary on a case-by-case basis) for implementation across the Padeswood Spur Pipeline Proposed Development will be developed in accordance with best practice guidance with regards to protected species. It will broadly include: • Avoidance of direct lighting on any buildings or trees that contain bat roosts or barn owl nest/roost sites; • Avoidance of artificial lighting of watercourses as far as practicable, particularly during the hours of darkness to prevent impacts to fish behaviour or passage; • Avoidance of light spill using directional and or baffled lighting; • The use of movement triggers, thus lighting only turns on when people (large objects) move through the area (use within Construction Compounds); • Positioning of lighting columns away from habitats of value to foraging and commuting bats and other nocturnal fauna (e.g. hedgerows, trees, woodland); • Reducing the height of lighting columns to reduce light spill onto adjacent habitats; • Undertaking works during daylight hours (broadly 08:00 to 18:00) reducing the need for night-time lighting; and/or • Avoidance of use of blue-white short wavelength lights and high UV content where necessary to avoid impacts to biodiversity.	To reduce disturbance to fauna.	Construction Contractor
PW-BD-016	Prior to works commencing a pre-commencement walkover survey for badger will be undertaken of the works area and to a distance of 30 m from the Red Line Boundary (extended at the discretion of the ECoW/appointed ecologist). A pre-works walkover survey will be undertaken by the ECoW to confirm that baseline results remain accurate and relevant. The survey work is recommended to be undertaken at least three months in advance of the commencement of works. The alignment of the Padeswood Spur Pipeline Proposed Development will, wherever practicable, maintain a 30 m buffer from all sett entrances associated with main, annex, subsidiary, and outlier setts. Where this is not possible, at the	To protect species.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	discretion of the ECoW and in response to the type, duration and extent of works, a reduction in exclusion buffer size may be granted. Where not possible, appropriate mitigation measures will be devised and captured within a method statement alongside an application for a badger licence (where considered necessary). Mitigation measures may include the temporary or permanent closure and destruction of a sett under licence. Only upon receipt of a granted licence and following completion of all necessary licence requirements/mitigation can works commence. • The setts identified in the **Badger Survey Technical Appendix (Confidential) (Document Reference: PW.3.3.9.6)** will require mitigation to avoid where possible direct and indirect impacts. Setts requiring closure will be subject to protected species licence applications detailing proposed closure methods and mitigation (where necessary) and timeframes, in advance of construction commencement. The process and method of sett closure will be detailed within method statements, accompanying any licence application. Methods are broadly to follow: • Preparation of method statement and licence application with submission to relevant body. • Appointment of an appropriately experienced and licensed ecologist to oversee the closure process and adherence to licence requirements following granted licence receipt. • Installation of wire mesh and one-way gates on and around sett entrance/s. A minimum period of 21 days monitoring post gate installation, to determine whether badger have vacated a sett. • If signs of badger re-entry are recorded, exclusion measures will be repaired and extended (as required) and the 21-day monitoring period restarted. • Following successful conclusion of 21-day period without badger activity or evidence, destruction of the sett by careful excavation under the supervision of the licensed ecologist (or named accredited agent). Sett closure and destruction is restricted to the period July to November inclusive. Only once the entirety of the sett exclusion period has been successfully completed (i.e. no evidence of badgers occupying or utilising the sett) can destruction of the sett take place and construction commence thereafter. Should a badger sett or activity be discovered within a zone of influence of proposed construction works, mitigation will be developed and, where required, an application for a derogation licence from NRW will be applied for in advance of construction. Any necessary mitigation to facilitate construction will be implemented in advance of construction commencement (within that zone of influence) following receipt of a granted licence.		
PW-BD-017	Due to the presence of badger within the Red Line Boundary, badger permeable fencing will be used, where fencing is required to allow the free movement of badger through the landscape. It may be necessary to implement temporary badger-resistant fencing around spoil heaps/storage locations to prevent any attempts of sett creation/excavation. Where possible, spoil will be stored in heaps with shallow angles to dissuade badger from sett creation attempts. Spoil heaps	To avoid adverse impacts to badger movement within the landscape.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	will be left in situ for as short a duration as possible, or else covered and secured with appropriate material (e.g. tarpaulin), where considered required by the ECoW.		
PW-BD-018	To prevent entrapment of wildlife, where trenches or voids are to be left overnight, a suitable means of escape will be provided (such as a ramp at no greater than a 45° angle) at regular intervals along the excavated trench channel/excavations. Any void/trench channel should be visually inspected prior to re-starting works each morning to confirm the absence of entrapped wildlife. All escape measures will be discussed and agreed with the ECoW to ensure they are suitable for the size of void and wildlife that may become trapped. Any exposed tunnels or pipes will, where practicable, be covered or capped to prevent access to wildlife. If necessary, the ECoW may recommend additional measures such as the installation of temporary amphibian/ reptile fencing around voids / trenches to prevent entry.	To protect wildlife.	Construction Contractor
PW-BD-019	At present no bat maternity or hibernation roosts have been identified and mitigation is not proposed. Where practicable, trees containing roosts will be retained. A single transitional common pipistrelle bat roost has been identified at T275 during the 2024 baseline surveys. T275 is located along the Red Line Boundary and is anticipated to be retained. An NRW bat licenced ecologist or accredited agent will assess the potential for disturbance in response to the roost type, timing of works, duration and extent of works proposed in proximity to known roosts, advising of the need to implement mitigation (e.g. non-licenced bat method statement, with the roost retained and demarcated to an appropriate buffer, depending on the works and roost type, to safeguard the roost) or else apply for an NRW European Protected Species Licence (EPSL) to facilitate works. An NRW EPSL application will be required where trees with confirmed bat roosts cannot be retained or safeguarded and roosts will be lost. Further surveys to ascertain roost type, species present and number of bats will be required in advance of any NRW EPSL application to allow for the preparation of accompanying documents such as a licenced bat method statement, detailing methods of felling and necessary mitigation for any bat roosts to be lost. Works will be undertaken in compliance with an NRW EPSL when granted.	To protect the Conservation Status of local bat populations.	Construction Contractor
PW-BD-020	Pre-commencement surveys on PRF-M trees which may potentially be felled or damaged and where a roost is found. Pre-commencement surveys on PRF-M trees which may potentially be felled or damaged (which is anticipated to be T27, T31, T90, T106, T265, T266 and T267) will be completed to update baseline survey results. This will inform any requirements for an NRW EPSL application if a roost is found or a non-licenced bat method statement where PRFs remain present and bats are likely to be absent. Surveys will be undertaken prior to construction and during the active bat season (May to September inclusive, with at least two visits between May and August) with three aerial PRF-inspection surveys or three emergence surveys spaced a minimum of three weeks apart.	To protect the Conservation Status of local bat populations.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Where a roost is found an NRW EPSL licence will be required, works are to be completed under a licenced bat method statement, with associated documents and a work schedule which will detail: • The method, scope and requirement of pre-commencement surveys. • The timing of works, which will be agreed in advance with the relevant statutory body and dependant on the species and type of roost identified, following completion of updated pre-commencement baseline surveys. • Felling protocols for bat roosts. • Compensation requirements (for example, erection of compensatory bat boxes at an expected ratio of 3:1), which will be required to be installed ahead of any felling of trees covered within the EPSL. • Toolbox talks which will be carried out by the named bat ecologist (or accredited agent) and will provide a briefing to the site operatives to outline the planned works at each roost location, actions required if a bat is found, and their legal responsibility regarding bats and their roosts. Mitigation and compensation requirements are subject to agreement with NRW.		
PW-BD-021	Upon completion of the updated pre-construction baseline surveys of PRF-M trees, trees which cannot be retained where no roost has been found but potential roost features remain , along with PRF-I trees (trees with the potential to support individual roosting bats only T351, T354, T468, T361, T362, T269, T281, T326, T478 and T345), will be soft felled under a non-licenced bat method statement and under supervision by NRW bat licenced ecologist or accredited agent. PRF-M and PRF-I trees proposed for felling (Appendix 9.4 - Bat Survey Report, Document Reference: PW.3.3.9.4) will be subject to an aerial tree PRF-inspection by NRW bat licenced ecologist or accredited agent and/or dusk emergence survey no more than 24 hours prior to pruning/felling to check for roosting bats. Soft felling will consist of the removal of major branches and limbs followed by section felling of the main trunk. Sections of trees with features suitable to support bats will be lowered to the ground for inspection by the NRW bat licenced ecologist or accredited agent. In the event a bat or roost is identified works will cease and liaison with NRW sought for further advice. Should a bat roost be recorded, a method statement detailing appropriate mitigation will accompany an NRW EPSL application for submission to the relevant statutory body. Only upon receipt of a granted licence and implementation of necessary mitigation (as detailed within the licence application) can works take place. In the unlikely event that a bat roost is found in a PRF-I tree, further surveys to support the NRW EPSL application would be required.	To protect potential roosting bats.	Construction Contractor
PW-BD-022	If practicable and at the discretion of the NRW bat licenced ecologist or accredited agent, where trees with potential roost features suitable for bats (but absent of roosting bats as determined through surveys) are to be felled to facilitate construction, trees will be felled in such a way as to retain the potential roost feature(s). These features will then be translocated and erected on nearby retained trees under direction of the NRW bat licensed ecologist or accredited agent to retain future viability of the feature as a roost.	To protect potential roosting bats.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Where trees with suitable roost features (but absent of bat roosts as determined through surveys) are to be lost and it is not practicable or possible to retain potential roost features for erection on nearby retained trees; veteranisation of retained trees and creation of monoliths will be explored within the Padeswood Spur Pipeline Proposed Development under direction of an NRW bat licenced ecologist or accredited agent, to enhance landscape opportunities to support roosting bats.		
PW-BD-23	For trees which are to be retained which have been identified as PRF-M where pre-commencement surveys have not been undertaken (for example for Red Line Boundary trees), potential impacts will be reviewed with respect of the type, extent and duration of works proposed, by an NRW licenced bat ecologist or accredited agent. The NRW licenced bat ecologist will then assign an exclusion buffer/demarcating the potential bat roost to avoid works within that distance. It is anticipated that a minimum buffer of 10 m will be applied. However, it is at the discretion of the NRW licenced bat ecologist and it may be possible to reduce the exclusion buffer where it is appropriate e.g. for minor access along an existing road. Where risk of disturbance/damage of a roost persists after an assessment by the NRW licenced bat ecologist, further survey work will be required and where a bat roost is present an NRW EPSL will be applied for. Works would only be allowed to proceed following receipt of a granted licence from NRW and implementation of any necessary mitigation (e.g. non licenced bat method statement).	To avoid adverse impacts on protected species. To protect the Conservation Status of local bat populations.	Construction Contractor
PW-BD-24	Hedgerows that require removal to facilitate construction will be translocated during construction and maintained so they can be translocated back into the hedgerow they came from to mitigate the loss and fragmentation of Important Hedgerows and Hedgerow Priority Habitats. The full hedgerow translocation strategy will be detailed pre-construction in the Contractor's CEMP. This will need to detail the translocation methods, timings, care during and after translocation and the methods for translocation of the hedgerows on completion of the pipeline construction. Establishment will be assessed by the ECoW (as part of during construction and post-construction monitoring of reinstated habitats).	To avoid adverse impacts to Important and Priority Habitat Hedgerows and protected species and to limit the length of time hedgerows are fragmented and maintain structure post-construction. To limit the time hedgerow gaps are present and to maintain commuting and foraging routes.	Construction Contractor
PW-BD-025	Mature, locally characteristic native shrubs will be used for replanting gaps in hedgerows created by the proposed works, if translocation is not fully successful in maintaining viable shrubs. Establishment will be assessed by the ECoW (as part of post-construction monitoring of reinstated habitats).	To avoid adverse impacts to Important and Priority Habitat Hedgerows and protected species and comply with conservation legislation. To maintain commuting and foraging routes.	Construction Contractor
PW-BD-026	Post construction, all hedgerows subject to hedgerow loss to facilitate construction, and where translocation has not been successful, will be reinstated with native species of local provenance in-keeping with the overall species compositions of hedgerows. Reinstatement will comprise a combination planting of whips and standard-sized shrubs. Planting shall be selected to match as close as possible, the height of any adjacent retained hedgerow. Hedgerows directly impacted as a result of the Padeswood Spur Pipeline Proposed	To avoid adverse impacts to protected species and comply with conservation legislation.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Development (i.e. those not impacted as a result of Construction Compounds) will be reinstated within 1 year of impact.		
PW-BD-027	Following planting of all impacted hedgerows post construction, those hedgerows identified as important for bats (**Appendix 9.4 - Bat Survey Report (Document Reference: PW.3.3.9.4**) will be supplemented through the installation of temporary flight lines to maintain linear structure whilst planted sections establish. In addition, such hedgerows will be subject to monitoring through monthly crossing point surveys during the first active bat season following hedgerow reinstatement (period May to September inclusive) to determine use (or otherwise) by target species (for example lesser horseshoe Rhinolophus hipposideros and activity levels considered sufficiently high to affect the favourable conservation status of other species (e.g. brown long-eared bat Plecotus auritus and Myotis species). Only once the planted hedgerow section has established to levels akin to the unimpacted hedgerow, as assessed by an appropriately experienced ecologist, can the artificial flight line be removed.	To avoid adverse impacts to protected species and comply with conservation legislation. To maintain commuting and foraging routes.	Construction Contractor
PW-BD-028	A pre-commencement survey in search of evidence/activity of riparian mammals (namely otter and water vole) in watercourses crossed by the Padeswood Spur Pipeline Proposed Development, and those within an appropriate buffer of proposed works. Surveys should include all sections of watercourses within the Working Width, extending to 150 m either side of the Working Width, as a minimum. This should also include watercourses not crossed but within potential disturbance distance of construction works at the discretion of the ECoW/appointed ecologist. Surveys will be undertaken at least 3 months prior to construction works commencing to confirm baseline conditions and mitigation proposals remain accurate or else inform requirements for new mitigation and/or licencing.	To protect riparian mammals and update riparian mammal baseline data should an EPS or a WCA Licence application be required.	Construction Contractor
PW-BD-029	Where temporary culverts are to be installed, these will remain in place for as short a time as practicable only to serve facilitating construction, suitable commuting routes for riparian mammals will be demarcated around any temporary culverts. Reinstatement of habitats following culvert removal will be undertaken where considered necessary by the ECoW, or else left to naturally regenerate. Temporary culverts required on main and ordinary watercourses (i.e. not field ditches) will be suitability sized and designed/installed to best practice Fish Pass standards.	To avoid adverse impacts to protected species and comply with conservation legislation.	Construction Contractor
PW-BD-030	Trees and nest boxes recorded within the Padeswood Spur Pipeline Proposed Development which have been identified as suitable to support roosting or nesting barn owl (Barn Owl Tech Note (Confidential)) will be subject to a pre-construction survey to ascertain the use of the feature(s) by barn owl. Whilst known barn owl roost and nest sites will be avoided and retained where possible, exclusion of barn owls from barn owl boxes and other features may be required under licence. Where this is required, a minimum of 30 days prior to the exclusion works compensatory barn owl boxes (at a ratio 1:1) will be erected in suitable locations under supervision of an appropriately licensed ecologist, where practicable, within 250 m of the feature/box being excluded to compensate for the temporary loss of roosting and/or nesting sites. Erected boxes will be sited in locations that will not be subject to disturbance or	To compensate for the temporary loss of barn owl nesting / rooting sites and protect barn owl.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	impact by construction under the advice of a barn owl licensed ecologist. Following the completion of construction works and the removal of Construction Compounds, any barn owl features temporarily excluded will be re-opened for use by barn owl.		
PW-BD-031	Trees recorded within the Padeswood Spur Pipeline Proposed Development suitable for barn owl roost sites will be subject to an ecological inspection during the winter period (October – February inclusive) prior to works commencing. Where no evidence of nesting barn owl is visible, features will be temporarily blocked up until construction works and activities within a 250 m buffer have been completed. Upon completion of construction works, features will be unblocked.	To reduce the impact to barn owl disturbance.	Construction Contractor
PW-BD-032	No barn owl nesting sites were identified within the Red Line Boundary or within 30m of it during surveys to date. In order to adopt a suitably precautionary approach to development pre-construction surveys will be carried out to determine if any nesting sites have become established in the intervening period from surveys in 2024 and the commencement of construction In the event that barn owl nesting sites are identified, construction in proximity to barn owl nest sites that have not been subject to temporary exclusion measures (i.e. nests that have established after construction commencement) will be temporarily and spatially restricted to avoid or reduce impacts of disturbance in accordance with the below criteria (developed in accordance with good practice): • Pedestrian movement of a Low to Medium Disturbance Risk, e.g. site personnel walking near nests/roosts, will implement a Minimum Protection Zone of 20 m. • Artificial lighting of a Low to Medium Disturbance Risk, e.g. illumination of works area (no direct lighting or nest/roost), will implement a Minimum Protection Zone of 30 m. • Vehicular movements of a Medium Disturbance Risk, e.g., vehicles or heavy plant moving past nest / roost sites, will implement a Minimum Protection Zone of 40 m. • General light building and landscape works of a Medium to High Disturbance Risk, e.g., laying concrete, using mechanised plant will implement a Minimum Protection Zone of 60 m. • Where heavy vehicles and plant for construction could create a High Disturbance Risk in proximity of active barn owl nests, e.g. piling or compaction works, ground levelling, crushing of materials, a Minimum Protection Zone of 100 m from the nest site during the nesting season will be implemented. It is assumed that works will be undertaken during daylight hours, however, some night-time work will be required. Where works need to be conducted within the minimum protection zone these will be discussed with the ECoW, and where necessary a barn owl licensed ecologist, who will assess the proposed works, duration and extent and potential use of mitigation to facilitate works. Where works are deemed to pose a significant risk to nesting barn owl, licensing may be required and/or the rescheduling of works to periods outwith the most sensitive period (March to June inclusive), however, this would be at the discretion of the ECoW/barn owl licensed ecologist.	To comply with conservation legislation and protect barn owl.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-BD-033	Invasive Non-Native Species (INNS) are present within the Padeswood Spur Pipeline Proposed Development (**Appendix 9.2 - Preliminary Ecological Appraisal Report (Document Reference: PW.3.3.9.2)**). A Biosecurity Method Statement will be implemented throughout the construction of the Padeswood Spur Pipeline Proposed Development. The Biosecurity Method Statements will detail the locations and extent of any INNS and other biosecurity concerns, appropriate measures to control, prevent further spread or eradicate the species from the area if necessary. Appropriate good hygiene measures (e.g. Check, Clean, Dry methods) will also be included. Workers should be equipped with the necessary equipment, Personal Protective Equipment (PPE) and substances to implement biosecurity control measures, including effective hygiene and sanitation practices. This will most frequently comprise disinfectant tablets, sprayers, and brushes to clean and disinfect equipment and PPE prior to entering/leaving construction areas. Other noteworthy biosecurity considerations (e.g. avian flu, bovine TB) will also be referenced within a Biosecurity Management Plan to be produced prior to commencement.	To prevent the spread of invasive species and manage other biosecurity concerns.	Construction Contractor
PW-BD-034	Where INNS are located and within the construction corridor, the engagement of an INNS specialist will be sought whom will provide options for treatment and or removal in advance of construction. Any remaining stands of INNS will be subject to exclusion zones which will be clearly and physically demarcated and enforced around areas of invasive species to avoid spread or propagation. The extent of buffer will be determined by the species and in consultation with the ECoW. Biosecurity measures, as detailed within a Biosecurity Management Plan to be prepared at detailed design will be implemented during construction to prevent the spread of INNS.	To prevent the spread of invasive species and manage other biosecurity concerns.	Construction Contractor
PW-BD-035	Vegetation and site clearance works will be undertaken outside the bird nesting period, recognised as March to August inclusive, to avoid damage or destruction of nests. Where this is not possible, site clearance will be preceded by an inspection from an experienced ECoW within 24 hours of clearance works commencing to confirm the absence of active nests or nesting activity. If an active nest is recorded, a minimum exclusion zone of 5 m, where practicable, within which no works can take place (exclusion zone size will be at the discretion of the ECoW and in response to the species of bird encountered) and remain in place until the nest is confirmed inactive (either eggs hatch and chicks have fledged, or the nest attempt fails). All cleared vegetation will be rendered unsuitable for nesting birds, for example, by covering or chipping depending on the end purpose of the vegetation or will be removed from the works area.	To protect nesting birds.	Construction Contractor
PW-BD-036	Given the confirmed presence of GCN within the below listed waterbodies, an EPS Licence from NRW will be required to enable the construction of the Padeswood Spur Pipeline Proposed Development: Waterbodies 10, 11, 15 – 25, 41, 47 and 48 No waterbodies are to be lost as part of the Padeswood Spur Pipeline Proposed Development. Terrestrial habitat suitable for supporting GCN in their terrestrial phase will be temporarily or permanently impacted. Works will proceed under a GCN Precautionary Working Method Statement (PWMS) under ECoW supervision.	To protect the Conservation Status of local GCN populations.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	This will include a provision for suitable timing of works to take place, i.e. where terrestrial habitat suitable for overwintering GCN is to be cleared, this will only be carried out during the active GCN season, generally from March to September, when overnight temperatures are consistently above 5°C. Clearance of such terrestrial habitat will be subject to inspection, at the discretion of the ECoW, in advance of clearance.		
PW-BD-037	Where suitable GCN terrestrial habitat will be impacted, either temporarily or permanently, habitat clearance will take place prior to construction works. This will be undertaken under a PWMS and ECoW supervision and will include: • Prior to the commencement on site, it is recommended all site operatives attend a briefing from the ECoW. This will include a description of the location of known GCN populations in proximity to the works area, legislative policy, identification of GCN and other amphibians, how works will proceed under a PWMS and what occurs in the event a GCN, or other species, is found. • The gradual strimming of vegetation following ECoW inspection of vegetation to a short sward. Vegetation should be inspected by the ECoW, and if clear, strimmed to 10 cm; then checked again by the ECoW before strimming to ground level. Vegetation should then be maintained as a short sward for the duration of the construction works. • The deployment of newt-proof fencing to isolate works areas.	To protect GCN and other amphibians.	Construction Contractor
PW-BD-038	Where practicable, construction works will avoid works on watercourses during high flow events to reduce the risk of fine sediment release, increased flood risk, and impacts to aquatic ecology. Where possible, the Construction Contractor will seek to target activities at or near watercourses during the drier summer months to reduce this risk.	To avoid adverse impacts on water quality and aquatic species.	Construction Contractor
PW-BD-039	Turbidity and oxygen monitoring to be undertaken during the Construction Stage where deemed required due to the sensitivity of aquatic species receptors. The need and frequency of turbidity and oxygen monitoring would be determined by the regulatory authority and detailed in any required permits for undertaking work within or near watercourses.	To avoid adverse impacts on water quality and aquatic species.	Construction Contractor
PW-BD-040	Watercourses will be reinstated to mimic baseline conditions as far as practicable, including bank forms, in-channel features (such as riffles, pools, point bars etc), and morphological diversity. This includes the reinstatement of the vegetation assemblage and structure, using an appropriate species mix, within the riparian zone and in-channel. Works on watercourses will be restricted to the minimal width required for the construction activity to reduce impacts, with vegetation clearance occurring immediately prior to construction where practicable. An 8 m buffer zone between the construction zone and the watercourse will be retained, wherever practicable.	To minimise and avoid impacts to waterbodies and associated riparian and aquatic receptors.	Construction Contractor
PW-BD-041	Temporary culverts and causeways/access routes will be removed as soon as practicable when no longer required.	To avoid adverse impacts to protected species and comply with conservation legislation.	Construction Contractor
PW-BD-042	Temporary discharges will comply with the requirements for permits Main Rivers from NRW, regarding both acceptable discharge volumes and water quality.	To avoid adverse impacts to protected species and comply with conservation legislation.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-BD-042	Sensitivity (e.g. to noise and vibration) of those fish species present will be considered to ensure that appropriate construction methods can be implemented to minimise and avoid disturbance or avoidance behaviour. A Noise and Vibration Management Plan will be implemented. This will include, but not be limited to, information on the pile driving methodology, including commencing with a soft start, and thereafter proceeding with either press or vibration pile driving. If needed, percussion or hammer pile driving will be limited, within reason, to sink the piles to design depth.	To avoid adverse impacts to protected species and comply with conservation legislation.	Construction Contractor
PW-BD-043	Seeded biodegradable fibre matting will be used to encourage re-vegetation after works on, or near, the banks of each watercourse (except field drains unless otherwise advised by the ECoW) disturbed by the works to reduce establishment time and to help support bank structure. A suitable seed mix to produce a tussocky species-rich sward will be used to mitigate for the loss of habitats suitable to support riparian mammals. Where appropriate, willow whips will be installed to both provide green bank protection and to mitigate loss of riparian habitat. A sediment boom will be used downstream of the temporary crossing to intercept any sediment artificially mobilised during the Construction Stage.	To minimise adverse impacts to watercourses and associated riparian and aquatic receptors.	Construction Contractor
PW-BD-045	During any river dewatering and/or in-channel working, a fish rescue plan will be employed. Where areas are required to be temporarily dewatered to facilitate construction activities, fish will be removed under NRW consent and relocated before dewatering. Any environmental permit(s) shall be obtained and in place before the creation of a temporary dry channel. The construction of a temporary dry channel shall be undertaken by the mitigation measures contained within the Detailed CEMPs and any other relevant measures prescribed by granted permits from NRW. A pump may be required to divert flows during construction. Where this occurs, a 2 mm screen will be fitted on the transfer intake to minimise the risk of fish and eel entrainment.	To avoid adverse impacts to protected species and comply with conservation legislation .	Construction Contractor
PW-BD-046	The Construction Contractor will, as far as practicable, seek to reduce watercourse crossings for those watercourses that do not intersect the Red Line Boundary, and/or those with a partial extent or reach within the Red Line Boundary.	To minimise impacts on aquatic fauna and flora through a reduction of potential watercourse crossings.	Construction Contractor
PW-BD-047	Reinstatement of Habitats of Principal Importance (HPI) will take place post construction, however, recognising the need to reinstate with alternative habitats should former habitats potentially interfere with the buried pipeline (e.g. where trees are removed and cannot be reinstated, scrub will be planted as an alternative). Species will comprise native species of local provenance and will comprise a mixture of species. Planting should be undertaken in the appropriate planting season but as soon as possible following completion of the works to reduce the likelihood of undesired colonisation by flora or INNS. Non-HPI/Biodiversity Action Plan (BAP) habitats impacted by construction will be reinstated on a like-for-like basis at the locations of loss/impact. Where adjudged appropriate, certain habitats may be left to naturally recover or otherwise be left to be managed by landowners, rather than be subject to dedicated mitigation planting/sowing (e.g. arable fields, pasture grassland). Habitats requiring mitigation planting/sowing will be shown in the Landscape Design of the Padeswood Spur	To compensate for loss of habitats.	The Applicant / Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Pipeline Proposed Development. Reinstated habitats will be monitored and managed for a minimum 5-year period post reinstatement. Any dead or dying plants will be removed and replaced during the monitoring period.		
PW-BD-048	Where woodland and trees are to be lost to facilitate construction of the Padeswood Spur Pipeline Proposed Development, these will be mitigated for through the planting of trees across areas identified within the OEMP. Trees will be replaced at a ratio of 3:1 and will comprise planting of native species of local provenance, in-keeping with woodland within the wider landscape. Areas for planting will be sought to prioritise areas based on connections to, and to enhance, existing green infrastructure. Management of newly planted woodland and trees will be prescribed by the detailed EMP but will broadly follow management across a 10-year period during establishment. Management of other habitat types (e.g. scrub and riparian planting) will be subject to a 5-year management plan.	To mitigate for the loss of woodland and trees.	Construction Contractor
PW-BD-49	Where woodland and trees are to be lost to facilitate construction of the Padeswood Spur Pipeline Proposed Development these will be mitigated for through the planting of trees. Riparian enhancements are proposed along the Bracken's Drain, subject to landowner agreement, to off-set tree loss along watercourses which cannot be reinstated due to the pipeline root exclusion zone.	To minimise adverse impacts on protected/ notable species and habitats.	Construction Contractor
PW-BD-050	In advance of decommissioning works, ecology surveys will be undertaken, where required, to determine the ecological baseline and presence, or otherwise, of protected and/or notable species to determine any mitigation or licensing requirements in advance of decommissioning works commencement.	To minimise adverse impacts on protected/ notable species and habitats.	The Applicant
PW-BD-051	Opportunities for enhancement will be identified prior to and throughout construction of the Padeswood Spur Pipeline Proposed Development. Enhancement opportunities will be reflected within the detailed CEMPs as and where identified, but may include: • Where possible, cleared deadwood, felled trees and arisings from site clearance works will be used in a variety of locations to benefit wildlife. These locations will be determined by the ECoW and based on site conditions at the time. Materials will be stored in a suitable location away from the working area to prevent risk of damage and then placed within areas of retained woodland or woodland planting at an appropriate time. • Bat and bird boxes will be installed in unlit areas on multiple aspects (including facing south, west or east) at a height of a minimum of 3 m and have a clear flight path to the access point. The bat boxes will be located within existing or newly created suitable foraging and commuting habitats. The requirements of the bird boxes will be specific to the type installed and manufacturers advice will be followed. The bat and bird boxes could be placed within existing retained woodlands, during construction or once mature, the boxes could be placed within newly created woodlands, (on poles or mature existing trees along the edge), post-construction. • Where practical and bats are absent, potential roost feature(s) from felled trees will be translocated and erected on nearby retained trees under direction of the NRW bat licenced ecologist or accredited agent to retain future viability of the feature as a roost. • Veteranisation of selected and suitable retained trees and creation of monoliths will be explored under direction of an NRW bat licenced ecologist	To provide opportunities for biodiversity.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	or accredited agent, to enhance landscape opportunities to support roosting bats.		
PW-BD-52	Should any dead or visibly injured fish be observed during construction they should be reported immediately to Natural Resources Wales	To safeguard aquatic ecosystems	Construction Contractor

Table 6-7 Greenhouse Gases

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-GG-004	The Construction Contractor should maximise the opportunity to use more sustainable materials and products with reduced embodied carbon emissions and materials/resources featuring recycled content (where safe and of sufficient integrity for engineering), eventually supported with eco and carbon labels or verified Environmental Product Declarations (EPD), are preferred	Reduce embodied carbon emissions	Construction Contractor
PW-GG-005	Construction materials will be sourced from local suppliers and local waste disposal facilities will be used in the Flintshire region where practicable.	Reduce GHG resulting from transportation of materials	Construction Contractor
PW-GG-006	The Construction Contractor shall avoid disposal of construction waste to landfill, maximising recycling, and reuse of waste where possible.	Reduce GHG resulting from disposal of materials	Construction Contractor
PW-GG-007	The Construction Contractor shall use modern and efficient low emission construction plant and delivery vehicles, and/or those powered by electricity from alternative/lower carbon fuels. The Construction Contractor will ensure high performance of plant and equipment through correct and efficient operation, maintenance, and servicing of vehicle fleet to avoid polluting emissions.	Reduce GHG emissions associated with construction plant and equipment.	Construction Contractor
PW-GG-008	Training policies and management protocols will be in place during site induction to avoid idling of engines, spills of fuels (for example when refuelling) and safe/environmentally sensitive driving techniques to maximise fuel saving.	Reduce GHG emissions associated with construction plant and equipment.	Construction Contractor
PW-GG-009	The sustainability credentials of suppliers and companies in the supply chain will be considered as part of the procurement process.	Ensure sustainability of the supply chain	Construction Contractor
PW-GG-010	Where practicable, innovative construction methods (for example, optimising gradients of haul and access roads/points) will be incorporated to reduce construction energy consumption, such as plant use and minimise the need for sharp acceleration and braking in order to save fuel.	Reduce construction energy consumption	Construction Contractor
PW-GG-013	The requirement for venting shall be minimised where safe and practicable.	Reduce GHG emissions from venting.	The Applicant / Construction Contractor

Table 6-8 Land and Soils

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-LS-001	Temporary installation or upgrade of existing access tracks for the Construction Compounds and work-fronts will be set up to minimise disruption and local environmental impacts to Land and Soils. Options will include (dependent on local ground conditions and other variables) provision of bog matts, compacted gravel tracks, proprietary aluminium trackways and asphalt or concrete sealed surfaces.	To minimise disruption and local environmental impacts to land and soil.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-LS-002	Materials excavated for the trenching work will be stockpiled adjacent to the works and reused locally during backfilling of the trenches and reinstatement, where suitable. Any topsoil or organic surface material will be stockpiled separately for re-use on completion of the works.	Reduce loss of site won material.	Construction Contractor
PW-LS-003	Agricultural soil will be suitably stored and re-used. The stripping of topsoil will be carried out with care to provide maximum protection for the soil structure (preventing topsoil and subsoil becoming mixed and avoiding soil contamination). Topsoil will be formed into bunds for temporary stockpiling. Movement on or any kind of compaction of the topsoil will be avoided. As far as practical, topsoil will be stored adjacent to the works and reused locally during post-construction reinstatement.	Reduce adverse effects to agricultural soil quality.	Construction Contractor
PW-LS-005	A Material Management Plan (MMP) will be produced in accordance with CL:AIRE DoWCoP. The MMP will provide a clear, consistent and efficient process to enable the reuse of excavated material without it being classified as a waste and outline a cut / fill balance to reduce the amount of material permanently removed during the construction of the Padeswood Spur Pipeline Proposed Development.	Assure correct management of soils.	Construction Contractor
PW-LS-006	If, during open trench construction and excavations, unexpected gross contamination is encountered, potential mitigation options including potentially lining the trench in order to inhibit water percolation and subsequent leachate generation will be considered.	Prevent pollution of Principal Aquifers in bedrock and Secondary A Aquifers in superficial deposits.	Construction Contractor
PW-LS-007	Measures contained within the detailed CEMP to resolve impacts to land and soil will include: • Using appropriate risk assessments and method statements (RAMS) • All site operatives should follow hygiene best practices and be provided with the correct PPE (e.g. safety glasses, gloves and face masks where applicable) or Respiratory Protective Equipment (RPE) (over and above the standard PPE) to reduce the risk of inhaling / ingesting / touching contaminated materials. • All site operatives will be made aware of the risks posed from ground conditions likely to be encountered during the construction, for example through toolbox talks before undertaking any works.	Protection of construction and maintenance workers from ingestion / inhalation / dermal contact with contaminated soils.	Construction Contractor
PW-LS-008	All site operatives will be fully trained and competent in their role. There will be a trained and responsible manager on site during construction works, including any movement of the stockpiles. • If unexpected visual and olfactory evidence of contamination is encountered an appropriately qualified environmental consultant will be asked to advise and if appropriate additional investigation and remediation would be undertaken in consultation with regulators. • If unexpected visual and olfactory evidence of contaminated is encountered the LPA and NRW would be notified, and any follow up investigation and remediation would be provided to them for review.	Protection of construction and maintenance workers from ingestion / inhalation / dermal contact with contaminated soils.	Construction Contractor
PW-LS-019	In line with standard practice all excavations and trenches should undergo gas testing prior to entry. The Construction Contractor will be appropriately experienced and will be briefed in the expected and unknown ground conditions. The Construction Contractors ground workers will be appropriately trained to	To mitigate unacceptable contaminated land related risks to the environment and construction workers and ensure works are legally compliant.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	identify potential contamination. Should unexpected Made Ground or unexpected contaminated ground (i.e. visual or olfactory evidence of contamination) be encountered during the construction phase, a suitably qualified person will be employed by the Construction Contractor to advise on the appropriate course of action. Testing of Made Ground for a minimum of asbestos, metals, petroleum hydrocarbons and polyaromatic hydrocarbons to assess suitability for re-use and potential risks to construction works will be undertaken.		
PW-LS-010	Ongoing monitoring and maintenance will be undertaken to ensure that any temporary or permanent drainage in the main works area is meeting its operational requirements. This will prevent surface runoff and/ or contamination from entering surface water or groundwater bodies and migrating. Appropriate measures and maintenance procedures will be detailed in the detailed CEMP. Emergency procedures will be in place should a leak of contamination i.e. from a drainage failure or machine tank, occur. These emergency procedures will be documented in the detailed CEMP. Should a leak or drainage failure occur the Qualified Person will be informed, and appropriate actions taken.	To limit contamination to groundwater and surface waterbodies.	Construction Contractor
PW-LS-011	Any concrete used in below ground infrastructure will be selected based on the appropriate sulphate classifications	To prevent damage to the Padeswood Spur Pipeline Infrastructure from aggressive ground conditions.	Construction Contractor
PW-LS-012	Any unexpected disused below ground tanks, structures and / or pipework/ services encountered during construction that cannot be avoided will be appropriately decommissioned and removed (where necessary) by an appropriately qualified person as appointed by the Construction Contractor	To ensure that contaminants do not enter the ground.	Construction Contractor
PW-LS-013	Should asbestos containing material (ACM) be encountered during the construction, or soil testing indicate that asbestos fibres are present, the Qualified Person will be notified and appropriate actions taken.	To ensure that construction workers are not exposed to asbestos.	Construction Contractor
PW-LS-014	For excavation in areas of known Made Ground, the Qualified Person will supervise the excavation to observe for visual or olfactory evidence of contamination or ACM.	To ensure that construction workers are not exposed to contamination or asbestos.	Construction Contractor
PW-LS-015	If, following the measures outlined in PW-LS-014, remediation is determined to be required, suitable remediation strategy will be produced. The remediation strategy will be approved by the Local Authority (FCC / NRW) prior to being implemented.	To mitigate unacceptable contaminated land related risks.	Construction Contractor
PW-LS-016	Incidental extraction of mineral resources is considered likely to happen as part of installation of the pipeline. Sustainable re-use of extracted mineral resources should be conducted where possible.	To mitigate against the sterilisation of mineral resources.	Construction Contractor
PW-LS-017	Prior to Decommissioning, a Decommissioning Environmental Management Plan will be developed. Prior to development, consultation with relevant stakeholders will be undertaken. The approach/scope of the Decommissioning Environmental Management Plan will be agreed with the Local Authority prior to commencement.	To outline mitigation and manage risks during Decommissioning of the Padeswood Spur Pipeline Proposed Development.	The Applicant

Table 6-9 Landscape and Visual

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-LV-005	Temporary Construction compounds will, where reasonably practicable, be micro-sited to reduce proximity to residential properties, to minimise likely visibility and to avoid key landscape features.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-006	Prior to the commencement of construction, the reinstatement of arable land, fenced boundaries, hedgerows and grassland will be set out. This will include any protective fencing to areas of reinstatement that would typically remain in place to exclude livestock and allow establishment to take place.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-008	Where the proposed route will extend through areas of tree/vegetation significant for screening, adjacent to the Padeswood Cement Works and proposed Padeswood AGI, appropriate root protection measures will be utilised to enable reinstatement of screen planting.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-009	Where construction will impact road verges, these will be reinstated and, where appropriate and practicable, enhanced through the addition of species rich grass mixes or similar as appropriate for the benefit of biodiversity.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-012	Land disturbed to make way for Construction that is not then utilised as part of the Padeswood Spur Pipeline Proposed Development during Operation will be reinstated and returned to original land uses following completion of the Construction Stage, including consideration of effects to existing land drainage and reinstatement of any existing drainage features.	To minimise landscape and visual impacts, restoring original landscape where possible.	Construction Contractor
PW-LV-013	Where trees (stems) sit outside of the Red Line Boundary, but there is potential to impact, the Root Protection Areas (RPAs) of these trees will be retained and protected.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-014	All ancient woodland areas will be protected. A 15 m works exclusion zone or similar approved by an Arboriculturist is assumed, except for environmental mitigation works, such as drainage works. It is noted that at Wared Wood an exclusion has been made to allow for access to construct the trenchless crossing (TRX-12). However, construction access will utilise an existing access through the woodland, to avoid vegetation clearance.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-015	Fences, kiosks and lighting columns associated with the AGI will be painted to a colour that fits the context in which they are located. This external finish paint colour will be subject to approval at Detailed Design stage with the precise shade specified at that time.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-016	Along the Padeswood Carbon Dioxide Spur Pipeline, where loss of hedgerow, tree or woodland is unavoidable and takes place as a result of construction works, the loss will be replaced on a like-for like basis, as close as practical to their original locations, which may be limited by pipeline easement requirements or offset requirements from services. This will be in accordance with United Kingdom Onshore Pipeline Operators' Association (UKOPA) Tree Planting Near High Pressure Pipelines guidance, as well as similar or any updated guidance notes for the relevant service provider as appropriate. Replacement planting will be undertaken in agreement with the Local Planning Authority.	To minimise landscape and visual impacts, restoring original landscape where possible.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-LV-018	Hedgerows, trees and woodland which are located between trenchless crossing entry/exit pits will be protected and retained.	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-019	Where new temporary construction accesses are required through existing hedgerows, the width to be lost will be kept to the minimum practicable and will not exceed 6m. Hedgerows, trees and woodland outside of this 6m will be protected and retained. Protective measures will be detailed within a site specific Arboricultural Method Statement (AMS) and shown on a Tree Protection Plan (TPP) and where necessary, working methods will be monitored by a suitable Arboricultural Clerk of Works (ACoW).	To minimise landscape and visual impacts.	Construction Contractor
PW-LV-020	The Arboricultural Method Statement (AMS) will be produced in line with the Outline AMS included in the **Arboriculture Imapct Assessment (Document Reference PW.3.3.9.1)**, and will address the following matters: • arboricultural site supervision; • tree works; • tree protection fencing; • ground protection; • requirement for Construction Exclusion Zones (CEZs) • additional precautions outside the CEZ; and • installation of underground apparatus and service runs.	To minimise landscape and visual impacts.	Construction Contractor

Table 6-10 Major Accidents and Disasters

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-MD-002	The Construction Stage of the Padeswood Spur Pipeline Proposed Development will be managed through the implementation of the Construction Phase Plan (required under the Construction (Design and Management) Regulations 2015).	To reduce the vulnerability of the Padeswood Spur Pipeline Proposed Development to the risk of MA&D events.	Construction Contractor
PW-MD-003	All construction risks will be managed in accordance with the Construction (Design and Management) Health & Safety Plan and Construction Phase Plan.	To reduce the vulnerability of the Padeswood Spur Pipeline Proposed Development to the risk of MA&D events.	The Applicant / Construction Contractor
PW-MD-004	The Padeswood Spur Pipeline Proposed Development will be managed in accordance with supplier management environmental, health & safety standards (for example, Construction Skills Certification Scheme).	To reduce the vulnerability of the Padeswood Spur Pipeline Proposed Development to the risk of MA&D events.	The Applicant / Construction Contractor
PW-MD-005	The Applicant and Construction Contractor will implement a risk management system.	To manage the risks related to MA&Ds.	The Applicant / Construction Contractor
PW-MD-006	The Construction Contractor will implement a Construction and Environmental Management system (including the CEMP).	To reduce the vulnerability of the Padeswood Spur Pipeline Proposed Development to the risk of MA&D events.	Construction Contractor

Table 6-11 Noise and Vibration

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-NV-001	Construction works will be programmed to the following core hours: 8 am to 6 pm Monday to Friday (excluding bank holidays) and from 8 am to 1 pm on Saturdays). Any exceptions to this, such as for works associated with trenchless crossings or any other unexpected requirement to work outside of the core construction working hours, will be discussed and agreed prior to such works commencing with the Local Planning Authority's EHO (or equivalent position and/or further stakeholders as appropriate). This includes, where relevant, agreeing any additional noise mitigation with the EHO/s, and notifying local residents/communities of planned works outside of core construction hours prior to such works commencing.	To reduce the likelihood of noise and vibration disturbance.	Construction Contractor
PW-NV-002	The Construction Contractor will nominate a Community Liaison Representative (or equivalent title) who will be a nominated competent site contact for whom the contact details will be shared with local residents and other third parties within close proximity to the construction works, and will be displayed clearly within the site compounds. The Community Liaison Representative will be responsible for engaging with any noise or vibration related matters raised by third parties.	To reduce the likelihood of noise and vibration disturbance and to manage impacts should they arise.	Construction Contractor
PW-NV-003	Construction works will utilise low noise generating plant and equipment and will adopt methods which minimise noise and vibration, wherever practicable.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
PW-NV-004	Where required, temporary acoustic barriers will be considered around significant noise producing plant that are in close proximity to sensitive receptors. The locations of these screens will be optimised for acoustic mitigation whilst considering other potential impacts. The location and design of the temporary acoustic barriers will be detailed in conjunction with the Landscape Architect to ensure impacts upon landscape character and visual amenity are avoided and do not give rise to increased levels of effect as reported in Chapter 12 of the ES. Particular consideration will be given to PRoW, residential receptors and ecological receptors (including those assessed within the HRA).	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
PW-NV-005	Optimal location(s) of all equipment with the potential to cause a significant effect on noise on site will be selected, if/where required to comply with FCC requirements, to minimise noise disturbance to local sensitive receptors.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
PW-NV-006	Construction vehicles will, wherever practicable, be fitted with less intrusive warning alarms, such as broadband vehicle reversing warnings.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
PW-NV-007	Temporary noise screening methods and management such as low noise equipment, hoarding etc as per agreement with the FCC EHO (or equivalent positions and/or further stakeholders as appropriate) should achieve a minimum attenuation of 10 dB(A) at all sensitive locations during construction where the noise impact in the ES and HRA were identified. During detailed design, the Construction Contractor will explore further attenuation opportunities to mitigate any residual impacts at all sensitive locations, where required.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
PW-NV-008	Noise and vibration monitoring will be carried out during construction at a sample of locations representative of the nearest sensitive receptors to Padeswood Spur Pipeline Proposed Development. Particular focus will be given to receptors near trenchless crossing activities.	To enable implementation of further measures to mitigate noise and vibration impacts should this be required.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-NV-009	During the Operational Stage, the noise levels of the equipment in the AGI will be limited to avoid the potential for adverse significant effects at the nearest noise sensitive receptors.	Best Practicable Means to minimise noise and vibration impacts.	The Applicant

Table 6-12 Population and Human Health

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-PH-001	Construction Compounds will be set out and managed to reduce impacts on access to / from private property and housing, and community facilities as far as practicable.	To minimise population and health impacts.	Construction Contractor
PW-PH-002	The public will be informed of the nature, timing and duration of particular construction activities and the duration of the construction works by newsletters, online updates, letter drops, information boards and details of key contacts, and liaison with the Applicant. The contractor would manage a 24-hour free telephone hotline and a project website.	To minimise population and health impacts.	The Applicant / Construction Contractor
PW-PH-003	A stakeholder communications plan (that includes community engagement before work commences on site) will be implemented.	To minimise population and health impacts.	The Applicant / Construction Contractor
PW-PH-004	Temporary PRoW closures and diversions to be managed in line with the **Outline Public Right of Way Management Plan (Document Reference: PW.3.3.16.7)** and **OTCMP (Document Reference PW.4.2).**	To minimise population and health impacts.	Construction Contractor
PW-PH-005	Clear signage and directions for any alternative routes and appropriate alternative diversions will be provided and diversions clearly publicised to maintain access. Signage to advertise that businesses are open and operating as normal will also be provided where required.	To minimise population and health impacts.	Construction Contractor
PW-PH-006	Community Facilities will be consulted prior to construction where access arrangements will be directly affected. Traffic management systems and diversion routes will be put in place to maintain access to identified community facilities.	To minimise population and health impacts.	Construction Contractor

Table 6-13 Traffic and Transport

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-TT-001	The Construction Contractor will produce a Construction Traffic Management Plan (CTMP), detailing the Traffic and Transport mitigation measures to be implemented throughout the Construction Stage. The CTMP will be submitted to FCC prior to construction of the Padeswood Spur Pipeline Proposed Development. The CTMP will follow the mitigation measures included within the **Outline Construction Traffic Management Plan** (OCTMP, **Document Reference PW.4.2**) and within this OEMP.	To achieve the following: Ensure movements of people, plant and materials are achieved in a safe, efficient, timely and sustainable manner; Ensure any impact to local communities and the local economy is reduced as far as reasonably practical; Ensure construction traffic levels do not exceed an acceptable level during network peak periods; Reduce and control construction vehicle trips where practical; Ensure that strategies and mitigation measures are implemented and adhered to through continued	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
		monitoring, review, and improvement; and Limit the effects of construction traffic on the local road network.	
PW-TT-002	Final construction traffic routes will be selected to avoid sensitive receptors. Details of these routes will be provided within the CTMP.	To reduce, where possible, traffic effects on links that would be more sensitive to changes in traffic volumes.	Construction Contractor
PW-TT-003	Careful consideration will be taken in relation to the siting of temporary access points during construction. Access points will require the incorporation of site-specific and appropriate visibility splays, turning radii and, where deemed necessary or appropriate, speed limit reductions. Temporary access locations should make use of existing accesses as far as practicable.	To minimise disruption to existing transport links.	Construction Contractor
PW-TT-004	Temporary signs providing route information for contractors will be erected at key locations along the proposed construction traffic routes. Project information boards will be erected in multiple locations as appropriate to inform the public about temporary PRoW diversions and closures, site access points, Construction Traffic Routes and relevant contact details. The design and location of route information signs and Padeswood Spur Pipeline Proposed Development information boards will be agreed with FCC prior to installation. Signs will be bi-lingual, with messages written in Welsh and English (unless otherwise agreed with FCC).	To minimise disruption to existing transport links.	Construction Contractor
PW-TT-005	Short-term closures of Padeswood Road South, Rose Lane, Bryn-y-Ball Road and Alltami Road will be required to allow Non-Road Mobile Machinery movement for trenchless road crossings. The Construction Contractor will make arrangements for the marshalling of traffic for the duration of all short-term road closures.	To allow for safe access of Non-Road Mobile Machinery at trenchless road crossings	Construction Contractor
PW-TT-006	Road closures will be required to facilitate open trench crossings. Road closures are anticipated to last a maximum of two weeks. Reinstatement of street works shall be completed in accordance with local regulations. The road closure and diversion arrangements shall be subject to landowner agreements. The crossings will preferably utilise existing gates where identified, however, new gates may be required to minimise duration of road closures.	To minimise disruption to existing transport links.	Construction Contractor
PW-TT-007	Traffic marshals and/or temporary signage to be provided at accesses with adjacent PRoWs	To manage the movement of PROW users and to ensure they are accommodated safely.	Construction Contractor
PW-TT-008	The Construction Contractor shall implement a Travel Plan. The Travel Plan will include measures to reduce single occupancy car trips via a car sharing scheme and the use of minibuses to transport workers to compounds and access locations, where possible.	Encourage sustainable travel behaviour; Reduce car usage (particularly single occupancy car journeys); Raise awareness of the sustainable transport measures serving the Site; and Minimise the impact of traffic on sensitive locations.	Construction Contractor
PW-TT-009	The Construction Contractor shall produce and implement a Public Rights of Way Management Plan (PRoWMP). The PRoWMP will contain the following information to be approved by FCC for each PRoW: • Plans showing the relevant control measures; • Length (distance) of the closure; • Route, length and any surfacing proposals for diversions;	To minimise impacts on Public Rights of Way.	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• Details of any gates, stiles or similar features to be removed and reinstated on any PRoW; • Details of signage to be provided for diversions; and • The appropriate standards for reinstatement of the PRoW. The PRoWMP shall be based on the **Outline PRoW Management Plan (Document Reference: PW.3.3.16.7).**		
PW-TT-010	Appropriate facilities will be installed at the Compound/AGI access locations to allow removal of debris from construction vehicles prior to use of the LRN/TRN.	To reduce the risk of damage/dilapidation of the highway.	Construction Contractor
PW-TT-011	Delivery records will be kept, allowing vehicular activities to be recorded, monitored and managed through the construction of the Padeswood Spur Pipeline Proposed Development.	To ensure compliance with the CTMP.	Construction Contractor
PW-TT-012	HGV traffic movement and timing restrictions, to be determined with agreement from FCC, will be implemented to mitigate potential traffic effects. This may include timing restriction on routes associated with school drop off and pick up times, within the AM and PM peak times and restrictions at certain locations to accommodate local special events.	To reduce the effects of construction traffic on sensitive links or those with sensitive receptors such as school, or to minimise the impacts of construction traffic at junctions or links with capacity/ operational issues at specific times of the days.	Construction Contractor
PW-TT-013	HGVs will be to the required Euro Class and should have additional cycle friendly measures such as cameras, full length door windows, blind spot warning systems and additional mirrors.	Address risk associated with identified trend of cyclist and motorcyclists collision on construction traffic routes and minimise Padeswood Spur Pipeline Proposed Development impact on highways safety.	Construction Contractor
PW-TT-014	Suitably qualified personnel will be present at key locations and times during construction to guide traffic.	Ensure safe access to working locations and for other road users	Construction Contractor
PW-TT-016	The Construction Contractor will appoint a Traffic Safety and Control Officer (TSCO).	To ensure compliance with the CTMP.	Construction Contractor
PW-TT-017	Special timing restrictions to be implemented on Bryn Lane for all construction traffic: • Between 08:00 and 09:00 (AM peak / school drop-off); • Between 15:00 and 16:00 (school pick-up); and • Between 17:00 and 18:00 (PM peak).	To avoid conflict between construction traffic, typical peak hour traffic and school pick-up and drop-off traffic.	Construction Contractor
PW-TT-018	Where required, Temporary Traffic Regulation Orders will be introduced. This may include Speed Limits at Access Locations	Ensure safe access to working locations and for other road users as well as maintaining appropriate visibility splays.	Construction Contractor
PW-TT-019	Should the Construction Contractor require the use of Abnormal Indivisible Loads, then specific access requirements, potential impacts, and associated mitigation will be assessed under separate cover by specialist AIL contractor.	To minimise disruption to, and ensure safety of, existing transport links.	Construction Contractor
PW-TT-020	Communication channels between the Construction Contractor and Local Highway Authority will be maintained prior to and during the construction of the Padeswood Spur Pipeline Proposed Development. The Construction Contractor may for example have, but not be limited to, the following responsibilities: • Communicate, monitor and review the CTMP and its mitigation measures; • Ensure records of HGV movements are maintained and reported;	To ensure that the objectives and mitigation measures which are set out in the final CTMP are met, implemented as appropriate and managed effectively	Construction Contractor

Reference Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• Be the first point of contact for the public, stakeholders, and contractors; • Hold regular update meetings with LHAs and relevant stakeholders; and • Record near misses, incidents, and hazards and resolve issues regarding stakeholders and the public.		

Table 6-14 Water Resources and Flood Risk

Reference PW-WR-004 Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-WR-001	The Padeswood AGI will be designed with a surface water drainage scheme complying with the local, regional and national requirements of the SUDS Approval Body (SAB)	To prevent increases in flood risk	Construction Contractor
PW-WR-002	Construction works will avoid the positioning of temporary material stockpiles and arisings near to watercourses and will ensure material stockpiles and arisings are located outside of the flood zone (where not benefitting from flood defences), where practicable. Temporary stockpiles will be located a minimum of 10 m from the top of bank of any watercourse, where practicable. Welfare facilities and stored equipment and materials to be located within the compounds so that areas of high flood risk are avoided. Where this is not achievable the contractor shall discuss the proposals with the LLFA and the NRW and ensure that the FRAP and the accompanying CEMP include measures and a method statement, including a Flood Action Plan, relevant to the prevention of pollution and increase in fluvial flood risk during the construction phase, in accordance with the LLFA and NRW's requirements.	To minimise the impacts on surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-003	Construction works will ensure that a sufficient working area, as agreed by the Construction Contractor, is made available for effective sediment management for works within watercourses.	To minimise the impacts on surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-004	Where necessary, temporary stockpiles will be protected by silt netting when not in use.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-005	Temporary drainage systems will be implemented near sensitive receptors to control surface water runoff, to alleviate both flood risk and help to prevent sediment laden runoff entering the watercourse.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-006	Areas with a greater risk of spillage (for example, vehicle maintenance and storage areas for hazardous materials) will be carefully sited (for example, away from drains or areas where surface waters may pond) and on an impermeable surface.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-007	Emergency response plans will be developed, and spill kits made available on-site.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-008	Measures to be put in place to prevent pollution from construction plant, vehicles and machinery including: • Refuelling and lubricating in designated areas, over an impermeable surface, with appropriate cut-off drainage located away from watercourses;	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor

Reference PW-WR-004 Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• Plant to be maintained in a good condition with wheel washing in place (avoiding vehicle cleaning near to existing watercourses), all refuelling would be supervised and carried out in a designated area. • In the event of plant breakdown, drip trays would be used during any emergency maintenance and spill kits would be available on-site. • Construction plant will be checked regularly for oil and fuel leaks, particularly when construction works are undertaken in or near the existing waterbodies.		
PW-WR-009	Measures to be put in place to prevent pollution from spillage, including: • Fuels and potentially hazardous construction materials would be stored in bunds that have areas with external cut-off drainage; fuel would be stored in double skinned tanks with 110% capacity. • Waste fuels and other fluid contaminants will be collected in leak-proof containers prior to removal from the construction area to an approved recycling processing facility. • Oil absorbent booms will be made available at construction compounds and works areas and will be deployed as soon as possible in the event of a significant spillage. • Measures implemented to control spillage or pollution risks for site runoff or works within watercourses will be regularly inspected to ensure they are working effectively. • Avoid pumping or similar processes of concrete over or adjacent to open water where possible and such works will be closely observed to ensure the swift shut off of any pumps if a spillage occurs.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-010	Concrete wash out will only take place at designated concrete washout areas.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-011	Measures to be put in place to prevent sediment input into watercourses, including: • Surface water run-off and excavation dewatering will be captured and settled out prior to disposal where practicable. The Construction Contractor will ensure that any contaminants are to be suitably removed prior to disposal. • Temporary cofferdams will be used to exclude work areas from the waterbodies, thus reducing the risk of increased sediment loads or hazardous substances entering the main water flow. • Where works are within 10 m of watercourses, sediment barriers will be provided between earth works and the construction zone and the watercourse to prevent sediment from washing into the river. Silt management will be considered not only for areas adjacent to the watercourse, but also up the valley sides to minimise fine sediment input to the watercourse. Where practicable, there will be no works within 8m of watercourses. • Silt fences, silt traps, filter bunds, settlement basins and/or proprietary units will be used to treat sediment laden water generated on-site before discharge.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor

Reference PW-WR-004 Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-WR-012	Sewage generated from site welfare facilities will be disposed of appropriately. This may be by discharge to the foul sewer network or by collection in septic tank for disposal off-site.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-013	Works will be undertaken in compliance with the relevant sections of BS6031:2009 Code of Practice for Earthworks (British Standards, 2009) with respect to protection of water quality and control of Site drainage including washings, dewatering, abstractions, and surface water.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-014	Where works are required on the watercourse banks, valley sides, riparian zone or in-channel, vegetation clearance will be restricted to the minimum required for the construction working area and should be undertaken only immediately prior to the commencement of those works, except for other circumstances where earlier clearance may be required due to the presence of protected species. A minimum of 8m, vegetated buffer strip between the construction zone and the watercourse will be retained, wherever practicable. Vegetation should be re-established as soon as practicable. If necessary, and where practicable (e.g. where difficulties in planting and establishment of vegetation are likely to occur), additional measures such as geotextiles (biodegradable and non-biodegradable), willow whips, mulching, brushwood mattresses etc. will be used to protect soils before vegetation has re-established, particularly on the watercourse banks.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-015	The watercourse will be temporarily blocked and pumped over where practicable whilst the temporary crossing is constructed.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-016	A Groundwater Management and Monitoring Plan (GWMMP) will be implemented alongside a CEMP. The GWMMP will set out the monitoring requirements, establish a protocol for the assessment and response to monitoring data and provide methods to assess compliance with the conditions of development consents, environmental protection licences and legislation relating to groundwater and GWDTE. The GWMMP will consider: limits to the scale, depth and time of temporary dewatering by change of method or by division of works to reduce the zone of influence of dewatering; reduction in the use of construction methods with the potential to adversely affect aquifer physical properties such as consolidating; provision of (compensatory) discharges to Groundwater Dependant Terrestrial Ecosystems (GWDTEs) or use of water recycling during dewatering to support water level and flows where these may be reduced and provision of monitoring of water levels in nearby wells or surface water to enable/ identify further mitigation measures when needed.	To set out the monitoring strategy of the shallow groundwater where any dewatering activities are proposed, and to ensure all groundwater abstracted through construction is appropriately managed.	Construction Contractor
PW-WR-017	A Dewatering Management Plan will be developed. The Dewatering Management Plan will provide a general framework for assessing the potential risks arising from dewatering. The Dewatering Management Plan will aim to keep the duration of pumping and the rates to a minimum which is achieved by minimising the required dewatering. The Dewatering Management Plan will summarise all licences and permits to abstract and discharge from dewatering works issued by	To set out the dewatering strategy of groundwater where dewatering activities are proposed, and to ensure all groundwater abstracted through construction is appropriately managed.	Construction Contractor

Reference PW-WR-004 Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Natural Resources Wales. In addition to permitting, the Dewatering Management Plan will include detailed description of the main discharge points, abstraction and discharge rates, equipment used and construction sequence, any authorisation and details of any pre-treatment required prior to discharge approved by Natural Resources Wales. Dewatering activities will be programmed for the summer months, wherever reasonably practicable, when groundwater levels are lower, in order to reduce the potential impact of local dewatering volumes The Dewatering Management Plan will also act as a vehicle for more specific and detailed assessment (as necessary).		
PW-WR-018	A Surface Water Management and Monitoring Plan (SWMMP) will be developed. The SWMMP will provide a framework for assessing and managing surface water flood risks, provide strategies for mitigation, and outline actions to ensure sustainable water management practices	To set out the Surface Water management and monitoring strategy.	Construction Contractor
PW-WR-019	In areas of shallow groundwater, the use of temporary sheet-piles shall be considered as a hydraulic control measure to limit the ingress of water to the pipeline trench and act as mitigation to reduce the groundwater dewatering rate. If implemented sheet piles will then be removed as soon as practicable after their use.	To minimise the impacts of dewatering to groundwater receptors	Construction Contractor
PW-WR-020	Construction works will seek to minimise the loss of groundwater quantity from the water environment. Where practicable, water recycling practices, including re-use of hydrotest water, will be considered.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-021	Trench breakers (clay plugs) will be placed at regular intervals along the Padeswood Spur Pipeline trench where required to avoid preferential flow pathways being created which could impact groundwater flows to receptors.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
PW-WR-022	A Flood Action Plan (FAP) will be developed and implemented for all Construction Compounds and the AGI. The FAP will contain procedures to minimise the risk to construction workers and the measures will be reflective of the flood risk of each area but will include as a minimum a requirement for: • Where applicable the Construction Contractor/s will sign up to flood warning service to obtain information related to the area of the Padeswood Spur Pipeline Proposed Development and will check online warnings regularly in areas at risk of fluvial/coastal flooding; • Construction works will avoid working in the floodplain, where practicable; • Weather forecasts will be regularly monitored so to avoid working in peak flows or when flooding is possible. If a flood warning is received from NRW, move all machinery and equipment out of any undefended floodplain. If this cannot be completed in a safe time, secure equipment to prevent it being washed away. • Evacuation procedures in case of expected flooding and/or when flooding is happening.	Flood Risk Management.	The Applicant / Construction Contractor
PW-WR-023	The Construction Contractor and the Applicant will ensure that all construction and operation staff are made aware and trained in the procedures of the Flood Action Plans.	Flood Risk Management.	The Applicant / Construction Contractor

Reference PW-WR-004 Number	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
PW-WR-024	Surface water drainage solutions and discharge rates from the Central construction Compound will be discussed with the LLFA, where applicable.	Flood Risk Management.	Construction Contractor
PW-WR-025	Turbidity and oxygen monitoring to be undertaken during the Construction Stage where deemed required due to the sensitivity of aquatic species receptors. The need and frequency of turbidity and oxygen monitoring would be determined by the regulatory authority and detailed in any required permits for undertaking work within or near watercourses.	Water quality protection.	Construction Contractor
PW-WR-026	A pre-works crossing point survey will be carried out to record channel and bank morphology and features, riparian zone structure, and collect photographic record, so that reinstatement is as close to baseline as practicable. Re-instatement works should be supervised by an appropriately qualified ECoW.	To minimise the impacts on surface water quality, groundwater, hydromorphology and flood risk.	Construction Contractor
PW-WR-027	A strategy for exceedance flows during pumping or pump malfunction will be implemented during peak flows. This will need to assess where the water would naturally flow in those instances and include appropriate control measures if a potential impact on third parties is possible e.g. in case of flows potentially affecting developed areas.	Flood risk management.	Construction Contractor
PW-WR-028	Maintenance vehicles will be equipped with a spill kit in case of emergency (if one is not already available on board these vehicles) and spill kits will be stored in the kiosks at the AGIs.	To reduce the risk of spillage impacting water quality of surface water and groundwater receptors.	The Applicant
PW-WR-029	Within construction compounds, the location of temporary structures and material shall avoid being sited in areas of medium or high surface water flood risk, as identified in the Flood Consequence Assessment **(Document Reference PW.3.3.17.1).**	To minimise risk of surface water flooding.	Construction Contractor
PW-WR-030	Should there be a change to the design of TRX-07, resulting in pile driving activity in closer proximity to the River Alyn, then the need for precautionary mitigation will require further assessment and NRW should be consulted. • Precautionary mitigation could include: • Restricting pile driving works within the period of 1 October to 31 May in compliance with the Salmon and Freshwater fisheries Act (1975); • Working outside of this period, pile driving should commence with a soft start, and thereafter proceed with either press or vibration pile driving methodologies. • If needed, percussion or hammer pile driving will be limited, within reason, to sink the piles to design depth.	To minimise disturbance to fish species.	Construction Contractor
PW-WR-031	The Padeswood Spur Pipeline will be buried at least 2 m below the bed level of the Wepre Brook and Black Brook Tributary 2 for the whole width of the erodible corridor. The extent of the erodible corridor is provided in **Annex E** of the **WFD Assessment (Document Reference PW.3.3.17.3)**.	To prevent alteration to flows, water quantity and/ or quality; and Loss of morphological diversity and habitat.	Construction Contractor
PW-WR-032	The pipeline is to be buried to as shallow depth as safe and practical to do so under the Tributary to River Alyn 2, to reduce interaction with bedrock.	To prevent alteration to flows, water quantity and/ or quality; and Loss of morphological diversity and habitat.	Construction Contractor
PW-WR-033	The equipment and kiosk at Padeswood AGI will stand on plinths, raised a minimum of 200 mm above proposed working platform elevation	To reduce the likelihood of flooding	Construction Contractor

7. REFERENCES

The Town and Country Planning Act (TCPA) 1990. Available at: https://www.legislation.gov.uk/ukpga/1990/8/contents

Annexures

Appendix A

REGISTER OF ENVIRONMENTAL ACTIONS AND COMMITMENTS