LBA CCS PROJECT

Onshore Pipelines
Onshore Pipelines - General

Construction Environmental Management Plan

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HOLD RECORD

Abbreviations

Abbreviation	Description
ACM	Asbestos Containing Material
AGI	Above Ground Installation
BVS	Block Valve Station
CCS	Carbon Capture Storage
CDM	Construction (Design and Management) Regulations 2015
CEMP	Construction Environmental Management Plan
CoSHH	Control of Substances Hazardous to Health
CP	Cathodic Protection
CW&C	Cheshire West & Chester
DCO	Development Consent Order
DoWCop	Definition of Waste Code of Practice
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EPD	Environmental Product Declaration
ES	Environmental Statement
FCC	Flintshire County Council
FEL	Front-end loader
FOC	Fibre Optic Cable
GCN	Great Crested Newt
LB	Liverpool Bay
LPA	Local Planning Authority
NVMP	Noise and Vibration Management Plan
PoA	Point of Ayr
PPE	Personal Protective Equipment
PRoW	Public Right of Way
RAMS	Risk Assessed Method Statement
REAC	Register of Environmental Actions and Commitments
REL	Rear-end loader
RPE	Respiratory Protective Equipment
SHE	Safety Health and Environment
ULIS	United Living Infrastructure Services
WAR	Work Activity Requirements

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1.0 INTRODUCTION

1.1 Authorised Development

The Liverpool Bay Asset Carbon Capture Storage (CCS) - Onshore Pipelines project is a nationally significant infrastructure project consented by Development Consent Order (DCO) – 'The HyNet Carbon Dioxide Pipeline Order 2024'. The project encompasses a 36km pipeline for the transportation of carbon dioxide (CO2) from Ince in Cheshire, England to Talacre in Flintshire, Wales and includes the following components as part of the CCS Infrastructure;

- **Ince Above Ground Installation (AGI) to Stanlow AGI Pipeline** – an approximate 4km section of underground onshore pipeline (20" in diameter with capacity of up to 2.5 MtCO2/yr at a pressure of approximately 38 barg) to transport CO_2.
- **Stanlow AGI to Flint AGI Pipeline** – an approximate 32km section of underground onshore pipeline (36" in diameter with a capacity of up to 10 MtCO2/yr at a pressure of approximately 35 barg) to transport CO_2.
- **Flint AGI to Flint Connection Pipeline** – an approximate 400m section of underground onshore tie-in pipe (24" in diameter with a capacity of up to 4.5 MtCO2/yr at a pressure of approximately 33 barg) to transport CO_2.
- **Flint Connection to Point of Ayr (PoA) Terminal Pipeline** – an approximate 24km section of existing Connah's Quay to PoA Terminal underground onshore pipeline (24" in diameter) which currently transports natural gas but will be repurposed and reused to transport CO2 as part of the DCO Authorised Development.
- **Four AGIs** - Ince AGI, Stanlow AGI, Northop Hall AGI, and Flint AGI.
- **Six Block Valve Stations (BVSs)** located along:
- The proposed Stanlow AGI to Flint AGI Pipeline (three in total).
- The existing Flint Connection to PoA Terminal Pipeline (three in total)
- **Other above ground infrastructure**, including Cathodic Protection (CP) transformer rectifier cabinets and pipeline marker posts.
- **Utility Connection infrastructure**, including power utilities and Fibre Optic Cable (FOC); and
- **Temporary ancillary works** integral to the construction of the Carbon Dioxide Pipeline, including Construction Compounds and temporary access tracks.
- **Environmental mitigation areas** requiring woodland planting, scrub and restoration works.

United Living Infrastructure Services (ULIS) is the Main Contractor for the Project responsible for detailed design, procurement and construction of the pipeline and associated infrastructure on behalf of the Company – Liverpool Bay CCS Limited.

1.2 Project Programme

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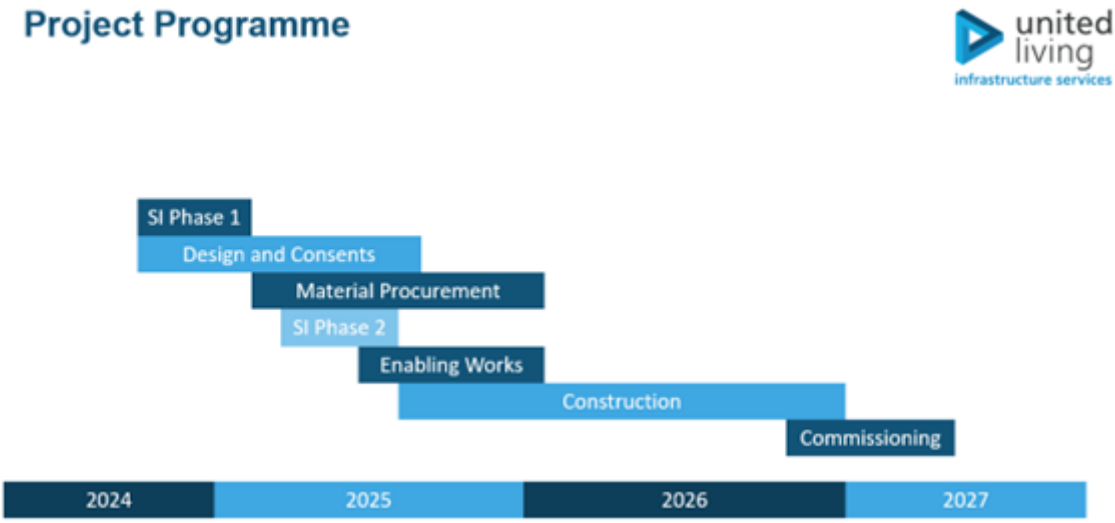

Figure 1.1 Liverpool Bay CCS Programme

1.3 Purpose of the Construction Environment Management Plan

This document has been produced in accordance with principles outlined in the ISO 14001:2015 standard. ULIS has an established Environmental Management System (EMS) that is certificated to ISO 14001:2015. As part of the Register of Environmental Actions and Commitments (REAC) requirements (REAC ref D-PD-012) ULIS is expected to demonstrate to the principles of ISO 14001:2015 and to have an Environmental Management System (EMS) certified to the standard.

An Environmental Impact Assessment (EIA) was undertaken and an Environmental Statement (ES) prepared and submitted as part of the DCO application. A Register of Environmental Actions and Commitments (REAC) was prepared setting out the mitigation measures and commitments arising from the findings of the ES.

This Construction Environmental Management Plan (CEMP) will function as a control plan to ensure that the construction works do not result in unacceptable environmental impacts. This CEMP shall:

- Explain the delivery of mitigation measures to reduce environmental effects identified in the ES, during the construction phase;
- Demonstrate that the Environmental Actions and Commitments set out in the REAC are incorporated into the project procedures;
- Provide assurance to third parties that their requirements with respect to environmental performance will be met; and
- Provide a framework for compliance auditing and inspection to enable the Project to meet its aims with respect to environmental performance.

A copy of this CEMP will be provided to each Subcontractor working on behalf of ULIS. ULIS is required to maintain an electronic copy of the CEMP at all worksite offices for reference by the entire workforce. It must be accessible to all site personnel and representatives of the relevant enforcement authority, and all Subcontractors.

1.4 Development Consent Order

The CEMP will be implemented by ULIS secured through the following Requirement of the Development Consent Order (DCO)

> ***"6.**—(1) No stage of the authorised development must commence until a CEMP which includes that stage has been submitted to and approved by the relevant planning authority following consultation with the Environment Agency and/or the Lead Local Flood Authority.*
>
> *(2) The CEMP must be in accordance with the outline construction environment management plan and include management plans, working methods and mitigation measures including—*
>
> *(a) details of lighting during construction;*
>
> *(b) noise and vibration management plan;*
>
> *(c) dust management plan;*
>
> *(d) material management plan;*
>
> *(e) soil management plan;*
>
> *(f) peat management plan;*
>
> *(g) waste management plan;*
>
> *(h) groundwater management and monitoring plan;*
>
> *(i) bio-security management plan;*
>
> *(j) surface water management and monitoring plan;*
>
> *(k) dewatering management plan;*
>
> *(l) stakeholder communications plan; and*
>
> *(m) public rights of way management plan.*
>
> *(3) Each stage of the authorised development must be implemented in accordance with the approved CEMP for that stage."*

1.5 Stages of Development

In summary the authorised development stages are as followed:

- Stage 1: Compounds and Access
- Stage 2: Special Crossings
- Stage 3: Main Pipeline 20" and 36"
- Stage 4: Above Ground Installations (AGI's) and Block Valves Stations (BVS)
- Stage 5: Commissioning
- Stage 6: Environmental Mitigation Areas

This CEMP has been produced in accordance with the DCO requirement in Section 1.3

1.6 CEMP Structure

In order to ensure that each stage of the project's risks and controls are considered the CEMP will be supported by an Annex for each stage of development. The Annex will provide detail on the speicific risks and controls relating to the activities to be undertaken. This will include all known sensitve receptors or constraints within the specific work locations. The Annex will include the minimum protocols to be followed

with environmental commitments and specific mitigation measures for the locations and activities included in that Construction Stage. The stages are outlined in Section 1.5.

The CEMP will be reviewed and approved by the relevant Local Planning Authority (LPA) - Cheshire West & Chester (CW&C) or Flintshire County Council (FCC). In accordance with DCO requirement 6. and protective provisions within the DCO, the following bodies will also be consultees on the detailed CEMP:

- Environment Agency
- Natural Resources Wales
- Lead Local Flood Authority (CW&C/ FCC)
- Canal and River Trust (Stage 2: Special Crossings)
- National Highways (Stage 2: Special Crossings)

The CEMP is an overarching plan. The Stage Annexes are the live documents that will be maintained and reviewed throughout construction and if necessary updated and resubmitted to the relevant LPA for approval.

The CEMP has been structured as such to minimise the number of revisions and volume of content that need to be sent to LPAs for approval. It is envisaged this core document would provide the framework applicable to all stages with more detailed appendices prepared setting out specific mitigation measures and commitments for each stage.

Table 1.1 Supporting Plans

Management Plan	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Details of lighting during construction	Y	Y	Y	Y	Y	
Noise and vibration management plan	Y	Y	Y	Y	Y	
Dust management plan	Y	Y	Y	Y		
Material management plan		Y	Y	Y		
Soil management plan	Y	Y	Y	Y		
Peat management plan		Y	Y			
Waste management plan	Y	Y	Y	Y	Y	Y
Groundwater management and monitoring plan		Y	Y	Y	Y	
Bio-security management plan	Y	Y	Y	Y	Y	Y

Management Plan	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Surface water management and monitoring plan		Y	Y	Y		
Dewatering management plan		Y	Y	Y		
Stakeholder communications plan	Y	Y	Y	Y	Y	Y
Public rights of way management plan	Y	Y	Y			

1.7 Compliance with Legislation, Standards and Guidance

All site works shall be undertaken in compliance with this CEMP and with all applicable legal and regulatory requirements. It is the responsibility of ULIS to ensure that their works do not contravene legal requirements.

ULIS shall comply as necessary with the Construction (Design and Management) Regulations 2015 (CDM) and all applicable pollution control regulations in which case ULIS shall obtain and keep current any necessary consent, authorisation, approval or permission.

1.7.1 Register of Environmental Actions and Commitment (REAC) & other Legal Requirements

The REAC outlines the obligations, commitments and mitigation measures associated with this project. This CEMP will follow the REAC table to ensure environmental compliance.

Certain aspects of the construction work for this Project may be subject to environmental permits, consents, authorisations and permissions. This is further developed in Section 1.7.2

1.7.2 Consents and licenses

Certain aspects of the construction work for this Project may be subject to environmental permits, consents, authorisations and permissions. The Environmental Consents, Permits and Licenses Register outlines all those required for the project to be undertaken. The Register includes a schedule of all consent submissions and a tracker to confirm they are in place for the start of works they apply to.

All necessary permits, licenses and assents 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 licenced actions completed, can works commence. ULIS shall obtain and keep current any necessary consent, authorisation, approval or permission.

The register is a live document and shall be reviewed weekly. ULIS has appointed a Consents Lead to maintain this Register and ensure all consents, permits and licenses are in place.

ULIS will be responsible for ensuring resources are available and work is planned to meet the legislative requirements.

1.7.3 Consultations of Statutory Bodies

Prior to construction works commencing, consultation will take place with any authority or stakeholder identified in the DCO or the REAC, including but not limited to:

- The Local Planning Authorities – Cheshire West & Chester and Flintshire to discharge DCO requirements;
- Local Authority Environmental Health Officer to agree the parameters to be included in the Noise and Vibration Management Plan;
- Lead Local Flood Authorities in relation to ordinary watercourses, surface water drainage solutions and discharge rates from construction compounds;
- The Environment Agency in relation to Main Rivers, flood risk activities, water abstraction and discharge activities, discharge of DCO requirements in England;
- Natural Resources Wales in relation to designated sites and protected species licences, Main Rivers and flood risk activities, and discharge of DCO requirements in Wales;
- Natural England in relation to designated sites and protected species licences in England.

1.8 Community Engagement and Public Information

A Stakeholder and Communications Plan will be prepared as part of this CEMP.

External communication mechanisms to keep local communities and members of the public informed may include:

- Letter drops;
- Leaflet campaigns/ Bulletins;
- Notice boards at site entrances;
- Public meetings

ULIS shall provide advanced notification of the works to those identified as being impacted by the proposed works. Local residents, businesses and other sensitive stakeholders shall be notified via letter of the works commencing at least two weeks prior to the Contractor starting on site.

A Liaison Officer will be appointed to deal with external enquiries and/or complaints. In co-operation with the Company, a ‘hotline’ number and/or email address may be set up to receive calls/communications from the Public during the construction period.

All communication / complaints received by ULIS shall be assessed on receipt to determine what information is required from all parties to formulate a response. In the event of a complaint, ULIS will endeavour to contact the complainant on the same day. All complaints shall be recorded and investigated.

Through the site induction all members of the workforce shall be made aware that any direct approaches from a member of the public should be directed to their Site Foreman / Construction Manager. The Site Foreman / Construction Manager shall record all approaches made by members of the public and shall advise ULIS’s Project Team of all comments received at the worksite from members of the public.

1.9 Roles and Responsibilities

ULIS will ensure that sufficient time and resource is made available for the effective management of environmental risks that could arise during construction work. This includes appointing adequately qualified

personnel with knowledge and capability in the environmental management of construction site works. Persons having responsibility for environmental site management, and in particular any persons required to undertake and oversee response to any incidents with potential environmental consequences, shall be empowered to make decision and take appropriate action necessary to avoid or mitigate adverse environmental effects, even when this may lead to delay and/or additional cost to ULIS.

1.9.1 Project Roles

The ULIS project team and all appointed subcontractors will be responsible for ensuring that the potential risks to the environment are adequately avoided or controlled by the application of measures as documented within this CEMP, which shall be complied with throughout construction. The main organisations and staff involved in the construction stage works are set out in Table 1.2.

Prior to construction, a team of suitably qualified and experienced Environmental personnel, will be appointed to support, oversee and monitor Construction and ensure the implementation of measures defined within this CEMP. Multiple Environmental personnel may be required during construction to ensure appropriate oversight of multiple active works locations.

A Community Liaison Representative 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.

Table 1.2 Roles and Responsibilities

Role	Responsibilities
Project Manager	Will have overall responsibility for all aspects related to compliance with, environmental legislation, DCO requirements and the ULIS Environmental Management System through the implementation of the Construction Environmental Management Plan. Responsible for providing adequate resources for the development and implementation of the CEMP and associated management plans and documents. Responsible for ensuring that all concerns relating to environmental issues are reported to the Company Project Manager.
Commercial Manager	Responsible for ensuring all Subcontractors are aware of the ULIS Environmental Policy and that each Subcontractor nominates an Environmental Representative. Ensuring each Subcontractor submits their completed Vendor Evaluation Questionnaire and provides an Environmental Policy Statement.
Engineering Design Project Managers	Responsible for ensuring that environmental constraints and aspects have been taken into consideration during the design process and in conjunction with the Environmental Manager, that appropriate measures have been incorporated into the design to prevent or mitigate environmental effects.
Construction Manager	Responsible for ensuring that site work is undertaken in compliance with environmental legislation, the CEMP and associated management plans and documentation.

Role	Responsibilities
	Ensuring that site personnel and Subcontractors carry out their duties in compliance with environmental legislation (permit and licence conditions/ method statements), the CEMP and associated management plans and documentation. Advising the Lead Project Manager and Project Environmental Manager/ ECoW of any environmental incidents immediately.
Project Environmental Manager	Responsible for co-ordinating all environmental inputs to the Project and advising the Lead Project Manager and Project Team on environmental matters; Liaising with the Company's Environmental Representatives and statutory consultees; Responsible for the preparation of the CEMP and associated documentation. Working with Environmental Consultants to ensure that all necessary environmental, archaeological and geotechnical surveys and investigations are conducted and completed in a timely manner to identify the need for and inform applications for consents. Overseeing the preparation and submission of applications for environmental consents, permits and licences and the preparation of documents required for the discharge of DCO requirements; Work with the Project Team to ensure compliance with environmental legislation (consents and licences), the CEMP and associated documentation. Responsible for identifying corrective actions arising from inspections and audits and ensuring implementation. Provision of environmental training, inductions and toolbox talks.
Environmental Clerk of Works (ECoW	Provide environmental advice to the Construction Team over the entire construction programme, at all times as required. Liaison with specialist environmental/ site investigation Subcontractors, coordination and facilitation of on-site works. Input into environmental training – induction and toolbox talks. Provision of on-site environmental supervision of works where required. Monitor the implementation of mitigation measures during construction to ensure compliance with the CEMP / REAC/ legislation/permits and consents. Respond to environmental queries raised by site personnel and advise on timely remedial action if incidents occur to minimise effects. Reporting of environmental incidents immediately to the Lead Project Manager and Project Environmental Manager.
Ecological Clerk of Works (EcCow)	Provide ecological advice to the Construction Team over the entire construction programme, at all times as required.

Role	Responsibilities
	Undertake or oversee pre-construction surveys for protected species in the areas affected by construction works. Monitor ecological conditions during construction 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 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 construction to ensure compliance with protected species legislation, licensing, and commitments within the ES. The ECOW will have previous experience in similar ECOW roles. 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.
Specialist Environmental Consultants / Subcontractors	All environmental Subcontractors will report to the Project Environmental Manager.

1.10 Competence, Training and Awareness

ULIS to provide a training matrix to either append or update this CEMP with, once available.

ULIS shall ensure that appropriate awareness training is delivered to all site operatives and only appropriately qualified Subcontractors are appointed.

1.10.1 Communication with supply chain

The sustainability credentials of suppliers and companies in the supply chain are identified through the completion of a pre-qualification / Vendor Evaluation Questionnaire, and suppliers/ Subcontractors are required to provide an Environmental Policy Statement.

Subcontractors will be made aware of the ULIS Environmental Policy and each Subcontractor nominates an Environmental Representative.

Subcontractors' personnel will be required to attend a site induction prior to working on site and will receive Toolbox Talks.

1.10.2 Internal Communication

ULIS's Construction Manager, Project Environmental Manager and other relevant team members shall meet weekly to review the status of environmental aspects including but not limited to:

- Works activities underway and planned;
- Environmental issues identified;

- Mitigation measures required to be implemented;
- Results of weekly inspections and any audit results/feedback;
- Any corrective and preventative actions required to be implemented;
- Identification of areas for continual improvement;
- Status of staff competence and training needs; and
- Status of CEMP and of any required consent and approvals and the need for review and updating.

Additional and ongoing communication of environmental performance and requirements is to be determined by the appointed Project Environmental Manager and provided as appropriate.

1.10.3 Procurement

The sustainability credentials of suppliers and companies in the supply chain has been assessed through the pre-qualification questionnaire. This is to ensure sustainability performance as a key consideration when evaluating supplier performance.

Maximising 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.

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.

- Construction materials will be sourced from local suppliers and local waste disposal facilities will be used in the Flintshire and Cheshire regions where practicable.
- Specifying efficient mechanical and electrical equipment that is long-lasting and based on its durability, repairability and energy efficiency credentials.

Using modern and efficient low emission construction plant, welfare and delivery vehicles, and/or those powered by electricity from alternative/lower carbon fuels. ULIS will ensure the efficient use of plant and equipment through the correct operation, training, regular maintenance and servicing. This is to reduce carbon emission and avoid unnecessary polluting emissions.

1.10.4 Site Induction and Training

Every member of the workforce including Subcontractors shall be required to participate in a site induction prior to starting work on the Site. The level of induction training will depend upon the position and duties the person is to perform. The site induction, as a minimum will include:

- A brief overview of the works to be undertaken and any potential environmental aspects associated with the construction activities;
- A summary of the sensitive environmental receptors near the Site;
- An overview of the applicable environmental mitigation, pollution control measures and environmental incident reporting and response procedures; and
- An overview of the health & safety management measures in particular emergency response procedures.

ULIS will provide continuing training and awareness raising of the workforce. This can be delivered in the form of Toolbox Talks tailored to the specific environmental mitigation measures required dependent on the work activities being undertaken and to raise awareness on environmental best practice.

Records of all inductions and Toolbox Talk deliveries shall be maintained at the site office. Copies shall be made available to ULIS on request.

Additional training will be provided for specific operations or for personnel working in environmentally sensitive areas. This may include but not limited to:

- Refuelling procedure, spill prevention and spill response; and
- Procedures of the Flood Action Plan(s).
- Ecological Sensitive areas

All training will be recorded within the ULIS training matrix.

1.10.5 Notice Boards

ULIS will provide and maintain project environmental notice board(s) which are positioned to ensure all operatives are able to review the notice board on a daily basis. The notice boards should be updated at least monthly. As a minimum, the notice boards shall contain:

- ULIS's Environmental Policy
- Emergency contacts list
- Relevant statutory and non-statutory advice and guidance
- Description of the key environmental risks and intended risk mitigation measures.

These environmental notice board(s) will be situated in prominent positions including the main reception area of the site office.

1.10.6 Toolbox Talks

Toolbox Talks will be used to inform all site personnel of key information concerning the management of the site, procedures to be followed and expected standards / controls when working on the project. The Toolbox Talks will cover a broad range of topics including those related to best practice environmental management.

A record of Toolbox Talks will be kept on site, Toolbox Talks may also be required in instances where:

- There is a change to existing legislation, which requires an operation change
- Site inspections or audits have identified corrective actions which require communicating
- There are significant changes in environmental conditions i.e. heavy rainfall.

The frequency and topics of the Toolbox Talks shall depend upon the phase of construction. They shall be provided as often as necessary to address site-specific environmental requirements.

1.10.7 Work Activity Requirements (WAR)

ULIS shall prepare Work Activity Requirements (WAR) for specific activities to communicate environmental requirements to site personnel. These may include but not be limited to:

- Water management – dewatering excavations;
- Water management – control of surface water run-off;
- Refuelling – spill prevention and spill response;
- Pollution control and emergency response;
- Vegetation clearance and hedge removal;
- Ground contamination – identification and reporting;
- Waste Management

1.10.8 Method Statements

Specific method statements will be completed for the works relating to this stage as per any licenses and consent requirements or as elements requiring method statements are identified.

1.11 Environmental Assurance

1.11.1 Inspections

ULIS shall be responsible for managing environmental performance during all site works. This will be supported with a program of monitoring, inspections and audits. All inspections and audits will be recorded and kept within the SharePoint folders.

Inspections shall be undertaken by the ECoWs and Project Environmental Manager and recorded as follows:

- Visual inspection of the site perimeter to check for dust deposition (evident as soiling and marking) on vegetation, cars and other objects.
- Visual inspection of the local haul roads to check their condition to ensure there is no build-up of dust or earth deposits liable to cause dust emissions as vehicles pass.
- Visual inspections of measures implemented to control spillage or pollution risks from site runoff or works within the vicinity of watercourses.
- Vehicles, equipment and plant inspections shall be completed to check the absence of damage or maintenance issues and that it is correctly functioning.
- Visual inspection of acoustic barriers / screening to check they are present and in good condition.
- Visual inspection of waste containers and waste storage areas to verify wastes are being correctly segregated and to confirm the absence of mixing of hazardous and non-hazardous wastes.
- Visual inspection of all site areas to ensure there is no deposited or wind-blown litter.
- If a waste collection is made, a check shall be made of the Waste Transfer Note / Hazardous Waste Consignment Note provided for the collection.

When potentially dust emitting activities are being conducted, and weather conditions could contribute to the generation of nuisance dust, mitigation measures will be applied. The effectiveness of dust mitigation shall be kept under review. A record shall be added to the official site diary when such activities are conducted, the dust emission conditions observed and when necessary, the mitigation measures taken.

Any elements of the site management found to be in an unsatisfactory condition during the site inspection shall be addressed on the day. In the event it is not possible to address the matter on the day it is raised; a note of the reason why shall be made on the inspection record sheet.

1.11.2 Audits

ULIS will appoint a third-party to conduction Environmental Compliance Audits during construction to undertake checks of the Construction Works and appointed ECoW. The audit will assess construction works, mitigation and activities against the REAC and the CEMP relating to that stage.

Audit reports will be produced monthly and will cover specific work activities and Subcontractors and/ or a specific environmental aspect (e.g. Waste Management, Water Management, Pollution Control).

The audit shall include checks of the site records including the daily inspection record sheets, consents tracker, vehicle arrival logs and waste disposal paperwork. All audits shall be documented; where audit actions are raised, close out of these actions shall be assessed at the following audit.

An audit of an Environmental Management Process will be undertaken by the Environment Manager throughout the Project duration and will typically cover the activities identified in the above chapters.

1.11.3 Non-Conformity and Corrective Action

Where ULIS's Environmental Team has a concern or raises an issue for resolution, or where potential issues are raised from an inspection or audit of the site/ operations, or by a regulatory authority, the relevant crew/ Subcontractor shall investigate the root cause and any implications arising from the issue and shall if necessary following discussion with ULIS's Environmental Team implement measures to rectify the problem.

The Subcontractor's environmental representative and/or ULIS's Environmental Team shall monitor the effectiveness of the corrective action and report the outcome to ULIS Lead Project Manager. Where relevant ULIS will report to the regulatory authority. All documentation of the issue/ event and corrective action/ outcome shall be retained by the ULIS Environmental Team.

1.11.4 Monthly Data Reporting

At the end of each calendar month Subcontractors may be required to record all relevant data on the following:

- Energy usage (i.e. electricity meter readings and diesel generator fuel used/delivered to site).
- Water consumption (i.e. water meter readings or bowser water deliveries to site).
- Waste collections.

ULIS shall comply with any additional reporting requirements that may be introduced through the conditions of any agreements or permits.

1.11.5 Review and Updates

1.11.5.1 CEMP Reviews

This CEMP is will be maintained by ULIS, to be reviewed every 6 months as a minimum; or following any significant change to the work activities, ULIS's requirements or legislation. If deemed necessary this CEMP shall be updated and re-submitted to the relevant LPA for approval of any changes, at intervals to be agreed.

1.11.5.2 Management Review

A management review of the performance of the Environmental Management System will be undertaken at least every 6 months and will include the ULIS's Project Manager and senior management (as a minimum this should include the Project Director, HSEQ Manager and senior corporate representative) key personnel including the Environmental Manager.

Matters such as staffing, training, matters arising from audits and inspections and performance against KPIs will be discussed and where there is a shortfall in performance, actions shall be agreed to rectify this.

1.11.5.3 Documentation

The Site Manager and/or work Environmental Advisor shall be responsible for documenting and retaining safe all suitable records relating to environmental issues at the site and/or arising from site operations. Documents shall be stored in a suitable manner and backups created to safeguard the records. The CEMP shall be controlled document and authorised latest version shall be signed and dated by the responsible person[s]. Other site data records and environmental management document would include, but not necessarily be limited to the following:

- Copies of relevant consents, permissions, or other approvals/ authorisations.
- Environmental data records including waste transfer notes/records of waste collection and treatment/ disposal.
- Records of any environmental incidents including actions taken and resolution.
- Records of all plant/equipment entering / leaving site together with any relevant compliance documentation (for instance in respect of noise or air pollutant emissions class).
- Copies of any enforcement notices or instructions issues by the local authority or statutory regulatory body.
- Record of any prosecutions pending or resolved, and any penalties enforced.
- Records of daily site inspections.
- Records of weekly/monthly audits and minutes of environmental team briefings; and
- Records of staff training including site inductions and toolbox talks.

2.0 GENERAL SITE OPERATIONS

This section outlines and describes the general principles that will be adopted across site during works in accordance with ULIS Policies and Procedures to ensure general environmental compliance.

2.1 Pre-construction Activities

Ahead of construction, a number of pre-construction activities will be carried out and will 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);
- Archaeological intrusive investigations and implementation of archaeological mitigation;
- Ecological pre-construction surveys and mitigation work;
- Route setting out in consultation with the landowner/occupier; and
- Site clearance and preparation.

Surveys and engagement with utility providers has been undertaken to identify known utilities within the Newbuild Infrastructure Boundary. None of the known utilities have any requirement for diversion as the depth of the Newbuild Carbon Dioxide Pipeline should enable the existing utilities to be crossed without disturbance.

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

2.2 Construction Hours

The core working hours on any part of the development during the construction period will be:

- 08:00 hours to 18:00 hours Mondays to Fridays;
- 08:00 hours to 13:00 hours on Saturdays.

The following controls will also apply to the works:

- No works, including site deliveries and collections, will take place on Sundays or Public Holidays.
- To maximise productivity within core working hours, ULIS 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.

2.2.1 Additional Working Hours

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.

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 the relevant local authority.

2.3 Construction Site Layout and Appearance

The site set up works shall include the establishment of secure site access, works signage, dedicated laydown area(s) and construction compounds. All compounds shall be set up in accordance with the ULIS Safety, Health and Environment (SHE) policy and procedures.

Detailed drawings of the construction compounds and site layout will be available through the Project electronic management system.

The construction phase will be managed to ensure works meet the requirements of the DCO:

- Storage compounds will be located away from any identified water features.
- If necessary temporary bunding and/or settlement ponds will be installed to allow for isolation and onsite treatment of any sediment laden or contaminated water prior to discharge to the drainage system.
- Concrete wash out will only take place in designated concrete washout areas.
- Temporary installation or upgrade of existing access tracks and work-fronts will be set up options include provision of bog matts (where wet soil conditions are anticipated) and compacted gravel tracks (where road-going vehicles or heavy traffic is anticipated.
- 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.

2.3.1 Stockpiles, Materials and Spoil Handling

- Avoid positioning of temporary material stockpiles and arisings near to watercourses and where practicable, ensure material stockpiles and arisings are located outside of the flood zone (where not benefitting from flood defences) 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 possible, spoil will be stored in heaps with shallow angles to dissuade badger from sett creation attempts.
- Spoil heaps 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.
- Ordered materials shall be adequately managed to avoid spoilage or overordering and surplus materials shall be minimised: provide a suitable and sufficiently sized materials storage compound that is lockable and provides an above ground covered area, protected from wind and rain. Encourage the reuse of cut-offs and arrange for suppliers to take back unused surplus materials and packaging.

- Surplus materials are to be reused on site where possible. All reuse and recycling to be carried out in accordance with the terms of a valid waste exemption or voluntary codes of practice/protocols.
- Excavated material surplus shall be minimised so far as practicable; details of all inert material reuse on site including composition and disposal location must be mapped and records retained.
- No excavated material from the trenches will be placed outside of the demarcated working area.
- Stockpiles of contaminated materials must be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund.

2.4 Fencing and Other Means of Enclosure

Only authorised personnel will be permitted on site. All visitors shall be required to enter through the main site access and report to the Construction Manager/Site Manager. All visitors will be required to sign in and out to ensure that site management is aware of the people on site in the event of an emergency.

- Visitors and site team will be required to undergo induction training, wear the necessary PPE and be accompanied by a representative on site at all times.
- The Site shall be checked on a regular basis to ensure that it is maintained in good condition and is secure. ULIS shall provide further information.
- Due to the presence of badgers, where fencing is required, it shall be badger permeable fencing, unless around spoil heaps/storage locations.
- ULIS will be responsible for installing, maintaining and removing all temporary hoardings and fencing during the Construction Stage.
- All worksites will be securely fenced or otherwise demarcated from public access.
- All fencing and hoarding will be suitable, taking into consideration location, construction activities and the surrounding landscape.
- 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.

2.5 Temporary Site Lighting

Temporary site lighting will be provided by ULIS as appropriate to enable safe working conditions and security of the Construction Compounds. Section 35 of The CDM Regulations (2015) states the Site must be provided with suitable and sufficient lighting, which must be, so far as is reasonably practicable, by natural light. This relates to both the construction site as well as the approach and traffic route to the Site.

Temporary site lighting will be at the minimum luminosity necessary to enable the safety and security of the construction site. In determining temporary construction lighting arrangements for the site, consideration will be given by ULIS 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

ULIS will be responsible for ensuring all flood 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 centralised compounds and will ensure an appropriate amount of lighting for the safe movement of personnel between welfare facilities.

The measures lighting procedures to be utilised are:

- Glare (and the potential for complaints) caused by poorly directed security and floodlighting shall be minimised by ensuring that light fittings are horizontally mounted and directed inwards on Site.
- Temporary walkways, roads or parking areas shall be illuminated in accordance with current guidance stipulated in the current ILP Guidance Notes.
- Avoidance of direct lighting upon any buildings or trees that contain bat roosts or barn owl nest/ roost sites.
- Undertaking works during daylight hours (broadly 08:00 to 18:00) reducing the need for nighttime lighting.
- Detailed lighting design will be referenced once available.

2.6 Waste Management

ULIS shall apply the principles of waste hierarchy (eliminate, reduce, reuse, recycle, dispose) to the waste management of the site.

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.

The development shall seek to promote the re-use of excavated materials through optimisation of cut and fill operations to improve the sustainable and cost-effective development of land, as per the Definition of Waste: Development Industry Code of Practice (DoWCoP). In many instances the DoWCoP can provide an alternative to Environmental Permits or Waste Exemptions when seeking to reuse excavated materials, this is only if the process is followed in full and a Materials Management Plan (MMP) is produced that has been signed off by a suitably qualified person and submitted to CL:AIRE.

A Waste management plan is being produced for the project and will outline the waste measures for site at a minimum the following Requirements for waste will apply on site:

- Maintain good housekeeping and site working practices to control litter, insects or vermin. For example, dispose of food into appropriate receptacles.
- All skips and other waste storage containers will be covered.
- Hazardous waste must be separated and stored; spray cans should not be left outside of containers once used.
- 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.
- The Site will operate in full compliance with the Environmental Protection Act 1990, the Environmental Protection (duty of care) Regulations 1991, and all other relevant legislative requirements and the Construction Environmental Management Plan.
- The Site will be maintained in a clan, litter-free condition throughout the works.
- Measures will be put in place to control pests or scavengers should they be noted during site inspections.

- A waste collection area shall be set up before site works start. This area shall be as close to the site compound as possible with adequate hardstanding for the waste containers and unobstructed access for telehandler and waste removal vehicles.
- Front-end loader (FEL) or rear-end loader (REL) skips shall be provided to segregate wastes including plasterboard, timber and metal. A designated area shall be provided for inert wastes, for example bricks, clay pipes and roof tiles. A designated container[s] shall be provided for hazardous wastes, which and must be clearly labelled.
- Wastes shall be collected by a licensed waste carrier. A copy of all Waste 'Duty of Care' documentation shall be held on site for a minimum of 3 years.
- Duty of Care documentation must be completed for all waste transfer copies. They must be signed by a competent person and kept on file in the site office. Waste transfer notes or hazardous waste consignment notes and Duty of Care procedures are to be audited regularly (monthly as a minimum).
- A Site Waste Management Plan shall be made available on site and its requirements understood by all contractors and operatives before starting work on site.
- Road sweepers shall be deployed as necessary. All road sweepers must be removed from site accompanied with a completed waste transfer note from the driver. If road sweepings are inadvertently discharged on site, these should be disposed of appropriately.
- All waste incidents shall be reported immediately to the Site Manager and Environmental Advisor.
- Spoil and recycled aggregate transfers shall be carried out in accordance with the Materials Management Plan and all transfer tickets must be retained on Site.
- The use of trenchless installation techniques (such as horizontal directional drilling or auger boring) will prevent additional material resource consumption and waste generation and disposal through the avoidance of infrastructure removal and replacement.

Wherever possible, the following waste streams will be diverted from landfill:

- All Plasterboard waste shall be segregated on site and returned for recycling.
- The site works shall be designed to retain as much soil on site as possible whilst maintaining protection of human health and the environment.
- All timber is to be segregated on site and sent for recycling.
- All metal is to be segregated on site and sent for recycling.
- All inert waste (e.g. bricks, blocks, concrete) will be segregated on site and used under roads, driveways etc as appropriate.
- All mixed waste removed from site shall be taken to a material recycling facility for further segregation to maximise recycling and recovery.
- All hazardous waste shall be segregated from all other wastes and clearly labelled.
- All other site waste shall be segregated on site.

2.7 Welfare

Welfare facilities will be made available at each Construction Compound (e.g. Centralised Compounds, Trenchless Crossing Compounds and Localised Compounds). Welfare facilities may be shared between work sites where there is more than one compound in close proximity to minimise the construction footprint.

2.8 Emergency Preparedness

Prior to the commencement of construction, ULIS 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.

2.8.1 Spill kits

Spill kits capable of dealing with hydrocarbon and chemical spills shall be available at all worksites. Each storage location shall be clearly visible to the workforce, for instance by deploying clear signage.

If a construction compound, fuel storage points or COSHH store is provided then additional spill kits will need to be available at each separate location.

The spill kit contents shall include absorbent pads, absorbent booms, absorbent granules and hazardous waste disposal sacks as a minimum. Regular checks of the spill kits shall be completed to ensure they remain adequately stocked to deal with environmental incidents.

Spill drills shall be performed periodically to confirm that the workforce can effectively contain and clear up potentially polluting spillages. All drills will be documented and details kept on record for the duration of the works.

2.8.2 Fire prevention

Means to raise the alarm in the event of a fire shall be available at the points of work. An assembly point shall be designated a safe distance from the active works locations and will be communicated to all members of the workforce before works commence. The workforce shall assemble at the point for a roll-call and to receive further instructions. All individuals at the worksite, including visitors, will be obliged to immediately sign in on arrival.

2.8.3 Extreme weather

ULIS's Site Manager shall register to receive Met Office weather warnings of a short to medium range weather forecasting. All warnings issued by the Met Office with the potential to impact upon the works shall be communicated by the Site Manager to the workforce in a timely manner so that measures can be implemented where necessary. In the absence of the Site Manager the Works Environment Manager shall also receive and act upon all alerts.

Weather conditions will be monitored and the contractor will sign up for the flood warning service. Where appropriate, action will be taken to halt works when information indicates a flood event or peak flows may occur.

ULIS will consider the impacts of extreme weather events and related conditions during construction. They will use a s 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.

As appropriate, method statements should also consider extreme weather events where risks have been identified.

2.8.4 Contamination

Acute exposure to potential contamination will be mitigated through normal working practice using appropriate RAMS and use of standard PPE and hygiene best practice. Where contamination is suspected, construction workers will be provided with appropriate Personal Protective Equipment (PPE) or Respiratory Protective Equipment (RPE) (over and above the standard PPE) to prevent direct contact, ingestion or inhalation of potential soil or groundwater contamination.

In the event of an emergency occurrence at the Site, ULIS and its contractors shall determine the relevant statutory and regulatory bodies that must be notified. Notification shall be in accordance with the measures outlined in the incident procedure.

Table 2.1 List of Emergency Contacts

Emergency Contacts	
Contact	**Contact Details**
Client Site Manager – [Name/TBC]	TBC
Contractor Site Manager	TBC
Contractor Environmental Manager	TBC
Environment Agency Emergency Number	0800 807 060
Natural Resources Wales Environmental Incident Number	0300 065 3000
Health and Safety Executive (HSE Construction)	01519 229 235
Community Liaison Representative	TBC
Local Authority – TBC	TBC
Major Spill Emergency Response – e.g. RSK Response	0333 999 7687
Fire	999 / 112
Police	999 / 112
Ambulance	999 / 112

2.9 Incident Procedure

ULIS Incident Procedure will be referenced and this section updated once made available.

All pollution incidents should be managed through the STOP – CONTAIN – NOTIFY concept.

As soon as an incident is identified, the first action should be **STOP** and prevent further discharge to drainage/river/ground.

CONTAIN may constitute control of discharge in the event of a spill, or cessation of works if it is the works that are resulting in the incident, e.g. halting excavations until silt runoff is contained. It is recognised that due to personal health and safety risks it may not always be safe to stop the source of the spill, for instance if a significant volume of an unidentified substance has been released.

NOTIFICATION should take place as soon as practicable and frequently can take place while further release is being stopped or while a spill is being contained. The emergency contact numbers outlined in Table 2.1 should be used.

For further guidance on the Projects Incident Procedures, refer to the Emergency Plan and Contaminated Land Procedure,

Work Activity Requirements Guidance Documents should be referenced in relation to refuelling.

3.0 ENVIRONMENTAL MANAGEMENT AND CONSTRUCTION PRINCIPLES

This section outlines and describes the environmental constraints that have been identified for this Stage of the project, as per the Written Scheme of Authorised Development (ULIS Doc No: 802001-SHE-PL-086). Further described in this section are the mitigation measures that will be adopted throughout construction in accordance with ULIS policies and procedures to minimise environmental risk on site.

Subsidiary management plans have been produced to supplement this CEMP and provide specific mitigation measures for the relevant stages. These should be referenced where relevant to understand the full scope of mitigation required.

3.1 Biodiversity and Nature Conservation

As part of the DCO surveys are being conducted on site to understand the ecological sensitivities of the Project. The following have been identified along with some general mitigation.

Table 3.1 Environmental Sensitivities

Environmental Sensitivity	Mitigation
Badgers	Maintain at least a 30m exclusion zone around active setts where possible. Where a 30 m buffer cannot be maintained, this will be discussed with the ECoW and may be reduced dependent on the type, extent and duration of works proposed. Any indirect impacts to main badger setts will be assessed and associated mitigation to ameliorate impacts will be captured with a method statement Any fencing required will have sufficient clearance our openings to allow the free movement of badger through the landscape. It may be necessary to implement 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. Trenches/earthworks, excavations must be covered overnight or profiled to allow an escape route/sturdy ramp for any trapped individuals. Pipework with a diameter greater than 150mm should similarly be capped at the end of the working day.
Bats	Maternity or hibernation bat roosts identified during baseline and pre-commencement surveys will be retained and an exclusion buffer of a minimum of 30m physically demarcated around any identified tree or structure to safeguard roosts from construction affiliated impacts. The alignment of the Project will wherever practicable, physically demarcate a minimum 10 m exclusion buffer around all buildings with confirmed bat roosts. Where this is not possible, potential impacts to roosts will be assessed in respect of the type, extent and duration of works proposed, by the ECoW.

Environmental Sensitivity	Mitigation
	Use low-intensity, directional lighting to prevent disruption to bat foraging and commuting routes. Keep noise and vibration levels low near known roosts
Water Voles	Maintain at least a 5m-10m buffer around water vole habitats Reduce noise and vibration near watercourses to prevent disruption. Vegetation clearance (by strimming or turf stripping) will aim to make habitat unsuitable for water vole and will cover a maximum span of 50 m along each bank from proposed crossing locations where open-cut trenching is required.
Otters	Maintain at least a 30m buffer around holts and resting sites. Reduce noise and vibration near watercourses to prevent disruption. Protect and enhance riparian habitats with vegetation planting along riverbanks. Provide escape ramps in deep trenches to prevent otters from getting trapped.
Great Crested Newts	All vegetation that is taken out, must be removed from site to avoid creating habitat for GCN inadvertently. Buffer zones around GCN ponds must be decided by an Ecologist. Hand search of any potential suitable reptile habitat immediately prior or removal. Staged removal of hedgerows and scrub in combination with directional strimming of any coarse grassland and tall ruderal vegetation, where required, to allow passive displacement of individuals. Dismantling of artificial brash piles by hand, or thoroughly hand searched prior to mechanical removal.
Fish	Avoid construction during low-flow periods when fish may be more vulnerable Use silt curtains, sediment traps, and bunding to prevent silt runoff, which can smother fish eggs and gills. Properly manage wastewater to prevent contamination from oil, fuel, and chemicals. Follow best practices for concrete use to prevent toxic leachate from affecting water quality. The installation of temporary culverts and causeways/access routes within watercourses will aim to avoid sensitive fish migration and spawning periods.
Barn Owls	Maintain a buffer zone of at least 50m around nesting or roosting sites. Avoid disturbing foraging areas, such as rough grassland and field edges. Minimise artificial lighting at night to prevent disrupting owls' natural behaviour.

The Project shall follow the Ecological Calendar. This outlines when it is possible to conducted surveys and mitigation measures for each identified protected species.

Further surveys have been undertaken to clarify the presence of protected species at each Stage of works and will outline through updated reports the specific mitigation for identified species for each Stage.

3.2 Ground Conditions and Contamination

3.2.1 Groundwork

- Construction works within areas of potential historic mine shafts, will be cordoned off and only excavated if necessary for the installation of the project. The zone of the potential shaft will be determined from the co-ordinates available within the Coal Authority reports.
- 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 ULIS.
- ULIS will ensure that the backfilling of earthworks generated through trenching activities (subject to suitability of material) will be undertaken.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Following excavation works, return subsoil and topsoil at the earliest suitable time of year after construction has been completed.

3.2.2 Land and Soil Pollution

- 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) 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.
- All site operatives will be fully trained and competent. There will be a trained and responsible manager on site during construction works, including any movement of the stockpiles.

3.2.3 Ground Gas

- Monitoring of gas ingress, such as mine gas, will be undertaken during trenching and drilling works where necessary. In addition, any trenches / excavations should be gas tested (as it is standard practice) prior to entry.
- Ground gas measures are not considered necessary however following D-LS-020 the requirement for ground gas measures will be reassessed in the areas that are investigated.

3.2.4 Unexpected Contamination

In the event that contamination is found at any time when carrying out works, the following procedures will be followed as per the DCO requirement 10(7)-10(11)

- Unexpected contamination will be reported in writing to the relevant planning authority as soon as reasonably practicable. Investigation and risk assessment will be completed and findings submitted to the relevant planning authority.

- If remediation is required then a remediation scheme shall be produced and implemented on site before further works in the area of identified contaminated land will occur.
- Ground excavation work shall be carried out with an ECoW Watching Brief where there is significant risk of contamination, to identify any unexpected contamination. Should unexpected Made Ground or unexpected contaminated ground (i.e., visual or olfactory evidence of contamination) be encountered during the construction phase the ECoW or equivalent qualified person will be notified.
- If, during open trench construction and excavations, unexpected contamination is encountered, the open trench will be lined in order to inhibit water percolation and subsequent leachate generation.
- For excavation in areas of known Made Ground the ECoW should supervise the excavation to observe for visual or olfactory evidence of contamination or ACM.
- 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 should be undertaken.

Please refer to ULIS Emergency Incident Response Procedure.

3.3 Water Management

3.3.1 Surface Water Management

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.

3.3.1.1 Silt Management

- Surface water and drains must be protected from silt run-off: Use drain guards to protect drains. Use straw bales, gravel traps or silt fencing, silt netting to protect surface waters. All silt protection measures must be inspected frequently and maintained throughout the works.
- Where works are within 10m 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 fences, silt traps, filter bunds, settlement basins and/or proprietary units' will be used to treat sediment laden water generated on-site before discharge.
- Tracking or washing out next to drains/surface waters must be avoided.
- Temporary cut-off drains will be used uphill and downhill of the Construction Compounds to prevent clean runoff entering and dirty water leaving the working area without appropriate treatment.
- All drains within the construction works areas will be identified and labelled and measures implemented to those considered most at risk of polluting substances from entering them.
- 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.
- Surface water run-off and excavation dewatering will be captured and settled out prior to disposal.

3.3.1.2 Dewatering

- When dewatering, any pump shall be switched off before removing the last potion of water and suspended solids will be allowed to settle out before discharging.
- Potentially contaminated water must be tested before dewatering. Contaminated water must be treated or discharged off site.
- If a discharge consent is required, then all conditions within the consent must be understood before commencement of dewatering.

3.3.1.3 Drainage

- 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.
- 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.

3.3.1.4 Discharge of water

- Where required ULIS will apply for permits to discharge water prior to any works. Potential consents that may be required can be reviewed in the ULIS Consents and Permits Tracker.
- Should a Discharge consent be required the following shall be adhered to. Regular quality testing of the water will take place after it has passed through the weirs to determine if further treatment is required prior to discharge, which would be to a nearby watercourse, licenced sewer discharge point, or, if none is present, to greenfield surface. Any captured sediment would be disposed of offsite at a location to be agreed with the local authority.

3.3.2 Groundwater Management

- Relevant Local Authorities will be consulted for information relating to unlicensed private groundwater abstractions;
- Trench breakers (clay plugs) will be placed at regular intervals along the Carbon Dioxide pipeline trench where required to avoid preferential flow pathways being created which could impact groundwater flows to receptors.

3.4 Historic Environment

The route alignment has been chosen to avoid any known sites of heritage value. A Written Scheme of Investigation has been produced and will be used to conduct archaeological investigations of site to identify any potential historic environment before the start of the Project.

Any required action and mitigation measures that are required from the investigations will be implemented.

3.5 Traffic and Transport

ULIS shall provide for the safe and secure management and control of pedestrian and vehicular movements, both on and off site, to ensure the safety of all members of the general public and workforce at all times throughout the construction work period in accordance with all requisite Acts and Regulations, including, but not limited to the:

- Health and Safety at Work etc Act, 1974;

- Management of Health and Safety at Work Regulations, 1999;
- Construction (Design and Management) Regulations, 2007;
- Supply of Machinery (Safety) Regulations 1992; and
- Provision and Use of Work Equipment Regulations, 1998.

ULIS shall be responsible for:

- Promotion, management and control of such general provisions and measures for traffic management and control to be implemented by all contractors and Subcontractors throughout the extent and duration of the construction.
- On-site provision for site access roads and pedestrian footways, with controlled access from the public domain for pedestrians and vehicles, on-site parking provisions, standing, lay-down and unloading facilities for delivery vehicles, and on-site compound, welfare facilities and material holding areas for use by all contractors and Subcontractors.
- Ensuring that the on-site provisions are controlled, managed and shall be safe at all times through the provision of planned and informed procedures and segregation between vehicular and pedestrian traffic.
- A maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas.
- Large-scale vehicle movements will avoid peak hours on all local road networks.
- All construction traffic will avoid using sensitive roads including.
    - Residential roads
    - Congested roads
    - Unsuitable junctions

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.

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.

Clear signage and directions for any alternative routes and appropriate alternative diversions will be provided and diversions clearly publicised to maintain access.

Careful consideration will be taken of 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.

3.6 Air Quality

- All work will be carried out where possible in accordance with Control of Dust from Construction Sites (BRE DTi Feb 2003).
- Stripping and stockpiling of soil shall be minimised where possible.
- Activities associated with the use of construction vehicles (such as washdown facilities) shall be appropriately managed to contain contaminants and regulate the release of water back into the natural environment.

- Site layout shall be planned so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Stockpiles shall be covered, seeded or fenced (as appropriate) to prevent wind whipping.
- Excavated materials undergoing treatment shall be covered to reduce the release of odours and vapours.

3.6.1 Dust Suppression

- Use of bowsers for dust suppression in dry weather and wheel washes in locations where required will be employed to limit exposure pathways to human health, in particular to offsite neighbouring site users, nearby residential properties, or members of the public. As set out in REAC (reference D-AQ-004).
- Where possible, solid screens or barriers shall be erected around dusty activities or the Site boundary that are at least as high as any stockpiles on site.
- The contractor shall consider the use of a 'green'/vegetated hoarding to reduce particles and reduce carbon dioxide levels.
- If dust levels remain excessively high when adequate control measures are in place and operating effectively, then reduce or postpone works during such times (e.g. during dry or windy periods).
- Timing of earthworks and material movements shall be planned to reduce double handling and minimise traffic movements and therefore associated dust and mud.

3.6.1.1 Site Traffic Pollution

To minimise the dust pollution caused by site traffic the following measures will be undertaken:

- Vehicles shall be kept clean and will be sheeted when on public highways.
- All vehicle engines will be switched off when not in use to reduce particulate emissions.
- Exhaust systems will be fitted with particulate filters and catalytic converters as necessary.
- Construction vehicles shall be regularly maintained to ensure mud-flaps etc. are effective.
- All contractor vehicles and private cars are to be parked in the designated area within the site compound and to be removed from site when not in use;
- Mechanical road sweepers shall be employed to clean roads after movement of soil and of any dust and debris if it is generated within the vicinity of the site entrance.
- All loads entering/leaving the site shall be covered.
- Drop heights must be kept to a minimum and conveyors and enclosed wherever possible.
- Site roads shall be kept clear of soil and debris as much as possible.
- Haul routes shall be hard surfaced and/or effectively damped down.

3.7 Noise and Vibration

- All work will be carried out where possible in accordance with BS 5228-1:2014 – Code of practice for noise and vibration control on construction and open sites.
- Only plant that conforms to the relevant noise emission standards would be used during the construction of the authorised development.
- Use of acoustic screens or covers where required.

- Noisy works and deliveries to and from the site shall be conducted within the core working hours. Where necessary, deliveries outside of these core hours would be agreed in advance with the local authority.
- If operations involving high noise levels must take place, consideration should be given to the people in the immediate vicinity and such works should be limited to the times which will have least impact on the neighbourhood.
- Construction works will utilise low noise generating plant and equipment. If possible, electrically powered plant should be used.
- 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. Particular consideration will be given to PRoW, residential receptors and ecological receptors.
- Provision of acoustic enclosures around static plant, where practicable, is in place to reduce noise disturbance. The Noise and Vibration Management Plan will estipulate where this is necessary.
- Construction vehicles will, wherever practicable, be fitted with less intrusive warning alarms, such as broadband vehicle reversing warnings.
- Temporary noise screening methods and management should achieve a minimum attenuation of 10 dB(A) at all sensitive locations during construction.
- Continuous 24-hour noise monitoring, with trigger and notification capabilities, will be implemented by the Construction Contractor(s) at the Centralised Compounds and where there is a likelihood of significant effects outside of core hours (8am to 6pm Monday to Friday (excluding bank holidays) and from 8am to 1pm on Saturdays)) at the following trenchless crossings: TRS 01: Hapsford railway line (and spur to Encirc glass factory)
    - TRS 02: A5117 (north of M56 Chester Services)
    - TRS 28: River Dee
    - TRS 31/32: Chester Road
    - TRS 37: A494
    - TRS 38: Church Lane
- Optimal location(s) of all equipment with the potential to cause a significant effect on noise on site will be part of the NVMP. TBC
- Where construction activities are expected to affect residents with a magnitude of medium and high, and exceed the durations of 10 or more days or nights in any 15 consecutive days or nights, or a total number of days exceeding 40 in any 6 consecutive months, then a set of enhanced mitigation measures will be discussed and agreed with the Local Planning Authority. Temporary re-housing will be also considered through consultation with the Local Planning Authority for specific locations where other mitigation measures do not provide sufficient attenuation to prevent sleep disturbance during activities in the night-time period.

3.8 Public Rights of Way

A Public Rights of Way Management Plan has been developed and should it be relevant to the stage of development, this CEMP will be updated with reference to this plan.

3.9 Reinstatement on Completion

Land disturbed to make way for Construction that isn't then utilised as part of the Project 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.

Hedgerow Reinstatement plans and Landscape Environmental Management Plans will be used to identify areas of vegetation to be retained, removed and reinstated. For areas of removal these plans propose what features they should be replaced with. Furthermore outlining how to manage, maintain and enhance landscape and ecology features over time to ensure full reinstatement.

4.0 REFERENCES

4.1 Legislation

[Ref 1] Construction (Design and Management) Regulations 2015
[Ref 2] Management of Health and Safety at Work Regulations 1999
[Ref 3] Confined Space Regulations 1997
[Ref 4] Lifting Operations and Lifting Equipment Regulations (LOLER) 1998
[Ref 5] First Aid at Work Regulations 2024
[Ref 6] Control of Substances Hazardous to Health Regulations (CoSHH) 2022
[Ref 7] Control of Noise at Work Regulations 2005
[Ref 8] Control of Vibration at Work Regulations 2005

4.2 Guidance

[Ref 9] HSG 47 Avoiding Danger from Underground Services
[Ref 10] GS6 Avoiding Danger from Overhead Power Lines
[Ref 11] BS7121 Code of Practice for Safe Use of Cranes
[Ref 12] INDG293 Welfare at Work' Guidance for Employers'

4.3 Contractor Documents

[Ref 13] 802001-SHE-PL-082 Competence Management Plan
[Ref 14] 802001-SHE-PL-083 Project Emergency Response Plan
[Ref 15] 802001-SHE-PR-005 SHE Audit and Inspection Procedure
[Ref 16] 802001-SHE-PR-007 Incident Reporting and Investigation Procedure
[Ref 17] 802001-CON-PL-002Construction Traffic Management Plan
[Ref 18] 802001-SHE-RA-006 Confined Spaces Entry Procedure
[Ref 19] 802001-QA-PR-018 Lifting Operations Procedure
[Ref 20] 802001-SHE-PR-006 Permit to Work Procedure
[Ref 21] 802001-SHE-RA-006Fire Risk Assessment
[Ref 22] 802001-SHE-RA-007 First Aid Risk Assessment
[Ref 23] 802001-SHE-PL-081 CoSHH Procedure and Database
[Ref 24] 802001-SHE-PR-008 Noise Monitoring Procedure
[Ref 25] 802001-SHE-PR-009 Vibration Monitoring Procedure
[Ref 26] 802001-QA-PR-017 Design and Control of Temporary Works Design Procedure
[Ref 27] 802001-SHE-PL-087 Security Management Plan