Heidelberg Materials

Padeswood Carbon Capture Plant

Drainage Construction Environmental Management Plan

Project Number - 663575

OCTOBER 2025

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1 INTRODUCTION

This Drainage CEMP relates to the proposed development of a post combustion carbon capture plant at Padeswood cement works (described in full in later sections). This CEMP and the documents referenced within relate to the Phase 1 of drainage construction for the project.

As detailed within the Site Drainage Technical Note, Phase 1 will include the car park, access road and the temporary construction and laydown areas which form the initial SAB application.

Phase 2 will include the CCU permanent and temporary drainage and will be subject to a second SAB application.

1.1 Aim

The aim of this Drainage CEMP is to set out how the construction of sustainable drainage systems (SuDS) will be will be undertaken, such that environmental impacts are avoided where possible or otherwise minimised.

This document has been prepared to accompany the SAB application associated with the DNS planning permission (DNS Application Ref: CAS-02009-W1R1Z7_DNS). Objectives

This document contains the site-specific control measures that will be applied by Heidelberg Materials and its contracting team during the SuDS construction. In preparing this Drainage CEMP the requirements of the following documents have been considered:

- Padeswood CCS Plot Area Animal Report;
- Biodiversity Construction Environmental Management Plan
- Construction Environmental Management Plan
- Surface Water Management Plan
- Site Drainage Technical Note

A copy of this Drainage CEMP will be retained on site for reference throughout the construction phase. The Principal Contractor is required to maintain a copy of the Drainage CEMP at all work site 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.

1.2 Roles and responsibilities

Site Operator, Heidelberg Materials

The site operator is responsible for ensuring that all members of the project team, including the principal contractor (PC) and all other contractors and sub-contractors comply with the procedures set out in this CEMP. The site operator will ensure that all persons working on site are provided with sufficient training, supervision and instruction to fulfil this requirement.

The site operator will ensure that all persons allocated specific responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

The main environmental responsibilities for other key staff can be identified as follows:

Construction manager

The construction manager will have overall responsibility for monitoring the performance of the project against statutory requirements and the agreed objectives and targets. The duties associated with this role include:

- notification of changes affecting this CEMP to the Heidelberg Materials team;
- confirm the competence of all contractors to be employed for the works;
- review risk assessments and method statements (RAMS) regarding environmental aspects and advise of suggested improvements prior to works commencing; and
- provide main contact between contractor and clients project team on environmental and construction issues.

Principal contractor's site manager

The PC's site manger's environmental management responsibilities include but are not limited to:

- supervision and implementation of the measures contained in this CEMP;
- managing the preparation and implementation of risk assessments and method statements (RAMS) for specific tasks and ensuring they accord with the Drainage CEMP;
- management of the safety, health, environment and quality (SHEQ) plan;
- environmental incident investigation;
- development and implementation of environmental incident emergency response plan;
- review of compliance reports from site inspections undertaken by the environmental manager and implementation of report recommendations;
- reviewing applications for environmental consents and permits; and

- ensuring that the risk assessments for control of substances hazardous to health regulations (COSHH), noise and environmental risks are prepared and effectively monitored, reviewed and communicated on site.

Construction contractors

All contractors working on the site have environmental management responsibilities, which include but are not limited to:

- having an understanding of the requirements of the Drainage CEMP with respect to the specific tasks that they are undertaking,
- immediately stopping works and reporting any operations and conditions that deviate from the Drainage CEMP to the site manager, and
- actively participating in site safety and environmental briefings and meetings.

2 THE PROJECT

The main details of the project are summarised in this section; the description is limited to an overview of the main components sufficient to provide an understanding of the approach to the planned works, and the roles of those main parties responsible for undertaking each part of the works.

2.1 Project Description

The overall project includes the construction of a Carbon Capture Plant; comprised of a Combined Heat and Power (CHP) plant and a Post Combustion Carbon Capture and Compression (PCCCC) plant ('the Proposed Development'). The Proposed Development will be located in the southwest corner of the Site, with the existing cement works at the centre of the Site.

The development will enable carbon capture from the existing cement kiln and from a new CHP plant designed to provide the heat and electricity required to operate the PCCC plant. Captured CO2 will be transported by pipeline to the HyNet CO2 main pipeline at Northop Hall AGI for onward transportation to storage offshore in depleted gas fields operated by Eni UK. The Proposed Development will enable the production of net zero cement for use in the UK construction industry.

Ancillary works associated with the Proposed Development and also subject to the DNS planning permission including road accesses, temporary and permanent car parking, temporary construction offices, temporary materials laydown areas and a temporary construction and assembly area.

2.2 Site Location and Plan

Padeswood Cement Works is located to the south of Buckley, near Mold, Flintshire, CH7 4HB. The Site's primary operation is as a cement works and contains infrastructure, plant and machinery to enable operations that include but are not limited to cement kilns, griding mills and silos as well as several office buildings, workshops and vehicle parking. The Site also includes non-operational land used for a range of purposes including agriculture, landscaping and a number of privately tenanted residential properties.

A full site plan can be seen in Figure 1 attached to this document. The Site is approximately 71.3ha in size and includes Padeswood Hall and Padeswood Hall Farm. Padeswood Hall has been vacant for over a decade and is now derelict, Padeswood Hall Farm is let to a private tenant. Padeswood Drive, an unclassified residential road exiting from the A5118, is located within the northern perimeter of the Site and is home to 12 semi-detached residential dwellings.

The site will be accessed from the north of the site via the A5118.

2.3 Timetable for Implementation

The measures in this document will coincide with the main construction phases of the project as summarised below. These dates are subject to change, dependent on progress with the construction schedule and discharge of planning conditions alongside any other pre-commencement requirements.

Table 1: Project Timetable

Stage of Development	Proposed Start Date
Preliminary site works (surveys, EPS Licence works, preliminary site investigation works)	July 2025
Tree clearance and demolition works	December 2025
Enabling works	December 2025
Commencement of main civils works	May 2026
Main construction phase	October 2026
Pre-Commissioning phase	March 2028
Commissioning works	May 2028
Start-up for operational phase	November 2028

2.4 Consents and Licenses

When required, the appropriate consents and licenses will be sought from the appropriate regulator. The following licences and consents are expected to be required for the development:

- Ordinary Watercourse Consent
- European Protected Species Licence (Bats, Badger and Great Crested Newt)
- Permit to discharge to surface water

A permit and consents register is located within the main CEMP for the construction phase that will be stored on site. This register will be regularly updated with any further consents and licences that are needed. A licence to abstract water is not expected to be required as dewatering is not expected to exceed 20 m3/day (UK Environmental Agency, 2025).

2.5 Fencing

The construction site will be securely fenced and otherwise demarcated from public access. All fencing and hoarding will be suitable as to prevent unauthorised access to the site and will be closed when not in use. Warning, instructional, pictorial and informative signage will be affixed at appropriate locations. Only authorised personnel will be permitted on site. Drainage features will also be fenced off where required to prevent unauthorised access. The headwall to be constructed in the western ditch will be securely fenced to prevent public access. Details of the design of this headwall and its fencing will be submitted as part of the Ordinary Watercourse Consent mentioned above. Fencing will be regularly inspected by the site manager to ensure that it is maintained in good condition and is secure.

3 CONSTRUCTION DRAINAGE STRATEGY

The detailed design strategy for the development can be found within the Site Drainage Technical Note submitted alongside this CEMP as part of the SAB application. This Drainage CEMP details the drainage strategy for Phase 1 of construction which includes the car park, access road and the temporary construction and laydown areas only. The location of each of these construction areas can be seen in Figure 2 , extracted from the Surface Water Management Plan.

3.1 Construction Drainage Strategy

The design for management of surface water during construction will be through discharge to a surface water body. This is method has been chosen due to poor-infiltration rates and lack of feasible reuse options for surface water at the site. The specific methodology of surface water drainage for each construction area is discussed below:

Carpark (Area B)

- As shown in Figure 2, the car park is located to the northern boundary of the site. The car park will be divided into two sections, one half will have a sealed asphalt surface while the other will have a gravel cover with Bodpave overlying natural ground.
- During construction, the Bodpave system will be utilised in which runoff will be collected and transported to the main surface water pipes and stored in attenuation crates. Once construction is completed, the gravel section of the car park will be removed and replaced with sealed asphalt.

Access Road (Area C)

- The access road will run along the western side of the site, connecting the car park and construction laydown area to the Carbon Capture Unit (CCU). The permanent method for drainage will be installed and used during the construction phase of the development.
- Surface water run-off will be drained into a piped network through gullies along the road. The northern section of the network will discharge directly into the existing drainage ditch along the western boundary. A hydro-break will be used to restrict discharge flow.
- The southern section of the access road will use existing surface water sewer diversion infrastructure. Excess rainfall runoff will be redirected towards the western ditch and to the downstream defender at the CCU. Silt busters will treat runoff prior to discharge.

Temporary Laydown area (Area D)

- The laydown area will be used for construction material and machinery storage. Surface water run off will be stored in trapezoidal drains. Trapezoidal drains and drainage channels will flow into existing stormwater infrastructure.

- The drainage channels will act as green pathways when dry to provide biodiversity benefit to insects and other pollinators.

4 ENVIRONMENTAL MITIGATION MEASURES

Environmental management measures have been developed to avoid or reduce environmental impacts associated with the drainage construction works. A more detailed description of the construction programme and general environmental protection measures have been provided within the Construction Environmental Management Plan and Biodiversity CEMP. The mitigation measures that will be implemented during construction of the SuDS and drainage are summarised below.

4.1 Water Quality and Pollution Control

As detailed within the Surface Water Management Plan, the access road and laydown areas are not deemed to be areas of high-risk for hydrocarbon pollution. The car park may pose a contaminants risk, with high vehicle standing times resulting in settled hydrocarbons. Through the SuDS risk matrix, this poses a high risk to groundwater quality at the site. Any dewatering of the car park will be to a cut off drain to the south of site and transported to the settling facility.

Silt Management

Silt and sediment can build up during construction activities such as soil stripping and vehicle movements. Silt can impact on SuDS and drainage features and reduce their effectiveness in managing surface water. For this development, silt may block drains and impact the flow rates of drainage ditches. Therefore, silt management measures must be undertaken throughout construction.

Any water that is discharged to a surface water receptor during the course of construction will be treated through a silt buster prior to discharge. This includes discharge to the existing western drainage ditch. The following silt management methods will also be incorporated during the construction phase to prevent pollution impacting drainage features:

- Surface water and drains will be protected from silt run-off: use of drain guards to protect drains. Use of straw bales, gravel traps or silt fencing to protect surface waters. All silt protection measures must be inspected frequently and maintained throughout the works.
- Stockpiles of contaminated materials will be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund.
- Tracking or washing out next to drains/surface waters will be avoided.
- Potentially contaminated water must be tested before dewatering. Contaminated water must be treated before being discharged off site.
- If a discharge consent is required, then all conditions within the consent must be understood before commencement of dewatering.
- All fuels, oil and chemicals are to be labelled and stored appropriately, such that any leaks are contained and do not result in ground contamination.

- Road sweepers shall be utilised where necessary
- Minimize any areas of soil stripping and stockpiling
- Limit water volumes used to suppress dust

The main CEMP produced as part of the planning conditions will be kept on site during the construction phase. Management measures detailed in the CEMP refuelling, fuel and chemical storage should be adhered to throughout the construction of the drainage elements.

4.2 Biodiversity

Across the site, landscape and ecological enhancement features are to be incorporated within the proposed development. A total of 10.1 ha of the site will be utilised for landscaping, habitat creation and enhancement. Temporary construction areas, such as the laydown area discussed above (Area D), are to be permanently reinstated for biodiversity value as per the Outline Habitat Creation & Management Plan (RSK Environment, September 2024). Landscape and habitat areas will support the SAB objectives through the inclusion of water retaining features such as woodlands, ponds and wet grassland. In addition, the drainage ditches situated adjacent to the car park may provide biodiversity benefit through insect and pollinator habitat.

A Biodiversity CEMP has been prepared as part of the planning conditions for the development. The mitigation and licensed activities to be undertaken are outlined in detail within the Biodiversity CEMP. The protected species known to be present at the site and the potential impact of drainage construction on them are discussed below:

Great Crested Newts

Great Crested Newts are known to be present on site and a licence has been obtained from Natural Resources Wales (NRW) to begin trapping out works in August 2025. GCN will be strategically moved from the site and relocated to nearby suitable habitat. An amphibian barrier will remain in place during construction to prevent any GCN returning to the construction area. This will prevent any GCN becoming trapped within any drainage features as they are being constructed. If any GCN become trapped within a SuDS drainage feature that is being used for the construction phase, an Ecological Clerk of Works (ECoW) will be consulted. No demolition or construction works will occur until the trapping out works have been completed.

Bats

It is not anticipated that any impacts from the drainage construction will impact directly on bat species known to be present at the site. A licence has been sought from NRW for the demolition of bat roosing features before demolition works occur. Bat foraging habitat may be improved due to the addition of the drainage ditches that will provide insect habitat and breeding areas.

Badgers

Badger setts have been identified at the site. The setts expected to be impacted by the construction have been closed in October under a licence granted by NRW. Badgers are known to be using the site for commuting and foraging. The mitigation measures outlined within the Biodiversity CEMP should be followed throughout construction. In particular to drainage features, this includes ensuring appropriate fencing of drainage features and grading of trenches to prevent mammals becoming trapped.

FIGURE 1: SITE PLAN

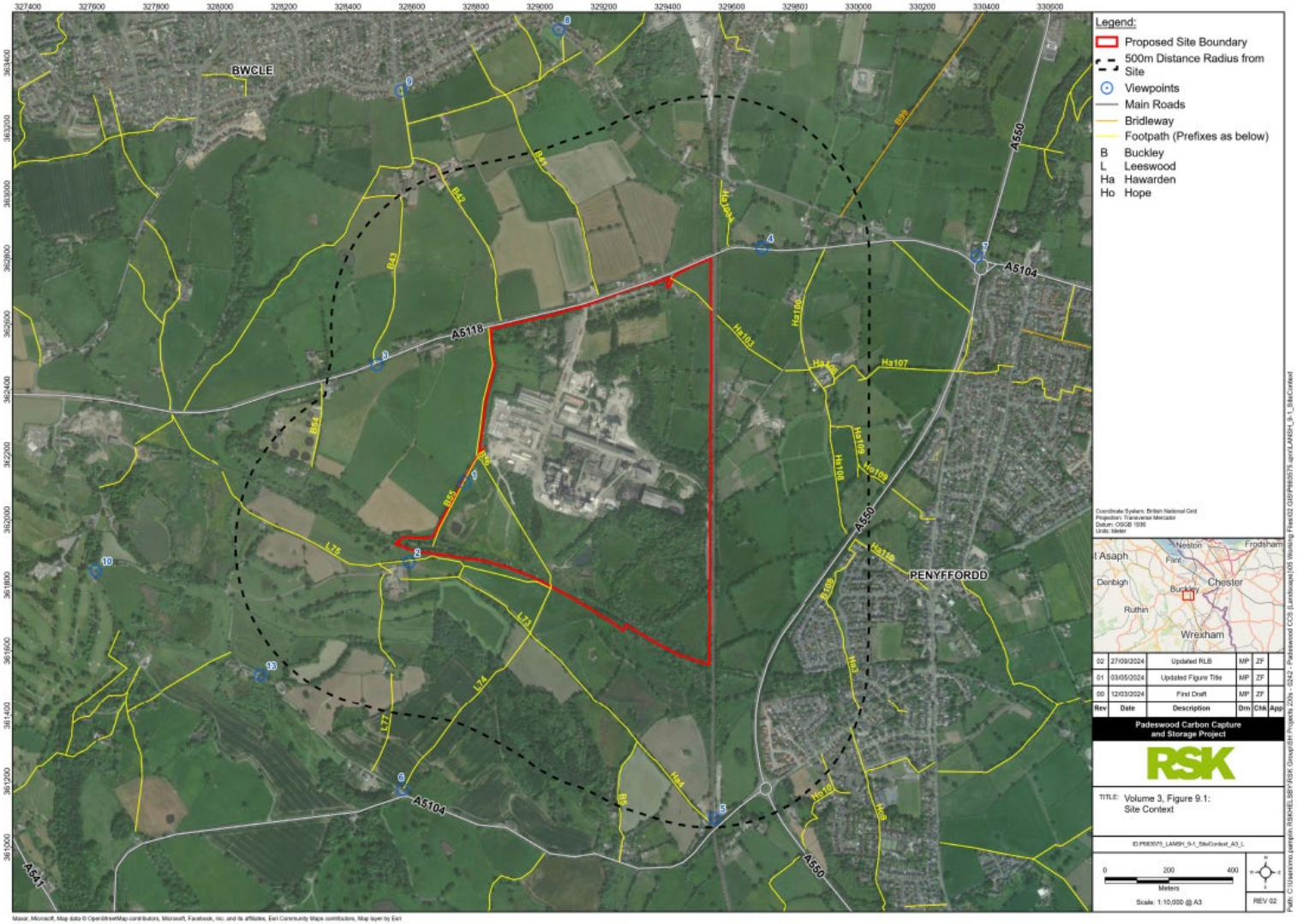

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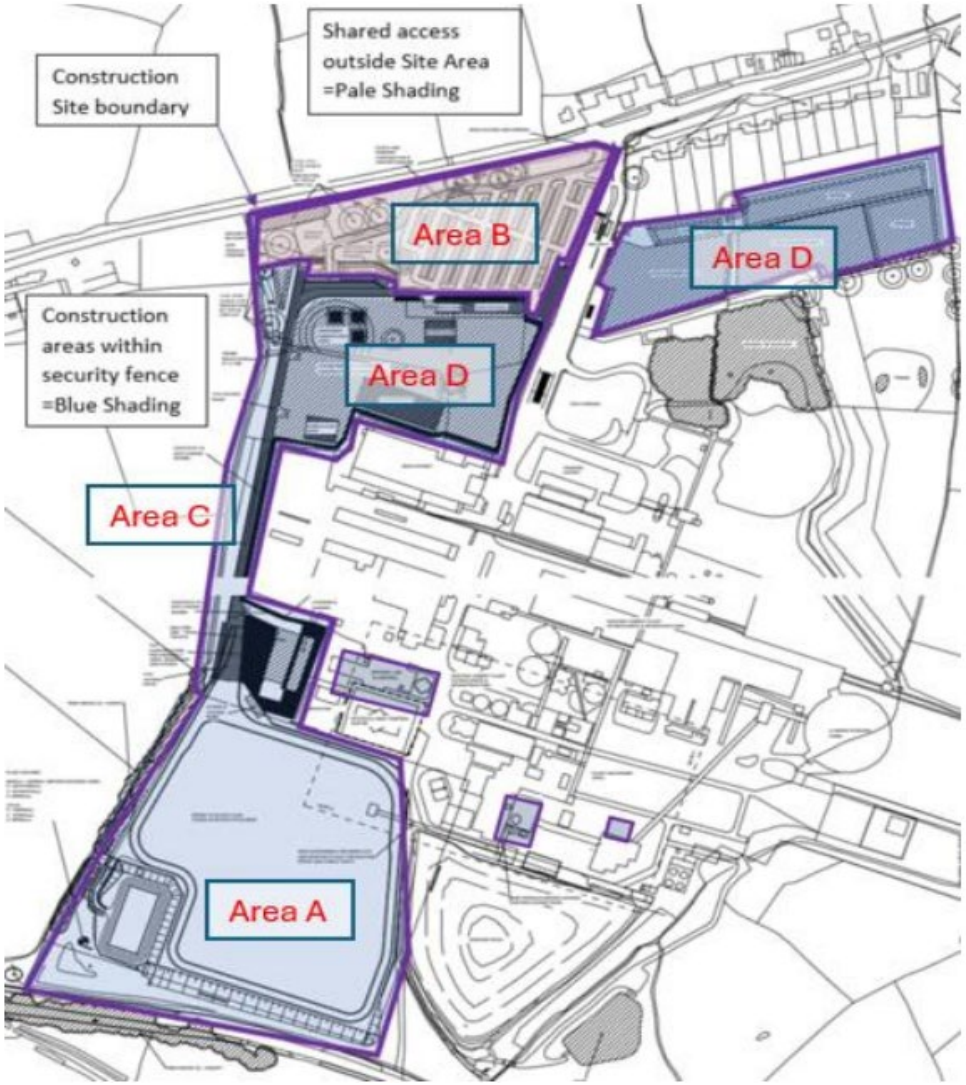
FIGURE 2: CONSTRUCTION AND LAYDOWN AREAS



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