

APPENDIX G

ENVIRONMENTAL MANAGEMENT PLAN

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Scope and Responsibility

1.1 Introduction

This document provides an overview of the systems and controls put in place by Causeway Geotech, working on behalf of The Port of Mostyn Ltd, to ensure the protection of the environment while carrying out works as part of the ground investigation.

1.2 Legislation

The works must comply with the guidance set out in: Environment Agency Pollution Prevention Guidelines (PPG) in particular, but not necessarily limited to PPG5 'Works and maintenance in or near water' and PPG6 'Working at construction and demolition sites' and satisfy all NRW requirements regarding abstraction of inland waters.

1.3 Persons responsible

Principal Designer: BAM Nuttall

Principal Contractor: Causeway Geotech
8 Drumahiskey Road,
Ballymoney,
Co. Antrim,
BT53 7QL

Causeway Geotech's Site Agent will be responsible for the implementation of good environmental practises on the site, as set out in this plan.

2. Implementation

2.1 Training and briefing

The guidelines set out in the EMP will be briefed to all personnel by means of a dedicated tool box talk. Briefing records will be held in the site safety file. This briefing session will include:

- Outline role of Principal Contractor in environmental protection
- Detail systems in place to control and mitigate against any environmental incidents
- Emphasize duty of care that must be borne by all employees
- Best practice in carrying out standard tasks to reduce risk of environmental incidents
- Impact of standard works on local environment
- Inform of any particularly sensitive areas (SSSIs/SACs etc)
- Detail reporting and response procedures for any environmental incidents.
- Site specific constraints (i.e. consent requirements, ecology, waste management etc.)

3. Plant and equipment

All plant and equipment on site should be maintained in good order to minimise potential for any discharge of pollutants, such as oil, through leakage or such. Good biosecurity should be practiced at all times; all marine plant and drilling equipment will be pressure washed before leaving previous site ahead of arrival and placement into the water at the works area.

Key plant and equipment in mitigating environmental impact:

- Bunded fuel bowser
- Spill kits
- Plant nappies
- Drip trays
- Jerry cans with refuelling spouts
- Silt traps
- Biodegradable lubricant (drill casing)
- Designated skips according to waste type (recyclable/non-recyclable/biodegradable)
- Containment booms for deployment overwater.

4. Environmental Controls

4.1 Overview

All work activities will be carried out strictly in accordance with Causeway Geotech's Method Statements and Risk assessments. Where required, works will be carried out under the instruction and guidance of an appointed ECoW.

A point of work risk assessment will be carried out for each exploratory hole location to ascertain the likelihood of a contaminant (fuel oil, hydraulic oil, silt, bentonite, etc) entering any water course. Appropriate controls will be put in place (bundling around works areas, silt traps, spill kits, plant nappies, etc)

The drilling rigs will lubricate the casing joints with biodegradable vegetable oil.

4.2 Spillage Event

Should a spillage of contaminant occur the following procedures will be followed:

- Operative to contact the Causeway Geotech Site Agent
- Causeway Geotech to notify the Client's Representative & ECoW immediately of the incident (details, location etc.). Head Bailiff will also be notified at this time along with the event being logged on the NRW system.
- The deployment of on-site spill kits to minimise the spread of spillage at the source. Should the spilled material enter the watercourse, it will first be attempted to contain it (using booms).

Should the volume be such that it cannot be contained effectively, then an assessment as to the nature of the spill needs to be made by the Site Agent. After this, the Client's Representatives should be informed along with the regulatory body (NRW) – for a serious spill. Given the low volumes of fuel and hydraulic oils stored and transferred on the barge at any one time, it is highly unlikely that such a serious spillage event will occur.

- Any re-useable equipment used to contain the contaminant will be cleaned as soon as possible and ready for use again.
- Any contaminated spill kits will be disposed of (in accordance with the Duty of Care via licensed waste carrier) and immediately replaced.

4.3 Refuelling

- The designated refuelling area is at the site compound. Spill kits and drip trays will be available throughout the operation. Refuelling via jerry can is anticipated for the overwater works; jerry cans to be securely sealed/fastened and stored in a bunded area either at the site compound or on the barge deck as required.
- Refuelling on site will only take place at the work areas where the rig / plant cannot be moved to a designated refuelling area. Spill kits and drip trays will be available throughout the operation.

4.4 Noise control

Noise generated from drilling operations have been assessed by noise monitoring surveys. Best practicable means are employed in minimising the noise generated through standard activities (silent pack generators in use, respite periods built into drilling activities, speed limit in place for site traffic, acoustic barriers deployed as appropriate).

The noise levels do not exceed 87dBa at 1m and are unlikely to affect the environment or cause a nuisance to the nearest residences given the remoteness of the work sites.

Investigation works will typically be carried out between the hours of 08.00 to 18.00 Monday to Sunday.

4.5 Ecology

If evidence of protected species (Otters, badgers, bats, dormouse, etc.) are found, work should immediately cease in that area and the ECoW/Client's Representative informed so that appropriate action can be taken. An otter survey of both riverbanks is proposed during week 1 of the works.

Causeway Geotech recognises the importance of the conservation of fish, riparian and aquatic habitats and will ensure that activities avoid:

- Bird nest season: maintain minimum distances from actual or suspected nesting sites
- interference with fish migration and spawning

- interference mammal movement, rare plants and their habitats and with riparian and linear wildlife corridors
- loss of aquatic and riparian habitat
- alteration of flow regime
- harmful discharges during access and investigation activities

Causeway Geotech recognises the importance of controlling the spread of noxious weeds and non-native invasive plant species and ensuring any activities comply with the requirements of the Noxious Weeds Act, 1936, and the Wildlife (Amendment) Act, 2000. If, following invasive species survey to be carried out by the ECoW, there are locations along the site where invasive species are known to exist (Japanese Knotweed and Himalayan Balsam), an invasive species management plan will be drawn up and appended to the Project Work Plan. Causeway Geotech will liaise directly with the ECoW for any/all ecological constraints.

From the previous phase of works, no invasive species were noted either on the surround hillsides or along the riverbanks in the immediate vicinity of the proposed overwater works locations. As mentioned elsewhere, the marine plant and drilling rigs will be power washed prior to leaving their previous sites to ensure no possible transfer of invasive species/biosecurity issues.

The drilling rigs will use biodegradable vegetable oil to lubricate the casing threads. The rigs and site plant are operating in an open environment and will emit very low concentrations of exhaust fumes that will be quickly dispersed.

4.7 Waste management

A designated waste storage area will be in place at the site compound, comprising a number of separate skips clearly designated according to waste type (recyclables, non-recyclables, biodegradable waste, etc). As standard, Causeway Geotech use biodegradable oil for lubricating their casing and drilling equipment for all drilling activities.

The drilling flush (water mixed with biodegradable polymer) will be recycled and a large part of the waste for this project will be the settlement “sludge” within the rotary drilling circulation tanks. This will periodically be transferred to the IBC’s on deck using buckets and shovels as necessary. The IBC’s will then be hoisted off deck using the mobile crane at the end of the drilling works to be disposed of.

The core samples of the rock will be stored on pallets on the deck and transferred to the land at the end of the borehole drilling works. They will be transferred via the mobile crane before being loaded onto transports and shipped back to the CGL logging facility.

All residual materials (empty containers, bags, etc) will be bagged up on the jack-up barge and taken back to the compound and placed in the appropriate (covered) skip.

Waste material (wood, paper, plastic, scrap metal etc.) to be recycled where possible – this may involve re-use on site (with processing if required) or via a licensed carrier to remove material off-site for processing and re-use where possible.

Waste carrier to remove filled skips from site as and when appropriate, or on a weekly basis. No skips to be overfilled. Waste transfer notes to be maintained in site safety file.

4.8 Dust Management

Dust levels on site will be monitored closely. Drilling is not expected to be carried out in dry conditions and as such dust generation should be negligible. In the event of dust being produced by drilling, the rig's dust trap will be utilised. Dust generation would not be anticipated to be a major issue during the overwater works as the drilling takes place at/below the riverbed.

4.9 Protection of controlled waters

Where works are to be carried out adjacent to controlled waters, clear pathways for effluent to be discharged to that stream/river etc must be impeded. Silt traps will be put in place and will adopt form of sandbags, terram, non-porous plastic sheeting and straw bales (as applicable). All drilling fluids will be cleaned up at the end of each borehole location; diaphragm pump used to clean out the banded waters to IBC's which will then be removed to compound and decanted into tanks ahead of disposal at licensed facility.

In the event of a large groundwater strike all drilling works will be halted and the Main Contractor, ECoW and the Investigation Supervisor contacted to discuss the best way to proceed.

4.9 Environmental monitoring

Causeway Geotech's Site Agent will conduct daily walkovers of each work site to ensure that the control measures included in the RAMS for each operation are being complied with. Any non-compliances must be dealt with in the appropriate manner (resolve, record and report). Disciplinary action may be taken against offending workers in accordance with the company's disciplinary procedures.