

# MONA OFFSHORE WIND PROJECT

## Outline Discovery Strategy for Contaminated Land

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Image of an offshore wind farm

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### Glossary

Term	Meaning
Discovery strategy	A plan setting out the process for identifying and managing unforeseen contamination that may be encountered during construction

### Acronyms

Acronym	Description
CoCP	Code of Construction Practice
DCO	Development Consent Order
MLWS	Mean Low Water Springs
V/O	Visual/Olfactory

# 1 OUTLINE DISCOVERY STRATEGY FOR CONTAMINATED LAND

## 1.1 OVERVIEW

- 1.1.1.1 This document forms the Outline Discovery Strategy for Contaminated Land is provided as an annex to the Outline Code of Construction Practice (CoCP) (Document reference J26). It sets out the key management measures that will be implemented during the construction phase of the Mona Offshore Wind Project.
- 1.1.1.2 The strategy seeks to manage potential impacts that occur from the construction of the onshore and intertidal elements of the Mona Offshore Wind Project. These elements occur landward of Mean Low Water Springs (MLWS) and comprise:
- Mona Landfall
  - Onshore Cable Corridor
  - Onshore Substation
  - 400 kV Grid Connection Cable Corridor.
- 1.1.1.3 In addition to these elements, the Outline CoCP considers the temporary construction compounds, storage areas, accesses and mitigation areas required to support the construction of the Mona Offshore Wind Project.
- 1.1.1.4 The relevant planning authority for the landfall and the western section of the Onshore Cable Corridor (i.e. west of Bodelwyddan) is Conwy County Borough Council; the relevant planning authority for the eastern section of the Onshore Cable Corridor, the Onshore Substation and the 400kV Grid Connection Cable Corridor is Denbighshire County Council.

## 1.2 Purpose of this Outline Discovery Strategy for Contaminated Land

- 1.2.1.1 The draft Development Consent Order (DCO) (Document Reference C1) includes a requirement for the preparation of a final CoCP. The final CoCP will be supported by a series of management plans including an Outline Artificial Light Emissions Plan (Document Reference J26.10), which must be submitted to and approved by the relevant planning authority prior to the commencement of onshore works.
- 1.2.1.2 The purpose of this Outline Discovery Strategy for Contaminated Land is to set out the process for identifying and managing unforeseen contamination that may be encountered during the construction phase of the onshore and intertidal elements of the Mona Offshore Wind Project.
- 1.2.1.3 This is an outline document based on the design set out in Volume 1, Chapter 3: Project Description of the Environmental Statement (Documents reference F1.3) and includes measures that have been identified as part of the EIA process.
- 1.2.1.4 The Outline Discovery Strategy should be read in conjunction with the Volume 3, Chapter 1: Geology, hydrogeology and ground conditions of the Environmental Statement (Document reference F3.1), the Outline CoCP (Document reference J26) and its supporting appendices.

## 1.3 Scope of the Outline Discovery Strategy for Contaminated Land

- 1.3.1.1 The scope of the Outline Discovery Strategy applies to the onshore site preparation and construction activities of the Mona Offshore Wind Project located landward of MLWS. The Plan does not apply to activities associated with offshore works, (i.e. seaward of MLWS).
- 1.3.1.2 Onshore site preparation will be undertaken prior to the commencement of construction. These works comprise the following:
- Site clearance include vegetation clearance
  - Demolition
  - Early planting or landscaping works
  - Archaeological investigations
  - Environmental surveys
  - Ecological mitigation
  - Investigations for the purpose of assessing ground conditions
  - Remedial work in respect of any contamination or other adverse ground conditions
  - The diversion and laying of utilities and services
  - Site security works
  - The erection of any temporary means of enclosure;
  - The erection of any temporary hard standing
  - The erection of welfare facilities
  - Creation of site accesses
  - Temporary display of site notices or advertisements,
- 1.3.1.3 The onshore site preparation works listed in section 1.3.1.2 will be carried out in accordance with the measures set out in this Outline Discovery Strategy as part of the CoCP which is secured as a requirement in the DCO.
- 1.3.1.4 The final Discovery Strategy will be in general accordance with the principles established in the Outline Discovery Strategy and will be agreed with the relevant authority prior to commencing the relevant stage of the onshore and intertidal works (above MLWS). For the purpose of this Outline Discovery Strategy, the term 'construction' includes all related engineering, construction and restoration activities as authorised by the DCO within the Order Limits.
- 1.3.1.5 The Discovery Strategy aims to achieve the following during the proposed construction works:
- Effective management of any residual contaminated soils that may be encountered
  - Effective management of any groundwater contamination generated during construction
  - Effective management of controlled water and human health risks associated with low level contaminated groundwater and soils that may be encountered.

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- 1.3.1.6 The Discovery Strategy delivers these objectives through the following four elements:
- Protocols for managing any localised hot-spots of soil contamination that may be encountered, as delivered through a discovery strategy
  - Groundwater management measures/protocols
  - Monitoring and field records required during the construction phase
  - Verification reporting.

## 1.4 Roles and Responsibilities

- 1.4.1.1 The key roles and associated responsibilities with regard to this Outline Discovery Strategy are set out below. The Construction (Design and Management) Regulations 2015 also identify the legal duties, responsibilities and obligations of all the major roles within the construction team.

- 1.4.1.2 The responsibilities of each role will be refined as necessary in the final Discovery Strategy.

### Applicant

- 1.4.1.3 The Applicant will be responsible for the following:
- Ensuring that the Discovery Strategy is implemented effectively
  - Giving necessary direction to contractors (for example, setting contractual obligations)
  - Reviewing, revising and refining the Discovery Strategy (where necessary) in conjunction with the Principal Contractor.

### Principal Contractor

- 1.4.1.4 The Principal Contractor will be appointed by the Applicant and has the overall responsibility for:
- Updating and delivering the final Discovery Strategy on behalf of the Applicant
  - Ensuring all procedures in the Discovery Strategy Plan are followed
  - Ensuring all contractors are suitably qualified and experienced in implementing the measures within the Discovery Strategy
  - Maintaining records relevant to the Discovery Strategy.

### Contractors/Sub contractors

- 1.4.1.5 Contractors and sub-contractors will be required to understand their responsibilities and implement the measures within the Discovery Strategy (e.g. task-based lighting will be switched off after use and at the end of the working shift).



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### 1.5 Methodology

#### 1.5.1 Overview

- 1.5.1.1 A Discovery Strategy for any previously unanticipated and un-encountered contamination will be implemented as part of the Mona Offshore Wind Project. It will also include details of a watching brief to be kept by the Principal Contractor(s).
- 1.5.1.2 The watching brief and method of reporting will be provided in the detailed Discovery Strategy.
- 1.5.1.3 Where visual or olfactory (V/O) evidence of significant contamination (that has not been previously encountered), is identified, construction activities will be stopped and a suitably qualified environmental consultant will be contacted. Evidence of soil/groundwater contamination may include:
- The presence of free phase contamination (liquids or sheens)
  - Fibrous or cement bound materials (potentially asbestos containing materials)
  - Significant staining and discolouration of exposed soils
  - Oily sheen on the surface of groundwater
  - V/O evidence of organic contamination (i.e. hydrocarbons, solvents, etc).
- 1.5.1.4 Areas where unexpected contamination is suspected or encountered will be photographed and annotated on a site drawing. Any construction activities in the area where this material was encountered will cease until an appropriate plan for testing and the subsequent dealing with the contamination has been put in place in accordance with the Contaminated Land (Wales) Regulations 2006.
- 1.5.1.5 Specific risk assessments will take place prior to any construction work in line with health and safety requirements to enable appropriate measures and personal protective equipment (PPE) to be implemented.
- 1.5.1.6 The Discovery Strategy will require that any contamination, including contaminated groundwater, that is discovered during construction which was not previously identified must be reported as soon as reasonably practicable to the relevant authority, and a risk assessment will be completed in consultation with the authority. Soil (soil vapour/ groundwater) samples will be collected and analysed. The risks associated with contamination will be assessed. When required, a remediation strategy will be designed and agreed with the relevant authority before implementation.

#### 1.5.2 Soil contamination

##### Identification

- 1.5.2.1 There is the possibility that localised hot spots of soil contamination could be encountered during the construction activities.
- 1.5.2.2 The hot spot discovery strategy provides the mechanism to manage soils that may represent an unacceptable risk to controlled waters but have not been subject to detailed quantitative risk assessment prior.
- 1.5.2.3 The proposed framework for managing hot spots of soil contamination is summarised in Diagram 1 and will include the following elements:
- Pre-construction preparations



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- Preliminary (V/O) characterisation
- Temporary stockpiling of potentially contaminated materials
- Determination of chemical suitability of potentially contaminated soils for on-site reuse
- Off-site disposal and/or treatment
- Monitoring and record keeping
- Verification reporting.

1.5.2.4 It is proposed that the V/O contamination criteria developed for preliminary characterisation of soils encountered during the construction works remain appropriate. These criteria are summarised in Table 1.1.

**Table 1.1: V/O characterisation criteria for soils**

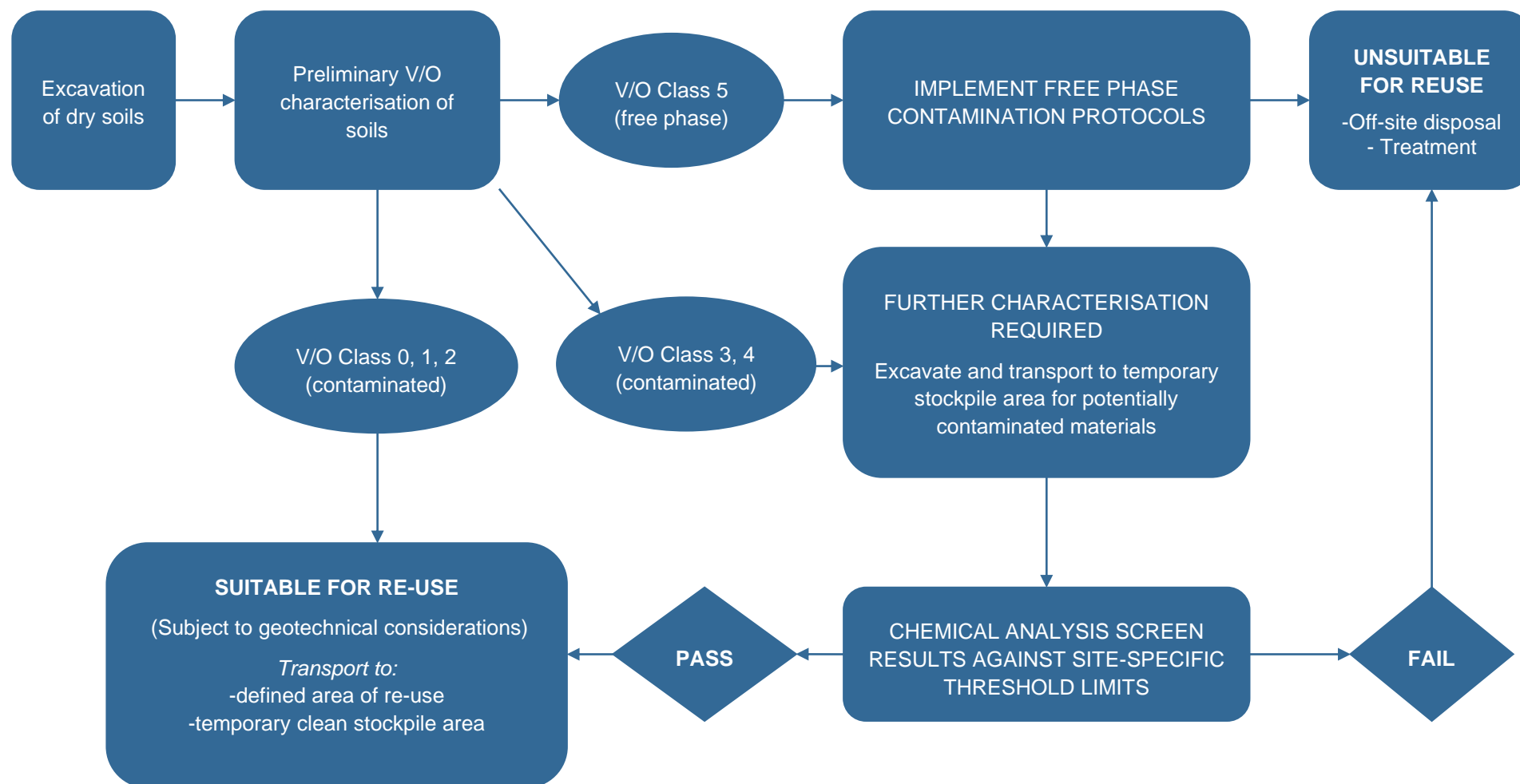
Class	Visual	Olfactory
0	No visible staining of soil, no visible suspect ACM*	No detectable odour on soil
1	Occasional staining of soil, no visible suspect ACM*	Faint odour on soil
2	Frequent staining of soil	Distinct but not strong odour on soil
3	Occasional heavy staining of soil	Strong odour on soil
4	Heavy staining on soil	Strong odour discernible in ambient air
5	Visible hydrocarbon present	Overwhelming odour

\*visible suspect Asbestos Containing Materials (ACMs). ACM refers to asbestos containing material visible to the naked eye which a reasonable and prudent person used to managing asbestos may suspect to be asbestos containing

### Management

1.5.2.5 The process for managing contaminated soil is set out in Diagram 1.

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**Diagram 1: Soil contamination management flow chart**

## 1.5.3 Groundwater contamination

### Identification

1.5.3.1 It is unlikely that construction of the Mona Offshore Wind Project will discover previously unencountered contaminated groundwater. However, in the scenario contaminated groundwater is discovered, a summary of the recommended protocols is presented in Diagram 2 and includes the following elements:

- Pre-construction preparations
- Preliminary V/O characterisation
- Treatment for contaminated waters
- Silt management
- Routine monitoring, maintenance and record keeping.

1.5.3.2 It is proposed that the V/O contamination criteria developed for preliminary characterisation of groundwater encountered during the construction works remain appropriate. These criteria are summarised in Table 1.2.

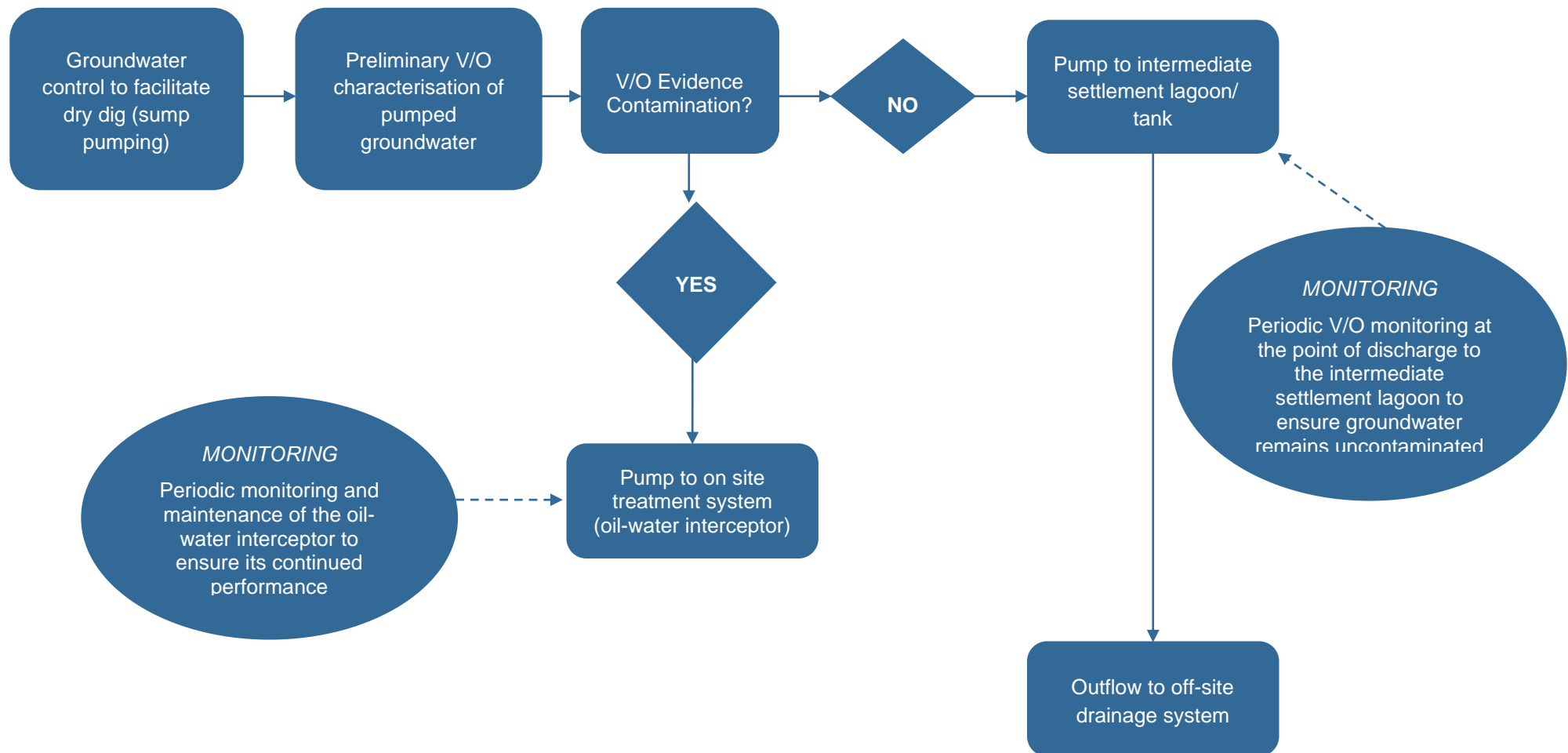
**Table 1.2: V/O characterisation criteria for groundwater**

Class	Visual	Olfactory
0	No visual evidence of contamination	No visual evidence of contamination
1	Minor visual evidence (discontinuous sheening)	Slight/moderate hydrocarbon odours
2	Significant visual evidence (widespread sheening and/or thin or localised product)	Strong hydrocarbon odours
3	Free phase product	Overwhelming odour

### Management

1.5.3.3 The process for managing contaminated groundwater is set out in Diagram 2.

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**Diagram 2: Groundwater contamination management flow chart**

## 1.6 Verification Reporting

- 1.6.1.1 The verification report shall include details of the works undertaken during the construction phase and provide documentary evidence to the relevant authority that the works have been undertaken in accordance with the Discovery Strategy.
- 1.6.1.2 With respect to the hot spot discovery strategy, the routine documentation of the works to be carried out by the contractor shall include:
- Daily Record sheet describing activities undertaken on site
  - Site plans
  - Excavation records for contaminated material including the extent of any contamination, together with sampling locations
  - Details of any remedial works due to the findings on site
  - Plans detailing the volume and nature of materials within stockpiles (where stockpiling undertaken)
  - Sample records detailing the location and composition of each sample taken
  - Duty of care register of contaminated waste removal, including a list of transfer notes and consignment notes against landfill weighbridge tickets, chemical test results for the material
  - Special measures for the disposal of any asbestos contaminated soils.