

# MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Outline contaminated land and groundwater discovery strategy



September 2024  
Rev: F01

MOR001-FLO-CON-ENV-STR-0002  
MRCNS-J3303-RPS-10071

PINS Reference: EN020028  
APFP Regulations: 5(2)(j)  
Document reference: J1.14

Document status					
Version	Purpose of document	Approved by	Date	Approved by	Date
F01	For issue	AS	September 2024	IM	September 2024

The report has been prepared for the exclusive use and benefit of the Applicants and solely for the purpose for which it is provided. Unless otherwise agreed in writing by RPS Group Plc, any of its subsidiaries, or a related entity (collectively 'RPS') no part of this report should be reproduced, distributed or communicated to any third party. RPS does not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report.

The report has been prepared using the information provided to RPS by its client, or others on behalf of its client. To the fullest extent permitted by law, RPS shall not be liable for any loss or damage suffered by the client arising from fraud, misrepresentation, withholding of information material relevant to the report or required by RPS, or other default relating to such information, whether on the client's part or that of the other information sources, unless such fraud, misrepresentation, withholding or such other default is evident to RPS without further enquiry. It is expressly stated that no independent verification of any documents or information supplied by the client or others on behalf of the client has been made. The report shall be used for general information only.

**Prepared by:**

**RPS**

**Prepared for:**

**Morgan Offshore Wind Limited,  
Morecambe Offshore Windfarm Ltd**

## Contents

<b>1</b>	<b>OUTLINE CONTAMINATED LAND AND GROUNDWATER DISCOVERY STRATEGY .....</b>	<b>1</b>
1.1	Background .....	1
1.1.1	Introduction .....	1
1.2	Implementation.....	1
1.3	Objectives and management .....	2
1.3.1	Objectives .....	2
1.3.2	Roles and responsibilities .....	2
1.4	Evidence of potential contamination .....	3
1.4.1	Evidence .....	3
1.5	Procedures where previously unidentified contamination is encountered .....	3
1.6	Mitigation plan .....	4
1.7	References .....	5

## Glossary

Term	Meaning
Code of Construction Practice	A document detailing the overarching principles of construction, contractor protocols, construction-related environmental management measures, pollution prevention measures, the selection of appropriate construction techniques and monitoring processes.
Construction	Any activity involved with the provision of a new structure (or structures), its modification or refurbishment.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Effect	The term used to express the consequence of an impact. The significance of effect is determined by correlating magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Free phase	Contamination which is present as a discrete substance rather than mixed with water or soil, commonly used to refer to Light Non-Aqueous Phase Liquid (LNAPL) floating on a layer of water or visible at surface
Impact	Change that is caused by an action/proposed development, e.g., land clearing (action) during construction which results in habitat loss (impact).
Landfall	The area in which the offshore export cables make landfall (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Lytham St. Annes between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, intertidal working area and landfall compound(s).
Light Non-Aqueous Phase Liquid	Light Non-Aqueous Phase Liquid (LNAPL) is a liquid which is less dense than water and does not mix with water and so floats. Common contaminants which fit this category are hydrocarbons such as kerosene, diesel and petrol.
Local Authority	A body empowered by law to exercise various statutory functions for a particular area of the United Kingdom. This includes County Councils, District Councils and County Borough Councils.
Mean Low Water Springs	The height of mean low water during spring tides in a year.
Morecambe OWL	Morecambe Offshore Windfarm Limited is a joint venture between Zero-E Offshore Wind S.L.U. (Spain) (a Cobra group company) and Flotation Energy Ltd.
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The offshore and onshore infrastructure connecting the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the national grid. This includes the offshore export cables, landfall site, onshore export cables, onshore substations, 400 kV grid connection cables and associated grid connection infrastructure such as circuit breaker compounds.  Also referred to in this report as the Transmission Assets, for ease of reading.
Morgan OWL	Morgan Offshore Wind Limited is a joint venture between bp Alternative Energy investments Ltd. and Energie Baden-Württemberg AG (EnBW).

Term	Meaning
Onshore export cables	The cables which would bring electricity from the landfall to the onshore substations.
Onshore export cable corridor	The corridor within which the onshore export cables will be located.
Onshore substations	The onshore substations will include a substation for the Morgan Offshore Wind Project: Transmission Assets and a substation for the Morecambe Offshore Windfarm: Transmission Assets. These will each comprise a compound containing the electrical components for transforming the power supplied from the generation assets to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid.
Remediation	The action(s) required to remove unacceptable risks posed to human health, the environment or controlled waters, such that the land is suitable for its intended use.
Site specific target level	Target concentrations set to remediate (clean up) soil or groundwater contamination.
Substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of electrical transformers..
Transmission Assets	See Morgan and Morecambe Offshore Wind Farms: Transmission Assets (above).
Validation	A stage of assessment which provides assurance that remediation has been undertaken successfully.

## Acronyms

Acronym	Meaning
CoCP	Code of Construction Practice
DCO	Development Consent Order
V/O	Visual or olfactory

## Units

Unit	Description
kV	Kilovolt

# 1 Outline Contaminated Land and Groundwater Discovery Strategy

## 1.1 Background

### 1.1.1 Introduction

1.1.1.1 This document forms the Outline Contaminated Land and Groundwater Discovery Strategy prepared for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets (referred to hereafter as ‘the Transmission Assets’).

## 1.2 Implementation

This Outline Contaminated Land and Groundwater Discovery Strategy forms an appendix to the Outline Code of Construction Practice (CoCP) (document reference J1). Following the granting of consent for the Transmission Assets, detailed Contaminated Land and Groundwater Discovery Strategies will be prepared as a part of the detailed Code of Construction Practice(s) on behalf of Morgan OWL and/or Morecambe OWL, prior to commencement of the relevant stage of works and will follow the principles established in this Outline Contaminated Land and Groundwater Discovery Strategy. The detailed Contaminated Land and Groundwater Discovery Strategies will require approval by the relevant planning authority following consultation with relevant stakeholders. The Applicants and all appointed contractors will be responsible for the implementation of the detailed Contaminated Land and Groundwater Discovery Strategies.

1.2.1.1 The Applicants have committed to implementation of detailed Contaminated Land and Groundwater Discovery Strategies via the following commitment, CoT30 (see Volume 1, Annex 5.3: Commitments Register, document reference F1.5.3), and is secured by inclusion of Requirement 8 of the draft Development Consent Order (DCO) (document reference C1) Schedules 2A & 2B. Below sets out the requirement wording for Project A (Project B’s requirement mirror those of Project A for this requirement and are, therefore, not repeated):

*8.—(1) No stage of the Project A onshore works or Project A intertidal works may commence until for that stage a code of construction practice has been submitted to and approved by the relevant planning authority following consultation as appropriate with Lancashire County Council, Natural England, the Environment Agency and, in relation to the Project A intertidal works or, if applicable to the Project A offshore works, the MMO.*

*(2) Each code of construction practice must accord with the outline code of construction practice and include, as appropriate to the relevant stage...*

*(n) contaminated land and groundwater discovery strategy...*

*(3) The code of construction practice approved in relation to the relevant stage of the Project A onshore works must be followed in relation to that stage of the Project A onshore works.*

- 1.2.1.2 The Transmission Assets may adopt a staged approach to the approval of DCO requirements. This will enable requirements to be approved in part or in whole, prior to the commencement of the relevant stage of works in accordance with whether staged approach is to be taken to the delivery of the each of the offshore wind farms.
- 1.2.1.3 For onshore and intertidal works (landward of Mean Low Water Springs), this approach will be governed by the inclusion of Requirement 3 within the draft DCO, which requires notification to be submitted to the relevant planning authority/authorities detailing whether Project A or Project B relevant works will be constructed in a single stage; or in two or more stages to be approved prior to the commencement of the authorised development.

## 1.3 Objectives and management

### 1.3.1 Objectives

- 1.3.1.1 The objective of the Outline Contaminated Land and Groundwater Discovery Strategy is to ensure effective management of previously unidentified soil and/or groundwater contamination that may be encountered in order to minimise risks to environmental and human health receptors for the construction phase of the Transmission Assets.

### 1.3.2 Roles and responsibilities

- 1.3.2.1 The Principal Contactor(s) will be responsible for the implementation of the detailed Contaminated Land and Groundwater Discovery Strategies.
- 1.3.2.2 Where evidence of significant previously unidentified contamination is encountered (on the basis of the indicators detailed in **paragraph 1.4.1.1**) by the Principal Contractor(s), construction activities will cease immediately and a suitably qualified environmental consultant will be contacted.
- 1.3.2.3 Refer to section 1.2 of the Outline CoCP (document reference J1) for further information on roles and responsibilities.

### Training and competence

- 1.3.2.4 The Principal Contractor(s) will be responsible for overseeing and enforcing the procedures in the Contaminated Land and Groundwater Discovery Strategies such that potential adverse impacts to human health or the environment from any activities involving handling of potential pollutants are avoided or mitigated.
- 1.3.2.5 Through toolbox talks, construction workers will be educated on those aspects of environmental management as appropriate to the task assigned to them.

- 1.3.2.6 All site personnel involved in the construction works will be briefed on the likely nature and type of soils that could indicate the presence of contamination (see **section 1.4.1**).
- 1.3.2.7 A watching brief comprising the monitoring of works by way of observation for previously unidentified contamination is to be undertaken by the Principal Contractor(s) during the construction phase. Details of the watching brief and method of reporting will be provided in the detailed Contaminated Land and Groundwater Discovery Strategies.

## 1.4 Evidence of potential contamination

### 1.4.1 Evidence

- 1.4.1.1 Evidence that will be considered indicative of significant soil and/or groundwater contamination include:
- the presence of free phase contamination (liquids or sheens);
  - fibrous or cement bound materials (potentially asbestos containing materials). Photographic examples are provided by the Health and Safety Executive (Asbestos image gallery (hse.gov.uk));
  - significant staining and discolouration of exposed soils;
  - oily sheen on the surface of groundwater;
  - visual or olfactory (V/O) evidence of organic contamination (e.g., hydrocarbons, solvents) within soil or groundwater; and
  - discovery of other unknown, unusual or unexpected potentially hazardous material.

## 1.5 Procedures where previously unidentified contamination is encountered

- 1.5.1.1 Where unexpected contamination is encountered, the Principal Contractor(s) must implement measures onsite, in accordance with the Construction Industry Research and Information Association (CIRIA, 2023) where practicable, to assess and control risks resulting from the disturbance of potential contamination. The Principal Contractor(s) is to quantify the extent of the potential risk from the contamination and follow a risk-based approach in accordance with Land contamination: risk management (Environment Agency, 2020).
- 1.5.1.2 In accordance with best practice, work in the immediate area of concern would be made safe and secure and stopped until a suitably qualified specialist (in consultation with the Environment Agency and relevant planning authority) is able to make an assessment. The assessment may involve the sampling and testing of the suspected contaminated material, as deemed necessary by the qualified specialist. The mitigation plan for land contamination encountered is included in **section 1.6**.



- 1.5.1.3 Further, as soon as reasonably practicable after finding the unexpected contamination, the qualified specialist must report this to the Environment Agency and the relevant planning authority where necessary.
- 1.5.1.4 Upon completion of the assessment by a suitably qualified specialist, if remediation is considered necessary, then, a written scheme and programme for the remedial measures to be taken to render the land fit for its intended purpose must be submitted to and agreed in writing with the Environment Agency and the relevant planning authority.
- 1.5.1.5 Where identified contaminated materials have been, or are to be, disturbed, the following measures will be adhered to where necessary:
- The provision of Personal Protective Equipment (PPE) to construction personnel. PPE shall be proportionate to the risk and may include items such as gloves, barrier cream, overalls, dust masks and respirators to minimise direct contact exposure with contaminated materials. The precise PPE requirements would be identified following an appropriate hazard assessment.
  - The provision of suitable hygiene facilities and clean welfare facilities for all construction site workers.
  - The monitoring of confined spaces for the potential accumulation of ground gases, and the restricting of access to confined spaces to suitably trained personnel and use of specialist PPE where necessary. These measures must also be implemented where concentrations of ground gases have been recorded above long-term and/or short-term workplace exposure limits (Health and Safety Executive, 2020).

## 1.6 Mitigation plan

- 1.6.1.1 Should unexpected contamination be identified during excavation works, where applicable the following mitigation procedures must be implemented and adhered to:
- Works within the immediate area of concern should be made safe and secure to prevent the spread of contamination and stopped immediately.
  - Report the discovery to the Principal Contractor(s) Project Manager and Environmental team, who would then inform the Environment Agency and the relevant local authority, and seek expert advice from a suitably qualified specialist.
  - Notify other construction workers in adjacent working areas to prevent their contact with the suspected contaminated material.
  - Undertake a risk assessment to minimise the risk to health and safety of site workers, including the identification of suitable PPE to mitigate any potential exposure and acceptable working methods.
  - As deemed necessary by the qualified specialist, undertake an assessment of the suspected contaminated material, for example via chemical testing to characterise the suspected contaminated material. As

required, agree changes to the existing site proposals and method statements.

- All excavated materials proposed for reuse would be required to meet site-specific material acceptability criteria. Contaminated materials that cannot be reused onsite would be disposed offsite. A hazardous waste assessment would be undertaken to first classify the waste material in accordance with Technical Guidance WM3 (Environment Agency, 2014). Once classified, further Waste Acceptance Criteria (WAC) testing would be undertaken, as required, to allow landfill operators to determine if they can accept the waste. The disposal of contaminated materials must comply with all relevant waste management regulations.
- Should remediation be required, a written scheme and programme for the remedial measures must be produced outlining the appropriate measures to be taken to render the land fit for its intended purpose. This must be submitted to the Environment Agency and the relevant planning authority.
- Inform the landowner and occupier of the identification of contamination.
- The location of any such contamination encountered shall be recorded, including the results of chemical testing, the volumes sentenced for treatment by remediation, and where relevant the validation data showing compliance with the relevant site-specific material acceptability criteria, and the location of the area of use of any remediated material within the Transmission Assets.

## 1.7 References

Construction Industry Research and Information Association (CIRIA) (2023) Environmental good practice on site guide (fifth edition).

Environment Agency (2014) Technical Guidance WM3: Waste Classification - Guidance on the classification and assessment of waste, Updated September 2021.

Health and Safety Executive (2020) EH40/2005 Workplace exposure limits.