Document version number: (to be completed by marine licensing team)	
Approval date: (to be completed by marine licensing team)	

Marine Invasive Non-native Species Biosecurity Risk Assessment and Management Plan

A Marine Biosecurity Risk Assessment and Management Plan enables marine operators and contractors to understand and minimise the risk of introducing or spreading marine invasive non-native species (INNS). Management of marine INNS is extremely challenging once they are introduced to a new area. Effective biosecurity measures that minimise the risk of introduction or spread are therefore key to effective management.

Filling in this form:

To help you fill in this form, see accompanying document “Guidance for completing NRW’s Biosecurity Risk Assessment and Management Plan”. The accompanying document contains clarification of many key terms and also provides guidance on potential pathways of introduction for INNS (Table 1) and level of risk associated with each pathway (Table 2).

Structure of this form:

You will need to fill in Sections A and C. Fill in sections B1 to B5 when relevant to your activity. For further information on what is included in each section see the accompanying guidance document.

Section A: Activity overview

You should complete this section.

Section B: Risk Assessment

B.1 Assessing the pathway risks associated with vessels

If you are using a vessel (or vessels) as part of your licensed activity you should complete this section. Information on any equipment to be used which can be separated from the vessel should be provided in Section B.4.

B.2 Assessing the pathway risks associated with non-biological materials and water

If your activity involves the use or transfer of non-biological materials (e.g. water, sediment, construction material) you should complete this section.

B.3 Assessing the pathway risks associated with biological material

If your activity involves the use or transfer of biological material (including aquaculture) you should complete this section.

B.4 Assessing the pathway risks associated with equipment

If your activity involves use of equipment which can be separated from their vessel you should complete this section.

B.5 Assessing other pathway risks

This should be filled in if previous sections do not capture aspects of your activity.

Section C: Management Measures

You should complete this section.

Section D: Recommendations

You should consider this section.

Section A: Activity overview

Please fill out the activity details below:

Applicant name:	Mona Offshore Wind Limited
Short description of activity: *(please provide enough detail for NRW to understand the location and the different elements of the project. Links to other documents which describe the project can be provided)*	Geotechnical survey is to establish the characteristics and mechanical properties of the different soils and bedrock types within the Mona Offshore Wind array area zone by acquisition, evaluation and presentation of geotechnical information derived from drilling performance, soil samples, cores and in situ tests.
Estimated timings of proposed licensed activities:	15 May 2025 extending until 27 June 2026

Section B: Risk Assessment

B.1 Assessing the pathway risks associated with vessels

B.1.1. Please list all ports within the UK or overseas that all vessel(s) to be used (both during construction and maintenance) have visited over the 12 months prior to this licensed activity, or since the last out of water period (whichever is most recent).

Please state **N/A** if vessels have not entered any port since the last out of water period.

If you do not yet have the information to complete this section, please state **Unknown.** NRW may ask for this section to be updated when these details are known. The risk should be set as High.

Vessel name	**Port / location visited over last 12 months** (listed chronologically with dates if known)			**Which marine invasive non-native species known to be present at this port(s) / location(s)?**	**Has the vessel had antifouling ?** 12 months prior to activity for biocidal coatings, 24 months for biocide-free coatings
Fugro Synergy	Tananger - Norway	6/11/2023	6/11/2023	*Asterocarpa humilis, Didemnum vexillum, Caprella mutica, Crassostrea gigas, Sargassum muticum, Schizoporella japonica, Styela clava, Undaria pinnatifida, Eriocheir sinensis, Ensis leei, Diadumene lineata, Ficopomatus enigmaticus, Amphibalanus improvises, Austrominius modestus, Bonnemaisonia hamifera, Codium fragile, Magallana*	No
	Ijmuiden - Netherlands	6/13/2023	6/16/2023		
	Holyhead - UK	6/27/2023	6/27/2023		
	Holyhead - UK	7/12/2023	7/13/2023		
	Holyhead - UK	7/26/2023	7/26/2023		
	Holyhead - Uk	8/10/2023	8/10/2023		
	Liverpool (United Kingdom) - United Kingdom	8/23/2023	8/25/2023		
	Liverpool (United Kingdom) - United Kingdom	8/25/2023	8/25/2023		
	Holyhead - United Kingdom	9/21/2023	9/23/2023		

		Holyhead - United Kingdom	10/18/2023	10/19/2023	*gigas, Marenzelleria viridis, Mya arenaria, Paralithodes camtschaticus, Petricolaria pholadiformis, Crepidula fornicate, Juxtacribrilina mutabilis, Mytilus galloprovincialis , Carcinus maenas, Mnemiopsis leidy, Prorocentrum minimum, Dikeogammarus villosus, Neogobius melanostomus.*	
		Liverpool - United Kingdom	11/16/2023	11/17/2023		
		Beverwijk - Netherlands	11/21/2023	11/25/2023		
		Den Helder - Netherlands	12/13/2023	12/13/2023		
		Eemshaven - Netherlands	12/18/2023	12/26/2023		
		Den Helder - Netherlands	1/8/2024	1/15/2024		
		Eemshaven - Netherlands	2/4/2024	2/6/2024		
		Eemshaven - Netherlands	2/15/2024	2/15/2024		
		Eemshaven - Netherlands	2/26/2024	2/27/2024		
		Eemshaven - Netherlands	3/6/2024	3/6/2024		
		Eemshaven - Netherlands	3/13/2024	3/13/2024		
		Mekjarvik - Norway	3/16/2024	3/16/2024		
		Mekjarvik - Norway	4/2/2024	4/2/2024		
		Kristiansand - Norway	4/17/2024	4/17/2024		
		Kristiansand - Norway	4/17/2024	4/17/2024		
		Klaipeda - Lithuania	4/30/2024	4/30/2024		
		Klaipeda - Lithuania	4/30/2024	4/30/2024		

		Delfzijl - Netherlands	5/24/2024	5/24/2024	
		Delfzijl - Netherlands	5/24/2024	5/24/2024	
		Delfzijl - Netherlands	5/29/2024	5/29/2024	
		Delfzijl - Netherlands	5/29/2024	5/29/2024	
		Ijmuiden - Netherlands	6/13/2024	6/15/2024	
		Ijmuiden - Netherlands	6/13/2024	6/15/2024	
		Holyhead - United Kingdom	6/27/2024	6/28/2024	
		Holyhead - United Kingdom	6/27/2024	6/28/2024	
		Holyhead - United Kingdom	7/25/2024	7/26/2024	
		Holyhead - Uk	8/9/2024	8/9/2024	
		Lerwick - Uk	8/15/2024	8/19/2024	
		Lerwick - Uk	8/22/2024	8/22/2024	
		Liverpool (United Kingdom) - United Kingdom	9/5/2024	9/5/2024	
		Holyhead - United Kingdom	9/19/2024	9/19/2024	
		Holyhead - United Kingdom	10/16/2024	10/16/2024	
		Frederikshavn - Denmark	10/21/2024	12/12/2024	
		Mekjarvik - Norway	12/14/2024	12/16/2024	
		Bergen - Norway	12/18/2024	12/23/2024	
		Stavanger - Norway	12/29/2024	1/1/2025	

	Ijmuiden - Netherlands	1/8/2025	1/8/2025		
	Ijmuiden - Netherlands	2/5/2025	2/6/2025		
	Ijmuiden - Netherlands	3/4/2025	3/4/2025		
	Eemshaven - Netherlands	3/10/2025	3/10/2025		
	Esbjerg - Denmark	3/14/2025	3/15/2025		
	Mekjarvik - Norway	4/2/2025	4/2/2025		
	Tromso - Norway	4/18/2025	4/18/2025		
	Anticipated:				
	Offshore/central Norway	June 2025	June 2025		
Horizon Geodrill	Hamriyah, UAE	12/02/2024	28/02/2024	*Carcinus maenas, Ensis leei, Austrominius modestus, Petricolaria pholadiformis, Sargassum muticum, Bonnemaisonia hamifera, Mytilus galloprovincialis , Crepidula fornicata, Eriocheir sinensis, Magallana gigas, Mya arenaria, Amphibalanus improvisus, Ficopomatus enigmaticus, Styela clava, Marenzelleria viridis, Codium fragile, Juxtacribrilina mutabilis,, Undaria pinnatifida, Caprella mutica,*	No
	Cape Town, SA	25/03/2024	26/03/2024		
	Grenaa, Denmark	30/04/2024	13/06/2024		
	Frederikshaven, Denamrk	14/06/2024	05/07/2024		
	Frederikshaven, Denmark	11/07/2024	11/07/2024		
	Gt Yarmouth, UK	14/07/2024	21/07/2024		
	Hull, UK	13/08/2024	14/08/2024		
	Gt. Yarmouth, UK	10/09/2024	13/09/2024		
	Gt. Yarmouth, UK	26/09/2024	27/09/2024		
	Gt. Yarmouth, UK	06/10/2024	13/10/2024		
	Hull, UK	07/11/2024	08/11/2024		
	Hull, UK	14/11/2024	20/11/2024		
	Leith, UK	21/11/2024	26/02/2025		
	Stavanger, Norway	01/03/2025	07/03/2025		
	Stavanger, Norway	09/03/2025	16/03/2025		
	Aberdeen, UK	20/03/2025	26/03/2025		
	Liverpool, UK	30/03/2025	30/03/2025		
	Liverpool, UK	01/04/2025	02/04/2025		
	Liverpool, UK	07/04/2025	08/04/2025		
	Liverpool, UK	11/04/2025	25/04/2025		
	Liverpool, UK	26/04/2025	27/04/2025		

<table>
<tr><td></td><td></td><td>Dasysiphonia japonica</td><td></td></tr>
<tr><td>Ocean Observer</td><td>
<table>
<tr><td>Dundee, (Scotland) UK</td><td rowspan="2">March 2024</td></tr>
<tr><td>Dundee, (Scotland) UK</td></tr>
<tr><td>Dundee, (Scotland) UK</td><td rowspan="2">April 2024</td></tr>
<tr><td>Liverpool (United Kingdom) - United Kingdom</td></tr>
<tr><td>Liverpool (United Kingdom) - United Kingdom</td><td rowspan="3">May 2024</td></tr>
<tr><td>Liverpool (United Kingdom) - United Kingdom</td></tr>
<tr><td>Kristiansund, Norway</td></tr>
<tr><td>Sandnessjoen, Norway</td><td rowspan="3">June 2024</td></tr>
<tr><td>Sandnessjoen, Norway</td></tr>
<tr><td>Trondheim, Norway</td></tr>
<tr><td>Tromso, Norway</td><td rowspan="2">July 2024</td></tr>
<tr><td>Tromso, Norway</td></tr>
<tr><td>Tromso, Norway</td><td rowspan="3">August 2024</td></tr>
<tr><td>Hammerfest, Norway</td></tr>
<tr><td>Hammerfest, Norway</td></tr>
<tr><td>Rypefjord, Norway</td><td rowspan="4">September 2024</td></tr>
<tr><td>Tromso, Norway</td></tr>
<tr><td>Hammerfest, Norway</td></tr>
<tr><td>Hammerfest, Norway</td></tr>
<tr><td>Hammerfest, Norway</td><td rowspan="3">October 2024</td></tr>
<tr><td>Tromso, Norway</td></tr>
<tr><td>Hammerfest, Norway</td></tr>
<tr><td>Kristiansund, Norway</td><td rowspan="5">November 2024</td></tr>
<tr><td>Trondheim, Norway</td></tr>
<tr><td>Trondheim, Norway</td></tr>
<tr><td>Kristiansund, Norway</td></tr>
<tr><td>Kristiansund, Norway</td></tr>
<tr><td>Hull, UK</td><td rowspan="2">December 2024</td></tr>
<tr><td>Lowestoft, UK</td></tr>
<tr><td>Lowestoft, UK</td><td>January 2025</td></tr>
<tr><td>Lowestoft, UK</td><td>February 2025</td></tr>
</table>
</td><td>Petricolaria pholadiformis, Ensis leei, Styela clava, Schizoporella japonica, Paralithodes camtschaticus, Eriocheir sinensis, Crepidula fornicata, Magallana gigas, Austrominius modestus, Mya arenaria, Sargassum muticum, Ficopomatus enigmaticus, Undaria pinnatifida, Caprella mutica, Dasysiphonia japonica, Marenzelleria viridis, Tricellaria inopinata, Melanothamnus harveyi</td><td>No</td></tr>
<tr><td>Reliance</td><td>
<table>
<tr><td>Stavanger, Norway</td><td>01/05/2024</td><td>01/05/2024</td></tr>
<tr><td>Hammerfest, Norway</td><td>15/05/2024</td><td>16/05/2024</td></tr>
<tr><td>Hammerfest, Norway</td><td>23/05/2024</td><td>26/05/2024</td></tr>
<tr><td>Tromso, Norway</td><td>30/05/2024</td><td>31/05/2024</td></tr>
<tr><td>Kristiansund, Norway</td><td>03/06/2024</td><td>04/06/2024</td></tr>
<tr><td>Floro, Norway</td><td>09/06/2024</td><td>12/06/2024</td></tr>
<tr><td>Floro, Norway</td><td>19/06/2024</td><td>21/06/2024</td></tr>
<tr><td>Leith, UK</td><td>29/06/2024</td><td>03/07/2024</td></tr>
<tr><td>Grimsby, UK</td><td>12/07/2024</td><td>12/07/2024</td></tr>
<tr><td>Hull, UK</td><td>31/07/2024</td><td>01/08/2024</td></tr>
<tr><td>Hull, UK</td><td>04/08/2024</td><td>07/08/2024</td></tr>
</table>
</td><td>Petricolaria pholadiformis, Ensis leei, Sargassum muticum, Schizoporella japonica, Paralithodes camtschaticus, Mya arenaria, Austrominius modestus, Magallana gigas, Eriocheir sinensis, Bonnemaisonia hamifera, Ruditapes philippinarum,</td><td>Yes</td></tr>
</table>

	Hull, UK	21/08/2024	23/08/2024	*Maya arenaria, Ficopomatus enigmaticus, Styela clava, Undaria pinnatifida, Tricellaria inopinata, Marenzelleria viridis, Codium fragile, Mnemiopsis leidy, Amphibalanus improvisus, Melanothamnus harveyi*	
	Hull, UK	25/08/2024	28/08/2024		
	Beverwijk, Netherlands	09/09/2024	13/09/2024		
	Den Helder, Netherlands	17/09/2024	17/09/2024		
	Hull, UK	24/09/2024	29/10/2024		
	Hull, UK	03/11/2024	Still in port		
	Anticipated:				
	Eemshaven, Netherlands	11/06/2025			
	Eemshaven, Netherlands	09/07/2025			
	Hull, UK	July 2025			

Please add more rows if necessary

Please indicate the INNS risk level and justification of the risk below, separately for each vessel based on the locations visited in last 12 months. This should take into account the probability of biofouling and vessel antifouling regime. **Note:** Examples of risk levels are given in Table 2 of the accompanying guidance document and there is further information about this section in the accompanying guidance document.

Vessel name / type	Risk Level (High, Medium, Low)	Justification of risk level
Fugro Synergy	Low	Vessel is equipped with Organotin-free self polishing anti fouling system. Vessel has maintenance routine in place. Vessel is not slow moving. The anti-fouling certificate was received 03 December 2024 and has a validity of 5 years.
Horizon Geodrill	Low	Vessel has maintenance routine in place . Vessel is not slow moving. The anti-fouling certificate was received 28 June 2023 and has a validity of 3 years.
Ocean Observer	Low	Vessel has maintenance routine in place. Vessel is not slow moving. The anti-fouling certificate was received 02 September 2022 and has a validity of 5 years.
Reliance	Low	Anti-fouling was applied during the dry-dock in early 2025.

B.1.2 Please provide details of the vessels (identified in Table B.1.1), which have not had antifouling (within the 12 months prior to the licensed activity for biocidal coatings, or 24 months for biocide-free coatings) and if there is an alternative antifouling management regime.

If there are not additional measures or an alternative biofouling management regime, then please put **None**, and the risk level would not change.

Vessel	**Alternative biofouling management regime** (e.g. different timeframes for antifouling treatment, vessel storage on land etc.)	**Risk Level (High, Medium, low)**
Fugro Synergy	Antifouling was most recently applied on the 3rd December 2024. Validity of the antifouling certificate applies until 3rd December 2029. Vessel is equipped with Impressed Current Anti-Fouling Anodes.	Low
Horizon Geodrill	Vessel has not had antifouling applied within the past 12 months. Antifouling was most recently applied on the 28th June 2023. Validity of the antifouling certificate applies until 28th June 2026.	Low
Ocean Observer	Vessel has not had antifouling applied within the past 12 months. Antifouling was most recently applied on the 2nd September 2022. Validity of the antifouling certificate applied until the 2nd September 2027.	Low

B.2 Assessing the pathway risks associated with non-biological materials and water

B.2.1: Please provide information about the source and receiving environments for non-biological materials and water transferred through the licensed activity from different pathways (for example hopper water, dredge material, construction material).

Pathway	**Location (including Coordinates, WGS84)**		**Relevant Environmental Conditions for INNS species** (e.g. salinity and depth differences between source and receiving environments)	**List of INNS known to be present**	**Risk Level (High, Medium or Low)**	**Justification of risk level**
N/A	Source					
	Receiving					
	Source					
	Receiving					
	Source					
	Receiving					

Please add more rows if necessary

B.3 Assessing the pathway risks associated with biological material

B.3.1 Please provide information about the species that will be used or transferred through the licensed activity and the potential for INNS to be contained in the biological material.

This activity does not involve the use or transfer of biological material

B.3.2: Please provide information about the source and receiving environments for biological material used or transferred through the licensed activity. Pathways include, for example, transfer of seeded ropes with seaweed or shellfish.

Pathway	**Location (coordinates, WGS84) and / or name of culture facility**		**Relevant environmental conditions for INNS species** (e.g. salinity and depth differences between source and receiving environments)	**List of INNS known to be present in the location or culture facility**	**Risk Level (High, Medium or Low)**	**Justification of risk level**
N/A	Source					
	Receiving					
	Source					
	Receiving					

Please add more rows if necessary

B.3.3. If a relevant pathway is identified in Table B.3.2, please outline any relevant biosecurity measures or protocols in place to prevent contamination of material by marine INNS, and introduction or spread of marine INNS.

N/A

B.3.4. Does the transfer have the relevant documentation from the Fish Health Inspectorate at CEFAS (Aquaculture Production Business Registration), or follow other relevant codes of conduct for prevention of the introduction or spread of marine INNS? Please place an X in the relevant box.

Yes	No	Don't know	Not relevant
			X

B.4 Assessing the pathway risks associated with immersible equipment

B.4.1. Please list the immersible equipment expected to be used in this licensed activity in the box below.

Horizon Geodrill:

- Seabed frame (covered by Cathodic Protection Anodes)
- BHA (drill bit assembly at the bottom of the drill string)
- Drill pipes

Furgro Synergy:

- SeaDevil seabed frame (covered by Cathodic Protection Anodes)
- BHA (drill bit assembly at the bottom of the drill string)
- Drill pipes

Ocean Observer:

- Roson 50kN CPT and a High powered Vibrocorer

Reliance: • KUM corer with Fielax heat-flow probe

B.4.2. Will all the immersible equipment used in this licensed activity undergo washing, rinsing and / or drying as part of routine maintenance at the times described below? Please place an X in the relevant box.

	Yes	**No**
Immediately prior to departing the port of origin to undertake the licensed activity.	X	
Immediately prior to leaving the licensed activity area on completion of the licensed activity.	X	

B.4.3. Will all the immersible equipment used in this licensed activity undergo washing, rinsing and / or drying between different deployments within the activity area of this licensed activity (e.g. different specific locations of dredging or sampling covered under this marine licence)? Please place an X in the relevant box.

Yes	**No (please provide reason)**
X Yes for deep borehole vessels – Horizon Geodrill, Fugro Synergy and Reliance.	No for shallow Geotech vessels doing vibrocores – Ocean Observer. Immersible equipment will be washed between the Morgan Offshore Windfarm site and the Mona Offshore Windfarm site, but there will be many vibrocore samples taken in close proximity so it is impractical to wash between samples, and there is not considered to be a biological risk.)

If you answer No to any of the questions in B.4.2 or B.4.3, then please complete B.4.4 below.

B.4.4. Please provide information on the previous location the equipment will have been used prior to the vessel being used for this licensed activity.

Equipment	Location (Coordinates, WGS84)	Risk Level (High, Medium or Low)	Justification of risk level
Ocean Observer	Morgan Array Area (see GIS files attached)	Low	All equipment is washed, rinsed and dried before and after deployment within this activity area.

B.5 Assessing other pathway risks

B.5.1 Please provide any other information on the licensed activity that may produce a risk of the introduction or spread of marine INNS that is not covered in the sections above.

Pathway	Risk Level (High, Medium or Low)	Justification of risk level
N/A		

Section C: Management Measures

C.1 Management Measures

Enter the management measures for the pathways identified in the sections above.

All **high and medium risk** pathways identified in the previous risk assessment (sections B.1 to B.5) should have some degree of additional control or mitigation measures. Low risk pathways may also need additional control or mitigation measures. You may want to consider keeping a logbook to help demonstrate compliance if this is requested.

Pathway (identified in sections above)	**Risk Level (High, Medium or Low)**	**Risk management measure/s**	**Risk level after management (High, Medium or Low)**
Equipment	Low	All equipment, materials, machinery and Personal Protective Equipment (PPE) used as part of the licensed activities will be cleaned prior to arrival at and subsequent departure from the licensed area. Logs of these activities will be maintained.	Low
Hull Fouling	Low	Large vessel will be stored in water except for defouling and dry-docking. Vessel will not be slow moving between sites.	Low

		Maintenance records of Impressed Current Anti-Fouling Anodes and Biofouling Records inspected.	
Ballast Water	Low	Vessel equipped with Ballast Water Treatment System (BWTS) installed according to classification regulation. BWTS designed to meet IMO guidelines for approval of ballast water management system and DNV standards	Low

Please add more rows if necessary

Section D. Recommendations

You may want to consider how compliance with the management measures will be recorded, for example in a log book or via photos.

We also recommend that;

- You identify an individual for monitoring and reporting on biosecurity management plan actions (a biosecurity manager)
- All staff involved in the licensed activity are made fully aware of the possibility that INNS may be encountered and understand what measures will be taken to ensure surveillance / monitoring of INNS during the activity
- All relevant staff are adequately trained in the identification and detection of INNS and to report any instances to the biosecurity manager