Diffuser Installation to the Existing Invergordon Distillery Long Sea Outfall Pipeline – Environmental Supporting Document

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Contents

1 Introduction

Grissan Renewable Energy (Grissan) are seeking approval to install a diffuser on to the existing long sea outfall (LSO) from Invergordon Distillery, currently owned and operated by Whyte & Mackay. Effluent is discharged from the LSO into the Cromarty Firth. The diffuser will be installed below Mean High Water Springs (MHWS), constituting a deposit on the seabed, and therefore requiring a marine construction licence from Marine Scotland under the Marine (Scotland) Act 2010. In addition, a works licence from Cromarty Firth Port Authority is required due to the existing LSO being within their Harbour Area.

The purpose of this report is to ensure that an appropriate level of information is provided to allow for the marine licence to be obtained, whilst demonstrating compliance with the legal framework and planning policies in Scotland, including the National Marine Plan (NMP). This report provides a description of:

- An overview of the proposed project;
- An overview of the consenting requirements for the project and their current status;
- A review of relevant marine policies and how the project aligns with them;
- The environmental sensitivities in the vicinity of the proposed development;
- Potential effects on the environment;
- Mitigation to minimise any negative effects to the environment; and
- Habitats Regulations Appraisal Pre-Screening Report.

2 Project Overview

2.1 Project Need

The north of Scotland is famous for its distilleries and producing world class whisky. These distilleries produce large volumes of by-products such as Pot Ale[1] , as well as aqueous process wastes (effluent). Common practice for the disposal of effluent by distilleries is to discharge to the marine environment. Environmental legislation now requires distillery trade effluent to be regulated and monitored by SEPA under Controlled Activities Regulations (CAR), which supports the Water Environment and Water Services (Scotland) Act 2003. The discharge of distillery trade effluent to the sea is to be carried through a long sea outfall (LSO), and discharges must meet stringent Environmental Quality Standards (EQS) and aesthetic conditions.

Grissan are a renewable energy company, specialising in the process of anaerobic digestion (AD) of distillery by-products, namely Draff[2] and Pot Ale, to produce a methane-rich biogas. The biogas is then either used to produce electricity in a Combined Heat and Power (CHP) engine or upgraded to biomethane and injected directly into the gas network. Grissan currently offset over 100,000t of CO_2 per annum (600,000 trees equivalent[3]) from the Scottish distilling industry using this technique. The biomethane produced can also be used to power gas-fuelled trucks, subsequently reducing CO_2 emissions by more than 90% compared to

[1] Pot Ale is the residue left in the bottom of the copper still after the distillation process is complete.
[2] Draff is the spent grain left over in the mash-tun, a vessel used in the mashing process of grains.
[3] Trees for life calculates 6 trees offset 1 tonne of carbon dioxide.

diesel and generating no particulate ($PM_{2.5}$) emissions. Grissan aims to further decarbonise the Scottish distilling industry with the uptake of biomethane-fuelled trucks.

In November 2021, Grissan received planning approval for the construction of a new AD plant at Invergordon Distillery and this is currently under construction. Liquid effluent processed through the AD plant is more than 90% lower in Chemical Oxygen Demand (COD) and Biological Oxygen Demand (BOD) than traditional distillery effluent discharges. The distillery effluent from the Invergordon Distillery, is discharged to the Cromarty Firth via an LSO, roughly 400m west from Saltburn Pier.

Grissan propose to install the diffuser to further improve the dispersion of effluent discharged from the LSO and subsequently improve water quality close to the discharge point. Perpendicular line diffusers ensure comprehensive dispersal of effluent plumes, into the far field. Thus, minimising localised environmental impacts from the standardised LSO discharge. Comprehensive dispersion coupled with the low COD and BOD effluent, as a result of the AD plant, means that environmental impacts are significantly reduced.

2.2 Project Description

A perpendicular line 6-port diffuser will be directly installed at the end of the existing Invergordon Distillery LSO. The diffuser design, installation methods and diffuser location are discussed within this section. Construction is scheduled to take place between April and October 2023 and is anticipated to last ~ 2 weeks.

2.2.1 Diffuser Design

The diffuser has 6-ports at 5m spacings, which will sit at approximately -20m chart datum (CD) on the seabed. The diffuser will be bolted on to the 180mm diameter flanged end of the existing LSO and held in place with concrete mattresses. The finalised drawing for the diffuser arrangement is outlined in Drawing IBE2063_001C.

The total height of the diffuser above the existing seabed is 75cm and is placed on the seabed at -20 CD, which equates to a 3.75% reduction in navigable water depths, at the site of diffuser installation.

2.2.2 Installation Methods

The diffuser will be installed by a 6-man diving team. The diving operatives will be working from a 33m crane barge using a 4-point mooring system to hold position over the existing LSO. The barge will be supported by a 16m tugboat, doubling up as an anchor handler. The crane on board the barge is a 75t link belt crane.

2.2.3 Location

The diffuser is being installed on to the already existing Invergordon Distillery LSO, just off the town of Invergordon and about 400m east of the Saltburn Pier (Drawing KWA/18066/200A). The diffuser extends from the LSO perpendicularly with 3 ports either side, to form a T shape, it will be held in place, and has a footprint of approximately $105m^2$.

The proposed Marine Licence Boundary can be seen in Drawing 98_DRG_02_1, with co-ordinates found in Appendix A, and covers an area of $750m^2$. The proposed Marine Licence Boundary includes a 5m buffer to allow for small in-situ changes to take of seabed conditions and complexities involved with subsea construction.

2.2.4 Deposits on the Seabed

During the development the following materials will be permanently deposited on to the seabed:

- 30m of 18cm diameter High-Density Polythene (HDPE) pipe;
- 4 tonnes of steel/iron comprising:
    - 2 tonnes of ductile iron pipe protection (27m)
    - 2 tonnes of stainless steel associated with 3 flanges & 316 backing rings and bolts;
- Plastic/Synthetic approximately 0.51 m^2:
    - 0.01m^2 compressed neoprene strip;
    - 0.5m^2 associated with High Performance Polyethylene (HPPE) flanged tees; and
- 20 tonnes of articulated concrete mats approximately 70.8m^2.

3 Statutory Context

This section provides a summary of the statutory requirements for the proposed installation of a diffuser, to the already existing Invergordon Distillery LSO.

3.1 Legislation

The relevant legislation with regards to the installation of the diffuser to the existing LSO is outlined within this section.

3.1.1 Marine Licencing

Under the Marine (Scotland) Act 2010 several activities listed in Part 4; Section 21 of the Act require a Marine Licence issued by the Marine Scotland Licensing Operations Team (MS-LOT). This includes any activity where the project intends to do any of the following below the Mean High-Water Spring (MHWS):

- Deposit or remove substances or objects in the sea either on or under the seabed;
- Construct/alter/improve any works in or over the sea or on or under the seabed; and
- Remove substances or objects from the seabed.

The installation of the diffuser is classed as a deposit on the seabed and therefore requires authorisation via a marine construction licence from MS-LOT.

3.1.2 Port of Cromarty Firth Works Licence

Under Section 15 of the Cromarty Firth Port Authority Order Confirmation Act 1973 ('The Act'), works undertaken within the jurisdiction of the Port of Cromarty Firth (PoCF) must apply to the authority for a works licence in order to:

'Construct, maintain, alter, renew or extend any works on, under or over tidal waters or tidal land below the level of high water in the Port notwithstanding any interference with public rights of navigation or other public rights by such works as constructed, maintained, altered, renewed or extended'.

The installation of the diffuser constitutes construction works under tidal waters and therefore a works licence is required from the Cromarty Firth Port Authority.

3.1.3 Habitats Regulations Appraisal

An Appropriate Assessment (AA) as part of the Habitats Regulations Appraisal (HRA) process, is undertaken by the competent authority. It is required when a plan or project potentially affects a European Natura 2000 site. The Natura 2000 sites network in the UK consists of Special Protection Areas (SPAs) and Special Areas of Conservation (SAC). An AA must demonstrate that there will be no adverse effect on site integrity. Should this requirement not be satisfied, a project would only receive consent if:

a) Imperative Reasons of Overriding Public Interest are proved; and
b) There are not satisfactory alternatives.

The HRA Pre-Screening Process has been undertaken for this development, and the HRA Pre-Screening Report (Document Reference 98_REP_02) can be found in Appendix B.

3.1.4 CAR Licence

The operational discharge of effluent from the current LSO is currently authorised by licence (CAR/L/1003978) under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 as amended (CAR), issued by the Scottish Environment Protection Agency (SEPA).

Due to the change in effluent dispersion, Whyte and Mackay will partially surrender CAR licence ref CAR/L/1003978.Grissan submitted a new CAR licence application to SEPA on the 22nd of September, which meets the required conditions.

3.2 Policy Context

3.2.1 Climate Change Plan

The Scottish Governments Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 aims to reduce the emission of greenhouse gases to net zero by 2045. The installation of an AD plant and subsequent ancillary structures such as the proposed diffuser, aid the decarbonisation of the distilling industry and contributes towards the successful achievement of net zero emissions by 2045.

The AD process produces methane-rich biogas, which can then be used to produce electricity in a CHP or be upgraded to biomethane and injected directly into the gas network. At present, this technique offsets over 100,000t of CO_2 per annum from the Scottish distilling industry.

3.2.2 Scotland ‘s National Marine Plan

As the proposed diffuser installation is conducted entirely below MHWS and is within 12 nautical miles (NM) of the Scottish Coastline, it falls within the remit of the Marine (Scotland) Act 2010. The 2015 Scottish National Marine Plan (NMP) covering inshore waters is a requirement of the Act. The NMP lays out the Scottish Minister’s policies for the sustainable development of Scotland's seas and provides General Planning Principles (GENs), some of which apply to this development. Many GENs are specific to environmental topics; these are identified in Table 3.2.1, along with the considerations made during design development in order to meet the requirement.

Table 3.2.1: Applicable Scottish National Marine Plan GENs

GEN's	Requirements	Invergordon Diffuser Instalaltion Considerations
GEN 2: Economic Benefit	Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan.	Once installed the diffuser will ensure the continuation of the distilleries in the region, ensuring their future by providing a reliable and sustainable route for their by-products. This provides an economic benefit associated with jobs in the AD plant as well as the wider whisky industry by association. The whisky industry does not only directly contribute to the Scottish economy but also attracts tourists to the local area.
GEN 4: Co-existence	Proposals which enable coexistence with other development sectors and activities within the Scottish marine area are encouraged in planning and decision-making processes, when consistent with policies and objectives of the Plan.	The installation of the diffuser will not affect any other operations in the vicinity of the proposed development. The diffuser will be below -20 CD which is out with any depth at which it could interact with a vessel. The area of the proposed development is also not used by fishing vessels.
GEN 5: Climate Change	Marine planners and decision makers must act in the way best calculated to mitigate, and adapt to, climate change.	The AD plant generates biomethane gas which can power gas trucks with more than 80% less CO_2 than diesel and no $PM^{2.5}$ particulate emissions. The diffuser provides adequate infrastructure to minimize environmental impacts caused by distillery effluent.
GEN 6: Historic Environment	Development and use of the marine environment should protect and, where appropriate, enhance heritage assets in a manner proportionate to their significance.	Consideration to archaeological discoveries and any mitigation required have been considered in Sections 4.4 & 6.2.4, respectively.
GEN 7: Landscape/Seascape	Marine planners and decision makers should ensure that development and use of the marine environment take seascape, landscape, and visual impacts into account.	The proposed diffuser will be installed below MHWS and hence there will be no landscape or visual impacts once in situ.
GEN 8: Coastal Process and Flooding	Developments and activities in the marine environment should be resilient to coastal change and flooding, and not have unacceptable adverse impact on coastal processes or contribute to coastal flooding.	Coastal processes or flooding will not be impacted as the diffuser is placed on top of the seabed, small in scale and held in place by concrete mattresses.

GEN's	Requirements	Invergordon Diffuser Instalaltion Considerations
GEN 9: Natural Heritage	Development and use of the marine environment must: • Comply with legal requirements for protected areas and protected species; • Not result in significant impact on the national status of Priority Marine Features; and • Protect and, where appropriate, enhance the health of the marine area.	Ecological features of interest have been considered within Section 4.1 Biodiversity. The proposed diffuser will not be installed within an area of protection for benthic ecology. Local water quality will also be improved as a result of the installation of the diffuser.
GEN10: Invasive Non-Native Species	Opportunities to reduce the introduction of invasive non-native species to a minimum or proactively improve the practice of existing activity should be taken when decisions are being made.	Preventing the spread of Marine Non-Native Species (MNNS) has been considered within Section 6.2.5.
GEN11: Marine Litter	Developers, users, and those accessing the marine environment must take measures to address marine litter where appropriate. Reduction of litter must be considered by decision makers.	Best practice guidance will be adopted throughout the project and ensure that no marine litter enters the environment.
GEN 12: Water Quality and Resource	Developments and activities should not result in a deterioration of the quality of waters to which the Water Framework Directive, Marine Strategy Framework Directive or other related Directives apply.	This construction will not have any long-term significant impacts on water quality due to the localised nature of the installation work. The development will improve the water quality of the effluent to be discharged by reducing the BOD and COD. Appropriate dispersion will ensure water quality of the Cromarty Firth coastal water body is maintained. Water & Seabed quality is discussed further in Sections 4.2 & 6.2.2.
GEN 13: Noise	Development and use in the marine environment should avoid significant adverse effects of man-made noise and vibration, especially on species sensitive to such effects.	Installation methods will not emit significant noise levels or vibration and the duration of works will be minimised where possible.

4 Environmental Considerations

Relevant environmental topics associated with the installation of the diffuser are discussed in turn within this section.

4.1 Biodiversity

4.1.1 Designated Sites

Error! Reference source not found.details the Statutory Nature Conservation Designated Sites; Marine Protected Areas (MPAs), Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) and Special Protected Areas (SPAs) within approximately 20km offshore, and 10km onshore, of the proposed pipeline installation site. Locations of the designated sites identified within the vicinity of the site are shown in Drawing 98_DRG_01_01. Sites unlikely to be affected by the development due to their location and/or associated designated features (e.g., terrestrial, immobile features that will not interact with the development) are shown in grey, and reasoning behind their exclusion from further consideration is detailed.

Table 4.1.1 Statutory Nature Designated Sites Relevant to the Diffuser Installation

Site	Distance & Direction	Feature Category/Feature	Requires Consideration?
Cromarty Firth SPA	Immediately adjacent to the proposed development to the North & South	Common Tern *(breeding)* Osprey *(breeding)* Bar-tailed Godwit *(wintering)* Whooper Swan *(wintering)* Greylag Goose *(wintering)* Red-breasted Merganser *(wintering)* Redshank *(wintering)* Wigeon *(wintering)* Waterfowl assemblage *(wintering)* Marine mudflats and sandflats	Yes – The proposed development is situated in habitat that is likely to be frequented by species designated to the SPA.
Cromarty Firth SSSI	Immediately adjacent to the proposed development to the North & South	Red-breasted merganser *(Mergus serrator)* Redshank *(Tringa totanus)* Red-breasted merganser *(Mergus serrator* Mudflats	Yes – The proposed development is situated in habitat that is likely to be frequented by species designated to the SSSI.
Moray Firth SAC	8km E	Bottlenose dolphin (*Tursiops truncastus*) Subtidal sandbanks.	Yes – Consideration is given to the bottlenose dolphins only as the distance between proposed development and designated site is within the known range of bottlenose dolphins. Subtidal sandbanks are not expected to move considerable distances and there is no ecological connectivity between the proposed diffuser installation and sandbanks.
Novar SPA	9.1km NW	Capercaillie *(Tetrao urogallus)*	No – The features protected by the SPA are a considerable distance away from the proposed development and terrestrial species, which will not use the marine environment.
Braelangwell Wood SSSI	4.8km SW	Upland birch woodland Springs (including flushes) Soldier fly *(Stratiomys chamaeleon)* Whorl Snail *(Vertigo genesii and V. geyeri)*	No – The vegetative features protected by the SSSI are immobile and will not require to be considered. Exceptions include the soldier fly and whorl snail; however, the development is in the marine environment, which these

Site	Distance & Direction	Feature Category/Feature	Requires Consideration?
			species do not use, and a considerable distance away therefore the development will not impact these protected features.
Moray Firth SPA	12km E	Great northern diver (*Gavia imme)* Red-throated diver (*Gavia stellata)* Slavonian grebe (*Podiceps auratus)* Greater scaup (*Aythya marila)* Common eider (*Somateria mollissima)* Long-tailed duck (*Clangula hyemalis)* Common scoter (*Melanitta nigra)* Velvet scoter (*Melanitta fusca)* Common goldeneye (*Bucephala clangula*)	Yes – some species are given further consideration due to their characteristics and mobile nature.
Inner Moray Firth SPA	16km SSW	Bar-tailed Godwit (*Limosa lapponica*) Common Tern (*Sterna hirundo*) Curlew (*Numenius arquata*) Goldeneye (*Bucephala clangula*) Goosander (*Mergus merganser*) Greylag Goose (*Anser anser)* Osprey (*Pandion haliaetus)* Oystercatcher (*Haematopus ostralegus*) Red-breasted Merganser *(Mergus serrator*) Redshank (*Tringa tetanus*) Scaup (*Aythya marila)* Teal (*Anas crecca)* Wigeon *(Anas Penelope)* Waterfowl assemblage Marine intertidal mudflats and sandflats. Marine reefs.	Yes – some species are given further consideration due to their behavioural characteristics and mobile nature.
Loch Eye SPA	16km NE	Greylag Goose (*Anser anser*) Whooper Swan (*Cygnus cygnus*)	No – The species designated to this site will not frequent the vicinity of the development, as it does not provide suitable habitat for foraging, nor are they diving species of bird.
Dornoch Firth and Loch Fleet SPA	18km NE	Bar-tailed Godwit (*Limosa lapponica*) Curlew (*Numenius arquata)* Dunlin (*Calidris alpina)*	Yes – some species are given further consideration due to their behavioural characteristics and mobile nature.

Site	Distance & Direction	Feature Category/Feature	Requires Consideration?
		Greylag Goose (*Anser anser*) Osprey (*Pandion haliaetus)* Oystercatcher (*Haematopus ostralegus)* Teal (*Anas crecca)* Wigeon *(Anas Penelope)* Waterfowl assemblage	
Moray & Nairn Coast SPA	20km SE	Bar-tailed godwit (*Limosa lapponica*) Dunlin (*Calidris alpina alpina)* Osprey (*Pandion haliaetus)* Greylag goose (*Anser anser)* Oystercatcher (*Haematopus ostralegus)* Red-breasted merganser (*Mergus serrator)* Redshank (*Tringa totanus)* Pink-footed goose (*Anser brachyrhynchus)* Wigeon (*Anas penelope)* Waterfowl assemblage	Yes – some species are given further consideration due to their behavioural characteristics and mobile nature.

4.1.2 Benthic Ecology

The proposed diffuser installation is located 4km west of the Port of Cromarty Firth (PoCF) Phase 4 development. During the PoCF Phase 4 Environmental Impact Assessment (EIA) (Affric, 2018) process for the development, a benthic survey was undertaken which covered the area ~2km from the proposed diffuser installation. The survey was completed by Fugro in February 2017 with the final survey published in April 2017. While the study was conducted several years prior and ~2km west of the proposed development, it is indicative of the expected habitats within the Cromarty Firth as a whole and the benthic ecology expected at the site of the proposed development.

The Fugro report identified five different habitat types present in the immediate vicinity of where the diffuser is proposed to be located. These are as follows:

- Gravelly muddy sand with shell fragments;
- Gravelly muddy sand with shell fragments and pebbles;
- Gravelly muddy sand with shells (including Blue Mussel (*Mytilus edulis*) shells), shell fragments and pebbles;
- Gravelly muddy sand with shell fragments and oyster shells; and
- Gravelly muddy sand with shell fragments and Blue Mussel (*Mytilus edulis*) shells.

Due to local understanding of the geological features within the Cromarty Firth, coupled with the high energy environment from tidal and anthropogenic water movements, the vicinity of the proposed development is expected to be the same as above.

4.1.3 Fish and Shellfish Ecology

4.1.3.1 Anadromous Migratory Fish

Atlantic salmon (*Salmo salar*) are found across temperate and Arctic regions of the northern hemisphere and are widely distributed in Scotland's river systems. Salmon are anadromous, hatching and developing through their juvenile life stages of alevin, fry and parr in freshwater, before migrating to sea as smolts. Smolts begin to leave river systems in the late spring, with most having reached the sea by June (NatureScot, 2021a). When they have undergone smoltification and reached the marine environment they are referred to as post-smolts. Once sexual maturity is reached, they return to their native rivers to spawn around October/November (Godfrey et al., 2014). Migratory routes of Atlantic salmon to spawning sites are poorly understood, since returns to the Scottish coast occur from a range of directions. However, the main rivers frequented by Atlantic salmon within the Cromarty Firth include the River Conon, River Alness, and a number of much smaller local rivers.

As with Atlantic salmon, sea trout (*Salmo trutta*) may spend a variable number of years in freshwater habitats prior to migrating. Sea trout post-smolts may stay within estuaries for extended periods of time, prior to moving into the wider sea (Malcolm et al., 2010). Research on the west coast of Scotland concluded sea trout post-smolts move from rivers to sea lochs/estuaries between April and early June. They then move to the open sea from late June to July, eventually returning to their natal freshwater rivers in August to September (Pemberton, 1976). In the Cromarty Firth, sea trout can be found mainly in the River Conon and Alness, in addition to several smaller local rivers.

4.1.3.2 Shellfish

As mentioned in Section 4.1.2, blue mussel shells were found during a survey for PoCF Phase 4 development, which is indicative of blue mussel beds (a Priority Marine Feature) on nearby coastlines. Blue mussels are not expected within the immediate development area, as blue mussels are found in intertidal and shallow sub-tidal areas.

The waters around the proposed pipeline are also listed as a functional unit and suitable for Norway lobster (*Nephrops norvegicus*).

The closest protected shellfish waters to the development are directly across the Cromarty Firth, around 5km away from the development, in Cromarty Bay (ID: SWPA11). Cromarty Bay was classified as having fair status in 2014 (SEPA, 2022b).

4.1.4 Marine Mammals

The Cromarty Firth supports a variety of marine mammals including species of whales, dolphins, porpoise, and seals. The Moray Firth Special Area of Conservation (SAC), designated in part for bottlenose dolphins (*Tursiops truncatus*), is located 6km east of the development. The SAC is a Natura 2000 site under the Habitats Regulations and therefore an HRA pre-screening report has been generated, to enable the competent authority to determine if an appropriate assessment will be required, see Appendix B. The marine mammals most likely to frequent the Cromarty Firth are discussed within this section.

4.1.4.1 Bottlenose Dolphin (*Tursiops truncatus*)

Bottlenose dolphins were detected in the vicinity of the proposed development during the PoCF Phase 3 Development construction marine mammal observations (Affric, 2015). Bottlenose dolphins were detected 34 times during 6 months of archival acoustic monitoring combined with 267hr of visual observations between June and December 2014 (Affric, 2015). Bottlenose dolphins were most frequently detected during the moths of June to September and were more regularly present during hours of daylight.

4.1.4.2 Harbour Porpoise (*Phocoena phocoena*)

During the marine mammal monitoring conducted for the PoCF Phase 3 development, harbour porpoises were the most frequently detected marine mammal at the Invergordon Service Base. A total of 181 porpoise encounters were recorded during acoustic and visual surveys conducted between June and December 2014 (Affric, 2015). A prominent peak in the number of harbour porpoise detections was observed between the months of August-October (Affric, 2015). It was also noted that harbour porpoise detections occurred most frequently during the late evening to early morning, with fewer detections during the day regardless of whether operational activities were ongoing (Affric, 2015).

4.1.4.3 Minke Whale (Balaenoptera acutorostrata)

Minke whales throughout British and Irish waters are considered a single population of 23,528 individuals, although this is reported to be an underestimate. Paxton et al. (2014) compiled a density surface for minke whales in Scottish waters, based on effort adjusted observations between the 2000 and 2012. This showed that the Moray Firth supports a higher-than-average density of minke whales, compared to wider Scottish Territorial Waters, however the highest densities are concentrated in the southern outer Moray Firth, within the area enclosed by the Southern Trench MPA. Minke whales are encountered in the inner Moray Firth with a modelled

density of between 0.1-0.5 animals per km^2 (Paxton et al. 2014). Minke whales are seldom present within the Cromarty Firth and were not observed during the PoCF Phase 3 marine mammal monitoring (Affric, 2015). Minke whales are most frequently observed in Scottish waters between July and September but may be more widely present from May to October (Reid et al, 2003)

4.1.4.4 Common Seal (*Phoca vitulina*)

The Cromarty Firth designated non-breeding common seal haul-out site is located approximately 10km southwest of the proposed development, on the intertidal sandbanks between the Cromarty Bridge and the Storehouse of Foulis (Marine Scotland, 2018). In 2016 aerial surveys recorded 72 common seals at the Cromarty Firth haul-out site (SCOS, 2017). The Beauly Firth designated common seal haul out lies approximately 21km southwest of the proposed development (38km through the water) (Marine Scotland 2018).

4.1.4.5 Grey Seal (Halichoerus grypus)

Grey seals are only very infrequently observed within the Cromarty Firth (SCOS 2017). During the 2014 Phase 3 Development marine mammal monitoring, there was only one confirmed grey seal sighting in the vicinity of the Invergordon Service Base. Designated breeding grey seal haul-out sites are concentrated in the Northern Isles, Orkney, and Shetland, and in the Outer Hebrides. Non-breeding haul-out sites are also concentrated at these locations, in addition to various sites along the west coast of Scotland and along some of the east coast as far south as the Moray Firth. The closest SAC designated for grey seals is the Faray and Holm of Faray SAC, located approximately 200km to the northeast of the proposed development (through the water).

4.1.5 Otter (Lutra lutra)

Numerous otter surveys have been conducted by Affric around the Invergordon Service Base over the last 10 years. Most recently, a pre-construction survey for the PoCF stage 4 development was conducted in 2019 (Affric, 2019). No layups, holts or couches were detected, however, there were evidence of spraints and feeding remains, suggestive that otters do not regularly frequent the area and are more likely to be passing through.

The shorelines adjacent to the proposed development is 1km to the west of the Phase 4 development, therefore, due to the large range of otters and ample suitable habitat in the area, it can be assumed that there is potential for otter. The diffuser is located 650m from shore, hence installation activities are too far from land to affect otter resting places if present. Therefore a otter survey hasn't been completed and an EPS licence for otter disturbance will not be required.

4.1.6 Ornithology

The development is immediately adjacent to the Cromarty Firth SPA and SSSI, which has been designated for various breeding and overwintering ornithological species and can be seen in Table 4.1.1. The immediate vicinity of the works is unsuitable for nests and it unlikely that vessel movements 470m from the shoreline have the ability to disturb breeding birds. Foraging and overwintering birds are likely to frequent the vicinity of the works, albeit only near the vessels.

Seabirds and diving species of bird designated in the SPA and SSSI will forage along the coastline and at varying water depths near the proposed development.

4.2 Water and Seabed Quality

4.2.1 Cromarty Firth

The Cromarty Firth is a transitional water body, and the proposed development is classified as the Inner Cromarty Firth (ID: 200443), which has an area of 35.9km^2. In 2020, the area was classified as having good overall and ecological status, with a pass chemical status. The water body to the east of the site is classed as the Outer Cromarty Firth (ID: 200442), which has an area of 41.4km^2. In 2020, this area was also classified as good overall and ecological status, with a pass chemical status (SEPA, 2022a).

4.2.2 Shellfish Water

As previously mentioned in Section 4.1.3.2, the closest protected shellfish waters to the development are directly across the Cromarty Firth, around 5km away from the development, in Cromarty Bay (ID: SWPA11). Cromarty Bay was classified as having fair status in 2014 (SEPA, 2022b).

4.2.3 Rivers

Multiple rivers and burns flow into the Cromarty Firth, however, the proposed development is downstream of these rivers. Thus, there is no potential for their water quality of said rivers to be impacted by the development and are not considered further within this section. The importance of rivers in relation to salmon & trout migratory paths are discussed in Section 4.1.3.1.

4.2.4 Marine Non-Native Species (MNNS)

During a benthic survey carried out prior to the PoCF Phase 4 development, no MNNS were identified within the vicinity of the development and there is only one record of MNNS in the Cromarty Firth; the Acorn barnacle *(Balanomorpha)*. Red algae *(Rhodophyta)* have been identified in the adjacent Moray Firth, but this is not known to be present in the Cromarty Firth.

4.2.5 Existing Effluent Discharge

Currently, effluent from the Invergordon Distillery is discharged to the Cromarty Firth via an LSO roughly 400m west from Saltburn Pier, at a rate of 62.5m^3/hr. The BOD of the effluent exiting from the LSO is 43g/l.

4.3 Navigation

The location of the outfall is within the Port of Cromarty Firth Harbour limits; it is between the Saltburn pier and the Bannerman pier. The Saltburn Pier is utilised for commercial deliveries is 385m in length and has a water depth ranging from 6m at the north end, to 11m at the south.

The Bannerman Pier has historically been utilised for cruise ships and other large vessel berthing. It is noted that most cruise vessels have drafts of less than 10m.

To the west of the Bannerman Pier, the West Harbour is utilised by smaller vessels including Harbours Pilot boats and the RNLI lifeboats. Further west are the berths associated with the

Invergordon service base which can accommodate oil rigs and vessels and has water depths ranging between 5.5m up to 14m (PoCF, 2022).

There are no commercial fishing operations in the area and therefore they do not pose a risk to the proposed development.

4.4 Marine Archaeology

There have been no reported archaeological finds or deposits of significance in the vicinity of the proposed diffuser installation.

According to Canmore, National Record of the Historic Environment, a steam drifter named HMS Harmony (Canmore ID: 324056), sank after an alleged collision with a buoy. It is classed as a 'dangerous wreck' and is approximately 250m south from the proposed diffuser installation (Canmore, 2022). It is 20m below CD and therefore will not be impacted by vessels utilised by the development. There are another two Canmore sites which are classed as 'unknown' within a 500m radius of the vicinity of the proposed diffuser installation.

Canmore ID: 102041– This site was identified and classed as an obstruction in June 1974 and is located approximately 250m SE from the proposed development. Subsequent transit sonar searches have been unable to identify this site.

Canmore ID: 324719 – This site has been identified as possible craft and is located roughly 330m NNW of the proposed development. Due to the distance from the proposed development and localised nature of works, this site will not be impacted by the development.

4.5 Socio-Economic, Population & Human Health

Invergordon is an industrial town supporting many marine industries, including renewables, oil and gas, cruise liners and the decommissioning of oil rigs. Local tourism in Invergordon is facilitated by cruise liners, with many tourists directly engaging with local whisky distilleries. Successful operations of distilleries, create jobs for the local community and in turn improve the local area. In 2018 it was revealed that the distilling industry provides between 7000 - 8000 jobs in Scotland (Scottish Parliament, 2018).

There is no fishing sector based on the Cromarty Firth.

There will be no impact on population or human health as a result of installing a diffuser to the existing LSO.

5 Potential Environmental Effects

Table 5.1 provides a description of the environmental aspects arising during the installation of a diffuser to the existing Invergordon distillery LSO. It outlines the sensitivities as per Section 4, identifies any potential effects and the proposed mitigation measures for the negative effects, if applicable, to the environment.

Table 5.1: Marine Construction Effects and Sensitivities

Source	Sensitivities	Potential Effect
Diver installation of diffuser and laying of concrete mattresses	Biodiversity – benthic ecology	Physical harm/mortality of benthic organisms and a small area of permanent habitat loss <300m^2, this is not significant in terms of the Cromarty Firth as a whole. Unlikely to affect any PMF.
	Biodiversity – fish, shellfish, marine mammals, benthic ecology, ornithology, and designated sites	Sedimentation associated with seabed disturbance may result in temporary reduction in local water quality due to additional suspended solids. This can have an effect on species such as diving birds, otters and marine mammals foraging, due to reduced visibility. Fish especially smolt due to their small size can be physically harmed be sedimentation. Sediment dropout from the water column can cause smothering on benthic species. In this instance, the works cover a very small area, the use of concrete mattresses has avoided the need for significant seabed disturbance (trenching). As such sedimentation levels will be low and unlikely to have a noticeable direct or indirect effect on ecological receptors.
	Archaeology	It is also possible that previously unidentified features may be discovered or disturbed, hence mitigation included within Section 6.2.4 will be implemented.
Vessel movements and use during construction activities.	Navigation	Collision risks with other vessels, is unlikely as all movements within the Cromarty Firth are under the direction of PoCF. Appropriate communications will be put in place to make other vessels aware of the works see Section 6.2.3.
	Biodiversity – marine mammals, ornithology, otter, and designated sites.	Although there will be relatively few vessel movements there, is still a risk of vessel collision with ornithological species, marine mammals and otter all be it small. In addition, the physical presence of the vessels, divers and associated noise could cause disturbance. The vessel noise will be limited and only add to the overall soundscape for a short period of time. Note disturbance is not at a level which would cause an offence under the Wildlife and Countryside Act 1981 and The Conservation (Natural Habitats, &c.) Regulations 1994, hence there is no plan for a cetacean EPS licence to be sought. Works will be carried out between April and October to avoid the overwintering bird season. The mitigation discussed in Section 6.2.1 will be followed to minimise effects as far as practicable.
Vessel and equipment associated with the works being used in the marine environment	Biodiversity – marine ecosystems	There is small potential for MNNS to be introduced to the Cromarty Firth via equipment and vessels, the use of local vessels will significantly reduce the risk of spread. Mitigation is identified in Section 6.2.5.
Loss of containment of	Water quality	A loss of chemicals or fuels would decrease water quality, this can cause mortality of marine mammals, ornithological

Source	Sensitivities	Potential Effect
oil/fuel/chemicals during refuelling, collision, or containment failure from vessels.	Biodiversity - marine mammals, fish, shellfish benthic ecology, designated sites.	species, fish, and benthic species depending on the materials and quantities. No chemicals are planned to be used below the water. Hence, sources relate to materials and fuels onboard vessels. The use of well-maintained vessels with appropriate storage of materials will make it unlikely that there will be a spill of a magnitude that could noticeably reduce water quality or effect biodiversity. Mitigation regarding fuel and material storage, and contingency plans will be in place as discussed in Section 6.2.2.
Employment opportunities	Socioeconomics	Construction works will have the potential to provide local employment and support the supply chain industry. Operationally it will help to ensure the viability of the whisky sector in the area.
Operations of the diffuser	Water quality Biodiversity - marine mammals, fish, shellfish benthic ecology, designated sites.	Improvement in local water quality due to improve dispersion of effluent discharged.

6 Mitigation

6.1 Pre-Construction Mitigation

Several mitigation measures have been identified which should be implemented prior to construction works commencing to address the potential effects identified in Table 5.1, these are detailed within this section.

6.1.1 Navigation

Notices to Mariners will be issued prior to diffuser installation.

Appropriate temporary marker buoys will be installed to show the location of the construction area for the project duration.

A PoCF Works Licence will be sought prior to the commencement of works.

6.2 Construction Mitigation

The mitigation measures within this section to avoid and minimise negative effects associated with construction are detailed below and are to be implemented during construction.

6.2.1 Marine Ecology, Otters, and Ornithology

All vessels operating onsite will be required to follow the Scottish Marine Wildlife Watching Code (SMWWC) (NatureScot, 2017).

Mitigation discussed under Section 6.2.2 will protect birds from pollution related harm.

If a marine mammal or otter approaches within 50m of the proposed works, any activity that could cause disturbance or harm will cease until they have moved out with this area.

6.2.2 Water and Seabed Quality

All chemicals and fuels will be stored in double bunded containers.

Chemicals will be stored as per the Control of Chemicals Hazardous to Health (COSHH) Regulations 2002. COSHH assessments will include consideration of environmental risks.

A pollution prevention and spill management plan will be in place during the construction phase.

Vessels must be appropriately maintained and adhere to the relevant International Convention for the Prevention of Pollution from Ships (MARPOL) regulations.

All plant and machinery will be appropriately maintained.

6.2.3 Navigation

Navigation and berthing at Invergordon Service Base will be under the control of the Harbour Authority (PoCF).

All vessels utilised during the project will be required to meet all relevant safety regulations. Appropriate temporary marker buoys will be deployed as required.

Upon completion of the diffuser installation, the temporary markers will be removed, eliminating this navigational risk. As built plans showing the locations of the diffusers will be

made available to all interested parties. The need for permanent marker buoys for the diffusers will be discussed and agreed with the National Lighthouse Board (NLB) and the Harbour Authority.

6.2.4 Marine Archaeology

A Protocol for Archaeological Discoveries (PAD): Offshore Renewables Projects (Crown Estate, 2014) will be implemented should any archaeological finds be made during construction.

6.2.5 Marine Non-Native Species (MNNS)

Vessels will be locally sourced in order to reduce the risk of spreading MNNS.

All works will be carried out in accordance with The Code of Practice on Non-Native Species (Scottish Parliament, 2012) under Section 14C of the Wildlife & Countryside Act 1981.

7 Summary

Consents are being sought under the Marine (Scotland) Act 2010 for the proposed installation of a diffuser to the existing Invergordon Distillery LSO, currently owned and operated by Whyte & Mackay. Once installed, the diffuser will allow for the improved dispersion of distillery trade effluent discharged into the Cromarty Firth. It has been recognised that construction will have minimal potential impacts on the environment, however with the successful implementation of mitigation measures outlined within this document, environmental impacts will be negligible.

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9 Glossary

Acronym	Definition
AA	Appropriate Assessment
AD	Anaerobic Digestion
BOD	Biological Oxygen Demand
CAR	Water Environment (Controlled Activities) (Scotland) Regulations 2011
CHP	Combined Heat and Power
CMACS	Centre for Marine and Coastal Studies Ltd
COD	Chemical Oxygen Demand
EIA	Environmental Impact Assessment
EPS	European Protected Species
EQS	Environmental Quality Standards
GEN	General Planning Principles
GPP	Guidance for Pollution Prevention
HDPE	High Density Polythene
HPPE	High Performance Polyethylene
HRA	Habitats Regulations Appraisal
IMO	International Maritime Organisation
JNCC	Joint Nature Conservation Committee
km	Kilometre(s)
LSO	Long Sea Outfalls
m	Metre(s)
MARPOL	International Convention for the Prevention of Pollution from Ships
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
mm	Millimetre(s)
MNNS	Marine Non-Native Species
MPA	Marine Protected Area
MS-LOT	Marine Scotland Licensing Operations Team
NBN	National Biodiversity Network
NIEA	Northern Ireland Environment Agency
nm	Nautical Miles
NMP	National Marine Plan
NMPi	National Marine Plan Interactive
NNW	North Northwest
NRW	Natural Resources Wales
PAD	Protocol for Archaeological Discoveries
PMF	Priority Marine Features
PoCF	Port of Cromarty Firth
PPG	Pollution Prevention Guidance
S	South
SAC	Special Area of Conservation
SEPA	Scottish Environment Protection Agency
SMWWC	Scottish Marine Wildlife Watching Code
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

Drawings

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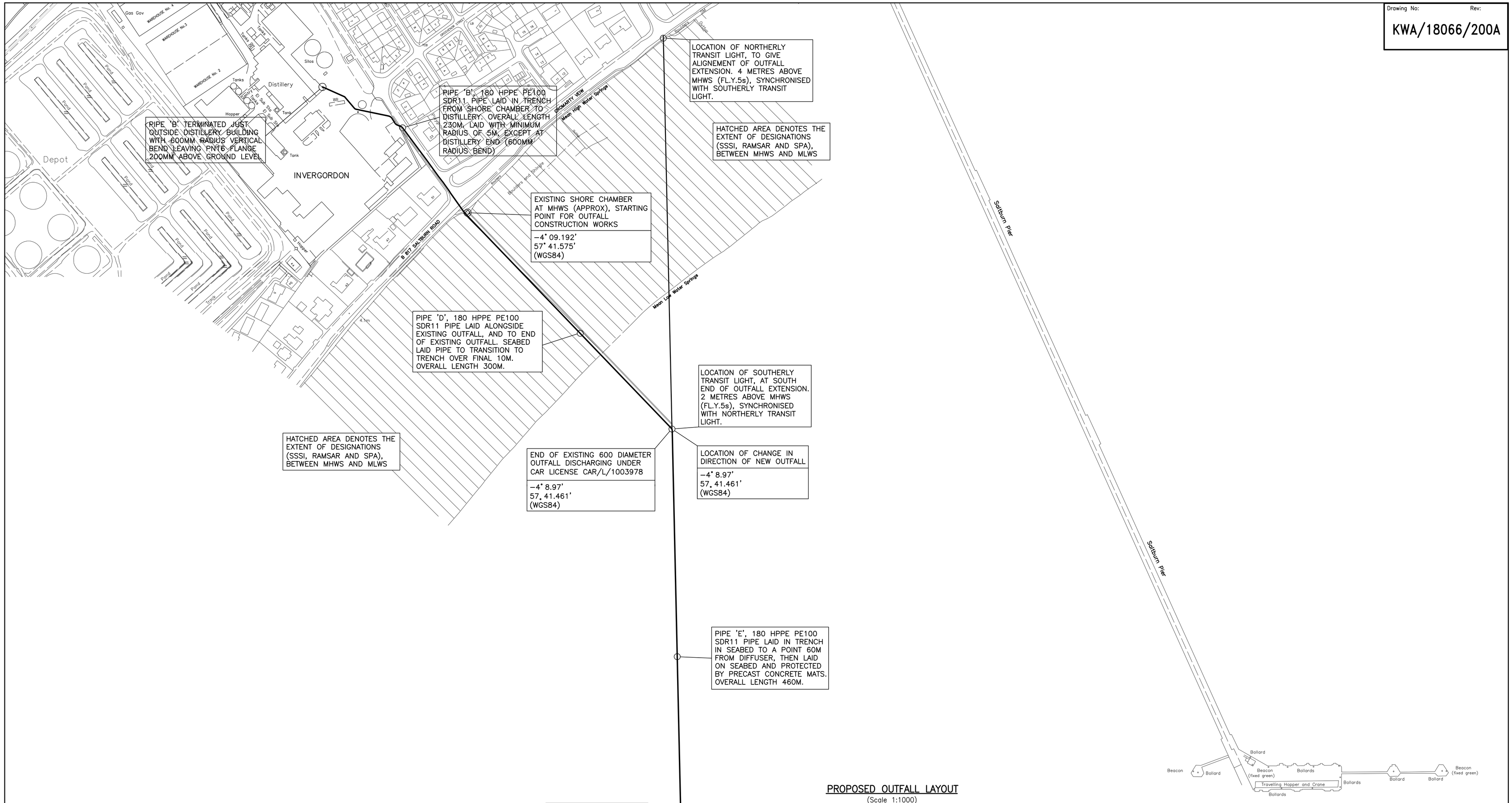

PROPOSED OUTFALL LAYOUT
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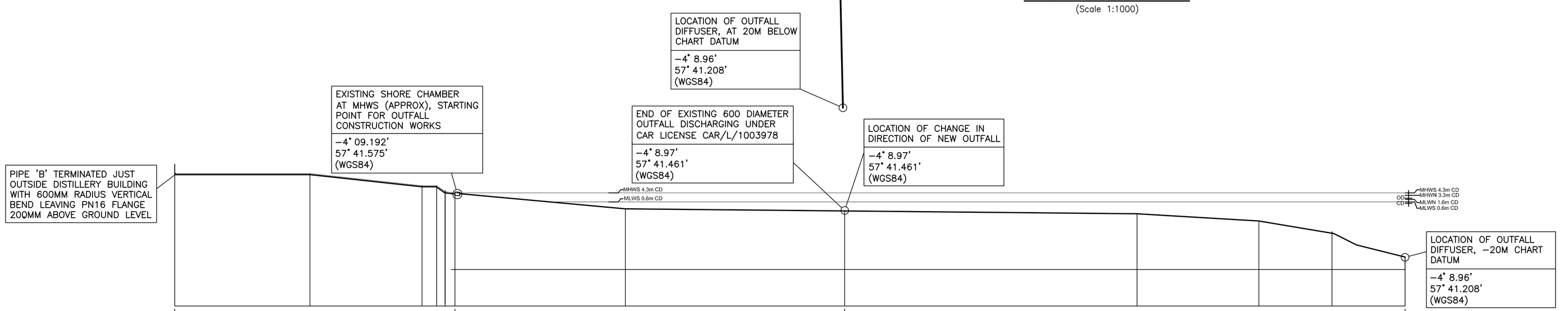

PROPOSED OUTFALL PROFILE
(Scale 1:1000 HORZ)
(Scale 1:500 VERT)

REVISIONS		
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Client:
WHYTE & MACKAY

Job:
PROPOSED OUTFALL EXTENSION
INVERGORDON DISTILLERY, INVERGORDON

Title:
OVERALL PIPE ROUTE AND PROFILE

KWA
Consulting Engineers
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Burn Place, Dingwall
IV15 9NQ
Tel: (01349) 863333 Email: info@kwa.uk.net

Drawn:	Scale:	Drawing No:	Rev:
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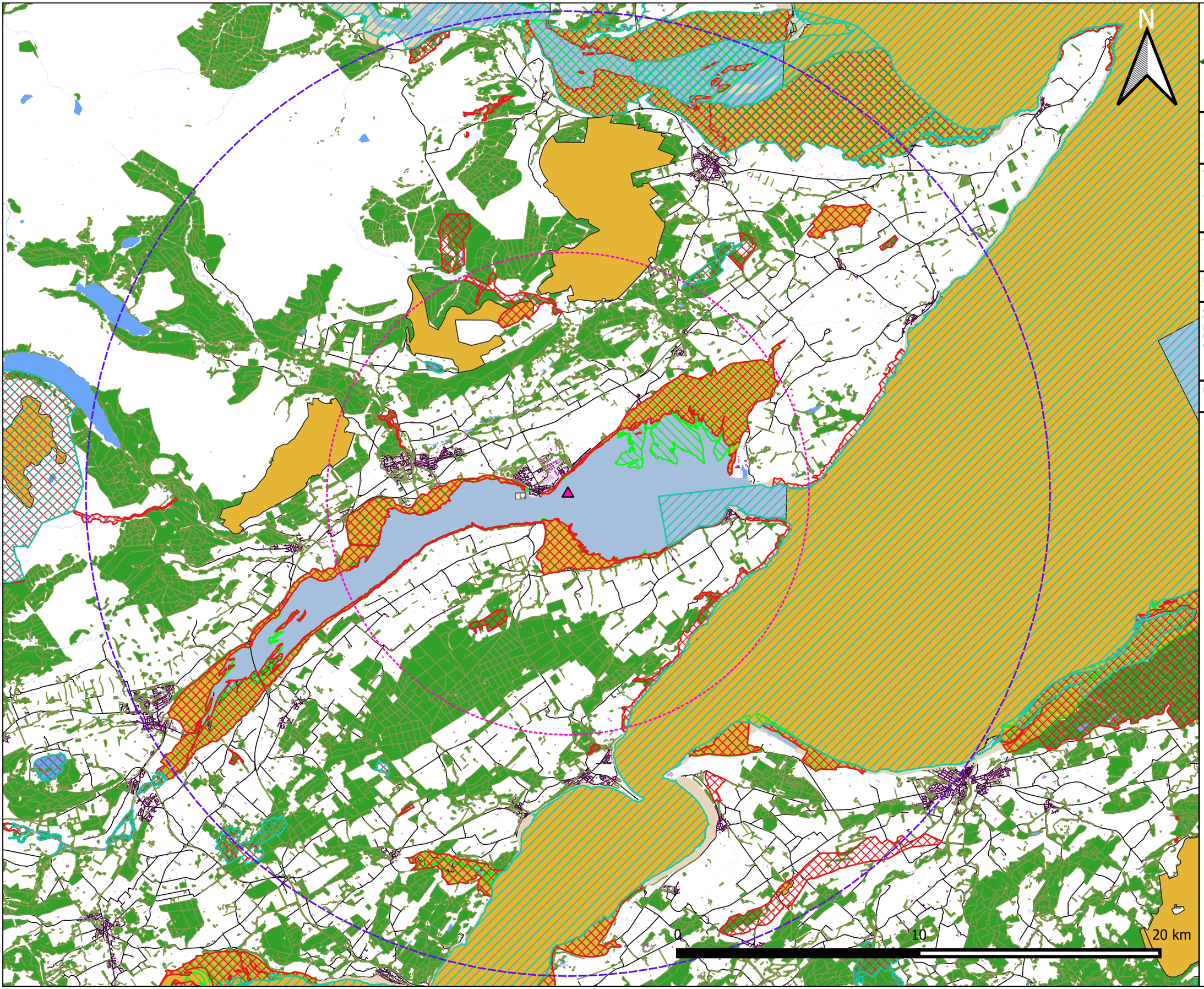
Chk'd:	Date: 23.08.18		



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Title: 98_DRG_01_1
Designated Sites

Projection: OSGB 1936/British National Grid EPSG: 27700

Page 1	Rev No: 1	Drawing Date: 11/10/2022

Legend

- Diffuser Outfall Location
- 10Km Buffer
- 20Km Buffer
- Buildings
- Inland Water
- RAMSAR_SCOTLAND
- Roads
- SAC_SCOTLAND
- SPA_SCOTLAND
- SSSI_SCOTLAND
- Tidal Water
- Woodland

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Projection: OSGB 1936/British National Grid
EPSG:27700

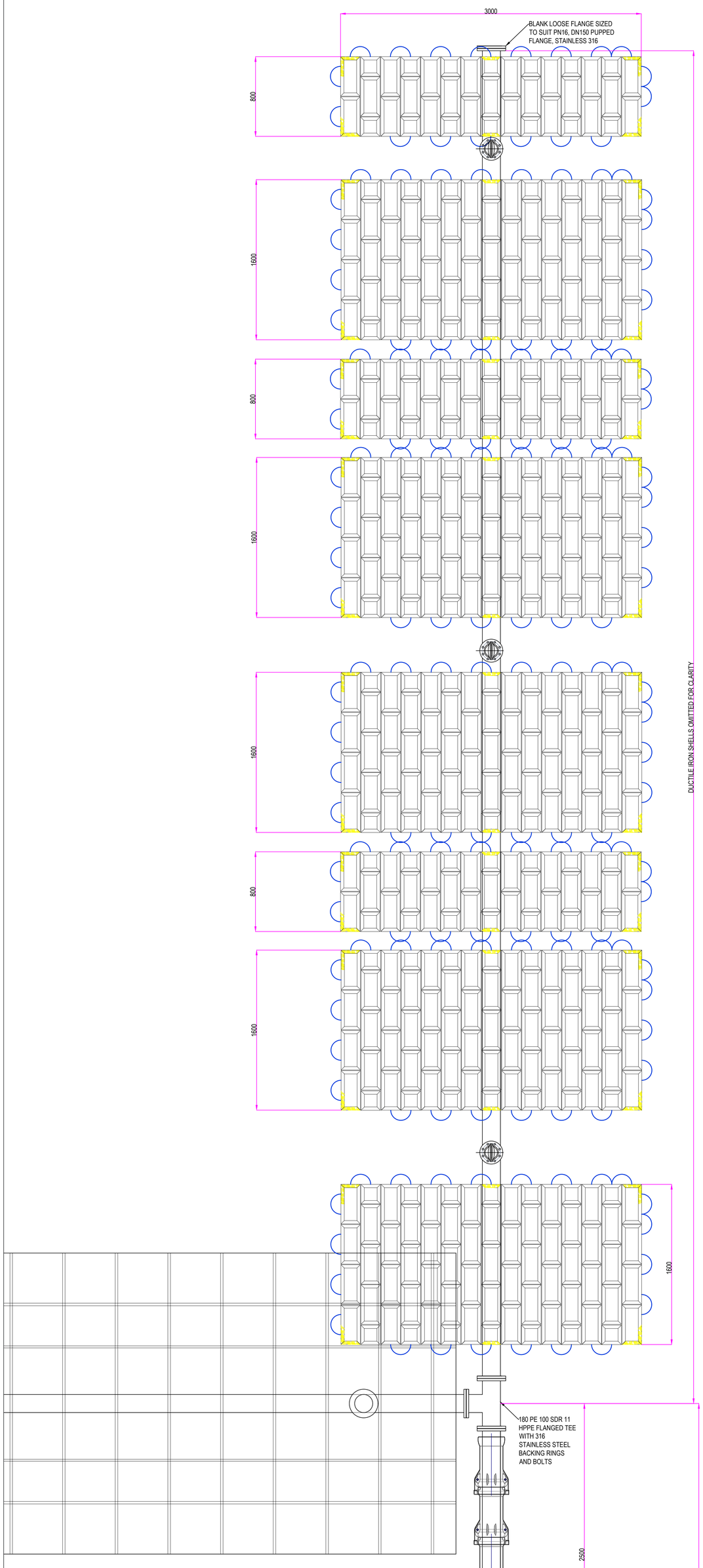
Page 1 | Rev No: 1 | Drawing Date: 11/11/2022

Drawn by: Innes Beaton

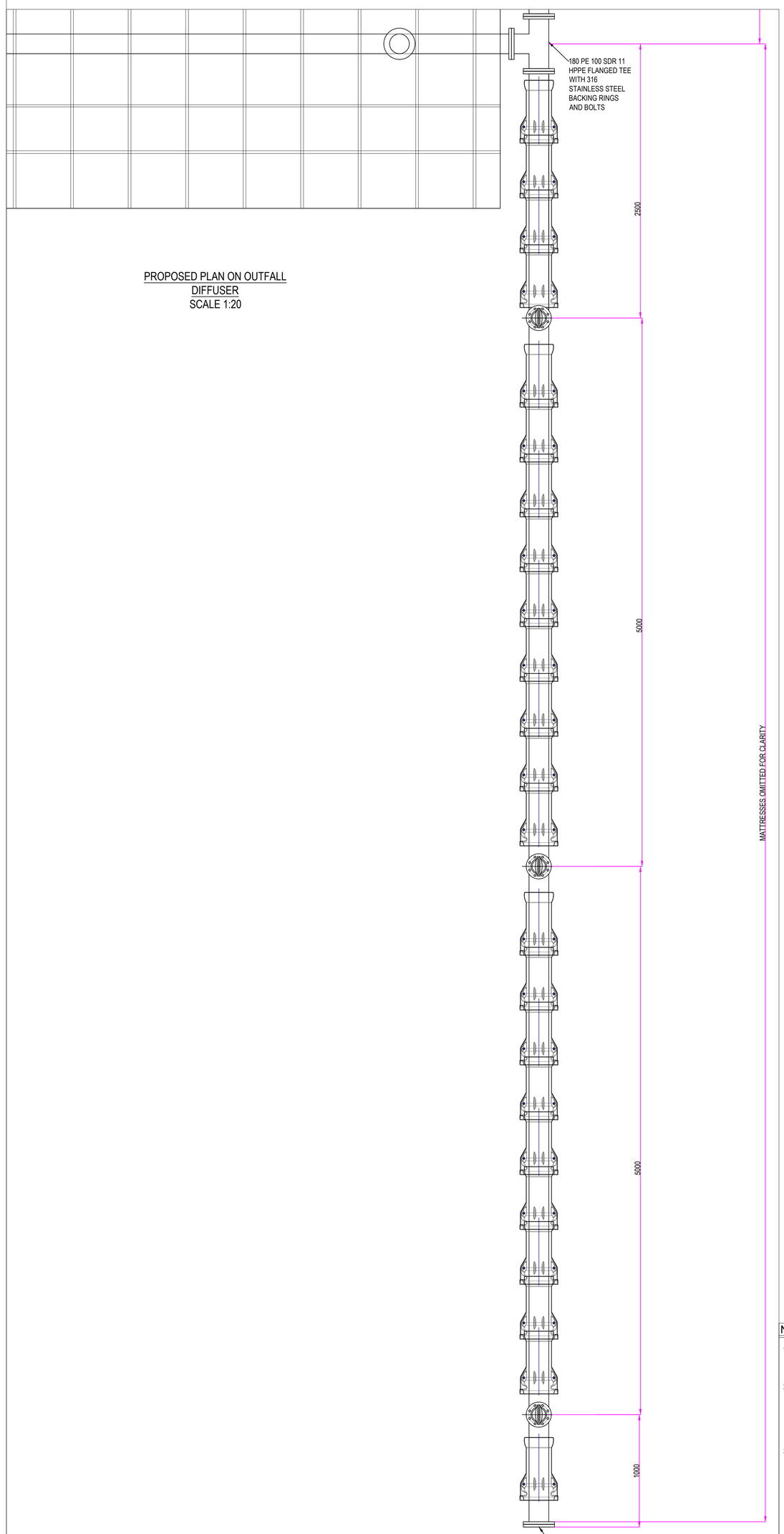
Title: 98_DRG_02_1 Marine Licence Boundary

Legend

- Diffuser Outfall Location
- Marine Licence Boundary Points
- Marine Licence Boundary
- Pipeline



PROPOSED PLAN ON OUTFALL DIFFUSER
SCALE 1:20



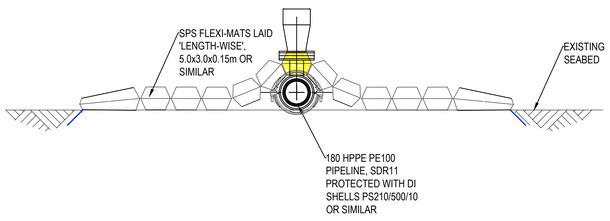
PROPOSED PLAN ON OUTFALL DIFFUSER
SCALE 1:20

NOTES

1. Verifying Dimensions.
   The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services.
   Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
3. Issue of Drawings.
   Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.
4. Datum.

LONGITUDINAL SECTION AT DIFFUSER
SCALE 1:20

TYPICAL DUCTILE IRON SHELL DETAIL
SCALE 1:20



SECTION SHOWING CONCRETE MAT PROTECTION OVER DUCTILE IRON SHELLS
SCALE 1:20

rev	amendments	check	date

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Project
INVERGORDON OUTFALL DIFFUSER

Title
DIFFUSER DETAILS

Project Number	Sheet Size	Drawing Scale
IBE2063	A0	AS SHOWN

Drawing Number
IBE2063_001C

Drawn By	Status	Revision
NM	TENDER	01

Checked By	Approved By	Date
MB	MB	15/09/2022

Appendix A: Proposed Licence Boundary Co-Ordinates

Point Number	Grid Reference	Latitude / Longitude
P1	271977 868371	57°41.212'N/004°08.938'W
P2	271933 868371	57°41.212'N/004°08.989'W
P3	271933 868354	57°41.203'N/004°08.989'W
P4	271977 868354	57°41.203'N/004°08.938'W

Appendix B: Habitat Regulations Appraisal Pre-Screening Report

Diffuser Installation to the Existing Invergordon Distillery Long Sea Outfall Pipeline: Habitat Regulations Appraisal Pre-Screening Report

Reference No: 98_REP_02

Date: 21/11/2022

Document Control

	Name	Title	Signature	Date
Author	Rhona Taylor	ECoW/Environmental Consultant	R.Taylor	12/10/2022
Reviewer	Sophie Fallon	Senior Environmental Consultant	S. Fallon	09/11/2022
Authoriser	Fiona Henderson	Managing Director	F. Henderson	21/11/2022

Effective Date:	**21/11/2022**

Revision No:	Signature	Comments	Date
1A	R. Taylor	Draft for internal review	12/10/2022
1B	R. Taylor	For client review	11/11/2022
1	R. Taylor	For issue to Marine Scotland	21/11/2022

Contents

1 Introduction

This Habitats Regulations Appraisal (HRA) Pre-Screening Report supports the Marine Licence application for the installation of a diffuser, to the existing Whyte and MacKay's long sea outfall (LSO) pipeline, in Invergordon.

Due to the site's close proximity to Natura 2000 sites, and the potential for aspects of the diffuser installation process to have some degree of connectivity with the qualifying features or species of Natura 2000 sites, a HRA pre-screening report is required in support of the marine licence application. This HRA pre-screening report provides the information required for the competent authority to carry out a HRA, and where required, an Appropriate Assessment (AA).

This report is designed to be read in conjunction with the Diffuser Installation to the Existing Invergordon Distillery Long Sea Outfall Pipeline - Environmental Supporting Document and directs the reader to the sections of the document that are relevant to the designated site(s) or qualifying specie(s) being discussed.

1.1 Legislative Basis

A HRA is required for this development due to its proximity to multiple Natura 2000 sites. These include Special Areas of Conservation (SAC) and Special Protection Areas (SPA). The legislative context for this requirement is based on Article 6(3) of the Habitats Directive (92/43/EEC), Article 4(4) of the Birds Directive (2009/147/EC) and is implemented in Scotland through The Conservation (Natural Habitats, &c Regulations 1994 (the Habitats Regulations).

In Scotland, the Scottish Planning Policy document ensures that Ramsar sites, which are normally included in an HRA assessment, overlap with Natura sites, and are therefore protected under the same legislation. Therefore, Ramsar sites do not need considered separately as part of this HRA Screening report.

If a likely significant effect (LSE) is predicted on a Natura Site at the first stage of the HRA, then an AA must then be carried out. The AA must demonstrate that the proposal will not adversely affect the integrity of the site (NatureScot, 2021a).

It is the responsibility of the competent authority to carry out the HRA based on robust, scientific information provided by the project developer about the proposed project. It is not the role of the developer to make an assessment on whether the proposal will have an adverse effect on any associated Natura sites.

1.2 Terminology

The terminology employed as part of the HRA process relates to LSEs. It is important when reading the HRA, to be aware that the term 'significant/significance' terminology used this HRA Pre-Screening report, relates to potential ecological connectivity.

Assessment of LSEs takes a precautionary approach and ask whether a project may have an effect, or have the possibility of having an effect, on a Natura site (NatureScot, 2021b). A project component is said to have an LSE on a designated site if, there is ecological connectivity with the site's qualifying interests or there is the potential for the conservation objectives of the designated site to be undermined. Where an LSE "*cannot be excluded, on the basis of*

objective information" (European Court of Justice C-127/02, 2004) an AA is required. The conservation objectives of the site provide the framework for considering the potential for LSEs.

1.3 Objectives

The objectives of this HRA Pre-Screening report are to summarise:

- The proposed development details;
- The Natura 2000 sites considered, with reference to the Grissan Bay pipeline development, along with these sites' qualifying interests and conservation objectives; and
- Details on the qualifying interests for each of the scoped-in Natura sites.

This information will aid the competent authority in carrying out an HRA. This HRA Pre-Screening Report provides a reference as to where the relevant information required to complete the HRA is located within the Environmental Supporting Document. As such, the HRA should be read in conjunction with the Environmental Supporting Document and not as a stand-alone document. An indication of whether LSEs are expected is given for each designated site, but it is ultimately up to the competent authority carrying out the HRA to ascertain whether LSEs are present, and therefore whether an AA is needed for each designated site.

2 Project Summary

Grissan have proposed to install a diffuser perpendicular to the already existing Invergordon Distillery LSO, currently operated by Whyte & Mackay Ltd. The existing LSO was extended 460m into the Cromarty Firth in 2018 under Marine Licence 06794.

It is proposed that the diffuser will be bolted on to the flanged end of the existing LSO, sit on top of the seabed at ~ -20 Chart Datum (CD) and held in place with concrete mattresses. The diffuser has 6-ports each spaced 5m apart, with a total length of 27m. The aim of the perpendicular line diffuser is to greatly improve the dispersion of effluent coming from the LSO, in turn reducing environmental impacts to the marine environment.

Construction is scheduled to be take place between April and October 2023 and is anticipated to last 2 weeks. Refer to Section 2.2 Project Description of the Environmental Supporting Document for further details on project design, location, and installation methodology.

3 Designated Sites

3.1 Identification of Designated Sites

The designated sites and their qualifying interests, relevant to the proposed diffuser installation are shown in Table 3.1. Sites considered include all sites irrespective of qualifying interest within 5km and sites with mobile features or hydrological connectivity within 20km. Due to the nature of the development, designations further than 20km from the site are highly unlikely to have any connectivity.

The sites, or species within the sites, are scoped in or out depending on the level of ecological connectivity to the proposed works. A reduced list of designated sites and features is then taken forward for further assessment. Explanations as to why certain sites or qualifying features are included or excluded are laid out in Section 3.2 and 3.3.

Only Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are considered, as together, these make up the Natura 2000 Network.

Table 3.1: Designated Sites Relevant to the Diffuser Installation

Site	Distance & Direction	Qualifying Feature(s)	Scoped In or Out?
Cromarty Firth SPA	Directly adjacent to proposed development site.	Common Tern, *Sterna hirundo (breeding)* Osprey, *Pandion haliaetus (breeding)* Bar-tailed Godwit, *Limosa lapponica (wintering)* Whooper Swan, *Cygnus cygnus (wintering)* Greylag Goose, *Anser anser (wintering)* Red-breasted Merganser, *Mergus serrator* (wintering) Redshank, *Tringa totanus* (wintering) Wigeon, *Anas penelope* (wintering) Waterfowl assemblage (wintering) Marine mudflats and sandflats	In
Moray Firth SAC	8km E	Bottlenose dolphin *Tursiops truncatus* Subtidal sandbanks.	In: bottlenose dolphin Out: subtidal sandbanks
Novar SPA	9.1km NW	Capercallie (*Tetrao urogallus)*	Out
Moray Firth SPA	12km E	Great northern diver, *Gavia immer (wintering)* Red-throated diver, *Gavia stellata* (*wintering)* Slavonian grebe, *Podiceps auritus (wintering)* Greater scaup, *Aythya marila (wintering)* Common eider, *Somateria mollissima (wintering)* Long-tailed duck, *Clangula hyemalis (wintering)* Common scoter, *Melanitta nigra (wintering)* Velvet scoter, *Melanitta fusca (wintering)*	In

Site	Distance & Direction	Qualifying Feature(s)	Scoped In or Out?
		Common goldeneye, *Bucephala clangula (wintering)*	
Inner Moray Firth SPA	16km SSW	Bar-tailed Godwit, *Limosa lapponica (wintering)* Common Tern, *Sterna hirundo (breeding)* Curlew, *Numenius arquata (wintering)* Goldeneye, *Bucephala clangula (wintering)* Goosander, *Mergus merganser (wintering)* Greylag Goose, *Anser anser (wintering)* Osprey, *Pandion haliaetus (breeding)* Oystercatcher, *Haematopus ostralegus (wintering)* Red-breasted Merganser, *Mergus serrator* (wintering) Redshank, *Tringa totanus* (wintering) Scaup, *Aythya marila (wintering)* Teal, *Anas crecca (wintering)* Wigeon, *Anas penelope* (*wintering)* Waterfowl assemblage *(wintering)* Marine intertidal mudflats and sandflats. Marine reefs.	In: goldeneye, goosander, red breasted merganser, scaup, teal, wigeon Out: bar-tailed godwit, common tern, curlew, greylag goose, osprey, oystercatcher, redshank, waterfowl assemblage, marine intertidal mudflats and sandflats, marine reefs
Loch Eye SPA	16km NE	Greylag Goose, *Anser anser (wintering)* Whooper Swan, *Cygnus cygnus (wintering)*	Out
Dornoch Firth and Loch Fleet SPA	18km NE	Bar-tailed Godwit, *Limosa lapponica (wintering)* Curlew, *Numenius arquata (wintering)* Dunlin, *Calidris alpina (wintering)* Greylag Goose , Anser anser *(wintering)* Osprey, *Pandion haliaetus (breeding)*	In: teal, wigeon Out: bar-tailed godwit, curlew, dunlin, greylag goose, osprey,

Site	Distance & Direction	Qualifying Feature(s)	Scoped In or Out?
		Oystercatcher, *Haematopus ostralegus (wintering)* Teal, *Anas crecca (wintering)* Wigeon, *Anas penelope (wintering)* Waterfowl assemblage *(wintering)*	oystercatcher, waterfowl assemblage
Moray & Nairn Coast SPA	20km SE	Bar-tailed godwit, *Limosa lapponica (wintering)* Dunlin, *Calidris alpina alpina (wintering)* Osprey, *Pandion haliaetus (breeding)* Greylag goose, *Anser anser (wintering)* Oystercatcher, *Haematopus ostralegus (wintering)* Red-breasted merganser, *Mergus serrator (wintering)* Redshank, *Tringa totanus (wintering)* Pink-footed goose, *Anser brachyrhynchus (wintering)* Wigeon, *Anas penelope (wintering)* Waterfowl assemblage *(wintering)*	In: red-breasted merganser, wigeon Out: bar-tailed godwit, dunlin, osprey, greylag goose, oystercatcher, redshank, pink footed goose, waterfowl assemblage

3.2 Reason for Designated Site or Species Exclusion

The designated site or relevant qualifying features of each site and their reason for exclusion are detailed within this section:

3.2.1 Moray Firth SAC

The two designated features of the Moray Firth SAC are subtidal sandbanks and the bottlenose dolphin (JNCC, 2020a). The SAC and subsequent subtidal sandbanks are 8km east of the proposed development and immobile in nature, therefore there is no ecological connectivity between the sandbanks and the installation of the diffuser. Remobilised sediments would not be able to reach the SAC and would have no effect upon the conservation objectives of the SAC. The bottlenose dolphin is mobile and has therefore been considered further in Section 3.3.2.

3.2.2 Novar SPA

The designated feature of the Novar SPA is solely the capercaillie (JNCC, 2020b). The proposed development is in the marine environment and therefore there is no ecological connectivity between the proposed development and the designated feature of Novar SPA, the capercaillie. Although mobile, the capercaillie is a terrestrial species of bird and would not frequent the marine environment. The designated site is also over 9km away from the proposed development; therefore it can be assumed that pollution and disturbance will not have an LSE on the conservation objectives of the SPA.

3.2.3 Inner Moray Firth SPA

The Inner Moray Firth SPA is designated for ornithological species with varying foraging and breeding behaviours, marine intertidal mudflats and sandflats and marine reefs (JNCC, 2020c). The SPA is over 16km from the proposed development; therefore the proposed development has no ecological connectivity to the marine intertidal mudflats and sandflats or marine reefs. The sediment plumes that may arise from the development will be too small and localised to have an LSE. Furthermore, there is a large land mass directly between the site and proposed development.

As the development is 780m from the shoreline and ~20m below Chart Datum (CD), non-diving species of bird will not utilise the immediate vicinity of the development for foraging. Therefore, the following species of bird have not been considered for further assessment:

- bar-tailed godwit;
- common tern;
- curlew;
- greylag goose;
- osprey, oystercatcher; and
- redshank, waterfowl assemblage.

The aforementioned species of birds' forage on land or in shallow intertidal areas. The site is 16km from the proposed development, hence it is unlikely for these species to be in the area as there is suitable habitat throughout the eastern coastlines. Pollution and disturbance will not affect these species, due to the distance from the proposed development, and that it is

under water. Therefore, only the diving species designated for the Inner Moray Firth SPA are considered further in Section 3.3.4.

3.2.4 Loch Eye SPA

The Loch Eye SPA is designated for greylag geese and whooper swan (JNCC, 2020d). The habitat in the vicinity of the proposed development is not suitable for foraging or breeding for either of the species designated to the SPA. The greylag goose prefers farmland and grassland, whereas the whooper swan prefers lochs, ponds, rivers, and streams. Both species eat grains, grass, and aquatic plants. As the site is 16km away from the development, and underwater, designated features of the Loch Eye SPA are unlikely to utilise the vicinity of the development.

3.2.5 Dornoch Firth and Loch Fleet SPA

The Dornoch Firth and Loch Fleet SPA is designated for ornithological species with varying foraging and breeding behaviours (JNCC, 2020e). As the development is ~780m from the shoreline and ~20m below CD, non-diving species of bird will not utilise the vicinity of the development for foraging. In addition, directly to the shoreline from the diffuser, is an industrial area with heavy vessel traffic and occasionally noisy activities. Therefore, the following species of bird have not been considered for further assessment:

- bar-tailed godwit;
- curlew;
- dunlin;
- greylag goose;
- osprey;
- oystercatcher; and
- waterfowl assemblage.

The aforementioned species of birds' forage on land or in shallow intertidal areas. The site is also 18km from the proposed development, which means that it is unlikely for these species to be in the area whilst considering the vast areas of suitable habitat throughout the eastern coastlines. Pollution and disturbance will not affect these species, due to the distance from the proposed development. Therefore, only the diving species of bird designated to this SPA are considered further in Section 3.3.5.

3.2.6 Moray & Nairn Coast SPA

The Moray & Nairn Coast SPA is designated for ornithological species with varying foraging and breeding behaviours (JNCC, 2020f).

As the development is ~780m from the shoreline and ~20m below CD, non-diving species of bird will not utilise the vicinity of the development for foraging. Therefore the following species of bird have not been considered for further assessment:

- bar-tailed godwit;
- dunlin;
- osprey;
- greylag goose;
- oystercatcher;

- redshank;
- pink footed goose; and
- waterfowl assemblage.

The aforementioned species of birds' forage on land or in shallow intertidal areas. The site is also 20km from the proposed development, which means that it is unlikely for these species to be in the area whilst considering the vast areas of suitable habitat throughout the eastern coastlines. Pollution and disturbance will not affect these species, due to the distance from the proposed development. Therefore, only the diving species of birds designated in the SPA are considered further in Section 3.3.6.

3.3 Reason for Designated Site or Species Inclusion

The Conservation Objectives of each of the designated sites or species taken forward is provided under each designated site section. Information on each designated site and the subsequent assessment on the qualifying features or species is then provided, including reference to the relevant sections of the Environmental Supporting Document.

3.3.1 Cromarty Firth SPA

Cromarty Firth SPA is a large, narrow-mouthed estuary covering 3247.96ha. The area supports the largest intertidal flats in the Moray Basin. The site extends eastwards for approximately 30 km from the islands at the mouth of the river Conon to the town of Cromarty (JNCC, 2020g).

The conservation objectives for the Cromarty Firth SPA are shown in Table 3.2 and the qualifying features and subsequent assessment are shown in Table 3.3.

A high degree of ecological connectivity has been identified between the Cromarty Firth SPA proposed development due to the proximity of the designated site. This, combined with the techniques likely to be utilised during the construction of the development, means that there is the potential for the works to have an LSE on the SAC. Therefore, it is likely an AA will be required.

Table 3.2 Cromarty Firth SPA Conservation Objectives

Conservation Objective of the Designated Site	Section of the Supporting Document Used to Inform the Assessment
Overarching Conservation Objectives: To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site • Distribution of the species within site; • Distribution and extent of habitats supporting the species; • Structure, function and supporting processes of habitats supporting the species; and • No significant disturbance of the species.	Section 4.1.1: Designated Sites Section 4.1.6: Ornithology Section 6.2.1: Marine Ecology, Otters & Ornithology Section 6.2.2: Water & Seabed Quality

Table 3.3 Cromarty Firth SPA Qualifying Features

Qualifying Features	Summary of Assessment
Common Tern (breeding) Osprey (breeding) Bar-tailed Godwit (wintering) Whooper Swan (wintering) Greylag Goose (wintering) Red-breasted Merganser (wintering) Redshank (wintering) Wigeon (wintering) Waterfowl assemblage (wintering) Marine mudflats and sandflats	The Cromarty Firth SPA is immediately adjacent to the proposed development, and it is certain that ornithological species designated to the site will frequent the vicinity of the works. The common tern, bar tailed godwit and redshank forage on shallow intertidal areas, looking for small fish and bivalves. Should there be a pollution incident during the diffuser installation, from a vessel, then an LSE on these species cannot be ruled out in the absence of mitigation. Consideration is given to diving species in general as they have the ability to forage closer to the proposed development and in subtidal areas. The very localised temporary nature of construction will not give rise to significant disturbance. The development is 400m from the shoreline, where most of the species are likely to utilise for foraging. Diving species will also be present within the water body. As such, all species of bird designated to this site, have the potential to be disturbed by vessel movements. Due to industrial activities and large vessels operating in the immediate area, there will be a level of habitualisation to disturbance and therefore, the affect is not likely to be significant. Nor, are vessels likely to alter the distribution of the species in the designated site. A small section of benthic habitat will be lost due to the placement of the diffuser and concrete matrices on the seabed. The scale is so small it is unlikely to affect the structure, function and supporting habitats within the SPA, however, LSE cannot be fully ruled out. With the implementation of mitigation outlined within the supporting document, there will be no adverse effects on the conservation objectives of the designated site. It is also possible for the proposed development having a positive effect on the conservation objectives of the SPA, due to improved water quality.

3.3.2 Moray Firth SAC

The Moray Firth SAC is large water body, covering 151,274ha. The shallow sandy sediments within the SAC provide important nursing and feeding grounds for various species of fish. Furthermore, providing a migration route for Atlantic salmon and sea trout, and consequently in turn, supplying an important habitat for bottlenose dolphins to forage. Other species include flatfish, cod, and herring etc., who also feed on the sand eels and sprats that thrive in the subtidal sandflats (JNCC, 2020h).

The conservation objectives for the Moray Firth SAC are shown in Table 3.4 and the qualifying features and subsequent assessment are shown in Table 3.5.

A degree of ecological connectivity has been identified between the Moray Firth SAC and the proposed development due to the relatively proximity of the designated site. It is possible that the species may frequent the vicinity of the site however, it is highly unlikely for the

construction activities to have an LSE on the designated features of the SPA. Therefore, it is unlikely that an AA is required.

Table 3.4 Moray Firth SAC Conservation Objectives

Conservation Objective of the Designated Site	Section of the Supporting Document Used to Inform the Assessment
Overarching Conservation Objectives: To ensure that the qualifying features of Moray Firth SAC are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status; and To ensure that the integrity of Moray Firth SAC is maintained or restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature: **For bottlenose dolphin:** • The population of bottlenose dolphin is a viable component of the site; • The distribution of bottlenose dolphin throughout the site is maintained by avoiding significant disturbance; and • The supporting habitats and processes relevant to bottlenose dolphin and the availability of prey for bottlenose dolphin are maintained.	Section 4.1.1: Designated Sites Section 4.1.4: Marine Mammals Section 6.2.1: Marine Ecology, Otters & Ornithology Section 6.2.2: Water & Seabed Quality

Table 3.5 Moray Firth SAC Qualifying Features

Qualifying Feature	Summary of Assessment
Bottlenose dolphin	The SAC is 8km east from the proposed development, therefore there is potential for bottlenose dolphins, that are designated to the site, to frequent the surrounding areas at the time of the works. The scope of the works are negligible in comparison to the size of the SAC and will not affect the population of the bottlenose dolphin as a viable component of the site and breeding will remain unaffected. Temporary disturbance of prey species of the bottlenose dolphin may occur at the time of the works, however there is ample surrounding habitat for this, and the bottlenose dolphin will be able to maintain hunting habits. The shoreline adjacent to the proposed works, is already an established port with various industrial activities taking place and large vessel numbers. The construction activities are negligible in comparison to other vessel operations in the Cromarty & Moray Firth. The bottlenose dolphins who frequent this area, will already have a level of habituation with regards to the industrial activities and vessel movements therefore, the proposed development will not give rise to any further significant disturbance. There is very limited potential for the construction activities to have an LSE on the qualifying features of the SPA, in the absence of mitigation. With the implementation of mitigation outlined within the supporting document, there will be no adverse effects on the conservation objectives of the SAC. As

	previously mentioned, the installation of the diffuser will improve water quality and may have a positive effect.

3.3.3 Moray Firth SPA

The Moray Firth SPA is a mostly shallow body of water (less than 20m) of the northeast coast of Scotland. It is funnel shaped and over sandy substrate, with the exception of a 50m deep channel running from east to west, through muddy substrate.

The maximum tidal range is ~3m, with relatively weak tidal flows due to the Firth being generally sheltered, in comparison to the exposure experienced by the Atlantic west coasts.

The Moray Firth is important for a number of prey species, including seabirds, due to being a highly active spawning ground for many species of fish. Furthermore there is an abundance of bivalve molluscs which further enrich the habitat for these seabirds.

The conservation objectives for the Moray Firth SPA are shown in Table 3.6 and the qualifying features and subsequent assessment are shown in Table 3.7.

There is a limited degree of connectivity between the Moray Firth SPA and the proposed development, due to the mobile nature of all of the designated features of the SPA. It is possible that the species may frequent the vicinity of the site however, it is highly unlikely for the construction activities to have an LSE on the designated features of the SPA. Therefore, it is unlikely that an AA is required.

Table 3.6 Moray Firth SPA Conservation Objectives

Conservation Objective of the Designated Site	Section of the Supporting Document Used to Inform the Assessment
Overarching Conservation Objectives: To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species; To ensure that the qualifying features of Moray Firth SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status; and To ensure that the integrity of Moray Firth SPA is restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature: a. The populations of qualifying features are viable components of the site; b. The distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species; and	Section 4.1.1: Designated Sites Section 4.1.6: Ornithology, Section 6.2.1: Marine Ecology, Otters & Ornithology Section 6.2.2: Water & Seabed Quality

c. The supporting habitats and processes relevant to qualifying features and their prey resources are maintained, or where appropriate restored, at the Moray Firth SPA.	

Table 3.7 Moray Firth SPA Qualifying Features

Qualifying Feature	Summary of Assessment
Great northern diver (wintering) 60 Red-throated diver (wintering) 20 Slavonian grebe (wintering) Greater scaup (wintering) Common eider (wintering) Long-tailed duck (wintering) Common scoter (wintering) Velvet scoter (wintering) Common goldeneye (wintering)	The SPA is 12km east from the proposed development and all species designated to this site are diving birds with maximum diving depths ranging from 7m-60m. There is a very limited potential for the species to be foraging on benthic species such as bivalves that may be lost due to the diffusers and concrete mattresses being placed on top. The effects on the bivalve populations will be negligible and therefore will not affect the conservation objectives of the subsequent birds that potentially forage on them. There is ample suitable habitat for the species of birds designated to this site to forage and the works are extremely localised. As the development is so far from the SPA, vessel movements will not affect the distribution of the qualifying features by way of disturbance. It is slightly more likely that there could be a potential LSE on the deeper diving species, as they could forage closer to the development. However, it is extremely unlikely that a species designated to the site, some 12km away, will be foraging at the exact location of the works. There is ample foraging habitat in the wider area. An LSE can be ruled out, even in the absence of mitigation. Mitigation identified within the supporting document will still be implemented and there will be no negative effects on the conservation objectives of the designated site. As previously mentioned, the installation of the diffuser will improve water quality and may have a positive effect.

3.3.4 Inner Moray Firth SPA

The Inverness and Beauly Firth constitute the Inner Moray Firth SPA, which is 2290.25ha in size and compromised of mostly saltmarshes, sand dunes and intertidal flats. It forms the eastern-most estuarine component of the Moray Firth Basin ecosystem and provides a range of suitable habitats for ornithological species.

The conservation objectives for the Inner Moray Firth SPA are shown in Table 3.8 and the qualifying features and subsequent assessment are shown in Table 3.9.

There is a limited degree of connectivity between the Inner Moray Firth SPA and the proposed development, due to the mobile nature of all of the designated features of the SPA. It is possible that the species may frequent the vicinity of the site however, it is highly unlikely for the construction activities to have an LSE on the designated features of the SPA. Therefore, it is unlikely that an AA is required.

Table 3.8 Inner Moray Firth SPA Conservation Objectives

Conservation Objective of the Designated Site	Section of the Supporting Document Used to Inform the Assessment
Overarching Conservation Objectives: To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site; • Distribution of the species within site; • Distribution and extent of habitats supporting the species; • Structure, function and supporting processes of habitats supporting the species; and • No significant disturbance of the species.	Section 4.1.1: Designated Sites Section 4.1.6: Ornithology, Section 6.2.1: Marine Ecology, Otters & Ornithology Section 6.2.2: Water & Seabed Quality

Table 3.9 Inner Moray Firth SPA Qualifying Features

Qualifying Feature	Summary of Assessment
Goldeneye (wintering) Goosander (wintering) Red-breasted Merganser (wintering) Scaup (wintering) Teal (wintering) Wigeon (wintering)	Due to the 16km distance between the designated site and the proposed diffuser installation, it can be assumed that it is highly unlikely any diving species of bird designated to the site will be within the immediate vicinity of the works. Therefore, any effect on the conservation objectives by way of disturbance or pollution can be ruled out due to the small nature of the works. There is a very limited potential for the species to be foraging on benthic species such as bivalves that may be lost due to the diffusers and concrete mattresses being placed on top. The effects on the bivalve populations will be negligible and therefore will not affect the conservation objectives of the subsequent birds that potentially forage on them. There is ample suitable habitat for the species of birds designated to this site to forage and the works are extremely localised. An LSE can be ruled out, even in the absence of mitigation. Mitigation identified within the supporting document will still be implemented and there will be no negative effects on the conservation objectives of the designated site. As previously mentioned, the installation of the diffuser will improve water quality and may have a positive effect.

3.3.5 Dornoch Firth and Loch Fleet SPA

The Dornoch Firth and Loch Fleet SPA, is a large area covering the two northernmost estuaries in the Moray Basin Ecosystem. It is relatively unaffected by industrial development and consists of a stretch of rocky shore, salt marches, heath, sand dunes and intertidal flats.

Dornoch Firth extends eastwards for 25km from Newton Point, whereas Loch Fleet is a narrow estuary containing extensive sandflats. The Loch is bordered by dunes, pinewood an alderwood providing important habitat for many species.

The conservation objectives for the Dornoch Firth and Loch Fleet SPA are shown in Table 3.10 and the qualifying features and subsequent assessment are shown in Table 3.11.

There is a limited degree of connectivity between the Dornoch Firth and Loch Fleet SPA and the proposed development, due to the mobile nature of all of the designated features of the SPA. It is possible that the species may frequent the vicinity of the site however, it is highly unlikely for the construction activities to have an LSE on the designated features of the SPA. Therefore, it is unlikely that an AA is required.

Table 3.10 Dornoch Firth and Loch Fleet SPA Conservation Objectives

Conservation Objective of the Designated Site	Section of the Supporting Document Used to Inform the Assessment
Overarching Conservation Objectives: To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site; • Distribution of the species within site; • Distribution and extent of habitats supporting the species; • Structure, function and supporting processes of habitats supporting the species; and • No significant disturbance of the species.	Section 4.1.1: Designated Sites Section 4.1.6: Ornithology, Section 6.2.1: Marine Ecology, Otters & Ornithology Section 6.2.2: Water & Seabed Quality

Table 3.11 Dornoch Firth and Loch Fleet SPA Qualifying Features

Qualifying Feature	Summary of Assessment
Teal (wintering) Wigeon, wintering)	Due to the 18km distance between the designated site and the proposed diffuser installation, it can be assumed that it is highly unlikely any diving species of bird designated to the site will be within the immediate vicinity of the works. Therefore, any effect on the conservation objectives by way of disturbance or pollution can be ruled out due to the small nature of the works. There is a very limited potential for the species to be foraging on benthic species such as bivalves that may be lost due to the diffusers and concrete mattresses being placed on top. The effects on the bivalve populations will be negligible and therefore will not affect the conservation objectives of the subsequent birds that potentially forage on them. There is ample suitable habitat for the species of birds designated to this site to forage and the works are extremely localised. An LSE can be ruled out, even in the absence of mitigation. Mitigation identified within the supporting document will still be implemented and there will be no negative effects on the conservation objectives of the designated site. As previously mentioned, the installation of the diffuser will improve water quality and may have a positive effect.

3.3.6 Moray & Nairn Coast SPA

Moray and Nairn Coast SPA is compromised of the Culbin Bars, Findhorn Bay, and Spey Bay. These form the easternmost estuarine component of the Moray Basin ecosystem. It supports a diverse assemblage of wintering waterfowl of exceptional nature conservation and scientific importance.

The conservation objectives for the Moray & Nairn Coast SPA are shown in Table 3.12 and the qualifying features and subsequent assessment are shown in Table 3.13.

There is a limited degree of connectivity between Moray and Nairn Coast SPA and the proposed development, due to the mobile nature of all of the designated features of the SPA. It is possible that the species may frequent the vicinity of the site however, it is highly unlikely for the construction activities to have an LSE on the designated features of the SPA. Therefore, it is unlikely that an AA is required.

Table 3.12 Moray & Nairn Coast SPA Conservation Objectives

Conservation Objective of the Designated Site	Section of the Supporting Document Used to Inform the Assessment
Overarching Conservation Objectives: To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site • Distribution of the species within site • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species • No significant disturbance of the species	Section 4.1.1: Designated Sites Section 4.1.6: Ornithology, Section 6.2.1: Marine Ecology, Otters & Ornithology Section 6.2.2: Water & Seabed Quality

Table 3.13 Moray & Nairn Coast SPA Qualifying Features

Qualifying Feature	Summary of Assessment
Red-breasted merganser (wintering) Wigeon, wintering)	Due to the 20km distance between the designated site and the proposed diffuser installation, it can be assumed that it is highly unlikely any diving species of bird designated to the site will be within the immediate vicinity of the works. Therefore, any effect on the conservation objectives by way of disturbance or pollution can be ruled out due to the small nature of the works. There is a very limited potential for the species to be foraging on benthic species such as bivalves that may be lost due to the diffusers and concrete mattresses being placed on top. The effects on the bivalve populations will be negligible and therefore will not affect the conservation objectives of the subsequent birds that potentially forage on them. There is ample suitable habitat for the species of birds designated to this site to forage and the works are extremely localised. An LSE can be ruled out, even in the absence of mitigation. Mitigation identified within the supporting document will still be implemented and there will be no negative effects on the conservation objectives of the designated site. As previously mentioned, the installation of the diffuser will improve water quality and may have a positive effect on conservation objectives.

4 Cumulative & In-Combination Effects

Cumulative and in-combination effects of the proposed Invergordon diffuser installation were assessed as part of the HRA process and were assessed for the following designated sites and their qualifying features:

- Cromarty Firth SPA;
- Moray Firth SAC;
- Moray Firth SPA;
- Inner Moray Firth SPA;
- Dornoch Firth and Loch Fleet SPA; and
- Moray and Nairn Coast SPA.

There are various marine developments that will be in construction during the proposed diffuser installation at the Invergordon distillery LSO. There is a large operational port that has been considered due to their size and locality to the works. Note that only marine projects have been considered due to the proposed diffuser installation works being below MHWS and that the qualifying features of each designated site utilise the marine environment.

- Invergordon Service Base – A large operational marine service base providing facilities for renewables, oil & gas, decommissioning and cruise liner industries - **300m to the West;**
- Nigg Energy Park Cromarty Firth Marine Licence 06291 - Removal of Two Dolphin Moorings – **6.5km to the East;** and

- Nigg Slipway, Cromarty Firth Marine Licence 07218 - Slipway Repair - **6.5km to the East.**

These developments, in terms of scale and potential impact are greater than those from the diffuser that Grissan propose to install at the end of Invergordon distillery LSO. The impacts from the diffuser installation works in comparison to these developments are negligible and are unlikely to contribute towards cumulative or in-combinations effects for any of the receptors identified as part of this HRA screening report.

5 Conclusion

The HRA predicted that there is some potential for residual, adverse impacts on the designated features of the Cromarty Firth SPA in the absence of mitigation. No cumulative or in-combination effects are anticipated. Information from this report can be used by the competent authority, in conjunction with the relevant sections of the Supporting Document as identified in this report, to carry out the HRA and any necessary AAs. It will be up to the competent authority to ascertain whether the proposal will adversely affect the integrity of the designated sites considered.

6 References

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7 Glossary

Acronym	Definition
AA	Appropriate Assessment
EIAR	Environmental Impact Assessment Report
HRA	Habitats Regulation Assessment
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effects
SAC	Special Areas of Conservation
SPA	Special Protection Area