

Marine Licence Application for Construction Projects

Cooke Aquaculture Scotland Mid Yell Processing Plant – Replacement and extension of existing outfall pipeline: Supplementary information

1. Description of proposed development

The proposed development is to replace and extend the existing outfall pipeline from Cooke Aquaculture Scotland's (CAS) Mid Yell Fish Processing Plant, which discharges fish processing water into Mid Yell Voe.

The existing outfall discharge point is located at approximately mean low water springs (MLWS) level adjacent to the processing plant (see Figure 1.1). The proposed development would replace the existing pipeline (100 mm internal diameter) with a larger diameter pipeline (140.7 mm internal diameter) and extend the pipeline (and hence outfall location) approximately 250 m offshore (Figure 1.1). This will allow for improved dilution of the processing water from the plant.

The proposed development would require a number of consents and licenses as listed below:

- i. A licence for the discharge of effluent to the marine environment from SEPA (Submitted, in determination, CAR/L/5001808);
- ii. Planning Permission (for works landward of Mean Low Water Springs (MLWS) level) from Shetland Islands Council (SIC) Development Management;
- iii. A Marine Licence (for works below Mean High Water Springs (MHWS) level) from Marine Scotland Licensing Operations Team (MS-LOT);
- iv. A Marine Works Licence (for works below MHWS) from SIC Coastal and Marine Planners;
- v. A Consent for Marine Works from Crown Estate Scotland (CES).

This document provides supplementary information relating to the elements of the proposed works which would occur below the MHWS level, to accompany the consent applications for (iii), (iv) and (v) listed above.

The extent of the proposed works below the MHWS level are shown in Figure 1.1. The figure also shows the nature conservation designations within Mid Yell Voe. Additional technical drawings showing a location plan, the existing site plan, the proposed site plan and longitudinal sections of the proposed pipeline are shown in the accompanying Designer Risk Assessment and Method Statement (RAMS) document.

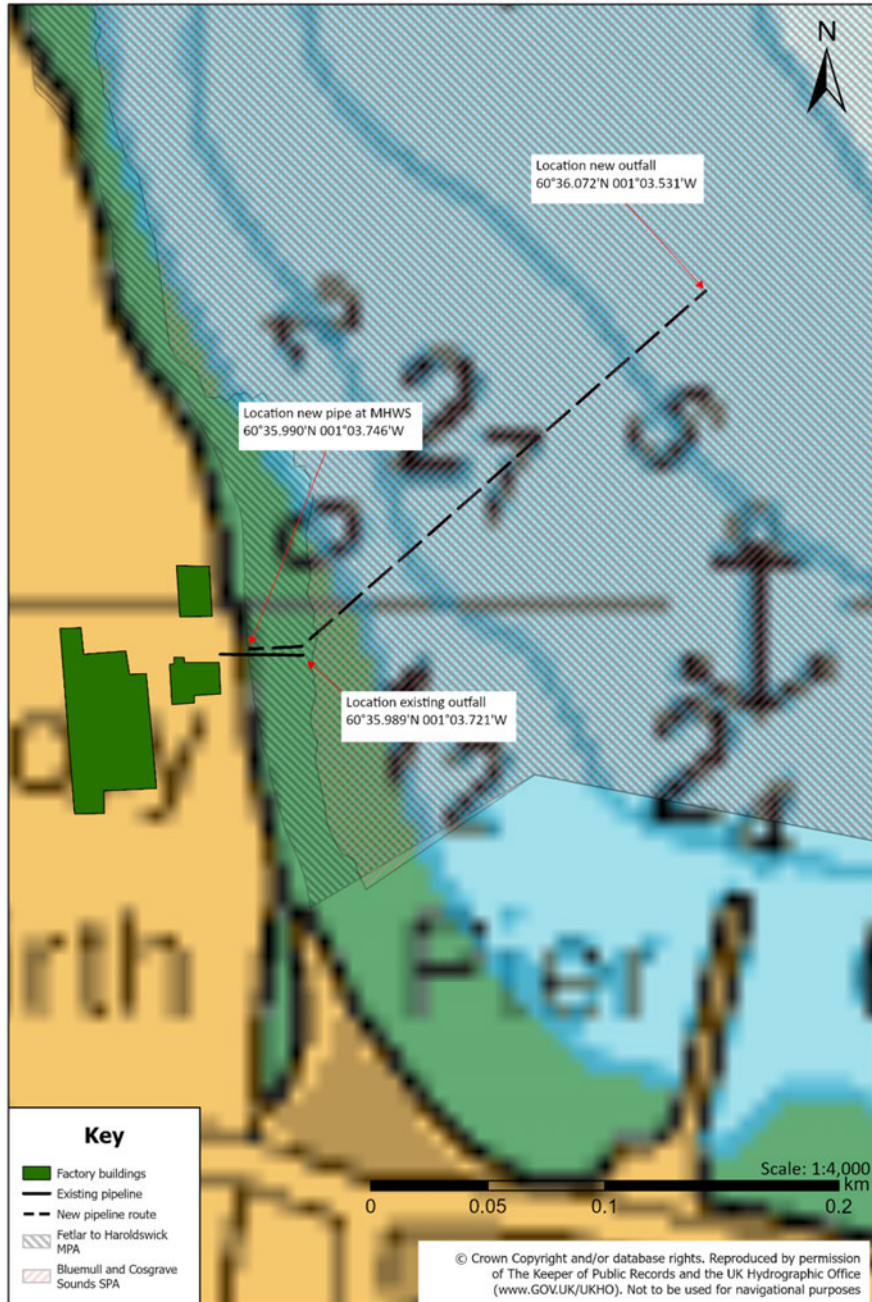


Figure 1.1 Location of the proposed extended outfall pipeline in Mid Yell Voe, Shetland. Note, the landward boundaries of the MPA and SPA follow the MHWS and MLWS levels respectively. The proposed new pipeline route is only shown seaward from MHWS. Data source Marine Scotland (2022)

2. Method statement

This section describes the works to be undertaken below MHWS, which are the elements of the proposed development relevant to the marine consents listed in Section 1. The accompanying RAMS document provides full details of the proposed onshore, foreshore (intertidal) and offshore (subtidal) elements of the works. Consent for the onshore elements of the project (landward from MLWS) is being sought via planning permission from the SIC.

Subject to receiving all of the required consents, work would commence in April 2023. Elements of the works which would take place on the foreshore (between MHWS and MLWS) and offshore (below MLWS) are listed below:

- Access of construction plant (excavator, long reach excavator and dumper) for work on the steep slope and rock armour (approximately 2.5 m above MHWS level; see drawing CS22.044-03 in the accompanying RAMS document);
- Installation of the new pipeline across the intertidal seaward to 250 m offshore;
- Removal of the redundant pipeline across the foreshore.

In total, the duration of the work below MHWS is estimated to be 17 days. Works would be undertaken during daylight hours.

Details of the plant and equipment relevant to the work aspects listed above are shown in Tables 2.1 to 2.3. The detailed methodology is presented in Sections 2.1 to 2.3 below.

Table 2.1. Plant and equipment (foreshore)

Description	Quantity
Excavators - 2.5 tonnes and 13 tonnes (long reach)	1 each
All terrain dumper	1

Table 2.2. Plant and equipment (offshore)

Description	Quantity
Support / rescue vessel	1
Barge with crane	1
Electrofusion or Butt-fusion equipment	1 set

Table 2.3. Materials and supplies (offshore)

Description	Quantity
160 mm OD HDPE pipe coils – SDR17	250 m
3.0 x 1.5 x 0.15 m Concrete mattresses	38
22.5 deg HDPE bend (electrofusion)	1

2.1 Access of construction plant/equipment for work on the steep slope and rock armour

The bank and rock armour adjacent to the factory are above MHWS, however, construction plant will need to access the area and undertake the work from the foreshore. Details of this access are described below.

- A temporary ramp will be required at Linkshouse near the Mid Yell Care Centre for Plant/Equipment access to the beach. Ramp to be formed using 4" crushed rock (or equal approved equivalent) and finished with a Type 1 capping layer. (Refer to Drawings Number CS22.044-08 in accompanying RAMS document for details). The ramp will remain in position for less than 28 days. Note, the ramp will be located above MHWS and hence is not listed as a temporary deposit in the marine licence application form.
- Long reach excavator and dumper to access the beach during low tide, move across the beach and position below (East of) the factory.

2.2 Installation of HDPE pipeline from the Intertidal Zone to Subtidal Zone (250 m Offshore)

2.2.1 Offshore (Subtidal) Installation

- Final/detailed methodology to be agreed with the Offshore Installation Contractor prior to works commencing on site.
- Offshore installation contractor to mobilise to site (Standby/Rescue Vessel and Barge with Crane).
- Linkshouse Pier to be used as a loading point for the offshore materials. (Concrete Mattresses etc.).
- Civils contractor to excavate trench from below MHWS to MLWS using the long reach excavator.
- A weather window to be checked and agreed for the offshore phase of the project.
- Civils contractor to spread 10mm pipe bedding material (min. 150 mm deep) across the bottom of the trench.
- Barge to attend site with the 160 mm pipe coil secured on board.
- End of pipe to be attached onto long reach excavator and pulled up to MHWS area.
- Locate the end of the pipe on the beach from the onshore phase of the installation.
- Remove the temporary cap from the end of the pipe and clean/prepare for jointing.
- Electrofusion or Butt-Fusion joint to be carried out to connect the lines on the beach.
- Barge to dispense the line, heading offshore to the discharge location in Mid Yell Voe. (Easting:451640m, Northing: 1191235m).
- Electrofusion or Butt-Fusion joint to be carried out as required, this is to be kept to a minimum by using 100m and 50m pipe coils.
- Support vessel to locate end of outfall line at agreed co-ordinates and hold line in this location.
- Section of line to be water filled from IC04 and air vented to reduce the buoyancy of the line.

- Barge to commence placing concrete mattresses at 6.0 m centres over the outfall line starting below MLWS. Line to be sunk on the seabed in a controlled manner taking care not to over stress/kink the line. (Refer to Drawing Number CS22.044-04 Rev A and CS22.044-06 in accompanying RAMS document).
- Barge to continue installing concrete mattresses until the line is fully on the seabed.
- Civils contractor to backfill the intertidal section of line with 10 mm pipe bedding material (min. 150 mm deep). Suitable existing excavation material to be used to backfill remainder of the trench to original beach/ground level.
- Note no intertidal material is to be removed from site, excess material to be spread out/graded to suit existing beach/ground levels.

2.2.2 Post Subtidal Installation Survey

- i. The co-ordinates of the outfall discharge location on the seabed to be checked and confirmed.
- ii. The ballast (concrete mattresses) holding the outfall line are all properly sitting on the bottom contour and the line is not forced to bridge any changes in the seabed elevation.
- iii. The outfall pipe is not resting on any rock, debris or materials that could cause damage.
- iv. Any auxiliary lines, such as hoses, ropes, buoys, or other equipment used during the installation has been removed.

2.3 Remove Redundant Outfall Line

Note that the method below includes elements of the works above MHWS in addition to works below MHWS.

- Excavate and expose the redundant steel line from the side of the concrete bund at the Water Treatment plant to the top of the bank.
- Cut line from the side of the concrete bund to the top of the bank into manageable pieces and remove offsite for recycling.
- Seal the exposed outlet at the side of the concrete bund.
- Backfill the trench, compacting in 150mm layers to sub-base level.
- Using the long reach excavator from the beach, expose the redundant line from top of the bank to MLWS.
- Cut the steel line at the bottom of the bank.
- Pull the section of line on the slope down to the beach.
- Cut the remainder of the steel line into manageable pieces and remove offsite via Linkhouse area for recycling.
- Backfill the line from top of the bank to MLWS.
- Temporary access ramp at Linkhouse to be removed and made good. Note the ramp is to be removed within 28 days of placement.

3. Potential impacts and mitigation measures

This section considers the potential impact of the proposed development (during construction and operation) on environmental receptors and others users of the marine environment in the vicinity of the proposed works (i.e. in Mid Yell Voe).

3.1 Environmental receptors

3.1.1 Sensitive species or habitats

The proposed development is located within the following designated sites for nature conservation (Table 3.1).

Table 3.1. Designated nature conservation sites and protected features (NatureScot, 2022 a, b)

Site name	Protected features
Fetlar to Haroldswick MPA	Black guillemot; Circalittoral sand and coarse sediment communities; Maerl beds; Horse mussel beds; Kelp and seaweed communities on sublittoral sediment; Shallow tide-swept coarse sands with burrowing bivalves; Marine geomorphology of the Scottish Shelf Seabed [Redacted]

Although there are additional designated nature conservation sites in the wider area (Hascosay Special Area of Conservation (SAC), Hascosay Site of Special Scientific Interest (SSSI) and Fetlar SPA approximately 3.6 km, 3.6 km and 4.3 km from the proposed development respectively), this assessment focusses on the designated sites and sensitive features listed below which were highlighted for further consideration by NatureScot and the SIC Coastal and Marine Planning during pre-application consultation:

- Maerl beds and Horse mussel beds in the Fetlar to Haroldswick MPA;
- Red-throated divers (during the breeding season) in the Bluemull and Colgrave Sounds SPA;
- Otters which are a European Protected Species under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and which may be present in the area.

Maerl beds and horse mussel beds

Potential effects on benthic species and habitats include a physical change to another substrate (during construction and operation) and abrasion/disturbance of the substrate on the surface of the seabed (during construction only).

As advised by NatureScot during pre-application consultation in May 2022, a basic visual survey of the seabed within the proposed pipeline corridor was undertaken in November 2022 to establish whether maerl beds or horse mussel beds were present.

The full visual survey report is presented in Appendix A. In summary, the ROV footage showed that between water depths of 11 m and approximately 3.5 m the survey area consisted of sand, and the biota present (lug worms *Arenicola marina*, scallop, starfish *Asterias rubens*, hermit crabs, razor shells *Ensis* species and sea urchin *Echinus esculentus*) were indicative of the biotope complex Infralittoral Muddy Sand (SS.SSa.IMuSa). Below 3.5m depth, the cover of seaweed (predominately sugar kelp *Saccharina latissima* with other unidentified seaweed species) increased notably, possibly indicative of the habitat type 'Kelp and seaweed communities on sublittoral sediment' (SS.SMp.KSwSS). However, as only the canopy could be observed in the ROV footage, the underlying seaweed species could not be classified.

In summary, no species of conservation importance, including horse mussels or maerl, were observed in the ROV footage within the footprint of the proposed pipeline. Hence the potential impacts of the proposed project on these sensitive receptors has not been considered further.

[Redacted]

Duration of marine works

The duration of the works that would take place on the foreshore (i.e. between MHWS and MLWS) and offshore (below MLWS) are of relatively short duration and are estimated below:

- Access of long reach excavator and dumper via the foreshore for work on the steep slope and rock armour (above MHWS level) and installation of the new pipeline across the foreshore – estimated duration 10 days;
- Installation of the new pipeline seaward to 250 m offshore and removal of the redundant pipeline across the foreshore – estimated duration 7 days.

Noise

- No loud, low to mid frequency (10Hz to 10kHz) impulsive noise will be produced by the construction activity below MHWS;
- Two vessels will be used for the offshore installation of the pipeline. The largest will be a barge with a crane, comparable to an aquaculture site service vessel (e.g. 24 m in length and 8 m in width). The general engine noise recorded on the deck of a typical CAS workboat steaming to site measured in 2015/2016 was 81 dBA (measured from point of source; recorded during light wind conditions approximately 5-10 mph).

Vessel traffic (subtidal installation only)

- During construction, the two vessels (a standby/rescue vessel and a barge with a crane) will transit between the Linkhouse Pier and the pipeline corridor, a distance of approximately 300m;
- The following vessel management measures will be implemented:
 - Daily vessel routes and activity will be as consistent as possible to minimise the area which is potentially disturbed;
 - Vessel speeds will be limited to 5 knots (consistent with the SHA byelaw for Small Harbours and Piers which incorporates Mid Yell Voe) or less which is considered to be sufficiently low to allow protected species to safely vacate vessel transit routes;
 - Over-revving of engines will be avoided to minimise noise disturbance;
 - All staff aboard vessels will follow standard maritime procedures and maintain a look out for Red-throated divers along the vessel transit route
 - Where feeding Red-throated divers are observed within regular transit routes, the vessels course will be adjusted to avoid disturbance where possible.

[Redacted]



[Redacted]



[Redacted]

3.1.2 Other relevant environmental issues

Water Quality

The discharge of trade effluent to the marine environment is regulated by SEPA under the Water Environment (Controlled Activities) (Scotland) Regulations 2011.

A CAR licence application (CAR/L/5001808) has been submitted to SEPA for the discharge of the effluent arising from the factory's processing activities (fish blood and water), and the cleaning products and wash-down (rinse) water that are used daily at the end of processing activities. Prior to discharge, all effluent would pass through a multi-stage wastewater treatment system, including multiple filters to remove particulate matter, a fractionator to remove proteins and an ozonated contact tank to disinfect the effluent and remove any potential pathogens. Further to passing through the wastewater treatment system, the effluent will be subject to initial and secondary dilution factors as it mixes in the marine environment. A modelling report, approved by SEPA's modelling team and submitted in support of the CAR licence application indicates that the discharge will continue to meet the Environmental Quality Standards of the Mid Yell Voe waterbody.

A detailed chemical risk assessment was also undertaken to support the CAR licence application. This assessment calculated the concentration of the cleaning chemicals in the effluent discharged to the marine environment (accounting for chemical reactions, degradation and partitioning (removal) of chemicals during transit through the wastewater settlement tanks and treatment system) and compared these concentrations to Predicted No Effects Concentrations (PNECs) to assess the risk to the environment. The assessment indicated that for all cleaning chemicals used, and their potential by-products, no risk to the marine environment is expected further to initial dilution in the marine environment (i.e. at the concentration within the plume when it reaches the surface).

Shellfish Water Protected Areas and Shellfish Harvesting Areas

The proposed development is located within the Mid Yell Voe Shellfish Water Protected Area (SWPA64; current classification good; see https://www.sepa.org.uk/media/593957/swpa-64_mid-yell-voe.pdf) (Figure 3.2). The proposed new pipeline and associated 100m mixing zone are also in the vicinity of (but not overlapping with) two classified Shellfish Harvesting Areas (not shown in Figure 3.2): Mid Yell Voe and Mid Yell Voe East, both currently classified as Category A (see https://www.foodstandards.gov.scot/downloads/Annual_Classification_Document_-_2022-2023_-_All_Sites.pdf).

As the effluent to be discharged does not contain any sewage, it is judged that there is no risk to the designated SWPA or the Shellfish Harvesting Areas, both of which are classified based on *E. coli* levels. Furthermore, as noted above, the modelling report and chemical risk assessment undertaken to support the CAR licence application indicate that all waterbody EQS will continue to be met and that there is no risk to the environment from any components of the effluent. Hence it is considered that there is no risk to the SWPA or the classified Shellfish Harvesting Areas. Note, potential impacts on the Aquaculture Production Businesses in Mid Yell Voe are considered in Section 3.2.2



Figure 3.2 Active shellfish aquaculture sites in Mid Yell Voe. Data source: Marine Scotland (2022).

Invasive non-native species

The proposed project will deploy 38 concrete mattresses from below MLWS to the end of the pipeline to hold the pipe securely in place. The introduction of artificial substrate into the marine environment has the potential to act as a vector for the introduction of INNS into the marine environment or as a 'stepping stone' for the spread of marine invasive non-native species (INNS) along or between coastlines (Collin *et al.*, 2015).

The equipment to be placed below MHWS for the proposed development (HDPE pipeline and concrete mattresses) will be new equipment and hence there is no risk of transfer of INNS into the Mid Yell Voe from other marine areas or aquaculture sites. Furthermore, we plan to follow the guidance in the document 'A Biosecurity Plan for the Shetland Islands' (Collin *et al.*, 2015) to minimise the potential risks of introducing/spreading Invasive Non-Native Species (INNS) during the proposed project.

3.2 Other receptors

3.2.1 Marine Heritage

A search of the National Monuments Record of Scotland (NMRS), accessed using the Canmore and Pastmap online databases, was conducted. The search identified the one heritage feature within the footprint of the proposed development which is described in Table 3.3.

Table 3.3 Output of heritage desk-based assessment

Database	Dataset ID	Name	Easting	Northing	OS NGR	Classification
HERSHET	8214	Reafirth	451448	1191072	HU 51448 91072	Midden

A meeting has been requested with the Shetland Amenity Trust Regional Archaeologist to discuss the extents and location of the identified feature to enable an assessment of potential impacts and possible mitigation measures if there is any potential impact pathway between the heritage feature identified and the proposed works.

3.2.2 Other local marine users/stakeholders

This section considers the potential effects of the proposed development on the operations of, and access to safe anchorage for, other users of the marine environment in Mid Yell Voe. Such receptors include commercial vessels (related to Aquaculture Production Businesses (APBs) and commercial fisheries activity) and recreational vessels.

During the construction phase, potential effects include obstruction of other commercial vessel operations in Mid Yell Voe, obstruction of access to safe anchorage or an accident/incident involving construction craft. During the operational phase, potential effects include the new pipeline and concrete mattresses posing a snagging risk to towed fishing gear and hence potential displacement of fishing vessels from the development footprint.

There are three shellfish Aquaculture Production Businesses (APBs) in Mid Yell Voe, operated by one company (see Figure 3.2). The distances between the centre of the active shellfish aquaculture sites and the proposed new outfall location are shown in Table 3.4. Based on these distances, and the short duration of the works in the marine environment (estimated to be approximately seven days) it is not anticipated there will be any effects on the operations of the APBs during the pipeline construction phase. No objections were raised by the company which owns the shellfish farms during pre-application consultation.

Table 3.4 Distance between the shellfish farms in Mid Yell Voe and the new outfall location

Site name	Site ID	Distance from farm centre to proposed outfall location
Cambs	SS0633	856
West of Hevdagarth	SS0907	309
Bunyasand	SS0882	740

Commercial fisheries in and around Mid Yell include creeling for crabs (primarily Brown crab but also velvet crab, green crab and lobster), potting for whelks (buckies) and dredging for King scallops. Given the short duration of the construction works and the location of the proposed pipeline (within 250 m of the shoreline, with the new outfall located in approximately 6-7 m of water depth), it is not anticipated there will be any effects on inshore commercial fisheries during the construction or operational phase of the proposed development. No objections were raised by the Shetland Fishermen’s Association or the Shetland Shellfish Management Organisation during pre-application consultation.

During the construction phase, two vessels (a standby/rescue vessel and a barge with a crane) will transit between the Linkshouse Pier and the pipeline corridor, a distance of approximately 300m. As noted above, the estimated duration of the ‘offshore’ works is estimated to be seven days. Regarding navigational safety, information on the areas and time periods of the construction works and the vessels involved will be submitted to the Statutory Harbour Authority to enable Notice to Mariners to be published and made available to all vessels. At the time of writing of this application, no concerns had been received from the SHA in response to pre-application consultation.

An example of the information sent to the local marine users/stakeholders referred to above is shown in Appendix C.

4. References

Collin, S.B., Maclver, K., Shucksmith, R. (2015). A Biosecurity Plan for the Shetland Islands. Available online at: <https://www.shetland.uhi.ac.uk/t4-media/one-web/shetland/research/document/marine-spatial-planning/biosecurity-plan.pdf> [accessed 14/12/2022]

Marine Scotland (2022). Scotland's Aquaculture, Site details Available at: http://aquaculture.scotland.gov.uk/data/site_details.aspx [accessed 14/12/2022]

NatureScot (undated). Standing advice for planning consultations – Otters. Available online at: <https://www.nature.scot/doc/standing-advice-planning-consultations-otters> [accessed 14/12/2022]

NatureScot (2022a). NatureScot Fetlar to Haroldswick MPA(NC) SiteLink webpage. Available at: <https://sitelink.nature.scot/site/10409> [accessed 14/12/2022]

NatureScot (2022b). NatureScot Bluemull and Colgrave Sounds SPA SiteLink webpage. Available at: <https://sitelink.nature.scot/site/10483> [accessed 14/12/2022]



Appendix A

Mid Yell Benthic Visual Survey Report



November
2022

Mid Yell Processing Plant Outfall Extension Benthic Visual Survey Report

1. Introduction

This benthic visual survey report has been prepared by Cooke Aquaculture Scotland (CAS) in support of a proposal to replace and extend the Mid Yell Processing Plant's current outfall pipeline into deeper more dispersive waters within Mid Yell Voe.

The visual survey along the proposed extended pipeline footprint was completed on 09/11/2022 by Roving Eye Enterprises on behalf of CAS. This was further to pre-application advice from NatureScot received on the 17th May 2022, to undertake a visual survey of the proposed pipeline route to check for the presence of horse mussel beds or maerl beds which are protected features within the Fetlar to Haroldswick MPA.

This report used the video data collected at the location to describe and characterise the baseline benthic environment and in particular, highlight any species or habitats of conservation importance.

2. Survey Methodology

2.1 Survey Design

The transect route was designed to start just beyond the proposed new outfall location, along the pipeline corridor, and end as close as possible to the existing outfall location (see Figure 2.1). The planned and actual start and end locations of the survey transect are shown in Table 2.1 and the location of the images taken from the ROV survey footage are shown in Figure 2.1.

Table 2.1. The planned and actual visual benthic survey transect at Mid Yell.

Transect	Start		End	
	Easting (OSGB)	Northing (OSGB)	Easting (OSGB)	Northing (OSGB)
Planned	451652	1191247	451488	1191092
Actual	451651	119253	451479	1191084

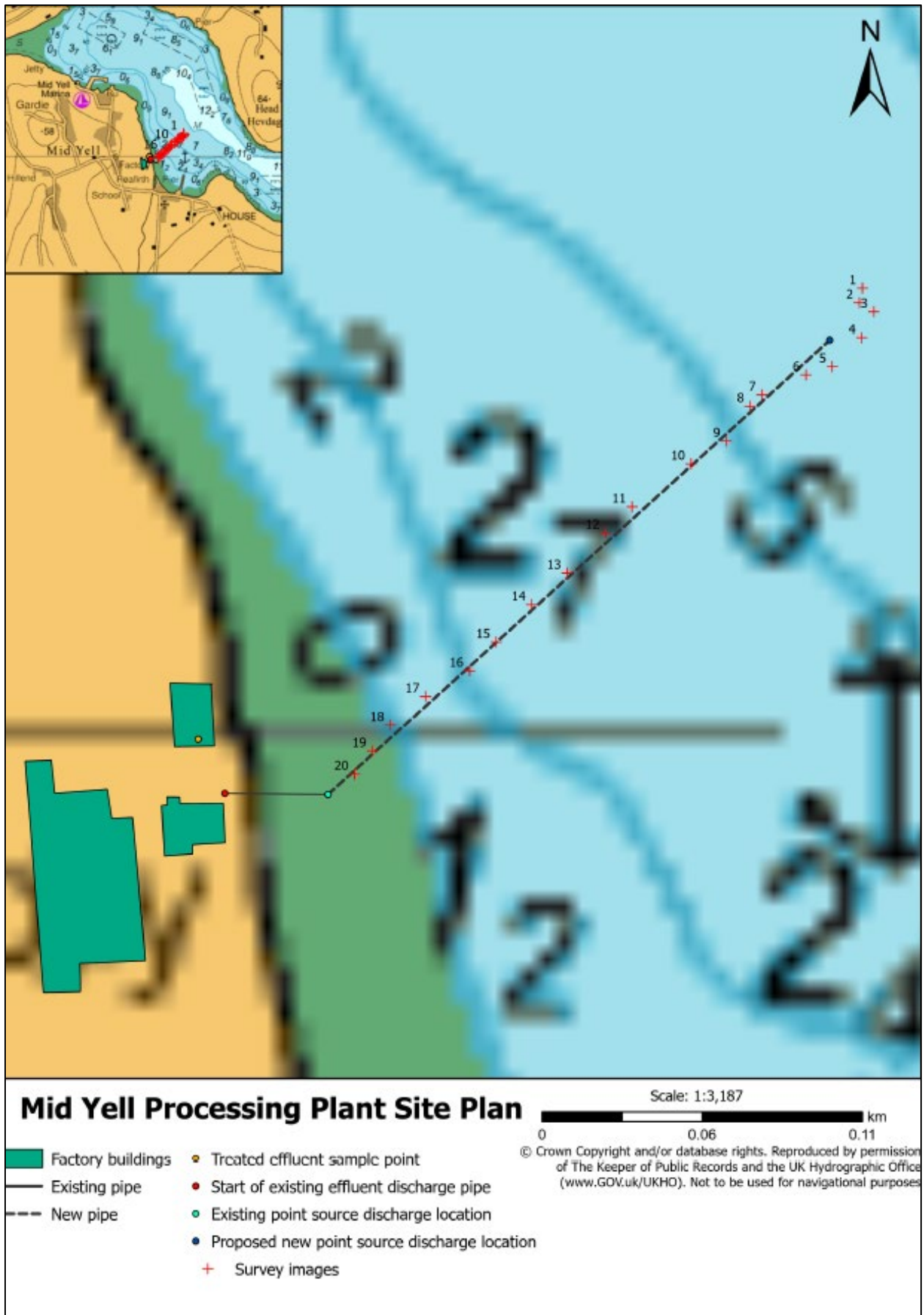


Figure 2.1. Locations of the still images taken from the ROV survey footage at Mid Yell

2.3 Survey Analysis and Interpretation

Survey video footage was inspected by CAS and used to describe the biota and seabed characteristics in the area. Biotope types were identified and classified according to the JNCC Marine Habitat Classification for Britain and Ireland (JNCC, 2015).

3. Survey observations

3.1 Seabed characteristics

The sediment type across the area surveyed was fairly uniform with sand being the predominant sediment, although there were some presence of shell/pebbles observed towards the end of the transect in the shallower depths. The depth along the transect ranged from 11.4 m to 0.3 m.

3.2 Biota

Appendix 1 provides a description of the biota observed in the still images taken from the ROV footage and the images are presented in Appendix 2. In general there was limited species diversity across the transect. The most commonly observed fauna were scallops and the burrows and casts of lug worms. Fauna occasionally observed were Starfish (*Asterias rubens* and possibly *Solaster Endeca*), crabs (hermit crabs and *Liocarcinus* species), razor clams (*Ensis* species) and fish (goby; unidentified small species in water column). A possible feather star was noted in image T1-2.

Small patches of seaweed were observed at the start of the transect in deeper water, however seaweed cover increased as water depth decreased, with sugar kelp (*Saccharina latissima*) being the dominant seaweed species. Other unidentified seaweed species were also present towards the end of the transect (including possibly Sea oak *Halidrys siliquosa* and *Ulva* species).

No species of conservation importance including horse mussels or maerl were observed in the ROV footage.

4. Description of Habitat

It is not possible to characterise the seabed to biotope level based on the ROV survey. However the survey area displayed characteristics of the main habitat type 'Sublittoral sands and muddy sands' (SS.SSa) according to the JNCC Marine Habitat Classification for Britain and Ireland (JNCC, 2015).

Between 11m and approximately 3.5m water depth, the survey area consisted of sand and the presence of lug worms (*Arenicola marina*), scallop, starfish (*Asterias rubens*), hermit crabs, razor shells (*Ensis* species) and sea urchin (*Echinus esculentus*), indicative of the biotope complex Infralittoral Muddy Sand (SS.SSa.IMuSa).

Below 3.5m depth, the cover of sugar kelp (*Saccharina latissima*) and other unidentified seaweed species increased notably, possibly indicative of the habitat type 'Kelp and seaweed communities on sublittoral sediment' (SS.SMp.KSwSS). However, as only the canopy could be observed in the ROV footage, the underlying seaweed species cannot be classified.

5. References

JNCC (2015) The Marine Habitat Classification for Britain and Ireland Version 15.03. Available from: <https://mhc.jncc.gov.uk/>

Appendix 1

Table A1 describes the location, substrate and biota for each image shown in Appendix 2.

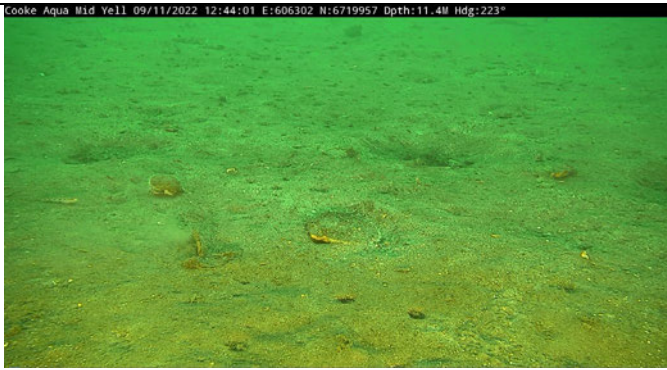
Table A1 Descriptions of images taken from the visual survey at the proposed Mid Yell outfall extension corridor.

Image	Easting	Northing	Depth (m)	Substrate	Biota
AT1-1	606302	6719957	11.4	Sand	Sand mason worm (<i>Lanice conchilega</i>) Lug worm (<i>Arenicola marina</i>) casts and burrows King scallop (<i>Pecten maximus</i>) Queen scallop (<i>Aequipecten opercularis</i>) Fish (possible goby <i>Pomatoschistus</i> species)
T1-2	606301	6719952	11.2	Sand	King scallop (<i>Pecten maximus</i>) Possible feather star (<i>Antedon</i> species)
T1-3	606306	6719949	11.2	Sand	King scallop (<i>Pecten maximus</i>)
T1-4	606302	6719940	10.6	Sand	Lug worm (<i>Arenicola marina</i>) burrows and casts Hermit crab Sugar kelp (<i>Saccharina latissima</i>)
T1-5	606292	6719930	10.2	Sand	Starfish (possibly <i>Solaster endeca</i>)
T1-6	606283	6719926	9.6	Sand	Urchin (<i>Echinus esculentus</i>) Sugar kelp (<i>Saccharina latissima</i>)
T1-7	606269	6719919	8.3	Sand	Lug worm (<i>Arenicola marina</i>) burrows and casts Mixed seaweed including kelp, with some encrusting fauna.
T1-8	606265	6719915	7.8	Sand	Lug worm (<i>Arenicola marina</i>) burrows and casts Hermit crab Sugar kelp (<i>Saccharina latissima</i>)
T1-9	606257	6719903	7.5	Sand	Lug worm (<i>Arenicola marina</i>) burrows and casts Starfish (possibly <i>Asterias rubens</i>) Sugar kelp (<i>Saccharina latissima</i>)
T1-10	606245	6719895	6.4	Sand	Razor shell (<i>Ensis</i> species) Mixed seaweed
T1-11	606225	6719880	5.0	Sand	Sugar kelp (<i>Saccharina latissima</i>) Lug worm (<i>Arenicola marina</i>) burrows and casts

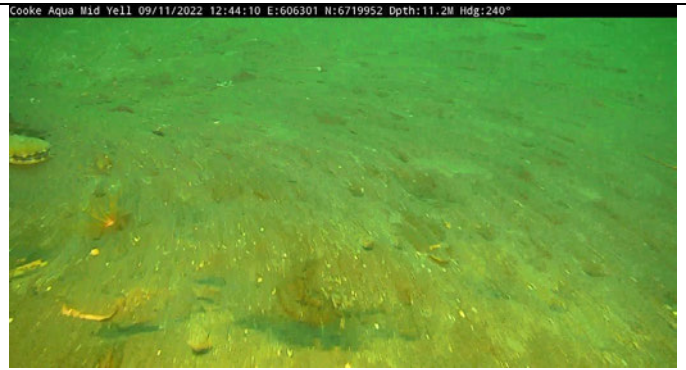
					Starfish (<i>possibly Asterias rubens</i>) Unidentified tube worms
T1-12	606216	6719870	4.7	Sand	Lugworm casts and burrows Razor shell (<i>Ensis</i> species) Sugar kelp (<i>Saccharina latissima</i>)
T1-13	606203	6719856	4.3	Sand	Lug worm (<i>Arenicola marina</i>) burrows and casts Sugar kelp (<i>Saccharina latissima</i>) Other mixed seaweed including possibly <i>Ulva</i> species
T1-14	606192	6719845	3.9	Sand	Lug worm (<i>Arenicola marina</i>) burrows and casts Razor shell (<i>Ensis</i> species) Sugar kelp (<i>Saccharina latissima</i>) Other mixed seaweed including possibly <i>Ulva</i> species
T1-15	606180	6719832	3.4	Sand	Sugar kelp (<i>Saccharina latissima</i>) Sea oak (<i>Halidrys siliquosa</i>) Other mixed seaweed including possibly <i>Ulva</i> species
T1-16	606171	6719822	2.7	Sand	Sugar kelp (<i>Saccharina latissima</i>) Unidentified seaweed (possibly <i>Ulva</i> species)
T1-17	606156	6719813	1.7	Sand	Sugar kelp (<i>Saccharina latissima</i>)
T1-18	606144	6719802	0.6	Sand	Sugar kelp (<i>Saccharina latissima</i>)
T1-19	606138	6719793	0.4	Sand	Unidentified sea squirt (possibly <i>Ascidia conchilega</i>) Sugar kelp (<i>Saccharina latissima</i>)
T1-20	606133	6719785	0..3	Sand	Sugar kelp (<i>Saccharina latissima</i>) Other mixed seaweed

Appendix 2

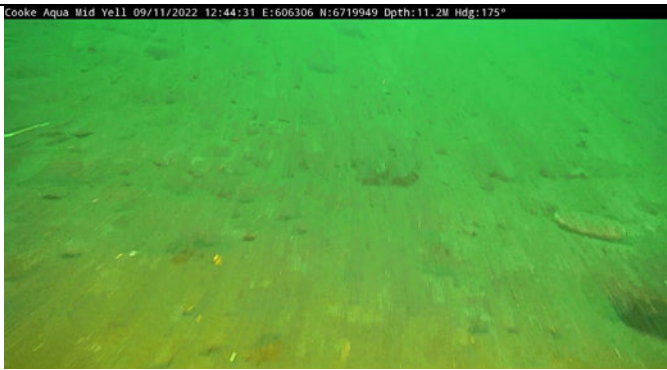
TRANSECT IMAGES



T1 - 1



T1 - 2



T1 - 3



T1 - 4



T1 - 5



T1 - 6



T1 - 7



T1 - 8



T1 - 9



T1 - 10



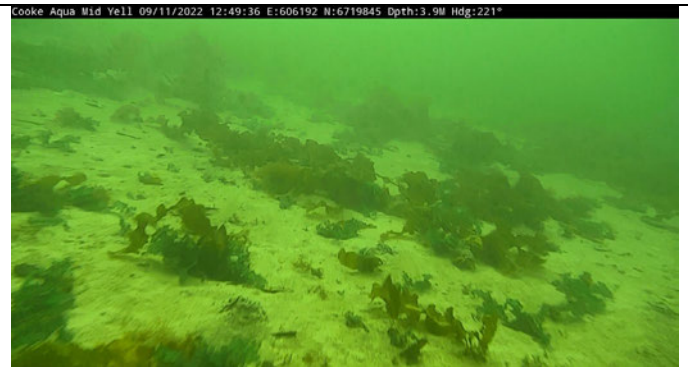
T1 - 11



T1 - 12



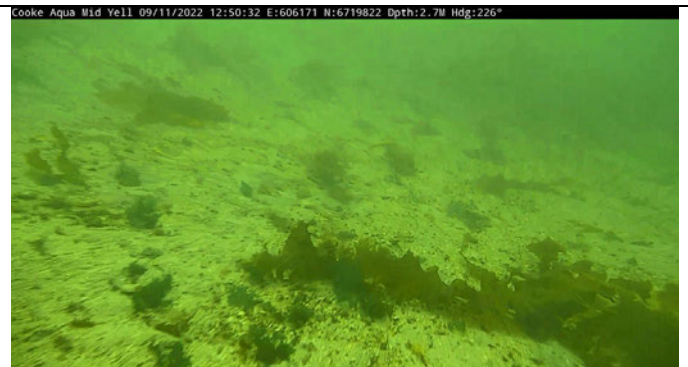
T1 - 13



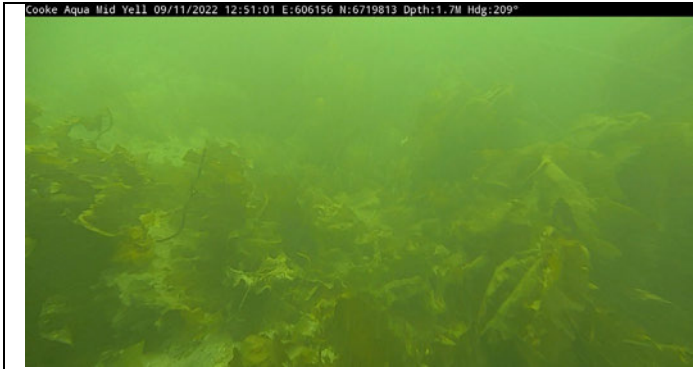
T1 - 14



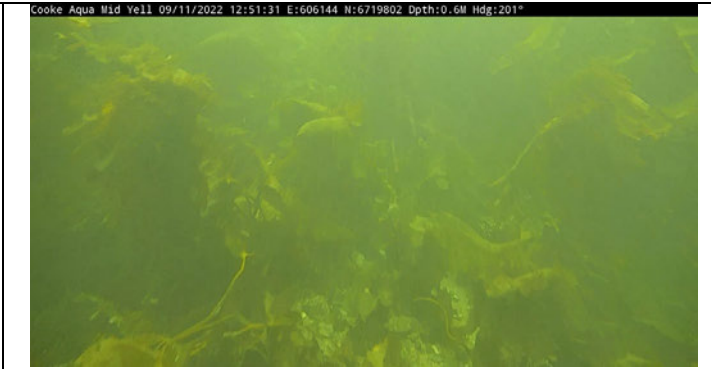
T1 - 15



T1 - 16



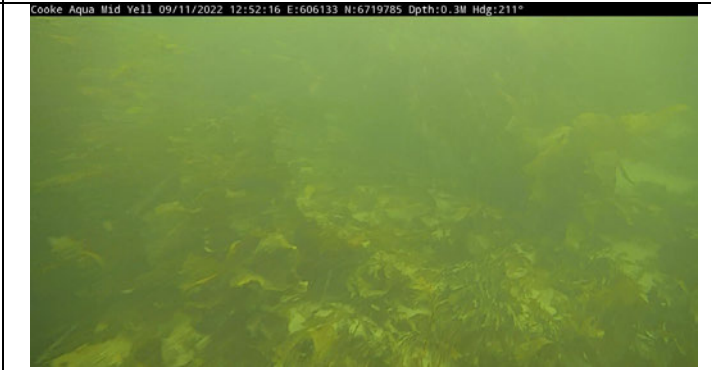
T1 - 17



T1 - 18



T1 - 19



T1 - 20



Appendix B
Otter Impact Assessment Report
November 2022

NOTE THE LOCATION OF THE EXISTING OUTFALL SHOWN BELOW HAS BEEN SUPERSEDED BY THE GROUND TRUTHED CO-ORDINATES PRESENTED IN THE MAIN REPORT. THE NEW 2023 BASELINE SURVEY AREA WILL BE CONDUCTED AROUND THE AMENDED CO-ORDINATES.

***NB Additional info added 6th January 2021**

Revisited on 06/01/21 to add Grid References to waypoints.

Otter Impact Assessment Report: Mid Yell Factory, Cooke Aquaculture-

Proposed Waste Water Pipeline

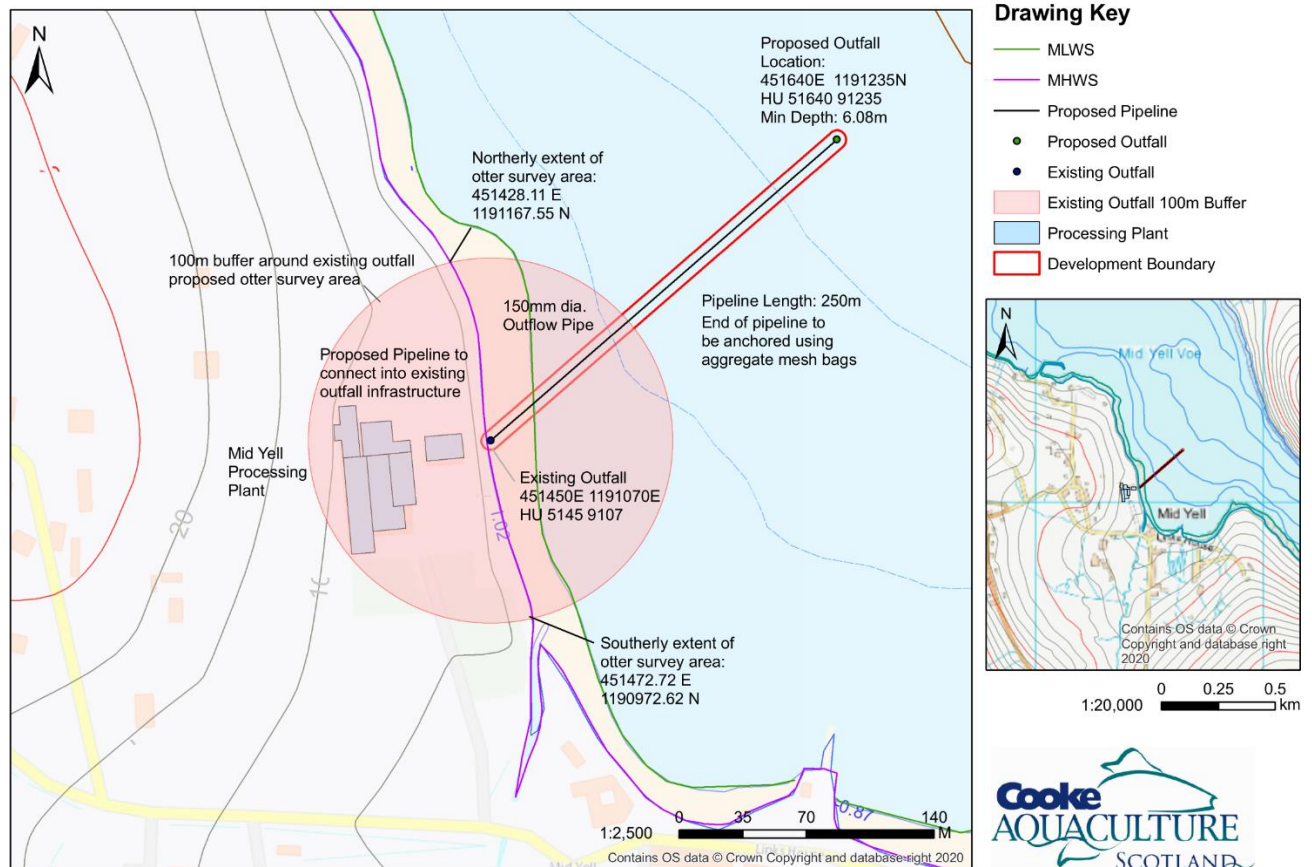
Date: 28/11/20

Survey undertaken by: [REDACTED], Shetland Nature

Rohan, Baltasound, Unst Shetland.

email: [REDACTED]

Mid Yell Processing Plant - Proposed Wastewater Outfall Pipeline Showing otter survey boundaries



Methodology: Starting at the southern end of buffer zone, (at burn underpass of main road) I began my inspection of the survey area. I paid particular attention to following areas for spraint points, runs and especially anything that could be used as holt or lay-up;

- along burn
- the bank and shore along east/seaward fence of factory yard

- rock armouring at burn/burn mouth and cemetery wall
- the bank/shore beyond, continuing north away from yard
- the perimeter fence around the yard, checking both outside and inside
- all walls, structures and buildings within yard/factory compound

[Redacted]

Mid Yell Proposed Pipeline - Otter Survey Report Waypoints and Survey Area

[Redacted]



Appendix C

Example Mid Yell Stakeholder Letter

30th November 2022

Mid Yell Fish Processing Plant – proposed outfall pipeline extension

I am contacting you to make you aware that Cooke Aquaculture Scotland (CAS) are looking to install a new outfall pipeline for discharging the fish processing water from our Mid Yell Fish Processing Plant.

The existing outfall is located around the Mean Low Water Springs (MLWS) level adjacent to the factory (see Figure 1) and discharges fish processing water from the factory after it has been through a multi-stage water treatment process. The effluent does not contain waste water from the factory offices, kitchen or toilet areas, which will continue to be discharged to the Scottish Water drainage system.

We are proposing to replace the existing outfall with a slightly larger diameter and longer pipeline. The proposed amendments would extend the outfall location approximately 230m offshore into deeper water within Mid Yell Voe (Figure 1). This would improve the dilution of the processing water effluent from the plant compared to the existing outfall location enabling CAS to discharge higher volumes of fish processing effluent whilst continuing to meet the Environmental Quality Standards of the Mid Yell Voe waterbody.

The new pipeline would be buried below the beach (foreshore) up to MLWS level, then the extended pipeline would be placed on the seabed (so no dredging required) and held in place with concrete mattresses placed at 6 m intervals along the length of the pipeline. The existing pipeline would be removed once the new pipeline is installed and operational. CAS are in the process of obtaining the necessary consents to undertake this work, as listed below:

Consent	Consenting body	Status
CAR Licence	SEPA	Submitted; in determination
Planning Permission	SIC (Development Management)	To be submitted Dec 2022
Marine Licence	Marine Scotland (Licensing Operations Team)	To be submitted Dec 2022
Marine Works Licence	SIC (Coastal and Marine Planning))	To be submitted Dec 2022
Consent for Marine Works	Crown Estate Scotland	To be submitted Dec 2022

As indicated, we anticipate submitting the remaining consent applications in December 2022 and public consultation will take place as per each consenting body's statutory requirements. However, I wanted to let you know about the proposed project in advance of those public consultations, so you can contact me directly if you have any concerns or questions.

As such, please feel free to contact me via email ([REDACTED]) with any queries or to arrange a time to speak via phone or MS Teams to discuss further.

Kind regards, [REDACTED]

Environmental Analyst, Cooke Aquaculture Scotland



Figure 1 Location of existing and proposed new outfall