Bea Gregory-5252

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NEW ZEALAND

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www.marlborough.govt.nz

Application for Resource Consent

Applicant details

Application for Resource Consent

Sections 88 and 145, Resource Management Act 1991

To

Marlborough District Council

Applicant

I,

Bay Fresh Aquaculture Limited

20 Market Street
Blenheim 7201

Company number: 1140980

Lex Heywood

20 Market Street
Blenheim 7201

03 578 9776
lex@alexhayward.co.nz

Apply for the following type(s) of resource consent

Coastal

Agent

Aquaculture Direct Limited

PO Box 213
Blenheim 7240

Bruce Cardwell

021451284

bruce@aquaculturedirect.co.nz

Project reference

Bay Fresh Pipi Bay

Property details

Site and location details

The site at which the proposed activity is to occur is as follows:

Pipi Bay
Port Underwood
Marlborough Sounds

Legal description

NA

Is there locale information in regards to the site?

No - there is no locale information in regards to the site

Site description

Description of the site at which the activity is to occur

Refer to AEE

Owners and occupiers of the application site

Applicant is the only owner and occupier?

Yes - the applicant is the only owner and occupier

Proposed activity

Description of the activity

The activity to which the application relates (the proposed activity) is as follows:

To re-consent an existing mussel farm at marine farm site 8451, including all activities ancillary to the operation of that marine farm for a 20 year term.

Other activities that are part of the proposal to which the application relates

Are there permissions needed which do not relate to the Resource Management Act 1991?

No - there are no permissions needed which do not relate to the Resource Management Act 1991

Are there permitted activities that are part of this application?

Yes - there are permitted activities that are part of this application

Permitted activities that are part of this application:

Refer AEE

Additional resource consents

Are any additional resource consents needed for the proposal to which this application relates?

No - no additional resource consents are needed for the proposal to which this application relates

Consent summary

I apply for the following resource consents.

Consent information

Consent type

Coastal

Subcategory type

Occupancy

Description of consent being applied for

Refer AEE

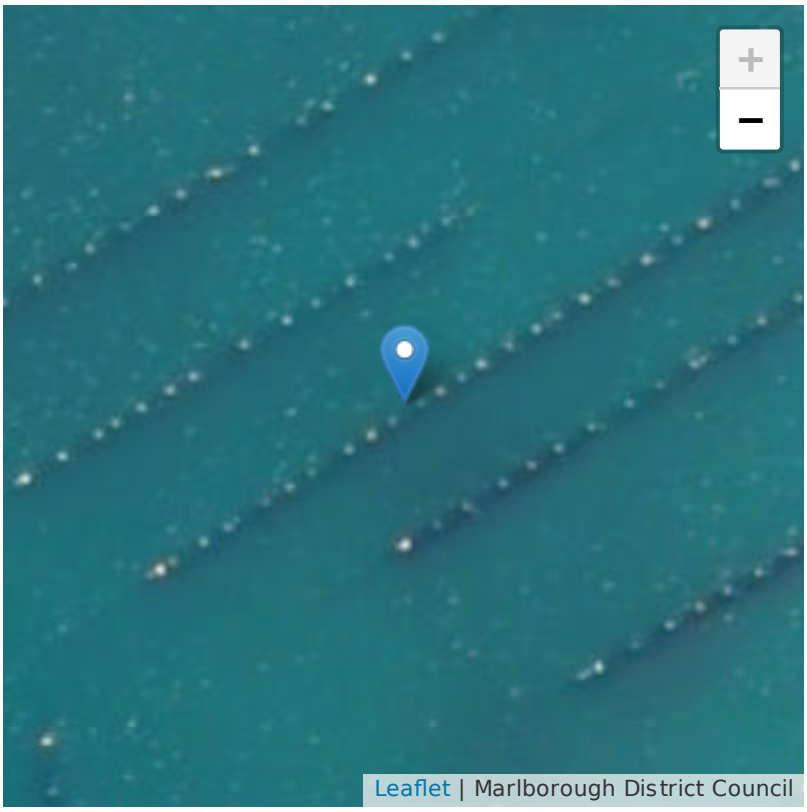
Location of the consent

Easting

1695265.677

Northing

5423322.647



Triggering rules

Rules which trigger the consent

I attach an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

The assessment under this section must include an assessment of the activity against
(a) Rules in a document; and
(b) Any relevant requirements, conditions, or permission in any rules in a document; and
(c) Any other relevant requirements in a document (for example, in a national environmental standard or other regulations))

Triggering rules assessment

Refer AEE

Assessment of Effects on the Environment (AEE)

Clause 6 - Information required in assessment of environmental effects

6.1 An assessment of the activity's effect on the environment must include the following information:

6.1(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity

Provision not relevant

6.1(b) an assessment of the actual and potential effect on the environment of the activity

Provision not relevant

6.1(c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use

Provision not relevant

6.1(d)(i) if the activity includes the discharge of any contaminant, a description of the nature of the discharge and the sensitivity of the receiving environment to adverse effects

Provision not relevant

6.1(d)(ii) if the activity includes the discharge of any contaminant, a description of any possible alternative methods of discharge, including discharge into any other receiving environment

Provision not relevant

6.1(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect.

Provision not relevant

6.1(f) identification of the persons affected by the activity,

Provision not relevant

6.1(f cont.) any consultation undertaken,

Provision not relevant

6.1(f cont.) and any response to the views of any person consulted

Provision not relevant

6.1(f cont.) and any iwi consultation undertaken

Provision not relevant

6.1(g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved.

Provision not relevant

6.1(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless

written approval for the activity is given by the protected customary rights group).

Provision not relevant

Clause 7 - Matters that must be addressed by assessment of environmental effects

7.1 An assessment of the activity's effects on the environment must address the following matters:

7.1(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects

Provision not relevant

7.1(b) any physical effect on the locality, including any landscape and visual effects

Provision not relevant

7.1(c) any effect on ecosystems, including effects on plants or animals and any physical disturbances of habitats in the vicinity

Provision not relevant

7.1(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations

Provision not relevant

7.1(e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants

Provision not relevant

7.1(f) any risk to the neighbourhood, the wider community, or the environment through natural or hazardous installations

Provision not relevant

Applicant's proposed conditions for this activity

Refer AEE

Part 2 RMA

Matters of national importance (Section 6 Resource Management Act 1991)

1. Assess your application against the following matters of national importance:

6.1 (a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

Refer AEE

6.1 (b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

Refer AEE

6.1 (c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

Refer AEE

6.1 (d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

Refer AEE

6.1 (e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

Refer AEE

6.1 (f) the protection of historic heritage from inappropriate subdivision, use, and development:

Refer to AEE

6.1 (g) the protection of protected customary rights.

Refer AEE

6.1 (h) the management of significant risks from natural hazards.

Refer AEE

Other matters (Section 7 Resource Management Act 1991)

1. Assess your application against the following matters:

7.1 (a) kaitiakitanga:

Re AEE

7.1 (aa) the ethic of stewardship:

refer AEE

7.1 (b) the efficient use and development of natural and physical resources:

Refer AEE

7.1 (ba) the efficiency of the end use of energy:

Provision not relevant

7.1 (c) the maintenance and enhancement of amenity values:

Refer AEE

7.1 (d) intrinsic values of ecosystems:

Refer AEE

7.1 (f) maintenance and enhancement of the quality of the environment:

Refer AEE

7.1 (g) any finite characteristics of natural and physical resources:

Refer AEE

7.1 (h) the protection of the habitat of trout and salmon:

Provision not relevant

7.1 (i) the effects of climate change:

Provision not relevant

7.1 (j) the benefits to be derived from the use and development of renewable energy

Refer AEE

Treaty of Waitangi (Section 8 Resource Management Act 1991)

Assess your application against the principles of the Treaty of Waitangi (Te Tirti o Waitangi)

Refer AEE

Statutory instruments

I attach an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1) (b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

The assessment under this section must include an assessment of the activity against –
(a) Any relevant objectives, or policies in a document; and
(b) Any relevant requirements, conditions, or permission in any rules in a document; and
(c) Any other relevant requirements in a document (for example, in a national environmental standard or other regulations)

Statutes that are relevant to your proposed activity

Assessment under the Resource Management Act 1991

Refer AEE

Assessment under the New Zealand Coastal Policy Statement

Refer AEE

Assessment under the Marlborough Regional Policy Statement

Refer AEE

Assessment under the Marlborough Sounds Resource Management Plan

Refer AEE

Assessment under the Proposed Marlborough Environment Plan

Refer AEE

Additional information

Applications affected by Section 124 or 165ZH(1)(c) of the Resource Management Act 1991

Does this application relate to an existing consent held by the applicant which is due to expire, and the applicant is to continue the activity?

Yes - this application relates to the following existing consent

Consent number

Refer AEE

The value of investment of the existing consent holder is

Refer AEE

Section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011

Is the proposed activity to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011?

No - the proposed activity does not occur in such an area

Additional information required for subdivision consent

Does your application include one or more consents for subdivision?

No

Additional information required for application for reclamation

Does your application include one or more consents for reclamation?

No

Plans and technical reports

Report type	Report title	Author	External reference	Keywords	Document
Benthic report	Biological Report for the reconsenting of marine farm 8451 in Pipi Bay, Port Underwood	Rob Davidson	Report No 881	-	8451 Benthic Pipi Bay (BayFresh).pdf (4 MB)
Site Plan	-	-	-	-	8451 Locality Map.pdf (4 MB)
Site Plan	-	-	-	-	8451 Renewal Layout Plan.pdf (561 kB)
Site Plan	-	-	-	-	8451 Renewal Site Plan.pdf (747 kB)
Miscellaneous	AEE	Aquaculture Direct Limited	-	-	8451 AEE Renewal June 2018.pdf (477 kB)

Affected person approvals

Have you obtained affected person(s) approvals?

No - I have not obtained affected person(s) approvals

Iwi

Have you obtained approvals from iwi?

No - I have not obtained approvals from iwi

Public notification (Section 95A(2)(b)) of the Resource Management Act 1991

Is public notification of the application requested by the applicant?

No - public notification of application is not requested

Lodgement fee

Please see Marlborough District Council's fees page for more information.

Payment ID Code

0006ZQ

Do you require a GST receipt for a bank payment?

Yes - I do require a GST receipt for a bank payment

If further charges are incurred, please invoice

Agent

Fee comments

-

Declaration

I confirm that the information provided in this application and the attachments are accurate.

Yes

Authorised by (your full name)

Bruce Raymond Cardwell

Authorising person is:

Person authorised to sign on behalf of the applicant

Note to applicant

You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.

You may apply for 2 or more resource consents that are needed for the same activity on the same form. If you lodge the application with the Environment Protection Agency, you must also lodge a notice in form 16A at the same time.

You must pay the charge payable to the consent authority for a resource consent application under the Resource Management Act 1991 (if any)

If your application is to the Environment Protection Agency, you may be required to pay actual and reasonable costs incurred in dealing with this matter (see section 149ZD of the Resource Management Act 1991).

Privacy information

The information you have provided on this form is required so that your application can be processed and so that statistics can be collected by Council. The information will be stored on a public register and held by Council. Details may be made available to the public about consents that have been applied for and issued by Council. If you would like access to or made corrections to your details, please contact Council.

ASSESSMENT OF ENVIRONMENTAL EFFECTS
FOR A COASTAL PERMIT
OCCUPANCY AND DISTURBANCE OF THE SEABED

APPLICATION BY BAY FRESH AQUACULTURE LIMITED
TO RENEW EXISTING CONSENT FOR MARINE FARM SITE 8451
PIPI BAY, PORT UNDERWOOD MARLBOROUGH

1.0 INTRODUCTION – OVERVIEW OF APPLICATION

Bay Fresh Aquaculture Limited has applied to renew the existing resource consent MPE891 (U990745) for marine farm site 8451 (total 4.93ha) for the purpose of farming Greenshell mussels (Perna canaliculus) using conventional long line methods. (Refer attached layout diagrams illustrating the site.)

In December 2000 resource consent U990745 for a 3.285ha site was granted. Following an appeal, the Environment Court granted a consent order in October 2003 for an additional 1.645ha area.

The associated marine farming permit MPE891 for the complete 4.93ha area was issued under the Fisheries Act 1983 in June 2007.

MPE891 (U990745) expires 19th December 2020.

MPE891 (U990745) is assessed as discretionary activity in the current Marlborough Sounds Resource Management Plan.

The application is for a continuation of the activities currently consented at the site. No changes to the activities are proposed.

The site lies within the boundary of the CMZ2, an area in which marine farming activity is a discretionary activity.

The present consent has a small structure exclusion zone located along the inshore zone of the northern part of the farm. The revised plan avoids the exclusion area however the farm area (4.93 Ha) and the number of permitted lines (16) remains the same as the existing consent.

Bay Fresh Aquaculture is owned by Alexander (Lex) Hayward a Registered Valuer based in Blenheim and David Smythe a retired Planner of Nelson. Both have contributed significantly to the Aquaculture Industry over many years in their professional capacity.

The farm has been developed and operated by Scott Madsen since about 1999. The applicants wish to provide security for Madsen to ensure the productive future of the farm.

The Applicant's farm is managed by Madsen Marine Limited who adheres to the 'Greenshell Mussel Industry Environmental Code of Practice' and its successor, the Environment Management Framework and is an active participant of the Marine Farming Association's Environmental Programme.

This programme covers the activities of marine farmers "on water" activities. This Programme includes being an active participant in beach clean ups and adhering to the following Codes of Practice:

- 'Marine Farming Operating Standards Marlborough Sounds, Tasman and Golden Bays'.
- 'Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay, on other users and residents'.
- 'Reducing Pollution and Emissions from Marine Farming 'On Water' Activities'.
- 'Reducing Waste taken to Landfill from Marine Farming 'On water' Activities'.

As this is a 'like for like' Application by an existing permit holder, the Application should be processed under section 165ZH. The Applicant's adherence to the codes of practice mentioned above, and its commitment to environmental programmes and activities, along with its compliance with the conditions of the existing Consent, are conduct in the Applicant's favour in terms of section 165ZJ(1).

2.0 INTRODUCTION – THE APPLICATION

2.1 Size: The site is 4.93ha.

2.2 Structures: The site dimensions will be: inshore boundary 241.82 metres long, outer boundary 446.41 metres, southern boundary 140 metres long and north eastern boundary 147.30 metres long (refer attached site plan).

There will be a total of 16 longlines (refer attached layout diagram).

2.3 Species: It is proposed to farm and harvest Greenshell mussels (Perna canaliculus) using conventional long line methods.

The application is for a continuation of the activities currently consented at the site. No changes to the activities are proposed.

3.0 PERMITTED ACTIVITIES

Consent is also sought to allow the existing seabed anchoring devices to remain (and be replaced as required), to harvest marine farming product from the marine farm (including the discharging of coastal seawater and discharge of biodegradable and organic waste matter) and all other activities that are ancillary to the operation on site 8451.

The movement of vessels is a permitted activity: s27 Marine and Coastal Area (Takutai Moana) Act 2011. This right includes anything reasonably incidental to vessel movement (s27(2)).

4.0 TERMS OF CONSENT

MPE891 (U990745) expires 19th December 2020.

The Applicant seeks a 20-year term expiring in 2038.

5.0 THE SITE - LOCATION

"The marine farm site is along the eastern coastline of outer Port Underwood, adjacent to the headland separating Pipi and Whangatoetoe Bays." (Davidson Environmental Limited Report 881, attached).

The farm sits alongside other farms on the eastern side of Port Underwood. The nearest marine farms to 8451 are the adjacent farms to the south in Whangatoetoe Bay 8452 and 8628.

The adjacent land is zone Rural 1. There are no residences in the Bay. The nearest residence is across on the western side of Port Underwood in Waipuna Bay 2,774 metres from the site.

The site lies within the boundary of Coastal Marine Zone 2 (CMZ2).

6.0 THE SITE - DIMENSIONS

The site dimensions have been described above are as per the layout plans attached. The depth of the water at each of the site corners is 12 metres (NW), 12 metres (N), 9 metres (NE), 9 metres (SE), and 11 metres (SW).

The application includes 16 long lines, each being approximately between 72-160 metres long.

There are currently 15 lines installed and operating at the site that grow Greenshell mussels.

The site layout is attached to the application.

The warp lengths are between 19-20 metres from each end of the backbone (see line layout diagram for individual longline lengths). The warp ratio is approximately 2:1.

The exclusion zone has been rechecked as part of the benthic report and Davidson suggests the area on the northern block can be reduced from 30 metres wide to approximately 20 metres and states

"5.4 Benthic report *Based on the existing consent coordinates, rocky substrata were recorded along inshore areas of the consent. Rocky substratum is traditionally avoided for marine farming activities. The northern exclusion area is presently up to 30 m wide; however, this could be reduced to 20 m wide and would still function to avoid rocky substratum. The southern consent area also has rocky substratum. It is recommended that a 10 m wide exclusion area be established over this area."* (Davidson Environmental Limited Report 881, attached).

Currently, the inside line on the northern block sits just inside the exclusion area and will be removed from the area after the next harvest. The existing exclusion zone was incorrectly estimated from an unknown low water position. However, the benthic report identified exactly where the exclusion zone should be placed and avoids any cobble habitat. The realigning of the farm so that the inshore area is 50 metres from the low tide mark for both the northern and southern blocks and avoids any benthic areas of concern. The site plan shows the new position of the farm to avoid these benthic areas.

7.0 THE PRESENT ENVIRONMENT

7.1 The Marine Environment

In April 2018 Mr RJ Davidson, of Davidson Environmental Ltd, undertook a biological study of the ecology of the marine area of site 8451 (Report 881, attached).

The Report indicates that the impact of the existing activity is similar to other mussel farming activities in Marlborough. In particular, the report states the following;

"5.1 Benthic habitats and substratum
Substratum and habitat distribution relative to the reconsent area was based on drop camera stations and sonar imaging of the benthos.

Most of the consent area was located over silt and clay substratum. Inshore edges of the consent were characterised by pebbles, silt, natural shell and occasional cobbles. In the north, rocky substrata were located within the first 20 m of the consent. In the south, rock substrata was limited to a narrow strip approximately 5 m wide at two locations.

Mud (i.e. silt and clay) dominated the benthos under farm growing structures. Mud is the most common subtidal habitat in the sheltered Marlborough Sounds (McKnight and Grange, 1991) and

has been traditionally targeted for marine farming activities. This substratum type is considered suitable for consideration for marine farming activities in the Marlborough Sounds.

Unlike mud and silt, pebble and cobble substratum are not traditionally considered suitable for marine farming activities as it usually is smothered by shell debris and likely no longer functions as a hard substratum habitat. At this site, hard substratum was observed within the consent area near the inshore boundary.

5.2 Species and communities
Species abundance and diversity was low. Benthic observations within the consent area supported species typical of silt substratum (e.g. cushion seastars, sea cucumbers). No fish species were observed while collecting drop camera photographs within the consent area.

Algal species were recorded in almost half of the consent area drop camera photographs on silt substratum. Twelve drop camera locations recorded algae cover of 20% or more, with up to 100% cover under existing backbone structures. Algae was also recorded in photographs taken offshore of the consent boundary. No algae were not observed on the pebble, silt, natural shell and occasional cobble substratum closer to shore.
Shallow photographs from nearshore areas inshore of the consent recorded brown macroalgae and bedrock habitat with higher diversity of species including tarakihi, blue moki and spotty.

5.3 Mussel farming impacts
5.3.1 Benthic impacts
Mussel debris was not recorded from rocky substrata located within the consent. From the remainder of the consent mussel shell debris was recorded from 12 of the 40 consent photos. Mussel debris was often low to moderate cover on the benthos under the backbones. Only one photo recorded high mussel shell debris under the backbones. Shell debris impact levels were within the range known for mussel farms in the Marlborough Sounds. This farming activity represents low to middle impact range compared to other farms in the Sounds. No mussel shell debris was recorded outside of the consent area.

Algae was often recorded growing on the benthos within the consent and under the backbones. The presence of algae under growing structures suggests these species are not adversely impacted by this farm. The density of the algae cover is temporally variable (Davidson and Richards, 2018), and spacially variable as documented from the photographs collected in the present survey.

It is probable that the impact of continued shellfish farming at this site will result in the deposition of more shell and fine sediment under and near droppers. Based on the literature and assuming the present level of farming activity remains consistent, it is very unlikely that the surface sediments would become anoxic (Hartstein and Rowden, 2004; Keeley et al., 2009; Davidson and Richards, 2014).

5.4 Boundary adjustments, recommendations and monitoring
The consent is located <50 m distance from low water (i.e. inshore consent boundary is currently 33 m to 40 m from low tide). If the consent was relocated 50 m distance from low water, most of the inshore rocky substratum would be located inshore of the consent."

Adjustments have been made to the inshore boundary so the southern block is 50 metres from the low water fix and the northern block is over 60 metres from the low water fix. The inshore mussel lines are positioned as recommended by Davidson and clear of possible impact on the benthos.

"Based on the existing consent coordinates, rocky substrata were recorded along inshore areas of the consent. Rocky substratum is traditionally avoided for marine farming activities. The northern exclusion area is presently up to 30 m wide; however, this could be reduced to 20 m wide and would still function to avoid rocky substratum. The southern consent area also has rocky substratum. It is recommended that a 10 m wide exclusion area be established over this area.

The northern block of marine farm structures has been positioned 20-25 m offshore of the inshore consent boundary, but within the exclusion area (Figure 6). This mussel lines position has avoided hard substratum. The southern farm block has been positioned 4.5-7.5m offshore of the inshore boundary and has also avoided rocky substratum.

The substratum under the rest of the consent is dominated by mud, the most common and widespread habitat type in sheltered shores of the Marlborough Sounds. The impacts associated with mussel farming on muddy habitats characterised by silt and clay are low compared to farm impacts in shallow, habitats dominated by rocky or biogenic communities.

Algae distribution throughout the consent area and offshore area suggests a naturally patchy distribution and these algal species. The current mussel farming activity does not appear to have an impact on the presence of algae compared to offshore areas away from the farm. Any shift of the farm into this offshore area would be unlikely to have a negative impact on algae species in this area.

Based on the substratum located under structures and the low impact levels of the existing activity, no monitoring is suggested."

The report also indicates that the impact of the current activities is in line with expectations of the environmental impacts of mussel farming. In addition, the current study supports the Ministry of Fisheries assessment which was used to assess the sustainability of the farm and its impact on fishing and fishery resources.

7.2 The Land Environment

"The site is located offshore of the promontory separating Pipi Bay and Whangatoetoe Bay in Port Underwood. (Refer attached locality map.)

Port Underwood is a Y-shaped bay extending some 8.5 km in length in a northeast direction, opening into Cloudy Bay towards the south. Offshore depths range from 10 to 18 m (Navy Chart NZ615). The catchments of Port Underwood have been heavily modified by historic land practices including farming, forestry, fire and land clearance with most of the area now in pine plantation or early regenerating scrub.

The combined coastline length of both Whangatoetoe and Pipi Bay is approximately 3.1 km and encompasses an area of sea of approximately 42.15 ha." (Davidson Report 881).

The adjacent land is zoned Rural 1.

The coastline adjacent consists of steep hill slopes with short to moderately high coastal cliffs. The area is planted in pine plantation, some of which has been recently harvested with early regenerating scrub.

The beach is dominated by hard rock and boulders, although small beaches have formed along the coastline in this area.

8.0 NAVIGATION MATTERS

8.1 The Shoreline

The distance from the shoreline according to the original Cadastral mapping is inside the conventions established in the Marlborough Sounds Resource Management Plan. The new site plan moves the inshore boundary of the farm beyond 50m from the low water mark.

8.2 Headlands

There are no headlands immediately adjacent to the site.

8.3 Navigational Routes (Formal/Informal)

The shoreline in which the farm sits is not on a normal navigation route, however, vessels that wish to navigate within the area can proceed through the farm and either inside or outside of the site.

The farm does not impede vessel movements along the coastline or access to the adjacent land.

8.4 Anchorages or Mooring Areas (Formal/Informal)

There is one registered mooring in the adjacent Whangatoetoe Bay 376 metres to the south of the site. Mooring 2455 held by the Waikawa Boating Club, Pelorus Boating Club, Mana Cruising Club and Paddy Bull Limited.

The site does not impede access to this mooring.

8.5 Indirect Effects-Servicing vessels at site

The Applicant estimates farming and harvesting vessels will visit the site on an average of 60-70 day a year, for periods of 0.5 to 8 hrs to undertake farm maintenance, seeding and harvesting.

The total number of hours spent on these activities is estimated to be 190 - 210 hrs annually.

8.6 Water Ski Lanes

There are no formal water ski lanes in the vicinity.

8.7 Sub-Marine Cables

There are no sub-marine cables in the immediate vicinity of the farm.

9.0 AESTHETIC

9.1 Land Zoned for Residential Use or Proximity to Residences

The land adjacent to the site is zone Rural 1.

There are no residences directly adjacent to the site.

9.2 Scenic Value

The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural landscape value. The area behind the site has been described as an area of outstanding nature landscapes and features in the proposed Plan.

The area is planted in pine plantation, some of which has been recently harvested with early regenerating scrub.

The area is not considered to have a high coastal natural character rating. The 2014 Boffa Miskell study '*Natural Character of the Marlborough* Coast', which is reflected in the natural character maps in the proposed Plan, which do not map the waters of Port Underwood as having outstanding, very high or high natural character.

The effect of the marine farm on the adjacent area will not have an effect on the flora and fauna of this area.

10.0 ECOLOGICAL VALUE

There is ecological value identified in the Marlborough Sounds Resource Management Plan for Site 8451(1/34) Hectors dolphins.

Port Underwood is mapped as a marine mammal site (dolphins and whales) in the proposed Plan.

Davidson, R.J.; Richards, L.A.; Rayes, C.; Sutherland, R. 2017. Ecological report for a proposed extension to farm 8423 in Kingfish Bay, Port Underwood. Prepared by Davidson Environmental Ltd. for Talley's Group Limited. Survey and monitoring report no. 847 state that

''Marine Mammals: Hector's dolphin (Cephalorhyhncus hectori hectort), is endemic to New Zealand and is currently listed as Nationally Endangered by the NZ threat classification scheme (Baker et al., 2010) and considered Endangered by the IUCN since 2000 (Reeves et al., 2008). Based on a

series of historic boat and plane surveys conducted from 1997-2001, their abundance around the South Island was estimated at approximately 7300 animals (95% 5303-9966; Slooten et al., 2004). In the most recent aerial survey found Hector's dolphin abundance to be approximately 9130 (CV: 19%;95% CI: 6342-13 144) in summer and 7456 (CV: 18%; 95% CI: 5224-10 641) in winter (MacKenzie and Clement, 2014). The authors stated that the population of Hector's dolphin was larger than expected from previous estimates. MacKenzie and Clement (2014) stated this difference was mainly due to approximately half of their summer estimate being distributed across previously un-surveyed regions in offshore waters between 4 and 20 nautical miles. The authors emphasized that, at least in summer, a large portion of the ECSI Hector's dolphin population occurs in waters around Banks Peninsula and within Clifford and Cloudy Bays.

Hector's and other species of dolphin overlap with marine farms areas in particular parts of New Zealand. An overlap for Hector's dolphin occurs around Banks Peninsula and East Bay, Marlborough Sounds. Admiralty Bay in the Marlborough Sounds supports many mussel farms and is visited annually in winter by large numbers of dusky dolphins (Markowitz, 2002). Despite these spatial overlaps, no entanglements have been documented.

There are, however, two reported incidences of dolphin entanglement and death at a salmon farm in New Zealand, both from the Marlborough Sounds (M. Aviss, MDC). In one, an unidentified dolphin species became trapped while a predator net was being replaced, and in the other case, a Hector's dolphin became trapped under a predator net. Internationally, fatal entanglements of dolphins in predator nets on finfish farms have been reported from Australia (Gibbs and Kemper, 2000; Kemper and Gibbs, 2001; Kemper et al., 2003) and Italy (Diaz Lopez and Bernal Shirai, 2007). This may reflect attraction of dolphins to a food source (Kemper and Gibbs, 2001) although such interactions between finfish farms and cetaceans have not been proven (Kemper et al., 2003).

There is also one record of a marine mammal becoming trapped or tangled in a mussel farm (i.e. a Bryde's whale) (Wursig and Gailey, 2002). The low incidence of mussel farm entanglements is probably related warps and backbones being under tension thereby reducing the chance of entanglement. This is in stark contrast to lobster pots that have a single line to the surface. This line is usually under little or no tension. Whales migrating up the east coast of the South Island pass hundreds of lobster lines that present a serious entanglement threat). Wursig and Gailey (2002) stated that entanglements by larger whales in aquaculture facilities are relatively rare events.

Displacement of Hector's dolphin by new marine farms have been discussed in a report in Pegasus Bay (DuFresne et al., 2010). The authors considered that there existed the "possibility that mussel farms may not be optimal habitat for Hector's dolphin, and in that case, some level of displacement was possible." The authors reported that in Golden Bay, Hector's dolphins have been observed at least in the access lanes between blocks of lines in a mussel farm (Slooten et al., 2001). In the same farm, there are anecdotal reports of dolphins regularly entering the farm area (Slooten et al., 2001), however, a lack of before-after data, and in this case a general paucity of data, preclude making any statements about the impact or otherwise of this farm on Hector's dolphins. DuFresene et al. (2010) concluded that "there are no easy answers to the question of whether Hector's dolphins will be displaced by a mussel farm", but they did state that "Given the size of the proposed

marine farm in Pegasus Bay (i.e. 2695 ha) relative to available Hector's dolphin habitat in the immediate vicinity, the presence of a mussel farm was unlikely to have a catastrophic impact on the dolphins.

Port Underwood is known as a significant site and part of the Cook Strait whale migratory corridor (Site 7.15 In: Davidson et al., 2011). This area includes the greater Cook Strait, Cloudy and Clifford Bays, Tory Channel and Queen Charlotte Sound (Figure 1). The authors stated "The Cook Strait is part of a migratory corridor along the NZ coast for humpbacks, as they move north from Antarctic feeding grounds to tropical waters for calving and breeding during the winter months (May - August). The Cook Strait is also utilised by other large whales including southern right whales (winter months), blue whales (possibly all year round but very little known about this species distribution) and sperm whales (probably all year round in the deeper waters of the Strait i.e., 300m and below). Humpback whales in New Zealand are part of the oceania subpopulation and in 2008 were recently reclassified by the international union for Conservation of nature (IUCN) as endangered. They were previously classed as Vulnerable but research on the oceania subpopulation has indicated this population is more threatened than previously thought. The Department of Conservation has conducted systematic annual surveys of humpbacks as they migrate through Cook Strait during the winters of 2004 to 2010, as well as collecting anecdotal sightings of humpbacks all year round to improve our understanding of the distribution and abundance of these species in New Zealand waters.

Nationally endangered southern right whales are also seen in New Zealand coastal waters, including the Cook Strait, in winter months. The New Zealand subpopulation of southern right whales is thought to be very small, with potentially as few as four to eleven breeding females (Patenaude, 2003). Other marine mammal species that have been observed utilising the Cook Strait area include sperm, minke and blue (Endangered) whales as well as orca (Nationally Critical), common, dusky, bottlenose (Nationally Endangered) and Hector's (Nationally Endangered) dolphins.

Other marine mammals may use the area but their use is likely temporary and uncommon. Large whales occasionally enter Port. Overall, there is a low risk of entanglement and displacement."

Hector's dolphins are occasionally seen in the Port, but most sightings have been recorded between the Wairau and Awatere River Mouths (DuFresene and Matlin, 2009). Other marine mammals may visit the area but their use is likely temporary and uncommon. Large whales occasionally enter the Port."

11.0 RECREATIONAL VALUE

The visual impact of the marine farm will not change.

Access to the coast for recreationalists is maintained.

12.0 HISTORICAL, TRADITIONAL AND CULTURAL VALUES

No sites of archaeological or traditional value are known by the Applicant to be present in the area. However ,nearby Horahora Kahahu (Island) is an important historical site as it was a pā when signatures were obtained for the treaty of Waitangi in nearby Kakapo Bay on 17 June 1840. The applicants recognise the importance of this area and have ensured the farm is maintained to a high standard to reflect these important values.

In preparing this Application, the Applicant has had regard to the Te Tau Ihu Statutory Acknowledgments and has reviewed the Statements of Association for each iwi. The Applicant understands that this Application will be notified to Iwi with statutory acknowledgements in the area and will discuss the Application further with Iwi representatives.

13.0 COMMERCIAL AND RECREATIONAL FISHING

Matters impacting on commercial and recreational fishing are controlled by the Ministry of Primary Industry's (MPI) Undue Adverse Effects test (UAE).

13.1 Commercial Fishing

Commercial fishing is not known to occur in Pipi Bay but may occur offshore. The farm will not interfere with commercial fishing operations. No artificial feed or attractants are added.

13.2 Recreational Fishing

It is the Applicant's view that the marine farm at the site enhances opportunities for recreational fishing, as marine farms generally tend to create an ecosystem which is conducive to the presence of reef fish and other fish species.

14.0 VISUAL EFFECTS OF THE FARM

Visual effects will remain the same as they exist at the present. The farm is consented for 16 long lines and the farm structures presently consist of 15 long lines each being approximately between 76-160 metres in length containing black mussel buoys ranging between approximately 4 and 60 per line.

At the end of each longline an orange buoy will be displayed and an orange buoy will be displayed in the middle of each of the seaward most and landward most longlines.

A yellow light, radar reflector and a band of reflective tape will be displayed on the seaward corners and radar reflectors and a band of reflective tape will be displayed on the landward corners or as requested on the lighting plan provided by the Harbour Master.

15.0 EFFECTS ON WATER QUALITY AND ECOLOGY

Water quality of the area is suitable for mussel farming. The site relies on water quality to enable the process of mussel farming to flourish. The site 8451 has a good capacity for mixing of water with regular tidal currents, wind and wave action.

The effect on the ecology of the site from the existing activity is attached in the Davidson Environmental Limited Report 881.

No specific sites of marine ecological significance have been identified in Pipi Bay in the 'Ecological Significant Marine Sites in Marlborough New Zealand' published by Rob Davidson and others in 2011.

16.0 EFFECTS ON PRODUCTIVITY

Water quality is unlikely to be a problem for mussel farming in Pipi Bay. The continuing activity itself is unlikely to create any significant detrimental effects on water quality.
Exert from Davidson Report (Benthic Report 881, refer attached).

"5.3.2 Productivity
Mussel farms can influence adjacent farms by slowing water flow to farms located in downstream positions. This is particularly pronounced in quiescent areas of the Sounds. However, published work by Zeldis et al. (2008, 2013) suggests that the major factors influencing productivity in the Marlborough Sounds relate to cyclical weather patterns in the summer (El Nino and La Nina) and river-derived nutrient inputs in winter. Slow crop cycles in some years are therefore a reflection of a weather cycle and much less about the number of farms.

There has been no data presented to show the ecological carrying capacity of the Sounds has been reached. There is considerable evidence showing the major drivers of the Pelorus system, for example, naturally leads to large within and between year variability. Relative to this, the impact of mussel farms appears to be material but relatively small compared to major environmental drivers (Broekhuizen et al., 2015).

Tidal flows in the bays along the eastern shores of Port Underwood are low (author, pers. Obs.), however, winds may be a significant driver of water movement in this area, especially during the predominant north-westerly winds and southerly storms. The farm is located close to the main reach and entrance to Port Underwood, so water turnover times are likely to be relatively short compared to bay well distant to main reaches or the Cook Strait.

Based on these considerations, it is probable the site is unlikely to cause significant phytoplankton depletion outside the boundaries of the consent."

17.0 THE BENTHIC ENVIRONMENT

In terms of the benthic environment, the ecology of this area has been documented in Davidson Environmental Ltd Report 881 (refer to 7.1 above).

There are minor changes to the site boundaries and layout to mitigate any adverse impacts on the seabed.

18.0 ALIENATION OF PUBLIC SPACE

The general area of this part of Port Underwood has been utilised by marine farmers in excess of 38 years. Recreation and commercial boat owners are aware of marine farms in this area and all vessels have the opportunity to use the site and transit through it. The spacing between the long lines provides opportunity for access by vessels wanting to transit the site.

19.0 HARVESTING

As part of this Application, the Applicant seeks to continue harvesting mussel crops. The right to navigate to and from the farm, and to anchor, moor and load crop is preserved by section 27 of the Marine and Coastal Area (Takutai Moana) Act 2011. However, consent is required for the amount of organic waste matter which is discharged during the harvesting process and for the take and use of coastal water. No significant historical adverse effects have been recorded or are anticipated and any visual evidence of harvesting quickly dissipates in the coastal environment.

Vessels will be required to service the farm on an irregular basis (refer 8.5).

20.0 ON SHORE FACILITIES

The applicant's farm work and harvesting are completed by Madsen Marine Limited who already has onshore marine farm facilities based in Picton.

21.0 VALUE OF INVESTMENT

As part of this Application to renew site 8451, the Applicant is seeking to re-consent the site for a period of 20 years. As a result, this is an Application to which section 165ZH(1)(c) applies and the Council must, when considering the application, have regard to the value of the investment of the existing consent holder under section 104(2A).

The original existing site has been held by the applicant since 2000. From that time the applicant has expended significantly on the establishment and maintenance of the farm.

The farm produces approximately 200 tonnes per annum ($1100/ Green Weight Tonne (GWT)) and after processing the final ½ shell product would be sold on the export market at approximately $455,000. Approximately 95% of mussel products are exported. All lines are restocked after harvest to achieve 200 GWT/per annum harvests.

The mussels are processed in Blenheim/Motueka where they provide a critical part of the production to maintain processing to the factory which employees 163 FTE.

22.0 PART II RESOURCE MANAGEMENT ACT ISSUES

22.1 Section 5

Section 5 of the Resource Management Act 1991 is given effect through the New Zealand Coastal Policy Statement, Marlborough Regional Policy Statement and Marlborough Sounds Resource Management Plan.

In terms of the enabling provisions in Section 5 of the Resource Management Act, the marine farm industry has been, and will continue to be, a source of substantial revenue generation and job creation in the Marlborough Sounds and, in the Nelson/Marlborough region.

The majority of mussels produced from the site will be exported, thereby generating foreign exchange earnings for the country. Applications such as this enable the sustainable use of the marine environment.

22.2 Section 6

Matters of national importance have been assessed under the requirements of the Marlborough Sounds Resource Management Plan.

The Proposal recognises:

a. *The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision use, and development:*

Section 6(a) is given effect through Policy 13 of the New Zealand Coastal Policy Statement and is considered further below.

b. *The protection of outstanding natural features and landscapes from inappropriate Subdivision, use, and development:*

The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural landscape value. The area behind the farm has been described as an area of outstanding nature landscapes and features in the proposed Plan. The

effects of the Application on the landscape will be the same as the present Consent and any effects will not impact on the values which contribute to the landscape.

c. *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*

The adjacent vegetation next to the farm is planted in pine plantation, some of which has been recently harvested with early regenerating scrub.

d. *The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*

Public access is maintained with good separation from the coast and main navigational routes.

e. *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.*

The Applicant is aware of an historical sites on land nearby and will continue to discuss this through consultation with Iwi.

22.3 Section 7

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to:

(a) Kaitiakitanga:

(b) The efficient use and development of natural and physical resources:

(c) The maintenance and enhancement of amenity values:

(d) Intrinsic values of ecosystems:

(e) Recognition and protection of the heritage values of the sites, buildings, place, or areas:

(f) Maintenance and enhancement of quality of the environment:

(g) Any finite characteristics of natural and physical resources:

(h) The protection of the habitat of trout and salmon.

Matters under Section 7 (a - g) have been considered earlier in the original proposal. This Application is not anticipated to have any additional effects over and above what already exists. Section (h) is not relevant to this Application.

23.0 NEW ZEALAND COASTAL POLICY STATEMENT 2010 (NZCPS)

The New Zealand Coastal Policy Statement 2010 is of general relevance to this Application and all policies have been considered in the development of the proposal.

Policies of specific relevance are considered below.

23.1 Policy 2

Policy 2 sets out a number of matters which are relevant to the taking into account of the principles of the Treaty of Waitangi and kaitiakitanga, in relation to the coastal environment.

The applicant recognises that Ngāti Apa ki te Rā Tō, Ngāti Kuia, Rangitāne o Wairau, Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, Te Ātiawa o Te Waka-a-Māui and Ngati Toa Rangatira have statutory acknowledgments in the area of the application site. Those acknowledgements have been considered during the preparation of this application, as outlined above.

The iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui have been reviewed.

There are also no established areas of protected customary rights or customary marine title within the meaning of the Marine and Coastal Area (Takutai Moana) Act 2011.

The Applicant will discuss the proposal further with relevant Iwi representatives.

23.2 Policy 6

Policy 6 of the NZCPS is in two parts; the first dealing with activities in the coastal environment more broadly, and the second with those in the coastal marine area more specifically.

The farm is part of the existing built environment, so is in accordance with subpart 1(f), as continuation of the farm would not result in a change in the present character of Pipi Bay.

No areas of indigenous biodiversity or historic heritage value have been identified in relation to the site, so the farm complies with subpart 1(j).

Subpart 2 of Policy 6 is particularly relevant. Mussel farming clearly has a functional need to be located in the coastal marine area. The farm directly contributes to the social and economic wellbeing of people and communities, in accordance with subpart 2(a). This is discussed in relation to Policy 8 below.

23.3 Policy 8

Policy 8 of the NZCPS provides for the recognition of the significant existing and potential contribution of aquaculture to the social, economic and cultural wellbeing of people and communities by:

(a) including in regional policy statements and regional coastal plans provision for aquaculture activities in appropriate places in the coastal environment, recognising that relevant considerations may include:

i. The need for high quality water for aquaculture activities; and

ii. The need for land-based facilities associated with marine farming.

(b) Taking account of the social and economic benefits of aquaculture, including any available assessments of national and regional economic benefits; and

(c) Ensuring that development in the coastal environment does not make water quality unfit for aquaculture activities in areas approved for that purpose.

The Application will enable the continuation of production from the site, contributing to the social and economic benefits of aquaculture to the community. No changes to the impact on water quality are anticipated. This Application satisfies the requirement of Policy 8.

23.4 Policy 11

Policy 11 relates to protecting the indigenous biological diversity of the coastal environment.

The longlines are located over mud habitat and avoids any reef areas or any other areas of significant biodiversity. There will be no adverse modified effects on indigenous biodiversity. A revised site plan protects the inshore habitat on the northern boundary and the farm has been moved off shore in the southern and northern boundary to avoid cobble habitat.

23.5 Policy 13

Policy 13 provides for the avoidance of significant adverse effects on areas of the coastal environment with outstanding natural character and the avoidance, remediation and mitigation of other adverse effects on natural character.

The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural landscape value. The area behind the farm has been described as an area of outstanding nature landscapes and features in the proposed Plan. The effects of the Application on the landscape will be the same as the present Consent and any effects will not impact on the values which contribute to the landscape.

23.6 Policy 15

Policy 15(a) provides for the avoidance of adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment.

Policy 15(b) provides for the avoidance of significant adverse effects and the avoidance, remediation, and mitigation of other adverse effects of activities on other natural features and natural landscapes in the coastal environment.

There will be no further impact on the landscape than those already occurring under the current consent. The effects of the Application on the landscape will be minor and the effects are not likely to impact on the values which contribute to the landscape.

23.7 Policy 18

Policy 18 recognises the need for public open space within and adjacent to the coastal marine area, for public use and appreciation including active and passive recreation.

The visual impact of the marine farm will not change. Access to the coast for recreationalists is maintained.

There is one registered mooring in the vicinity of the site. The site does not impede access to this mooring.

There are no formal water ski lanes.

Opportunities for recreational fishing may be enhanced by the presence of the marine farm.

23.8 Policy 22

Policy 22 requires an assessment of sedimentation levels, and that use will not result in a significant increase in those levels. Davidson's biological report, discussed above, stated that while shell and fine sediment would be deposited under and in proximity to droppers, the farm structures are located over habitat considered suitable for this type of activity. No monitoring appeared to be necessary.

23.9 Policy 23

Subpart 1 of Policy 23, which relates to managing discharges to water in the coastal environment, is relevant to this Application. Silts and organic matter released at harvest are readily assimilated into the water column and seabed. The effects of harvesting mussels are only transitory, and quickly become indistinguishable from background sedimentation.

Conclusion

The effects of the Application on the landscape will be no more than minor and will result in no change to the existing status. The effects are not likely to impact on the values which contribute to the landscape.

24.0 REGIONAL POLICY STATEMENT/MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN

Certain provisions of the Marlborough Regional Policy Statement have relevance to this application and are considered in Appendix A.

The Marlborough Sounds Resource Management Plan contains a number of provisions that are relevant this application. An assessment of the application against the requirements of the plan is contained in Appendix B.

Conclusion

Taken overall, the application is consistent with the relevant objectives and policies of the Regional Policy Statement and Marlborough Sounds Resource Management Plan.

25.0 CONSULTATION

A meeting was held with Ngati Kuia on 11 June 2018.

A letter/e-mail has been sent to all Iwi listed below identifying the site prior to the application being submitted.

Name	Address	Phone
Ngati Koata Trust	PO Box 1659, Nelson 7040	(03) 548 1639
Te Runanga a Rangitane o Wairau	PO Box 883, Blenheim 7240	(03) 578 6180
Te Runanga O Ngati Kuia	PO Box 1046, Blenheim 7240	(03) 579 4328
Ngāti Apa ki te Rā Tō	PO Box 708, Blenheim 7240	(03) 578 9695
Te Atiawa Manawhenua Ki Te Tau Ihu Trust	PO Box 340, Picton 7250	(03) 573 5170
Ngati Toarangatira Manawhenua Ki Te Tau Ihu Trust	PO Box 5061, Blenheim 7240	(03) 577 8801
Ngati Rarua Trust	PO Box 1026, Blenheim 7240	(03) 577 8468

26.0 CONCLUSION

The Applicant considers that the renewal of site 8451 is appropriate, thereby allowing the continued farming of Greenshell mussels at the site.

The site is in that part of the Port Underwood where aquaculture has long been present and has no more than a minor impact on other values in the area.

Appendix A: Marlborough Regional Policy Statement – Policy Analysis

Objective	Policy	Assessment
5.3.2: That water quality in the coastal marine area be maintained at a level which provides for the sustainable management of the marine ecosystem	5.3.5: Avoid, remedy or mitigate the reduction of coastal water quality by contaminants arising from activities occurring within the coastal marine area.	No artificial feed or attractants are added. No Chemicals, antibiotics or other theraputants added Any discharges of organic matter associated with harvesting will be transitory.
5.3.10: The natural species diversity and integrity of marine habitats be maintained or enhanced	5.3.11: Avoid, remedy or mitigate habitat disruption arising from activities occurring within the coastal marine area.	Any disruption associated with the existing mooring of the farm is minor in scale and transitory. The seabed is already in a modified state due to terrestrial run off.
7.1.9: To enable present and future generations to provide for their wellbeing by allowing use, development and protection of resources provided any adverse effects of activities are avoided, remedied or mitigated.	7.1.10: To enable appropriate type, scale and location of activities by: • clustering activities with similar effects; • ensuring activities reflect the character and facilities available in the communities in which they are located; • promoting the creation and maintenance of buffer zones (such as stream banks or 'greenbelts'); • locating activities with noxious elements in areas where adverse environmental effects can be avoided, remedied or mitigated.	The marine farm is consistent with the current Policy and the designated consented area is within a bay with other marine farms.
	7.1.12: To ensure that no undue barriers are placed on the establishment of new activities (including new primary production species) provided the life supporting capacity of air, water, soil and ecosystems is safeguarded and any adverse environmental effects are avoided, remedied or mitigated.	The marine farm is located within the consented area which marine farming is a permitted activity. There will be no change in permitted activity or permitted structures when the consent is renewed.

7.2.7 The subdivision use and development, of the coastal environment, in a sustainable way.	7.2.8: Ensure the appropriate subdivision, use and development of the coastal environment.	The marine farm is within a bay with other marine farms. The marine farm's activity is biologically sustainable.
	7.2.10(a) - (d)	The marine farm is located within the consented area which is permitted for marine farming.
7.3.2: Buildings, sites, trees and locations identified as having significant cultural or heritage value are retained for the continued benefit of the community.	7.3.3: Protect identified significant cultural and heritage features	Horahora Kahahu (Island) is an important historical site as it was a pā when signatures were obtained for the treaty of Waitangi in nearby Kakapo Bay on 17 June 1840. The farm is situated well clear of the island.
8.1.2: The maintenance and enhancement of the visual character of indigenous, working and built landscapes.	8.1.3: Avoid, remedy or mitigate the damage of identified outstanding landscape features arising from the effects of excavation, disturbance of vegetation, or erection of structures.	There will be no further impact on the landscape than those already permitted under the current consent. The effects of the application on the landscape will be minor and the effects are not likely to impact on the values which contribute to the landscape. The farm is well managed and complies with the Greenshell Mussel Environmental Code of Practice.
	8.1.5: Promote enhancement of the nature and character of indigenous, working, and built landscapes by all activities which use land and water.	The marine farm will have no additional impact on landscape values.
	8.1.6: Preserve the natural character of the coastal environment.	The site will have no additional impact on the natural character of the coastal environment.

Appendix B: Marlborough Sounds Resource Management Plan – Policy Analysis

Objective	Policy	Assessment
Ch 2, 2.2, Obj 1: The preservation of the natural character of the coastal environment, wetlands, lakes, and rivers and their margins and the protection of them from inappropriate subdivision, use and development.	Policy 1.1: Avoid the adverse effects of subdivision, use or development within those areas of the coastal environment and freshwater bodies which are predominantly in their natural state and have natural character which has not been compromised.	This application is set in an area which is pine forest and early regenerating scrub. The marine farm is within a bay with other marine farms.
	Policy 1.2: Appropriate use and development will be encouraged in areas where the natural character of the coastal environment has already been compromised, and where the adverse effects of such activities can be avoided, remedied or mitigated.	Refer above.
	Policy 1.3: To consider the effects on those qualities, elements and features which contribute to natural character, including: a) Coastal and freshwater landforms; b) Indigenous flora and fauna, and their habitats; c) Water and water quality; d) Scenic or landscape values; e) Cultural heritage values, including historic places, sites of early settlement and sites of significance to iwi; and f) Habitat of trout.	These matters have been considered in the assessment of environmental effects.
	Policy 1.4: In assessing the actual or potential effects of subdivision, use or development on natural character of the coastal and freshwater environments, particular regard shall be had to the policies in Chapters, 3, 4, 5, 6, 12, 13 and Sections 9.2.1, 9.3.2 and 9.4.1 in recognition of the components of natural character.	The application will not have any additional impact on the components of these policies which impact natural character values.

	Policy 1.6: In assessing the appropriateness of subdivision, use or development in coastal and freshwater environments regard shall be had to the ability to restore or rehabilitate natural character in the area subject to the proposal.	Any residual impact on natural character will naturally rehabilitate on removal of the farm.
	Policy 1.7: To adopt a precautionary approach in making decisions where the effects on the natural character of the coastal environment, wetlands, makes and rivers (and their margins) are unknown.	The effects of this application are not unknown and are discussed elsewhere in the assessment of environmental effects. A precautionary approach is not justified.
Ch 4, 4.3, Obj 1: The protection of significant indigenous flora and fauna (including trout and salmon) and their habitats from the adverse effects of use and development	Policy 1.2: Avoid, remedy or mitigate the adverse effects of land and water use on areas of significant ecological value.	The effect of the marine farm on the adjacent area will not have any effect on the flora and fauna of this area.
Ch 5, 5.3, Obj 1: Management of the visual quality of the Sounds and protection of outstanding natural features and landscapes from inappropriate subdivision, use and development	Policy 1.1: Avoid, remedy and mitigate adverse effects of subdivision, use and development, including activities and structures, on the visual quality of outstanding natural features and landscapes, identified according to criteria in Appendix One.	The effects of the application on the landscape will be the same as the current permitted activity and the effects are not likely to impact on the values which contribute to the landscape.
Ch 6, 6.1.2, Obj 1: Recognition and provision for the relationship of Marlborough's Maori to their culture and traditions with their ancestral lands, waters, sites, waahi tapu and other taonga.	Policies 1.1-1.5	In preparing this application, the applicant has had regard to the Statutory Acknowledgments and has reviewed the statements of association for each iwi. An initial letter has been sent to all Iwi identifying the site prior to the application being submitted and a meeting planned with relevant iwi.
Ch 8, 8.3, Obj 1: That public access *to and along* the coastal marine area, lakes and rivers be maintained and enhanced.	Policy 1.2: Adverse effects on public access caused by the erection of structures, marine farms, works or activities in or along the coastal marine area should as far as practicable be avoided. Where complete	There are no additional adverse effects on public access caused by the marine farm.

	avoidance is not practicable, the adverse effects should be mitigated and provision made for remedying those effects, to the extent practicable.	
	Policy 1.3: To prevent the erection of structures and marine farms that restrict public access in the coastal marine area where it is subjected to high public usage.	There are no additional adverse effects on public access caused by the marine farm.
	Policy 1.8: Public access to and along the coastal marine area should be maintained and enhanced except where it is necessary to [circumstances do not apply].	There are no additional adverse effects on public access caused by the marine farm.
Ch 9, 9.2.1, Obj 1: The accommodation of appropriate activities in the coastal marine area whilst avoiding, remedying or mitigating the adverse effects of those activities.	Policy 1.1: Avoid, remedy and mitigate the adverse effects of use and development of resources in the coastal marine area on any of the following: a) Conservation and ecological values; b) Cultural and iwi values; c) Heritage and amenity values; d) Landscape, seascape and aesthetic values; e) Marine habitats and sustainability; f) Natural character of the coastal environment; g) Navigational safety; h) Other activities, including those on land; i) Public access to and along the coast; j) Public health and safety; k) Recreation values; and l) Water quality.	The way in which adverse effects on the stated values will be avoided, remedied and mitigated is addressed elsewhere in the assessment of environmental effects. Overall, the proposal is consistent with this policy.
	Policy 1.2: Adverse effects of subdivision, use or development in the coastal environment should as far as practicable be avoided. Where complete avoidance is not practicable, the adverse effects	The marine farm is within a bay with other marine farms. There are no additional adverse effects on the coastal environment from this farm. The navigational lighting requirements will not change from the existing consent.

	should be mitigated and provision made for remedying those effects to the extent practicable.	
	Policy 1.3: Exclusive occupation of the coastal marine area or occupation which effectively excludes the public will only be allowed to the extent reasonably necessary to carry out the activity.	Consistent with other marine farms in the Marlborough Sounds, exclusive occupation of the consent area is not sought, other than for the area physically occupied by the lines and anchoring devices.
	Policy 1.6: Ensure recreational interests retain a dominant status over commercial activities that require occupation of coastal space and which preclude recreational use in Queen Charlotte Sound, including Tory Channel, but excluding Port and Marina Zones.	Not applicable
	Policy 1.7: Avoid adverse effects from the occupation of coastal space in or around recognised casual mooring areas.	Exclusive occupation of the consent area is not sought. There is one mooring located in the adjacent Bay. The farm does not impede the navigation to this mooring.
	Policy 1.12: To enable a range of activities in appropriate places in the waters of the Sounds including marine farming, tourism and recreation.	Policy 1.12 enables marine farming in appropriate places. Site 8451 is consented for marine farming, there are other marine farms consented in the adjacent bay.
	Policy 1.13: Enable the renewal as controlled activities of marine farms authorised by applications made prior to 1 August 1996 as controlled activities, apart from exceptions in Appendix D2 in the Plan.	NA
Ch 9, 9.3.2, Obj 1: Management of the effects of activities so that water quality in the coastal marine area is at a level which enables the gathering or cultivating of shellfish for human consumption (Class SG).	Policies 1.1 to 1.11	This application is not anticipated to have any impact on shellfish quality.

Ch 9, 9.4.1, Obj 1:	Policy 1.1: Avoid, remedy or mitigate the adverse effects of activities that disturb or alter the foreshore and/or seabed on any of the following: [criteria specified in Plan].	There will be no additional disturbances of the seabed.
Ch 9, 9.4A.1, Obj 1:	n/a	These policies are no longer relevant due to abolition of AMAs through legislation.
Ch 19, 19.3, Obj 1: Safe, efficient and sustainably managed water transport systems in a manner that avoids, remedies and mitigates adverse effects.	Policy 1.1: Avoid, remedy or mitigate the adverse effects of activities and structures on navigation and safety, within the coastal marine area.	There have been no reported navigational incidences in the bay. There will no changes to the existing consent conditions regarding the navigational aids placed on the farm.
Ch 22, 22.3, Obj 1: To avoid, remedy and mitigate the adverse effects of unreasonable noise, while allowing for reasonable noise associated with port activities.	Policy 1.1: Avoid, remedy and mitigate community disturbance, disruption or interference by noise within coastal, rural, and urban areas.	There are no residents in the Bay. A servicing vessel is estimated to spend approximately 190-210 hours per annum maintaining and harvesting the lines per year. The applicant complies with the 'Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay on other users and residents'

Appendix C: Analysis of Consistency with the Proposed Marlborough Environment Plan (Volume 1)

MEP Provision	Evaluation
Objective 3.2 – Natural and physical resources are managed in a manner that takes into account the spiritual and cultural values of Marlborough's tangata whenua iwi and respects and accommodates tikanga Māori. [RPS]	The applicant has prepared the application in a manner that takes into account the spiritual and cultural values of Marlborough's tangata whenua iwi. Recognition is given to Māori culture and traditions and confirmation from Iwi is sought to ensure the proposal does not affect these values.
Objective 3.3 – The cultural and traditional relationship of Marlborough's tangata whenua iwi with their ancestral lands, water, air, coastal environment, waahi tapu and other sites and taonga are recognised and provided for. [RPS]	See sections 12 and 22 AEE.
Objective 3.5 – Resource management decision making processes that give particular consideration to the cultural and spiritual values of Marlborough's tangata whenua iwi. [RPS]	The applicant has given particular consideration to the matters in objective 3.5, as discussed, the AEE at sections 12 and 22, in order to assist decision makers.
Policy 3.1.1 – Management of natural and physical resources in Marlborough will be carried out in a manner that: (a) takes into account the principles of the Treaty of Waitangi/Te Tiriti o Waitangi, including kāwanatanga, rangatiratanga, partnership, active protection of natural resources and spiritual recognition. (b) recognises that the way in which the principles of the Treaty of Waitangi/Te Tiriti o Waitangi will be applied will continue to evolve; (c) promotes awareness and understanding of the Marlborough District Council's obligations under the Resource Management Act 1991 regarding the principles of the Treaty of Waitangi/Te Tiriti o Waitangi among Council decision makers, staff and the community; (d) recognises that tangata whenua have rights protected by the Treaty of Waitangi/Te Tiriti o Waitangi and that consequently the Resource Management Act 1991 accords iwi a status distinct from that of interest groups and members of the public; and	See above.

MEP Provision	Evaluation
(e) recognises the right of each iwi to define their own preferences for the sustainable management of natural and physical resources, where this is not inconsistent with the Resource Management Act 1991. [RPS]	
Policy 3.1.2 – An applicant will be expected to consult early in the development of a proposal (for resource consent or plan change) so that cultural values of Marlborough's tangata whenua iwi can be taken into account. [RPS]	See above.
Policy 3.1.3 – Where an application for resource consent or plan change is likely to affect the relationship of Marlborough's tangata whenua iwi and their culture and traditions, decision makers shall ensure: (a) the ability for tangata whenua to exercise kaitiakitanga is maintained; (b) mauri is maintained or improved where degraded, particularly in relation to fresh and coastal waters, land and air; (c) mahinga kai and natural resources used for customary purposes are maintained or enhanced and that these resources are healthy and accessible to tangata whenua; (d) for waterbodies, the elements of physical health to be assessed are: i. aesthetic and sensory qualities, e.g. clarity, colour, natural character, smell and sustenance for indigenous flora and fauna; ii. life-supporting capacity, ecosystem robustness and habitat richness; iii. depth and velocity of flow (reflecting the life force of the river through its changing character, flows and fluctuations); iv. continuity of flow from the sources of a river to its mouth at the sea; v. wilderness and natural character; vi. productive capacity; and vii. fitness to support human use, including cultural uses. (e) how traditional Māori uses and practices relating to natural and physical resources such as mahinga maataitai, waahi tapu, papakāinga and taonga raranga are to be recognised and provided for. [RPS]	The applicant has had regard to the matters in Policy 3.1.3, as set out above, and in the AEE. Ecological effects have been assessed by Davidson Environmental in the report annexed to this application.

MEP Provision	Evaluation
Policy 3.1.5 – Ensure iwi management plans are taken into account in resource management decision making processes. [RPS]	The applicant has reviewed the Iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui.
Objective 4.1 – Marlborough's primary production sector and tourism sector continue to be successful and thrive whilst ensuring the sustainability of natural resources. [RPS]	The application will support the mussel farming industry in Marlborough and provide an opportunity for that industry to grow. The proposal ensures the sustainability of natural resources, as the adverse effects of mussel farming at the site are likely to be limited, as per the Davidson Environmental report. Within months of removing the farms, any trace of their presence will dissipate. Therefore, the proposal does not restrict the ability of future generations to decide how they wish to use these resources.
Policy 4.1.2 – Enable sustainable use of natural resources in the Marlborough environment. [RPS]	As above at Objective 4.1.
Policy 4.1.3 – Maintain and enhance the quality of natural resources. [RPS]	The proposal will have no more than minor effects on the quality of the natural resources at the site, and those effects are reversible upon removal of the farms.
Objective 4.3 – The maintenance and enhancement of the visual, ecological and physical qualities that contribute to the character of the Marlborough Sounds. [RPS]	The ecological character of the site will be maintained (see Davidson Environmental report). The application site is located over a habitat of sandy mud, typical of similar areas in the Sounds. The effects of low intensity farming are not likely to be significant. The relatively strong currents at the site are sufficient to prevent the accumulation of organic deposition. The existing character of the area is a working landscape. It is well-suited to the proposed activity due to the existing level of modification from farming and aquaculture. The proposed renewal is unlikely to adversely affect the existing values of the area.

MEP Provision	Evaluation
Policy 4.3.2 – Identify the qualities and values that contribute to the unique and iconic character of the Marlborough Sounds and protect these from inappropriate subdivision, use and development. [RPS]	The applicant has had regard to the qualities and values identified by the Council in the MEP, as indicated elsewhere in this policy assessment and in the application. Overall, the proposal is appropriate.
Policy 4.3.3 – Provide direction on the appropriateness of resource use activities in the Marlborough Sounds environment. [RPS]	The aquaculture provisions of the MEP have yet to be notified. The proposed site is zoned CMZ2 under the operative MSRMP, which suggests that aquaculture is appropriate in the area.
Policy 4.3.4 – Enhance the qualities and values that contribute to the unique and iconic character of the Marlborough Sounds. [RPS]	The proposal will not have significant effects on the qualities and values of the Sounds, and any effects are reversible upon removal of the farms.
Policy 4.3.5 – Recognise that the Marlborough Sounds is a dynamic environment [RPS]	The applicant recognises that the Sounds is a dynamic environment. The appropriateness of the farm can be re-assessed by future generations in the context of the future environment of the area through the resource consenting process.
Objective 5.10 – Equitable and sustainable allocation of public space within Marlborough's coastal marine area. [RPS, C]	The applicant acknowledges that it is a privilege to occupy public space in the coastal marine area. The public will still have access around and through the site, and the proposal will not affect the ability of future generations to enjoy that public space.
Policy 5.10.1 – Recognition that there are no inherent rights to be able to use, develop or occupy the coastal marine area. [RPS, C]	The applicant recognises that it has no inherent right to occupy and use the coastal marine area and requires resource consent for the proposed activity.
Policy 5.10.2 – The 'first in, first served' method is the default mechanism to be used in the allocation of resources in the coastal marine area. Where competing demand for coastal space becomes apparent, the Marlborough District Council may consider the option of introducing an alternative regime. [RPS, C]	The applicant considers that the first in first served method of allocation is appropriate for applications that meet the statutory requirements.

MEP Provision	Evaluation
Policy 5.10.3 – Where a right to occupy the coastal marine area is sought, the area of exclusive occupation should be minimised to that necessary and reasonable to undertake the activity, having regard to the public interest. [RPS, C]	The design of the site layout ensures the public will have access inshore of and through the farm.
Policy 5.10.4 – Coastal occupancy charges will be imposed on coastal permits where there is greater private than public benefit arising from occupation of the coastal marine area. [C]	The applicant has insufficient information on coastal occupancy charges to understand the implications.
Policy 5.10.5 – The Marlborough District Council will waive the need for coastal occupancy charges for the following: … (b) monitoring equipment; [C]	Davidson Environmental has not indicated that ongoing monitoring is necessary at this site.
Policy 5.10.6 – Where there is an application by a resource consent holder to request a waiver (in whole or in part) of a coastal occupation charge, the following circumstances will be considered: [(a) – (d)] [C]	Refer Policy 5.10.4
Objective 6.2 – Preserve the natural character of the coastal environment, and lakes and rivers and their margins, and protect them from inappropriate subdivision, use and development. [RPS, R, C, D]	The farm will not adversely compromise the existing values of the area and is appropriate development
Policy 6.2.1 – Avoid the adverse effects of subdivision, use or development on areas of the coastal environment with outstanding natural character values… [RPS, R, C, D]	N/A –site is not identified in the MEP has having outstanding natural character values.
Policy 6.2.2 – Avoid significant adverse effects of subdivision, use or development on coastal natural character, having regard to the significance criteria in Appendix 4. [RPS, R, C, D]	The proposal avoids significant adverse effects. There will be no damage, loss or destruction. The effects are reversible upon removal of the farm.

MEP Provision	Evaluation
Policy 6.2.3 – Where natural character is classified as high or very high, avoid any reduction in the degree of natural character of the coastal environment or freshwater bodies. [RPS, R, C, D]	The site is not classified as having high natural character in the MEP. There will be no change in the degree of the biological components of natural character.
Policy 6.2.4 – Where resource consent is required to undertake an activity within coastal or freshwater environments with high, very high or outstanding natural character, regard will be had to the potential adverse effects of the proposal on the elements, patterns, processes and experiential qualities that contribute to natural character. [RPS, R, C, D]	See above and AEE sections 9 and 22.3.
Policy 6.2.5 – Recognise that development in parts of the coastal environment and in those rivers and lakes and their margins that have already been modified by past and present resource use activities is less likely to result in adverse effects on natural character. [RPS, R, C, D]	The proposal is less likely to have an adverse effect on natural character, given existing development in the area.
Policy 6.2.6 – In assessing the appropriateness of subdivision, use or development in coastal or freshwater environments, regard shall be given to the potential to enhance natural character in the area subject to the proposal. [RPS, R, C, D]	The effects are not of a scale to justify an enhancement programme.
Policy 6.2.7 – In assessing the cumulative effects of activities on the natural character of the coastal environment, or in or near lakes or rivers, consideration shall be given to: (a) the effect of allowing more of the same or similar activity; (b) the result of allowing more of a particular effect, whether from the same activity or from other activities causing the same or similar effect; and (c) the combined effects from all activities in the coastal or freshwater environment in the locality. [RPS, R, C, D]	There are existing aquaculture activities in the area and the farm has been operating for a number of years. There are unlikely to be cumulative effects issues.
Objective 7.2 – Protect outstanding natural features and landscapes from inappropriate subdivision, use and development and maintain and enhance landscapes with high amenity value.	The area behind the farm is mapped as ONFL (although these maps are subject to challenge through the consultation process on the MEP).

MEP Provision	Evaluation
Policy 7.2.1 – Control activities that have the potential to degrade those values contributing to outstanding natural features and landscapes by requiring activities and structures to be subject to a comprehensive assessment of effects on landscape values through the resource consent process. [R, C, D]	See above and sections 9
Policy 7.2.3 – Control activities that have the potential to degrade the amenity values that contribute to those areas of the Marlborough Sounds Coastal Landscape not identified as being an outstanding natural feature and landscape by: (a) using a non-regulatory approach as the means of maintaining and enhancing landscape values in areas of this landscape zoned as Coastal Living; (b) setting standards/conditions that are consistent with the existing landscape values and that will require greater assessment where proposed activities and structures exceed those standards; and… [C, D]	Policy 7.2.3(b) does not apply to the proposed site, because aquaculture rules have yet to be included in the MEP. As a result, the application must be assessed against the rules applying under the operative MSRMP. This has been done in a separate policy analysis table, at Appendix B.
Policy 7.2.4 – Where resource consent is required to undertake an activity within an outstanding natural feature and landscape or a landscape with high amenity value, regard will be had to the potential adverse effects of the proposal on the values that contribute to the landscape. [R, C, D]	See above.
Policy 7.2.5 – Avoid adverse effects on the values that contribute to outstanding natural features and landscapes in the first instance. Where adverse effects cannot be avoided and the activity is not proposed to take place in the coastal environment, ensure that the adverse effects are remedied. [R, C, D]	See above.
Policy 7.2.7 – Protect the values of outstanding natural features and landscapes and the high amenity values of the Wairau Dry Hills and the Marlborough Sounds Coastal Landscapes by: (a) In respect of structures: (i) avoiding visual intrusion on skylines, particularly when viewed from public places; (ii) avoiding new dwellings in close proximity to the foreshore; (iii) using reflectivity levels and building materials that complement the colours in the surrounding landscape; (iv) limiting the scale, height and placement of structures to minimise intrusion of built form into the landscape;	The applicant will minimise the scale, height and placement of structures to minimise intrusion of built form into the landscape. Buoys are low profile and predominantly black, save for orange navigation buoys required for navigational safety. The remainder of policy 7.2.7 does not apply to marine farming structures.

MEP Provision	Evaluation
(v) recognising that existing structures may contribute to the landscape character of an area and additional structures may complement this contribution; (vi) making use of existing vegetation as a background and utilising new vegetation as a screen to reduce the visual impact of built form on the surrounding landscape, providing that the vegetation used is also in keeping with the surrounding landscape character; and (vii) encouraging utilities to be co-located wherever possible… [R, C, D]	
Policy 7.2.8 – Recognise that some outstanding natural features and landscapes and landscapes with high amenity value will fall within areas in which primary production activities currently occur. [C, D]	Existing farming and aquaculture already occurs within the embayment and general area. The proposal is consistent with this primary production character.
Policy 7.2.9 – When considering resource consent applications for activities in close proximity to outstanding natural features and landscapes, regard may be had to the matters in Policy 7.2.7. [R, C, D]	See above.
Policy 8.3.1 – Manage the effects of subdivision, use or development in the coastal environment by: (a) avoiding adverse effects where the areas, habitats or ecosystems are those set out in Policy 11(a) of the New Zealand Coastal Policy Statement 2010; (b) avoiding adverse effects where the areas, habitats or ecosystems are mapped as significant wetlands or ecologically significant marine sites in the Marlborough Environment Plan; or (c) avoiding significant adverse effects and avoiding, remedying or mitigating other adverse effects where the areas, habitats or ecosystems are those set out in Policy 11(b) of the New Zealand Coastal Policy Statement 2010 or are not identified as significant in terms of Policy 8.1.1 of the Marlborough Environment Plan.	Port Underwood is mapped as a marine mammal dolphins and whales site and addressed in section 10 of AEE (although these maps are subject to challenge through the consultation process on the MEP). The effect of the marine farm on the adjacent area will not have an effect on the flora and fauna of this area.
Policy 8.3.2 – Where subdivision, use or development requires resource consent, the adverse effects on areas, habitats or ecosystems with indigenous biodiversity value shall be: (a) avoided where it is a significant site in the context of Policy 8.1.1; and (b) avoided, remedied or mitigated where indigenous biodiversity values have not been assessed as being significant in terms of Policy 8.1.1	According to the Davidson Environmental report, the proposed farm is consistent with policy 8.3.2(b).

MEP Provision	Evaluation
Policy 8.3.5 – In the context of Policy 8.3.1 and Policy 8.3.2, adverse effects to be avoided or otherwise remedied or mitigated may include: [(a) – (t)]	See AEE and Davidson Environmental report.
Policy 8.3.8 – With the exception of areas with significant indigenous biodiversity value, where indigenous biodiversity values will be adversely affected through land use or other activities, a biodiversity offset can be considered to mitigate residual adverse effects. Where a biodiversity offset is proposed, the following criteria will apply: (a) the offset will only compensate for residual adverse effects that cannot otherwise be avoided, remedied or mitigated; (b) the residual adverse effects on biodiversity are capable of being offset and will be fully compensated by the offset to ensure no net loss of biodiversity; (c) where the area to be offset is identified as a national priority for protection under Objective 8.1, the offset must deliver a net gain for biodiversity; (d) there is a strong likelihood that the offsets will be achieved in perpetuity; (e) where the offset involves the ongoing protection of a separate site, it will deliver no net loss and preferably a net gain for indigenous biodiversity protection; and (f) offsets should re-establish or protect the same type of ecosystem or habitat that is adversely affected, unless an alternative ecosystem or habitat will provide a net gain for indigenous biodiversity.	Biodiversity offsetting is not justified in this case.
Objective 9.1 – The public are able to enjoy the amenity and recreational opportunities of Marlborough's coastal environment, rivers, lakes, high country and areas of historic interest. [RPS, R, C, D]	See sections 8, 9, 11, 13, 14 and 18 of the AEE.
Policy 9.1.1 – The following areas are identified as having a high degree of importance for public access and the Marlborough District Council will as a priority focus on enhancing access to and within these areas: (a) high priority waterbodies for public access on the Wairau Plain and in close proximity to Picton, Waikawa, Havelock, Renwick, Seddon, Ward and Okiwi Bay; (b) coastal marine area, particularly in and near Picton, Waikawa and Havelock, Kaiuma Bay, Queen Charlotte Sound (including Tory Channel), Port Underwood, Pelorus Sound, Mahau Sound, Mahikipawa Arm and Croiselles Harbour, Rarangi to the Wairau River mouth, Wairau Lagoons, Marfells Beach and Ward Beach…	N/A

MEP Provision	Evaluation
[RPS]	
Policy 9.1.2 – In addition to the specified areas in Policy 9.1.1, the need for public access to be enhanced to and along the coastal marine area, lakes and rivers will be considered at the time of subdivision or development, in accordance with the following criteria: (a) there is existing public recreational use of the area in question, or improving access would promote outdoor recreation; (b) connections between existing public areas would be provided; (c) physical access for people with disabilities would be desirable; and (d) providing access to areas or sites of cultural or historic significance is important. [RPS, C, D]	See above. The farm will not prevent access to areas or sites of cultural and historic significance in the area.
Policy 9.1.5 – Acknowledge the importance New Zealander's place on the ability to have free and generally unrestricted access to the coast. [RPS, C, D]	The applicant acknowledges the importance to New Zealanders of having unrestricted access to the coast. The site design ensures that the public will continue to have access through the site and along the shore.
Policy 9.1.7 – Recognise there is an existing network of marinas at Picton, Waikawa and Havelock, publicly owned community jetties, landing areas and launching ramps that make a significant contribution in providing access for the public to Marlborough's coastal areas. [RPS, C]	The proposed farm will be able to be accessed from the existing facilities of a contractor or lessee.
Policy 9.1.8 – Enable public use of jetties for the purposes of access to the Sounds Foreshore Reserve and legal road along the coast. [RPS, C]	There are no jetties in the vicinity of the site.
Policy 9.1.13 – When considering resource consent applications for activities, subdivision or structures in or adjacent to the coastal marine area, lakes or rivers, the impact on public access shall be assessed against the following: (a) whether the application is in an area identified as having a high degree of importance for public access, as set out in Policy 9.1.1;	The structures have a functional need to be located in the coastal marine area. The public will have access through and around the site. Access to the site is by boat. Any impact on public access would be temporary, being reversible upon removal of the farm. Any restrictions on public access will be consistent with the purpose of a resource consent to farm

MEP Provision	Evaluation
(b) the need for the activity/structure to be located in the coastal marine area and why it cannot be located elsewhere; … (d) the extent to which the activity/subdivision/structure would benefit or adversely affect public access, customary access and recreational use, irrespective of its intended purpose; (e) in the coastal marine area, whether exclusive rights of occupation are being sought as part of the application; (f) for the Marlborough Sounds, whether there is practical road access to the site of the application; (g) how public access around or over any structure sought as part of an application is to be provided for; (h) whether the impact on public access is temporary or permanent and whether there is any alternative public access available; and (i) whether public access is able to be restricted in accordance with Policies 9.2.1 and 9.2.2. [C, D]	mussels, in line with policy 9.2.1. The effects on public access will be no more than minor, in accordance with policy 9.2.2.
Policy 9.3.2 – Seek diversity in the type and size of open spaces and recreational facilities to meet local, district, regional and nationwide needs, by: … (d) recognising and protecting the value of open space in the coastal marine area, high country environments and river beds. [RPS, C, D]	The applicant recognises the value of open space and has designed the site layout with this in mind.
Objective 10.1 – Retain and protect heritage resources that contribute to the character of Marlborough. [RPS]	See section 12 AEE.
Policy 10.1.3 – Identify and provide appropriate protection to Marlborough's heritage resources, including: (a) historic buildings (or parts of buildings), places and sites; (b) heritage trees; (c) places of significance to Marlborough's tangata whenua iwi; (d) archaeological sites; and (e) monuments and plaques. [RPS, C, D]	See above

MEP Provision	Evaluation
Chapter 13 objectives and policies.	N/A – Chapter 13 expressly states that it "does not contain provisions managing marine farming."
Objective 15.1a – Maintain and where necessary enhance water quality in Marlborough's rivers, lakes, wetlands, aquifers and coastal waters, so that: (a) the mauri of wai is protected; (b) water quality at beaches is suitable for contact recreation; (c) people can use the coast, rivers, lakes and wetlands for food gathering, cultural, commercial and other purposes; … (f) coastal waters support healthy ecosystems. [RPS, R, C]	Mussel farming will not have an adverse effect on water quality and may even enhance water quality.
Policy 15.1.1 – As a minimum, the quality of freshwater and coastal waters will be managed so that they are suitable for the following purposes: (a) Coastal waters: protection of marine ecosystems; potential for contact recreation and food gathering/marine farming; and for cultural and aesthetic purposes; … [RPS, R, C]	Aquaculture requires excellent water quality. The proposed farm will not have an adverse effect on water quality.
Policy 15.1.9 – Enable point source discharge of contaminants or water to water where the discharge will not result: (a) in any of the following adverse effects beyond the zone of reasonable mixing: (i) the production of conspicuous oil or grease films, scums, foams or floatable or suspended materials; (ii) any conspicuous change in the colour or significant decrease in the clarity of the receiving waters; (iii) the rendering of freshwater unsuitable for consumption by farm animals; (iv) any significant adverse effect on the growth, reproduction or movement of aquatic life; or (c) in the flooding of or damage to another person's property. [R, C]	Discharge from harvesting will not result in any of the specified adverse effects.

MEP Provision	Evaluation
15.1.10 – Require any applicant applying for a discharge permit that proposes the discharge of contaminants to water to consider all potential receiving environments and adopt the best practicable option, having regard to: (a) the nature of the contaminants; (b) the relative sensitivity of the receiving environment; (c) the financial implications and effects on the environment of each option when compared with the other options; and (d) the current state of technical knowledge and the likelihood that each option can be successfully applied. [RPS, R, C]	See Davidson Environmental report. Discharge occurs during harvesting, and the effects are momentary and insignificant. Contaminants are materials that are already in the water column, such as sediments and organic materials trapped by lines and structures.
15.1.11 – When considering any discharge permit application for the discharge of contaminants to water, regard will be had to: (a) the potential adverse effects of the discharge on spiritual and cultural values of Marlborough's tangata whenua iwi; (b) the extent to which contaminants present in the discharge have been removed or reduced through treatment; and (c) whether the discharge is of a temporary or short term nature and/or whether the discharge is associated with necessary maintenance work for any regionally significant infrastructure. [RPS, R, C]	See above Discharge during harvest is temporary in nature and sedimentation soon reverts to background levels, consistent with policy 15.1.11(c).
15.1.12 – After considering Policies 15.1.10 and 15.1.11, approve discharge permit applications to discharge contaminants into water where: (a) the discharge complies with the water quality classification standards set for the waterbody, after reasonable mixing; or (b) in the case of non-compliance with the water quality classification standards set for the waterbody: (i) the consent holder for an existing discharge can demonstrate a reduction in the concentration of contaminants and a commitment to a staged approach for achieving the water quality classification standards within a period of no longer than five years from the date the consent is granted; and (ii) the degree of non-compliance will not give rise to significant adverse effects. [RPS, R, C]	Water discharged during harvesting will comply with SG standards in Appendix 5.

MEP Provision	Evaluation
Policy 15.1.16 – The duration of any new discharge permit will be either: (a) Up to a maximum of 15 years for discharges into waterbodies or coastal waters where the discharge will comply with water quality classification standards for the waterbody or coastal waters; … (c) no more than five years where the existing discharge will not comply with water quality classification standards for the waterbody or coastal waters. With the exception of regionally significant infrastructure, no discharge permit will be granted subsequent to the one granted under (c), if the discharge still does not meet the water quality classification standards for the waterbody or coastal waters. [R, C]	This policy is inconsistent with s 123A of the Resource Management Act, which provides for a minimum 20-year term for coastal permits authorising aquaculture activities, unless a shorter period is required to ensure that adverse effects on the environment are adequately managed. This high threshold is not met in these circumstances. It is illogical to allow for a marine farming permit for 20 years and restrict a discharge permit for harvesting to 15 years. The applicant is seeking 20-year resource consent. The AEE suggests that this term in appropriate in these circumstances.

Davidson Environmental Limited

Biological report for the reconsenting of marine farm 8451 in Pipi Bay, Port Underwood

Research, survey and monitoring report number 881

A report prepared for:
BayFresh Aquaculture Ltd
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Blenheim

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Contents

1.0 Introduction

The aim of the present study was to provide biological information for the proposed reconsenting of marine farm site 8451 in Pipi Bay, Port Underwood. The 4.93 ha consent area is located offshore of the promontory separating Pipi Bay and Whangatoetoe Bay in Port Underwood (Figure 1, Plate 1). This study describes the benthic substrata and habitats associated with the existing mussel farm consent. This report was commissioned by the farm owner, BayFresh Aquaculture Limited.

The present consent has a small structure exclusion zone located along the inshore zone of the northern part of the farm.

Figure 1. Location of marine farm 8451 in Port Underwood (red circle).

Plate 1. Looking southwest through the existing backbone lines of farm 8451 towards Whangatoetoe Bay. Photo taken near the inshore eastern consent corner in Pipi Bay.

2.0 Background information

2.1 Study area

The marine farm site is along the eastern coastline of outer Port Underwood, adjacent to the headland separating Pipi and Whangatoetoe Bays. (Figure 1, Plate 1).

Port Underwood is a Y-shaped bay extending some 8.5 km in length in a northeast direction, opening into Cloudy Bay towards the south. Offshore depths range from 10 to 18 m (Navy Chart NZ615). The catchments of Port Underwood have been heavily modified by historic land practices including farming, forestry, fire and land clearance with most of the area now in pine plantation or early regenerating scrub.

The combined coastline length of both Whangatoetoe and Pipi Bay is approximately 3.1 km and encompasses an area of sea of approximately 42.15 ha.

2.2 Historical reports

One biological report was found in relation to the original farm consent (Handley and Grange, 1999). The aim of their survey was to profile the shore to a distance of 200 m from the shore, describe the sediments within the area, and record the conspicuous benthic species observed during the dive transects across the area.

Handley and Grange (1999) reported:

"Along the shore, the sea floor sloped away to about 40-50 m from the shore where it began to level out. By 80-100 m offshore, the seafloor was generally flat.

Soft mud and silt extended from the outer boundary of the proposed farm (12 m depth) to depths of 9-10 m, at around 30-40 m from the shore. At this depth, the substrate changes to a coarser broken-shell, gravel zone. Above this, a band of cobbles dominated up into the lower intertidal zone where blue mussel shells were common.

The conspicuous species recorded along each transect were closely associated with each of the sediment zones described above. The soft mud habitat appeared to support high densities of a sand-dwelling Sabellid tube worm, occasional horse mussels (*Atrina zelandica*), and sea cucumbers (*Stichopus mollis*). Other species recorded included turret shells (*Maoricolpus roseus*), tubeworms (*Galeolaria hystrix*), cushion stars (*Patiriella regularis*) and snake stars (*Ophiopsammus maculata*). The *Galeolaria* tubeworms were not aggregated into large mounds and did not form a distinctive band or zone.

Sea squirts (*Cnemidocarpa bicornuta*) were the most common species found in the shell-gravel zone. Macroalgae was fairly common in these shallow depths. Algal species included kelp (*Carpophyllum mashalocarpum*), red alga (*Grateloupia* sp.) and the divaricating brown introduced alga (*Chnoospora minima*).

In the cobble zone above 4 m depth, purple/pink encrusting coralline algae covered many of the rocks with occasional kelp plants.

In summary, the site is fairly typical of the majority of the shallower parts of Port Underwood. There is a narrow band of cobbles and a shell gravel zone that grades rapidly into soft silt and mud which supports a fairly dense bed of tubeworms. These tubeworms have not yet been positively identified, but appear to be restricted to the soft mud/silt habitat."

3.0 Methods (present survey)

The area was investigated on 19th March 2018. Prior to fieldwork, the consent corners were plotted onto mapping software (TUMONZ Professional). The laptop running the mapping software was linked to a Lowrance HDS-12 Gen2 with an external Lowrance Point 1 high sensitivity GPS, allowing real-time plotting of the corners of marine farm surface structures and to pinpoint drop camera stations in the field. This GPS system has a maximum error of +/- 5 m.

The corners of the existing marine farm surface structures were surveyed by positioning the survey vessel immediately adjacent to the corner floats and the position plotted. It should be noted that surface structures can move due to environmental variables such as tidal current and wind. The plot of surface structures is variable from day to day and over the duration of

tidal cycles. These data should not therefore be regarded as a precise measurement of the position of surface structures, but rather an approximate position.

3.1 Sonar imaging

Sonar investigations of the area were conducted using a Lowrance HDS-12 Gen 2 and HDS-8 Gen2 linked with a Lowrance StructureScan™ Sonar Imaging LSS-1 Module. These units provide right and left side imaging as well as DownScan Imaging™. The unit also allows real time plotting of StructureMap™ overlays onto the installed Platinum underwater chart. A Lowrance HDS 10 Gen 1 unit fitted with a high definition 1kw Airmar transducer was used to collect traditional sonar data from the site.

Prior to the collection of underwater photographs, the boundaries of both the consent area and the marine farm surface structure area were investigated using the sonar. Any bottom abnormalities such as reefs, hard substrata or abrupt changes in depth were noted for inspection using the drop camera (see section 3.2).

3.2 Drop camera stations, mussel debris and low tide

A total of 50 drop camera photographs were collected from the farm (including alongside droppers and warps) and adjacent areas inside the consent. At each drop camera station, a Sea Viewer underwater splash camera fixed to an aluminium frame was lowered to the benthos and an oblique still photograph was collected where the frame landed.

The cover of benthic mussel shell from drop camera photographs were ranked as: None = no mussel shell, Low = 1-30%, Moderate = 31-50%, Moderate to High = 51-75%, and High = 76-100% cover. This assessment is displayed in Table 2 of the present report.

The location of photograph stations was selected to obtain a representative range of habitats and depths within the consent. Additional photographs were taken when any features of interest (e.g. mussel shell, reef structures, cobbles) were observed on the remote monitor on-board the survey vessel. All photographs collected during the survey have been included in Appendix 1.

Low tide was determined at four locations inshore of the consent. The survey vessel was positioned over the low water mark and the position plotted using the mapping software. Low tide was visually determined using the transition between intertidal and subtidal species.

4.0 Results

On the day of the survey, the tide was low at 8.24 am (0.4 m) and high at 2.46 pm (1.4 m). During fieldwork, the tide was incoming and high. No water current data has been collected form this area of Port Underwood, however, it is expected that the site is swept by relatively weak tidal currents.

4.1 Consent corners and surface structures

The inshore corner depths of the consent area ranged from 5.5 m to 8.7 m. Offshore boundaries of the consent area ranged from 10.8 m to 11.4 m (Table 1, Figure 3). One the day of the survey, the offshore backbones of each farm block were outside of the consent area. These lines were, however, within the range of movement that can occur due to wind and tide.

Existing surface structures consisted of two blocks of backbones covering a total of 3.6 ha (73%) of the 4.93 ha consent area.

The distance between low tide and the consent boundary was measured at four positions along the adjacent shoreline. The distance to the inshore boundary at the position of low tide 1 was 37 m, at low tide 2 was 40 m, at low tide 3 was 39 m and at low tide 4 was 33 m (Plate 2, Figure 3).

Table 1. Depths at the consent corners and existing surface structures. Depths adjusted to datum. Coordinates = NZTM (Northing/Easting).

Type	No. & Depth (m)	Coordinates
Consent corner	1, 8.7m	1695348.6,5423126.1
Consent corner	2, 10.8m	1695200.8,5423101.7
Consent corner	3, 11.3m	1695164.8,5423317.5
Consent corner	4, 11.4m	1695358.8,5423418.3
Consent corner	5, 5.5m	1695428.0,5423285.3
Consent corner	6, 7.1m	1695330.5,5423235.0
Structure corner	A, 11.3m	1695186.9,5423324.9
Structure corner	B, 11.4m	1695165.4,5423295.3
Structure corner	C, 10.8m	1695195.2,5423123.8
Structure corner	D, 11.5m	1695339.6,5423416.5
Structure corner	E, 8.6m	1695339.9,5423147.7
Structure corner	F, 7.1m	1695324.8,5423224.5
Structure corner	G, 6.7m	1695337.2,5423259.8
Structure corner	H, 8.8m	1695412.3,5423305.1
Low tide	Low tide 1	1695384.0,5423139.2
Low tide	Low tide 2	1695378.9,5423214.3
Low tide	Low tide 3	1695377.3,5423189.6
Low tide	Low tide 4	1695446.9,5423258.1

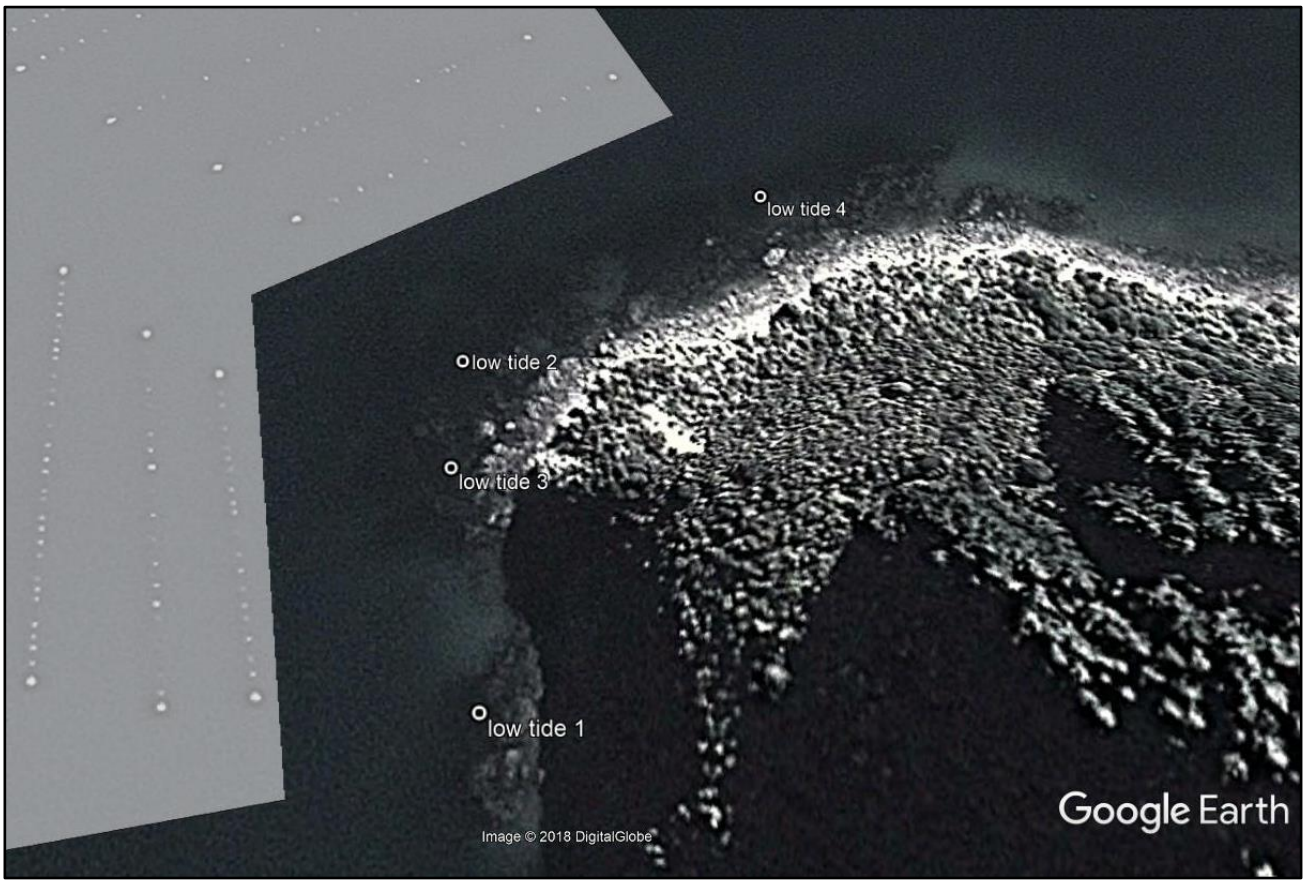

Plate 2. Areial view of low tide GPS locations relative to the inshore farm boundary (grey polygon).

4.2 Sonar imaging

Sonar runs along the inshore boundary of the consent revealed the rocky substrata inshore of the consent (Figure 4). Some cobble substrata extended into the consent, as confirmed by drop camera photographs, but these were too small to be detected by the sonar.

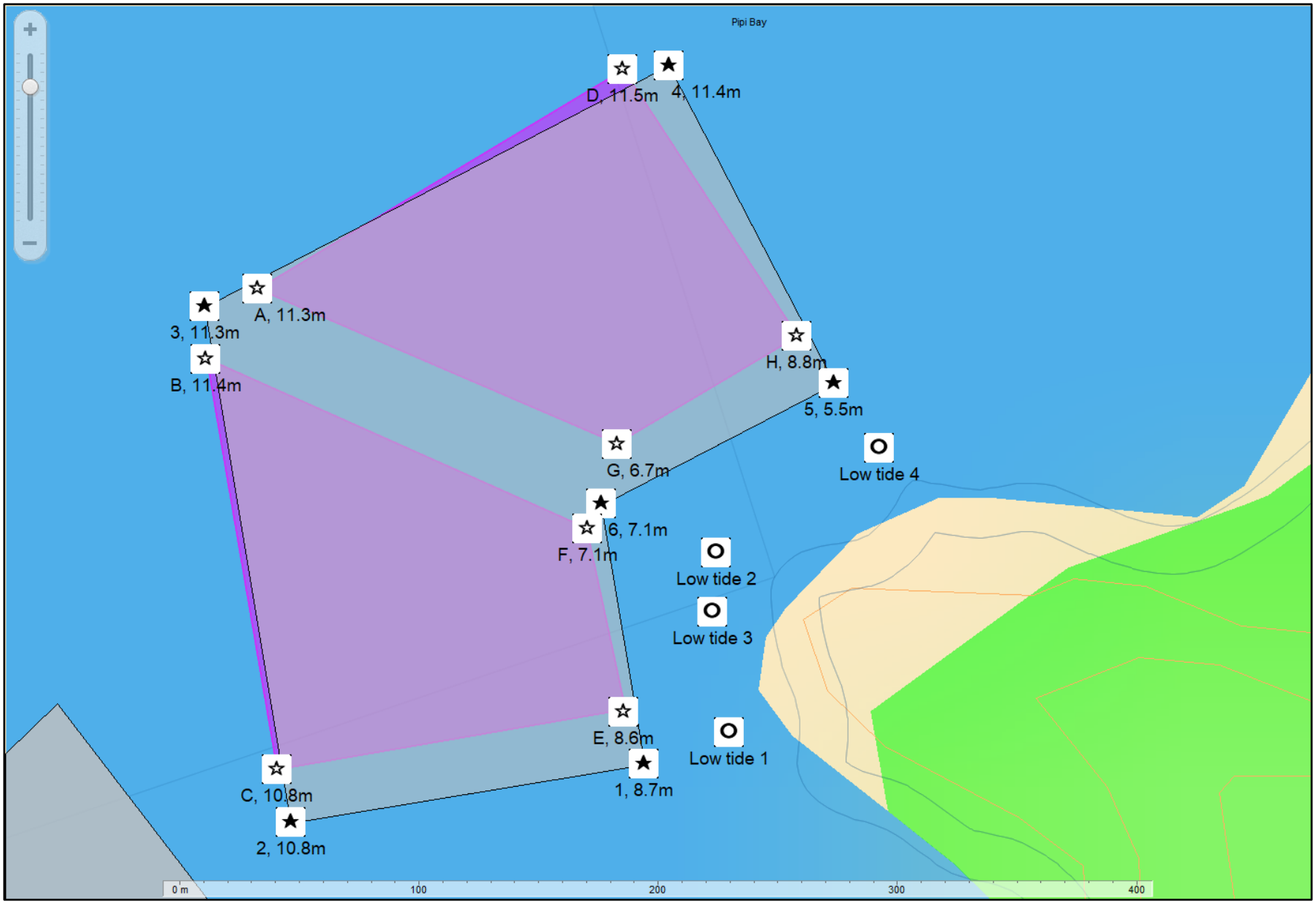

Figure 3. Depths of the proposed reconsent area (grey) and existing marine farm surface structures (pink). Four low tide locations also plotted (circles).

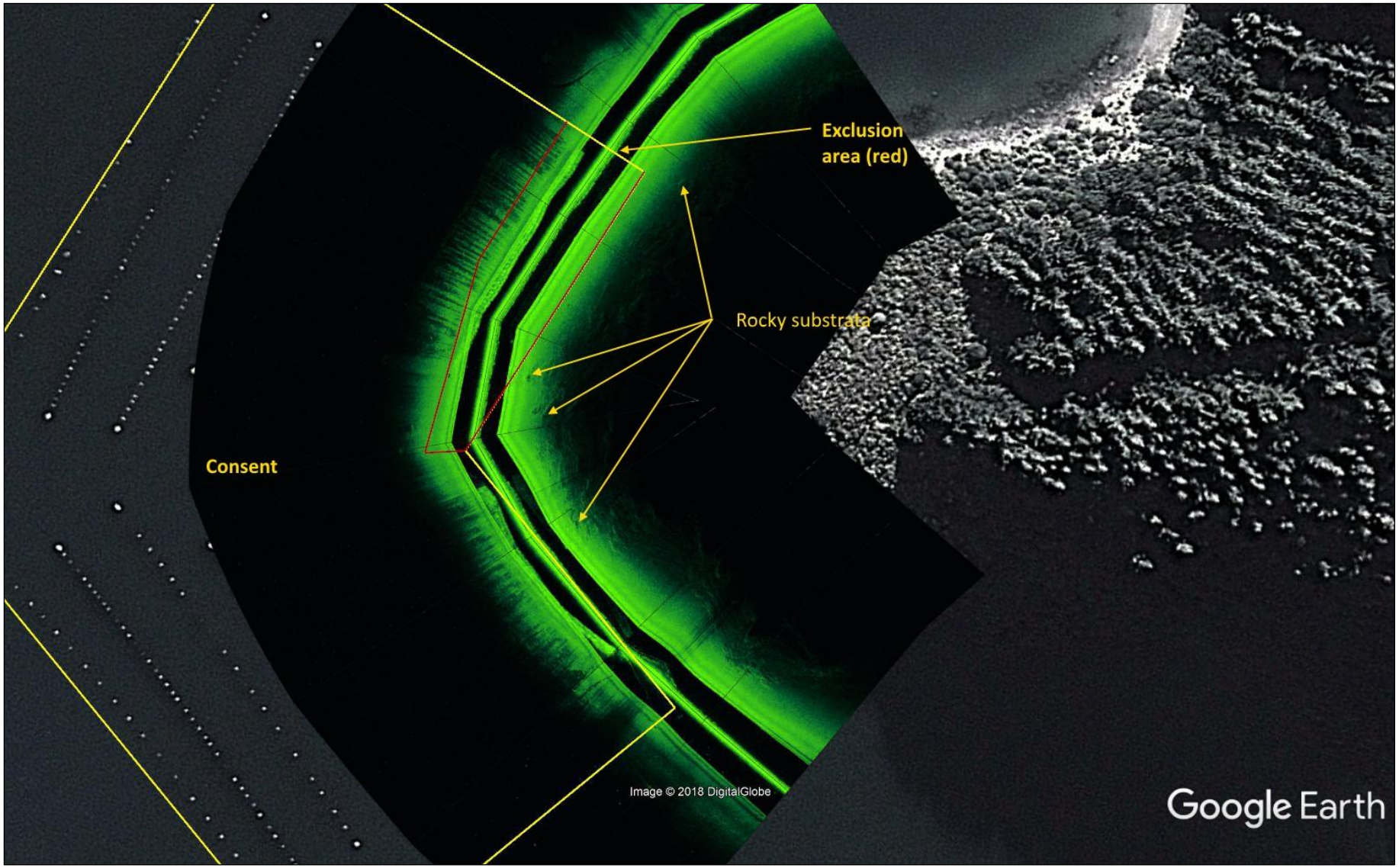

Figure 4. Inshore sonar transects at farm site 8451. Yellow polygon = consent boundary, red polygon = exclusion zone.

4.3 Drop camera images

Drop camera photographs were taken throughout the existing consent, in the exclusion zone and areas inshore of the consent (Table 2, Figures 5a and 5b, Appendix 1). Photographs were used to describe the benthic substratum and presence of biological characteristics such as algae and soft tubeworms. Percentage cover of algae on the benthos is shown in Table 2. Photograph locations showing 20% or more algae cover are plotted with black stars on Figures 5a and 5b.

Inshore of the consent

Benthic photographs taken inshore of the consent showed hard substrata. Inshore photo in Pipi Bay showed cobbles with silt and natural shell (Plate 3), while the two photos taken around the promontory had brown macroalgae growing on bedrock substratum (e.g. Plate 4).

Plate 3. Cobble, silt and natural shell (photo 48, 3.1m depth)

Plate 4. Bedrock and brown algae (photo 49, 3.7 m depth)

Within the consent

Photographs collected from the consent area inshore of structures (i.e. not occupied by farm structures) was characterised by pebbles, silt, natural shell and occasional cobbles (Plate 5). This substratum type was observed through depths of 5 m to 7 m. Mussel shell debris was

absent from this inshore consent area, except photo 47 taken directly inshore of existing backbones (Plate 6).

Plate 5. Pebbles, silt, natural shell and cobbles (photo 43, 7 m depth).

Plate 6. Silt, natural shell and moderate mussel shell debris (photo 47, 7.6 m depth).

The remainder of the consent was characterised by silt and clay substratum (Table 2). Mussel shell debris was observed within the consent area in 12 of the 40 consent photos collected. Mussel shell debris ranged from none to moderate cover under the backbones, with high debris recorded only in one photograph under backbones (Plate 7).

Plate 7. Silt and clay with high mussel shell debris under backbones (photo 37, 8.4 m depth).

Plate 8. Silt and clay with low mussel shell debris under backbones (photo 30, 8.3 m depth).

Algae were recorded in photographs taken from much of the consent area, including under the backbone structures (Table 2, Figures 5a and 5b). Algae was most common in depths around 10 m to 11 m, with percent cover reaching up to 100% (Plates 9 and 10).

Plate 9. Silt and clay with 40% algae cover in the consent, no structures (photo 16, 11.1 m depth).

Plate 10. Silt and clay with 100% algae cover in the consent, under backbones (photo 9, 10.8 m depth).

Offshore of the consent

Substratum offshore of the consent area was characterised by silt and clay with algae (Table 2). Algae was recorded in all 6 of the offshore photographs and ranged from 30% to 100% cover (Plate 11). No mussel shell debris was recorded in this area.

Plate 11. Silt and clay with 70% algae cover offshore of the consent (photo 2, 11.3 m depth).

Table 2. Coordinates of drop camera stations showing location relative to the marine farm consent area (NZTM). Colours are: grey = within consent, pink = under backbones, blue = outside consent. Depth, substratum, mussel debris, and algae (% cover) are listed

No. & Depth (m)	Coordinates	Location	Substratum	Shell debris	Algae %
1, 11.5m	1695331.9,5423423.3	Offshore of consent	Silt and clay	none	80
2, 11.3m	1695273.6,5423380.7	Offshore of consent	Silt and clay	none	70
3, 11.8m	1695233.6,5423356.1	Offshore of consent	Silt and clay	none	80
4, 11.9m	1695187.3,5423329.6	Consent boundary, no structures	Silt and clay	none	50
5, 11.3m	1695163.2,5423292.5	Offshore of consent	Silt and clay	none	100
6, 11.8m	1695172.1,5423226.2	Offshore of consent	Silt and clay	none	40
7, 10.8m	1695192.2,5423119.9	Offshore of consent	Silt and clay	none	30
8, 10.7m	1695358.4,5423394.1	In consent, under warps	Silt and clay	none	90
9, 10.8m	1695335.7,5423378.8	In consent, under backbones	Silt and clay	none	100
10, 10.7m	1695290.1,5423351.2	In consent, under backbones	Silt and clay, mussel shell	moderate	20
11, 10.3m	1695258.6,5423329.6	In consent, under backbones	Silt and clay	none	0
12, 11.2m	1695217.3,5423301.1	In consent, under warps	Silt and clay	none	70
13, 11.3m	1695204.7,5423273.3	In consent, under backbones	Silt and clay	none	40
14, 11.1m	1695218.5,5423203.5	In consent, under backbones	Silt and clay, mussel shell	low	0
15, 11.1m	1695224.7,5423141.8	In consent, under backbones	Silt and clay	none	0
16, 11.1m	1695229.4,5423109.2	In consent, no structures	Silt and clay	none	40
17, 10.3m	1695401.6,5423339.0	Consent boundary, under warps	Silt and clay, tubeworms (sparse)	none	5
18, 9.9m	1695360.4,5423321.2	In consent, under backbones	Silt and clay	none	40
19, 10.3m	1695320.3,5423302.1	In consent, under backbones	Silt and clay	none	5
20, 8.7m	1695285.0,5423275.7	In consent, under warps	Silt and clay	none	70
21, 10.1m	1695246.0,5423250.4	In consent, under backbones	Silt and clay	none	40
22, 10.5m	1695261.4,5423195.0	In consent, under backbones	Silt and clay, mussel shell	low	0
23, 10.1m	1695267.4,5423149.5	In consent, under backbones	Silt and clay	none	60
24, 10.8m	1695265.1,5423113.2	Consent boundary, no structures	Silt and clay	none	90
25, 10.5m	1695416.7,5423322.3	Alongshore of consent	Silt and clay	none	0
26, 9.4m	1695381.2,5423301.3	In consent, under backbones	Silt and clay, tubeworms (sparse)	none	2
27, 7.8m	1695323.5,5423267.9	In consent, under backbones	Silt and clay, natural shell, mussel shell	low	0
28, 8.2m	1695314.3,5423228.0	In consent, under backbones	Silt and clay, mussel shell	low	0
29, 7.6m	1695321.9,5423196.6	In consent, under backbones	Silt and clay, mussel shell	low	5
30, 8.3m	1695331.5,5423148.2	In consent, under backbones	Silt and clay, mussel shell	low	0
31, 9m	1695336.5,5423134.5	In consent, under warps	Silt and clay, natural shell, tubeworms (sparse)	none	2
32, 7.1m	1695418.1,5423300.9	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
33, 5.7m	1695390.8,5423275.7	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
34, 6.6m	1695357.5,5423265.2	In consent, no structures	Pebbles, silt, natural shell	none	0
35, 6.6m	1695337.8,5423244.2	In consent, no structures	Pebbles, silt, natural shell, occ cobble, outcropping rock	none	0
36, 8.3m	1695389.7,5423295.6	In consent, under backbones	Silt, natural shell, mussel shell	moderate	0
37, 8.4m	1695372.6,5423290.2	In consent, under backbones	Silt, natural shell, mussel shell	high	0
38, 7.8m	1695345.3,5423279.5	In consent, under backbones	Silt, natural shell, mussel shell	moderate-high	0
39, 6.5m	1695403.9,5423289.7	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
40, 6.6m	1695372.3,5423270.2	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
41, 5.8m	1695374.1,5423260.4	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
42, 5.1m	1695356.3,5423254.2	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
43, 7m	1695331.7,5423212.1	In consent, no structures	Pebbles, silt, natural shell, cobble	none	0
44, 6.2m	1695337.0,5423180.8	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
45, 7m	1695340.9,5423148.7	In consent, no structures	Pebbles, silt, natural shell, occ cobble	none	0
46, 7.6m	1695330.2,5423196.7	In consent, under backbones	Silt, natural shell, mussel shell	moderate	0
47, 7.6m	1695337.7,5423168.4	In consent, no structures	Silt, natural shell, mussel shell	moderate	0
48, 3.1m	1695388.7,5423253.8	Inshore of consent	Cobbles, silt, natural shell	none	0
49, 3.7m	1695352.5,5423221.5	Inshore of consent	Bedrock, algae	none	0
50, 3.7m	1695351.1,5423184.0	Inshore of consent	Bedrock, algae	none	0

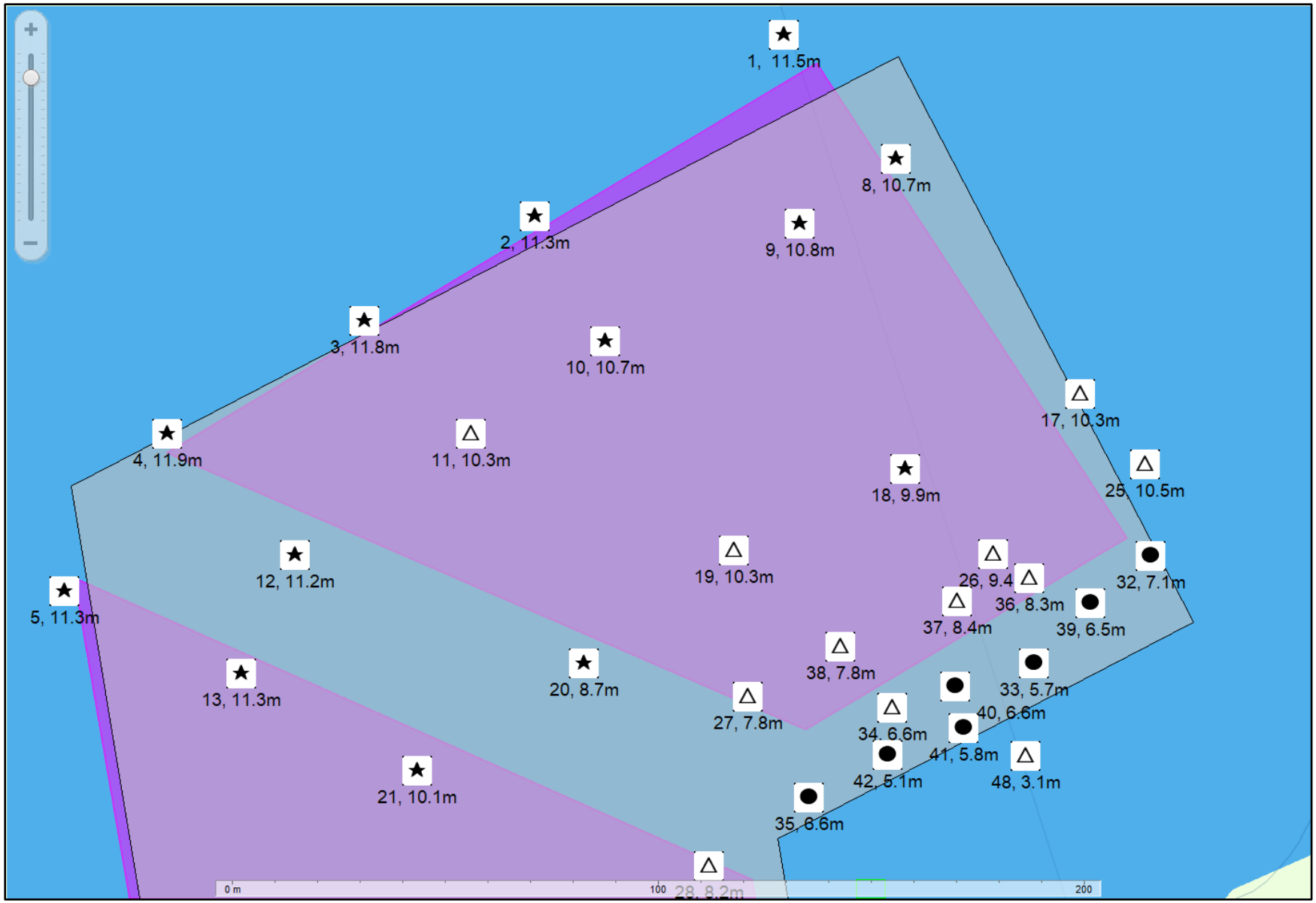

Figure 5a. Drop camera stations within the northern consent area (triangles = soft substrata, stars = algae, dots = cobbles), consent renewal area (grey) and surface structures (pink). Numbers are the photo number and water depth (m).

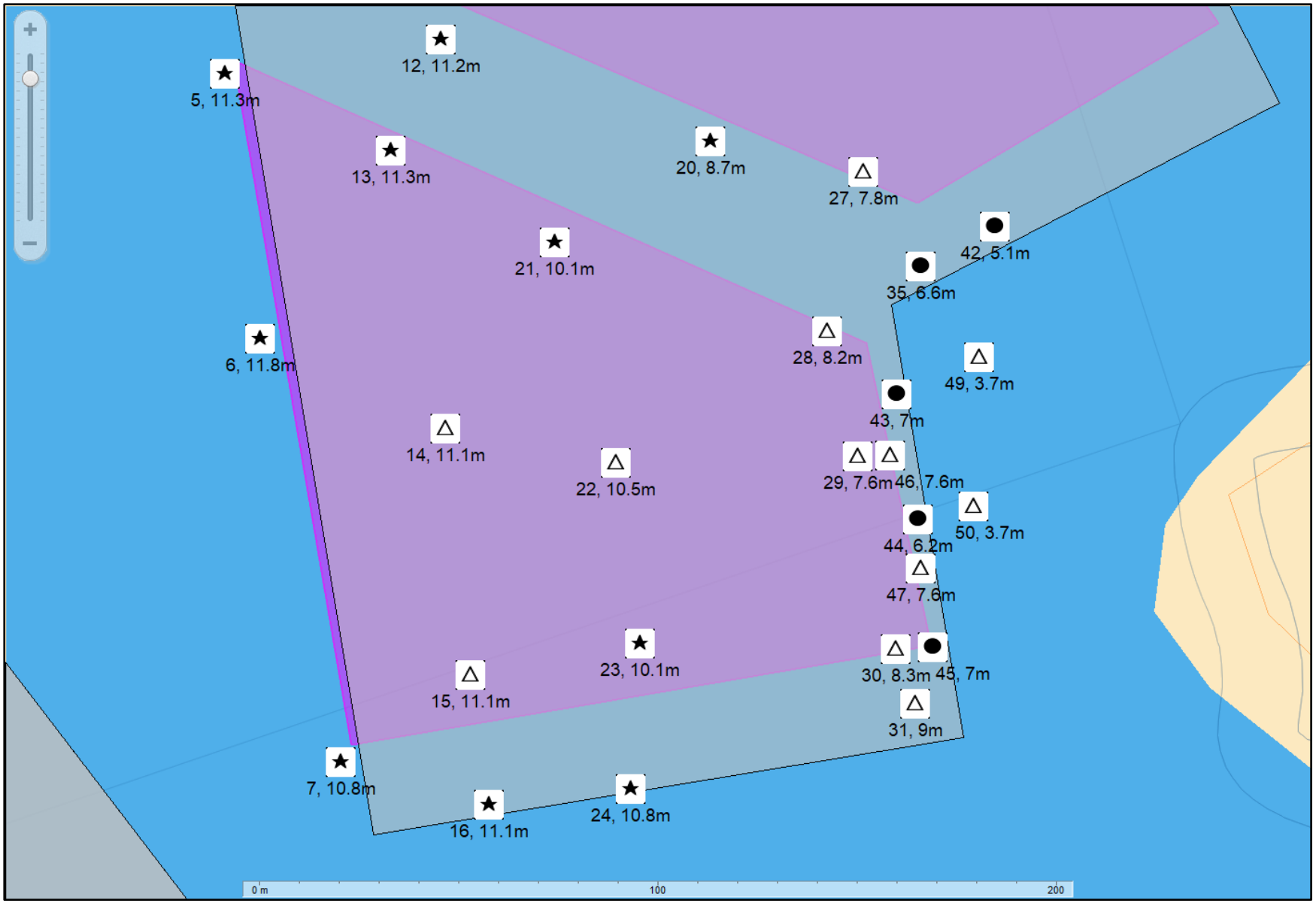

Figure 5b. Drop camera stations within the southern consent area (triangles = soft substrata, stars = algae, dots = cobbles), consent renewal area (grey) and surface structures (pink). Numbers are the photo number and water depth (m).

5.0 Conclusions

5.1 Benthic habitats and substratum

Substratum and habitat distribution relative to the reconsent area was based on drop camera stations and sonar imaging of the benthos.

Most of the consent area was located over silt and clay substratum. Inshore edges of the consent were characterised by pebbles, silt, natural shell and occasional cobbles. In the north, rocky substrata were located within the first 20 m of the consent. In the south, rock substrata was limited to a narrow strip approximately 5 m wide at two locations.

Mud (i.e. silt and clay) dominated the benthos under farm growing structures. Mud is the most common subtidal habitat in the sheltered Marlborough Sounds (McKnight and Grange, 1991) and has been traditionally targeted for marine farming activities. This substratum type is considered suitable for consideration for marine farming activities in the Marlborough Sounds.

Unlike mud and silt, pebble and cobble substratum are not traditionally considered suitable for marine farming activities as it usually is smothered by shell debris and likely no longer functions as a hard substratum habitat. At this site, hard substratum was observed within the consent area near the inshore boundary.

5.2 Species and communities

Species abundance and diversity was low. Benthic observations within the consent area supported species typical of silt substratum (e.g. cushion seastars, sea cucumbers). No fish species were observed while collecting drop camera photographs within the consent area.

Algal species were recorded in almost half of the consent area drop camera photographs on silt substratum. Twelve drop camera locations recorded algae cover of 20% or more, with up to 100% cover under existing backbone structures. Algae was also recorded in photographs taken offshore of the consent boundary. No algae were not observed on the pebble, silt, natural shell and occasional cobble substratum closer to shore.

Shallow photographs from nearshore areas inshore of the consent recorded brown macroalgae and bedrock habitat with higher diversity of species including tarakihi, blue moki and spotty.

5.3 Mussel farming impacts

5.3.1 Benthic impacts

Mussel debris was not recorded from rocky substrata located within the consent. From the remainder of the consent mussel shell debris was recorded from 12 of the 40 consent photos. Mussel debris was often low to moderate cover on the benthos under the backbones. Only one photo recorded high mussel shell debris under the backbones. Shell debris impact levels were within the range known for mussel farms in the Marlborough Sounds. This farming activity represents low to middle impact range compared to other farms in the Sounds. No mussel shell debris was recorded outside of the consent area.

Algae was often recorded growing on the benthos within the consent and under the backbones. The presence of algae under growing structures suggests these species are not adversely impacted by this farm. The density of the algae cover is temporally variable (Davidson and Richards, 2018), and spacially variable as documented from the photographs collected in the present survey.

It is probable that the impact of continued shellfish farming at this site will result in the deposition of more shell and fine sediment under and near droppers. Based on the literature and assuming the present level of farming activity remains consistent, it is very unlikely that the surface sediments would become anoxic (Hartstein and Rowden, 2004; Keeley *et al*., 2009; Davidson and Richards, 2014).

5.3.2 Productivity

Mussel farms can influence adjacent farms by slowing water flow to farms located in downstream positions. This is particularly pronounced in quiescent areas of the Sounds. However, published work by Zeldis *et al*. (2008, 2013) suggests that the major factors influencing productivity in the Marlborough Sounds relate to cyclical weather patterns in the summer (El Nino and La Nina) and river-derived nutrient inputs in winter. Slow crop cycles in some years are therefore a reflection of a weather cycle and much less about the number of farms.

There has been no data presented to show the ecological carrying capacity of the Sounds has been reached. There is considerable evidence showing the major drivers of the Pelorus

system, for example, naturally leads to large within and between year variability. Relative to this, the impact of mussel farms appears to be material but relatively small compared to major environmental drivers (Broekhuizen *et al*., 2015).

Tidal flows in the bays along the eastern shores of Port Underwood are low (author, pers. Obs.), however, winds may be a significant driver of water movement in this area, especially during the predominant north-westerly winds and southerly storms. The farm is located close to the main reach and entrance to Port Underwood, so water turnover times are likely to be relatively short compared to bay well distant to main reaches or the Cook Strait.

Based on these considerations, it is probable the site is unlikely to cause significant phytoplankton depletion outside the boundaries of the consent.

5.4 Boundary adjustments, recommendations and monitoring

The consent is located <50 m distance from low water (i.e. inshore consent boundary is currently 33 m to 40 m from low tide). If the consent was relocated 50 m distance from low water, most of the inshore rocky substratum would be located inshore of the consent.

Based on the existing consent coordinates, rocky substrata were recorded along inshore areas of the consent. Rocky substratum is traditionally avoided for marine farming activities. The northern exclusion area is presently up to 30 m wide; however, this could be reduced to 20 m wide and would still function to avoid rocky substratum. The southern consent area also has rocky substratum. It is recommended that a 10 m wide exclusion area be established over this area.

The northern block of marine farm structures has been positioned 20-25 m offshore of the inshore consent boundary, but within the exclusion area (Figure 6). This mussel lines position has avoided hard substratum. The southern farm block has been positioned 4.5-7.5m offshore of the inshore boundary and has also avoided rocky substratum.

The substratum under the rest of the consent is dominated by mud, the most common and widespread habitat type in sheltered shores of the Marlborough Sounds. The impacts associated with mussel farming on muddy habitats characterised by silt and clay are low

compared to farm impacts in shallow, habitats dominated by rocky or biogenic communities.

Algae distribution throughout the consent area and offshore area suggests a naturally patchy distribution and these algal species. The current mussel farming activity does not appear to have an impact on the presence of algae compared to offshore areas away from the farm. Any shift of the farm into this offshore area would be unlikely to have a negative impact on algae species in this area.

Based on the substratum located under structures and the low impact levels of the existing activity, no monitoring is suggested.

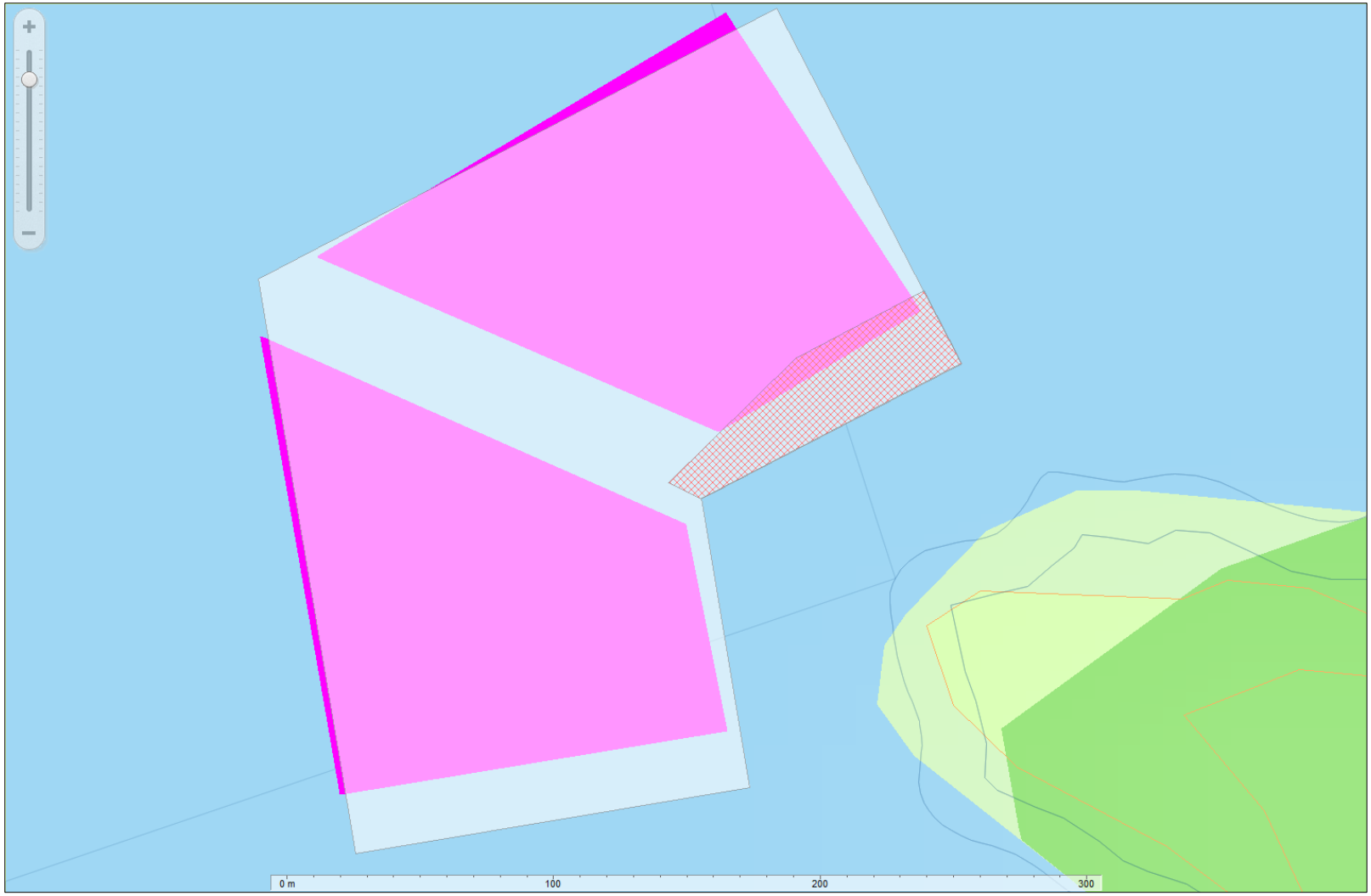

Figure 6. Consent (grey), surface structures and exclusion area (hatched).

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Appendix 1. Drop camera photographs

Photo site 1 Silt & clay, algae

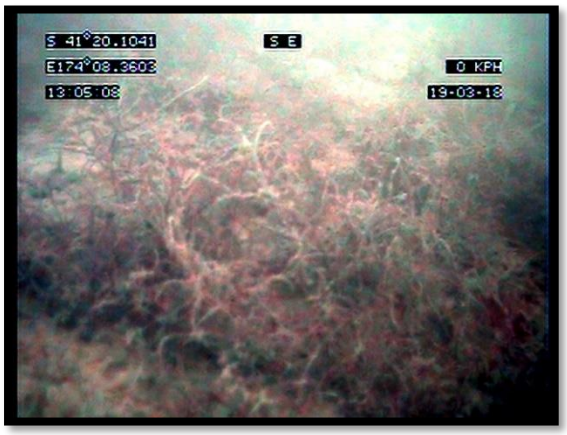


Photo site 2 Silt & clay, algae

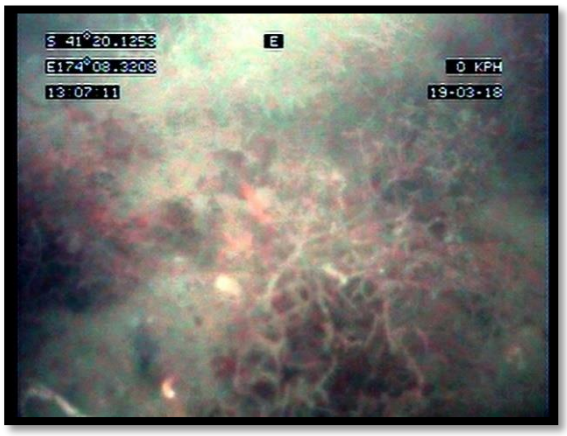


Photo site 3 Silt & clay, algae

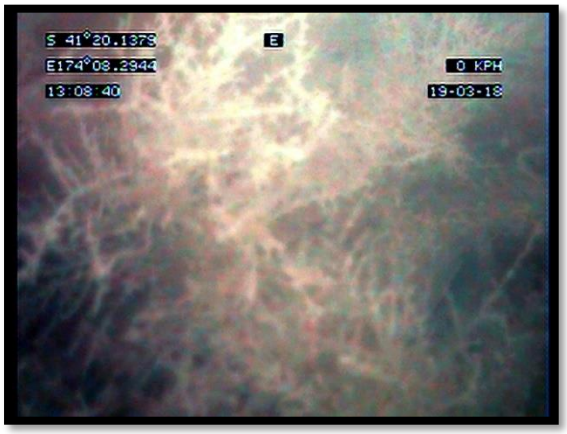


Photo site 4 Silt & clay, algae

Photo site 5 Silt & clay, algae

Photo site 6 Silt & clay, algae

Photo site 7 Silt & clay, algae

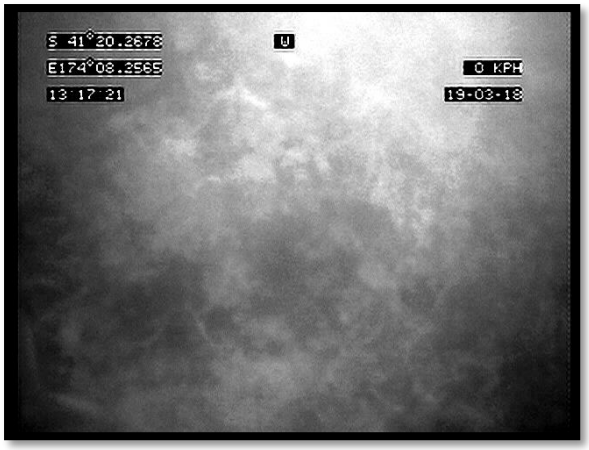


Photo site 8 Silt & clay, algae

Photo site 9 Silt & clay, algae

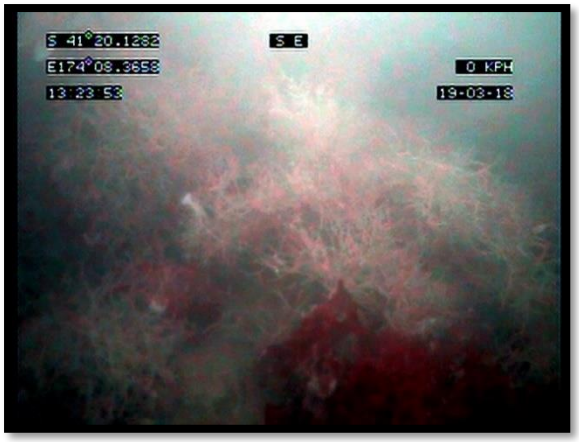


Photo site 10 Silt & clay, mussel shell, algae

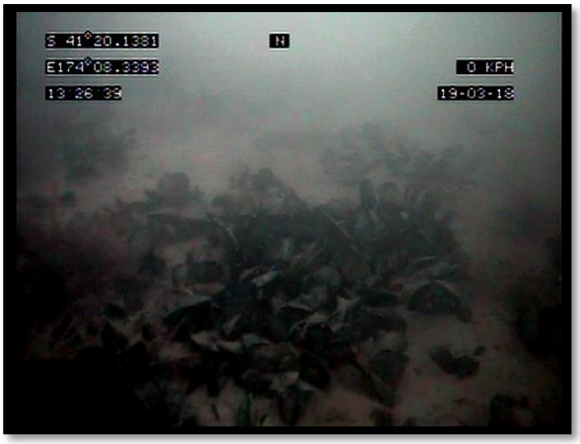


Photo site 11 Silt & clay

Photo site 12 Silt & clay, algae

Photo site 13 Silt & clay, algae

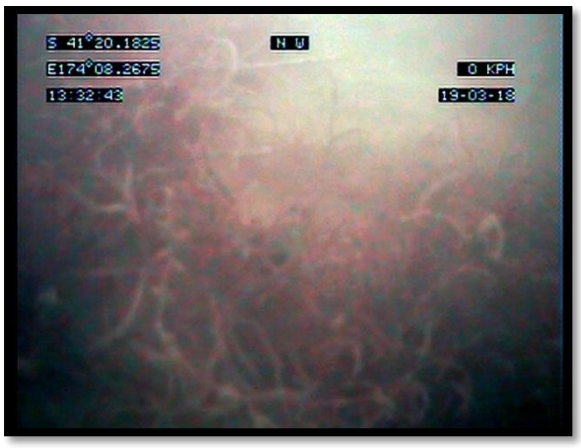


Photo site 14 Silt & clay, mussel shell

Photo site 15 Silt & clay

Photo site 16 Silt & clay, algae

Photo site 17 Silt & clay, algae, tubeworms

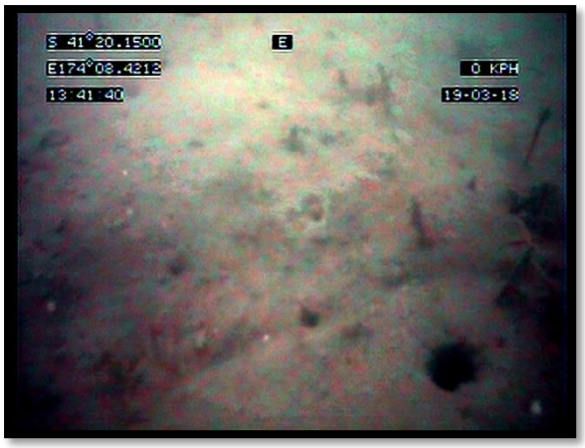


Photo site 18 Silt & clay, algae

Photo 19 Silt & clay, algae

Photo 20 Silt & clay, algae

Photo 21 Silt & clay, algae

Photo site 22 Silt & clay, mussel shell

Photo 23 Silt & clay, algae

Photo 24 Silt & clay, algae

Photo 25 Silt & clay

Photo 26 Silt & clay, algae, tubeworms

Photo 27 Silt & clay, natural shell, mussel shell

Photo site 28 Silt & clay, mussel shell

Photo 29 Silt & clay, mussel shell, algae

Photo 30 Silt & clay, mussel shell

Photo 31 Silt & clay, natural shell, algae, tubeworms

Photo 32 Pebbles, silt, natural shell, occ cobble

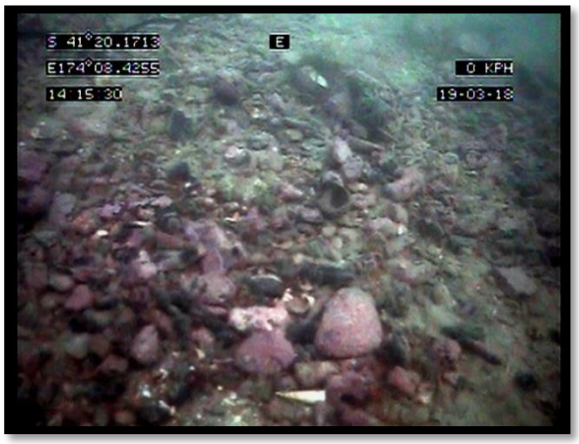


Photo 33 Pebbles, silt, natural shell, occ cobble

Photo site 34 Pebbles, silt, natural shell

Photo 35 Pebbles, silt, natural shell, occ cobble, outcropping rock

Photo 36 Silt, natural shell, mussel shell

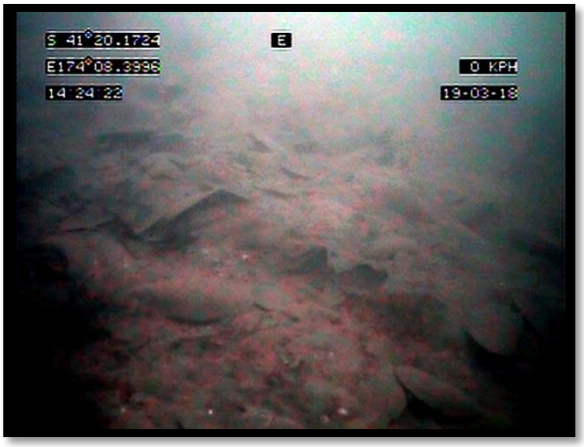


Photo 37 Silt, natural shell, mussel shell

Photo 38 Silt, natural shell, mussel shell

Photo 39 Pebbles, silt, natural shell, occ cobble

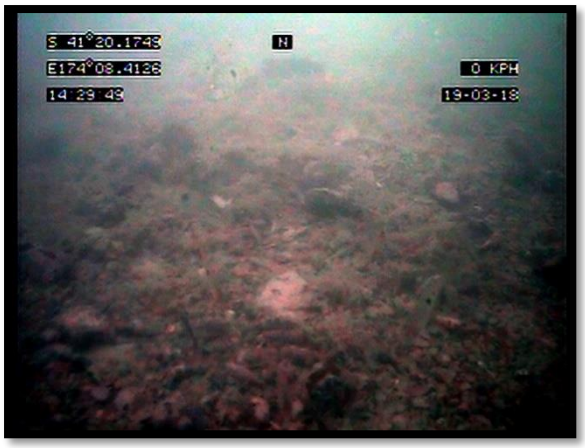


Photo site 40 Pebbles, silt, natural shell, occ cobble

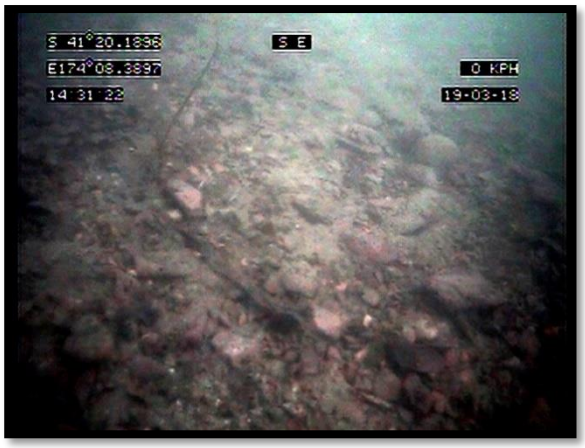


Photo 41 Pebbles, silt, natural shell, occ cobble

Photo 42 Pebbles, silt, natural shell, occ cobble

Photo 43 Pebbles, silt, natural shell, cobbles

Photo 44 Pebbles, silt, natural shell, occ cobble

Photo 45 Pebbles, silt, natural shell, occ cobble

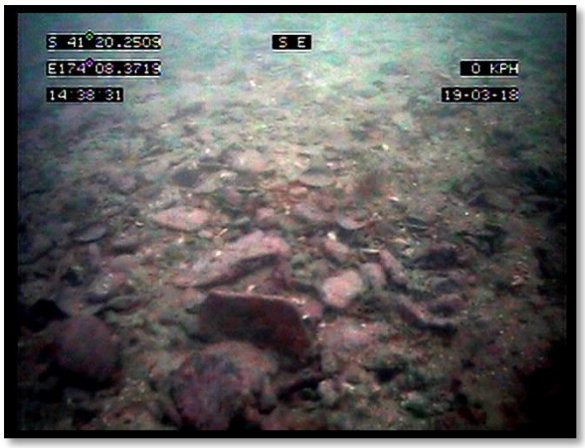


Photo site 46 Silt, natural shell, mussel shell

Photo 47 Silt, natural shell, mussel shell

Photo 48 Cobbles, silt, natural shell

Photo 49 Bedrock, algae

Photo 50 Bedrock, algae

Topomap 50 Sheet: BQ29

aquaculture direct

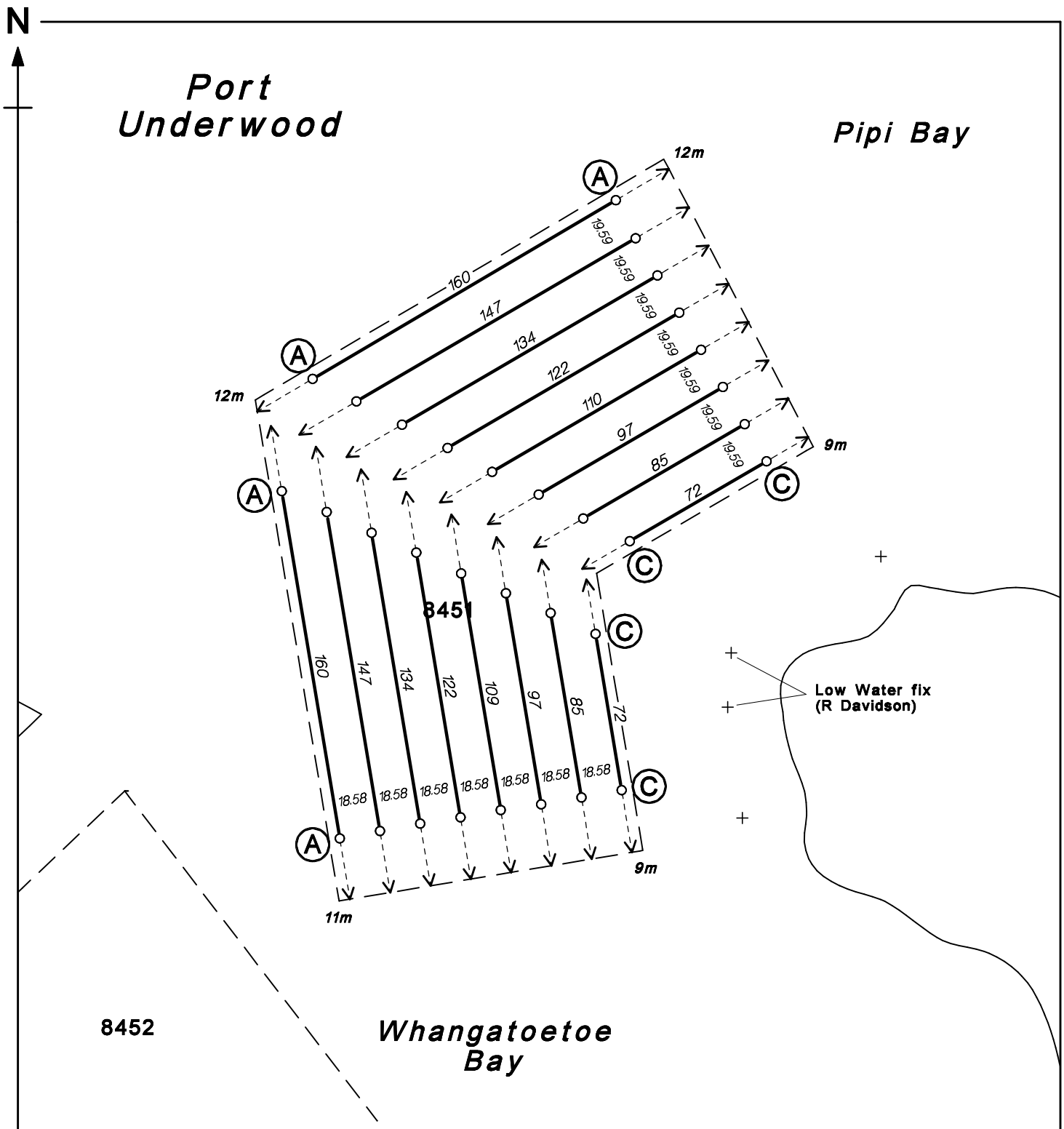
Prepared; 10 May 2018

Locality Map

Renewal of Marine Farm 8451
Pipi and Whangatoetoe Bays, Port Underwood

Scale 1:50,000

500 0 500 1000 1500 2000 2500 3000 3500 Meters



REFERENCE

- Orange Float
- Anchors
- Anchor Warp
- Backbone

- (A) Light, Radar Reflector & Reflective Tape
- (B) Radar Reflector & Reflective Tape
- (C) Reflective Tape

NOTE: Longline Spacing = as shown
Total Longlines = 16
Backbone Length = as shown
Total Backbone Length = 1853m
Warp Surface Loss = as shown

aquaculture direct

Layout Details

Renewal of Marine Farm 8451

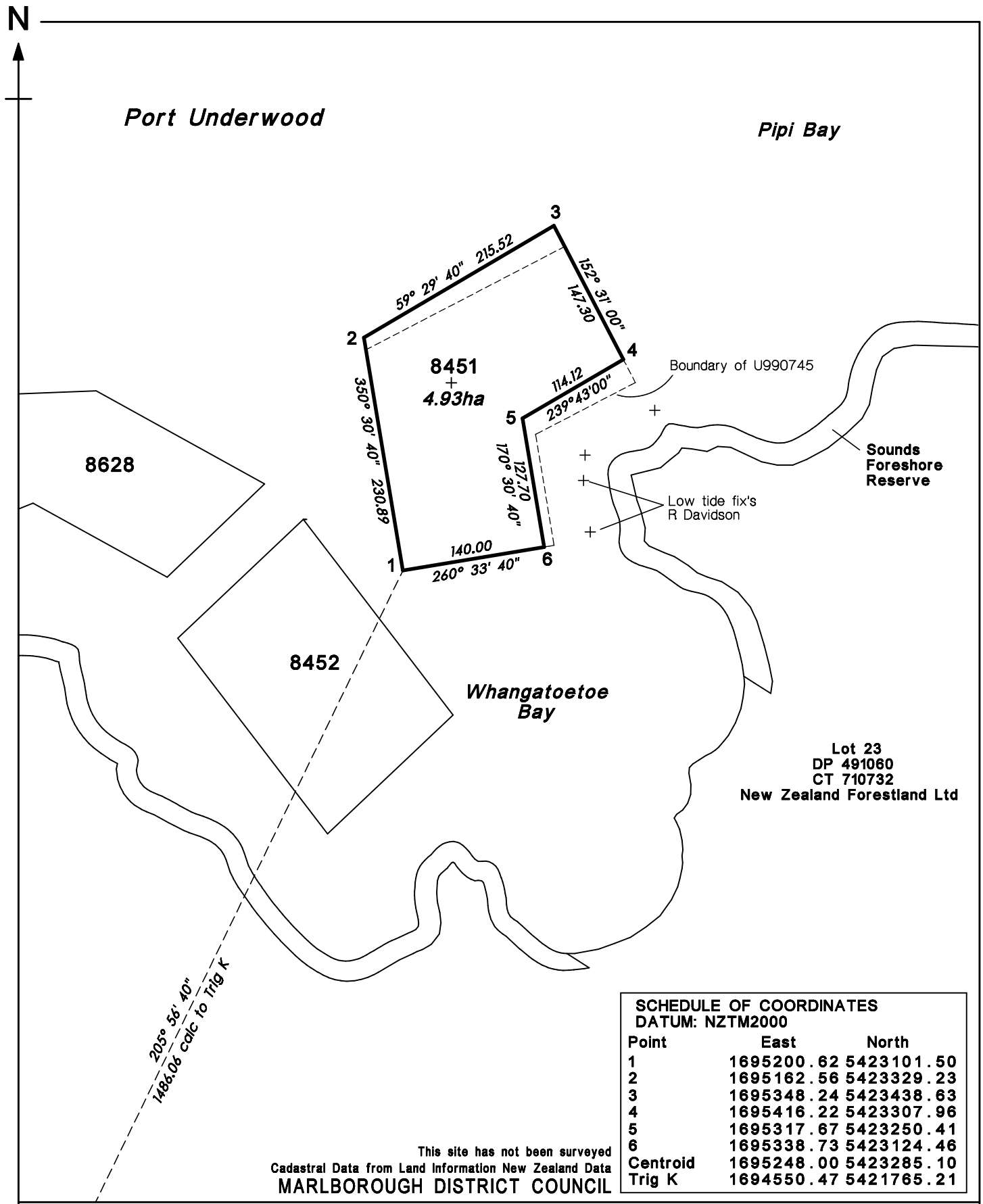
Port Underwood

SCALE 1:2,500

30 0 30 60 90 120 150m

MF_2564d
10 May 2018

C:\General CADD 12\Gxd\Marine Farming\MF_2564d.gxd -- 05/10/2018 -- 03:20 PM -- Scale 1 : 2500.00



SCHEDULE OF COORDINATES
DATUM: NZTM2000

Point	East	North
1	1695200.62	5423101.50
2	1695162.56	5423329.23
3	1695348.24	5423438.63
4	1695416.22	5423307.96
5	1695317.67	5423250.41
6	1695338.73	5423124.46
Centroid	1695248.00	5423285.10
Trig K	1694550.47	5421765.21

This site has not been surveyed
Cadastral Data from Land Information New Zealand Data
MARLBOROUGH DISTRICT COUNCIL

aquaculture direct

Proposed Coastal Permit
Renewal of Marine Farm 8451
Port Underwood

SCALE 1:5,000

50 0 100 200 300m

MF_2564d
10 May 2018