MF142 Roberts Point

Therapeutant Residue Monitoring Program

FINAL REPORT

June 2026

Report to:
Tassal Operations Pty Ltd

Prepared by:
AQUENAL PTY LTD

AQUENAL

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Operational Summary

Contractor: Aquenal Pty Ltd
ABN 74 151 011 157
244 Summerleas Road,
Kingston, Tasmania 7050
Phone 03 6229 2334 Fax 03 6229 2335

Client: Tassal Operations Pty Ltd

Field work: Sediment: Aquenal
Water quality and wild fish: Marine Solutions
Benthic video survey: Fulcrum Robotics

Laboratory Analysis:
Analytical Services Tasmania
New Town Laboratory
18 St Johns Avenue
New Town, Tasmania 7008

Environmental Monitoring Permit Details (NRE):
Aquenal Permit Number 25112 (valid until 16/10/2026)
Marine Solutions Permit Number 25114 (valid until 28/10/2026)

1 Introduction

A Therapeutant Residue Monitoring Program (TRMP) was undertaken for the Marine Farming Lease MF142 Roberts Point (Environmental Licence 9901/4) located within the Huon Estuary/D'Entrecasteaux Channel region. There was one therapeutant treatment event conducted across the lease between 22 February 2026 and 3 March 2026 using the antibiotic florfenicol (Table 1 and Table 2; see Appendix 1 for treatment details).

The TRMP was conducted in accordance with the specifications stipulated by the Tasmanian Environment Protection Authority (EPA) in *Therapeutant Residue Monitoring Schedule – Marine Farming Lease No. 142 (Roberts Point) – February 2026* (herein TRM Schedule MF142; Table 1).

The monitoring schedule was developed to assess potential environmental impacts from the treatment events and were based on the information provided in the Veterinary Authority (VA), the environment in which the lease is located, previous treatment history, and research into the active ingredient and its potential environmental fate. The TRMP included the following components: sediment sampling, water sampling, wild fish sampling, and benthic video surveys. Samples were taken at monitoring sites within the lease boundary (internal sites) and outside the lease boundary (external sites including compliance sites, transect sites, reference sites). Monitoring frequency was structured around predefined surveys stipulated in the schedule (e.g. post-treatment on Day 1, Day 7 and/or Day 21).

This report provides survey details, treatment details, methods and results of the TRMP for MF142 Roberts Point. The report includes a summary of all monitoring results and relevant contextual information.

2 Design Overview, Survey Sites and Laboratory Analysis

There was one treatment event (T1) at MF142 Roberts Point between 22 February 2026 and 3 March 2026 (Table 1; Table 2; Figure 1). This section provides an overview of the sampling design stipulated in the relevant Therapeutant Residue Monitoring Schedule (Table 1). A detailed explanation of sampling sites, frequency of collection, methodology and results for the four survey components are documented iteratively in Sections 3-6. Field conditions for each sampling day are provided in Appendix 3.

The Therapeutant Residue Monitoring Schedule for treatment T1 incorporated four components (i.e. sediment, water quality, wild fish and benthic video). These components were sampled at a range of internal, external and reference sites in the vicinity of MF142 Roberts Point (Figure 2). Internal sites included treated pen-bays and the lease centroid (Figure 2b). External sites included compliance sites 35 m from the lease boundary and 100 m and 500 m transect sites associated with these compliance sites (Figure 2b). A reference site was located further afield and was associated with a Broadscale Environmental Monitoring Program (BEMP) site (Figure 2a). Wild fish were sampled from zones defined by 1 km and 3 km buffers, along with one reference site (Figure 3). Benthic video surveys were conducted at all treated pen bays pre-treatment and post-treatment.

For surveys associated with treatment T1, the frequency of sampling was organised around the number of days post the conclusion of the treatment (e.g. Day 1, Day 7 and/or Day 21; Table 1).

The schedule explicitly stipulated one reference site (BEMP Site M5/B6) for sediment, water and wild fish surveys but included a footnote stating that *"BEMP Site M2 concurrently sampled under the Therapeutant Residue Monitoring Schedule and Addendum for MF94 (The Sheppards) – February 2026 provides a secondary reference site for MF142"*. For wild fish surveys the schedule also included a footnote stating that *"BEMP Site M3 concurrently sampled under the Therapeutant Residue Monitoring Schedule and Addendum for MF94 (The Sheppards) – February 2026 provides an additional 12 secondary fish samples within (the 1-3 km) zone ".* Given they were not primary reference sites or sampling sites, the relevant data for BEMP Site M2 and M3 is not included in this report but is instead presented in the TRMP report for MF94 (The Sheppards).

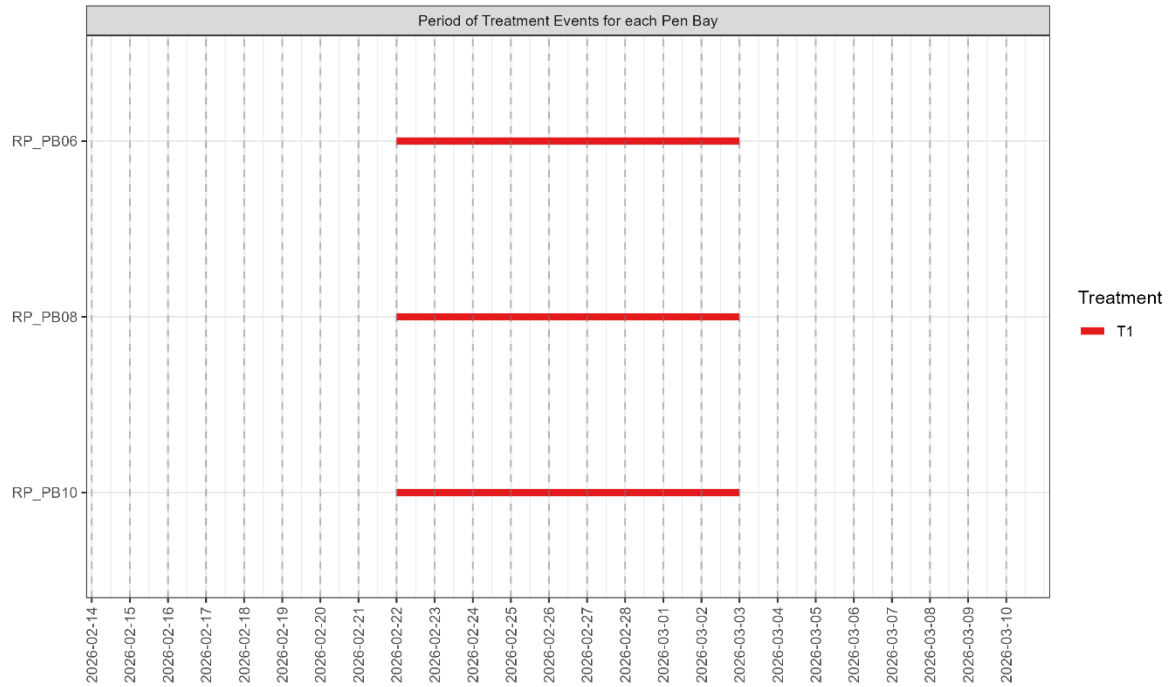

Figure 1: Date and duration of treatment events associated with pen bays at lease MF142 Roberts Point (see Table 2).

Table 1: Therapeutant treatment and associated Veterinary Authority for treatment of finfish with florfenicol at MF142 Roberts Point. Additional details of treatment events are in Appendix 1.

Treatment	Veterinary Authority	Start Date	Schedule	Design
T1	26-Tx-M09	2026-02-22	*TRM Schedule MF142*	Pre-defined post-treatment surveys (i.e. Day 1, Day 7 and/or Day 21)

Table 2: Date and duration of treatment event associated with pen bays at lease MF142 Roberts Point. Sampling requirements (i.e. water, sediment and benthic video) are shown for each pen bay.

Treatment	Site	Treatment Start	Treatment Finish	Sampling	
				Water and Sediment	Benthic Video
T1	**RP_PB06**	2026-02-22	2026-03-03	Y	Y
	RP_PB08	2026-02-22	2026-03-03		Y
	RP_PB10	2026-02-22	2026-03-03	Y	Y

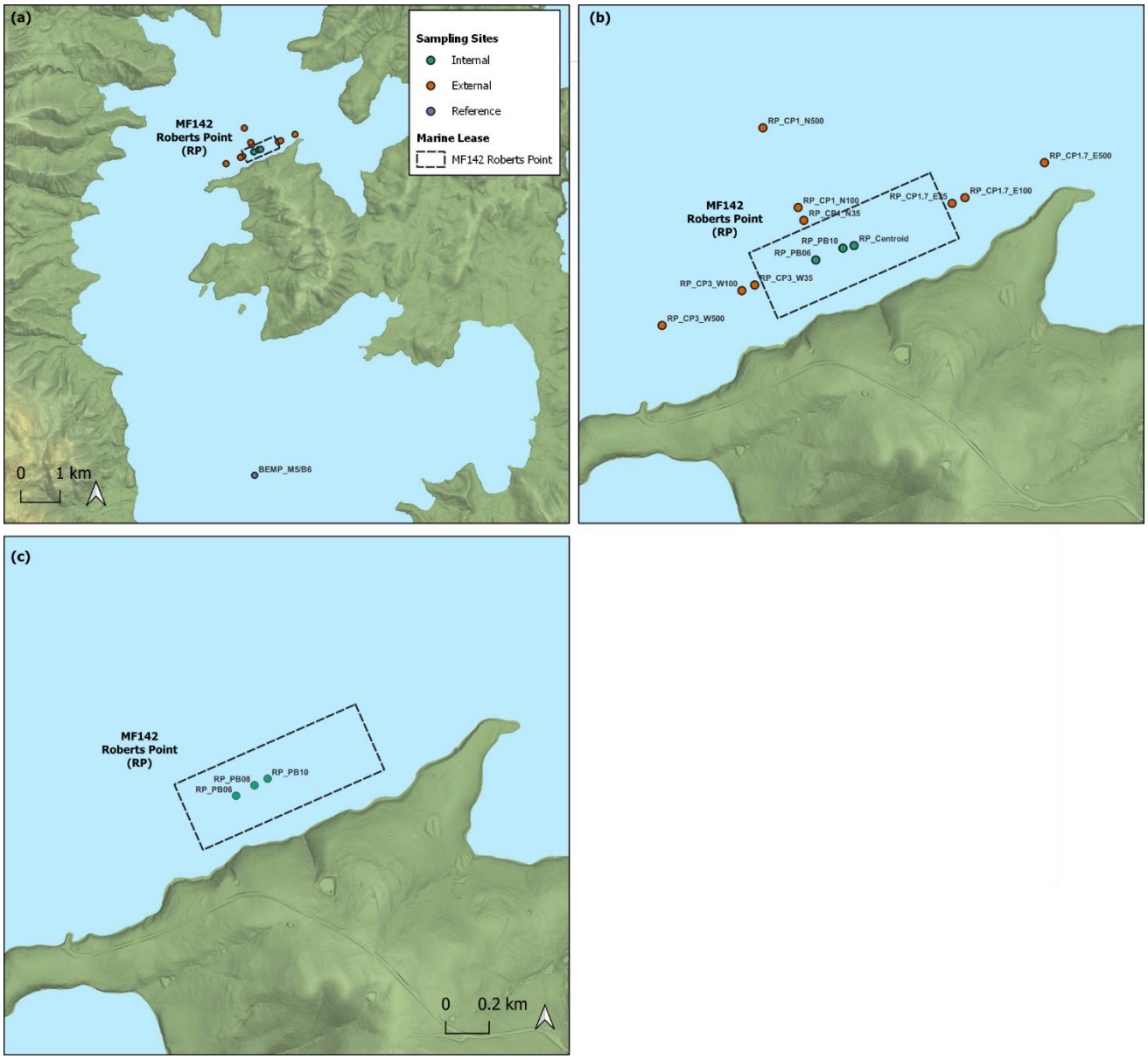

Figure 2: Sampling sites used in water quality, sediment and benthic video surveys, including (a) overview of the MF142 Roberts Point lease and survey area in the Huon Estuary/D'Entrecasteaux Channel region, highlighting the reference site; (b) internal and external sites associated with MF142 Roberts Point; and (c) benthic video survey sites. In (a) and (b) mapped coordinates for external and reference sites are from the schedules and mapped coordinates for the pen bays are from the first instance of their sampling in the field (see Appendix 2). In (c) mapped coordinates are those sampled in pre-treatment video surveys.

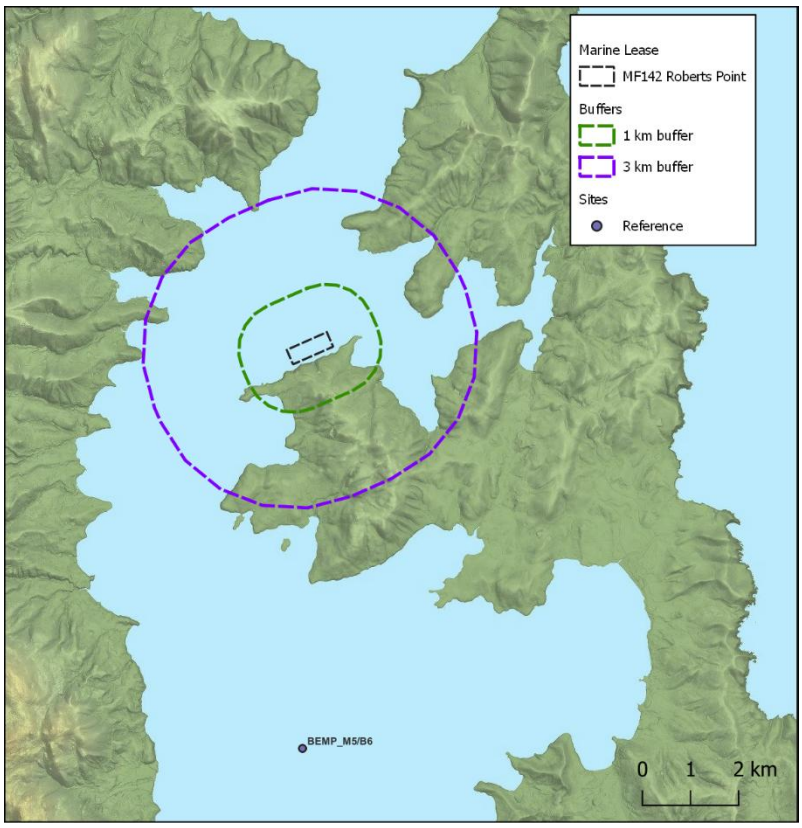

Figure 3: Reference site and survey zones defined by a 1 km and 3 km buffers for wild fish sampling around MF142 Roberts Point. Note that the <1 km zone includes areas inside and outside the lease boundary.

2.1 Laboratory analysis

Analysis of florfenicol and florfenicol amine in environmental samples was carried out by Analytical Services Tasmania (AST). Florfenicol is the antibiotic that was used to treat *Piscirickettsia salmonis*. Florfenicol amine is the primary, non-antibiotic metabolite and the principal breakdown product of florfenicol in the surrounding environment. When measuring florfenicol in fish, the fish samples were reported as the "sum of florfenicol and its metabolites measured as florfenicol amine", which is due to the method required to extract florfenicol from the fish tissues. The Limit of Reporting (LoR) that is referred to throughout this report is the lowest concentration of a substance that the laboratory can reliably and consistently measure (Table 3). Further information regarding the analytical methods for measuring florfenicol can be found on the AST website[1].

Table 3: AST laboratory Limits of Reporting for florfenicol.

Analyte	Sample Type		
	Water (µg/L*)	Sediment (mg/kg#)	Fish Tissue (mg/kg#)
Florfenicol	0.1	0.005	-
Florfenicol amine	0.1	0.01	-
Sum of florfenicol and its metabolites measured as florfenicol amine	-	-	0.01

* 1 µg/L is equal to 1 part per billion (ppb).
# 1 mg/kg is equal to 1 part per million (ppm).

[1] Florfenicol testing at Analytical Services Tasmania

3 Sediment Sampling

3.1 Survey sites and frequency

Sediment sampling was undertaken by Aquenal at an array of sites including a subset of treated pen bays (designated in the schedule), external 35 m compliance and associated 100 m and 500 m transect sites, and reference sites (Table 4; Figure 2; Appendix 2). Sampling associated with treatment T1 was organised around two pre-defined surveys conducted post-treatment (e.g. Day 1, Day 7; Table 4). Surface and depth sections of sediment cores were collected and analysed at all sites.

According to TRM Schedule MF142 issued in February 2026, subject to prior approval from the EPA, any sediment sites returning results below the LoRs (specified in Table 3) for two consecutive sampling events may be discontinued. Advice from the EPA on 18 March 2026 reduced the sediment sampling requirement in the schedule by stipulating the sampling of each of the pen bays, external sites, and reference sites until a single result below LoR is returned for each site following completion of the last treatment event on the lease.

Figure 4 illustrates the sampling design and the relationship with each treatment event.

Table 4: Sediment sampling design and frequency associated with treatment events at MF142 Roberts Point. Post treatment sampling included predefined surveys (e.g. Day 1, Day 7).

Location	Site	Survey Frequency
Internal (Pen Bay)	RP_PB06	Day 1, Day 7
	RP_PB10	Day 1, Day 7
External (35 m)	RP_CP1.7_E35	Day 1, Day 7
	RP_CP1.7_E100	Day 1, Day 7
	RP_CP1.7_E500	Day 1, Day 7
External (100 m)	RP_CP1_N35	Day 1, Day 7
	RP_CP1_N100	Day 1, Day 7
	RP_CP1_N500	Day 1, Day 7
External (500 m)	RP_CP3_W35	Day 1, Day 7
	RP_CP3_W100	Day 1, Day 7
	RP_CP3_W500	Day 1, Day 7
Reference	BEMP_M5/B6	Day 1, Day 7

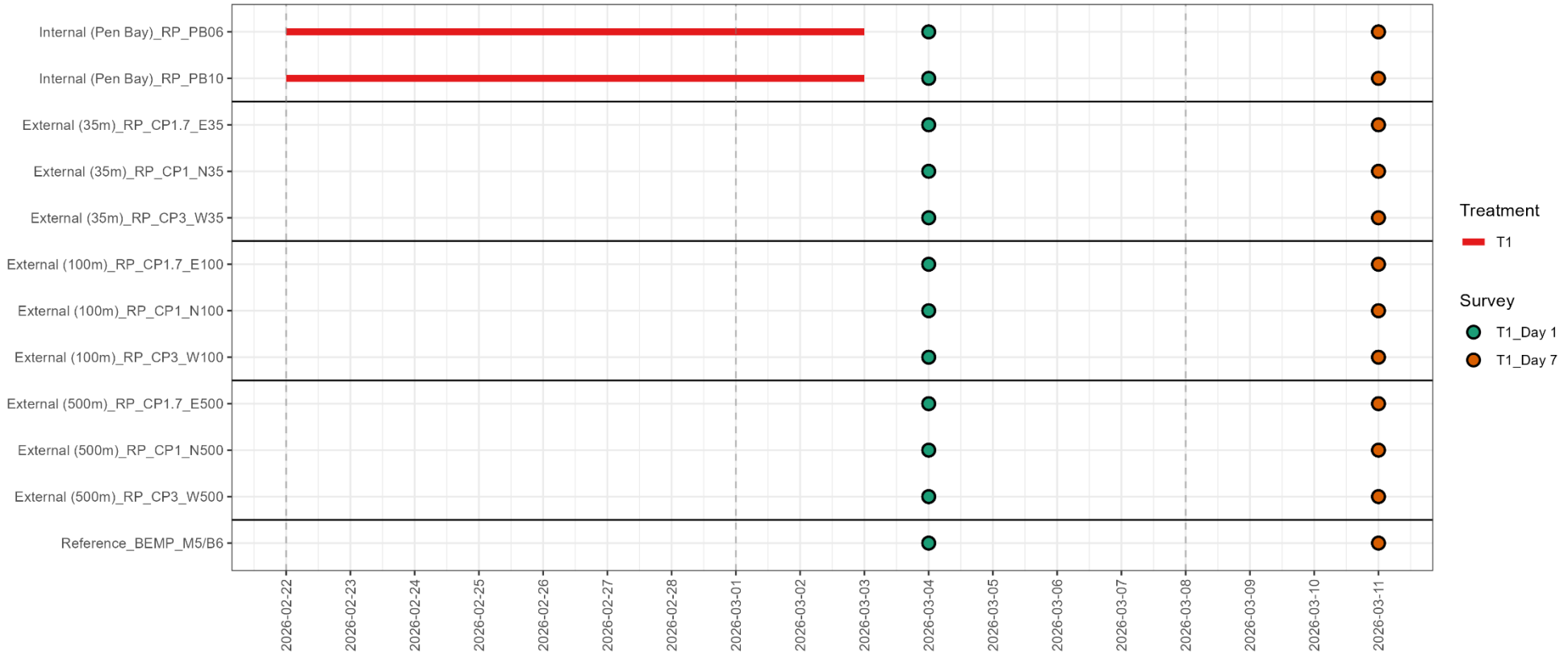

Figure 4: Sampling events for sediment surveys (i.e. Day 1, Day 7) for treatment T1 at MF142 Roberts Point. Sites sampled included treated internal pen bays, external sites and a reference site. Horizontal bars illustrate the timing and duration of treatment event (see Table 2; Figure 1).

3.2 Sample collection, processing and storage

Depending on sediment type, a Craib corer or Quad corer was used to collect triplicate sediment cores at each site. Core samples (75 mm minimum length) were collected in clean Perspex cores (Figure 5). The corer was thoroughly cleaned and rinsed with seawater between each site, with samples taken from the sites furthest from the lease boundary first (i.e. reference sites, 500 m, 100 m, 35 m and then internal (pen bay) sites) to minimise contamination risk.

Cores were processed onboard following collection at each site. Samples were split into surface (top 25 mm) and bottom (bottom 50 mm) sections and composited according to the EPA schedule. For the duplicate composited samples, the top 25 mm from two replicate cores were combined into one jar. Similarly, the bottom 50 mm from the same two cores were combined into a single jar. The third replicate core sample was separated into the 25 mm and 50 mm sections. Samples were held in an Eski on board the work vessel before being transferred to frozen storage at the end of each field day. The composite samples were delivered to Analytical Services Tasmania (AST) as soon as practicable, while samples from the third replicate core were retained as archived samples in frozen storage.

Samples were tested for both florfenicol (FFC) and florfenicol-amine (FFA) residues by AST.

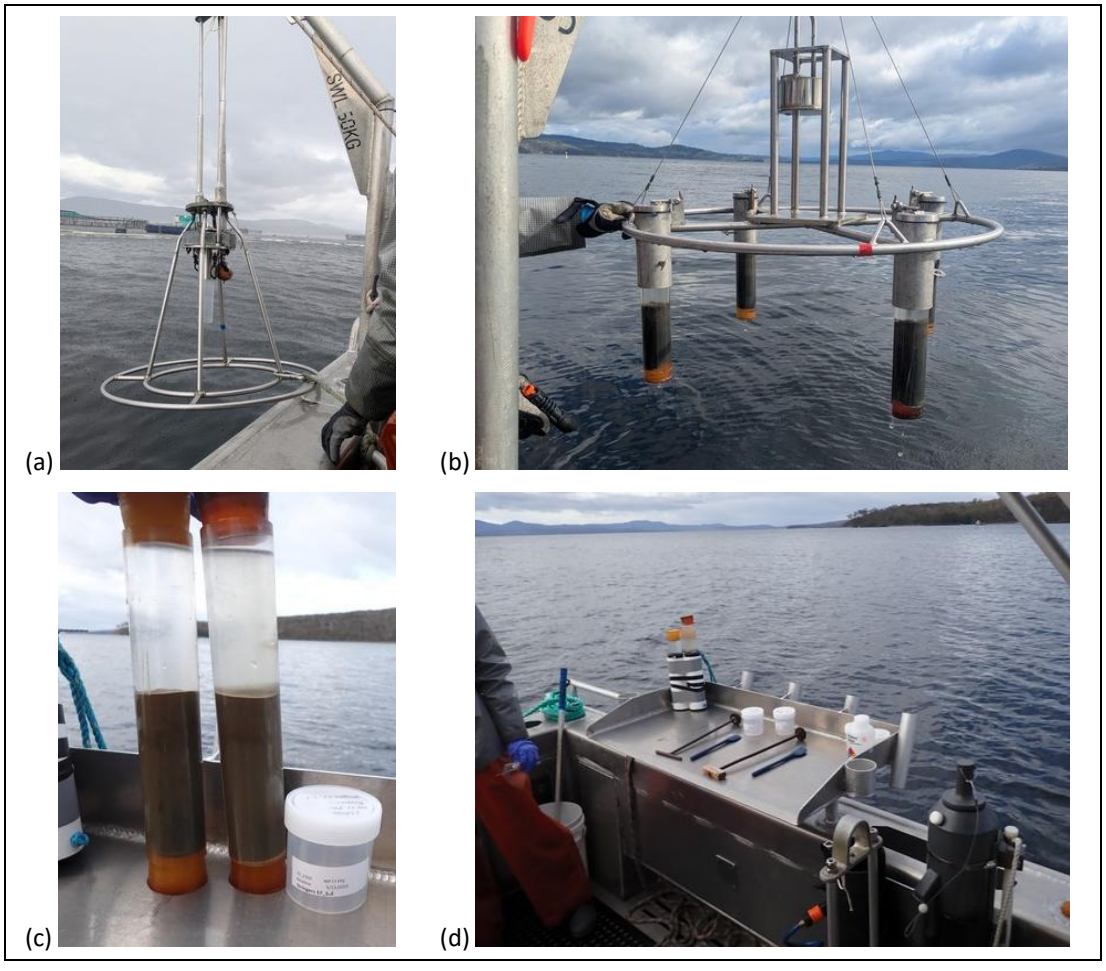

Figure 5: (a) Craib corer; (b) Quad corer in the field with sediment samples collected in Perspex cores; (c) Perspex cores prior to processing; and (d) processing equipment onboard work vessel.

3.3 Results

For the Day 1 and Day 7 post-treatment surveys associated with the T1 treatment event, florfenicol (FFC) and/or florfenicol amine (FFA) concentrations were below the LoR for all but one of the sediment samples collected at internal, external and reference sites (Table 5; Table 6). The one sample with FFC concentrations above the LoR was collected on Day 1 from the surface at an external site 35 m to the west of the lease boundary (Table 5). The corresponding bottom sample collected from this site on Day 1 and the subsequent sample collected at this site on Day 7 recorded a FFC concentration below the LoR (Table 5).

Table 5: Florfenicol (FFC) concentration (mg/kg DMB) in sediment samples collected at the surface (S) and at depth (bottom, B) at internal, external, and reference sites for treatment T1 at MF142 Roberts Point. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.005 mg/kg). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Unshaded cells indicate the result was above the LoR for that sample.

Location	Site	Florfenicol (mg/kg DMB)			
		Day 1		Day 7	
		2026-03-06		2026-03-11	
		S	B	S	B
Internal (Pen Bay)	RP_PB06	<0.005	<0.005	<0.005	<0.005
	RP_PB10	<0.005	<0.005	<0.005	<0.005
External (35 m)	RP_CP1.7_E35	<0.005	<0.005	<0.005	<0.005
	RP_CP1_N35	<0.005	<0.005	<0.005	<0.005
	RP_CP3_W35	0.016	<0.005	<0.005	<0.005
External (100 m)	RP_CP1.7_E100	<0.005	<0.005	<0.005	<0.005
	RP_CP1_N100	<0.005	<0.005	<0.005	<0.005
	RP_CP3_W100	<0.005	<0.005	<0.005	<0.005
External (500 m)	RP_CP1.7_E500	<0.005	<0.005	<0.005	<0.005
	RP_CP1_N500	<0.005	<0.005	<0.005	<0.005
	RP_CP3_W500	<0.005	<0.005	<0.005	<0.005
Reference	BEMP_M5/B6	<0.005	<0.005	<0.005	<0.005

Table 6: Florfenicol amine (FFA) concentration (mg/kg DMB) in sediment samples collected at the surface (S) and at depth (bottom, B) at internal, external, and reference sites for treatment T1 at MF142 Roberts Point. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.01 mg/kg). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure.

Location	Site	Florfenicol amine (mg/kg DMB)			
		Day 1		Day 7	
		2026-03-06		2026-03-11	
		S	B	S	B
Internal (Pen Bay)	RP_PB06	<0.01	<0.01	<0.01	<0.01
	RP_PB10	<0.01	<0.01	<0.01	<0.01
External (35 m)	RP_CP1.7_E35	<0.01	<0.01	<0.01	<0.01
	RP_CP1_N35	<0.01	<0.01	<0.01	<0.01
	RP_CP3_W35	<0.01	<0.01	<0.01	<0.01
External (100 m)	RP_CP1.7_E100	<0.01	<0.01	<0.01	<0.01
	RP_CP1_N100	<0.01	<0.01	<0.01	<0.01
	RP_CP3_W100	<0.01	<0.01	<0.01	<0.01
External (500 m)	RP_CP1.7_E500	<0.01	<0.01	<0.01	<0.01
	RP_CP1_N500	<0.01	<0.01	<0.01	<0.01
	RP_CP3_W500	<0.01	<0.01	<0.01	<0.01
Reference	BEMP_M5/B6	<0.01	<0.01	<0.01	<0.01

4 Water Sampling

4.1 Sample sites and frequency

Water sampling was undertaken by Marine Solutions at an array of sites including a subset of treated pen bays (designated in the schedule), the lease centroid, external 35 m compliance sites and reference sites (Figure 2; Table 7). Water samples were collected at a pre-defined frequency (e.g. post-treatment on Day 1 and Day 7; Table 7) from three depth strata: (i) the surface (0.1 m below the surface); (ii) 10 m below the surface; and (iii) the bottom (2 m above the seabed).

Figure 6 illustrates the water sampling regime and the relationship with each treatment event.

4.2 Sample collection, processing and storage

Samples were collected in labelled 250 mL amber glass bottles provided by AST, kept cool in a dark environment and frozen as soon as possible after collection (unless they were delivered to the laboratory within 12 hours of collection). Water samples were taken from the sites furthest from the lease boundary first (i.e. reference sites, external 35 m compliance sites and then internal sites) to minimise contamination risk. Water samples were delivered to AST, within 24 hours where possible. When this was not possible, samples were frozen for preservation and delivered promptly thereafter.

Samples were tested for both florfenicol (FFC) and florfenicol-amine (FFA) residues.

Table 7: Water sampling design and frequency associated with treatment event T1 at MF142 Roberts Point. Post treatment sampling included predefined surveys (e.g. Day 1 and Day 7).

Location	Site	Survey Frequency
Internal (Pen Bay)	RP_PB06	Day 1, Day 7
	RP_PB10	Day 1, Day 7
Internal (Centroid)	RP_Centroid	Day 1, Day 7
External (35 m)	RP_CP1.7_E35	Day 1, Day 7
	RP_CP1.7_E100	Day 1, Day 7
	RP_CP1.7_E500	Day 1, Day 7
Reference	BEMP_M5/B6	Day 1, Day 7

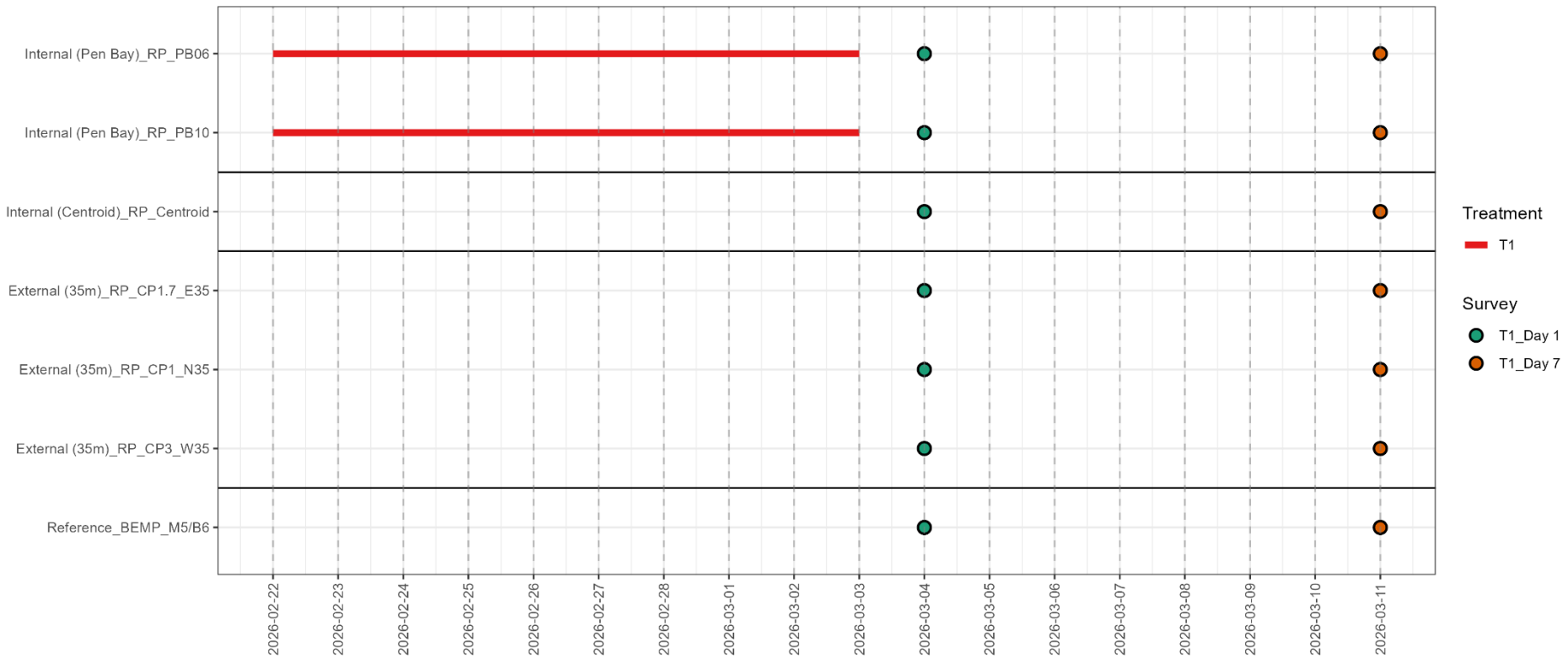

Figure 6: Sampling events for water surveys for treatment T1 at MF142 Roberts Point. Sites sampled included internal pen bays, the lease centroid, external 35 m compliance sites and a reference site. Horizontal bars illustrate the timing and duration of treatment events (see Table 2; Figure 1).

4.3 Results

For the Day 1 post-treatment survey for treatment T1, florfenicol (FFC) and/or florfenicol amine (FFA) concentrations were below the LoR for 71% of surface, middle and bottom water samples analysed (30 of 42 samples; Table 8; Table 9). There were twelve samples above or equal to the LoR, which were collected on Day 1 from surface, middle and bottom samples from two treated pen bay sites and one external site located 35 m to the west of the lease boundary (Table 8; Table 9). All samples collected on the subsequent Day 7 post-treatment survey recorded FFC and/or FFA concentrations below the LoR (Table 8: Table 9).

Table 8: Florfenicol (FFC) concentration (µg/L) in surface (S), middle (M) and bottom (B) water samples collected at internal, external and reference sites for treatment T1 at MF142 Roberts Point. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.1 µg/L). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Unshaded cells indicate the result was above the LoR for that sample.

Location	Site	Florfenicol (µg/L)					
		Day 1			Day 7		
		2026-03-04			2026-03-11		
		S	M	B	S	M	B
Internal (Pen Bay)	RP_PB06	0.3	0.2	0.1	<0.1	<0.1	<0.1
	RP_PB10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Internal (Centroid)	RP_Centroid	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
External (35m)	RP_CP1.7_E35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	RP_CP1_N35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	RP_CP3_W35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Reference	BEMP_M5/B6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table 9: Florfenicol amine (FFA) concentration (µg/L) in surface (S), middle (M) and bottom (B) water samples collected at internal, external and reference sites for treatment T1 at MF142 Roberts Point. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.1 µg/L). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Unshaded cells indicate the result was above the LoR for that sample.

Location	Site	Florfenicol amine (µg/L)					
		Day 1			Day 7		
		2026-03-04			2026-03-11		
		S	M	B	S	M	B
Internal (Pen Bay)	RP_PB06	1.1	0.8	0.5	<0.1	<0.1	<0.1
	RP_PB10	0.2	0.1	0.1	<0.1	<0.1	<0.1
Internal (Centroid)	RP_Centroid	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
External (35m)	RP_CP1.7_E35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	RP_CP1_N35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	RP_CP3_W35	0.3	0.3	0.4	<0.1	<0.1	<0.1
Reference	BEMP_M5/B6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

5 Wild Fish Sampling

5.1 Survey sites and frequency

Wild fish sampling was undertaken by Marine Solutions at an array of sites within two zones (<1 km and 1-3 km) and at one reference site (Figure 7; Appendix 2). Survey frequency was pre-defined in the schedule and surveys were conducted post-treatment on Day 1, Day 7 and Day 21 (Table 10). The schedule stipulated that twelve fish were to be collected from the <1 km zone and the reference site and six fish were to be collected from the 1-3 km zone (Table 10). For practical purposes the reference site was split into two representative locations adjacent to BEMP site M5/B6 (Figure 7). Despite significant effort (i.e. ~4 hours) only 11 fish were caught from the <1 km zone on Day 1 due to low catch rates following a ban on catching sand flathead by the Department of Natural Resources and Environment Tasmania (NRE Tas) after March 1 2026.

Samples were submitted as individual fish and were composed of a mix of benthic and pelagic species. Each fish sample was tested for florfenicol and all of its metabolites expressed as florfenicol-amine. Subject to prior approval from the EPA, if wild fish sampling returned results below the LoRs (specified in Table 1) for the Day 7 sampling event, wild fish sampling could be discontinued. Accordingly, wild fish sampling at the reference site was not required after Day 7. Wild fish were caught and analysed for Day 1, Day 7 and Day 21 in the <1 km and 1-3 km buffer zones.

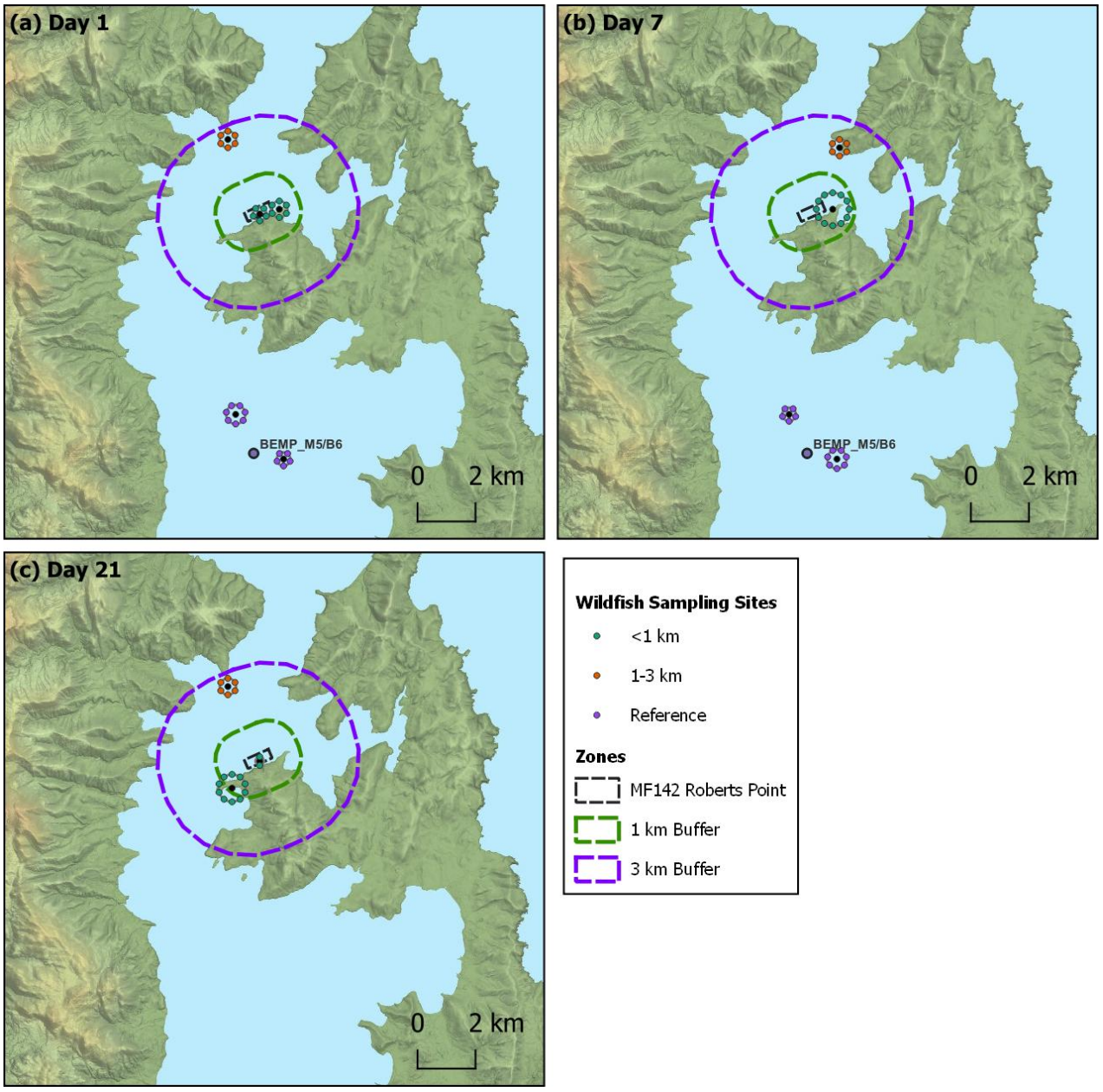

Figure 7: Location of sites where wild fish were collected within the <1 km and 1-3 km zones and the reference site for treatment T1 at MF142 Roberts Point. Note that the 1 km zone included areas inside and outside the lease boundary. Overlapping samples were offset to concentric rings around a central point where the sample was taken. Coordinates are provided in Appendix 2; Table A2.2. Wild fish sampling details are provided in Appendix 5.

Table 10: Wild fish sampling sites and frequency for treatment T1 at MF142 Roberts. Location of sites in their respective zones is illustrated in Figure 7. Coordinates and distance from lease are provided in Appendix 2; Table A2.2.

Treatment	Category	Zone	Fish Count	Frequency
T1	**External**	**<1 km**	12	Day 1, Day 7, Day 21
T1	**External**	**1-3 km**	6	Day 1, Day 7, Day 21
T1	**Reference site**	**>3 km**	12	Day 1, Day 7

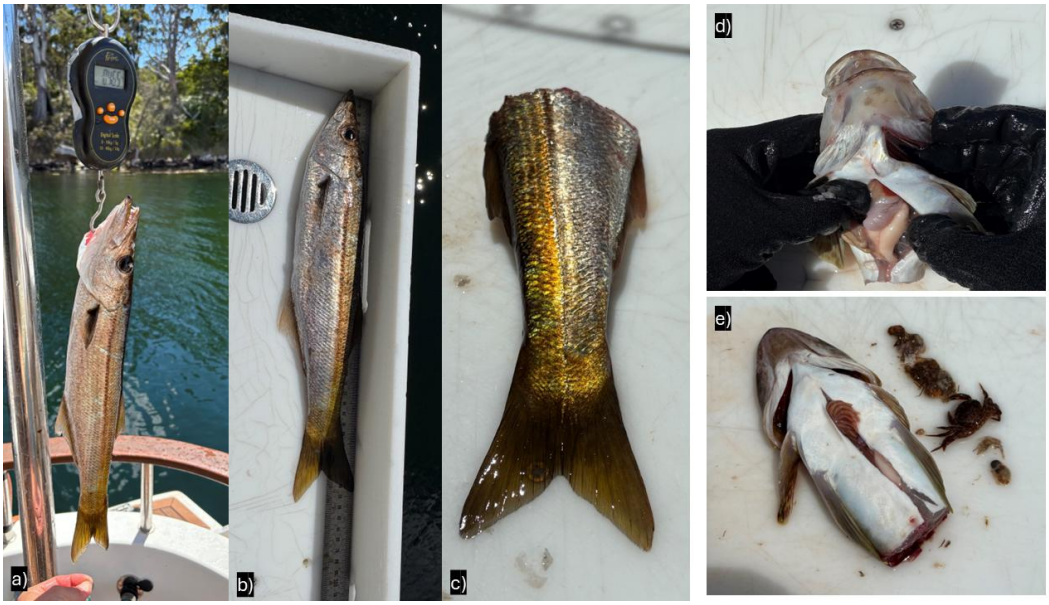

Figure 8: Representative photos taken during the processing of fish, showing (a) weight, (b) measurement, (c) tail sample for laboratory analysis, (d) gut processing and (e) gut content analysis.

5.2 Sample collection, processing and storage

Wild fish samples were collected first from the reference site before moving to the zone closer to the lease. This method was used to manage contamination risk between samples closest to the pens treated with florfenicol. Ideally, the fish collected within each zone were to consist of 50% pelagic and 50% benthic species, but due to practical constraints there were instances where only one category of fish could be captured in a zone. Note that sand flathead could not be captured as part of wild fish sampling after 1 March 2026, due to the catch ban implemented by the Department of Natural Resources and Environment Tasmania (NRE Tas).

GPS points were recorded at locations where fish were sampled (Appendix 2; Table A2.2). Once all fish for a location had been collected and the zones were complete, the full set of samples were processed.

Processing the samples involved collecting information on fish length, weight, and gut contents (Figure 8). Length was recorded using the longest measurable point, and weight was recorded using scales. A designated knife was then used to remove the tail posterior to the anus, which was retained for laboratory flesh analysis. A separate knife was used to dissect the fish to examine gut contents, and all observations were recorded. Between each dissection, all equipment used was thoroughly cleaned, and gloves were worn throughout the process. Flesh samples were bagged, labelled, and frozen for laboratory analysis. The lab analysis tested the sum of florfenicol, and its metabolites measured as florfenicol amine in the flesh tissue of each fish.

Note that results for wild fish flesh analysis were reported by AST as combined 'florfenicol & metabolites as florfenicol amine'. This differed from the water and sediment samples which reported florfenicol and florfenicol amine components separately[2].

[2] https://analyticalservices.tas.gov.au/Documents/Florfenicol%20testing%20at%20AST.pdf

5.3 Results

Wild fish collected for surveys on Day 1, Day 7 and Day 21 included twelve benthic and pelagic species of which blue-throat wrasse was the most commonly captured fish (Appendix 4). Details of fish caught and their gut contents are provided in Appendix 5.

For the <1 km zone, wild fish samples caught on Day 1 and Day 7 recorded florfenicol & metabolites as florfenicol amine (FFC/FFA) concentrations below the LoR for the majority of samples (17 out of 23 samples; Table 11). Of the six samples recording FFC/FFA above or equal to the LoR, four were jack mackerel collected from inside the lease on Day 1, and two were Australian salmon samples collected from 250 m outside the lease on Day 7 (Figure 9, Table 12). All wild fish samples collected within the <1 km zone in the subsequent Day 21 survey recorded FFC/FFA concentrations below the LoR (Table 11).

For the 1-3 km zone and the reference site, wild fish samples recorded florfenicol & metabolites as florfenicol amine (FFC/FFA) concentrations below the LoR across all sampling events (Table 11).

Table 11: Florfenicol & metabolites as florfenicol amine (FFC/FFA; mg/kg WMB) in wild fish tissue for wild fish caught from the <1 km and 1-3km zones and one reference site as part of Day 1, Day 7 and Day 21 surveys for treatment T1 at MF142 Roberts Point. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.01 mg/kg). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Blue shaded cells indicate sites where sampling and analysis was not required (refer to Table 10 for details). Unshaded cells indicate the result was above or equal to the LoR for that sample.

Zone	Sample ID	Florfenicol & metabolites as Florfenicol Amine (mg/kg WMB)		
		Day 1	Day 7	Day 21
		2026-03-04	2026-03-10 2026-03-11 2026-03-13	2026-03-25
<1 km	Fish 01	<0.01	<0.01	<0.01
	Fish 02	<0.01	<0.01	<0.01
	Fish 03	<0.01	<0.01	<0.01
	Fish 04	<0.01	<0.01	<0.01
	Fish 05	<0.01	<0.01	<0.01
	Fish 06	<0.01	<0.01	<0.01
	Fish 07	0.01	<0.01	<0.01
	Fish 08	0.78	<0.01	<0.01
	Fish 09	0.02	0.22	<0.01
	Fish 10	0.29	<0.01	<0.01
	Fish 11	<0.01	<0.01	<0.01
	Fish 12	No sample	0.70	<0.01
1-3 km	Fish 01	<0.01	<0.01	<0.01
	Fish 02	<0.01	<0.01	<0.01
	Fish 03	<0.01	<0.01	<0.01
	Fish 04	<0.01	<0.01	<0.01
	Fish 05	<0.01	<0.01	<0.01
	Fish 06	<0.01	<0.01	<0.01
> 3 km (Reference M5/B6)	Fish 01	<0.01	<0.01	
	Fish 02	<0.01	<0.01	
	Fish 03	<0.01	<0.01	
	Fish 04	<0.01	<0.01	
	Fish 05	<0.01	<0.01	
	Fish 06	<0.01	<0.01	
	Fish 07	<0.01	<0.01	
	Fish 08	<0.01	<0.01	
	Fish 09	<0.01	<0.01	
	Fish 10	<0.01	<0.01	
	Fish 11	<0.01	<0.01	
	Fish 12	<0.01	<0.01	

Table 12: Description of fish species and location of sites (see Figure 9) for samples where florfenicol & metabolites as florfenicol amine (mg/kg WMB) in wild fish tissue was above the Limit of Reporting (see Table 11). For distance to lease, positive values are outside the lease boundary and negative values are inside the lease boundary.

Survey	Date	Zone	Fish ID	Fish species	Easting	Northing	Distance from lease
Day 1	4/03/2026	<1 km	Fish 07	Jack mackerel	524333	5223884	-75m
Day 1	4/03/2026	<1 km	Fish 08	Jack mackerel	524333	5223884	-75m
Day 1	4/03/2026	<1 km	Fish 09	Jack mackerel	524333	5223884	-75m
Day 1	4/03/2026	<1 km	Fish 10	Jack mackerel	524333	5223884	-75m
Day 7	11/03/2026	<1 km	Fish 09	Australian salmon	525009	5224048	+252m
Day 7	13/03/2026	<1 km	Fish 12	Australian salmon	525009	5224048	+252m

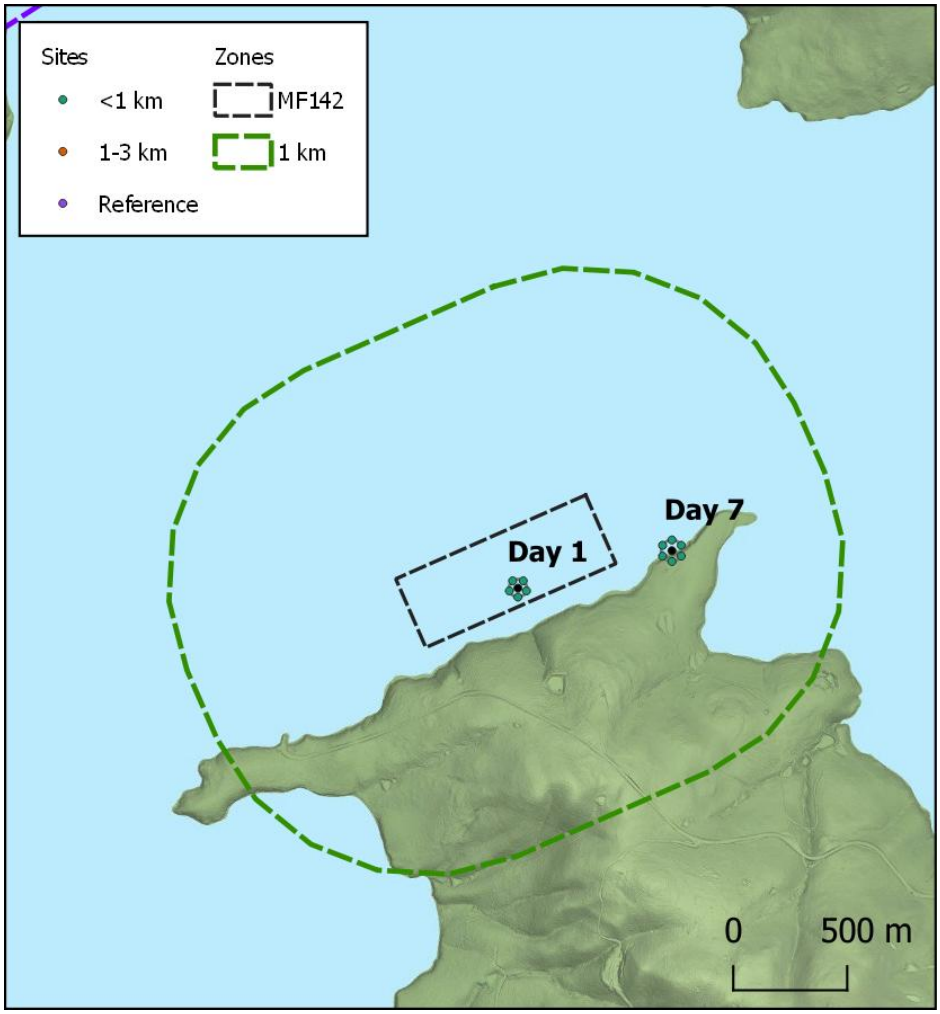

Figure 9: Location of sites where wild fish samples recorded florfenicol & metabolites as florfenicol amine (FFC/FFA) concentrations above the Limit of Reporting (LoR). Note that for display purposes, overlapping samples were offset slightly to concentric rings around a central point where the sample was taken. Note that the <1 km zone included areas inside and outside the lease boundary.

6 Benthic Video Surveys

6.1 Survey sites and frequency

Benthic video surveys and interpretation of footage of all pen bays treated was undertaken pre-treatment and post-treatment (Figure 2; Appendix 2; Table A2.3).

6.2 Sample collection, processing and storage

The pre-treatment and post-treatment benthic video surveys for treatment T1 were conducted by Fulcrum robotics. Fulcrum's surveys were carried out using a Deep Trekker Revolution® vectored inspection class Remotely Operated Vehicle (ROV). The ROV has an internal 4K colour video camera that is relayed to the topside via a tether. HD recording was also captured using a GoPro® Hero5 with the settings medium view, NTSC 2.7K, 60FPS.

All video footage was reviewed and databased by Fulcrum, using the same methodology as specified in the Environmental Licences. Survey coordinates for the benthic video survey are provided in Appendix 2.

6.3 Results

A description of seabed conditions for the pre-treatment and post-treatment surveys for each pen bay is provided in Appendix 6. The benthic habitats of pen bay sites at MF142 Roberts Points were mainly characterised by silty sediments and there was no sign of gas bubbles emanating from sediments under pen bays. Capitellid worms were absent, while patchy *Beggiatoa* was observed under all pens. Few pellets and many faeces were observed under pen bays during pre-treatment and post-treatment surveys. Algal fragments and drift algae were observed under most pen bays. A range of fauna was observed, with ascidians, crabs, flathead, anemones and northern Pacific seastars the most commonly recorded taxa. Overall, benthic condition was similar between pre-treatment and post-treatment surveys.

7 Summary

A Therapeutant Residue Monitoring Program (TRMP) was undertaken in the vicinity of MF142 Roberts Point, located in the D'Entrecasteaux Channel and Huon River Marine Farming Development Plan area. The TRMP was conducted in accordance with the specifications stipulated by the Tasmanian EPA in *Therapeutant Residue Monitoring Schedule – Marine Farming Lease No. 142 (Roberts Point) – February 2026* (herein TRM Schedule MF142; Table 1).

The TRMP included a suite of monitoring components (sediment, water, wild fish and benthic video surveys). Water, sediment and benthic video surveys sampled an array of monitoring sites including internal sites (i.e. pen bays and lease centroid), external sites (i.e. compliance sites and transects) and reference sites. Wild fish were sampled from <1 km and 1-3 km zones and one reference site. The frequency of monitoring was defined by predefined post-treatment surveys on Day 1, Day 7 and/or Day 21.

For sediment samples collected on Day 1, florfenicol (FFC) and/or florfenicol amine (FFA) concentrations were below the limit of reporting (LoR) for all but one sample. The one sample above the LoR was collected on Day 1 at an external 35 m compliance site. All sediment samples collected on Day 7 recorded FFC and/or FFA concentrations below the LoR (Table 8: Table 9).

For water samples collected on Day 1, FFC and/or FFA concentrations were below the LoR for the majority of samples. There were twelve samples above or equal to the LoR on Day 1, which were collected from two treated pen bay sites and one external 35 m compliance site. All water samples collected on Day 7 recorded FFC and/or FFA concentrations below the LoR (Table 8: Table 9).

For the <1km zone, wild fish samples caught post-treatment on Day 1 and Day 7 recorded florfenicol & metabolites as florfenicol amine (FFC/FFA) concentrations below the LoR for the majority of samples. Of the six wild fish samples above the LoR, four were collected inside the lease on Day 1 and two were collected 250 m outside the lease on Day 7. All wild fish samples collected within the <1 km zone on Day 21 recorded FFC/FFA concentrations below the LoR. For the 1-3 km zone and reference site, all wild fish samples recorded FFC/FFA concentrations below the LoR across all sampling events.

Appendices

Appendix 1: Antibiotic Florfenicol treatment details for MF142 Roberts Point lease. Treatment was administered by top coated feed, as prescribed by the Veterinary Authority (VA). Information supplied by Tassal Operations Pty Ltd.

Type	VA	Lease	Pen Bays	Days	Treatment start date	Active ingredient (kg) actually dispensed
Florfenicol	26-Tx-M09	142	PB06, PB08, PB10	10	22/02/2026	76

In accordance with section 28(2(d)) of the *Environmental Standards for Tasmanian Marine Finfish Farming 2023*, the Therapeutant Residue Monitoring Program report must include an evaluation of the factors contributing to the need for medication, including (i) potential seasonal/environmental factors; (ii) history of therapeutant use and its cause on the lease area in the previous 10 year period; and (iii) Any known issues with batches of fish involved in the medication event, including vaccination status with reference to the disease required. A summary of these factors is provided below:

(i) The main triggering issue is likely to be extended periods of elevated water temperatures.

(ii) In the last 10 years antibiotics have been used once previously on the lease. Medicated feed containing antibiotics (active ingredient: Oxytetracycline) was applied in 2016 for the treatment of Yersiniosis in Atlantic Salmon stock.

(iii) There were no known issues with batches of fish in the medication event. Waning immunity from vaccination likely coincided with the observed temperature rises.

Appendix 2: Survey coordinates for the residue monitoring survey, based on the Mapping Grid of Australia Zone 55 (Datum GDA94).

Table A2.1: Coordinates for sampling sites for water and sediment surveys. Coordinates are from the schedule (EPA) or from the first instance a site (see Source) was visited in the field by Aquenal (AQ) or Marine Solutions (MS).

Location	Site	Easting	Northing
Internal (Pen Bay)	**RP_PB06**	524104	5223892
Internal (Pen Bay)	**RP_PB10**	524229	5223946
Internal (Centroid)	**RP_Centroid**	524280	5223958
External (35 m)	**RP_CP1.7_E35**	524731	5224152
External (35 m)	**RP_CP1_N35**	524049	5224074
External (35 m)	**RP_CP3_W35**	523823	5223777
External (100 m)	**RP_CP1.7_E100**	524790	5224178
External (100 m)	**RP_CP1_N100**	524023	5224133
External (100 m)	**RP_CP3_W100**	523764	5223751
External (500 m)	**RP_CP1.7_E500**	525156	5224339
External (500 m)	**RP_CP1_N500**	523861	5224499
External (500 m)	**RP_CP3_W500**	523397	5223591
Reference	**BEMP_M5/B6**	524125	5215636

Table A2.2: Coordinates for sites sampled during each wild fish survey (Marine Solutions) and the distance to the lease boundary (Positive values are outside the lease boundary. Negative values are inside the lease boundary).

Survey	Zone	Easting	Northing	Distance from Lease (m)
Day 1	**<1 km**	525009	5224048	252
Day 1	**<1 km**	524333	5223884	-75
Day 1	**1-3 km**	523236	5226453	2540
Day 1	**BEMP_M5/B6**	525156	5215441	8274
Day 1	**BEMP_M5/B6**	523504	5216979	6658
Day 7	**<1 km**	523504	5216979	6658
Day 7	**1-3 km**	525244	5226168	1974
Day 7	**BEMP_M5/B6**	523504	5216979	6658
Day 7	**BEMP_M5/B6**	525156	5215441	8274
Day 21	**<1 km**	524333	5223884	-75
Day 21	**<1 km**	523378	5222954	867
Day 21	**1-3 km**	523236	5226453	2540

Table A2.3: GPS coordinates and depth for pre-treatment and post-treatment benthic video surveys conducted by Fulcrum Robotics.

Treatment	Survey	Date	Site	Easting	Northing
T1	**Pre-treatment**	21/02/2026	PB06	524081	5223872
T1	**Pre-treatment**	21/02/2026	PB08	524166	5223920
T1	**Pre-treatment**	21/02/2026	PB10	524226	5223950
T1	**Post-treatment**	4/03/2026	PB06	524106	5223885
T1	**Post-treatment**	4/03/2026	PB08	524171	5223918
T1	**Post-treatment**	4/03/2026	PB10	524232	5223946

Appendix 3: Weather conditions during field surveys.

Sampling event	Sampler	Field date	Wind (direction, knots)	Sky
Day 1	Aquenal	04/03/2026	Light and variable	Clear
Day 1	Marine Solutions	04/03/2026	Light and variable	Clear
Day 7	Aquenal	11/03/2026	N 5 knots	Cloudy, drizzle
Day 7	Marine Solutions	10/03/2026	Light and variable	Partly cloudy
Day 7	Marine Solutions	11/03/2026	S 10-20 knots	Overcast
Day 7	Marine Solutions	13/03/2026	NE 15 knots	Partly cloudy
Day 21	Marine Solutions	25/03/2026	Light and variable	Partly cloudy

Appendix 4: Wild fish sampling – species collected during surveys.

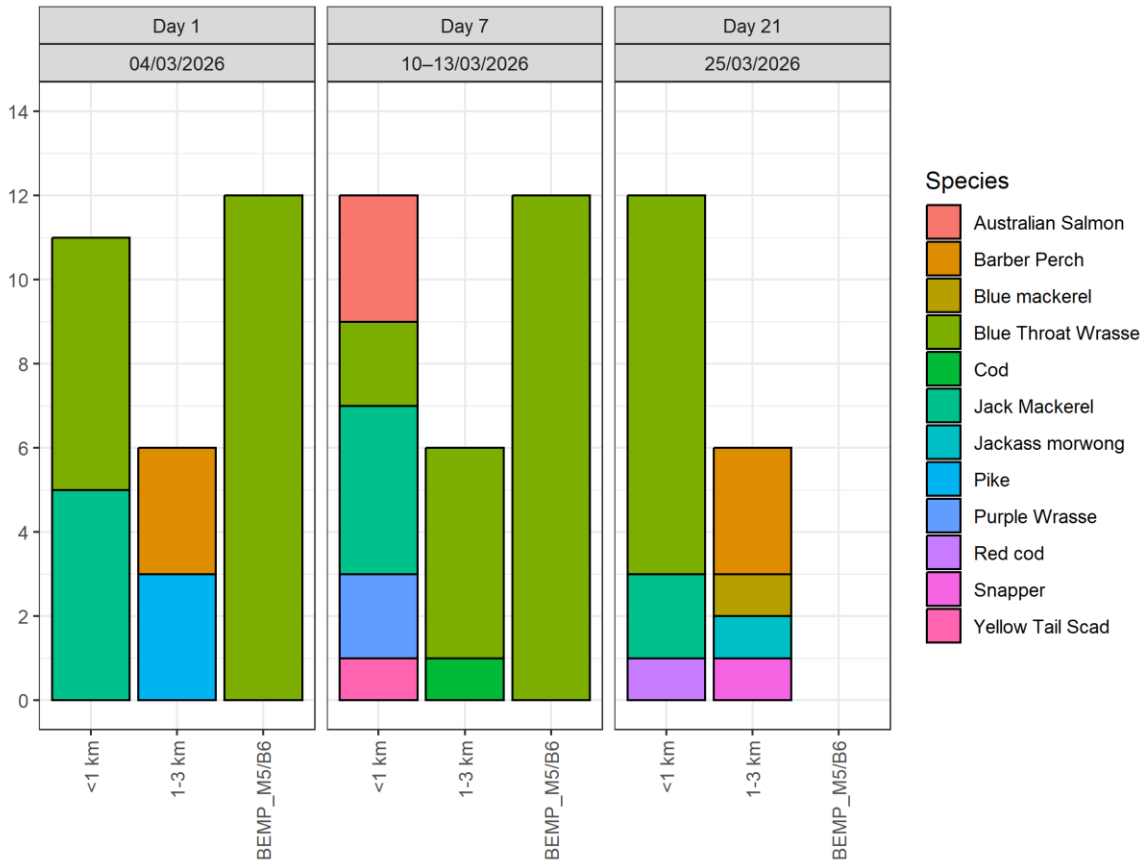

Figure A4.1: Number of fish collected for each species caught in two zones (<1 km, 1-3 km) and one reference site (BEMP_M5/B6) on Day 1, Day 7 and Day 21. Note sampling at BEMP_M5/B6 was not required for the Day 21 survey.

Appendix 5: Wild fish sampling field data.

Table A5.1: Wild fish sample data: Day 1.

Site	Fish No.	Date	Species	Length (mm)	Weight (g)	Gut content	Easting	Northing
1-3 km	**1**	4/03/2026	Barber perch	210	100	Algae	523236	5226453
1-3 km	**2**	4/03/2026	Barber perch	200	65	Empty	523236	5226453
1-3 km	**3**	4/03/2026	Barber perch	175	50	Empty	523236	5226453
1-3 km	**4**	4/03/2026	Pike	245	70	Empty	523236	5226453
1-3 km	**5**	4/03/2026	Pike	235	65	Fish	523236	5226453
1-3 km	**6**	4/03/2026	Pike	230	60	Fish	523236	5226453
1 km	**1**	4/03/2026	Blue-throat wrasse	350	700	Shell grit, crab	525009	5224048
1 km	**2**	4/03/2026	Blue-throat wrasse	380	860	Shell grit, crab	525009	5224048
1 km	**3**	4/03/2026	Blue-throat wrasse	430	1440	Shell grit, crab, algae	525009	5224048
1 km	**4**	4/03/2026	Blue-throat wrasse	395	1080	Crab, algae	525009	5224048
1 km	**5**	4/03/2026	Blue-throat wrasse	370	1080	Crab, shell grit, algae	525009	5224048
1 km	**6**	4/03/2026	Blue-throat wrasse	436	1320	Amphipods	525009	5224048
1 km	**7**	4/03/2026	Jack mackerel	225	120	Digested material	524333	5223884
1 km	**8**	4/03/2026	Jack mackerel	220	120	Digested material	524333	5223884
1 km	**9**	4/03/2026	Jack mackerel	212	95	Digested material	524333	5223884
1 km	**10**	4/03/2026	Jack mackerel	223	97	Digested material	524333	5223884
1 km	**11**	4/03/2026	Jack mackerel	205	82	Digested Material	524333	5223884
BEMP_M5/B6	**1**	4/03/2026	Blue-throat wrasse	315	460	Shell grit	525156	5215441
BEMP_M5/B6	**2**	4/03/2026	Blue-throat wrasse	320	420	Shell grit	525156	5215441
BEMP_M5/B6	**3**	4/03/2026	Blue-throat wrasse	280	280	Empty	525156	5215441
BEMP_M5/B6	**4**	4/03/2026	Blue-throat wrasse	365	820	Empty	525156	5215441
BEMP_M5/B6	**5**	4/03/2026	Blue-throat wrasse	240	200	Shell grit	525156	5215441
BEMP_M5/B6	**6**	4/03/2026	Blue-throat wrasse	350	760	Empty	523504	5216979
BEMP_M5/B6	**7**	4/03/2026	Blue-throat wrasse	310	440	Empty	523504	5216979
BEMP_M5/B6	**8**	4/03/2026	Blue-throat wrasse	305	420	Empty	523504	5216979
BEMP_M5/B6	**9**	4/03/2026	Blue-throat wrasse	407	1080	Shell grit	523504	5216979
BEMP_M5/B6	**10**	4/03/2026	Blue-throat wrasse	370	1000	Shell grit	523504	5216979
BEMP_M5/B6	**11**	4/03/2026	Blue-throat wrasse	250	200	Shell grit	523504	5216979
BEMP_M5/B6	**12**	4/03/2026	Blue-throat wrasse	240	200	Shell grit	523504	5216979

Table A5.2: Wild fish sample data: Day 7.

Site	Fish No.	Date	Species	Length (mm)	Weight (g)	Gut content	Easting	Northing
1-3 km	**1**	11/03/2026	Blue-throat wrasse	447	1725	Shell grit	525244	5226168
1-3 km	**2**	11/03/2026	Blue-throat wrasse	440	1590	Urchin and crab	525244	5226168
1-3 km	**3**	11/03/2026	Blue-throat wrasse	385	1060	Seastar remains	525244	5226168
1-3 km	**4**	11/03/2026	Blue-throat wrasse	268	395	Crab	525244	5226168
1-3 km	**5**	11/03/2026	Blue-throat wrasse	360	850	Empty	525244	5226168
1-3 km	**6**	11/03/2026	Cod	370	750	Empty	525244	5226168
1 km	**1**	11/03/2026	Purple wrasse	375	945	Empty	525009	5224048
1 km	**2**	11/03/2026	Blue-throat wrasse	320	695	Crab	525009	5224048
1 km	**3**	11/03/2026	Blue-throat wrasse	280	360	Empty	525009	5224048
1 km	**4**	11/03/2026	Purple wrasse	365	630	Bug	525009	5224048
1 km	**5**	11/03/2026	Jack mackerel	230	100	Empty	525009	5224048
1 km	**6**	11/03/2026	Jack mackerel	225	120	Digested material	525009	5224048
1 km	**7**	11/03/2026	Jack mackerel	215	140	Empty	525009	5224048
1 km	**8**	11/03/2026	Jack mackerel	200	85	Empty	525009	5224048
1 km	**9**	11/03/2026	Australian salmon	190	120	Empty	525009	5224048
1 km	**10**	13/03/2026	Yellow tail scad	275	40	Empty	525009	5224048
1 km	**11**	13/03/2026	Australian Salmon	0	70	Baitfish	525009	5224048
1 km	**12**	13/03/2026	Australian Salmon	150	70	Empty	525009	5224048
BEMP_M5/B6	**1**	10/03/2026	Blue-throat wrasse	470	1680	Baitfish and shell grit	523504	5216979
BEMP_M5/B6	**2**	10/03/2026	Blue-throat wrasse	325	595	Shell grit	523504	5216979
BEMP_M5/B6	**3**	10/03/2026	Blue-throat wrasse	390	1025	Crab	523504	5216979
BEMP_M5/B6	**4**	10/03/2026	Blue-throat wrasse	250	240	Shell grit	523504	5216979
BEMP_M5/B6	**5**	10/03/2026	Blue-throat wrasse	210	150	Crab	523504	5216979
BEMP_M5/B6	**6**	10/03/2026	Blue-throat wrasse	395	1105	Shell grit	525156	5215441
BEMP_M5/B6	**7**	10/03/2026	Blue-throat wrasse	360	855	Shell grit	525156	5215441
BEMP_M5/B6	**8**	10/03/2026	Blue-throat wrasse	370	845	Shell grit	525156	5215441
BEMP_M5/B6	**9**	10/03/2026	Blue-throat wrasse	325	540	Crab	525156	5215441
BEMP_M5/B6	**10**	10/03/2026	Blue-throat wrasse	420	1320	Brown algae	525156	5215441
BEMP_M5/B6	**11**	10/03/2026	Blue-throat wrasse	312	260	Red algae	525156	5215441
BEMP_M5/B6	**12**	10/03/2026	Blue-throat wrasse	225	295	Digested material	525156	5215441

Table A5.3: Wild fish sample data: Day 21.

Site	Fish No.	Date	Species	Length (mm)	Weight (g)	Gut content	Easting	Northing
1-3 km	**1**	25/03/2026	Blue mackerel	340	215	Digested material	523236	5226453
1-3 km	**2**	25/03/2026	Snapper	240	120	Empty	523236	5226453
1-3 km	**3**	25/03/2026	Jackass morwong	250	120	Digested material	523236	5226453
1-3 km	**4**	25/03/2026	Barber perch	230	100	Digested material	523236	5226453
1-3 km	**5**	25/03/2026	Barber perch	200	75	Digested material	523236	5226453
1-3 km	**6**	25/03/2026	Barber perch	190	75	Digested material	523236	5226453
1 km	**1**	25/03/2026	Jack mackerel	245	65	Brown digested material	524333	5223884
1 km	**2**	25/03/2026	Jack mackerel	210	50	Empty	524333	5223884
1 km	**3**	25/03/2026	Blue-throat wrasse	400	670	Crabs	523378	5222954
1 km	**4**	25/03/2026	Red cod	385	435	Empty	523378	5222954
1 km	**5**	25/03/2026	Blue-throat wrasse	395	690	Shell grit	523378	5222954
1 km	**6**	25/03/2026	Blue-throat wrasse	296	280	Shell grit	523378	5222954
1 km	**7**	25/03/2026	Blue-throat wrasse	379	575	Shell grit	523378	5222954
1 km	**8**	25/03/2026	Blue-throat wrasse	348	465	Shell grit	523378	5222954
1 km	**9**	25/03/2026	Blue-throat wrasse	420	930	Digested material	523378	5222954
1 km	**10**	25/03/2026	Blue-throat wrasse	420	764	Digested material	523378	5222954
1 km	**11**	25/03/2026	Blue-throat wrasse	400	710	Shell grit	523378	5222954
1 km	**12**	25/03/2026	Blue-throat wrasse	270	185	Shell grit	523378	5222954

Appendix 6: Benthic video survey – summary data.

Table A6.1: Benthic video observations for pre-treatment and post-treatment surveys conducted by Fulcrum Robotics for Treatment T1.

Treatment	Survey	Date	Site	Comments
T1	**Pre-treatment**	**21/02/2026**	**PB06**	Seabed: Silty sediment, marine snow, feed and faeces, mussel shells, shell fragments, patchy *Beggiatoa* sp. Fauna: Ascidian sp., tunicate, flathead sp., NP seastar, fire crab, egg mass, bryozoan sp. Flora: Brown, red and green algae, various drift algae. Other: Strong current, seal interaction. Pellets: Few
T1	**Pre-treatment**	**21/02/2026**	**PB08**	Seabed: Silty sediment, marine snow, mussel and oyster shells, shell fragments, carapace (GoPro 3:08), patches of *Beggiatoa* sp. Fauna: Ascidian sp., vase tunicate, anemone sp., NP seastar, crab spp., bryozoan sp., flathead sp., sponge sp. Flora: Red, brown and green algae, various drift algae. Other: Nil. Pellets: Few
T1	**Pre-treatment**	**21/02/2026**	**PB10**	Seabed: Silty sediment, marine snow, feed and faeces, shells and shell fragments, mussel and oyster shells, patches of *Beggiatoa* sp. Fauna: Anemone sp., crab spp., side gilled slug, flathead sp., vase tunicate, ascidian spp., fire crab, bryozoan sp. Flora: Red, brown and green algae, various drift algae. Other: Rope (GoPro 4:19), debris (GoPro 5:33), stick? (ROV 3:36). Pellets: Few
T1	**Post-treatment**	**4/03/2026**	**PB06**	Seabed: Marine snow, silty sediment, feed and faeces, shells and shell fragments, crab carapace, patches of *Beggiatoa* sp. Fauna: Ascidian sp., flathead sp., anemone sp. Flora: Benthic epiphytes, red and brown algae fragments, benthic brown algae sp. Other: Terrestrial plant material. Pellets: Few
T1	**Post-treatment**	**4/03/2026**	**PB08**	Seabed: Marine snow, silty sediment, feed and faeces, patches of *Beggiatoa* sp., shells and shell fragments Fauna: Flathead sp., vase tunicate, ascidian sp., anemone sp., crab sp., shark sp. Flora: Benthic epiphytes, benthic brown algae sp., green and red algae fragments Other: NA. Pellets: Few
T1	**Post-treatment**	**4/03/2026**	**PB10**	Seabed: Marine snow, silty sediment, feed and faeces, shells and shell fragments, patches of *Beggiatoa* sp. Fauna: Fire crab, anemone sp., flathead sp., vase tunicate, ascidian sp., silver trevally, sponge sp. Flora: Benthic epiphytes, various algae fragments, benthic red algae sp. Other: Rope (GoPro 3:09, 3:28), hose? (GoPro 5:16), unknown debris? (GoPro 4:45). Pellets: Few