SD Public Utilities

POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

POINT LOMA WASTEWATER TREATMENT PLANT

NPDES Permit No. CA0107409
SDRWQCB Order No. R9-2017-0007

JUNE 2024

Environmental Monitoring and Technical Services
2392 Kincaid Road • Mail Station 45A • San Diego, CA 92101
Tel (619) 758-2300 Fax (619) 758-2309

CERTIFIED
Public Utilities Department
Continual Improvement, Prevention of Pollution, Regulatory Compliance
ISO 14001

The City of SAN DIEGO
Public Utilities Department
Environmental Monitoring & Technical Services Division

July 31, 2024

Mr. David W. Gibson, Executive Officer
California Regional Water Quality Control Board
San Diego Region
2375 Northside Drive, Suite 100
San Diego, CA 92108

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the June 2024 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2017-0007, NPDES Permit No. CA0107409.

This report includes raw ocean monitoring data and summaries of water quality parameters and ocean conditions measured during the month for the Point Loma outfall region. Also included are summaries of compliance with the bacterial water-contact standards specified in the California Ocean Plan.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Peter S. Vroom, Ph. D.
Deputy Director, Public Utilities Department

PV/rk

cc: U.S. Environmental Protection Agency, Region 9

INTRODUCTION

Monthly reports of water quality and ocean conditions for the San Diego coastal region surrounding the Point Loma Ocean Outfall are submitted to the San Diego Regional Water Quality Control Board and U.S. EPA Region 9 in accordance with Order No. R9-2017-0007, NPDES Permit No. CA0107409 for the Point Loma Wastewater Treatment Plant (PLWTP), Point Loma Ocean Outfall (PLOO). This report includes receiving waters monitoring data collected from all shore, kelp and offshore stations specified in the above order. Data for influent and effluent monitoring activities for the PLWTP are presented in separate reports.

MATERIALS AND METHODS

Shore Stations

Water quality conditions are required to be monitored at eight shoreline stations, including D4, D5, D7, D8, D9, D10, D11 and D12, which range from the tip of the Point Loma Peninsula to west of Mission Bay (see station locations map). Over the past several years, due to increasing instability in several cliffside areas of Point Loma, City staff have been unable to safely access and sample several stations at various times. This has resulted in the following modifications:

- Station D8 was replaced by alternate station D8-A during July 2016, which was subsequently replaced by station D8-B in March 2018, after which sampling at station D8-A resumed in December 2020. Due to recent access issues at D8-A, sampling resumed at D8-B during February 2021.

Seawater samples are collected from the surf zone at each station on a weekly basis. These samples are subsequently transported to the City's Marine Microbiology Laboratory and analyzed for the presence of several types of fecal indicator bacteria (FIB), including total coliforms, fecal coliforms, and *Enterococcus*. Visual observations of water color and clarity, surf height, human or animal activity, and weather conditions are also recorded at the time of sample collection. Wind speed and direction are measured using a hand-held anemometer with a compass.

Kelp Bed Stations

The eight kelp stations are sampled weekly according to permit specifications to monitor water quality conditions within the Point Loma kelp forest. These stations include three sites located along the inshore edge of the kelp bed paralleling the 9-m depth contour (i.e., stations C4, C5 and C6), and five sites located near the offshore edge of the kelp bed along the 18-m depth contour (i.e., stations A1, A6, A7, C7 and C8).

Routine weekly monitoring at each of the kelp bed sites consists primarily of collecting seawater samples at discrete depths to determine concentrations of fecal indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). Water column profiles of various physical/chemical parameters are also generated during each sampling event, and visual observations of weather and water conditions are recorded at each station.

Seawater samples at the kelp bed stations are collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses are drawn from these bottles into sterile sample bottles for processing at the City's Marine Microbiology Laboratory. Water column

profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* are generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data at a rate of ≥ 4 scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. Additionally, CTD profile data for each water sample depth are presented with the bacteriological data.

Offshore Stations

Offshore water quality sampling is conducted quarterly typically during the months of February, May, August, and November. A total of 36 offshore stations (F01–F36) are sampled during each survey usually over a 3-day period. Three of the stations (F01–F03) are located along the 18 m depth contour, while 11 stations are located along each of the following contours: 60 m (stations F04–F14), 80 m (stations F15–F25), and 98 m (stations F26–F36). Of these 36 stations, 15 (F01-F03, F06-F14, F18-F20) are located within State jurisdictional waters (i.e., within 3 nautical miles of shore) and are subject to the California Ocean Plan's compliance standards. Monitoring at all offshore sites includes measurements of *Enterococcus* bacteria, water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, chromomorphic dissolved organic matter (CDOM), and visual observations of weather and water conditions.

Seawater samples for bacteriological analyses at the offshore stations are collected using a CTD-integrated rosette sampler with Niskin bottles. Profiles of the various physical/chemical parameters (listed above) are taken using a Sea-Bird CTD. Additionally, data for depths closest to those at which bacteriological samples were collected are extracted from the CTD profiles and presented with the bacteriological data.

Bacteriological Reporting and Quality Assurance

Estimated values for bacteriological analyses are denoted by greater than (>), less than (<), or estimated (e) qualifiers and result from plates with colony counts above or below the permissible counting limits established in Bordner et al. (1978)[1]. This document defines membrane filtration limits of 20–80 colonies per plate for total coliforms and 20–60 colonies per plate for fecal coliforms and *Enterococcus*. No Data (ND) is reported if plate counts from all dilutions have a total colony count of >200 per plate.

Results of the bacteriological analysis of seawater samples collected from each of the shore, kelp bed, and offshore stations located within State waters are assessed relative to the geometric mean and single sample maximum water-contact standards specified in the California Ocean Plan. The seven standards are defined as follows:

<u>30-day Geometric Mean</u>: The following standards are based on the geometric mean of the five most recent samples from each site.

(1) Total coliform density shall not exceed 1000 CFU/100 mL;
(2) Fecal coliform density shall not exceed 200 CFU/100 mL;
(3) *Enterococcus* density shall not exceed 35 CFU/100 mL

<u>Single Sample Maximums:</u>

1 Bordner, R., J. Winter, and P. Scarpino (eds.). (1978). Microbiological Methods for Monitoring the Environment: Water and Wastes, EPA Research and Development, EPA-600/8-78-017. 337 p.

(1) Total coliform density shall not exceed 10,000 CFU/100 mL;
(2) Fecal coliform density shall not exceed 400 CFU/100 mL;
(3) *Enterococcus* density shall not exceed 104 CFU/100 mL;
(4) Total coliform density shall not exceed 1,000 CFU/100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

Quality controls of bacteriological data include laboratory and field duplicate analyses. Laboratory duplicates are performed on approximately 10% of the water quality samples, while field duplicates are performed six times a month (see Appendix A). Laboratory duplicates represent two aliquots of the original sample that are split in the laboratory and analyzed by the same analyst using identical procedures within the same analytical run. The results of these analyses provide a measure of intra-analyst precision. In contrast, field duplicates represent two separate samples collected at the same time from the same site, which are handled under identical circumstances and treated the same throughout field and lab procedures. The results of these analyses provide a measure of precision associated with sample collection, preservation, storage, and lab procedures. The sign test (see Gilbert, 1987[2]) is used to statistically compare both the results from the laboratory duplicates, as well as the results from the field duplicates. These data will be further analyzed in the City's 2024 Quality Assurance Report, which will be completed in March 2025.

SUMMARY OF RESULTS

As of October 2020, new 2019 Ocean Plan Water Quality Objectives are included for *Enterococcus* and total coliforms, see Appendix B.

Shore Stations

- The eight shore stations (D4, D5, D7, D8-B, D9, D10, D11, D12) were sampled on June 5, 12, 18, and 26.
- During the June reporting period, one of the eight shore stations was out of compliance with the various 2015 California Ocean Plan (Ocean Plan) water contact standards on one or more days as follows:
    - The single sample maximum standard for total coliforms was exceeded at station D11.
- Nothing of sewage origin was observed at PLOO shore stations in June.
- Over the years, elevated bacteria levels at shore and kelp bed stations have tended to be associated with rainfall events, heavy recreational use, or the presence of seabirds or decaying kelp and surf grass. See the City of San Diego's most recent Biennial Receiving Waters *Monitoring and Assessment Report for the Point Loma and South Bay Ocean* Outfalls for details (https://www.sandiego.gov/public-utilities/sustainability/ocean-monitoring/reports).

Kelp Bed Stations

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled on June 4, 11, 17, and 25.
- During the June reporting period, each of the eight kelp stations was in compliance with the various 2015 California Ocean Plan (Ocean Plan) water contact standards.

2 Gilbert, R.O. (1987). Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold Co., New York.

- Water column temperatures ranged from 11.07 to 19.19°C. The difference between surface and bottom waters ranged from 1.42 to 7.82°C.
- Chlorophyll *a* concentrations ranged from 0.41 to 50.21 µg/L.
- Nothing of sewage origin was observed at PLOO kelp stations in June.

Offshore Stations

- Quarterly water quality sampling was not conducted during June at the offshore stations. The next quarterly sampling is scheduled for August 2024.

TABLES AND FIGURES

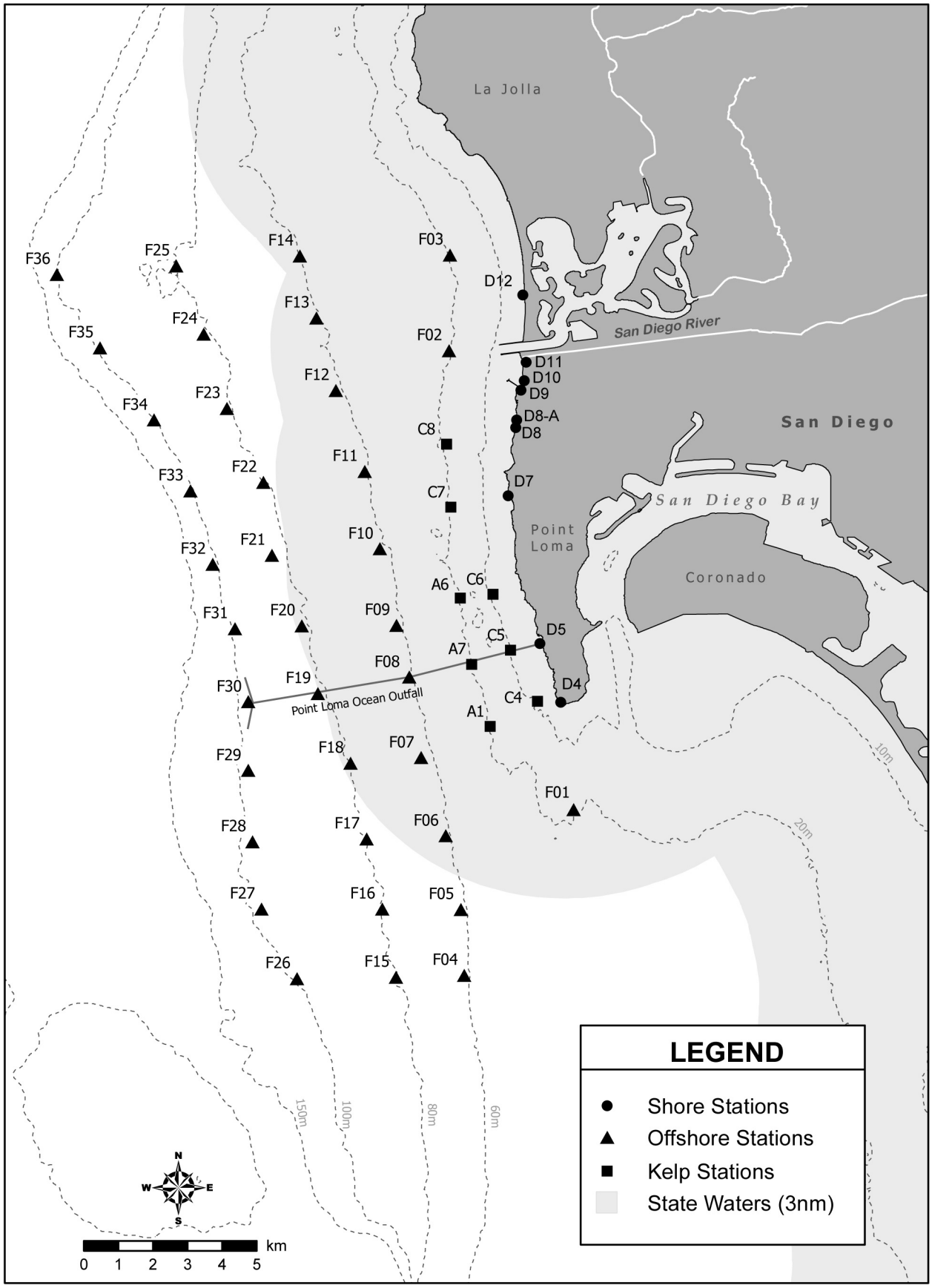

Figure 1.1 Station Map

This page intentionally left blank

Shore Stations

Table 2.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >200 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Jun 2024	*3	*4	*3	*3	*2	*8	*7	*2
02 Jun 2024	*3	*4	*3	*3	*2	*8	*7	*2
03 Jun 2024	*3	*4	*3	*3	*2	*8	*7	*2
04 Jun 2024	*3	*4	*3	*3	*2	*8	*7	*2
05 Jun 2024	2	5	3	3	3	11	9	2
06 Jun 2024	2	5	3	3	3	11	9	2
07 Jun 2024	*3	*6	*2	*4	*3	*9	*7	*2
08 Jun 2024	*3	*6	*2	*4	*3	*9	*7	*2
09 Jun 2024	*3	*6	*2	*4	*3	*9	*7	*2
10 Jun 2024	*3	*6	*2	*4	*3	*9	*7	*2
11 Jun 2024	*3	*6	*2	*4	*3	*9	*7	*2
12 Jun 2024	2	5	2	3	4	7	9	2
13 Jun 2024	2	5	2	3	4	7	9	2
14 Jun 2024	*3	*6	*2	*4	*4	*8	*14	*2
15 Jun 2024	*3	*6	*2	*4	*4	*8	*14	*2
16 Jun 2024	*3	*6	*2	*4	*4	*8	*14	*2
17 Jun 2024	*3	*6	*2	*4	*4	*8	*14	*2
18 Jun 2024	2	7	4	3	4	9	9	2
19 Jun 2024	2	7	4	3	4	9	9	2
20 Jun 2024	2	7	4	3	4	9	9	2
21 Jun 2024	*2	*7	*4	*3	*4	*10	*14	*2
22 Jun 2024	*2	*7	*4	*3	*4	*10	*14	*2
23 Jun 2024	*2	*7	*4	*3	*4	*10	*14	*2
24 Jun 2024	*2	*7	*4	*3	*4	*10	*14	*2
25 Jun 2024	*2	*7	*4	*3	*4	*10	*14	*2
26 Jun 2024	2	5	4	3	4	8	19	2
27 Jun 2024	2	5	4	3	4	8	19	2
28 Jun 2024	*2	*5	*4	*3	*4	*7	*17	*2
29 Jun 2024	*2	*5	*4	*3	*4	*7	*17	*2
30 Jun 2024	*2	*5	*4	*3	*4	*7	*17	*2

* Geometric mean calculated using n<5

Table 2.2

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
05 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
12 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
18 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
26 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 2.3

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (*). Values >35 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Jun 2024	*2	*2	*2	*2	*3	*3	*10	*3
02 Jun 2024	*2	*2	*2	*2	*3	*3	*10	*3
03 Jun 2024	*2	*2	*2	*2	*3	*3	*10	*3
04 Jun 2024	*2	*2	*2	*2	*3	*3	*10	*3
05 Jun 2024	2	3	3	3	4	4	12	4
06 Jun 2024	2	3	3	3	4	4	12	4
07 Jun 2024	*2	*4	*4	*3	*4	*3	*9	*5
08 Jun 2024	*2	*4	*4	*3	*4	*3	*9	*5
09 Jun 2024	*2	*4	*4	*3	*4	*3	*9	*5
10 Jun 2024	*2	*4	*4	*3	*4	*3	*9	*5
11 Jun 2024	*2	*4	*4	*3	*4	*3	*9	*5
12 Jun 2024	2	3	4	3	7	3	12	6
13 Jun 2024	2	3	4	3	7	3	12	6
14 Jun 2024	*2	*4	*5	*3	*9	*3	*19	*8
15 Jun 2024	*2	*4	*5	*3	*9	*3	*19	*8
16 Jun 2024	*2	*4	*5	*3	*9	*3	*19	*8
17 Jun 2024	*2	*4	*5	*3	*9	*3	*19	*8
18 Jun 2024	2	3	6	3	7	3	18	8
19 Jun 2024	2	3	6	3	7	3	18	8
20 Jun 2024	2	3	6	3	7	3	18	8
21 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7
22 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7
23 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7
24 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7
25 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7
26 Jun 2024	2	3	6	3	7	3	27	5
27 Jun 2024	2	3	6	3	7	3	27	5
28 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7
29 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7
30 Jun 2024	*2	*4	*8	*3	*9	*4	*26	*7

* Geometric mean calculated using n<5

Table 2.4

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
05 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
12 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
18 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
26 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 2.5

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the PLOO shore stations. Data are based on the median of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >1000 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Jun 2024	*11	*20	*20	*17	*18	*28	*43	*26
02 Jun 2024	*11	*20	*20	*17	*18	*28	*43	*26
03 Jun 2024	*11	*20	*20	*17	*18	*28	*43	*26
04 Jun 2024	*11	*20	*20	*17	*18	*28	*43	*26
05 Jun 2024	13	32	32	28	29	48	58	39
06 Jun 2024	13	32	32	28	29	48	58	39
07 Jun 2024	*11	*36	*36	*30	*31	*50	*47	*47
08 Jun 2024	*11	*36	*36	*30	*31	*50	*47	*47
09 Jun 2024	*11	*36	*36	*30	*31	*50	*47	*47
10 Jun 2024	*11	*36	*36	*30	*31	*50	*47	*47
11 Jun 2024	*11	*36	*36	*30	*31	*50	*47	*47
12 Jun 2024	8	20	32	28	29	48	52	25
13 Jun 2024	8	20	32	28	29	48	52	25
14 Jun 2024	*6	*20	*36	*30	*31	*60	*66	*26
15 Jun 2024	*6	*20	*36	*30	*31	*60	*66	*26
16 Jun 2024	*6	*20	*36	*30	*31	*60	*66	*26
17 Jun 2024	*6	*20	*36	*30	*31	*60	*66	*26
18 Jun 2024	8	20	50	28	45	60	83	25
19 Jun 2024	8	20	50	28	45	60	83	25
20 Jun 2024	8	20	50	28	45	60	83	25
21 Jun 2024	*6	*20	*63	*30	*63	*66	*118	*20
22 Jun 2024	*6	*20	*63	*30	*63	*66	*118	*20
23 Jun 2024	*6	*20	*63	*30	*63	*66	*118	*20
24 Jun 2024	*6	*20	*63	*30	*63	*66	*118	*20
25 Jun 2024	*6	*20	*63	*30	*63	*66	*118	*20
26 Jun 2024	5	20	50	34	50	65	163	13
27 Jun 2024	5	20	50	34	50	65	163	13
28 Jun 2024	*6	*20	*63	*47	*63	*87	*209	*11
29 Jun 2024	*6	*20	*63	*47	*63	*87	*209	*11
30 Jun 2024	*6	*20	*63	*47	*63	*87	*209	*11

* Median calculated using n<5

Table 2.6

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum for total coliform bacteria, which states that total coliform density shall not exceed 10^4 CFU/100 mL.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
05 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
12 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
18 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
26 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 2.7

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
05 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
12 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
18 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
26 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 2.8

Summary of water quality parameters at the PLOO shore stations for each sample date. Densities of fecal coliform (Fecal) and *Enterococcus* (Entero) are reported as CFU/100 mL. Comments follow the data summary.

Station	Date	Time	Total	Fecal	Entero
D10	05 Jun 2024	822	400e	30e	10e
D10	12 Jun 2024	817	40e	<2	<2
D10	18 Jun 2024	758	60e	<20	4e
D10	26 Jun 2024	755	60e	2e	2e
D11	05 Jun 2024	803	<200	20e	30e
D11	12 Jun 2024	806	80e	26e	36e
D11	18 Jun 2024	751	<200	2e	14e
D11	26 Jun 2024	747	600e	74	30e
D12	05 Jun 2024	737	<200	4e	10e
D12	12 Jun 2024	748	<2	<2	16e
D12	18 Jun 2024	737	<20	2e	6e
D12	26 Jun 2024	732	<2	<2	<2
D4	05 Jun 2024	1020	<20	2e	<2
D4	12 Jun 2024	943	<2	<2	<2
D4	18 Jun 2024	901	<20	<2	<2
D4	26 Jun 2024	906	<2	<2	<2
D5	05 Jun 2024	952	<200	6e	20e
D5	12 Jun 2024	922	<2	2e	<2
D5	18 Jun 2024	852	20e	<20	<2
D5	26 Jun 2024	855	<20	<2	<2
D7	05 Jun 2024	915	<200	4e	32e
D7	12 Jun 2024	857	<20	<2	4e
D7	18 Jun 2024	821	200e	<20	16e
D7	26 Jun 2024	834	<20	<2	<2
D8-B	05 Jun 2024	856	<200	8e	6e
D8-B	12 Jun 2024	841	20e	<2	<2
D8-B	18 Jun 2024	812	<20	2e	4e
D8-B	26 Jun 2024	815	60e	<2	2e
D9	05 Jun 2024	837	<200	8e	28e
D9	12 Jun 2024	830	20e	12e	56
D9	18 Jun 2024	805	<200	<2	<2
D9	26 Jun 2024	804	<20	<2	<2

ns = not sampled
ND = no data

Table 2.9

Summary of visual observations made during the month for each PLOO shore station by sample date.

Station	Date	Parameter	Value
D4	05 Jun 2024	Arrive Time	1020
D4	05 Jun 2024	Wind Speed (kts)	1.1
D4	05 Jun 2024	Wind Dir	SW
D4	05 Jun 2024	Animal Life	
D4	05 Jun 2024	Floatables	Foam
D4	05 Jun 2024	Current Direction	S
D4	05 Jun 2024	Water Temp (C)	12.4
D4	05 Jun 2024	High Tide Time	936
D4	05 Jun 2024	Low Tide Time	325
D4	05 Jun 2024	Comments	Water clear; Trash-1; Algae
D4	12 Jun 2024	Arrive Time	943
D4	12 Jun 2024	Wind Speed (kts)	1.7
D4	12 Jun 2024	Wind Dir	NW
D4	12 Jun 2024	Animal Life	
D4	12 Jun 2024	Floatables	None
D4	12 Jun 2024	Current Direction	S
D4	12 Jun 2024	Water Temp (C)	13.9
D4	12 Jun 2024	High Tide Time	108
D4	12 Jun 2024	Low Tide Time	841
D4	12 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae;Debris
D4	18 Jun 2024	Arrive Time	901
D4	18 Jun 2024	Wind Speed (kts)	5.8
D4	18 Jun 2024	Wind Dir	SW
D4	18 Jun 2024	Animal Life	
D4	18 Jun 2024	Floatables	None
D4	18 Jun 2024	Current Direction	S
D4	18 Jun 2024	Water Temp (C)	17
D4	18 Jun 2024	High Tide Time	809
D4	18 Jun 2024	Low Tide Time	207
D4	18 Jun 2024	Comments	Water clear; Trash-1; Algae
D4	26 Jun 2024	Arrive Time	906
D4	26 Jun 2024	Wind Speed (kts)	1.7
D4	26 Jun 2024	Wind Dir	W
D4	26 Jun 2024	Animal Life	Bird-2;
D4	26 Jun 2024	Floatables	Film
D4	26 Jun 2024	Current Direction	S
D4	26 Jun 2024	Water Temp (C)	18.5
D4	26 Jun 2024	High Tide Time	3
D4	26 Jun 2024	Low Tide Time	732
D4	26 Jun 2024	Comments	Water clear; Trash-1; Algae;Kelp;Seagrass
D5	05 Jun 2024	Arrive Time	952
D5	05 Jun 2024	Wind Speed (kts)	0
D5	05 Jun 2024	Wind Dir	XX
D5	05 Jun 2024	Animal Life	
D5	05 Jun 2024	Floatables	Foam
D5	05 Jun 2024	Current Direction	S
D5	05 Jun 2024	Water Temp (C)	17.3
D5	05 Jun 2024	High Tide Time	936
D5	05 Jun 2024	Low Tide Time	325
D5	05 Jun 2024	Comments	Water clear; Trash-1; Algae
D5	12 Jun 2024	Arrive Time	922

Station	Date	Parameter	Value
D5	12 Jun 2024	Wind Speed (kts)	2.1
D5	12 Jun 2024	Wind Dir	NW
D5	12 Jun 2024	Animal Life	
D5	12 Jun 2024	Floatables	None
D5	12 Jun 2024	Current Direction	S
D5	12 Jun 2024	Water Temp (C)	12.7
D5	12 Jun 2024	High Tide Time	108
D5	12 Jun 2024	Low Tide Time	841
D5	12 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae;Debris
D5	18 Jun 2024	Arrive Time	852
D5	18 Jun 2024	Wind Speed (kts)	4.2
D5	18 Jun 2024	Wind Dir	S
D5	18 Jun 2024	Animal Life	
D5	18 Jun 2024	Floatables	Foam
D5	18 Jun 2024	Current Direction	S
D5	18 Jun 2024	Water Temp (C)	15.6
D5	18 Jun 2024	High Tide Time	809
D5	18 Jun 2024	Low Tide Time	207
D5	18 Jun 2024	Comments	Water clear; Trash-1; Algae
D5	26 Jun 2024	Arrive Time	855
D5	26 Jun 2024	Wind Speed (kts)	0.5
D5	26 Jun 2024	Wind Dir	SW
D5	26 Jun 2024	Animal Life	
D5	26 Jun 2024	Floatables	None
D5	26 Jun 2024	Current Direction	S
D5	26 Jun 2024	Water Temp (C)	18.5
D5	26 Jun 2024	High Tide Time	3
D5	26 Jun 2024	Low Tide Time	732
D5	26 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae
D7	05 Jun 2024	Arrive Time	915
D7	05 Jun 2024	Wind Speed (kts)	3.4
D7	05 Jun 2024	Wind Dir	S
D7	05 Jun 2024	Animal Life	
D7	05 Jun 2024	Floatables	None
D7	05 Jun 2024	Current Direction	S
D7	05 Jun 2024	Water Temp (C)	16
D7	05 Jun 2024	High Tide Time	936
D7	05 Jun 2024	Low Tide Time	325
D7	05 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-3; Trash-1; Algae
D7	12 Jun 2024	Arrive Time	856
D7	12 Jun 2024	Wind Speed (kts)	1.3
D7	12 Jun 2024	Wind Dir	SW
D7	12 Jun 2024	Animal Life	
D7	12 Jun 2024	Floatables	None
D7	12 Jun 2024	Current Direction	S
D7	12 Jun 2024	Water Temp (C)	13.4
D7	12 Jun 2024	High Tide Time	108
D7	12 Jun 2024	Low Tide Time	841
D7	12 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-3; Trash-1; Kelp;Seagrass;Algae;Debris
D7	18 Jun 2024	Arrive Time	821
D7	18 Jun 2024	Wind Speed (kts)	5.4
D7	18 Jun 2024	Wind Dir	S
D7	18 Jun 2024	Animal Life	
D7	18 Jun 2024	Floatables	None
D7	18 Jun 2024	Current Direction	S

Station	Date	Parameter	Value
D7	18 Jun 2024	Water Temp (C)	15.7
D7	18 Jun 2024	High Tide Time	809
D7	18 Jun 2024	Low Tide Time	207
D7	18 Jun 2024	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-2
D7	26 Jun 2024	Arrive Time	834
D7	26 Jun 2024	Wind Speed (kts)	0.3
D7	26 Jun 2024	Wind Dir	W
D7	26 Jun 2024	Animal Life	
D7	26 Jun 2024	Floatables	None
D7	26 Jun 2024	Current Direction	S
D7	26 Jun 2024	Water Temp (C)	18.2
D7	26 Jun 2024	High Tide Time	3
D7	26 Jun 2024	Low Tide Time	732
D7	26 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-2; Trash-1; Kelp;Seagrass;Algae; Person/Walker/Jogger-4
D8-B	05 Jun 2024	Arrive Time	856
D8-B	05 Jun 2024	Wind Speed (kts)	4.6
D8-B	05 Jun 2024	Wind Dir	W
D8-B	05 Jun 2024	Animal Life	
D8-B	05 Jun 2024	Floatables	None
D8-B	05 Jun 2024	Current Direction	S
D8-B	05 Jun 2024	Water Temp (C)	17.2
D8-B	05 Jun 2024	High Tide Time	936
D8-B	05 Jun 2024	Low Tide Time	325
D8-B	05 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-2; Trash-1; Algae;Debris
D8-B	12 Jun 2024	Arrive Time	841
D8-B	12 Jun 2024	Wind Speed (kts)	3.6
D8-B	12 Jun 2024	Wind Dir	W
D8-B	12 Jun 2024	Animal Life	
D8-B	12 Jun 2024	Floatables	Foam
D8-B	12 Jun 2024	Current Direction	S
D8-B	12 Jun 2024	Water Temp (C)	13
D8-B	12 Jun 2024	High Tide Time	108
D8-B	12 Jun 2024	Low Tide Time	841
D8-B	12 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-2; Trash-1; Kelp;Seagrass;Algae;Debris; Person/Walker/Jogger-1
D8-B	18 Jun 2024	Arrive Time	812
D8-B	18 Jun 2024	Wind Speed (kts)	3.8
D8-B	18 Jun 2024	Wind Dir	W
D8-B	18 Jun 2024	Animal Life	
D8-B	18 Jun 2024	Floatables	None
D8-B	18 Jun 2024	Current Direction	S
D8-B	18 Jun 2024	Water Temp (C)	15.8
D8-B	18 Jun 2024	High Tide Time	809
D8-B	18 Jun 2024	Low Tide Time	207
D8-B	18 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Algae;Kelp;Debris
D8-B	26 Jun 2024	Arrive Time	815
D8-B	26 Jun 2024	Wind Speed (kts)	1.7
D8-B	26 Jun 2024	Wind Dir	W
D8-B	26 Jun 2024	Animal Life	
D8-B	26 Jun 2024	Floatables	None
D8-B	26 Jun 2024	Current Direction	S
D8-B	26 Jun 2024	Water Temp (C)	18.8
D8-B	26 Jun 2024	High Tide Time	3
D8-B	26 Jun 2024	Low Tide Time	732

Station	Date	Parameter	Value
D8-B	26 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-4; Trash-1; Kelp;Seagrass;Algae
D9	05 Jun 2024	Arrive Time	837
D9	05 Jun 2024	Wind Speed (kts)	2.9
D9	05 Jun 2024	Wind Dir	S
D9	05 Jun 2024	Animal Life	
D9	05 Jun 2024	Floatables	Foam
D9	05 Jun 2024	Current Direction	S
D9	05 Jun 2024	Water Temp (C)	16.6
D9	05 Jun 2024	High Tide Time	936
D9	05 Jun 2024	Low Tide Time	325
D9	05 Jun 2024	Comments	Water clear; Fisherperson-2; Trash-1; Algae
D9	12 Jun 2024	Arrive Time	830
D9	12 Jun 2024	Wind Speed (kts)	3.6
D9	12 Jun 2024	Wind Dir	W
D9	12 Jun 2024	Animal Life	Bird-2;
D9	12 Jun 2024	Floatables	Foam
D9	12 Jun 2024	Current Direction	S
D9	12 Jun 2024	Water Temp (C)	15.9
D9	12 Jun 2024	High Tide Time	108
D9	12 Jun 2024	Low Tide Time	841
D9	12 Jun 2024	Comments	Water clear; Trash-1; Seagrass;Algae;Kelp;Debris
D9	18 Jun 2024	Arrive Time	805
D9	18 Jun 2024	Wind Speed (kts)	4
D9	18 Jun 2024	Wind Dir	S
D9	18 Jun 2024	Animal Life	
D9	18 Jun 2024	Floatables	None
D9	18 Jun 2024	Current Direction	S
D9	18 Jun 2024	Water Temp (C)	15.3
D9	18 Jun 2024	High Tide Time	809
D9	18 Jun 2024	Low Tide Time	207
D9	18 Jun 2024	Comments	Water clear; Trash-1; Algae; Person/Walker/Jogger-1
D9	26 Jun 2024	Arrive Time	804
D9	26 Jun 2024	Wind Speed (kts)	2.9
D9	26 Jun 2024	Wind Dir	W
D9	26 Jun 2024	Animal Life	
D9	26 Jun 2024	Floatables	None
D9	26 Jun 2024	Current Direction	S
D9	26 Jun 2024	Water Temp (C)	18.3
D9	26 Jun 2024	High Tide Time	3
D9	26 Jun 2024	Low Tide Time	732
D9	26 Jun 2024	Comments	Water clear; Trash-2; Kelp;Seagrass;Algae; Person/Walker/Jogger-2
D10	05 Jun 2024	Arrive Time	822
D10	05 Jun 2024	Wind Speed (kts)	2.9
D10	05 Jun 2024	Wind Dir	SW
D10	05 Jun 2024	Animal Life	
D10	05 Jun 2024	Floatables	Foam
D10	05 Jun 2024	Current Direction	S
D10	05 Jun 2024	Water Temp (C)	15.3
D10	05 Jun 2024	High Tide Time	936
D10	05 Jun 2024	Low Tide Time	325
D10	05 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-8; Trash-1; Kelp;Seagrass;Debris
D10	12 Jun 2024	Arrive Time	817

Station	Date	Parameter	Value
D10	12 Jun 2024	Wind Speed (kts)	3.1
D10	12 Jun 2024	Wind Dir	W
D10	12 Jun 2024	Animal Life	
D10	12 Jun 2024	Floatables	Foam
D10	12 Jun 2024	Current Direction	S
D10	12 Jun 2024	Water Temp (C)	13.4
D10	12 Jun 2024	High Tide Time	108
D10	12 Jun 2024	Low Tide Time	841
D10	12 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-3; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-4
D10	18 Jun 2024	Arrive Time	758
D10	18 Jun 2024	Wind Speed (kts)	6
D10	18 Jun 2024	Wind Dir	S
D10	18 Jun 2024	Animal Life	
D10	18 Jun 2024	Floatables	Foam
D10	18 Jun 2024	Current Direction	S
D10	18 Jun 2024	Water Temp (C)	16.3
D10	18 Jun 2024	High Tide Time	809
D10	18 Jun 2024	Low Tide Time	207
D10	18 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-10; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
D10	26 Jun 2024	Arrive Time	755
D10	26 Jun 2024	Wind Speed (kts)	1.7
D10	26 Jun 2024	Wind Dir	W
D10	26 Jun 2024	Animal Life	
D10	26 Jun 2024	Floatables	None
D10	26 Jun 2024	Current Direction	S
D10	26 Jun 2024	Water Temp (C)	18.4
D10	26 Jun 2024	High Tide Time	3
D10	26 Jun 2024	Low Tide Time	732
D10	26 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-10; Trash-1; Kelp;Algae;Seagrass; Person/Walker/Jogger-1
D11	05 Jun 2024	Arrive Time	803
D11	05 Jun 2024	Wind Speed (kts)	3.1
D11	05 Jun 2024	Wind Dir	W
D11	05 Jun 2024	Animal Life	
D11	05 Jun 2024	Floatables	None
D11	05 Jun 2024	Current Direction	S
D11	05 Jun 2024	Water Temp (C)	15.5
D11	05 Jun 2024	High Tide Time	936
D11	05 Jun 2024	Low Tide Time	325
D11	05 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-14; Trash-1; Kelp;Seagrass;Algae;Debris; Person/Walker/Jogger-1
D11	12 Jun 2024	Arrive Time	806
D11	12 Jun 2024	Wind Speed (kts)	2.7
D11	12 Jun 2024	Wind Dir	W
D11	12 Jun 2024	Animal Life	
D11	12 Jun 2024	Floatables	Foam
D11	12 Jun 2024	Current Direction	S
D11	12 Jun 2024	Water Temp (C)	12.4
D11	12 Jun 2024	High Tide Time	108
D11	12 Jun 2024	Low Tide Time	841
D11	12 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae;Debris; Person/Walker/Jogger-3
D11	18 Jun 2024	Arrive Time	751
D11	18 Jun 2024	Wind Speed (kts)	4.6

Station	Date	Parameter	Value
D11	18 Jun 2024	Wind Dir	S
D11	18 Jun 2024	Animal Life	
D11	18 Jun 2024	Floatables	None
D11	18 Jun 2024	Current Direction	S
D11	18 Jun 2024	Water Temp (C)	15.8
D11	18 Jun 2024	High Tide Time	809
D11	18 Jun 2024	Low Tide Time	207
D11	18 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-10; Trash-1; Algae;Seagrass;Kelp;Debris
D11	26 Jun 2024	Arrive Time	747
D11	26 Jun 2024	Wind Speed (kts)	2.5
D11	26 Jun 2024	Wind Dir	W
D11	26 Jun 2024	Animal Life	Dog-1;
D11	26 Jun 2024	Floatables	Foam
D11	26 Jun 2024	Current Direction	S
D11	26 Jun 2024	Water Temp (C)	18.9
D11	26 Jun 2024	High Tide Time	3
D11	26 Jun 2024	Low Tide Time	732
D11	26 Jun 2024	Comments	Water clear; Surfer/Paddle boarder-1; Trash-2; Kelp;Seagrass;Algae; Person/Walker/Jogger-3
D12	05 Jun 2024	Arrive Time	737
D12	05 Jun 2024	Wind Speed (kts)	1.5
D12	05 Jun 2024	Wind Dir	S
D12	05 Jun 2024	Animal Life	
D12	05 Jun 2024	Floatables	Foam
D12	05 Jun 2024	Current Direction	S
D12	05 Jun 2024	Water Temp (C)	15.8
D12	05 Jun 2024	High Tide Time	936
D12	05 Jun 2024	Low Tide Time	325
D12	05 Jun 2024	Comments	Water clear; Fisherperson-1; Trash-1; Kelp;Seagrass;Debris
D12	12 Jun 2024	Arrive Time	748
D12	12 Jun 2024	Wind Speed (kts)	0.3
D12	12 Jun 2024	Wind Dir	W
D12	12 Jun 2024	Animal Life	Bird-1;
D12	12 Jun 2024	Floatables	Foam
D12	12 Jun 2024	Current Direction	S
D12	12 Jun 2024	Water Temp (C)	13.3
D12	12 Jun 2024	High Tide Time	108
D12	12 Jun 2024	Low Tide Time	841
D12	12 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
D12	18 Jun 2024	Arrive Time	737
D12	18 Jun 2024	Wind Speed (kts)	4.4
D12	18 Jun 2024	Wind Dir	S
D12	18 Jun 2024	Animal Life	
D12	18 Jun 2024	Floatables	None
D12	18 Jun 2024	Current Direction	S
D12	18 Jun 2024	Water Temp (C)	15.6
D12	18 Jun 2024	High Tide Time	809
D12	18 Jun 2024	Low Tide Time	207
D12	18 Jun 2024	Comments	Water clear; Fisherperson-1; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-1
D12	26 Jun 2024	Arrive Time	732
D12	26 Jun 2024	Wind Speed (kts)	1.9
D12	26 Jun 2024	Wind Dir	W
D12	26 Jun 2024	Animal Life	

Station	Date	Parameter	Value
D12	26 Jun 2024	Floatables	None
D12	26 Jun 2024	Current Direction	S
D12	26 Jun 2024	Water Temp (C)	17.3
D12	26 Jun 2024	High Tide Time	3
D12	26 Jun 2024	Low Tide Time	732
D12	26 Jun 2024	Comments	Water clear; Fisherperson-1; Trash-1; Kelp;Seagrass

This page intentionally left blank

Kelp Stations

Table 3.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >200 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jun 2024	*3	*3	*3	*2	*2	*2	*2	*2
02 Jun 2024	*3	*3	*3	*2	*2	*2	*2	*2
03 Jun 2024	*3	*3	*3	*2	*2	*2	*2	*2
04 Jun 2024	4	3	3	3	2	2	2	2
05 Jun 2024	*4	*4	*3	*3	*2	*2	*2	*2
06 Jun 2024	*4	*4	*3	*3	*2	*2	*2	*2
07 Jun 2024	*4	*4	*3	*3	*2	*2	*2	*2
08 Jun 2024	*4	*4	*3	*3	*2	*2	*2	*2
09 Jun 2024	*4	*4	*3	*3	*2	*2	*2	*2
10 Jun 2024	*4	*4	*3	*3	*2	*2	*2	*2
11 Jun 2024	4	3	3	3	2	2	2	2
12 Jun 2024	*4	*3	*3	*3	*2	*2	*2	*2
13 Jun 2024	*4	*3	*3	*3	*2	*2	*2	*2
14 Jun 2024	*4	*3	*3	*3	*2	*2	*2	*2
15 Jun 2024	*4	*3	*3	*3	*2	*2	*2	*2
16 Jun 2024	*4	*3	*3	*3	*2	*2	*2	*2
17 Jun 2024	3	3	3	3	2	2	2	2
18 Jun 2024	3	3	3	3	2	2	2	2
19 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
20 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
21 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
22 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
23 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
24 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
25 Jun 2024	3	2	2	3	2	2	2	2
26 Jun 2024	3	2	2	3	2	2	2	2
27 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
28 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
29 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2
30 Jun 2024	*3	*2	*2	*3	*2	*2	*2	*2

* Geometric mean calculated using n<5

Table 3.2

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
04 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
11 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
17 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
25 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 3.3

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (*). Values >35 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
02 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
03 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
04 Jun 2024	2	2	2	2	2	2	2	2
05 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
06 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
07 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
08 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
09 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
10 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
11 Jun 2024	2	2	2	2	2	2	2	2
12 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
13 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
14 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
15 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
16 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
17 Jun 2024	2	2	2	2	2	2	2	2
18 Jun 2024	2	2	2	2	2	2	2	2
19 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
20 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
21 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
22 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
23 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
24 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
25 Jun 2024	2	2	2	2	2	2	2	2
26 Jun 2024	2	2	2	2	2	2	2	2
27 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
28 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
29 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2
30 Jun 2024	*2	*2	*2	*2	*2	*2	*2	*2

* Geometric mean calculated using n<5

Table 3.4

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
04 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
11 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
17 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
25 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 3.5

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the PLOO kelp stations. Data are based on the median of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >1000 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jun 2024	*6	*8	*6	*3	*3	*3	*5	*5
02 Jun 2024	*6	*8	*6	*3	*3	*3	*5	*5
03 Jun 2024	*6	*8	*6	*3	*3	*3	*5	*5
04 Jun 2024	8	9	8	5	3	5	6	5
05 Jun 2024	*12	*8	*12	*7	*3	*4	*5	*4
06 Jun 2024	*12	*8	*12	*7	*3	*4	*5	*4
07 Jun 2024	*12	*8	*12	*7	*3	*4	*5	*4
08 Jun 2024	*12	*8	*12	*7	*3	*4	*5	*4
09 Jun 2024	*12	*8	*12	*7	*3	*4	*5	*4
10 Jun 2024	*12	*8	*12	*7	*3	*4	*5	*4
11 Jun 2024	8	8	10	7	3	4	4	4
12 Jun 2024	*8	*8	*10	*7	*3	*5	*5	*5
13 Jun 2024	*8	*8	*10	*7	*3	*5	*5	*5
14 Jun 2024	*8	*8	*10	*7	*3	*5	*5	*5
15 Jun 2024	*8	*8	*10	*7	*3	*5	*5	*5
16 Jun 2024	*8	*8	*10	*7	*3	*5	*5	*5
17 Jun 2024	7	6	8	5	4	5	4	4
18 Jun 2024	7	6	8	5	4	5	4	4
19 Jun 2024	*5	*5	*5	*7	*5	*6	*3	*5
20 Jun 2024	*5	*5	*5	*7	*5	*6	*3	*5
21 Jun 2024	*5	*5	*5	*7	*5	*6	*3	*5
22 Jun 2024	*5	*5	*5	*7	*5	*6	*3	*5
23 Jun 2024	*5	*5	*5	*7	*5	*6	*3	*5
24 Jun 2024	*5	*5	*5	*7	*5	*6	*3	*5
25 Jun 2024	4	4	6	7	4	6	4	4
26 Jun 2024	4	4	6	7	4	6	4	4
27 Jun 2024	*5	*5	*7	*9	*5	*8	*4	*4
28 Jun 2024	*5	*5	*7	*9	*5	*8	*4	*4
29 Jun 2024	*5	*5	*7	*9	*5	*8	*4	*4
30 Jun 2024	*5	*5	*7	*9	*5	*8	*4	*4

- Median calculated using n<5

Table 3.6

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum for total coliform bacteria, which states that total coliform density shall not exceed 400 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
04 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
11 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
17 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
25 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 3.7

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	A1	A6	A7	C4	C5	C6	C7	C8
04 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
11 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
17 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC
25 Jun 2024	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 3.8

Summary of water quality parameters at the PLOO kelp stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Entero) bacteria are reported as CFU/100 mL; values for temperature (Temp,°C), transmissivity (XMS, %), dissolved oxygen (DO, mg/L), salinity (Sal, ppt) and pH were extracted from CTD profile data for depths closest to those at which the bacteriological samples were collected. Comments follow the data summary.

Station	Date	Time	Depth	Total	Fecal	Entero
A1	04 Jun 2024	806	1	32e	4e	4e
A1	04 Jun 2024	806	12	14e	4e	<2
A1	04 Jun 2024	806	18	80e	22e	2e
A1	11 Jun 2024	757	1	<2	<2	<2
A1	11 Jun 2024	757	12	<2	<2	<2
A1	11 Jun 2024	757	18	<2	<2	<2
A1	17 Jun 2024	747	1	<2	<2	<2
A1	17 Jun 2024	747	12	2e	<2	<2
A1	17 Jun 2024	747	18	8e	<2	<2
A1	25 Jun 2024	738	1	<2	<2	<2
A1	25 Jun 2024	738	12	<2	<2	<2
A1	25 Jun 2024	738	18	2e	2e	<2
A6	04 Jun 2024	828	1	<20	<2	<2
A6	04 Jun 2024	828	12	<20	<2	<2
A6	04 Jun 2024	828	18	4e	6e	<2
A6	11 Jun 2024	822	1	4e	<2	<2
A6	11 Jun 2024	822	12	2e	<2	<2
A6	11 Jun 2024	822	18	22e	4e	<2
A6	17 Jun 2024	812	1	<2	<2	<2
A6	17 Jun 2024	812	12	<2	<2	<2
A6	17 Jun 2024	812	18	2e	<2	<2
A6	25 Jun 2024	801	1	<2	<2	<2
A6	25 Jun 2024	801	12	<2	2e	<2
A6	25 Jun 2024	801	18	<2	<2	<2
A7	04 Jun 2024	816	1	44	2e	2e
A7	04 Jun 2024	816	12	10e	2e	<2
A7	04 Jun 2024	816	18	<20	8e	8e
A7	11 Jun 2024	809	1	4e	<2	<2
A7	11 Jun 2024	809	12	4e	2e	<2
A7	11 Jun 2024	809	18	4e	<2	<2
A7	17 Jun 2024	800	1	<2	2e	<2
A7	17 Jun 2024	800	12	<2	<2	<2
A7	17 Jun 2024	800	18	6e	2e	<2
A7	25 Jun 2024	749	1	<20	<2	<2
A7	25 Jun 2024	749	12	<2	<2	<2
A7	25 Jun 2024	749	18	<2	<2	<2
C4	04 Jun 2024	935	1	60e	6e	2e
C4	04 Jun 2024	935	3	46	6e	<2
C4	04 Jun 2024	935	9	80e	10e	2e

Station	Date	Time	Depth	Total	Fecal	Entero
C4	11 Jun 2024	934	1	20e	<2	<2
C4	11 Jun 2024	934	3	<2	<2	<2
C4	11 Jun 2024	934	9	<2	2e	<2
C4	17 Jun 2024	916	1	<2	<2	<2
C4	17 Jun 2024	916	3	<2	<2	<2
C4	17 Jun 2024	916	9	<2	<2	2e
C4	25 Jun 2024	913	1	<2	<2	<2
C4	25 Jun 2024	913	3	<2	<2	<2
C4	25 Jun 2024	913	9	<20	4e	<2
C5	04 Jun 2024	924	1	2e	<2	<2
C5	04 Jun 2024	924	3	<20	<2	<2
C5	04 Jun 2024	924	9	<2	<2	<2
C5	11 Jun 2024	924	1	<2	<2	<2
C5	11 Jun 2024	924	3	<2	<2	<2
C5	11 Jun 2024	924	9	<2	<2	<2
C5	17 Jun 2024	905	1	<2	<2	<2
C5	17 Jun 2024	905	3	<20	<2	<2
C5	17 Jun 2024	905	9	<20	<2	<2
C5	25 Jun 2024	901	1	<2	<2	<2
C5	25 Jun 2024	901	3	<2	<2	<2
C5	25 Jun 2024	901	9	<2	<2	<2
C6	04 Jun 2024	912	1	<20	2e	<2
C6	04 Jun 2024	912	3	20e	<2	<2
C6	04 Jun 2024	912	9	<20	<2	<2
C6	11 Jun 2024	913	1	<2	<2	<2
C6	11 Jun 2024	913	3	<2	<2	<2
C6	11 Jun 2024	913	9	<20	<2	<2
C6	17 Jun 2024	855	1	6e	<2	<2
C6	17 Jun 2024	855	3	<2	<2	<2
C6	17 Jun 2024	855	9	4e	<2	<2
C6	25 Jun 2024	850	1	<20	<2	<2
C6	25 Jun 2024	850	3	<2	<2	<2
C6	25 Jun 2024	850	9	<2	<2	<2
C7	04 Jun 2024	841	1	<20	<2	<2
C7	04 Jun 2024	841	12	8e	2e	2e
C7	04 Jun 2024	841	18	8e	2e	<2
C7	11 Jun 2024	837	1	<2	<2	<2
C7	11 Jun 2024	837	12	<2	<2	<2
C7	11 Jun 2024	837	18	<2	<2	<2
C7	17 Jun 2024	824	1	<2	<2	<2
C7	17 Jun 2024	824	12	<2	<2	<2
C7	17 Jun 2024	824	18	<2	2e	<2
C7	25 Jun 2024	822	1	<20	<2	<2
C7	25 Jun 2024	822	12	<2	<2	<2
C7	25 Jun 2024	822	18	<2	<2	<2

Station	Date	Time	Depth	Total	Fecal	Entero
C8	04 Jun 2024	852	1	4e	<2	<2
C8	04 Jun 2024	852	12	2e	<2	2e
C8	04 Jun 2024	852	18	4e	<2	<2
C8	11 Jun 2024	852	1	<20	<2	<2
C8	11 Jun 2024	852	12	<2	<2	<2
C8	11 Jun 2024	852	18	2e	<2	2e
C8	17 Jun 2024	835	1	<2	<2	<2
C8	17 Jun 2024	835	12	<2	<2	<2
C8	17 Jun 2024	835	18	<2	<2	<2
C8	25 Jun 2024	834	1	<2	<2	<2
C8	25 Jun 2024	834	12	6e	<2	<2
C8	25 Jun 2024	834	18	2e	<2	<2

ns = not sampled
ND = no data

Table 3.9

Summary of visual observations made during the month for each PLOO kelp station by sample date.

Station	Date	Parameter	Value
A1	04 Jun 2024	Arrive Time	806
A1	04 Jun 2024	Depart Time	811
A1	04 Jun 2024	Air Temp (C)	15.7
A1	04 Jun 2024	Visibility (mi)	9
A1	04 Jun 2024	Wind Speed (kts)	8.4
A1	04 Jun 2024	Wind Dir	SE
A1	04 Jun 2024	Sea State	Regular Swell
A1	04 Jun 2024	High Tide Time	2000
A1	04 Jun 2024	Low Tide Time	236
A1	04 Jun 2024	Comments	Possible Red Tide
A1	11 Jun 2024	Arrive Time	757
A1	11 Jun 2024	Depart Time	801
A1	11 Jun 2024	Air Temp (C)	16.5
A1	11 Jun 2024	Visibility (mi)	5
A1	11 Jun 2024	Wind Speed (kts)	2.8
A1	11 Jun 2024	Wind Dir	W
A1	11 Jun 2024	Sea State	Calm
A1	11 Jun 2024	High Tide Time	6
A1	11 Jun 2024	Low Tide Time	748
A1	11 Jun 2024	Comments	Kelp Debris
A1	17 Jun 2024	Arrive Time	747
A1	17 Jun 2024	Depart Time	754
A1	17 Jun 2024	Air Temp (C)	15.4
A1	17 Jun 2024	Visibility (mi)	8
A1	17 Jun 2024	Wind Speed (kts)	9.6
A1	17 Jun 2024	Wind Dir	SE
A1	17 Jun 2024	Sea State	Confused Swell
A1	17 Jun 2024	High Tide Time	1842
A1	17 Jun 2024	Low Tide Time	124
A1	17 Jun 2024	Comments	
A1	25 Jun 2024	Arrive Time	738
A1	25 Jun 2024	Depart Time	744
A1	25 Jun 2024	Air Temp (C)	19.4
A1	25 Jun 2024	Visibility (mi)	10
A1	25 Jun 2024	Wind Speed (kts)	3.6
A1	25 Jun 2024	Wind Dir	SW
A1	25 Jun 2024	Sea State	Calm
A1	25 Jun 2024	High Tide Time	6
A1	25 Jun 2024	Low Tide Time	642
A1	25 Jun 2024	Comments	Low tide
C4	04 Jun 2024	Arrive Time	935
C4	04 Jun 2024	Depart Time	939
C4	04 Jun 2024	Air Temp (C)	15.6
C4	04 Jun 2024	Visibility (mi)	9
C4	04 Jun 2024	Wind Speed (kts)	11.1
C4	04 Jun 2024	Wind Dir	S
C4	04 Jun 2024	Sea State	Regular Swell
C4	04 Jun 2024	High Tide Time	2000
C4	04 Jun 2024	Low Tide Time	236
C4	04 Jun 2024	Comments	Possible Red Tide
C4	11 Jun 2024	Arrive Time	934

Station	Date	Parameter	Value
C4	11 Jun 2024	Depart Time	939
C4	11 Jun 2024	Air Temp (C)	16.3
C4	11 Jun 2024	Visibility (mi)	5
C4	11 Jun 2024	Wind Speed (kts)	5.7
C4	11 Jun 2024	Wind Dir	W
C4	11 Jun 2024	Sea State	Calm
C4	11 Jun 2024	High Tide Time	6
C4	11 Jun 2024	Low Tide Time	748
C4	11 Jun 2024	Comments	Kelp
C4	17 Jun 2024	Arrive Time	916
C4	17 Jun 2024	Depart Time	921
C4	17 Jun 2024	Air Temp (C)	15.8
C4	17 Jun 2024	Visibility (mi)	8
C4	17 Jun 2024	Wind Speed (kts)	9.1
C4	17 Jun 2024	Wind Dir	SE
C4	17 Jun 2024	Sea State	Confused Swell
C4	17 Jun 2024	High Tide Time	1842
C4	17 Jun 2024	Low Tide Time	124
C4	17 Jun 2024	Comments	
C4	25 Jun 2024	Arrive Time	913
C4	25 Jun 2024	Depart Time	916
C4	25 Jun 2024	Air Temp (C)	19.8
C4	25 Jun 2024	Visibility (mi)	10
C4	25 Jun 2024	Wind Speed (kts)	5.8
C4	25 Jun 2024	Wind Dir	S
C4	25 Jun 2024	Sea State	Calm
C4	25 Jun 2024	High Tide Time	6
C4	25 Jun 2024	Low Tide Time	642
C4	25 Jun 2024	Comments	
A7	04 Jun 2024	Arrive Time	816
A7	04 Jun 2024	Depart Time	821
A7	04 Jun 2024	Air Temp (C)	15.7
A7	04 Jun 2024	Visibility (mi)	9
A7	04 Jun 2024	Wind Speed (kts)	8.4
A7	04 Jun 2024	Wind Dir	SE
A7	04 Jun 2024	Sea State	Regular Swell
A7	04 Jun 2024	High Tide Time	2000
A7	04 Jun 2024	Low Tide Time	236
A7	04 Jun 2024	Comments	Kelp Debris; Possible Red Tide
A7	11 Jun 2024	Arrive Time	809
A7	11 Jun 2024	Depart Time	814
A7	11 Jun 2024	Air Temp (C)	16.6
A7	11 Jun 2024	Visibility (mi)	5
A7	11 Jun 2024	Wind Speed (kts)	4.3
A7	11 Jun 2024	Wind Dir	W
A7	11 Jun 2024	Sea State	Calm
A7	11 Jun 2024	High Tide Time	6
A7	11 Jun 2024	Low Tide Time	748
A7	11 Jun 2024	Comments	
A7	17 Jun 2024	Arrive Time	800
A7	17 Jun 2024	Depart Time	805
A7	17 Jun 2024	Air Temp (C)	15.6
A7	17 Jun 2024	Visibility (mi)	8
A7	17 Jun 2024	Wind Speed (kts)	9.8
A7	17 Jun 2024	Wind Dir	SE
A7	17 Jun 2024	Sea State	Confused Swell

Station	Date	Parameter	Value
A7	17 Jun 2024	High Tide Time	1842
A7	17 Jun 2024	Low Tide Time	124
A7	17 Jun 2024	Comments	
A7	25 Jun 2024	Arrive Time	749
A7	25 Jun 2024	Depart Time	754
A7	25 Jun 2024	Air Temp (C)	19.8
A7	25 Jun 2024	Visibility (mi)	10
A7	25 Jun 2024	Wind Speed (kts)	5.6
A7	25 Jun 2024	Wind Dir	NW
A7	25 Jun 2024	Sea State	Calm
A7	25 Jun 2024	High Tide Time	6
A7	25 Jun 2024	Low Tide Time	642
A7	25 Jun 2024	Comments	Low tide
C5	04 Jun 2024	Arrive Time	924
C5	04 Jun 2024	Depart Time	929
C5	04 Jun 2024	Air Temp (C)	15.8
C5	04 Jun 2024	Visibility (mi)	9
C5	04 Jun 2024	Wind Speed (kts)	9.4
C5	04 Jun 2024	Wind Dir	S
C5	04 Jun 2024	Sea State	Regular Swell
C5	04 Jun 2024	High Tide Time	2000
C5	04 Jun 2024	Low Tide Time	236
C5	04 Jun 2024	Comments	Possible Red Tide
C5	11 Jun 2024	Arrive Time	924
C5	11 Jun 2024	Depart Time	928
C5	11 Jun 2024	Air Temp (C)	16.3
C5	11 Jun 2024	Visibility (mi)	5
C5	11 Jun 2024	Wind Speed (kts)	7.3
C5	11 Jun 2024	Wind Dir	W
C5	11 Jun 2024	Sea State	Calm
C5	11 Jun 2024	High Tide Time	6
C5	11 Jun 2024	Low Tide Time	748
C5	11 Jun 2024	Comments	Kelp
C5	17 Jun 2024	Arrive Time	905
C5	17 Jun 2024	Depart Time	909
C5	17 Jun 2024	Air Temp (C)	15.6
C5	17 Jun 2024	Visibility (mi)	8
C5	17 Jun 2024	Wind Speed (kts)	12.9
C5	17 Jun 2024	Wind Dir	S
C5	17 Jun 2024	Sea State	Confused Swell
C5	17 Jun 2024	High Tide Time	1842
C5	17 Jun 2024	Low Tide Time	124
C5	17 Jun 2024	Comments	
C5	25 Jun 2024	Arrive Time	901
C5	25 Jun 2024	Depart Time	905
C5	25 Jun 2024	Air Temp (C)	19.8
C5	25 Jun 2024	Visibility (mi)	10
C5	25 Jun 2024	Wind Speed (kts)	8.5
C5	25 Jun 2024	Wind Dir	S
C5	25 Jun 2024	Sea State	Calm
C5	25 Jun 2024	High Tide Time	6
C5	25 Jun 2024	Low Tide Time	642
C5	25 Jun 2024	Comments	
A6	04 Jun 2024	Arrive Time	828
A6	04 Jun 2024	Depart Time	832

Station	Date	Parameter	Value
A6	04 Jun 2024	Air Temp (C)	15.7
A6	04 Jun 2024	Visibility (mi)	9
A6	04 Jun 2024	Wind Speed (kts)	8.3
A6	04 Jun 2024	Wind Dir	S
A6	04 Jun 2024	Sea State	Regular Swell
A6	04 Jun 2024	High Tide Time	2000
A6	04 Jun 2024	Low Tide Time	236
A6	04 Jun 2024	Comments	Possible Red Tide
A6	11 Jun 2024	Arrive Time	822
A6	11 Jun 2024	Depart Time	825
A6	11 Jun 2024	Air Temp (C)	16.4
A6	11 Jun 2024	Visibility (mi)	5
A6	11 Jun 2024	Wind Speed (kts)	4.9
A6	11 Jun 2024	Wind Dir	W
A6	11 Jun 2024	Sea State	Calm
A6	11 Jun 2024	High Tide Time	6
A6	11 Jun 2024	Low Tide Time	748
A6	11 Jun 2024	Comments	Kelp; Kelp Debris
A6	17 Jun 2024	Arrive Time	812
A6	17 Jun 2024	Depart Time	817
A6	17 Jun 2024	Air Temp (C)	15.5
A6	17 Jun 2024	Visibility (mi)	8
A6	17 Jun 2024	Wind Speed (kts)	7.5
A6	17 Jun 2024	Wind Dir	SE
A6	17 Jun 2024	Sea State	Confused Swell
A6	17 Jun 2024	High Tide Time	1842
A6	17 Jun 2024	Low Tide Time	124
A6	17 Jun 2024	Comments	
A6	25 Jun 2024	Arrive Time	801
A6	25 Jun 2024	Depart Time	813
A6	25 Jun 2024	Air Temp (C)	19.7
A6	25 Jun 2024	Visibility (mi)	10
A6	25 Jun 2024	Wind Speed (kts)	5.9
A6	25 Jun 2024	Wind Dir	NW
A6	25 Jun 2024	Sea State	Calm
A6	25 Jun 2024	High Tide Time	6
A6	25 Jun 2024	Low Tide Time	642
A6	25 Jun 2024	Comments	Low tide
C6	04 Jun 2024	Arrive Time	912
C6	04 Jun 2024	Depart Time	916
C6	04 Jun 2024	Air Temp (C)	15.7
C6	04 Jun 2024	Visibility (mi)	9
C6	04 Jun 2024	Wind Speed (kts)	9.7
C6	04 Jun 2024	Wind Dir	SE
C6	04 Jun 2024	Sea State	Regular Swell
C6	04 Jun 2024	High Tide Time	2000
C6	04 Jun 2024	Low Tide Time	236
C6	04 Jun 2024	Comments	Possible Red Tide
C6	11 Jun 2024	Arrive Time	913
C6	11 Jun 2024	Depart Time	917
C6	11 Jun 2024	Air Temp (C)	16.5
C6	11 Jun 2024	Visibility (mi)	5
C6	11 Jun 2024	Wind Speed (kts)	9.5
C6	11 Jun 2024	Wind Dir	W
C6	11 Jun 2024	Sea State	Calm
C6	11 Jun 2024	High Tide Time	6

Station	Date	Parameter	Value
C6	11 Jun 2024	Low Tide Time	748
C6	11 Jun 2024	Comments	Kelp
C6	17 Jun 2024	Arrive Time	855
C6	17 Jun 2024	Depart Time	858
C6	17 Jun 2024	Air Temp (C)	15.8
C6	17 Jun 2024	Visibility (mi)	8
C6	17 Jun 2024	Wind Speed (kts)	10.1
C6	17 Jun 2024	Wind Dir	SE
C6	17 Jun 2024	Sea State	Confused Swell
C6	17 Jun 2024	High Tide Time	1842
C6	17 Jun 2024	Low Tide Time	124
C6	17 Jun 2024	Comments	
C6	25 Jun 2024	Arrive Time	850
C6	25 Jun 2024	Depart Time	854
C6	25 Jun 2024	Air Temp (C)	19.9
C6	25 Jun 2024	Visibility (mi)	10
C6	25 Jun 2024	Wind Speed (kts)	6.2
C6	25 Jun 2024	Wind Dir	S
C6	25 Jun 2024	Sea State	Calm
C6	25 Jun 2024	High Tide Time	6
C6	25 Jun 2024	Low Tide Time	642
C6	25 Jun 2024	Comments	
C7	04 Jun 2024	Arrive Time	841
C7	04 Jun 2024	Depart Time	845
C7	04 Jun 2024	Air Temp (C)	15.9
C7	04 Jun 2024	Visibility (mi)	9
C7	04 Jun 2024	Wind Speed (kts)	8.6
C7	04 Jun 2024	Wind Dir	S
C7	04 Jun 2024	Sea State	Regular Swell
C7	04 Jun 2024	High Tide Time	2000
C7	04 Jun 2024	Low Tide Time	236
C7	04 Jun 2024	Comments	Possible Red Tide
C7	11 Jun 2024	Arrive Time	837
C7	11 Jun 2024	Depart Time	846
C7	11 Jun 2024	Air Temp (C)	16.6
C7	11 Jun 2024	Visibility (mi)	5
C7	11 Jun 2024	Wind Speed (kts)	1.6
C7	11 Jun 2024	Wind Dir	W
C7	11 Jun 2024	Sea State	Calm
C7	11 Jun 2024	High Tide Time	6
C7	11 Jun 2024	Low Tide Time	748
C7	11 Jun 2024	Comments	Unable to get 18th depth bin despite multiple attempts. cast should have sime 17.5m or greater data that may be able to be pulled out.; Kelp
C7	17 Jun 2024	Arrive Time	824
C7	17 Jun 2024	Depart Time	829
C7	17 Jun 2024	Air Temp (C)	15.6
C7	17 Jun 2024	Visibility (mi)	8
C7	17 Jun 2024	Wind Speed (kts)	5.9
C7	17 Jun 2024	Wind Dir	E
C7	17 Jun 2024	Sea State	Confused Swell
C7	17 Jun 2024	High Tide Time	1842
C7	17 Jun 2024	Low Tide Time	124
C7	17 Jun 2024	Comments	
C7	25 Jun 2024	Arrive Time	822

Station	Date	Parameter	Value
C7	25 Jun 2024	Depart Time	827
C7	25 Jun 2024	Air Temp (C)	20
C7	25 Jun 2024	Visibility (mi)	10
C7	25 Jun 2024	Wind Speed (kts)	5.7
C7	25 Jun 2024	Wind Dir	N
C7	25 Jun 2024	Sea State	Calm
C7	25 Jun 2024	High Tide Time	6
C7	25 Jun 2024	Low Tide Time	642
C7	25 Jun 2024	Comments	
C8	04 Jun 2024	Arrive Time	852
C8	04 Jun 2024	Depart Time	856
C8	04 Jun 2024	Air Temp (C)	15.9
C8	04 Jun 2024	Visibility (mi)	9
C8	04 Jun 2024	Wind Speed (kts)	9.1
C8	04 Jun 2024	Wind Dir	S
C8	04 Jun 2024	Sea State	Regular Swell
C8	04 Jun 2024	High Tide Time	2000
C8	04 Jun 2024	Low Tide Time	236
C8	04 Jun 2024	Comments	Possible Red Tide
C8	11 Jun 2024	Arrive Time	852
C8	11 Jun 2024	Depart Time	857
C8	11 Jun 2024	Air Temp (C)	16.6
C8	11 Jun 2024	Visibility (mi)	5
C8	11 Jun 2024	Wind Speed (kts)	7
C8	11 Jun 2024	Wind Dir	W
C8	11 Jun 2024	Sea State	Calm
C8	11 Jun 2024	High Tide Time	6
C8	11 Jun 2024	Low Tide Time	748
C8	11 Jun 2024	Comments	Kelp
C8	17 Jun 2024	Arrive Time	835
C8	17 Jun 2024	Depart Time	855
C8	17 Jun 2024	Air Temp (C)	15.5
C8	17 Jun 2024	Visibility (mi)	8
C8	17 Jun 2024	Wind Speed (kts)	11.3
C8	17 Jun 2024	Wind Dir	S
C8	17 Jun 2024	Sea State	Confused Swell
C8	17 Jun 2024	High Tide Time	1842
C8	17 Jun 2024	Low Tide Time	124
C8	17 Jun 2024	Comments	
C8	25 Jun 2024	Arrive Time	834
C8	25 Jun 2024	Depart Time	838
C8	25 Jun 2024	Air Temp (C)	20.1
C8	25 Jun 2024	Visibility (mi)	10
C8	25 Jun 2024	Wind Speed (kts)	4.8
C8	25 Jun 2024	Wind Dir	NW
C8	25 Jun 2024	Sea State	Calm
C8	25 Jun 2024	High Tide Time	6
C8	25 Jun 2024	Low Tide Time	642
C8	25 Jun 2024	Comments	

Table 3.10

Summary of CTD profile data from the PLOO kelp stations for each sample date.

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
A1	04 Jun 2024	1	17.14	45.81	9.4	33.61	8.3	24.4	31.59
A1	04 Jun 2024	2	16.59	46.45	9.8	33.65	8.3	24.6	26.79
A1	04 Jun 2024	3	16.11	52.88	10.2	33.63	8.3	24.7	22.22
A1	04 Jun 2024	4	15.95	60.88	9.8	33.62	8.3	24.7	20.16
A1	04 Jun 2024	5	15.91	63.20	9.4	33.61	8.2	24.7	17.77
A1	04 Jun 2024	6	15.83	64.65	9.1	33.62	8.2	24.7	17.12
A1	04 Jun 2024	7	15.66	65.09	8.8	33.62	8.2	24.8	15.37
A1	04 Jun 2024	8	15.50	67.34	8.5	33.62	8.2	24.8	14.01
A1	04 Jun 2024	9	15.12	69.50	8.2	33.64	8.2	24.9	12.25
A1	04 Jun 2024	10	15.03	74.29	7.9	33.62	8.1	24.9	9.89
A1	04 Jun 2024	11	14.59	78.86	7.4	33.64	8.1	25.0	8.37
A1	04 Jun 2024	12	14.33	80.81	7.1	33.64	8.0	25.1	6.02
A1	04 Jun 2024	13	14.10	84.16	6.7	33.64	8.0	25.1	4.25
A1	04 Jun 2024	14	13.80	87.43	6.4	33.65	8.0	25.2	2.82
A1	04 Jun 2024	15	13.43	89.93	6.0	33.66	7.9	25.3	1.93
A1	04 Jun 2024	16	13.17	91.22	5.6	33.65	7.9	25.3	1.44
A1	04 Jun 2024	17	12.87	92.39	5.2	33.68	7.9	25.4	1.18
A1	04 Jun 2024	18	12.23	93.15	4.9	33.68	7.8	25.5	0.91
A1	04 Jun 2024	19	12.17	93.27	4.7	33.67	7.8	25.5	0.81
A1	11 Jun 2024	1	17.89	90.53	9.2	33.56	8.3	24.2	1.30
A1	11 Jun 2024	2	17.85	89.76	9.2	33.56	8.3	24.2	1.35
A1	11 Jun 2024	3	17.68	89.88	9.2	33.56	8.3	24.2	1.38
A1	11 Jun 2024	4	17.50	90.98	9.3	33.56	8.3	24.3	1.62
A1	11 Jun 2024	5	17.25	90.86	9.2	33.56	8.2	24.4	2.11
A1	11 Jun 2024	6	16.92	89.55	9.0	33.56	8.2	24.4	2.40
A1	11 Jun 2024	7	16.33	89.32	8.7	33.56	8.2	24.6	3.56
A1	11 Jun 2024	8	15.30	88.56	8.1	33.55	8.2	24.8	5.36
A1	11 Jun 2024	9	14.01	85.78	7.4	33.57	8.1	25.1	5.70
A1	11 Jun 2024	10	13.36	85.33	6.7	33.55	8.0	25.2	4.54
A1	11 Jun 2024	11	13.12	89.54	6.3	33.54	8.0	25.2	2.86
A1	11 Jun 2024	12	13.00	93.58	5.9	33.57	7.9	25.3	1.66
A1	11 Jun 2024	13	12.85	92.04	5.7	33.57	7.9	25.3	1.28
A1	11 Jun 2024	14	12.76	93.23	5.6	33.56	7.9	25.3	1.27
A1	11 Jun 2024	15	12.61	94.15	5.6	33.56	7.9	25.4	1.32
A1	11 Jun 2024	16	12.47	94.48	5.4	33.58	7.9	25.4	1.17
A1	11 Jun 2024	17	12.46	94.81	5.4	33.58	7.9	25.4	1.09
A1	11 Jun 2024	18	12.38	94.73	5.3	33.59	7.9	25.4	1.01
A1	11 Jun 2024	19	12.33	94.77	5.2	33.60	7.9	25.4	1.00
A1	17 Jun 2024	1	17.27	78.51	8.1	33.62	8.2	24.4	3.60
A1	17 Jun 2024	2	17.25	81.82	8.1	33.62	8.2	24.4	4.03
A1	17 Jun 2024	3	17.23	81.68	8.0	33.62	8.2	24.4	4.50
A1	17 Jun 2024	4	17.21	80.90	8.0	33.62	8.2	24.4	4.71
A1	17 Jun 2024	5	17.20	80.41	8.0	33.62	8.2	24.4	5.04
A1	17 Jun 2024	6	17.18	80.19	7.9	33.62	8.2	24.4	5.16
A1	17 Jun 2024	7	17.10	79.93	7.7	33.62	8.2	24.4	5.88
A1	17 Jun 2024	8	16.65	78.52	7.4	33.65	8.1	24.6	6.79
A1	17 Jun 2024	9	16.34	74.47	7.0	33.63	8.1	24.6	8.59
A1	17 Jun 2024	10	15.90	73.24	6.8	33.65	8.0	24.7	8.81
A1	17 Jun 2024	11	15.48	76.19	6.6	33.62	8.0	24.8	8.17
A1	17 Jun 2024	12	15.18	75.47	6.2	33.63	8.0	24.9	7.77
A1	17 Jun 2024	13	14.31	74.56	5.6	33.67	8.0	25.1	7.48
A1	17 Jun 2024	14	12.61	77.84	5.0	33.68	7.9	25.4	7.35
A1	17 Jun 2024	15	12.40	83.01	4.5	33.64	7.8	25.5	5.87

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
A1	17 Jun 2024	16	12.01	85.07	4.3	33.66	7.8	25.6	4.89
A1	17 Jun 2024	17	11.81	86.63	4.1	33.65	7.8	25.6	4.05
A1	17 Jun 2024	18	11.76	87.55	4.0	33.65	7.8	25.6	3.53
A1	17 Jun 2024	19	11.35	88.28	3.8	33.71	7.7	25.7	3.10
A1	17 Jun 2024	20	11.37	90.18	3.7	33.65	7.7	25.7	2.56
A1	25 Jun 2024	1	18.38	84.74	8.8	33.56	8.2	24.1	1.77
A1	25 Jun 2024	2	17.89	83.99	8.9	33.57	8.2	24.2	2.01
A1	25 Jun 2024	3	17.51	85.66	8.7	33.59	8.2	24.3	2.21
A1	25 Jun 2024	4	16.51	84.71	8.5	33.61	8.2	24.6	3.54
A1	25 Jun 2024	5	15.60	82.23	8.3	33.62	8.2	24.8	5.83
A1	25 Jun 2024	6	15.17	79.91	8.3	33.59	8.1	24.8	9.08
A1	25 Jun 2024	7	15.00	76.18	8.4	33.59	8.1	24.9	11.91
A1	25 Jun 2024	8	14.66	73.74	8.3	33.60	8.1	25.0	11.70
A1	25 Jun 2024	9	14.17	77.57	8.0	33.60	8.1	25.1	8.89
A1	25 Jun 2024	10	13.68	80.83	7.5	33.59	8.1	25.2	7.68
A1	25 Jun 2024	11	13.13	80.40	6.9	33.59	8.0	25.3	7.63
A1	25 Jun 2024	12	12.60	80.03	6.2	33.59	8.0	25.4	7.88
A1	25 Jun 2024	13	12.36	80.48	5.6	33.59	7.9	25.4	7.07
A1	25 Jun 2024	14	12.11	84.03	5.0	33.61	7.8	25.5	5.45
A1	25 Jun 2024	15	11.93	87.23	4.6	33.62	7.8	25.5	4.68
A1	25 Jun 2024	16	11.81	88.40	4.4	33.63	7.8	25.6	3.76
A1	25 Jun 2024	17	11.79	90.29	4.2	33.63	7.8	25.6	2.77
C4	04 Jun 2024	1	16.93	48.01	10.2	33.62	8.3	24.5	28.10
C4	04 Jun 2024	2	16.73	47.79	10.4	33.63	8.3	24.5	24.81
C4	04 Jun 2024	3	16.32	52.51	10.6	33.63	8.3	24.6	14.39
C4	04 Jun 2024	4	16.13	68.77	10.5	33.62	8.3	24.7	9.05
C4	04 Jun 2024	5	16.10	76.48	10.3	33.62	8.3	24.7	7.49
C4	04 Jun 2024	6	15.91	78.46	9.9	33.63	8.3	24.7	6.29
C4	04 Jun 2024	7	15.70	79.98	9.2	33.63	8.2	24.8	4.83
C4	04 Jun 2024	8	15.49	82.40	8.6	33.63	8.2	24.8	3.67
C4	04 Jun 2024	9	15.38	85.09	8.0	33.63	8.2	24.8	2.79
C4	04 Jun 2024	10	15.26	87.17	7.5	33.62	8.1	24.9	1.97
C4	04 Jun 2024	11	15.21	88.83	7.1	33.63	8.1	24.9	1.45
C4	11 Jun 2024	1	18.42	56.82	8.4	33.61	8.2	24.1	16.82
C4	11 Jun 2024	2	18.35	56.20	8.2	33.62	8.2	24.1	19.38
C4	11 Jun 2024	3	17.98	55.95	8.2	33.62	8.2	24.2	18.85
C4	11 Jun 2024	4	17.64	62.32	8.5	33.60	8.3	24.3	14.75
C4	11 Jun 2024	5	17.37	72.03	8.3	33.60	8.2	24.4	12.10
C4	11 Jun 2024	6	17.26	75.76	7.7	33.61	8.2	24.4	8.28
C4	11 Jun 2024	7	17.09	78.67	7.0	33.61	8.2	24.4	4.95
C4	11 Jun 2024	8	16.14	80.38	6.4	33.65	8.1	24.7	3.25
C4	11 Jun 2024	9	15.59	78.75	5.8	33.62	8.1	24.8	1.95
C4	11 Jun 2024	10	15.49	73.94	5.6	33.61	8.0	24.8	1.22
C4	17 Jun 2024	1	17.52	83.17	8.1	33.60	8.2	24.3	1.62
C4	17 Jun 2024	2	17.51	82.98	8.1	33.60	8.2	24.3	1.75
C4	17 Jun 2024	3	17.41	83.38	8.0	33.61	8.2	24.3	2.18
C4	17 Jun 2024	4	17.37	82.06	7.9	33.61	8.2	24.4	2.76
C4	17 Jun 2024	5	17.36	81.20	7.8	33.61	8.2	24.4	3.13
C4	17 Jun 2024	6	17.33	80.51	7.8	33.62	8.2	24.4	3.35
C4	17 Jun 2024	7	17.30	80.32	7.7	33.61	8.2	24.4	3.38
C4	17 Jun 2024	8	17.28	80.83	7.7	33.62	8.2	24.4	3.60
C4	17 Jun 2024	9	17.08	80.89	7.2	33.63	8.2	24.4	3.45
C4	17 Jun 2024	10	16.10	74.47	6.6	33.67	8.1	24.7	2.58
C4	25 Jun 2024	1	17.91	79.48	9.2	33.59	8.3	24.2	1.41
C4	25 Jun 2024	2	17.79	80.57	9.2	33.60	8.3	24.2	1.80
C4	25 Jun 2024	3	17.73	80.98	9.2	33.60	8.2	24.3	2.23

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
C4	25 Jun 2024	4	17.73	80.49	9.1	33.59	8.2	24.3	2.26
C4	25 Jun 2024	5	17.41	80.25	8.8	33.62	8.2	24.4	3.02
C4	25 Jun 2024	6	16.62	79.99	8.4	33.61	8.2	24.5	4.16
C4	25 Jun 2024	7	16.00	81.39	7.4	33.62	8.2	24.7	3.59
C4	25 Jun 2024	8	14.51	80.92	5.9	33.67	8.0	25.1	2.50
C4	25 Jun 2024	9	13.34	79.83	4.7	33.62	7.9	25.3	1.32
C4	25 Jun 2024	10	12.60	79.71	4.1	33.62	7.8	25.4	0.84
A7	04 Jun 2024	1	17.31	38.14	9.2	33.62	8.3	24.4	39.34
A7	04 Jun 2024	2	17.20	39.52	9.1	33.62	8.3	24.4	35.28
A7	04 Jun 2024	3	16.97	45.41	9.2	33.63	8.3	24.5	29.02
A7	04 Jun 2024	4	16.74	50.10	9.3	33.62	8.3	24.5	24.86
A7	04 Jun 2024	5	16.66	56.33	9.0	33.62	8.3	24.5	21.77
A7	04 Jun 2024	6	15.87	60.52	8.2	33.64	8.2	24.7	19.45
A7	04 Jun 2024	7	14.88	65.31	7.5	33.65	8.1	25.0	14.84
A7	04 Jun 2024	8	14.88	78.75	7.0	33.62	8.1	24.9	10.28
A7	04 Jun 2024	9	14.09	84.64	6.4	33.64	8.0	25.1	6.46
A7	04 Jun 2024	10	14.03	87.64	6.2	33.63	8.0	25.1	4.01
A7	04 Jun 2024	11	13.85	88.74	5.9	33.64	8.0	25.2	2.96
A7	04 Jun 2024	12	13.03	91.43	5.5	33.67	7.9	25.4	1.82
A7	04 Jun 2024	13	12.81	93.62	5.1	33.66	7.8	25.4	1.24
A7	04 Jun 2024	14	12.38	94.49	4.9	33.68	7.8	25.5	1.01
A7	04 Jun 2024	15	12.08	95.25	4.6	33.67	7.8	25.5	0.76
A7	04 Jun 2024	16	11.97	95.33	4.4	33.68	7.8	25.6	0.72
A7	04 Jun 2024	17	11.86	95.41	4.3	33.68	7.8	25.6	0.73
A7	04 Jun 2024	18	11.83	95.49	4.2	33.68	7.8	25.6	0.63
A7	04 Jun 2024	19	11.84	95.40	4.2	33.68	7.7	25.6	0.64
A7	11 Jun 2024	1	18.17	81.54	9.7	33.59	8.3	24.1	2.55
A7	11 Jun 2024	2	18.10	81.45	9.6	33.59	8.3	24.2	2.76
A7	11 Jun 2024	3	17.90	81.17	9.5	33.59	8.3	24.2	3.09
A7	11 Jun 2024	4	17.73	82.68	9.4	33.58	8.3	24.3	3.10
A7	11 Jun 2024	5	17.57	85.24	9.4	33.57	8.3	24.3	2.85
A7	11 Jun 2024	6	17.46	87.45	9.4	33.57	8.3	24.3	3.59
A7	11 Jun 2024	7	17.27	87.09	9.1	33.58	8.3	24.4	4.91
A7	11 Jun 2024	8	16.71	85.34	8.4	33.61	8.2	24.5	7.00
A7	11 Jun 2024	9	15.90	81.55	7.5	33.65	8.2	24.7	5.94
A7	11 Jun 2024	10	14.87	84.18	6.7	33.65	8.1	25.0	3.60
A7	11 Jun 2024	11	14.23	90.47	6.2	33.62	8.0	25.1	2.29
A7	11 Jun 2024	12	13.86	91.67	5.9	33.62	8.0	25.1	1.79
A7	11 Jun 2024	13	13.48	92.15	5.7	33.62	8.0	25.2	1.31
A7	11 Jun 2024	14	13.13	93.14	5.4	33.61	7.9	25.3	1.14
A7	11 Jun 2024	15	12.90	93.96	5.3	33.61	7.9	25.3	0.94
A7	11 Jun 2024	16	12.46	94.38	5.1	33.62	7.9	25.4	0.78
A7	11 Jun 2024	17	12.17	95.10	5.0	33.62	7.9	25.5	0.72
A7	11 Jun 2024	18	11.99	95.36	4.9	33.62	7.8	25.5	0.60
A7	17 Jun 2024	1	17.42	79.63	8.0	33.60	8.2	24.3	2.14
A7	17 Jun 2024	2	17.42	81.45	8.0	33.60	8.2	24.3	2.25
A7	17 Jun 2024	3	17.41	85.34	8.0	33.60	8.2	24.3	2.37
A7	17 Jun 2024	4	17.41	85.35	8.0	33.60	8.2	24.3	2.43
A7	17 Jun 2024	5	17.41	85.29	7.9	33.60	8.2	24.3	2.47
A7	17 Jun 2024	6	17.41	85.17	7.9	33.60	8.2	24.3	2.59
A7	17 Jun 2024	7	17.41	85.26	7.9	33.60	8.2	24.3	2.52
A7	17 Jun 2024	8	17.40	85.25	7.9	33.60	8.2	24.3	2.54
A7	17 Jun 2024	9	17.35	85.24	7.8	33.61	8.2	24.4	2.55
A7	17 Jun 2024	10	17.34	85.00	7.7	33.60	8.2	24.4	2.55
A7	17 Jun 2024	11	16.68	84.87	6.9	33.65	8.2	24.6	2.99
A7	17 Jun 2024	12	15.06	82.97	6.2	33.69	8.1	25.0	3.60
A7	17 Jun 2024	13	14.39	82.14	5.4	33.66	8.0	25.1	4.22
A7	17 Jun 2024	14	12.75	85.27	4.6	33.70	7.9	25.4	3.30

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
A7	17 Jun 2024	15	12.69	87.60	4.2	33.65	7.8	25.4	2.40
A7	17 Jun 2024	16	12.68	87.83	4.1	33.65	7.8	25.4	2.11
A7	17 Jun 2024	17	12.66	88.00	3.9	33.65	7.8	25.4	1.95
A7	17 Jun 2024	18	12.41	88.02	3.8	33.67	7.8	25.5	1.83
A7	17 Jun 2024	19	12.31	88.30	3.7	33.67	7.8	25.5	1.43
A7	25 Jun 2024	1	18.94	64.42	8.9	33.53	8.2	23.9	1.12
A7	25 Jun 2024	2	18.80	77.80	8.6	33.54	8.2	24.0	1.17
A7	25 Jun 2024	3	16.18	85.56	8.8	33.72	8.2	24.7	1.80
A7	25 Jun 2024	4	15.01	86.20	8.7	33.65	8.2	24.9	3.38
A7	25 Jun 2024	5	14.58	85.58	8.3	33.60	8.1	25.0	6.69
A7	25 Jun 2024	6	14.46	82.86	8.0	33.59	8.1	25.0	7.78
A7	25 Jun 2024	7	14.19	82.67	7.6	33.60	8.1	25.1	7.17
A7	25 Jun 2024	8	14.07	83.44	7.3	33.59	8.1	25.1	6.35
A7	25 Jun 2024	9	13.95	84.69	7.0	33.60	8.0	25.1	5.42
A7	25 Jun 2024	10	13.62	85.40	6.5	33.62	8.0	25.2	3.90
A7	25 Jun 2024	11	13.24	88.22	5.8	33.64	8.0	25.3	2.71
A7	25 Jun 2024	12	12.97	91.37	5.2	33.63	7.9	25.3	1.84
A7	25 Jun 2024	13	12.37	92.88	4.9	33.66	7.9	25.5	1.47
A7	25 Jun 2024	14	12.16	93.90	4.6	33.65	7.8	25.5	1.23
A7	25 Jun 2024	15	11.87	94.44	4.4	33.67	7.8	25.6	1.07
A7	25 Jun 2024	16	11.47	94.93	4.1	33.66	7.8	25.6	1.02
A7	25 Jun 2024	17	11.24	95.26	3.9	33.67	7.8	25.7	0.71
C5	04 Jun 2024	1	17.30	43.88	10.0	33.62	8.3	24.4	33.19
C5	04 Jun 2024	2	17.30	44.28	10.0	33.62	8.3	24.4	34.72
C5	04 Jun 2024	3	17.25	46.13	9.6	33.62	8.3	24.4	30.30
C5	04 Jun 2024	4	16.97	51.58	8.9	33.63	8.3	24.5	17.53
C5	04 Jun 2024	5	16.64	72.80	8.1	33.63	8.2	24.5	9.19
C5	04 Jun 2024	6	16.29	77.30	7.5	33.63	8.2	24.6	6.95
C5	04 Jun 2024	7	15.70	79.96	6.9	33.64	8.1	24.8	5.55
C5	04 Jun 2024	8	15.35	82.84	6.4	33.62	8.0	24.8	4.25
C5	04 Jun 2024	9	15.27	86.96	6.2	33.62	8.0	24.8	3.52
C5	04 Jun 2024	10	15.30	88.23	6.2	33.61	8.0	24.8	2.85
C5	11 Jun 2024	1	18.31	67.06	9.3	33.60	8.3	24.1	10.52
C5	11 Jun 2024	2	18.12	66.82	9.1	33.60	8.3	24.2	11.61
C5	11 Jun 2024	3	17.86	69.26	9.2	33.59	8.3	24.2	11.16
C5	11 Jun 2024	4	17.80	74.02	9.1	33.58	8.3	24.2	10.00
C5	11 Jun 2024	5	17.62	77.69	9.0	33.58	8.3	24.3	10.60
C5	11 Jun 2024	6	17.38	77.00	8.8	33.59	8.3	24.3	12.30
C5	11 Jun 2024	7	17.30	75.72	8.4	33.59	8.2	24.4	11.21
C5	11 Jun 2024	8	17.04	77.44	7.6	33.62	8.2	24.4	9.03
C5	11 Jun 2024	9	15.71	79.64	6.5	33.66	8.1	24.8	5.27
C5	11 Jun 2024	10	15.40	78.15	6.0	33.61	8.0	24.8	2.65
C5	17 Jun 2024	1	17.66	75.47	7.8	33.61	8.2	24.3	2.06
C5	17 Jun 2024	2	17.66	74.24	7.7	33.61	8.2	24.3	2.21
C5	17 Jun 2024	3	17.62	77.54	7.5	33.61	8.2	24.3	2.68
C5	17 Jun 2024	4	17.53	77.11	7.0	33.62	8.2	24.3	2.89
C5	17 Jun 2024	5	17.07	74.37	6.3	33.66	8.1	24.5	2.05
C5	17 Jun 2024	6	16.79	66.93	5.9	33.63	8.0	24.5	1.43
C5	17 Jun 2024	7	16.46	66.32	5.5	33.65	8.0	24.6	1.15
C5	17 Jun 2024	8	15.62	71.53	4.9	33.65	8.0	24.8	0.95
C5	17 Jun 2024	9	14.76	68.16	4.4	33.66	7.9	25.0	0.76
C5	17 Jun 2024	10	14.56	57.35	4.2	33.65	7.9	25.0	0.72
C5	25 Jun 2024	1	18.17	83.63	9.3	33.57	8.3	24.1	1.45
C5	25 Jun 2024	2	17.98	82.98	9.1	33.59	8.3	24.2	1.78
C5	25 Jun 2024	3	17.02	81.99	8.8	33.62	8.2	24.4	3.27
C5	25 Jun 2024	4	16.49	82.32	8.2	33.60	8.2	24.6	6.29

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
C5	25 Jun 2024	5	16.00	80.94	7.6	33.60	8.1	24.7	6.05
C5	25 Jun 2024	6	15.43	83.82	7.4	33.62	8.1	24.8	4.83
C5	25 Jun 2024	7	15.02	86.36	7.3	33.60	8.1	24.9	3.97
C5	25 Jun 2024	8	14.54	86.12	6.4	33.63	8.1	25.0	3.45
C5	25 Jun 2024	9	13.31	88.56	5.2	33.65	8.0	25.3	1.78
A6	04 Jun 2024	1	17.08	51.14	12.0	33.61	8.4	24.4	30.96
A6	04 Jun 2024	2	17.07	51.38	11.9	33.61	8.4	24.4	31.16
A6	04 Jun 2024	3	17.03	52.53	11.9	33.61	8.4	24.4	27.47
A6	04 Jun 2024	4	16.82	55.27	11.8	33.62	8.4	24.5	24.15
A6	04 Jun 2024	5	16.55	60.32	11.7	33.62	8.4	24.6	19.17
A6	04 Jun 2024	6	16.49	63.56	11.4	33.62	8.4	24.6	17.19
A6	04 Jun 2024	7	16.22	65.80	11.0	33.62	8.3	24.6	14.99
A6	04 Jun 2024	8	16.19	68.63	10.6	33.62	8.3	24.6	13.43
A6	04 Jun 2024	9	15.93	70.83	9.9	33.62	8.3	24.7	11.02
A6	04 Jun 2024	10	15.40	74.54	9.0	33.65	8.2	24.8	8.23
A6	04 Jun 2024	11	14.92	80.33	8.1	33.63	8.1	24.9	6.62
A6	04 Jun 2024	12	14.75	81.83	7.6	33.63	8.1	25.0	5.99
A6	04 Jun 2024	13	14.62	81.91	7.3	33.63	8.1	25.0	5.53
A6	04 Jun 2024	14	14.35	83.32	6.9	33.63	8.0	25.1	4.36
A6	04 Jun 2024	15	14.15	85.49	6.7	33.63	8.0	25.1	3.48
A6	04 Jun 2024	16	14.04	87.10	6.5	33.63	8.0	25.1	2.73
A6	04 Jun 2024	17	13.83	89.07	6.2	33.65	8.0	25.2	2.14
A6	04 Jun 2024	18	13.45	90.69	5.9	33.66	7.9	25.3	1.83
A6	04 Jun 2024	19	13.24	91.73	5.5	33.64	7.9	25.3	1.58
A6	04 Jun 2024	20	12.90	93.39	5.3	33.65	7.9	25.4	1.18
A6	11 Jun 2024	1	18.24	81.98	9.5	33.59	8.3	24.1	4.51
A6	11 Jun 2024	2	18.23	82.43	9.4	33.60	8.3	24.1	4.51
A6	11 Jun 2024	3	17.78	82.39	9.4	33.61	8.3	24.3	5.05
A6	11 Jun 2024	4	17.47	81.81	9.4	33.60	8.3	24.3	6.94
A6	11 Jun 2024	5	17.37	79.84	9.3	33.59	8.3	24.3	10.05
A6	11 Jun 2024	6	17.20	79.45	9.1	33.59	8.3	24.4	11.61
A6	11 Jun 2024	7	16.97	76.47	8.8	33.61	8.2	24.5	11.97
A6	11 Jun 2024	8	16.62	76.65	8.4	33.60	8.2	24.5	11.24
A6	11 Jun 2024	9	16.37	77.28	8.1	33.61	8.2	24.6	9.68
A6	11 Jun 2024	10	16.05	81.45	7.8	33.61	8.2	24.7	7.84
A6	11 Jun 2024	11	16.05	83.73	7.6	33.59	8.1	24.7	6.45
A6	11 Jun 2024	12	15.67	84.24	7.1	33.63	8.1	24.8	6.17
A6	11 Jun 2024	13	15.03	85.76	6.7	33.65	8.1	24.9	4.79
A6	11 Jun 2024	14	14.43	88.90	6.3	33.65	8.0	25.1	3.39
A6	11 Jun 2024	15	14.18	90.65	6.0	33.63	8.0	25.1	2.68
A6	11 Jun 2024	16	13.78	92.15	5.8	33.65	8.0	25.2	2.02
A6	11 Jun 2024	17	13.06	93.39	5.4	33.66	8.0	25.3	1.34
A6	11 Jun 2024	18	12.49	94.43	5.2	33.68	7.9	25.5	0.92
A6	17 Jun 2024	1	18.26	86.67	9.1	33.54	8.3	24.1	2.23
A6	17 Jun 2024	2	18.26	86.83	9.1	33.54	8.3	24.1	2.27
A6	17 Jun 2024	3	18.26	87.57	9.1	33.54	8.3	24.1	2.46
A6	17 Jun 2024	4	18.21	87.73	9.0	33.55	8.3	24.1	3.31
A6	17 Jun 2024	5	18.01	84.83	8.8	33.56	8.3	24.2	4.61
A6	17 Jun 2024	6	17.86	83.59	8.7	33.57	8.3	24.2	4.30
A6	17 Jun 2024	7	17.84	84.73	8.6	33.57	8.3	24.2	4.04
A6	17 Jun 2024	8	17.80	85.43	8.6	33.58	8.3	24.2	3.76
A6	17 Jun 2024	9	17.77	85.50	8.5	33.58	8.2	24.2	3.45
A6	17 Jun 2024	10	17.72	85.78	8.4	33.58	8.2	24.3	3.28
A6	17 Jun 2024	11	17.49	85.89	8.2	33.59	8.2	24.3	3.58
A6	17 Jun 2024	12	16.94	84.91	7.8	33.61	8.2	24.5	3.61
A6	17 Jun 2024	13	16.76	85.67	7.4	33.60	8.2	24.5	3.12
A6	17 Jun 2024	14	16.51	85.76	7.1	33.60	8.2	24.6	3.06
A6	17 Jun 2024	15	15.81	85.79	6.6	33.62	8.1	24.7	3.01

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
A6	17 Jun 2024	16	15.03	86.19	5.9	33.66	8.1	24.9	2.99
A6	17 Jun 2024	17	13.41	87.46	5.0	33.66	8.0	25.3	2.75
A6	17 Jun 2024	18	12.64	88.48	4.6	33.63	7.8	25.4	2.82
A6	25 Jun 2024	2	17.14	85.27	9.1	33.61	8.2	24.4	2.36
A6	25 Jun 2024	3	16.83	85.45	9.0	33.61	8.2	24.5	2.51
A6	25 Jun 2024	4	16.38	85.63	8.9	33.64	8.2	24.6	2.83
A6	25 Jun 2024	5	15.67	86.16	8.9	33.62	8.2	24.8	2.80
A6	25 Jun 2024	6	15.48	86.48	8.8	33.61	8.2	24.8	2.80
A6	25 Jun 2024	7	15.17	86.75	8.6	33.63	8.2	24.9	2.68
A6	25 Jun 2024	8	14.95	86.50	8.4	33.62	8.2	24.9	3.34
A6	25 Jun 2024	9	14.78	84.69	8.2	33.62	8.1	25.0	5.23
A6	25 Jun 2024	10	14.53	83.04	8.0	33.63	8.1	25.0	6.30
A6	25 Jun 2024	11	13.89	82.64	7.4	33.67	8.1	25.2	6.94
A6	25 Jun 2024	12	13.76	82.84	6.7	33.63	8.0	25.2	6.55
A6	25 Jun 2024	13	13.26	84.62	6.2	33.66	8.0	25.3	6.11
A6	25 Jun 2024	14	13.23	86.66	5.7	33.63	7.9	25.3	5.43
A6	25 Jun 2024	15	13.18	87.26	5.4	33.63	7.9	25.3	4.65
A6	25 Jun 2024	16	12.28	88.68	4.9	33.73	7.9	25.6	4.17
A6	25 Jun 2024	17	11.82	92.23	4.4	33.69	7.8	25.6	2.88
C6	04 Jun 2024	1	17.28	35.99	10.4	33.61	8.3	24.4	50.21
C6	04 Jun 2024	2	17.27	38.52	10.3	33.61	8.3	24.4	49.31
C6	04 Jun 2024	3	17.01	39.37	9.9	33.63	8.3	24.5	45.83
C6	04 Jun 2024	4	16.56	64.47	9.5	33.62	8.3	24.6	22.50
C6	04 Jun 2024	5	16.27	77.68	9.3	33.61	8.2	24.6	8.75
C6	04 Jun 2024	6	16.04	76.99	9.1	33.62	8.2	24.7	6.07
C6	04 Jun 2024	7	15.92	79.71	8.9	33.62	8.2	24.7	4.35
C6	04 Jun 2024	8	15.23	86.58	7.3	33.65	8.1	24.9	2.78
C6	04 Jun 2024	9	14.97	91.33	6.3	33.62	8.0	24.9	1.48
C6	11 Jun 2024	1	18.49	71.93	10.1	33.62	8.4	24.1	8.04
C6	11 Jun 2024	2	18.38	72.05	9.8	33.63	8.4	24.1	8.54
C6	11 Jun 2024	3	17.96	72.33	9.5	33.61	8.3	24.2	9.33
C6	11 Jun 2024	4	17.63	74.25	9.3	33.61	8.3	24.3	8.55
C6	11 Jun 2024	5	17.21	78.65	8.9	33.61	8.3	24.4	8.10
C6	11 Jun 2024	6	16.90	80.72	8.4	33.60	8.2	24.5	7.22
C6	11 Jun 2024	7	16.49	83.56	7.7	33.61	8.2	24.6	5.10
C6	11 Jun 2024	8	15.60	87.93	6.8	33.66	8.1	24.8	3.39
C6	11 Jun 2024	9	15.00	89.06	6.2	33.65	8.1	24.9	2.61
C6	17 Jun 2024	1	17.74	79.96	8.0	33.59	8.2	24.3	2.54
C6	17 Jun 2024	2	17.72	79.72	8.0	33.59	8.2	24.3	2.69
C6	17 Jun 2024	3	17.42	80.06	8.1	33.60	8.2	24.3	3.44
C6	17 Jun 2024	4	17.28	81.91	8.0	33.60	8.2	24.4	4.00
C6	17 Jun 2024	5	17.21	82.66	7.9	33.60	8.2	24.4	4.66
C6	17 Jun 2024	6	17.18	82.26	7.8	33.60	8.2	24.4	4.75
C6	17 Jun 2024	7	17.06	81.58	7.6	33.60	8.2	24.4	4.78
C6	17 Jun 2024	8	17.02	79.97	6.9	33.60	8.2	24.4	4.52
C6	17 Jun 2024	9	15.29	78.46	5.8	33.70	8.1	24.9	3.15
C6	25 Jun 2024	1	18.09	72.46	9.6	33.57	8.3	24.2	2.70
C6	25 Jun 2024	2	17.96	76.58	9.6	33.57	8.3	24.2	3.32
C6	25 Jun 2024	3	17.42	78.60	9.5	33.59	8.3	24.3	5.11
C6	25 Jun 2024	4	16.85	76.61	9.3	33.60	8.2	24.5	9.34
C6	25 Jun 2024	5	16.22	71.75	9.1	33.60	8.2	24.6	14.20
C6	25 Jun 2024	6	15.78	70.82	8.6	33.59	8.2	24.7	13.48
C6	25 Jun 2024	7	15.47	75.70	7.8	33.60	8.2	24.8	8.74
C6	25 Jun 2024	8	14.73	83.59	6.4	33.62	8.1	25.0	4.23
C6	25 Jun 2024	9	13.70	85.59	5.3	33.70	8.0	25.2	2.02

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
C7	04 Jun 2024	1	17.30	43.42	12.7	33.60	8.4	24.4	37.70
C7	04 Jun 2024	2	17.27	43.34	12.7	33.60	8.4	24.4	37.77
C7	04 Jun 2024	3	17.27	44.95	12.6	33.60	8.4	24.4	37.18
C7	04 Jun 2024	4	17.22	46.03	12.5	33.61	8.4	24.4	35.08
C7	04 Jun 2024	5	17.17	48.29	12.2	33.61	8.4	24.4	31.05
C7	04 Jun 2024	6	16.96	54.72	11.2	33.61	8.4	24.5	23.15
C7	04 Jun 2024	7	16.47	64.37	10.0	33.62	8.3	24.6	17.50
C7	04 Jun 2024	8	16.26	68.42	9.5	33.61	8.2	24.6	16.06
C7	04 Jun 2024	9	15.93	69.17	9.0	33.62	8.2	24.7	15.21
C7	04 Jun 2024	10	15.47	69.45	8.4	33.62	8.2	24.8	15.03
C7	04 Jun 2024	11	15.05	70.06	7.9	33.63	8.1	24.9	14.88
C7	04 Jun 2024	12	14.98	70.84	7.5	33.62	8.1	24.9	13.80
C7	04 Jun 2024	13	14.95	71.97	7.2	33.62	8.1	24.9	13.20
C7	04 Jun 2024	14	14.58	74.00	6.7	33.64	8.0	25.0	11.18
C7	04 Jun 2024	15	14.36	79.33	6.3	33.63	8.0	25.1	8.37
C7	04 Jun 2024	16	13.98	83.38	5.8	33.64	8.0	25.1	5.94
C7	04 Jun 2024	17	13.83	88.61	5.4	33.64	7.9	25.2	4.07
C7	04 Jun 2024	18	13.54	92.13	5.3	33.65	7.9	25.2	2.99
C7	11 Jun 2024	1	18.63	47.14	13.0	33.59	8.5	24.0	32.38
C7	11 Jun 2024	2	18.64	47.11	12.9	33.60	8.5	24.0	32.82
C7	11 Jun 2024	3	18.52	46.90	12.5	33.60	8.5	24.1	31.89
C7	11 Jun 2024	4	18.38	47.32	11.9	33.60	8.5	24.1	29.69
C7	11 Jun 2024	5	18.15	49.21	11.2	33.61	8.4	24.2	28.19
C7	11 Jun 2024	6	17.77	52.78	10.1	33.62	8.4	24.3	28.15
C7	11 Jun 2024	7	17.09	53.62	8.5	33.63	8.3	24.4	28.08
C7	11 Jun 2024	8	16.50	55.81	7.6	33.63	8.2	24.6	22.94
C7	11 Jun 2024	9	16.21	65.04	7.3	33.62	8.2	24.6	16.51
C7	11 Jun 2024	10	16.04	73.32	7.0	33.62	8.1	24.7	14.62
C7	11 Jun 2024	11	15.57	74.19	6.9	33.63	8.1	24.8	13.45
C7	11 Jun 2024	12	15.20	76.83	6.8	33.62	8.1	24.9	11.80
C7	11 Jun 2024	13	14.99	80.15	6.7	33.62	8.1	24.9	11.83
C7	11 Jun 2024	14	14.94	79.79	6.6	33.61	8.1	24.9	12.44
C7	11 Jun 2024	15	14.84	78.58	6.4	33.62	8.0	24.9	13.81
C7	11 Jun 2024	16	14.19	78.24	6.0	33.66	8.0	25.1	11.58
C7	11 Jun 2024	17	13.83	83.58	5.6	33.65	8.0	25.2	7.36
C7	17 Jun 2024	1	18.21	86.70	9.0	33.56	8.3	24.1	2.12
C7	17 Jun 2024	2	18.21	85.48	9.0	33.56	8.3	24.1	2.14
C7	17 Jun 2024	3	18.20	86.66	8.9	33.56	8.3	24.1	2.36
C7	17 Jun 2024	4	18.11	86.59	8.8	33.57	8.3	24.2	3.09
C7	17 Jun 2024	5	18.00	85.54	8.6	33.58	8.3	24.2	4.25
C7	17 Jun 2024	6	17.98	83.72	8.5	33.58	8.3	24.2	5.19
C7	17 Jun 2024	7	17.93	82.20	8.3	33.58	8.3	24.2	5.69
C7	17 Jun 2024	8	17.81	81.36	8.1	33.59	8.3	24.2	6.37
C7	17 Jun 2024	9	17.48	79.94	7.9	33.61	8.2	24.3	6.63
C7	17 Jun 2024	10	17.27	79.21	7.4	33.60	8.2	24.4	6.51
C7	17 Jun 2024	11	16.34	77.92	6.6	33.66	8.2	24.6	6.92
C7	17 Jun 2024	12	15.47	76.43	5.8	33.65	8.1	24.8	7.09
C7	17 Jun 2024	13	14.38	76.75	4.7	33.70	7.9	25.1	7.24
C7	17 Jun 2024	14	12.83	79.28	3.8	33.69	7.8	25.4	6.44
C7	17 Jun 2024	15	12.29	85.56	3.5	33.68	7.7	25.5	4.13
C7	17 Jun 2024	16	11.93	90.35	3.4	33.67	7.7	25.6	2.17
C7	17 Jun 2024	17	11.71	91.19	3.4	33.66	7.7	25.6	1.28
C7	17 Jun 2024	18	11.64	91.74	3.4	33.66	7.7	25.6	0.82
C7	25 Jun 2024	1	19.19	86.84	8.8	33.52	8.3	23.8	1.22
C7	25 Jun 2024	2	18.87	84.10	9.2	33.54	8.3	23.9	2.93
C7	25 Jun 2024	3	18.21	79.36	9.5	33.58	8.3	24.1	5.81
C7	25 Jun 2024	4	17.64	74.15	9.4	33.57	8.3	24.3	7.67
C7	25 Jun 2024	5	16.58	77.05	8.6	33.62	8.2	24.6	8.83

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
C7	25 Jun 2024	6	14.70	78.02	7.7	33.62	8.2	25.0	9.69
C7	25 Jun 2024	7	14.26	78.89	7.0	33.58	8.1	25.0	10.45
C7	25 Jun 2024	8	14.00	78.76	6.6	33.59	8.0	25.1	10.55
C7	25 Jun 2024	9	13.39	80.35	6.0	33.61	8.0	25.2	9.08
C7	25 Jun 2024	10	13.22	82.79	5.4	33.60	7.9	25.3	7.50
C7	25 Jun 2024	11	12.70	80.82	5.0	33.62	7.9	25.4	6.73
C7	25 Jun 2024	12	12.56	84.29	4.7	33.61	7.8	25.4	4.81
C7	25 Jun 2024	13	12.45	90.01	4.4	33.63	7.8	25.4	4.06
C7	25 Jun 2024	14	11.97	93.54	4.1	33.64	7.8	25.5	1.99
C7	25 Jun 2024	15	11.88	95.24	4.0	33.64	7.8	25.6	1.03
C7	25 Jun 2024	16	11.59	95.94	3.8	33.66	7.8	25.6	0.65
C7	25 Jun 2024	17	11.48	96.30	3.7	33.66	7.8	25.6	0.41
C8	04 Jun 2024	1	17.47	52.92	13.3	33.60	8.5	24.3	28.35
C8	04 Jun 2024	2	17.46	53.14	13.2	33.60	8.5	24.3	28.83
C8	04 Jun 2024	3	17.35	55.14	12.6	33.60	8.5	24.4	26.32
C8	04 Jun 2024	4	17.16	59.46	12.1	33.60	8.4	24.4	21.08
C8	04 Jun 2024	5	17.17	61.78	11.6	33.59	8.4	24.4	19.92
C8	04 Jun 2024	6	16.65	63.73	10.7	33.63	8.4	24.5	17.63
C8	04 Jun 2024	7	16.15	68.68	9.3	33.63	8.3	24.7	13.50
C8	04 Jun 2024	8	15.52	76.57	8.0	33.64	8.2	24.8	9.33
C8	04 Jun 2024	9	14.86	83.99	7.0	33.63	8.1	25.0	6.25
C8	04 Jun 2024	10	14.35	86.89	6.3	33.63	8.0	25.1	5.11
C8	04 Jun 2024	11	14.12	87.39	6.0	33.63	7.9	25.1	4.35
C8	04 Jun 2024	12	14.11	88.58	5.8	33.62	7.9	25.1	3.76
C8	04 Jun 2024	13	13.92	89.52	5.8	33.62	7.9	25.1	3.51
C8	04 Jun 2024	14	13.78	90.43	5.6	33.63	7.9	25.2	3.19
C8	04 Jun 2024	15	13.71	91.70	5.4	33.63	7.9	25.2	2.47
C8	04 Jun 2024	16	13.48	93.06	5.2	33.63	7.9	25.2	1.68
C8	04 Jun 2024	17	13.37	94.15	5.0	33.63	7.8	25.3	1.25
C8	04 Jun 2024	18	13.37	94.85	5.0	33.63	7.8	25.3	0.88
C8	04 Jun 2024	19	13.33	94.95	4.9	33.63	7.8	25.3	0.84
C8	11 Jun 2024	1	18.55	55.53	12.6	33.58	8.5	24.0	21.73
C8	11 Jun 2024	2	18.54	55.54	12.3	33.58	8.5	24.1	21.41
C8	11 Jun 2024	3	18.34	55.75	11.2	33.59	8.5	24.1	20.69
C8	11 Jun 2024	4	17.49	58.06	9.4	33.63	8.4	24.3	18.54
C8	11 Jun 2024	5	16.99	62.11	8.2	33.62	8.3	24.5	17.04
C8	11 Jun 2024	6	16.54	67.12	7.6	33.62	8.2	24.6	16.27
C8	11 Jun 2024	7	16.24	70.59	7.2	33.62	8.2	24.6	16.77
C8	11 Jun 2024	8	16.00	70.87	6.9	33.62	8.1	24.7	16.82
C8	11 Jun 2024	9	15.81	71.31	6.7	33.62	8.1	24.7	16.88
C8	11 Jun 2024	10	15.66	71.43	6.4	33.62	8.1	24.8	17.43
C8	11 Jun 2024	11	15.49	70.73	6.2	33.63	8.1	24.8	21.15
C8	11 Jun 2024	12	15.34	67.00	5.9	33.63	8.0	24.8	20.22
C8	11 Jun 2024	13	15.13	68.54	5.8	33.64	8.0	24.9	13.93
C8	11 Jun 2024	14	14.79	75.72	5.6	33.65	8.0	25.0	11.85
C8	11 Jun 2024	15	14.52	77.93	5.4	33.65	8.0	25.0	7.36
C8	11 Jun 2024	16	14.26	84.88	5.2	33.65	8.0	25.1	4.09
C8	11 Jun 2024	17	13.62	87.27	4.8	33.69	7.9	25.2	2.74
C8	11 Jun 2024	18	12.40	90.08	4.5	33.69	7.9	25.5	1.33
C8	11 Jun 2024	19	12.39	90.77	4.4	33.67	7.8	25.5	0.78
C8	17 Jun 2024	1	17.91	80.80	8.7	33.58	8.3	24.2	3.94
C8	17 Jun 2024	2	17.93	80.63	8.7	33.58	8.3	24.2	4.28
C8	17 Jun 2024	3	17.94	81.06	8.7	33.58	8.3	24.2	4.76
C8	17 Jun 2024	4	17.88	81.26	8.7	33.58	8.3	24.2	4.74
C8	17 Jun 2024	5	17.71	81.34	8.7	33.59	8.3	24.3	4.95
C8	17 Jun 2024	6	17.62	81.21	8.6	33.58	8.3	24.3	4.80
C8	17 Jun 2024	7	17.30	81.41	8.5	33.59	8.3	24.4	4.64
C8	17 Jun 2024	8	16.64	81.73	8.5	33.60	8.3	24.5	4.48

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
C8	17 Jun 2024	9	15.72	82.64	8.2	33.61	8.2	24.7	4.81
C8	17 Jun 2024	10	14.97	82.65	7.4	33.60	8.2	24.9	5.56
C8	17 Jun 2024	11	14.52	81.00	6.4	33.62	8.1	25.0	6.05
C8	17 Jun 2024	12	13.95	80.00	5.4	33.62	8.0	25.1	6.62
C8	17 Jun 2024	13	13.11	80.06	4.5	33.65	7.9	25.3	6.03
C8	17 Jun 2024	14	12.22	82.42	3.9	33.66	7.8	25.5	4.86
C8	17 Jun 2024	15	11.98	85.08	3.5	33.65	7.7	25.5	4.06
C8	17 Jun 2024	16	11.81	85.84	3.4	33.65	7.7	25.6	3.59
C8	17 Jun 2024	17	11.60	86.52	3.3	33.66	7.7	25.6	2.85
C8	17 Jun 2024	18	11.46	87.04	3.2	33.67	7.7	25.7	2.32
C8	17 Jun 2024	19	11.42	86.73	3.2	33.67	7.7	25.7	1.66
C8	25 Jun 2024	1	18.89	85.76	8.9	33.55	8.3	23.9	1.63
C8	25 Jun 2024	2	18.44	83.76	8.9	33.57	8.3	24.1	1.76
C8	25 Jun 2024	3	17.86	84.96	8.9	33.57	8.2	24.2	2.15
C8	25 Jun 2024	4	17.20	85.64	8.9	33.58	8.2	24.4	2.79
C8	25 Jun 2024	5	16.59	84.99	8.9	33.59	8.2	24.5	3.67
C8	25 Jun 2024	6	15.75	83.46	8.7	33.60	8.2	24.7	4.83
C8	25 Jun 2024	7	15.08	83.56	7.9	33.60	8.2	24.9	5.52
C8	25 Jun 2024	8	13.35	85.76	6.3	33.65	8.0	25.3	7.04
C8	25 Jun 2024	9	12.87	84.10	5.3	33.61	7.9	25.3	8.46
C8	25 Jun 2024	10	12.42	83.40	4.8	33.62	7.8	25.4	7.83
C8	25 Jun 2024	11	12.21	85.83	4.4	33.62	7.8	25.5	6.61
C8	25 Jun 2024	12	11.84	88.58	4.1	33.64	7.8	25.6	4.47
C8	25 Jun 2024	13	11.68	92.77	3.9	33.65	7.8	25.6	2.29
C8	25 Jun 2024	14	11.49	95.07	3.8	33.66	7.8	25.6	1.15
C8	25 Jun 2024	15	11.30	95.79	3.8	33.67	7.8	25.7	0.76
C8	25 Jun 2024	16	11.19	96.44	3.7	33.68	7.8	25.7	0.60
C8	25 Jun 2024	17	11.21	95.97	3.6	33.68	7.8	25.7	0.53
C8	25 Jun 2024	18	11.07	95.13	3.5	33.69	7.7	25.7	0.47

NA = not available

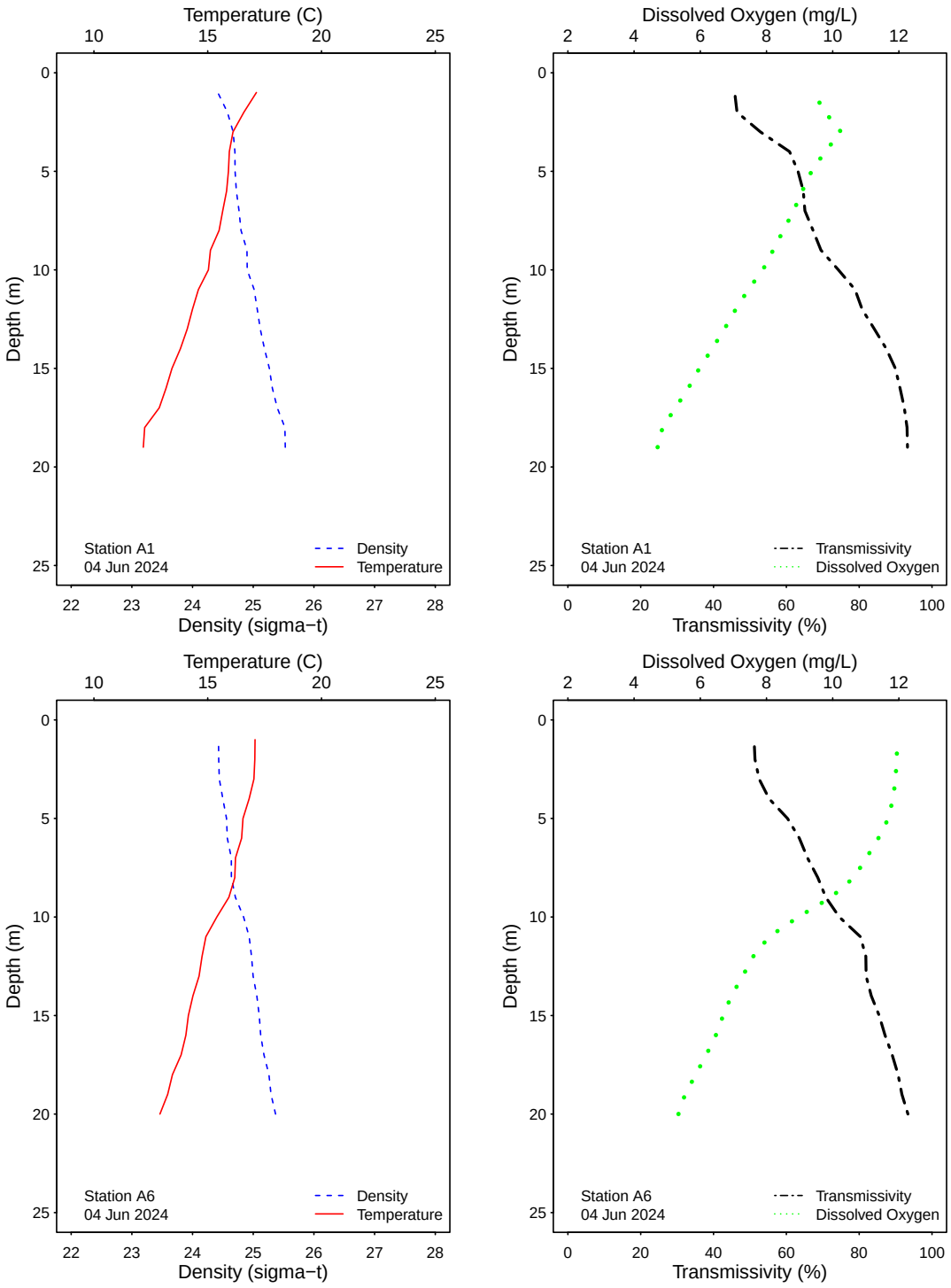

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

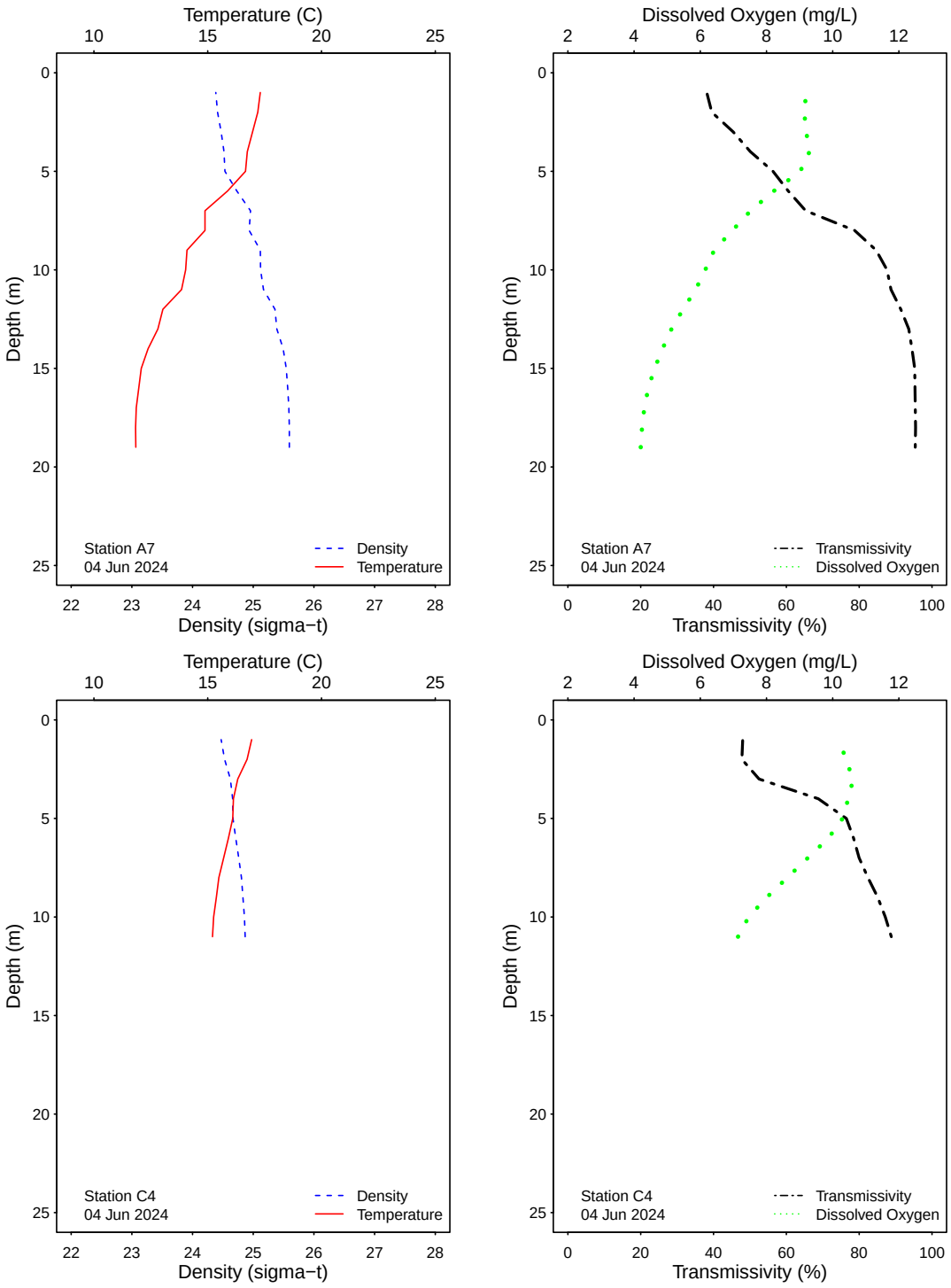

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

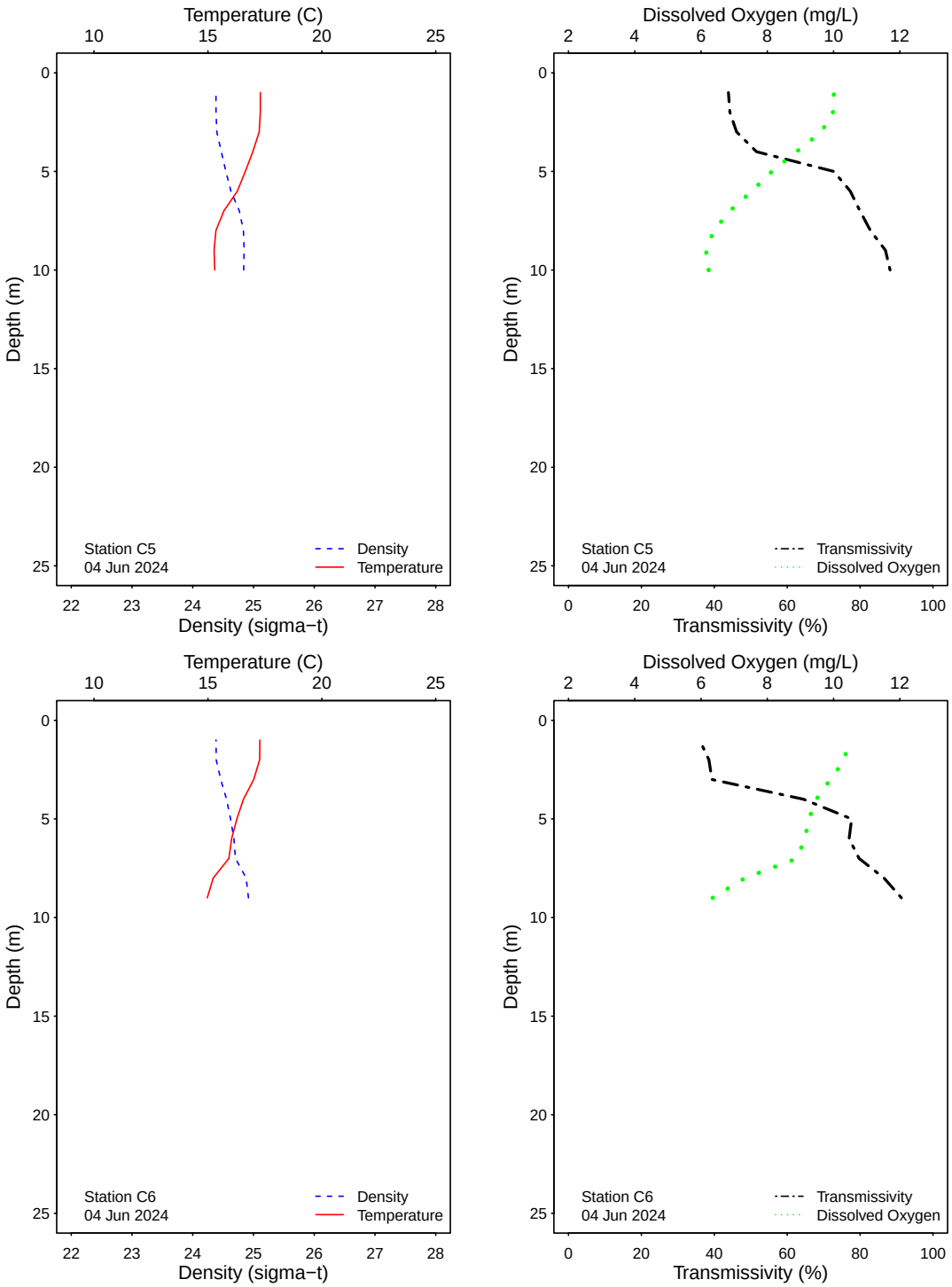

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

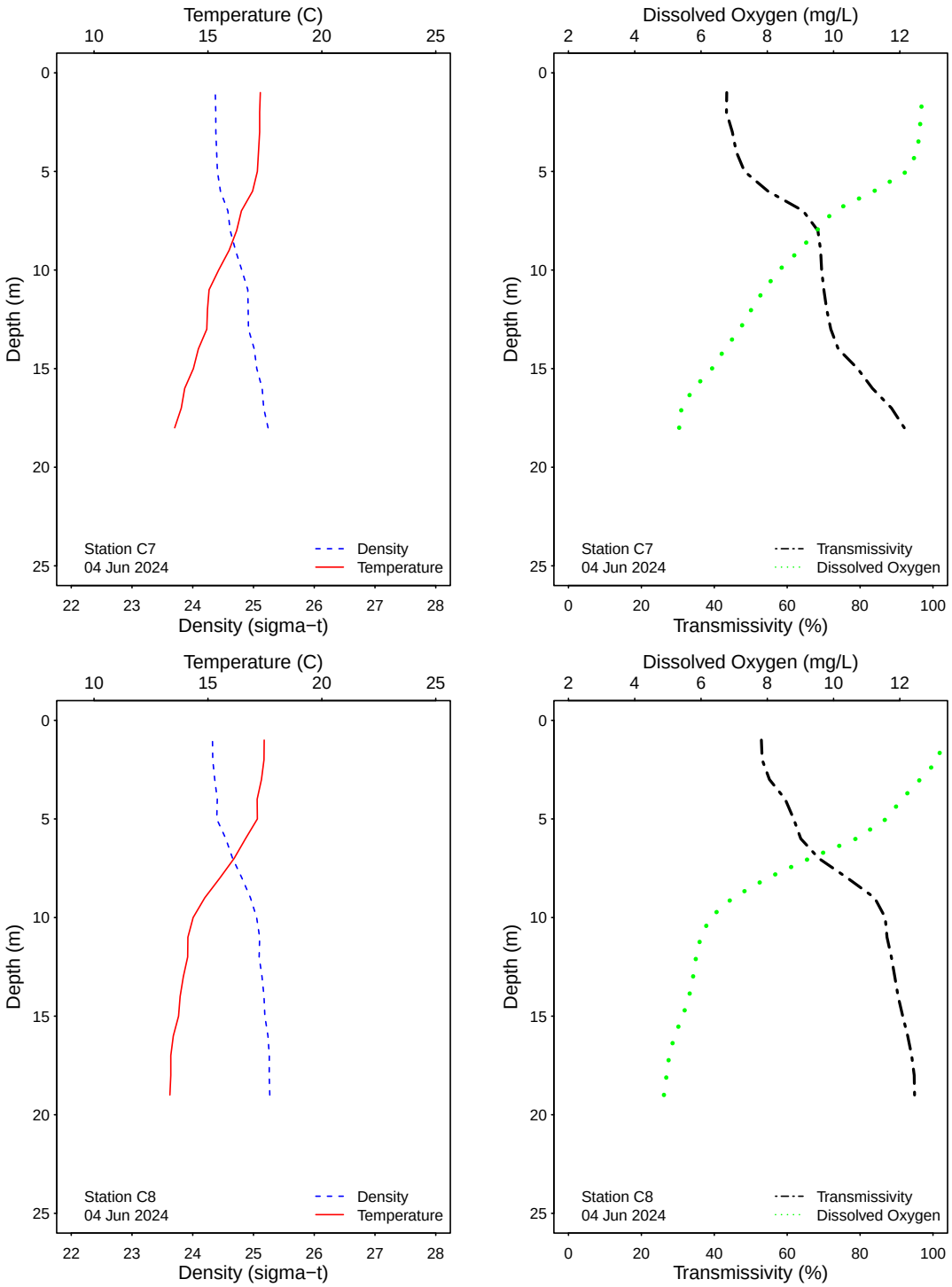

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

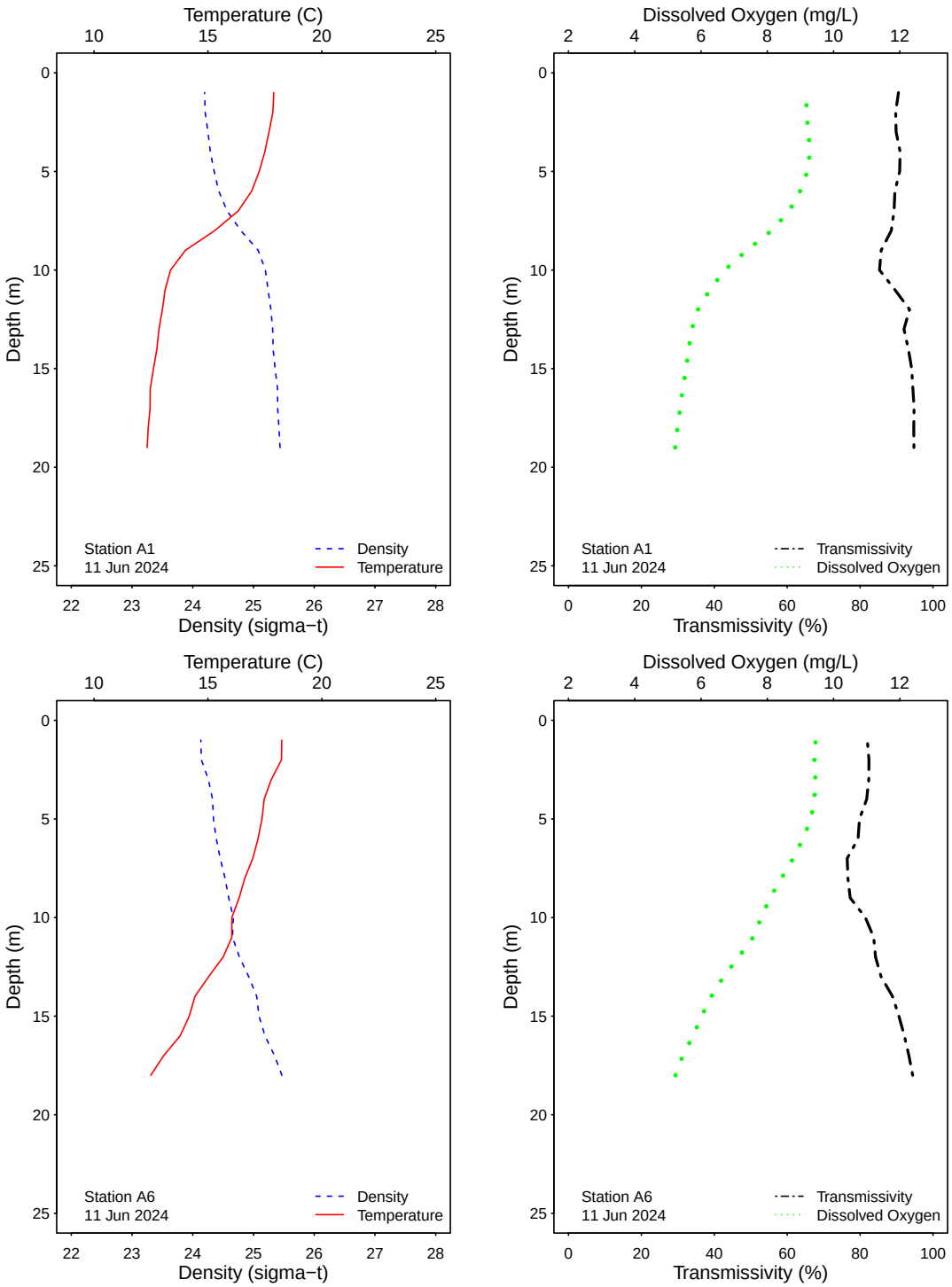

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

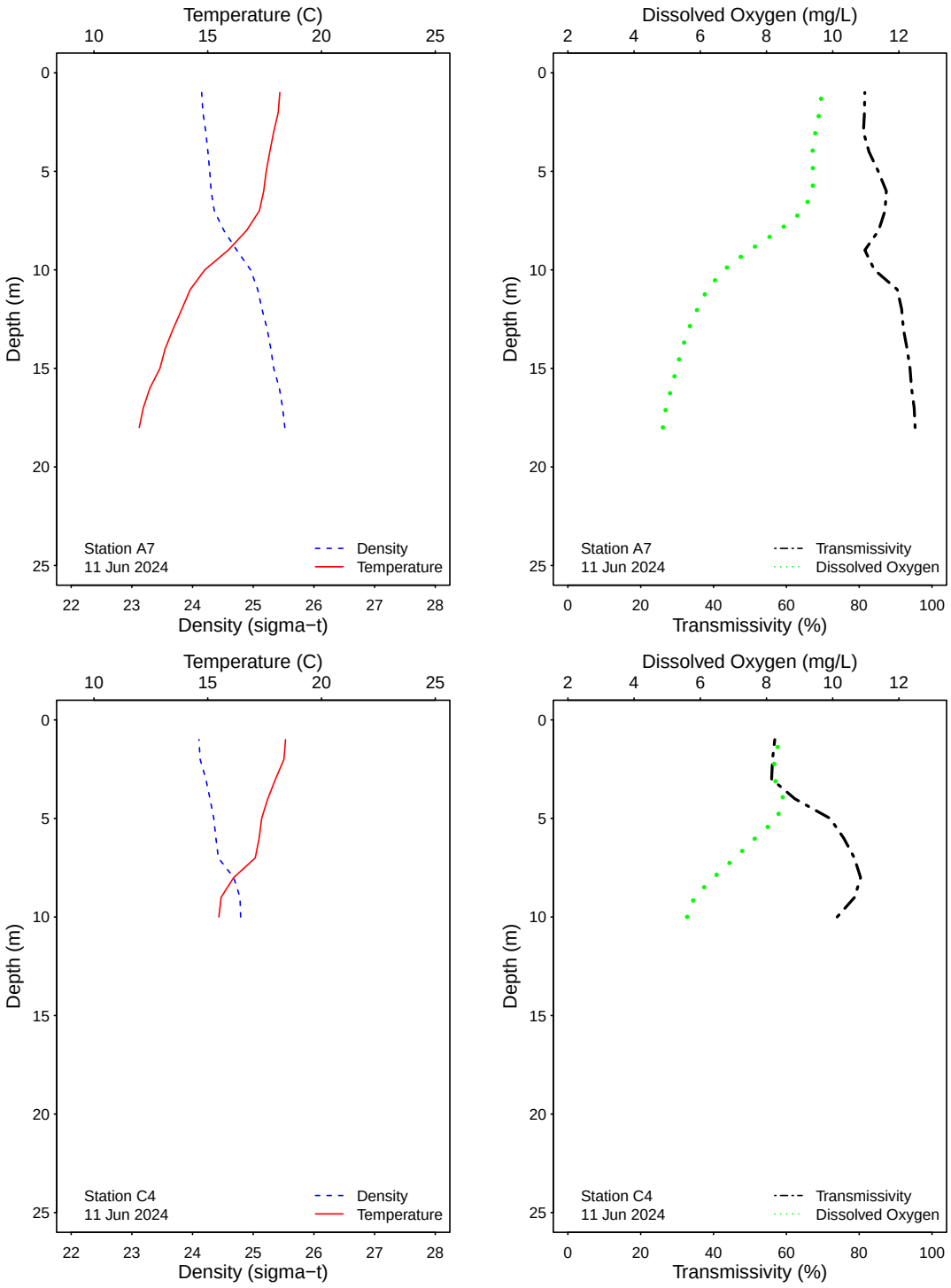

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

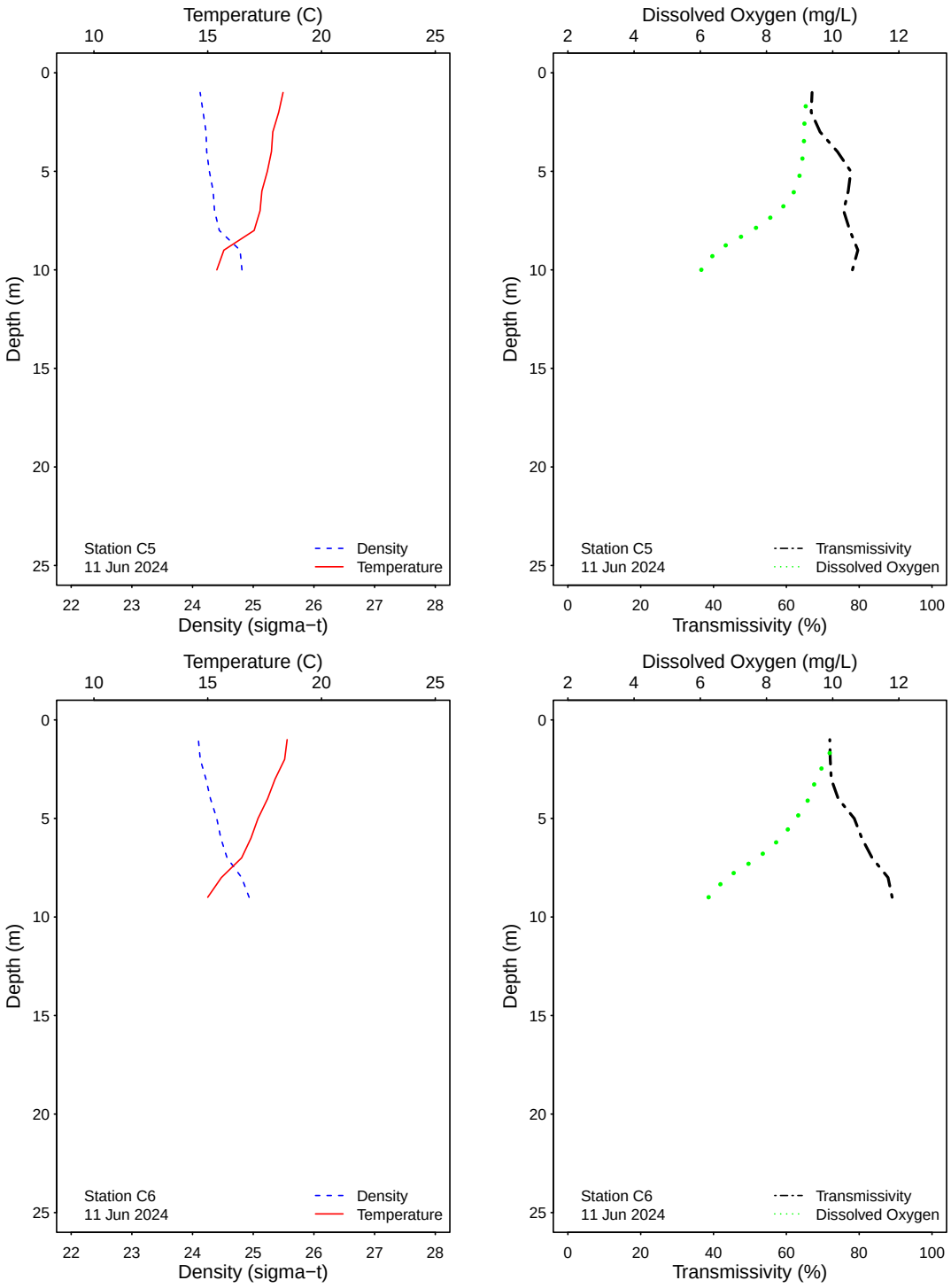

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

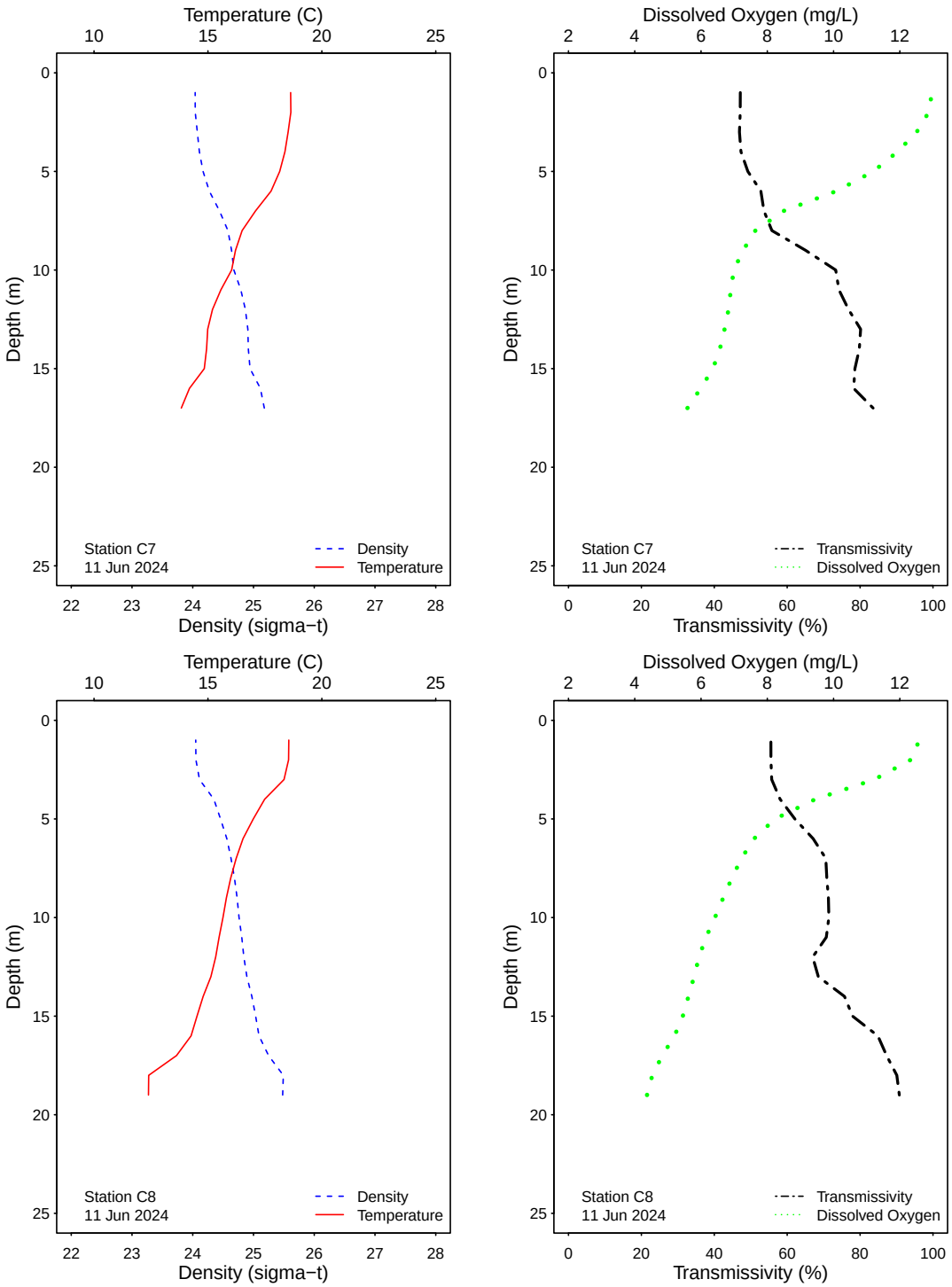

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

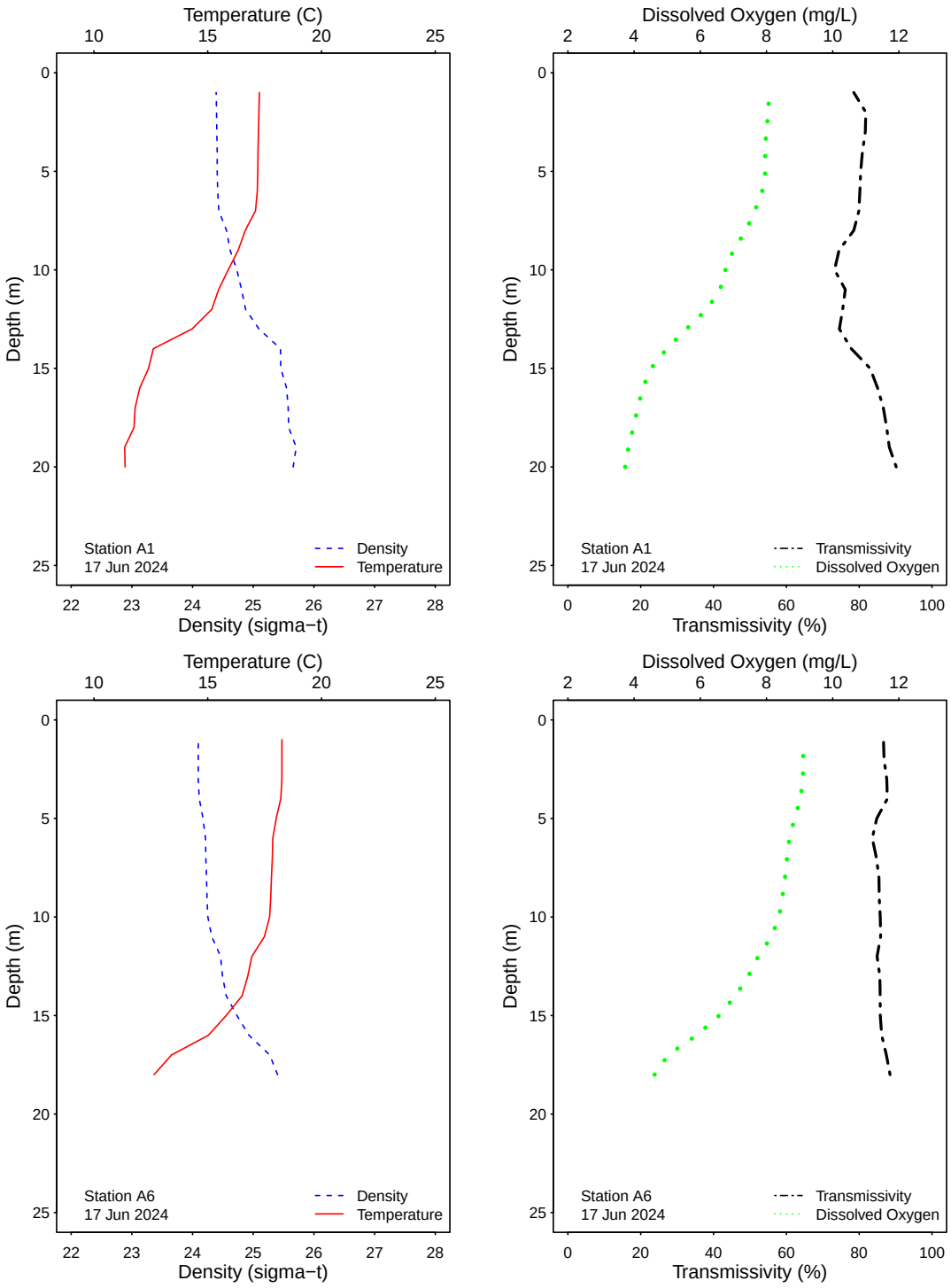

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

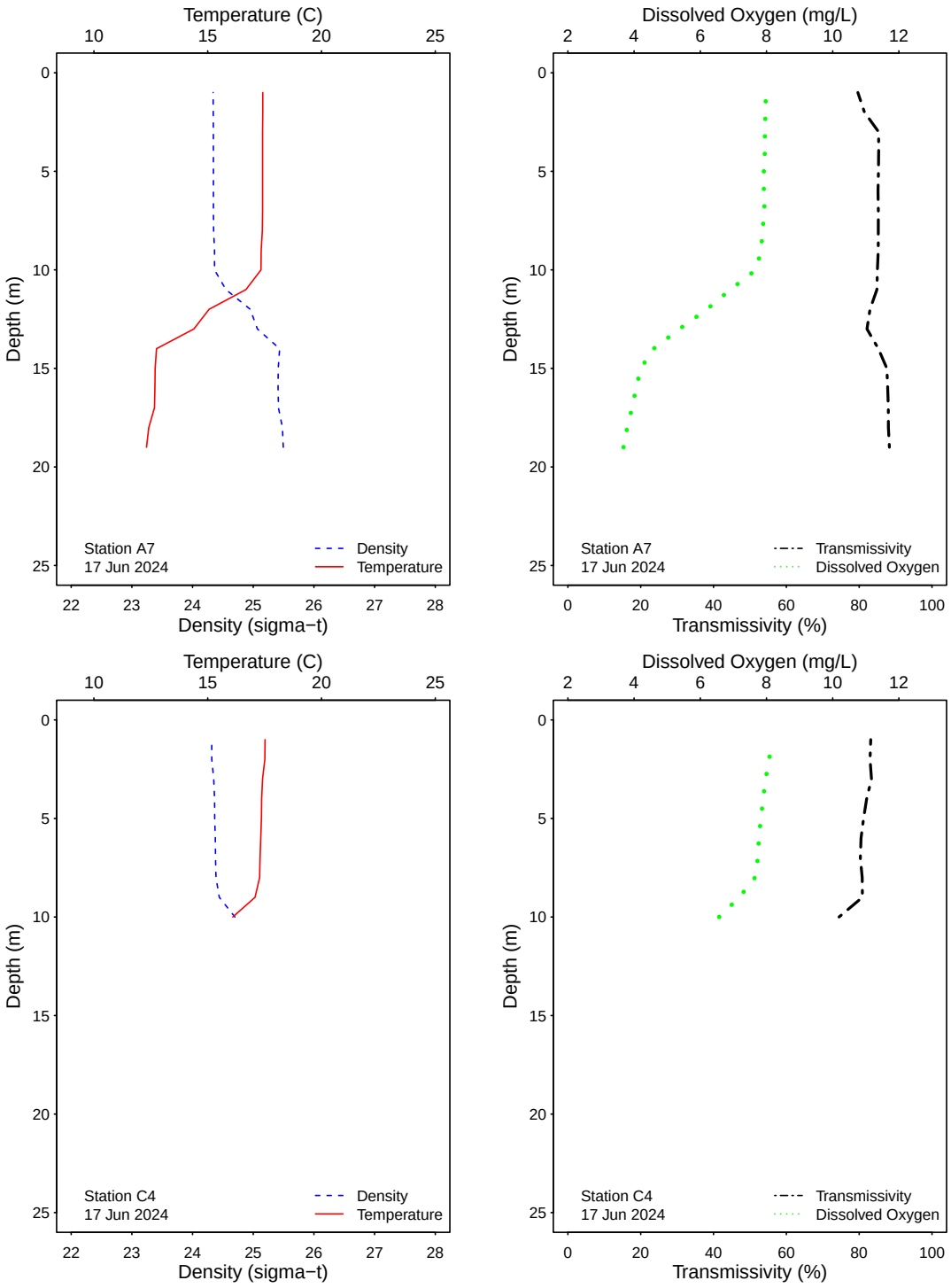

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

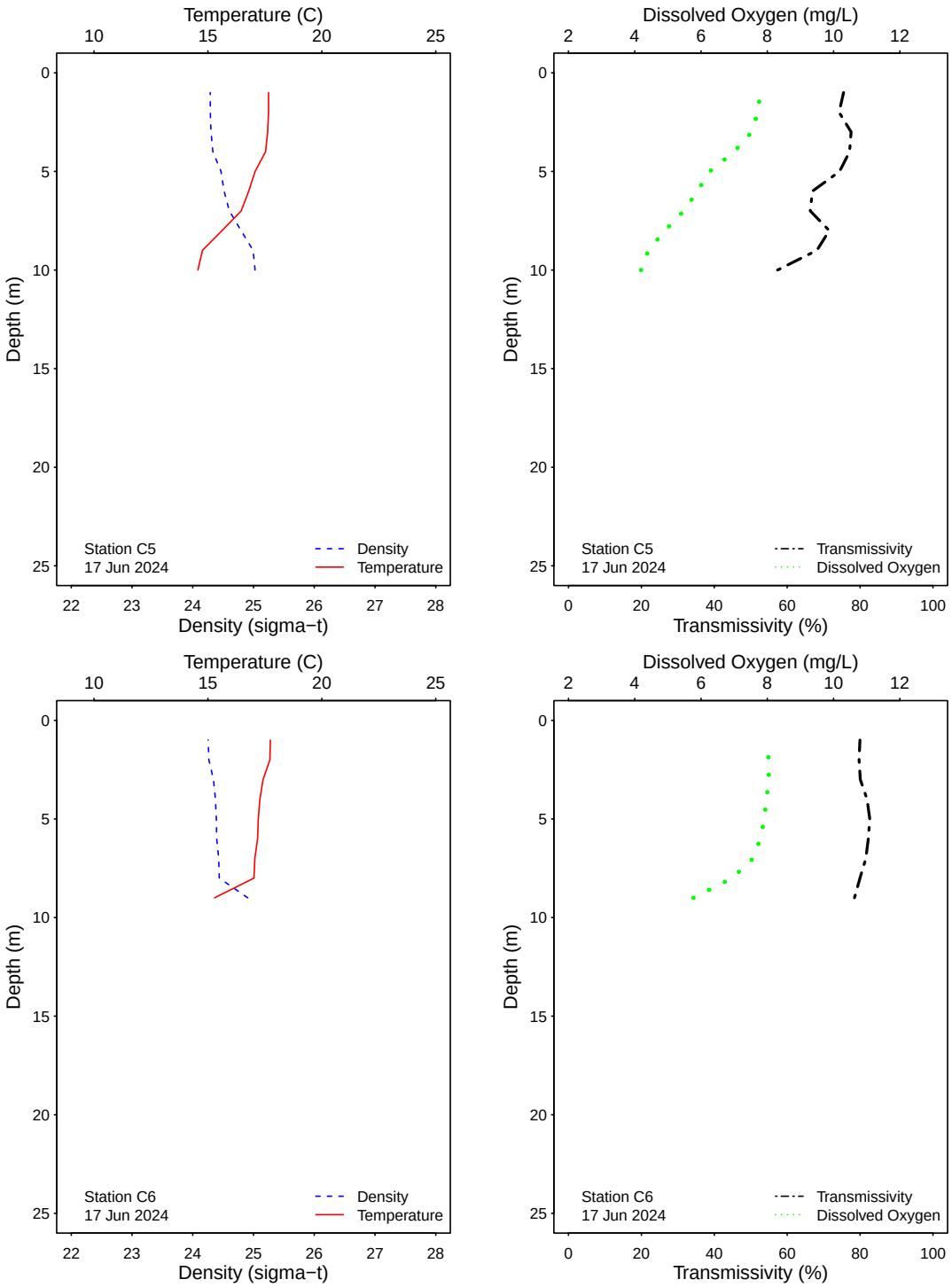

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

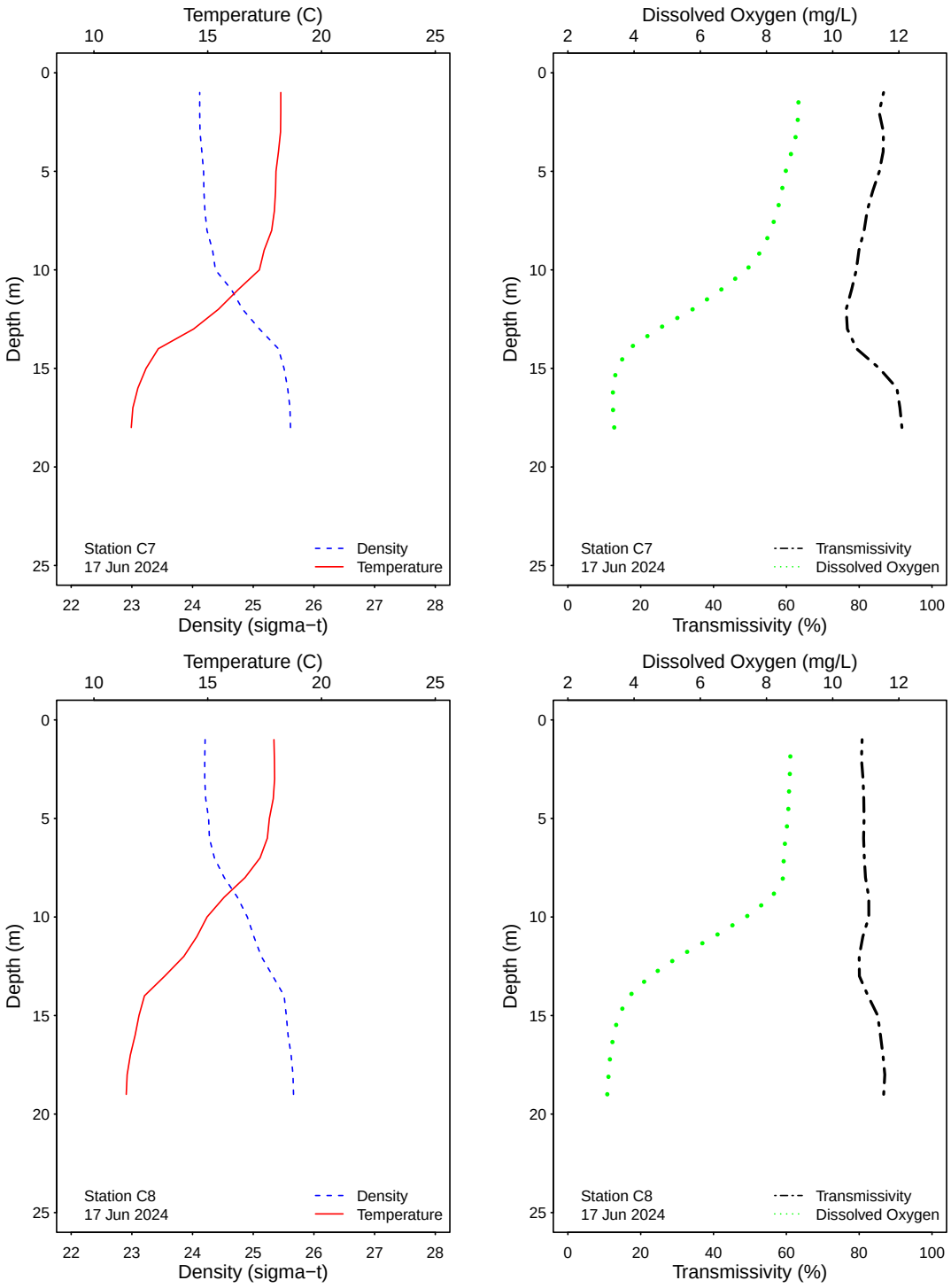

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

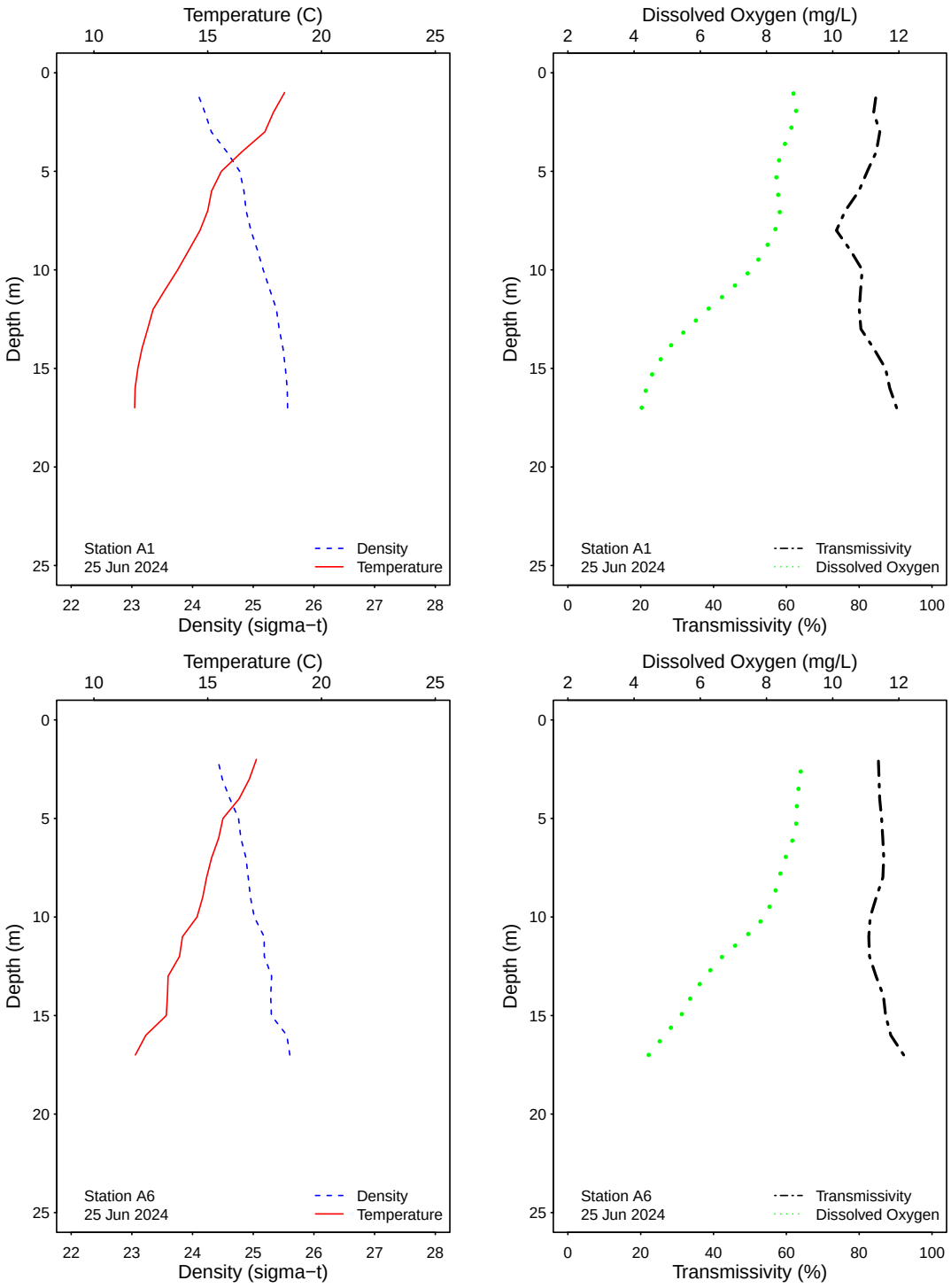

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

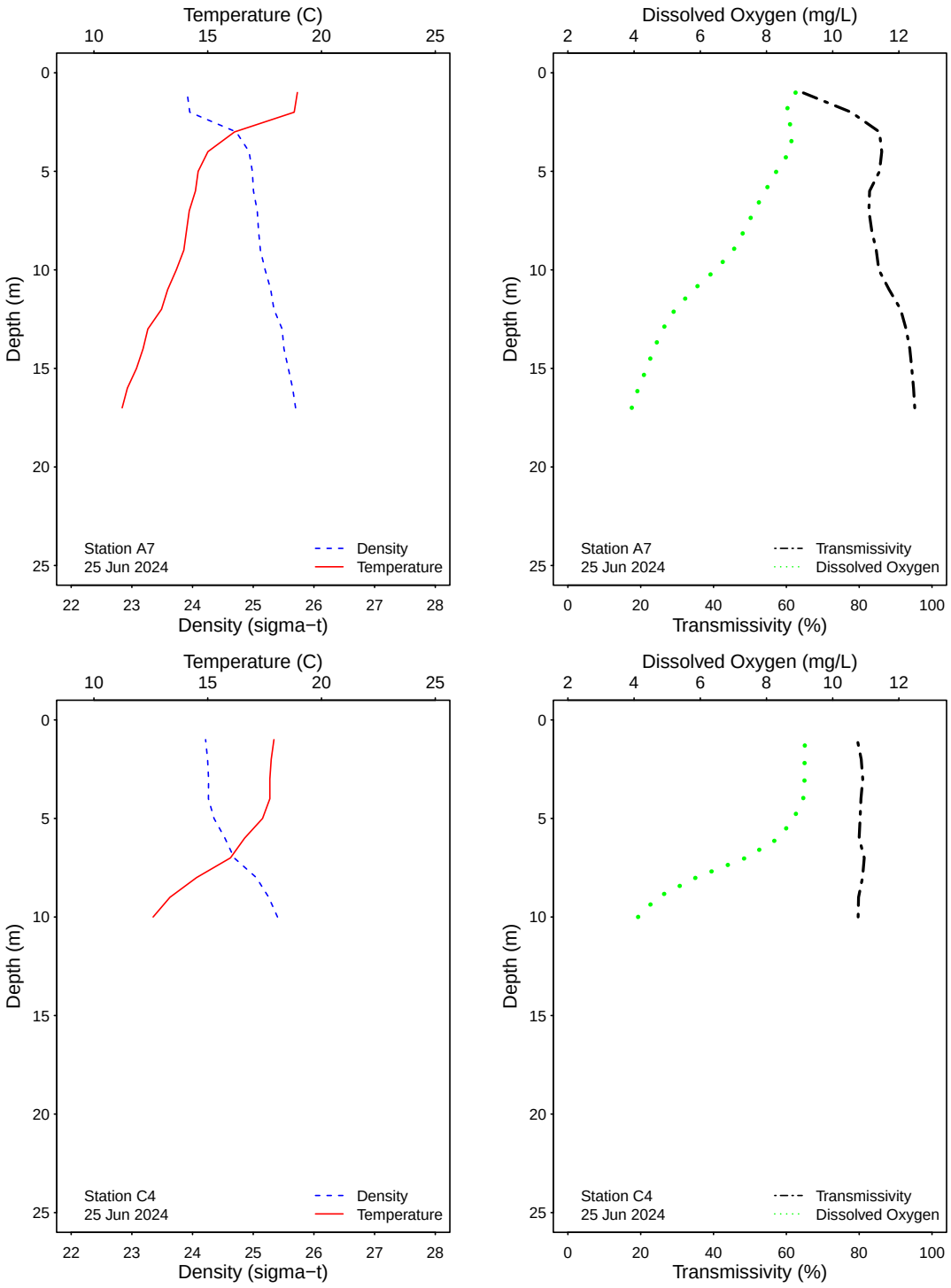

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

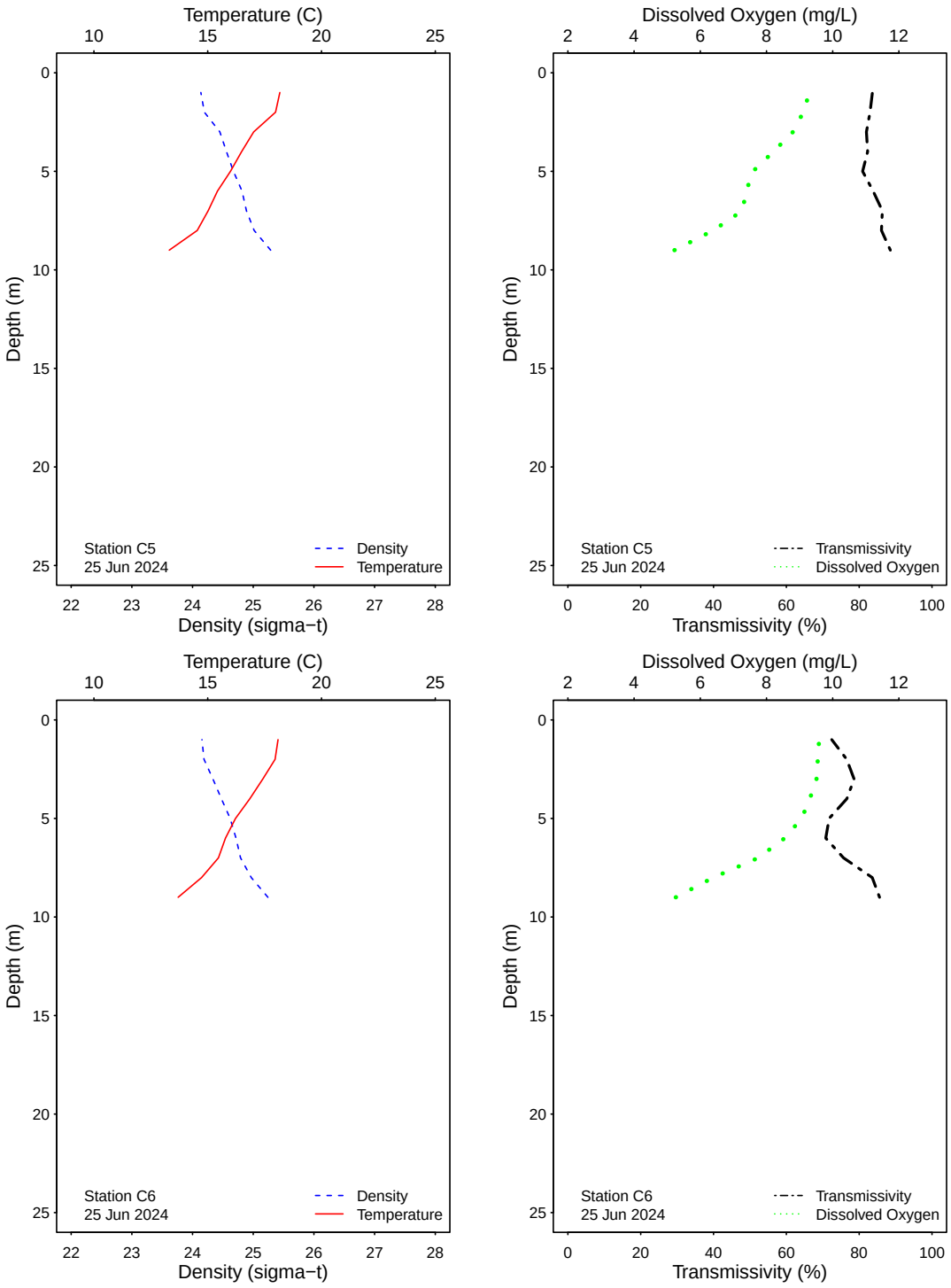

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

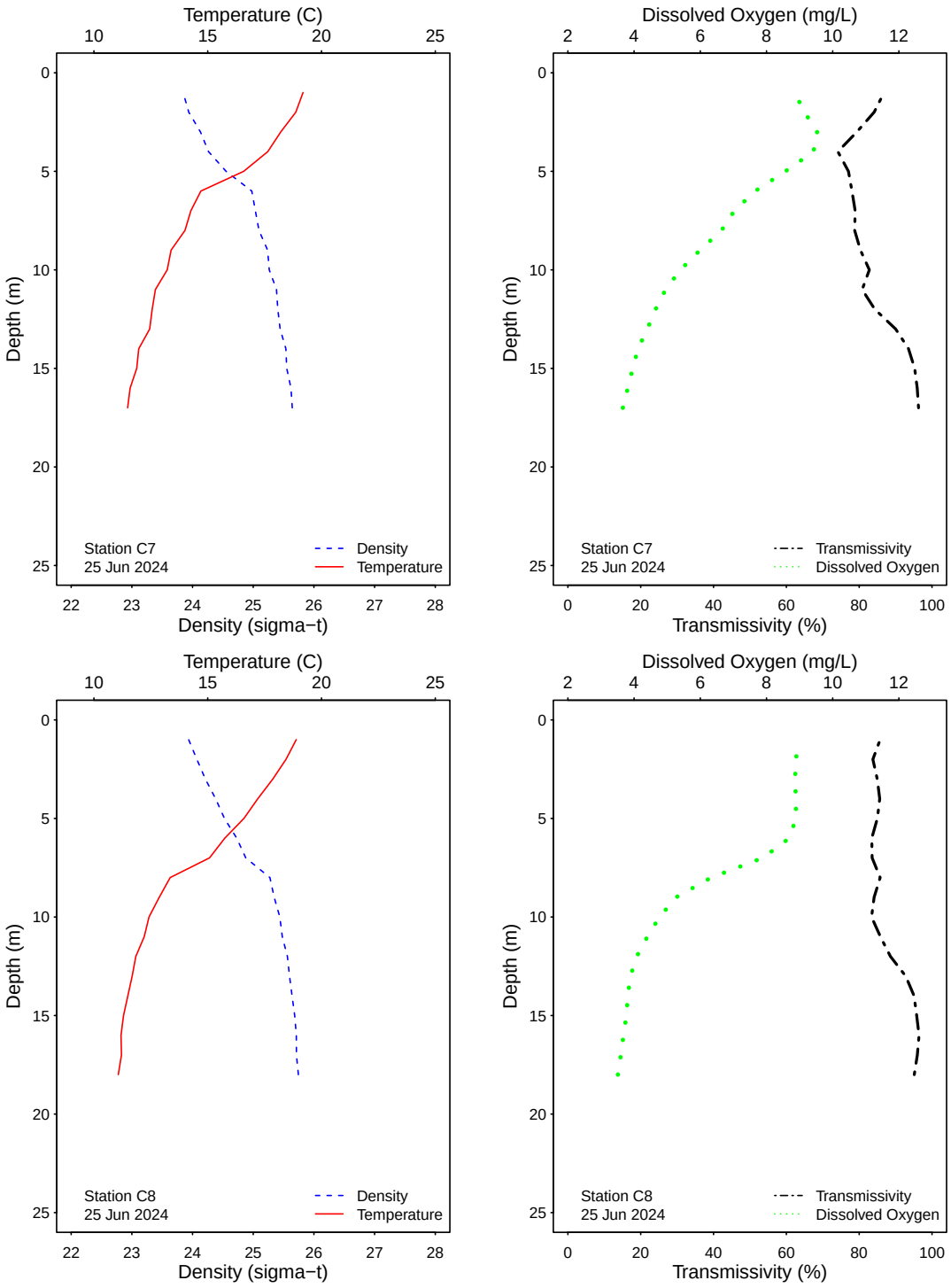

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

–>

This page intentionally left blank

APPENDIX A

Quality Assurance

Table A.1

Summary of bacteriological quality assurance field and lab duplicate sample analyses at selected PLOO stations. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Entero) are reported as CFU/100 mL.

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Entero
A7	04 Jun 2024	18	KT	LAB DUPLICATE	40	12	2
A7	11 Jun 2024	18	KA	LAB DUPLICATE	6	2	2
A7	17 Jun 2024	18	KA	LAB DUPLICATE	12	2	2
A7	25 Jun 2024	18	KT	LAB DUPLICATE	4	2	2
C7	04 Jun 2024	18	KT	LAB DUPLICATE	8	2	4
C7	11 Jun 2024	18	KA	LAB DUPLICATE	2	2	2
C7	17 Jun 2024	18	KA	LAB DUPLICATE	4	2	2
C7	25 Jun 2024	18	KT	LAB DUPLICATE	2	2	2
C8	04 Jun 2024	12	KT	LAB DUPLICATE	6	2	2
C8	11 Jun 2024	12	KA	LAB DUPLICATE	2	2	2
C8	17 Jun 2024	12	KA	LAB DUPLICATE	2	2	2
C8	25 Jun 2024	12	KT	LAB DUPLICATE	2	2	2
D12	05 Jun 2024		JF	FIELD DUPLICATE	200	8	20
D12	05 Jun 2024		JF	LAB DUPLICATE	200	2	8
D12	12 Jun 2024		KA	FIELD DUPLICATE	2	2	6
D12	12 Jun 2024		KA	LAB DUPLICATE	2	2	8
D12	18 Jun 2024		KA	FIELD DUPLICATE	2	2	2
D12	18 Jun 2024		KA	LAB DUPLICATE	20	2	2
D12	26 Jun 2024		KA	FIELD DUPLICATE	2	2	2
D12	26 Jun 2024		KA	LAB DUPLICATE	20	2	2

ns = not sampled
ND = no data

This page intentionally left blank

APPENDIX B

New 2019 Ocean Plan
Water Quality Objectives

Shore Stations

Table B.1

Summary of compliance with the Ocean Plan's 6-week Geometric Mean standard for *Enterococcus* at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (*). Values >30 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Jun 2024	2	2	2	2	3	3	6	3
02 Jun 2024	2	2	2	2	3	3	6	3
03 Jun 2024	2	2	2	2	3	3	6	3
04 Jun 2024	2	2	2	2	3	3	6	3
05 Jun 2024	2	3	3	3	4	4	9	4
06 Jun 2024	2	3	3	3	4	4	9	4
07 Jun 2024	2	3	3	3	4	4	9	4
08 Jun 2024	2	3	3	3	4	4	9	4
09 Jun 2024	2	3	3	3	4	4	9	4
10 Jun 2024	2	3	3	3	4	4	9	4
11 Jun 2024	2	3	3	3	4	4	9	4
12 Jun 2024	2	3	4	3	6	4	14	5
13 Jun 2024	2	3	4	3	6	4	14	5
14 Jun 2024	2	3	4	3	6	4	14	5
15 Jun 2024	2	3	4	3	6	4	14	5
16 Jun 2024	2	3	4	3	6	4	14	5
17 Jun 2024	2	3	4	3	6	4	14	5
18 Jun 2024	2	3	4	3	5	4	14	5
19 Jun 2024	2	3	5	3	5	3	12	6
20 Jun 2024	2	3	5	3	5	3	12	6
21 Jun 2024	2	3	5	3	5	3	12	6
22 Jun 2024	2	3	5	3	5	3	12	6
23 Jun 2024	2	3	5	3	5	3	12	6
24 Jun 2024	2	3	5	3	5	3	12	6
25 Jun 2024	2	3	5	3	5	3	12	6
26 Jun 2024	2	3	5	3	5	3	19	6
27 Jun 2024	2	3	5	3	5	3	19	6
28 Jun 2024	2	3	5	3	5	3	19	6
29 Jun 2024	2	3	5	3	5	3	19	6
30 Jun 2024	2	3	5	3	5	3	19	6

* Geometric mean calculated using n<5

Table B.2

Summary of compliance at the PLOO shore stations with the Ocean Plan's Statistical Threshold Value standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
June	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table B.3

Summary of compliance with the Ocean Plan's 30-day Median standard for total coliform bacteria at the PLOO shore stations. Data are based on the median of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*20
02 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*20
03 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*20
04 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*20
05 Jun 2024	20	20	20	20	20	40	60	20
06 Jun 2024	20	20	20	20	20	40	60	20
07 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*40
08 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*40
09 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*40
10 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*40
11 Jun 2024	*20	*20	*20	*20	*20	*30	*40	*40
12 Jun 2024	20	20	20	20	20	40	60	20
13 Jun 2024	20	20	20	20	20	40	60	20
14 Jun 2024	*11	*20	*20	*20	*20	*40	*70	*40
15 Jun 2024	*11	*20	*20	*20	*20	*40	*70	*40
16 Jun 2024	*11	*20	*20	*20	*20	*40	*70	*40
17 Jun 2024	*11	*20	*20	*20	*20	*40	*70	*40
18 Jun 2024	20	20	20	20	20	40	**80**	20
19 Jun 2024	20	20	20	20	20	40	**80**	20
20 Jun 2024	20	20	20	20	20	40	**80**	20
21 Jun 2024	*11	*20	***110**	*20	***110**	*50	***140**	*20
22 Jun 2024	*11	*20	***110**	*20	***110**	*50	***140**	*20
23 Jun 2024	*11	*20	***110**	*20	***110**	*50	***140**	*20
24 Jun 2024	*11	*20	***110**	*20	***110**	*50	***140**	*20
25 Jun 2024	*11	*20	***110**	*20	***110**	*50	***140**	*20
26 Jun 2024	2	20	20	20	20	60	**200**	20
27 Jun 2024	2	20	20	20	20	60	**200**	20
28 Jun 2024	*11	*20	***110**	*40	***110**	*60	***200**	*11
29 Jun 2024	*11	*20	***110**	*40	***110**	*60	***200**	*11
30 Jun 2024	*11	*20	***110**	*40	***110**	*60	***200**	*11

* Median calculated using n<5

Table B.4

Summary of compliance at the PLOO shore stations with the Ocean Plan's Statistical Threshold Value for total coliform bacteria, which states that total coliform density shall not exceed 230 CFU/100 mL in more than 10% of samples per station, per month.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
June	IC	IC	IC	IC	IC	**E**	**E**	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Kelp Stations

Table B.5

Summary of compliance with the Ocean Plan's 6-week Geometric Mean standard for *Enterococcus* at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (*). Values >30 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jun 2024	2	2	2	2	2	2	2	2
02 Jun 2024	2	2	2	2	2	2	2	2
03 Jun 2024	2	2	2	2	2	2	2	2
04 Jun 2024	2	2	2	2	2	2	2	2
05 Jun 2024	2	2	2	2	2	2	2	2
06 Jun 2024	2	2	2	2	2	2	2	2
07 Jun 2024	2	2	2	2	2	2	2	2
08 Jun 2024	2	2	2	2	2	2	2	2
09 Jun 2024	2	2	2	2	2	2	2	2
10 Jun 2024	2	2	2	2	2	2	2	2
11 Jun 2024	2	2	2	2	2	2	2	2
12 Jun 2024	2	2	2	2	2	2	2	2
13 Jun 2024	2	2	2	2	2	2	2	2
14 Jun 2024	2	2	2	2	2	2	2	2
15 Jun 2024	2	2	2	2	2	2	2	2
16 Jun 2024	2	2	2	2	2	2	2	2
17 Jun 2024	2	2	2	2	2	2	2	2
18 Jun 2024	2	2	2	2	2	2	2	2
19 Jun 2024	2	2	2	2	2	2	2	2
20 Jun 2024	2	2	2	2	2	2	2	2
21 Jun 2024	2	2	2	2	2	2	2	2
22 Jun 2024	2	2	2	2	2	2	2	2
23 Jun 2024	2	2	2	2	2	2	2	2
24 Jun 2024	2	2	2	2	2	2	2	2
25 Jun 2024	2	2	2	2	2	2	2	2
26 Jun 2024	2	2	2	2	2	2	2	2
27 Jun 2024	2	2	2	2	2	2	2	2
28 Jun 2024	2	2	2	2	2	2	2	2
29 Jun 2024	2	2	2	2	2	2	2	2
30 Jun 2024	2	2	2	2	2	2	2	2

* Geometric mean calculated using n<5

Table B.6

Summary of compliance at the PLOO shore stations with the Ocean Plan's Statistical Threshold Value standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	A1	A6	A7	C4	C5	C6	C7	C8
June	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table B.7

Summary of compliance with the Ocean Plan's 30-day Median" standard for total coliform bacteria at the PLOO kelp stations. Data are based on the median of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard.

	A1			A6			A7			C4			C5			C6			C7			C8		
Date	1m	12m	18m	1m	12m	18m	1m	12m	18m	1m	3m	9m	1m	3m	9m	1m	3m	9m	1m	12m	18m	1m	12m	18m
01 Jun 2024	*2	*5	*12	*2	*2	*12	*2	*3	*12	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5
02 Jun 2024	*2	*5	*12	*2	*2	*12	*2	*3	*12	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5
03 Jun 2024	*2	*5	*12	*2	*2	*12	*2	*3	*12	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5
04 Jun 2024	2	8	22	2	2	4	2	4	20	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4
05 Jun 2024	*2	*11	*35	*2	*2	*12	*2	*7	*20	*2	*11	*2	*2	*2	*2	*2	*2	*2	*2	*5	*5	*3	*2	*4
06 Jun 2024	*2	*11	*35	*2	*2	*12	*2	*7	*20	*2	*11	*2	*2	*2	*2	*2	*2	*2	*2	*5	*5	*3	*2	*4
07 Jun 2024	*2	*11	*35	*2	*2	*12	*2	*7	*20	*2	*11	*2	*2	*2	*2	*2	*2	*2	*2	*5	*5	*3	*2	*4
08 Jun 2024	*2	*11	*35	*2	*2	*12	*2	*7	*20	*2	*11	*2	*2	*2	*2	*2	*2	*2	*2	*5	*5	*3	*2	*4
09 Jun 2024	*2	*11	*35	*2	*2	*12	*2	*7	*20	*2	*11	*2	*2	*2	*2	*2	*2	*2	*2	*5	*5	*3	*2	*4
10 Jun 2024	*2	*11	*35	*2	*2	*12	*2	*7	*20	*2	*11	*2	*2	*2	*2	*2	*2	*2	*2	*5	*5	*3	*2	*4
11 Jun 2024	2	8	22	2	2	20	2	4	20	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4
12 Jun 2024	*2	*8	*25	*3	*2	*13	*3	*7	*12	*11	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5	*5	*12	*2	*3
13 Jun 2024	*2	*8	*25	*3	*2	*13	*3	*7	*12	*11	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5	*5	*12	*2	*3
14 Jun 2024	*2	*8	*25	*3	*2	*13	*3	*7	*12	*11	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5	*5	*12	*2	*3
15 Jun 2024	*2	*8	*25	*3	*2	*13	*3	*7	*12	*11	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5	*5	*12	*2	*3
16 Jun 2024	*2	*8	*25	*3	*2	*13	*3	*7	*12	*11	*2	*2	*2	*2	*2	*2	*2	*11	*2	*5	*5	*12	*2	*3
17 Jun 2024	2	2	8	2	2	4	2	4	6	2	2	2	2	2	2	2	2	4	2	2	2	4	2	2
18 Jun 2024	2	2	8	2	2	4	2	4	6	2	2	2	2	2	2	2	2	4	2	2	2	4	2	2
19 Jun 2024	*2	*2	*5	*3	*2	*3	*3	*3	*5	*11	*2	*2	*2	*11	*2	*4	*2	*12	*2	*2	*2	*12	*2	*3
20 Jun 2024	*2	*2	*5	*3	*2	*3	*3	*3	*5	*11	*2	*2	*2	*11	*2	*4	*2	*12	*2	*2	*2	*12	*2	*3
21 Jun 2024	*2	*2	*5	*3	*2	*3	*3	*3	*5	*11	*2	*2	*2	*11	*2	*4	*2	*12	*2	*2	*2	*12	*2	*3
22 Jun 2024	*2	*2	*5	*3	*2	*3	*3	*3	*5	*11	*2	*2	*2	*11	*2	*4	*2	*12	*2	*2	*2	*12	*2	*3
23 Jun 2024	*2	*2	*5	*3	*2	*3	*3	*3	*5	*11	*2	*2	*2	*11	*2	*4	*2	*12	*2	*2	*2	*12	*2	*3
24 Jun 2024	*2	*2	*5	*3	*2	*3	*3	*3	*5	*11	*2	*2	*2	*11	*2	*4	*2	*12	*2	*2	*2	*12	*2	*3
25 Jun 2024	2	2	2	2	2	2	4	2	4	2	2	2	2	2	2	6	2	4	2	2	2	4	2	2
26 Jun 2024	2	2	2	2	2	2	4	2	4	2	2	2	2	2	2	6	2	4	2	2	2	4	2	2
27 Jun 2024	*2	*2	*5	*3	*2	*3	*12	*3	*5	*11	*2	*11	*2	*11	*2	*13	*2	*12	*11	*2	*2	*3	*2	*2
28 Jun 2024	*2	*2	*5	*3	*2	*3	*12	*3	*5	*11	*2	*11	*2	*11	*2	*13	*2	*12	*11	*2	*2	*3	*2	*2
29 Jun 2024	*2	*2	*5	*3	*2	*3	*12	*3	*5	*11	*2	*11	*2	*11	*2	*13	*2	*12	*11	*2	*2	*3	*2	*2
30 Jun 2024	*2	*2	*5	*3	*2	*3	*12	*3	*5	*11	*2	*11	*2	*11	*2	*13	*2	*12	*11	*2	*2	*3	*2	*2

* Median calculated using n<5

Table B.8

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Statistical Threshold Value for total coliform bacteria, which states that total coliform density shall not exceed 230 CFU/100 mL in more than 10

	A1			A6			A7			C4			C5			C6			C7			C8		
Date	**1m**	**12m**	**18m**	**1m**	**12m**	**18m**	**1m**	**12m**	**18m**	**1m**	**3m**	**9m**	**1m**	**3m**	**9m**	**1m**	**3m**	**9m**	**1m**	**12m**	**18m**	**1m**	**12m**	**18m**
June	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data