

POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

POINT LOMA WASTEWATER TREATMENT PLANT

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

DECEMBER 2022

Environmental Monitoring and Technical Services
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January 31, 2023

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 December 2022 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, chromomorphpic 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:

30-day Geometric Mean: 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

Single Sample Maximums:

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, 1987²) 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 2022 Quality Assurance Report, which will be completed in March 2023.

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 December 5, 14, 21, and 28.
- During December, two of the eight shore stations were out of compliance with the various 2015 California Ocean Plan (Ocean Plan) water contact standards on one or more days as follows:
 - o The 30-day running geometric mean standard for *Enterococcus* was exceeded at station D8-B.
 - o The single sample maximum (SSM) for *Enterococcus* was exceeded at station D11.
- Nothing of sewage origin was observed at PLOO shore stations in December.
- 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 December 1, 5, 13, 21, and 27.

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

- During December, each of the kelp stations was in compliance with the various 2015 California Ocean Plan (Ocean Plan) water contact standards.
- Water column temperatures ranged from 12.99 to 15.73°C. The difference between surface and bottom waters ranged from 0.04 to 1.81°C.
- Chlorophyll *a* concentrations ranged from 0.62 to 3.01 µg/L.
- Nothing of sewage origin was observed at PLOO kelp stations in December.

Offshore Stations

- Quarterly water quality sampling was not conducted during December at the offshore stations. The next quarterly sampling is scheduled for February 2023.



TABLES AND FIGURES

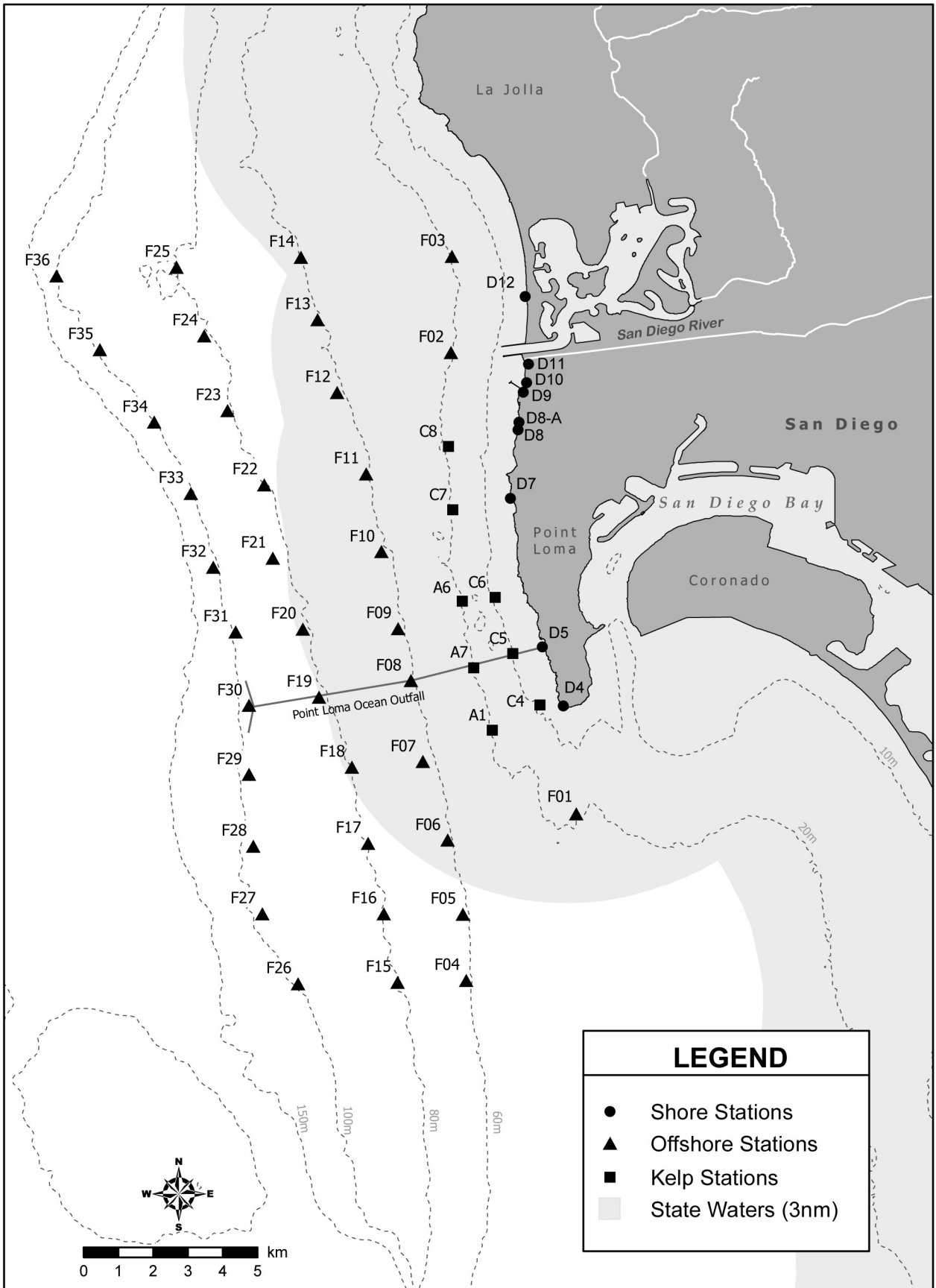


Figure 1.1 Station Map

Shore Stations

Table 2.1

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 geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >1,000 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Dec 2022	8	91	32	140	36	66	30	4
02 Dec 2022	6	63	11	73	42	63	34	5
03 Dec 2022	6	63	11	83	42	63	34	5
04 Dec 2022	6	63	11	83	42	63	34	5
05 Dec 2022	8	50	8	44	32	50	27	4
06 Dec 2022	8	50	8	44	32	50	27	4
07 Dec 2022	8	50	8	44	32	50	27	4
08 Dec 2022	8	50	8	44	32	50	27	4
09 Dec 2022	6	36	6	23	14	30	9	3
10 Dec 2022	6	36	6	9	14	30	9	3
11 Dec 2022	6	36	6	9	14	30	9	3
12 Dec 2022	6	36	6	9	14	30	9	3
13 Dec 2022	6	36	6	9	14	30	9	3
14 Dec 2022	5	32	5	14	19	44	11	4
15 Dec 2022	5	32	5	14	19	44	11	4
16 Dec 2022	6	36	6	22	22	63	12	4
17 Dec 2022	6	36	6	22	22	63	12	4
18 Dec 2022	6	36	6	22	22	63	12	4
19 Dec 2022	6	36	6	22	22	63	12	4
20 Dec 2022	6	36	6	22	22	63	12	4
21 Dec 2022	4	36	3	15	24	28	9	9
22 Dec 2022	4	36	3	15	24	28	9	9
23 Dec 2022	4	36	3	15	24	28	9	9
24 Dec 2022	4	36	3	15	24	28	9	9
25 Dec 2022	4	36	3	15	24	28	9	9
26 Dec 2022	4	36	3	15	24	28	9	9
27 Dec 2022	4	36	3	15	24	28	9	9
28 Dec 2022	8	32	4	23	45	48	20	11
29 Dec 2022	8	32	4	23	45	48	20	11
30 Dec 2022	11	36	5	29	55	60	30	13
31 Dec 2022	11	36	5	29	55	60	30	13

* Geometric mean calculated using n<5
 ns = not sampled

Table 2.2

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 Dec 2022	8	25	7	18	4	13	8	3
02 Dec 2022	12	20	3	9	5	11	6	3
03 Dec 2022	12	20	3	13	5	11	6	3
04 Dec 2022	12	20	3	13	5	11	6	3
05 Dec 2022	8	13	3	14	4	8	5	3
06 Dec 2022	8	13	3	14	4	8	5	3
07 Dec 2022	8	13	3	14	4	8	5	3
08 Dec 2022	8	13	3	14	4	8	5	3
09 Dec 2022	6	7	3	9	2	4	2	2
10 Dec 2022	6	7	3	5	2	4	2	2
11 Dec 2022	6	7	3	5	2	4	2	2
12 Dec 2022	6	7	3	5	2	4	2	2
13 Dec 2022	6	7	3	5	2	4	2	2
14 Dec 2022	5	5	3	4	2	5	3	2
15 Dec 2022	5	5	3	4	2	5	3	2
16 Dec 2022	6	7	3	5	2	6	4	2
17 Dec 2022	6	7	3	5	2	6	4	2
18 Dec 2022	6	7	3	5	2	6	4	2
19 Dec 2022	6	7	3	5	2	6	4	2
20 Dec 2022	6	7	3	5	2	6	4	2
21 Dec 2022	2	4	2	6	3	4	4	3
22 Dec 2022	2	4	2	6	3	4	4	3
23 Dec 2022	2	4	2	6	3	4	4	3
24 Dec 2022	2	4	2	6	3	4	4	3
25 Dec 2022	2	4	2	6	3	4	4	3
26 Dec 2022	2	4	2	6	3	4	4	3
27 Dec 2022	2	4	2	6	3	4	4	3
28 Dec 2022	3	4	2	9	6	5	6	3
29 Dec 2022	3	4	2	9	6	5	6	3
30 Dec 2022	3	2	2	13	8	7	8	3
31 Dec 2022	3	2	2	13	8	7	8	3

* Geometric mean calculated using n<5
 ns = not sampled

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 30 days unless otherwise noted (*). Values >35 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Dec 2022	5	10	10	38	4	8	6	2
02 Dec 2022	6	8	5	15	5	8	6	2
03 Dec 2022	6	8	5	18	5	8	6	2
04 Dec 2022	6	8	5	18	5	8	6	2
05 Dec 2022	5	6	4	17	4	7	5	3
06 Dec 2022	5	6	4	17	4	7	5	3
07 Dec 2022	5	6	4	17	4	7	5	3
08 Dec 2022	5	6	4	17	4	7	5	3
09 Dec 2022	3	3	4	10	2	4	2	3
10 Dec 2022	3	2	4	8	2	3	3	3
11 Dec 2022	3	2	4	8	2	3	3	3
12 Dec 2022	3	2	4	8	2	3	3	3
13 Dec 2022	3	2	4	8	2	3	3	3
14 Dec 2022	3	2	4	8	2	3	3	3
15 Dec 2022	3	2	4	8	2	3	3	3
16 Dec 2022	3	2	4	11	2	3	3	3
17 Dec 2022	3	2	4	11	2	3	3	3
18 Dec 2022	3	2	4	11	2	3	3	3
19 Dec 2022	3	2	4	11	2	3	3	3
20 Dec 2022	3	2	4	11	2	3	3	3
21 Dec 2022	2	2	2	4	2	2	2	5
22 Dec 2022	2	2	2	4	2	2	2	5
23 Dec 2022	2	2	2	4	2	2	2	5
24 Dec 2022	2	2	2	4	2	2	2	5
25 Dec 2022	2	2	2	4	2	2	2	5
26 Dec 2022	2	2	2	4	2	2	2	5
27 Dec 2022	2	2	2	4	2	2	2	5
28 Dec 2022	3	2	2	6	4	4	6	4
29 Dec 2022	3	2	2	6	4	4	6	4
30 Dec 2022	4	2	2	8	5	5	8	5
31 Dec 2022	4	2	2	8	5	5	8	5

* Geometric mean calculated using n<5
 ns = not sampled

Table 2.4

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
05 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
14 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
28 Dec 2022	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 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 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
14 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
28 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.6

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 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
14 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
28 Dec 2022	IC	IC	IC	IC	IC	IC	E	IC
29 Dec 2022	ns	ns	ns	ns	ns	ns	IC	ns

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 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
14 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
28 Dec 2022	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 total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Entero) are reported as CFU/100 mL. The fecal:total coliform ratio (F:T) is unitless. Comments follow the data summary.

Station	Date	Time	Total	Fecal	Entero	F:T
D4	05 Dec 2022	1025	<20	<2	<2	0.10
D4	14 Dec 2022	1122	2e	<2	<2	1.00
D4	21 Dec 2022	1221	<2	<2	<2	1.00
D4	28 Dec 2022	1004	200e	14e	<20	0.07
D5	05 Dec 2022	1013	<20	<2	<2	0.10
D5	14 Dec 2022	1108	20e	<2	<2	0.10
D5	21 Dec 2022	1155	<200	<2	<2	0.01
D5	28 Dec 2022	949	20e	4e	4e	0.20
D7	05 Dec 2022	945	2e	<2	<2	1.00
D7	14 Dec 2022	1027	<2	<2	2e	1.00
D7	21 Dec 2022	1122	10e	<2	<2	0.20
D7	28 Dec 2022	920	<20	<2	<2	0.10
D8-B	05 Dec 2022	930	<2	20e	16e	10.00
D8-B	14 Dec 2022	1008	60e	2e	6e	0.03
D8-B	21 Dec 2022	1106	40	16e	<2	0.40
D8-B	28 Dec 2022	906	140e	40e	20e	0.29
D9	05 Dec 2022	916	10e	2e	2e	0.20
D9	14 Dec 2022	951	60e	<2	4e	0.03
D9	21 Dec 2022	1031	26e	8e	<2	0.31
D9	28 Dec 2022	852	600e	100e	52	0.17
D10	05 Dec 2022	905	<20	<2	4e	0.10
D10	14 Dec 2022	935	<200	<20	<2	0.10
D10	21 Dec 2022	1051	8e	<2	2e	0.25
D10	28 Dec 2022	837	400e	26e	52	0.06
D11	05 Dec 2022	851	12e	<2	2e	0.17
D11	14 Dec 2022	918	20e	20e	4e	1.00
D11	21 Dec 2022	1007	8e	<2	2e	0.25
D11	28 Dec 2022	823	400e	40e	260e	0.10
D11	29 Dec 2022	1124	ns	ns	6e	ns
D12	05 Dec 2022	825	2e	2e	8e	1.00
D12	14 Dec 2022	852	<20	<2	<2	0.10
D12	21 Dec 2022	944	40e	8e	18e	0.20
D12	28 Dec 2022	804	<20	<2	2e	0.10

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
D11	29 Dec 2022			Resample

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 Dec 2022	Arrive Time	1025
D4	05 Dec 2022	Weather	Sunny
D4	05 Dec 2022	Wind Speed (kts)	3.1
D4	05 Dec 2022	Wind Dir	W
D4	05 Dec 2022	Animal Life	
D4	05 Dec 2022	Floatables	None
D4	05 Dec 2022	Water Color	Green
D4	05 Dec 2022	Current Direction	S
D4	05 Dec 2022	Water Temp (C)	15.1
D4	05 Dec 2022	Wave Height Low (ft)	2
D4	05 Dec 2022	High Tide (ft)	6.02
D4	05 Dec 2022	High Tide Time	644
D4	05 Dec 2022	Low Tide (ft)	1.34
D4	05 Dec 2022	Low Tide Time	28
D4	05 Dec 2022	Comments	Water clear; Trash-1; Kelp;Algae
D4	14 Dec 2022	Arrive Time	1122
D4	14 Dec 2022	Weather	Sunny
D4	14 Dec 2022	Wind Speed (kts)	2.3
D4	14 Dec 2022	Wind Dir	N
D4	14 Dec 2022	Animal Life	
D4	14 Dec 2022	Floatables	None
D4	14 Dec 2022	Water Color	Green
D4	14 Dec 2022	Current Direction	S
D4	14 Dec 2022	Water Temp (C)	13.8
D4	14 Dec 2022	Wave Height Low (ft)	3
D4	14 Dec 2022	High Tide (ft)	3.45
D4	14 Dec 2022	High Tide Time	225
D4	14 Dec 2022	Low Tide (ft)	3.08
D4	14 Dec 2022	Low Tide Time	633
D4	14 Dec 2022	Comments	Water clear; Trash-1; Kelp;Algae
D4	21 Dec 2022	Arrive Time	1221
D4	21 Dec 2022	Weather	Sunny
D4	21 Dec 2022	Wind Speed (kts)	6.9
D4	21 Dec 2022	Wind Dir	N
D4	21 Dec 2022	Animal Life	
D4	21 Dec 2022	Floatables	None
D4	21 Dec 2022	Water Color	Green
D4	21 Dec 2022	Current Direction	S
D4	21 Dec 2022	Water Temp (C)	12
D4	21 Dec 2022	Wave Height Low (ft)	1
D4	21 Dec 2022	High Tide (ft)	6.4
D4	21 Dec 2022	High Tide Time	640
D4	21 Dec 2022	Low Tide (ft)	1.68
D4	21 Dec 2022	Low Tide Time	20
D4	21 Dec 2022	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae; Could not sample at site due to low tide so sampled as close as possible. KD 12/21/22
D4	28 Dec 2022	Arrive Time	1004
D4	28 Dec 2022	Weather	Cloudy
D4	28 Dec 2022	Wind Speed (kts)	2.9
D4	28 Dec 2022	Wind Dir	N
D4	28 Dec 2022	Animal Life	
D4	28 Dec 2022	Floatables	None

Station	Date	Parameter	Value
D4	28 Dec 2022	Water Color	Green
D4	28 Dec 2022	Current Direction	S
D4	28 Dec 2022	Water Temp (C)	9
D4	28 Dec 2022	Wave Height Low (ft)	5
D4	28 Dec 2022	High Tide (ft)	4.07
D4	28 Dec 2022	High Tide Time	133
D4	28 Dec 2022	Low Tide (ft)	2.26
D4	28 Dec 2022	Low Tide Time	652
D4	28 Dec 2022	Comments	Water clear; Trash-1; Algae
D5	05 Dec 2022	Arrive Time	1013
D5	05 Dec 2022	Weather	Sunny
D5	05 Dec 2022	Wind Speed (kts)	2.1
D5	05 Dec 2022	Wind Dir	NW
D5	05 Dec 2022	Animal Life	
D5	05 Dec 2022	Floatables	None
D5	05 Dec 2022	Water Color	Green
D5	05 Dec 2022	Current Direction	S
D5	05 Dec 2022	Water Temp (C)	15
D5	05 Dec 2022	Wave Height Low (ft)	3
D5	05 Dec 2022	High Tide (ft)	6.02
D5	05 Dec 2022	High Tide Time	644
D5	05 Dec 2022	Low Tide (ft)	1.34
D5	05 Dec 2022	Low Tide Time	28
D5	05 Dec 2022	Comments	Water clear; Trash-1; Kelp;Algae
D5	14 Dec 2022	Arrive Time	1108
D5	14 Dec 2022	Weather	Sunny
D5	14 Dec 2022	Wind Speed (kts)	1.1
D5	14 Dec 2022	Wind Dir	NW
D5	14 Dec 2022	Animal Life	Bird-1; Seal/Sea Lion-1;
D5	14 Dec 2022	Floatables	Foam
D5	14 Dec 2022	Water Color	Grey
D5	14 Dec 2022	Current Direction	S
D5	14 Dec 2022	Water Temp (C)	12.8
D5	14 Dec 2022	Wave Height Low (ft)	2
D5	14 Dec 2022	High Tide (ft)	3.45
D5	14 Dec 2022	High Tide Time	225
D5	14 Dec 2022	Low Tide (ft)	3.08
D5	14 Dec 2022	Low Tide Time	633
D5	14 Dec 2022	Comments	Water turbid; Trash-1; Algae
D5	21 Dec 2022	Arrive Time	1155
D5	21 Dec 2022	Weather	Sunny
D5	21 Dec 2022	Wind Speed (kts)	1.3
D5	21 Dec 2022	Wind Dir	W
D5	21 Dec 2022	Animal Life	Bird-1;
D5	21 Dec 2022	Floatables	None
D5	21 Dec 2022	Water Color	Green
D5	21 Dec 2022	Current Direction	S
D5	21 Dec 2022	Water Temp (C)	13
D5	21 Dec 2022	Wave Height Low (ft)	1
D5	21 Dec 2022	High Tide (ft)	6.4
D5	21 Dec 2022	High Tide Time	640
D5	21 Dec 2022	Low Tide (ft)	1.68
D5	21 Dec 2022	Low Tide Time	20
D5	21 Dec 2022	Comments	Water clear; Trash-1; Kelp;Algae
D5	28 Dec 2022	Arrive Time	949
D5	28 Dec 2022	Weather	Cloudy
D5	28 Dec 2022	Wind Speed (kts)	3.8

Station	Date	Parameter	Value
D5	28 Dec 2022	Wind Dir	W
D5	28 Dec 2022	Animal Life	
D5	28 Dec 2022	Floatables	None
D5	28 Dec 2022	Water Color	Green
D5	28 Dec 2022	Current Direction	S
D5	28 Dec 2022	Water Temp (C)	8
D5	28 Dec 2022	Wave Height Low (ft)	4
D5	28 Dec 2022	High Tide (ft)	4.07
D5	28 Dec 2022	High Tide Time	133
D5	28 Dec 2022	Low Tide (ft)	2.26
D5	28 Dec 2022	Low Tide Time	652
D5	28 Dec 2022	Comments	Water clear; Trash-1; Algae
D7	05 Dec 2022	Arrive Time	945
D7	05 Dec 2022	Weather	Sunny
D7	05 Dec 2022	Wind Speed (kts)	1.7
D7	05 Dec 2022	Wind Dir	N
D7	05 Dec 2022	Animal Life	
D7	05 Dec 2022	Floatables	None
D7	05 Dec 2022	Water Color	Green
D7	05 Dec 2022	Current Direction	S
D7	05 Dec 2022	Water Temp (C)	18.2
D7	05 Dec 2022	Wave Height Low (ft)	3
D7	05 Dec 2022	High Tide (ft)	6.02
D7	05 Dec 2022	High Tide Time	644
D7	05 Dec 2022	Low Tide (ft)	1.34
D7	05 Dec 2022	Low Tide Time	28
D7	05 Dec 2022	Comments	Water clear; Trash-1; Seagrass;Algae
D7	14 Dec 2022	Arrive Time	1027
D7	14 Dec 2022	Weather	Sunny
D7	14 Dec 2022	Wind Speed (kts)	2.5
D7	14 Dec 2022	Wind Dir	N
D7	14 Dec 2022	Animal Life	
D7	14 Dec 2022	Floatables	None
D7	14 Dec 2022	Water Color	Green
D7	14 Dec 2022	Current Direction	S
D7	14 Dec 2022	Water Temp (C)	13.3
D7	14 Dec 2022	Wave Height Low (ft)	2
D7	14 Dec 2022	High Tide (ft)	3.45
D7	14 Dec 2022	High Tide Time	225
D7	14 Dec 2022	Low Tide (ft)	3.08
D7	14 Dec 2022	Low Tide Time	633
D7	14 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Kelp;Algae; Person/Walker/Jogger-1
D7	21 Dec 2022	Arrive Time	1122
D7	21 Dec 2022	Weather	Sunny
D7	21 Dec 2022	Wind Speed (kts)	1.5
D7	21 Dec 2022	Wind Dir	W
D7	21 Dec 2022	Animal Life	Dog-1;
D7	21 Dec 2022	Floatables	None
D7	21 Dec 2022	Water Color	Green
D7	21 Dec 2022	Current Direction	S
D7	21 Dec 2022	Water Temp (C)	14
D7	21 Dec 2022	Wave Height Low (ft)	2
D7	21 Dec 2022	High Tide (ft)	6.4
D7	21 Dec 2022	High Tide Time	640
D7	21 Dec 2022	Low Tide (ft)	1.68
D7	21 Dec 2022	Low Tide Time	20

Station	Date	Parameter	Value
D7	21 Dec 2022	Comments	Water clear; Boogie boarder/Swimmer-2; Trash-1; Sea-grass;Algae; Person/Walker/Jogger-3
D7	28 Dec 2022	Arrive Time	920
D7	28 Dec 2022	Weather	Partly cloudy
D7	28 Dec 2022	Wind Speed (kts)	3.6
D7	28 Dec 2022	Wind Dir	W
D7	28 Dec 2022	Animal Life	
D7	28 Dec 2022	Floatables	None
D7	28 Dec 2022	Water Color	Green
D7	28 Dec 2022	Current Direction	S
D7	28 Dec 2022	Water Temp (C)	8
D7	28 Dec 2022	Wave Height Low (ft)	4
D7	28 Dec 2022	High Tide (ft)	4.07
D7	28 Dec 2022	High Tide Time	133
D7	28 Dec 2022	Low Tide (ft)	2.26
D7	28 Dec 2022	Low Tide Time	652
D7	28 Dec 2022	Comments	Water clear; Trash-1; Algae;Kelp; Person/Walker/Jogger-2
D8-B	05 Dec 2022	Arrive Time	930
D8-B	05 Dec 2022	Weather	Sunny
D8-B	05 Dec 2022	Wind Speed (kts)	0.9
D8-B	05 Dec 2022	Wind Dir	W
D8-B	05 Dec 2022	Animal Life	
D8-B	05 Dec 2022	Floatables	None
D8-B	05 Dec 2022	Water Color	Green
D8-B	05 Dec 2022	Current Direction	S
D8-B	05 Dec 2022	Water Temp (C)	13.8
D8-B	05 Dec 2022	Wave Height Low (ft)	3
D8-B	05 Dec 2022	High Tide (ft)	6.02
D8-B	05 Dec 2022	High Tide Time	644
D8-B	05 Dec 2022	Low Tide (ft)	1.34
D8-B	05 Dec 2022	Low Tide Time	28
D8-B	05 Dec 2022	Comments	Water clear; Trash-1; Algae; Person/Walker/Jogger-1
D8-B	14 Dec 2022	Arrive Time	1008
D8-B	14 Dec 2022	Weather	Sunny
D8-B	14 Dec 2022	Wind Speed (kts)	1.5
D8-B	14 Dec 2022	Wind Dir	E
D8-B	14 Dec 2022	Animal Life	
D8-B	14 Dec 2022	Floatables	None
D8-B	14 Dec 2022	Water Color	Green
D8-B	14 Dec 2022	Current Direction	S
D8-B	14 Dec 2022	Water Temp (C)	13.6
D8-B	14 Dec 2022	Wave Height Low (ft)	4
D8-B	14 Dec 2022	High Tide (ft)	3.45
D8-B	14 Dec 2022	High Tide Time	225
D8-B	14 Dec 2022	Low Tide (ft)	3.08
D8-B	14 Dec 2022	Low Tide Time	633
D8-B	14 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Kelp;Seagrass;Algae
D8-B	21 Dec 2022	Arrive Time	1106
D8-B	21 Dec 2022	Weather	Sunny
D8-B	21 Dec 2022	Wind Speed (kts)	0.7
D8-B	21 Dec 2022	Wind Dir	W
D8-B	21 Dec 2022	Animal Life	
D8-B	21 Dec 2022	Floatables	None
D8-B	21 Dec 2022	Water Color	Green
D8-B	21 Dec 2022	Current Direction	S
D8-B	21 Dec 2022	Water Temp (C)	12

Station	Date	Parameter	Value
D8-B	21 Dec 2022	Wave Height Low (ft)	2
D8-B	21 Dec 2022	High Tide (ft)	6.4
D8-B	21 Dec 2022	High Tide Time	640
D8-B	21 Dec 2022	Low Tide (ft)	1.68
D8-B	21 Dec 2022	Low Tide Time	20
D8-B	21 Dec 2022	Comments	Water clear; Trash-1; Kelp;Algae;Debris
D8-B	28 Dec 2022	Arrive Time	906
D8-B	28 Dec 2022	Weather	Partly cloudy
D8-B	28 Dec 2022	Wind Speed (kts)	3.8
D8-B	28 Dec 2022	Wind Dir	W
D8-B	28 Dec 2022	Animal Life	
D8-B	28 Dec 2022	Floatables	None
D8-B	28 Dec 2022	Water Color	Green
D8-B	28 Dec 2022	Current Direction	S
D8-B	28 Dec 2022	Water Temp (C)	7
D8-B	28 Dec 2022	Wave Height Low (ft)	6
D8-B	28 Dec 2022	High Tide (ft)	4.07
D8-B	28 Dec 2022	High Tide Time	133
D8-B	28 Dec 2022	Low Tide (ft)	2.26
D8-B	28 Dec 2022	Low Tide Time	652
D8-B	28 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Algae;Seagrass;Kelp
D9	05 Dec 2022	Arrive Time	916
D9	05 Dec 2022	Weather	Sunny
D9	05 Dec 2022	Wind Speed (kts)	0.5
D9	05 Dec 2022	Wind Dir	W
D9	05 Dec 2022	Animal Life	
D9	05 Dec 2022	Floatables	None
D9	05 Dec 2022	Water Color	Green
D9	05 Dec 2022	Current Direction	S
D9	05 Dec 2022	Water Temp (C)	14.3
D9	05 Dec 2022	Wave Height Low (ft)	3
D9	05 Dec 2022	High Tide (ft)	6.02
D9	05 Dec 2022	High Tide Time	644
D9	05 Dec 2022	Low Tide (ft)	1.34
D9	05 Dec 2022	Low Tide Time	28
D9	05 Dec 2022	Comments	Water clear; Trash-1; Algae; Person/Walker/Jogger-1
D9	14 Dec 2022	Arrive Time	951
D9	14 Dec 2022	Weather	Sunny
D9	14 Dec 2022	Wind Speed (kts)	1.7
D9	14 Dec 2022	Wind Dir	N
D9	14 Dec 2022	Animal Life	
D9	14 Dec 2022	Floatables	None
D9	14 Dec 2022	Water Color	Green
D9	14 Dec 2022	Current Direction	S
D9	14 Dec 2022	Water Temp (C)	14.3
D9	14 Dec 2022	Wave Height Low (ft)	2
D9	14 Dec 2022	High Tide (ft)	3.45
D9	14 Dec 2022	High Tide Time	225
D9	14 Dec 2022	Low Tide (ft)	3.08
D9	14 Dec 2022	Low Tide Time	633
D9	14 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Algae
D9	21 Dec 2022	Arrive Time	1031
D9	21 Dec 2022	Weather	Sunny
D9	21 Dec 2022	Wind Speed (kts)	2.5
D9	21 Dec 2022	Wind Dir	W
D9	21 Dec 2022	Animal Life	Bird-10;

Station	Date	Parameter	Value
D9	21 Dec 2022	Floatables	None
D9	21 Dec 2022	Water Color	Green
D9	21 Dec 2022	Current Direction	S
D9	21 Dec 2022	Water Temp (C)	10
D9	21 Dec 2022	Wave Height Low (ft)	1
D9	21 Dec 2022	High Tide (ft)	6.4
D9	21 Dec 2022	High Tide Time	640
D9	21 Dec 2022	Low Tide (ft)	1.68
D9	21 Dec 2022	Low Tide Time	20
D9	21 Dec 2022	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-2
D9	28 Dec 2022	Arrive Time	852
D9	28 Dec 2022	Weather	Partly cloudy
D9	28 Dec 2022	Wind Speed (kts)	1.5
D9	28 Dec 2022	Wind Dir	W
D9	28 Dec 2022	Animal Life	Bird-1;
D9	28 Dec 2022	Floatables	None
D9	28 Dec 2022	Water Color	Green
D9	28 Dec 2022	Current Direction	S
D9	28 Dec 2022	Water Temp (C)	9
D9	28 Dec 2022	Wave Height Low (ft)	6
D9	28 Dec 2022	High Tide (ft)	4.07
D9	28 Dec 2022	High Tide Time	133
D9	28 Dec 2022	Low Tide (ft)	2.26
D9	28 Dec 2022	Low Tide Time	652
D9	28 Dec 2022	Comments	Water clear; Trash-1; Algae
D10	05 Dec 2022	Arrive Time	905
D10	05 Dec 2022	Weather	Partly cloudy
D10	05 Dec 2022	Wind Speed (kts)	2.5
D10	05 Dec 2022	Wind Dir	W
D10	05 Dec 2022	Animal Life	Bird-2;
D10	05 Dec 2022	Floatables	None
D10	05 Dec 2022	Water Color	Green
D10	05 Dec 2022	Current Direction	S
D10	05 Dec 2022	Water Temp (C)	14.4
D10	05 Dec 2022	Wave Height Low (ft)	3
D10	05 Dec 2022	High Tide (ft)	6.02
D10	05 Dec 2022	High Tide Time	644
D10	05 Dec 2022	Low Tide (ft)	1.34
D10	05 Dec 2022	Low Tide Time	28
D10	05 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-6
D10	14 Dec 2022	Arrive Time	935
D10	14 Dec 2022	Weather	Sunny
D10	14 Dec 2022	Wind Speed (kts)	2.1
D10	14 Dec 2022	Wind Dir	N
D10	14 Dec 2022	Animal Life	
D10	14 Dec 2022	Floatables	None
D10	14 Dec 2022	Water Color	Green
D10	14 Dec 2022	Current Direction	S
D10	14 Dec 2022	Water Temp (C)	13.1
D10	14 Dec 2022	Wave Height Low (ft)	3
D10	14 Dec 2022	High Tide (ft)	3.45
D10	14 Dec 2022	High Tide Time	225
D10	14 Dec 2022	Low Tide (ft)	3.08
D10	14 Dec 2022	Low Tide Time	633
D10	14 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-3; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-1

Station	Date	Parameter	Value
D10	21 Dec 2022	Arrive Time	1051
D10	21 Dec 2022	Weather	Sunny
D10	21 Dec 2022	Wind Speed (kts)	3.6
D10	21 Dec 2022	Wind Dir	W
D10	21 Dec 2022	Animal Life	
D10	21 Dec 2022	Floatables	None
D10	21 Dec 2022	Water Color	Green
D10	21 Dec 2022	Current Direction	S
D10	21 Dec 2022	Water Temp (C)	13
D10	21 Dec 2022	Wave Height Low (ft)	3
D10	21 Dec 2022	High Tide (ft)	6.4
D10	21 Dec 2022	High Tide Time	640
D10	21 Dec 2022	Low Tide (ft)	1.68
D10	21 Dec 2022	Low Tide Time	20
D10	21 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-3; Trash-1; Kelp; Person/Walker/Jogger-3
D10	28 Dec 2022	Arrive Time	837
D10	28 Dec 2022	Weather	Overcast
D10	28 Dec 2022	Wind Speed (kts)	6.6
D10	28 Dec 2022	Wind Dir	NW
D10	28 Dec 2022	Animal Life	
D10	28 Dec 2022	Floatables	None
D10	28 Dec 2022	Water Color	Green
D10	28 Dec 2022	Current Direction	S
D10	28 Dec 2022	Water Temp (C)	6
D10	28 Dec 2022	Wave Height Low (ft)	5
D10	28 Dec 2022	High Tide (ft)	4.07
D10	28 Dec 2022	High Tide Time	133
D10	28 Dec 2022	Low Tide (ft)	2.26
D10	28 Dec 2022	Low Tide Time	652
D10	28 Dec 2022	Comments	Water turbid; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-3
D11	05 Dec 2022	Arrive Time	851
D11	05 Dec 2022	Weather	Partly cloudy
D11	05 Dec 2022	Wind Speed (kts)	0
D11	05 Dec 2022	Wind Dir	W
D11	05 Dec 2022	Animal Life	Dog-1;
D11	05 Dec 2022	Floatables	None
D11	05 Dec 2022	Water Color	Green
D11	05 Dec 2022	Current Direction	S
D11	05 Dec 2022	Water Temp (C)	15.5
D11	05 Dec 2022	Wave Height Low (ft)	4
D11	05 Dec 2022	High Tide (ft)	6.02
D11	05 Dec 2022	High Tide Time	644
D11	05 Dec 2022	Low Tide (ft)	1.34
D11	05 Dec 2022	Low Tide Time	28
D11	05 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-2; Trash-1; Algae; Person/Walker/Jogger-3
D11	14 Dec 2022	Arrive Time	918
D11	14 Dec 2022	Weather	Hazy
D11	14 Dec 2022	Wind Speed (kts)	2.3
D11	14 Dec 2022	Wind Dir	E
D11	14 Dec 2022	Animal Life	
D11	14 Dec 2022	Floatables	None
D11	14 Dec 2022	Water Color	Green
D11	14 Dec 2022	Current Direction	S
D11	14 Dec 2022	Water Temp (C)	14.5
D11	14 Dec 2022	Wave Height Low (ft)	4

Station	Date	Parameter	Value
D11	14 Dec 2022	High Tide (ft)	3.45
D11	14 Dec 2022	High Tide Time	225
D11	14 Dec 2022	Low Tide (ft)	3.08
D11	14 Dec 2022	Low Tide Time	633
D11	14 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-7; Trash-1; Algae;Kelp;Seagrass; Person/Walker/Jogger-1
D11	21 Dec 2022	Arrive Time	1007
D11	21 Dec 2022	Weather	Sunny
D11	21 Dec 2022	Wind Speed (kts)	1.5
D11	21 Dec 2022	Wind Dir	NW
D11	21 Dec 2022	Animal Life	
D11	21 Dec 2022	Floatables	None
D11	21 Dec 2022	Water Color	Green
D11	21 Dec 2022	Current Direction	S
D11	21 Dec 2022	Water Temp (C)	14
D11	21 Dec 2022	Wave Height Low (ft)	3
D11	21 Dec 2022	High Tide (ft)	6.4
D11	21 Dec 2022	High Tide Time	640
D11	21 Dec 2022	Low Tide (ft)	1.68
D11	21 Dec 2022	Low Tide Time	20
D11	21 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-5; Trash-1; Kelp;Algae
D11	28 Dec 2022	Arrive Time	823
D11	28 Dec 2022	Weather	Partly cloudy
D11	28 Dec 2022	Wind Speed (kts)	4.4
D11	28 Dec 2022	Wind Dir	NW
D11	28 Dec 2022	Animal Life	Dog-1;
D11	28 Dec 2022	Floatables	None
D11	28 Dec 2022	Water Color	Green
D11	28 Dec 2022	Current Direction	S
D11	28 Dec 2022	Water Temp (C)	10
D11	28 Dec 2022	Wave Height Low (ft)	5
D11	28 Dec 2022	High Tide (ft)	4.07
D11	28 Dec 2022	High Tide Time	133
D11	28 Dec 2022	Low Tide (ft)	2.26
D11	28 Dec 2022	Low Tide Time	652
D11	28 Dec 2022	Comments	Water turbid; Trash-1; Kelp;Algae; Person/Walker/Jogger-3
D11	29 Dec 2022	Arrive Time	1124
D11	29 Dec 2022	Weather	Cloudy
D11	29 Dec 2022	Wind Speed (kts)	5
D11	29 Dec 2022	Wind Dir	S
D11	29 Dec 2022	Animal Life	Bird-2;
D11	29 Dec 2022	Floatables	None
D11	29 Dec 2022	Water Color	Green
D11	29 Dec 2022	Current Direction	N
D11	29 Dec 2022	Water Temp (C)	12
D11	29 Dec 2022	Wave Height Low (ft)	5
D11	29 Dec 2022	High Tide (ft)	4.34
D11	29 Dec 2022	High Tide Time	232
D11	29 Dec 2022	Low Tide (ft)	2.08
D11	29 Dec 2022	Low Tide Time	828
D11	29 Dec 2022	Comments	Resample; Water clear; Trash-1; Seagrass;Algae;Kelp; Person/Walker/Jogger-5
D12	05 Dec 2022	Arrive Time	825
D12	05 Dec 2022	Weather	Partly cloudy
D12	05 Dec 2022	Wind Speed (kts)	2.9
D12	05 Dec 2022	Wind Dir	N
D12	05 Dec 2022	Animal Life	Bird-2;

Station	Date	Parameter	Value
D12	05 Dec 2022	Floatables	None
D12	05 Dec 2022	Water Color	Green
D12	05 Dec 2022	Current Direction	S
D12	05 Dec 2022	Water Temp (C)	15.3
D12	05 Dec 2022	Wave Height Low (ft)	3
D12	05 Dec 2022	High Tide (ft)	6.02
D12	05 Dec 2022	High Tide Time	644
D12	05 Dec 2022	Low Tide (ft)	1.34
D12	05 Dec 2022	Low Tide Time	28
D12	05 Dec 2022	Comments	Water clear; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-2
D12	14 Dec 2022	Arrive Time	852
D12	14 Dec 2022	Weather	Sunny
D12	14 Dec 2022	Wind Speed (kts)	1.7
D12	14 Dec 2022	Wind Dir	S
D12	14 Dec 2022	Animal Life	Bird-1;
D12	14 Dec 2022	Floatables	None
D12	14 Dec 2022	Water Color	Green
D12	14 Dec 2022	Current Direction	S
D12	14 Dec 2022	Water Temp (C)	11.6
D12	14 Dec 2022	Wave Height Low (ft)	3
D12	14 Dec 2022	High Tide (ft)	3.45
D12	14 Dec 2022	High Tide Time	225
D12	14 Dec 2022	Low Tide (ft)	3.08
D12	14 Dec 2022	Low Tide Time	633
D12	14 Dec 2022	Comments	Water clear; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-2
D12	21 Dec 2022	Arrive Time	944
D12	21 Dec 2022	Weather	Sunny
D12	21 Dec 2022	Wind Speed (kts)	0.7
D12	21 Dec 2022	Wind Dir	W
D12	21 Dec 2022	Animal Life	
D12	21 Dec 2022	Floatables	None
D12	21 Dec 2022	Water Color	Green
D12	21 Dec 2022	Current Direction	S
D12	21 Dec 2022	Water Temp (C)	11
D12	21 Dec 2022	Wave Height Low (ft)	2
D12	21 Dec 2022	High Tide (ft)	6.4
D12	21 Dec 2022	High Tide Time	640
D12	21 Dec 2022	Low Tide (ft)	1.68
D12	21 Dec 2022	Low Tide Time	20
D12	21 Dec 2022	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Kelp; Person/Walker/Jogger-1
D12	28 Dec 2022	Arrive Time	804
D12	28 Dec 2022	Weather	Partly cloudy
D12	28 Dec 2022	Wind Speed (kts)	6.4
D12	28 Dec 2022	Wind Dir	NW
D12	28 Dec 2022	Animal Life	Bird-5;
D12	28 Dec 2022	Floatables	None
D12	28 Dec 2022	Water Color	Green
D12	28 Dec 2022	Current Direction	S
D12	28 Dec 2022	Water Temp (C)	10
D12	28 Dec 2022	Wave Height Low (ft)	5
D12	28 Dec 2022	High Tide (ft)	4.07
D12	28 Dec 2022	High Tide Time	133
D12	28 Dec 2022	Low Tide (ft)	2.26
D12	28 Dec 2022	Low Tide Time	652

Station	Date	Parameter	Value
D12	28 Dec 2022	Comments	Water turbid; Trash-1; Kelp;Debris

Kelp Stations

Table 3.1

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 geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >1,000 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Dec 2022	4	5	4	3	3	2	3	3
02 Dec 2022	4	5	4	3	3	2	3	3
03 Dec 2022	4	5	4	3	3	2	3	3
04 Dec 2022	4	5	4	3	3	2	3	3
05 Dec 2022	8	4	6	3	4	2	3	3
06 Dec 2022	8	4	6	3	4	2	3	3
07 Dec 2022	7	5	7	3	5	2	3	3
08 Dec 2022	7	5	7	3	5	2	3	3
09 Dec 2022	7	5	7	3	5	2	3	3
10 Dec 2022	7	5	7	3	5	2	3	3
11 Dec 2022	7	5	7	3	5	2	3	3
12 Dec 2022	7	5	7	3	5	2	3	3
13 Dec 2022	9	6	8	11	7	3	3	5
14 Dec 2022	12	4	9	12	9	3	4	5
15 Dec 2022	12	4	9	12	9	3	4	5
16 Dec 2022	12	4	9	12	9	3	4	5
17 Dec 2022	12	4	9	12	9	3	4	5
18 Dec 2022	12	4	9	12	9	3	4	5
19 Dec 2022	12	4	9	12	9	3	4	5
20 Dec 2022	12	4	9	12	9	3	4	5
21 Dec 2022	13	8	10	15	9	3	7	6
22 Dec 2022	13	8	10	15	9	3	7	6
23 Dec 2022	13	8	10	15	9	3	7	6
24 Dec 2022	13	8	10	15	9	3	7	6
25 Dec 2022	13	8	10	15	9	3	7	6
26 Dec 2022	13	8	10	15	9	3	7	6
27 Dec 2022	9	6	7	10	9	4	6	5
28 Dec 2022	9	6	7	10	9	4	6	5
29 Dec 2022	9	6	7	10	9	4	6	5
30 Dec 2022	9	6	7	10	9	4	6	5
31 Dec 2022	11	8	8	15	13	4	6	6

* Geometric mean calculated using n<5

Table 3.2

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 Dec 2022	3	3	2	2	2	2	2	2
02 Dec 2022	3	3	2	2	2	2	2	2
03 Dec 2022	3	3	2	2	2	2	2	2
04 Dec 2022	3	3	2	2	2	2	2	2
05 Dec 2022	4	3	2	2	2	2	2	2
06 Dec 2022	4	3	2	2	2	2	2	2
07 Dec 2022	4	3	2	2	2	2	2	2
08 Dec 2022	4	3	2	2	2	2	2	2
09 Dec 2022	4	3	2	2	2	2	2	2
10 Dec 2022	4	3	2	2	2	2	2	2
11 Dec 2022	4	3	2	2	2	2	2	2
12 Dec 2022	4	3	2	2	2	2	2	2
13 Dec 2022	4	3	3	2	2	2	2	2
14 Dec 2022	4	2	3	2	2	2	2	2
15 Dec 2022	4	2	3	2	2	2	2	2
16 Dec 2022	4	2	3	2	2	2	2	2
17 Dec 2022	4	2	3	2	2	2	2	2
18 Dec 2022	4	2	3	2	2	2	2	2
19 Dec 2022	4	2	3	2	2	2	2	2
20 Dec 2022	4	2	3	2	2	2	2	2
21 Dec 2022	4	3	3	2	2	2	3	2
22 Dec 2022	4	3	3	2	2	2	3	2
23 Dec 2022	4	3	3	2	2	2	3	2
24 Dec 2022	4	3	3	2	2	2	3	2
25 Dec 2022	4	3	3	2	2	2	3	2
26 Dec 2022	4	3	3	2	2	2	3	2
27 Dec 2022	4	3	3	2	2	2	3	2
28 Dec 2022	4	3	3	2	2	2	3	2
29 Dec 2022	4	3	3	2	2	2	3	2
30 Dec 2022	4	3	3	2	2	2	3	2
31 Dec 2022	4	3	3	2	2	2	3	2

* Geometric mean calculated using n<5

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 30 days unless otherwise noted (*). Values >35 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Dec 2022	3	2	2	2	2	2	3	2
02 Dec 2022	3	2	2	2	2	2	3	2
03 Dec 2022	3	2	2	2	2	2	3	2
04 Dec 2022	3	2	2	2	2	2	3	2
05 Dec 2022	2	2	2	2	2	2	2	2
06 Dec 2022	2	2	2	2	2	2	2	2
07 Dec 2022	2	2	2	2	2	2	2	2
08 Dec 2022	2	2	2	2	2	2	2	2
09 Dec 2022	2	2	2	2	2	2	2	2
10 Dec 2022	2	2	2	2	2	2	2	2
11 Dec 2022	2	2	2	2	2	2	2	2
12 Dec 2022	2	2	2	2	2	2	2	2
13 Dec 2022	2	2	2	2	2	2	2	2
14 Dec 2022	2	2	2	2	2	2	2	2
15 Dec 2022	2	2	2	2	2	2	2	2
16 Dec 2022	2	2	2	2	2	2	2	2
17 Dec 2022	2	2	2	2	2	2	2	2
18 Dec 2022	2	2	2	2	2	2	2	2
19 Dec 2022	2	2	2	2	2	2	2	2
20 Dec 2022	2	2	2	2	2	2	2	2
21 Dec 2022	2	2	2	2	2	2	2	2
22 Dec 2022	2	2	2	2	2	2	2	2
23 Dec 2022	2	2	2	2	2	2	2	2
24 Dec 2022	2	2	2	2	2	2	2	2
25 Dec 2022	2	2	2	2	2	2	2	2
26 Dec 2022	2	2	2	2	2	2	2	2
27 Dec 2022	2	2	2	2	2	2	2	2
28 Dec 2022	2	2	2	2	2	2	2	2
29 Dec 2022	2	2	2	2	2	2	2	2
30 Dec 2022	2	2	2	2	2	2	2	2
31 Dec 2022	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 total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
05 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
13 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
27 Dec 2022	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 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
01 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
05 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
13 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
27 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.6

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
01 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
05 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
13 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
27 Dec 2022	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
01 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
05 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
13 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
21 Dec 2022	IC	IC	IC	IC	IC	IC	IC	IC
27 Dec 2022	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; the fecal:total coliform ratio (F:T) is unitless; 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	F:T	Temp	XMS	DO	Sal	pH
A1	01 Dec 2022	737	1	2e	4e	4e	2.0000	15.3	85.75	7.5	33.49	8.1
A1	01 Dec 2022	737	12	<2	<2	<2	1.0000	15.2	83.70	7.4	33.49	8.1
A1	01 Dec 2022	737	18	8e	<2	<2	0.2500	13.9	86.59	6.6	33.46	8.0
A1	05 Dec 2022	828	1	6e	<2	2e	0.3333	15.4	88.58	7.5	33.46	8.0
A1	05 Dec 2022	828	12	120	24e	<2	0.2000	14.2	89.43	6.5	33.43	8.0
A1	05 Dec 2022	828	18	420	44	2e	0.1048	13.6	87.13	5.9	33.42	7.9
A1	13 Dec 2022	831	1	4e	2e	<2	0.5000	14.3	65.85	7.0	33.43	8.0
A1	13 Dec 2022	831	12	4e	2e	2e	0.5000	14.3	63.03	6.6	33.43	8.0
A1	13 Dec 2022	831	18	40e	4e	<2	0.1000	14.1	60.17	6.6	33.44	8.0
A1	21 Dec 2022	803	1	<2	<2	<2	1.0000	14.2	88.54	7.2	33.43	8.0
A1	21 Dec 2022	803	12	2e	<2	<2	1.0000	13.7	89.70	6.2	33.43	8.0
A1	21 Dec 2022	803	18	4e	<2	<2	0.5000	13.2	85.38	5.7	33.43	7.9
A1	27 Dec 2022	752	1	2e	<2	<2	1.0000	15.0	90.89	7.8	33.45	8.1
A1	27 Dec 2022	752	12	2e	<2	<2	1.0000	14.8	90.45	7.6	33.44	8.1
A1	27 Dec 2022	752	18	<2	<2	<2	1.0000	14.2	84.96	7.1	33.41	8.1
A6	01 Dec 2022	806	1	<2	2e	<2	1.0000	15.2	86.26	6.3	33.46	8.1
A6	01 Dec 2022	806	12	6e	<2	<2	0.3333	15.1	85.92	7.1	33.48	8.1
A6	01 Dec 2022	806	18	2e	<2	<2	1.0000	15.0	88.52	6.8	33.47	8.1
A6	05 Dec 2022	858	1	<2	<2	<2	1.0000	15.5	86.69	7.8	33.47	8.1
A6	05 Dec 2022	858	12	<2	<2	<2	1.0000	15.3	87.63	7.5	33.46	8.1
A6	05 Dec 2022	858	18	2e	<2	<2	1.0000	14.9	89.42	6.8	33.44	8.0
A6	13 Dec 2022	958	1	6e	<2	<2	0.3333	14.2	83.05	7.0	33.43	8.0
A6	13 Dec 2022	958	12	10e	2e	<2	0.2000	14.2	85.60	7.2	33.43	8.0
A6	13 Dec 2022	958	18	10e	<2	2e	0.2000	14.2	84.46	7.0	33.43	8.0
A6	21 Dec 2022	829	1	2e	2e	2e	1.0000	14.3	90.22	7.2	33.43	8.1
A6	21 Dec 2022	829	12	80e	6e	<2	0.0750	13.6	89.87	6.3	33.43	8.0
A6	21 Dec 2022	829	18	140e	30e	<2	0.2143	13.2	89.32	5.9	33.43	8.0
A6	27 Dec 2022	822	1	<2	<2	<2	1.0000	15.0	89.70	7.9	33.45	8.1
A6	27 Dec 2022	822	12	<2	<2	<2	1.0000	14.9	89.90	7.7	33.45	8.1
A6	27 Dec 2022	822	18	4e	2e	6e	0.5000	14.8	89.23	7.7	33.44	8.1
A7	01 Dec 2022	756	1	<2	<2	<2	1.0000	15.2	85.63	7.2	33.48	8.1
A7	01 Dec 2022	756	12	2e	<2	<2	1.0000	15.2	84.65	7.4	33.48	8.1
A7	01 Dec 2022	756	18	14e	6e	<2	0.4286	14.8	86.36	6.7	33.46	8.0
A7	05 Dec 2022	846	1	4e	<2	<2	0.5000	15.7	86.77	7.9	33.46	8.1
A7	05 Dec 2022	846	12	2e	<2	<2	1.0000	15.4	88.20	7.5	33.46	8.1
A7	05 Dec 2022	846	18	80e	4e	<2	0.0500	14.8	89.45	6.8	33.44	8.0
A7	13 Dec 2022	849	1	2e	<2	2e	1.0000	14.3	81.76	6.9	33.43	8.0
A7	13 Dec 2022	849	12	10e	4e	<2	0.4000	14.1	86.08	7.0	33.42	8.0
A7	13 Dec 2022	849	18	22e	8e	2e	0.3636	13.8	86.54	6.7	33.43	8.0

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH
A7	21 Dec 2022	816	1	4e	<2	<2	0.5000	14.3	89.47	7.4	33.44	8.0
A7	21 Dec 2022	816	12	10e	6e	<2	0.6000	13.4	90.01	6.1	33.43	8.0
A7	21 Dec 2022	816	18	2e	<2	<2	1.0000	13.2	89.69	5.7	33.43	8.0
A7	27 Dec 2022	808	1	<2	<2	<2	1.0000	15.1	90.50	7.8	33.45	8.1
A7	27 Dec 2022	808	12	<2	<2	<2	1.0000	15.0	90.66	7.8	33.45	8.1
A7	27 Dec 2022	808	18	<2	<2	<2	1.0000	14.5	87.95	7.2	33.43	8.1
C4	01 Dec 2022	903	1	<2	2e	<2	1.0000	15.1	84.83	5.5	33.47	8.1
C4	01 Dec 2022	903	3	<2	<2	<2	1.0000	15.2	84.25	6.6	33.49	8.1
C4	01 Dec 2022	903	9	2e	<2	<2	1.0000	15.1	86.63	7.0	33.50	8.1
C4	05 Dec 2022	1001	1	<2	<2	<2	1.0000	15.7	72.14	7.1	33.50	8.0
C4	05 Dec 2022	1001	3	<2	<2	<2	1.0000	15.6	73.37	7.1	33.49	8.0
C4	05 Dec 2022	1001	9	<2	<2	<2	1.0000	15.2	84.38	6.9	33.47	8.0
C4	13 Dec 2022	1111	1	6800	2e	<2	0.0003	14.3	67.70	6.5	33.40	8.0
C4	13 Dec 2022	1111	3	1100	<2	<2	0.0018	14.2	67.13	7.1	33.43	8.0
C4	13 Dec 2022	1111	9	1000e	<2	<2	0.0020	14.2	58.72	7.0	33.42	8.0
C4	21 Dec 2022	943	1	<2	<2	<2	1.0000	14.3	88.35	7.2	33.44	8.1
C4	21 Dec 2022	943	3	10e	<2	<2	0.2000	14.2	88.18	7.0	33.44	8.1
C4	21 Dec 2022	943	9	2e	2e	<2	1.0000	14.1	83.70	6.6	33.43	8.0
C4	27 Dec 2022	928	1	<2	<2	<2	1.0000	14.8	88.40	7.6	33.45	8.1
C4	27 Dec 2022	928	3	<2	<2	<2	1.0000	14.8	88.00	7.6	33.45	8.1
C4	27 Dec 2022	928	9	<2	<2	<2	1.0000	14.1	85.13	6.5	33.42	8.1
C5	01 Dec 2022	852	1	2e	<2	<2	1.0000	15.2	81.66	7.1	33.49	8.1
C5	01 Dec 2022	852	3	2e	<2	<2	1.0000	15.2	80.28	7.1	33.49	8.1
C5	01 Dec 2022	852	9	2e	<2	<2	1.0000	15.1	62.51	6.8	33.50	8.0
C5	05 Dec 2022	950	1	2e	<2	<2	1.0000	15.6	80.69	5.7	33.40	8.0
C5	05 Dec 2022	950	3	<2	2e	<2	1.0000	15.5	80.87	6.9	33.47	8.1
C5	05 Dec 2022	950	9	60e	8e	<2	0.1333	14.8	65.57	6.3	33.46	8.0
C5	13 Dec 2022	1100	1	<20	<2	<2	0.1000	14.3	24.52	7.4	33.41	8.0
C5	13 Dec 2022	1100	3	<20	2e	<2	0.1000	14.3	22.83	7.3	33.42	8.0
C5	13 Dec 2022	1100	9	<20	<2	<2	0.1000	14.2	14.52	7.3	33.42	8.0
C5	21 Dec 2022	931	1	2e	<2	<2	1.0000	14.4	85.91	7.6	33.45	8.1
C5	21 Dec 2022	931	3	<2	<2	<2	1.0000	14.4	87.18	7.6	33.45	8.1
C5	21 Dec 2022	931	9	20e	<2	<2	0.1000	14.3	84.23	7.2	33.44	8.1
C5	27 Dec 2022	919	1	2e	<2	2e	1.0000	14.9	80.62	7.4	33.46	8.1
C5	27 Dec 2022	919	3	2e	<2	<2	1.0000	14.9	79.70	7.4	33.47	8.1
C5	27 Dec 2022	919	9	<20	<2	<2	0.1000	14.6	40.60	6.8	33.45	8.0
C6	01 Dec 2022	843	1	<2	<2	<2	1.0000	15.2	85.27	7.4	33.48	8.1
C6	01 Dec 2022	843	3	<2	<2	<2	1.0000	15.2	86.57	7.4	33.48	8.1
C6	01 Dec 2022	843	9	<2	<2	<2	1.0000	15.2	86.26	6.8	33.48	8.1
C6	05 Dec 2022	940	1	<2	<2	<2	1.0000	15.6	82.77	7.3	33.48	8.0
C6	05 Dec 2022	940	3	2e	<2	<2	1.0000	15.5	83.70	7.2	33.48	8.0
C6	05 Dec 2022	940	9	<2	<2	<2	1.0000	14.9	83.44	6.8	33.45	8.0
C6	13 Dec 2022	1049	1	4e	<2	<2	0.5000	14.3	58.53	6.8	33.43	8.0
C6	13 Dec 2022	1049	3	6e	<2	<2	0.3333	14.2	57.38	6.7	33.43	8.0
C6	13 Dec 2022	1049	9	18e	2e	<2	0.1111	14.1	69.92	6.4	33.44	8.0

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH
C6	21 Dec 2022	921	1	<2	<2	<2	1.0000	14.4	86.83	7.9	33.45	8.1
C6	21 Dec 2022	921	3	<2	<2	<2	1.0000	14.3	89.40	7.8	33.45	8.1
C6	21 Dec 2022	921	9	2e	<2	<2	1.0000	14.3	89.52	7.8	33.45	8.1
C6	27 Dec 2022	910	1	2e	<2	<2	1.0000	14.6	80.95	7.6	33.45	8.1
C6	27 Dec 2022	910	3	<2	<2	2e	1.0000	14.6	80.47	7.6	33.45	8.1
C6	27 Dec 2022	910	9	<20	<2	<2	0.1000	14.1	20.45	6.1	33.43	8.0
C7	01 Dec 2022	817	1	2e	4e	<2	2.0000	15.3	87.28	7.5	33.47	8.1
C7	01 Dec 2022	817	12	2e	2e	<2	1.0000	15.1	88.03	7.1	33.46	8.1
C7	01 Dec 2022	817	18	8e	<2	2e	0.2500	14.7	88.03	6.3	33.45	8.0
C7	05 Dec 2022	912	1	<2	2e	<2	1.0000	15.5	82.76	7.9	33.47	8.1
C7	05 Dec 2022	912	12	2e	<2	<2	1.0000	15.3	86.93	7.6	33.46	8.1
C7	05 Dec 2022	912	18	4e	<2	<2	0.5000	14.6	87.21	6.7	33.44	8.0
C7	13 Dec 2022	1017	1	4e	<2	<2	0.5000	14.5	74.27	7.4	33.43	8.0
C7	13 Dec 2022	1017	12	10e	<2	<2	0.2000	14.4	86.66	7.0	33.44	8.0
C7	13 Dec 2022	1017	18	8e	2e	<2	0.2500	14.2	77.74	6.5	33.44	8.0
C7	21 Dec 2022	843	1	4e	2e	<2	0.5000	14.4	88.89	7.7	33.43	8.1
C7	21 Dec 2022	843	12	20e	6e	<2	0.3000	13.8	90.70	6.6	33.43	8.0
C7	21 Dec 2022	843	18	74	8e	<2	0.1081	13.6	90.80	6.2	33.43	8.0
C7	27 Dec 2022	838	1	<2	<2	<2	1.0000	14.7	89.48	7.8	33.44	8.1
C7	27 Dec 2022	838	12	2e	2e	<2	1.0000	14.5	88.74	7.6	33.43	8.1
C7	27 Dec 2022	838	18	<2	<2	<2	1.0000	14.1	74.35	6.7	33.43	8.0
C8	01 Dec 2022	827	1	<2	<2	<2	1.0000	15.3	87.54	7.7	33.48	8.1
C8	01 Dec 2022	827	12	2e	2e	<2	1.0000	15.1	88.78	7.2	33.46	8.1
C8	01 Dec 2022	827	18	6e	<2	<2	0.3333	14.7	88.39	6.8	33.44	8.1
C8	05 Dec 2022	923	1	2e	<2	<2	1.0000	15.4	79.94	7.6	33.46	8.1
C8	05 Dec 2022	923	12	<2	<2	<2	1.0000	15.2	86.13	7.2	33.47	8.0
C8	05 Dec 2022	923	18	8e	<2	<2	0.2500	14.8	79.94	6.8	33.45	8.0
C8	13 Dec 2022	1029	1	4e	<2	<2	0.5000	14.6	84.37	7.3	33.42	8.1
C8	13 Dec 2022	1029	12	8e	<2	<2	0.2500	14.4	89.02	7.1	33.44	8.0
C8	13 Dec 2022	1029	18	42	4e	2e	0.0952	14.1	88.58	6.6	33.44	8.0
C8	21 Dec 2022	901	1	2e	<2	<2	1.0000	14.4	88.42	7.6	33.42	8.1
C8	21 Dec 2022	901	12	8e	<2	<2	0.2500	14.3	89.53	7.3	33.42	8.1
C8	21 Dec 2022	901	18	12e	2e	<2	0.1667	14.0	90.73	6.7	33.42	8.1
C8	27 Dec 2022	848	1	<2	<2	<2	1.0000	14.4	88.56	7.7	33.42	8.1
C8	27 Dec 2022	848	12	<2	<2	<2	1.0000	14.3	88.00	7.6	33.42	8.1
C8	27 Dec 2022	848	18	2e	<2	<2	1.0000	14.2	84.46	7.2	33.42	8.1

ns = not sampled

ND = no data

Table 3.9

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

Station	Date	Parameter	Value
A1	01 Dec 2022	Depth (m)	18
A1	01 Dec 2022	Arrive Time	737
A1	01 Dec 2022	Depart Time	750
A1	01 Dec 2022	Air Temp (C)	14.7
A1	01 Dec 2022	Weather	Overcast
A1	01 Dec 2022	Visibility (mi)	11
A1	01 Dec 2022	Wind Speed (kts)	8.2
A1	01 Dec 2022	Wind Dir	S
A1	01 Dec 2022	Water Color	Greenish-Blue
A1	01 Dec 2022	Wave Ht Low (ft)	3
A1	01 Dec 2022	Wave Period (sec)	15
A1	01 Dec 2022	Sea State	Light Chop
A1	01 Dec 2022	High Tide (ft)	4.58
A1	01 Dec 2022	High Tide Time	1230
A1	01 Dec 2022	Low Tide (ft)	0.43
A1	01 Dec 2022	Low Tide Time	624
A1	01 Dec 2022	Comments	Redo cast; Didn't get depth
A1	05 Dec 2022	Depth (m)	18
A1	05 Dec 2022	Arrive Time	817
A1	05 Dec 2022	Depart Time	828
A1	05 Dec 2022	Air Temp (C)	15.3
A1	05 Dec 2022	Weather	Partly Cloudy
A1	05 Dec 2022	Visibility (mi)	12
A1	05 Dec 2022	Wind Speed (kts)	4.6
A1	05 Dec 2022	Wind Dir	W
A1	05 Dec 2022	Water Color	Greenish-Blue
A1	05 Dec 2022	Wave Ht Low (ft)	4
A1	05 Dec 2022	Wave Period (sec)	15
A1	05 Dec 2022	Sea State	Light Chop
A1	05 Dec 2022	High Tide (ft)	5.97
A1	05 Dec 2022	High Tide Time	1448
A1	05 Dec 2022	Low Tide (ft)	-0.35
A1	05 Dec 2022	Low Tide Time	2154
A1	05 Dec 2022	Comments	none
A1	13 Dec 2022	Depth (m)	17
A1	13 Dec 2022	Arrive Time	831
A1	13 Dec 2022	Depart Time	843
A1	13 Dec 2022	Air Temp (C)	10.1
A1	13 Dec 2022	Weather	Overcast
A1	13 Dec 2022	Visibility (mi)	10
A1	13 Dec 2022	Wind Speed (kts)	7.9
A1	13 Dec 2022	Wind Dir	E
A1	13 Dec 2022	Water Color	Blueish-Green
A1	13 Dec 2022	Wave Ht Low (ft)	5.2
A1	13 Dec 2022	Wave Period (sec)	11
A1	13 Dec 2022	Sea State	Regular Swell
A1	13 Dec 2022	High Tide (ft)	4.68
A1	13 Dec 2022	High Tide Time	1906
A1	13 Dec 2022	Low Tide (ft)	0.36
A1	13 Dec 2022	Low Tide Time	300
A1	13 Dec 2022	Comments	Use 2nd cast; Cap on CStar for 1st cast ; Kelp Debris; Lobster Floats
A1	21 Dec 2022	Depth (m)	19

Station	Date	Parameter	Value
A1	21 Dec 2022	Arrive Time	803
A1	21 Dec 2022	Depart Time	808
A1	21 Dec 2022	Air Temp (C)	12.9
A1	21 Dec 2022	Weather	Clear
A1	21 Dec 2022	Visibility (mi)	11
A1	21 Dec 2022	Wind Speed (kts)	3
A1	21 Dec 2022	Wind Dir	E
A1	21 Dec 2022	Water Color	Blue
A1	21 Dec 2022	Wave Ht Low (ft)	3
A1	21 Dec 2022	Wave Period (sec)	13
A1	21 Dec 2022	Sea State	Calm
A1	21 Dec 2022	High Tide (ft)	6.38
A1	21 Dec 2022	High Tide Time	1442
A1	21 Dec 2022	Low Tide (ft)	-1.08
A1	21 Dec 2022	Low Tide Time	2200
A1	21 Dec 2022	Comments	none
A1	27 Dec 2022	Depth (m)	18
A1	27 Dec 2022	Arrive Time	752
A1	27 Dec 2022	Depart Time	800
A1	27 Dec 2022	Air Temp (C)	13.8
A1	27 Dec 2022	Weather	Fog
A1	27 Dec 2022	Visibility (mi)	0
A1	27 Dec 2022	Wind Speed (kts)	7.8
A1	27 Dec 2022	Wind Dir	NW
A1	27 Dec 2022	Water Color	Blue
A1	27 Dec 2022	Wave Ht Low (ft)	5.6
A1	27 Dec 2022	Wave Period (sec)	11
A1	27 Dec 2022	Sea State	Regular Swell
A1	27 Dec 2022	High Tide (ft)	5.52
A1	27 Dec 2022	High Tide Time	1930
A1	27 Dec 2022	Low Tide (ft)	-0.61
A1	27 Dec 2022	Low Tide Time	248
A1	27 Dec 2022	Comments	none
A6	01 Dec 2022	Depth (m)	18
A6	01 Dec 2022	Arrive Time	806
A6	01 Dec 2022	Depart Time	810
A6	01 Dec 2022	Air Temp (C)	14.7
A6	01 Dec 2022	Weather	Overcast
A6	01 Dec 2022	Visibility (mi)	11
A6	01 Dec 2022	Wind Speed (kts)	8.5
A6	01 Dec 2022	Wind Dir	S
A6	01 Dec 2022	Water Color	Greenish-Blue
A6	01 Dec 2022	Wave Ht Low (ft)	3
A6	01 Dec 2022	Wave Period (sec)	15
A6	01 Dec 2022	Sea State	Light Chop
A6	01 Dec 2022	High Tide (ft)	4.58
A6	01 Dec 2022	High Tide Time	1230
A6	01 Dec 2022	Low Tide (ft)	0.43
A6	01 Dec 2022	Low Tide Time	624
A6	01 Dec 2022	Comments	none
A6	05 Dec 2022	Depth (m)	18
A6	05 Dec 2022	Arrive Time	852
A6	05 Dec 2022	Depart Time	858
A6	05 Dec 2022	Air Temp (C)	15.7
A6	05 Dec 2022	Weather	Partly Cloudy
A6	05 Dec 2022	Visibility (mi)	12
A6	05 Dec 2022	Wind Speed (kts)	6
A6	05 Dec 2022	Wind Dir	NW

Station	Date	Parameter	Value
A6	05 Dec 2022	Water Color	Greenish-Blue
A6	05 Dec 2022	Wave Ht Low (ft)	4
A6	05 Dec 2022	Wave Period (sec)	15
A6	05 Dec 2022	Sea State	Light Chop
A6	05 Dec 2022	High Tide (ft)	5.97
A6	05 Dec 2022	High Tide Time	1448
A6	05 Dec 2022	Low Tide (ft)	-0.35
A6	05 Dec 2022	Low Tide Time	2154
A6	05 Dec 2022	Comments	none
A6	13 Dec 2022	Depth (m)	18
A6	13 Dec 2022	Arrive Time	958
A6	13 Dec 2022	Depart Time	1007
A6	13 Dec 2022	Air Temp (C)	11.5
A6	13 Dec 2022	Weather	Overcast
A6	13 Dec 2022	Visibility (mi)	10
A6	13 Dec 2022	Wind Speed (kts)	9
A6	13 Dec 2022	Wind Dir	E
A6	13 Dec 2022	Water Color	Blueish-Green
A6	13 Dec 2022	Wave Ht Low (ft)	5.2
A6	13 Dec 2022	Wave Period (sec)	11
A6	13 Dec 2022	Sea State	Regular Swell
A6	13 Dec 2022	High Tide (ft)	4.68
A6	13 Dec 2022	High Tide Time	1906
A6	13 Dec 2022	Low Tide (ft)	0.36
A6	13 Dec 2022	Low Tide Time	300
A6	13 Dec 2022	Comments	Recast; 1st cast didn't make depth; Lobster Floats
A6	21 Dec 2022	Depth (m)	1
A6	21 Dec 2022	Arrive Time	829
A6	21 Dec 2022	Depart Time	832
A6	21 Dec 2022	Air Temp (C)	13.4
A6	21 Dec 2022	Weather	Clear
A6	21 Dec 2022	Visibility (mi)	11
A6	21 Dec 2022	Wind Speed (kts)	5.8
A6	21 Dec 2022	Wind Dir	NE
A6	21 Dec 2022	Water Color	Blue
A6	21 Dec 2022	Wave Ht Low (ft)	3
A6	21 Dec 2022	Wave Period (sec)	13
A6	21 Dec 2022	Sea State	Calm
A6	21 Dec 2022	High Tide (ft)	6.38
A6	21 Dec 2022	High Tide Time	1442
A6	21 Dec 2022	Low Tide (ft)	-1.08
A6	21 Dec 2022	Low Tide Time	2200
A6	21 Dec 2022	Comments	none
A6	27 Dec 2022	Depth (m)	16
A6	27 Dec 2022	Arrive Time	822
A6	27 Dec 2022	Depart Time	829
A6	27 Dec 2022	Air Temp (C)	13.8
A6	27 Dec 2022	Weather	Fog
A6	27 Dec 2022	Visibility (mi)	0
A6	27 Dec 2022	Wind Speed (kts)	5.9
A6	27 Dec 2022	Wind Dir	N
A6	27 Dec 2022	Water Color	Blue
A6	27 Dec 2022	Wave Ht Low (ft)	5.6
A6	27 Dec 2022	Wave Period (sec)	11
A6	27 Dec 2022	Sea State	Regular Swell
A6	27 Dec 2022	High Tide (ft)	5.52
A6	27 Dec 2022	High Tide Time	1930
A6	27 Dec 2022	Low Tide (ft)	-0.61

Station	Date	Parameter	Value
A6	27 Dec 2022	Low Tide Time	248
A6	27 Dec 2022	Comments	none
A7	01 Dec 2022	Depth (m)	19.6
A7	01 Dec 2022	Arrive Time	756
A7	01 Dec 2022	Depart Time	801
A7	01 Dec 2022	Air Temp (C)	14.7
A7	01 Dec 2022	Weather	Overcast
A7	01 Dec 2022	Visibility (mi)	11
A7	01 Dec 2022	Wind Speed (kts)	3
A7	01 Dec 2022	Wind Dir	SW
A7	01 Dec 2022	Water Color	Greenish-Blue
A7	01 Dec 2022	Wave Ht Low (ft)	3
A7	01 Dec 2022	Wave Period (sec)	15
A7	01 Dec 2022	Sea State	Light Chop
A7	01 Dec 2022	High Tide (ft)	4.58
A7	01 Dec 2022	High Tide Time	1230
A7	01 Dec 2022	Low Tide (ft)	0.43
A7	01 Dec 2022	Low Tide Time	624
A7	01 Dec 2022	Comments	none
A7	05 Dec 2022	Depth (m)	18
A7	05 Dec 2022	Arrive Time	835
A7	05 Dec 2022	Depart Time	846
A7	05 Dec 2022	Air Temp (C)	15.5
A7	05 Dec 2022	Weather	Partly Cloudy
A7	05 Dec 2022	Visibility (mi)	12
A7	05 Dec 2022	Wind Speed (kts)	9.3
A7	05 Dec 2022	Wind Dir	NW
A7	05 Dec 2022	Water Color	Greenish-Blue
A7	05 Dec 2022	Wave Ht Low (ft)	4
A7	05 Dec 2022	Wave Period (sec)	15
A7	05 Dec 2022	Sea State	Light Chop
A7	05 Dec 2022	High Tide (ft)	5.97
A7	05 Dec 2022	High Tide Time	1448
A7	05 Dec 2022	Low Tide (ft)	-0.35
A7	05 Dec 2022	Low Tide Time	2154
A7	05 Dec 2022	Comments	none
A7	13 Dec 2022	Depth (m)	19
A7	13 Dec 2022	Arrive Time	849
A7	13 Dec 2022	Depart Time	909
A7	13 Dec 2022	Air Temp (C)	10.5
A7	13 Dec 2022	Weather	Overcast
A7	13 Dec 2022	Visibility (mi)	10
A7	13 Dec 2022	Wind Speed (kts)	9.5
A7	13 Dec 2022	Wind Dir	SE
A7	13 Dec 2022	Water Color	Blueish-Green
A7	13 Dec 2022	Wave Ht Low (ft)	5.2
A7	13 Dec 2022	Wave Period (sec)	11
A7	13 Dec 2022	Sea State	Regular Swell
A7	13 Dec 2022	High Tide (ft)	4.68
A7	13 Dec 2022	High Tide Time	1906
A7	13 Dec 2022	Low Tide (ft)	0.36
A7	13 Dec 2022	Low Tide Time	300
A7	13 Dec 2022	Comments	Kelp Debris; Lobster Floats
A7	21 Dec 2022	Depth (m)	20
A7	21 Dec 2022	Arrive Time	816
A7	21 Dec 2022	Depart Time	820
A7	21 Dec 2022	Air Temp (C)	13

Station	Date	Parameter	Value
A7	21 Dec 2022	Weather	Clear
A7	21 Dec 2022	Visibility (mi)	11
A7	21 Dec 2022	Wind Speed (kts)	7.4
A7	21 Dec 2022	Wind Dir	N
A7	21 Dec 2022	Water Color	Blue
A7	21 Dec 2022	Wave Ht Low (ft)	3
A7	21 Dec 2022	Wave Period (sec)	13
A7	21 Dec 2022	Sea State	Calm
A7	21 Dec 2022	High Tide (ft)	6.38
A7	21 Dec 2022	High Tide Time	1442
A7	21 Dec 2022	Low Tide (ft)	-1.08
A7	21 Dec 2022	Low Tide Time	2200
A7	21 Dec 2022	Comments	none
A7	27 Dec 2022	Depth (m)	20
A7	27 Dec 2022	Arrive Time	808
A7	27 Dec 2022	Depart Time	814
A7	27 Dec 2022	Air Temp (C)	13.8
A7	27 Dec 2022	Weather	Fog
A7	27 Dec 2022	Visibility (mi)	0
A7	27 Dec 2022	Wind Speed (kts)	14.2
A7	27 Dec 2022	Wind Dir	NW
A7	27 Dec 2022	Water Color	Blue
A7	27 Dec 2022	Wave Ht Low (ft)	5.6
A7	27 Dec 2022	Wave Period (sec)	11
A7	27 Dec 2022	Sea State	Regular Swell
A7	27 Dec 2022	High Tide (ft)	5.52
A7	27 Dec 2022	High Tide Time	1930
A7	27 Dec 2022	Low Tide (ft)	-0.61
A7	27 Dec 2022	Low Tide Time	248
A7	27 Dec 2022	Comments	none
C4	01 Dec 2022	Depth (m)	10
C4	01 Dec 2022	Arrive Time	903
C4	01 Dec 2022	Depart Time	908
C4	01 Dec 2022	Air Temp (C)	14.6
C4	01 Dec 2022	Weather	Overcast
C4	01 Dec 2022	Visibility (mi)	11
C4	01 Dec 2022	Wind Speed (kts)	6.2
C4	01 Dec 2022	Wind Dir	S
C4	01 Dec 2022	Water Color	Greenish-Blue
C4	01 Dec 2022	Wave Ht Low (ft)	3
C4	01 Dec 2022	Wave Period (sec)	15
C4	01 Dec 2022	Sea State	Light Chop
C4	01 Dec 2022	High Tide (ft)	4.58
C4	01 Dec 2022	High Tide Time	1230
C4	01 Dec 2022	Low Tide (ft)	0.43
C4	01 Dec 2022	Low Tide Time	624
C4	01 Dec 2022	Comments	none
C4	05 Dec 2022	Depth (m)	11
C4	05 Dec 2022	Arrive Time	955
C4	05 Dec 2022	Depart Time	1001
C4	05 Dec 2022	Air Temp (C)	16.2
C4	05 Dec 2022	Weather	Partly Cloudy
C4	05 Dec 2022	Visibility (mi)	12
C4	05 Dec 2022	Wind Speed (kts)	4.2
C4	05 Dec 2022	Wind Dir	S
C4	05 Dec 2022	Water Color	Blueish-Green
C4	05 Dec 2022	Wave Ht Low (ft)	4
C4	05 Dec 2022	Wave Period (sec)	15

Station	Date	Parameter	Value
C4	05 Dec 2022	Sea State	Confused Swell
C4	05 Dec 2022	High Tide (ft)	5.97
C4	05 Dec 2022	High Tide Time	1448
C4	05 Dec 2022	Low Tide (ft)	-0.35
C4	05 Dec 2022	Low Tide Time	2154
C4	05 Dec 2022	Comments	none
C4	13 Dec 2022	Depth (m)	11
C4	13 Dec 2022	Arrive Time	1111
C4	13 Dec 2022	Depart Time	1115
C4	13 Dec 2022	Air Temp (C)	12.5
C4	13 Dec 2022	Weather	Overcast
C4	13 Dec 2022	Visibility (mi)	10
C4	13 Dec 2022	Wind Speed (kts)	5.6
C4	13 Dec 2022	Wind Dir	E
C4	13 Dec 2022	Water Color	Green
C4	13 Dec 2022	Wave Ht Low (ft)	5.2
C4	13 Dec 2022	Wave Period (sec)	11
C4	13 Dec 2022	Sea State	Regular Swell
C4	13 Dec 2022	High Tide (ft)	4.68
C4	13 Dec 2022	High Tide Time	1906
C4	13 Dec 2022	Low Tide (ft)	0.36
C4	13 Dec 2022	Low Tide Time	300
C4	13 Dec 2022	Comments	Kelp Debris; Lobster Floats
C4	21 Dec 2022	Depth (m)	1
C4	21 Dec 2022	Arrive Time	943
C4	21 Dec 2022	Depart Time	945
C4	21 Dec 2022	Air Temp (C)	14.8
C4	21 Dec 2022	Weather	Clear
C4	21 Dec 2022	Visibility (mi)	11
C4	21 Dec 2022	Wind Speed (kts)	2
C4	21 Dec 2022	Wind Dir	NW
C4	21 Dec 2022	Water Color	Green
C4	21 Dec 2022	Wave Ht Low (ft)	3
C4	21 Dec 2022	Wave Period (sec)	13
C4	21 Dec 2022	Sea State	Calm
C4	21 Dec 2022	High Tide (ft)	6.38
C4	21 Dec 2022	High Tide Time	1442
C4	21 Dec 2022	Low Tide (ft)	-1.08
C4	21 Dec 2022	Low Tide Time	2200
C4	21 Dec 2022	Comments	none
C4	27 Dec 2022	Depth (m)	11
C4	27 Dec 2022	Arrive Time	928
C4	27 Dec 2022	Depart Time	931
C4	27 Dec 2022	Air Temp (C)	13.7
C4	27 Dec 2022	Weather	Fog
C4	27 Dec 2022	Visibility (mi)	1
C4	27 Dec 2022	Wind Speed (kts)	6.5
C4	27 Dec 2022	Wind Dir	E
C4	27 Dec 2022	Water Color	Blue
C4	27 Dec 2022	Wave Ht Low (ft)	5.6
C4	27 Dec 2022	Wave Period (sec)	11
C4	27 Dec 2022	Sea State	Regular Swell
C4	27 Dec 2022	High Tide (ft)	5.52
C4	27 Dec 2022	High Tide Time	1930
C4	27 Dec 2022	Low Tide (ft)	-0.61
C4	27 Dec 2022	Low Tide Time	248
C4	27 Dec 2022	Comments	none

Station	Date	Parameter	Value
C5	01 Dec 2022	Depth (m)	9
C5	01 Dec 2022	Arrive Time	852
C5	01 Dec 2022	Depart Time	858
C5	01 Dec 2022	Air Temp (C)	14.6
C5	01 Dec 2022	Weather	Overcast
C5	01 Dec 2022	Visibility (mi)	11
C5	01 Dec 2022	Wind Speed (kts)	9.2
C5	01 Dec 2022	Wind Dir	SW
C5	01 Dec 2022	Water Color	Greenish-Blue
C5	01 Dec 2022	Wave Ht Low (ft)	3
C5	01 Dec 2022	Wave Period (sec)	15
C5	01 Dec 2022	Sea State	Light Chop
C5	01 Dec 2022	High Tide (ft)	4.58
C5	01 Dec 2022	High Tide Time	1230
C5	01 Dec 2022	Low Tide (ft)	0.43
C5	01 Dec 2022	Low Tide Time	624
C5	01 Dec 2022	Comments	none
C5	05 Dec 2022	Depth (m)	11
C5	05 Dec 2022	Arrive Time	946
C5	05 Dec 2022	Depart Time	950
C5	05 Dec 2022	Air Temp (C)	16.1
C5	05 Dec 2022	Weather	Partly Cloudy
C5	05 Dec 2022	Visibility (mi)	12
C5	05 Dec 2022	Wind Speed (kts)	1.6
C5	05 Dec 2022	Wind Dir	SE
C5	05 Dec 2022	Water Color	Greenish-Blue
C5	05 Dec 2022	Wave Ht Low (ft)	4
C5	05 Dec 2022	Wave Period (sec)	15
C5	05 Dec 2022	Sea State	Confused Swell
C5	05 Dec 2022	High Tide (ft)	5.97
C5	05 Dec 2022	High Tide Time	1448
C5	05 Dec 2022	Low Tide (ft)	-0.35
C5	05 Dec 2022	Low Tide Time	2154
C5	05 Dec 2022	Comments	none
C5	13 Dec 2022	Depth (m)	10
C5	13 Dec 2022	Arrive Time	1100
C5	13 Dec 2022	Depart Time	1104
C5	13 Dec 2022	Air Temp (C)	12.5
C5	13 Dec 2022	Weather	Overcast
C5	13 Dec 2022	Visibility (mi)	10
C5	13 Dec 2022	Wind Speed (kts)	8.3
C5	13 Dec 2022	Wind Dir	E
C5	13 Dec 2022	Water Color	Greenish-Brown
C5	13 Dec 2022	Wave Ht Low (ft)	5.2
C5	13 Dec 2022	Wave Period (sec)	11
C5	13 Dec 2022	Sea State	Regular Swell
C5	13 Dec 2022	High Tide (ft)	4.68
C5	13 Dec 2022	High Tide Time	1906
C5	13 Dec 2022	Low Tide (ft)	0.36
C5	13 Dec 2022	Low Tide Time	300
C5	13 Dec 2022	Comments	Inside turbid plume; Kelp Debris
C5	21 Dec 2022	Depth (m)	11
C5	21 Dec 2022	Arrive Time	931
C5	21 Dec 2022	Depart Time	933
C5	21 Dec 2022	Air Temp (C)	14.7
C5	21 Dec 2022	Weather	Clear
C5	21 Dec 2022	Visibility (mi)	11
C5	21 Dec 2022	Wind Speed (kts)	2.5

Station	Date	Parameter	Value
C5	21 Dec 2022	Wind Dir	NW
C5	21 Dec 2022	Water Color	Greenish-Blue
C5	21 Dec 2022	Wave Ht Low (ft)	3
C5	21 Dec 2022	Wave Period (sec)	13
C5	21 Dec 2022	Sea State	Calm
C5	21 Dec 2022	High Tide (ft)	6.38
C5	21 Dec 2022	High Tide Time	1442
C5	21 Dec 2022	Low Tide (ft)	-1.08
C5	21 Dec 2022	Low Tide Time	2200
C5	21 Dec 2022	Comments	none
C5	27 Dec 2022	Depth (m)	12
C5	27 Dec 2022	Arrive Time	919
C5	27 Dec 2022	Depart Time	921
C5	27 Dec 2022	Air Temp (C)	13.6
C5	27 Dec 2022	Weather	Fog
C5	27 Dec 2022	Visibility (mi)	1
C5	27 Dec 2022	Wind Speed (kts)	5.7
C5	27 Dec 2022	Wind Dir	E
C5	27 Dec 2022	Water Color	Blue
C5	27 Dec 2022	Wave Ht Low (ft)	5.6
C5	27 Dec 2022	Wave Period (sec)	11
C5	27 Dec 2022	Sea State	Regular Swell
C5	27 Dec 2022	High Tide (ft)	5.52
C5	27 Dec 2022	High Tide Time	1930
C5	27 Dec 2022	Low Tide (ft)	-0.61
C5	27 Dec 2022	Low Tide Time	248
C5	27 Dec 2022	Comments	none
C6	01 Dec 2022	Depth (m)	9
C6	01 Dec 2022	Arrive Time	843
C6	01 Dec 2022	Depart Time	847
C6	01 Dec 2022	Air Temp (C)	14.6
C6	01 Dec 2022	Weather	Overcast
C6	01 Dec 2022	Visibility (mi)	11
C6	01 Dec 2022	Wind Speed (kts)	3.7
C6	01 Dec 2022	Wind Dir	SW
C6	01 Dec 2022	Water Color	Greenish-Blue
C6	01 Dec 2022	Wave Ht Low (ft)	3
C6	01 Dec 2022	Wave Period (sec)	15
C6	01 Dec 2022	Sea State	Light Chop
C6	01 Dec 2022	High Tide (ft)	4.58
C6	01 Dec 2022	High Tide Time	1230
C6	01 Dec 2022	Low Tide (ft)	0.43
C6	01 Dec 2022	Low Tide Time	624
C6	01 Dec 2022	Comments	none
C6	05 Dec 2022	Depth (m)	9
C6	05 Dec 2022	Arrive Time	935
C6	05 Dec 2022	Depart Time	940
C6	05 Dec 2022	Air Temp (C)	15.7
C6	05 Dec 2022	Weather	Partly Cloudy
C6	05 Dec 2022	Visibility (mi)	12
C6	05 Dec 2022	Wind Speed (kts)	1.9
C6	05 Dec 2022	Wind Dir	SW
C6	05 Dec 2022	Water Color	Greenish-Blue
C6	05 Dec 2022	Wave Ht Low (ft)	4
C6	05 Dec 2022	Wave Period (sec)	15
C6	05 Dec 2022	Sea State	Confused Swell
C6	05 Dec 2022	High Tide (ft)	5.97
C6	05 Dec 2022	High Tide Time	1448

Station	Date	Parameter	Value
C6	05 Dec 2022	Low Tide (ft)	-0.35
C6	05 Dec 2022	Low Tide Time	2154
C6	05 Dec 2022	Comments	none
C6	13 Dec 2022	Depth (m)	11
C6	13 Dec 2022	Arrive Time	1049
C6	13 Dec 2022	Depart Time	1052
C6	13 Dec 2022	Air Temp (C)	12.5
C6	13 Dec 2022	Weather	Overcast
C6	13 Dec 2022	Visibility (mi)	10
C6	13 Dec 2022	Wind Speed (kts)	6.7
C6	13 Dec 2022	Wind Dir	E
C6	13 Dec 2022	Water Color	Green
C6	13 Dec 2022	Wave Ht Low (ft)	5.2
C6	13 Dec 2022	Wave Period (sec)	11
C6	13 Dec 2022	Sea State	Regular Swell
C6	13 Dec 2022	High Tide (ft)	4.68
C6	13 Dec 2022	High Tide Time	1906
C6	13 Dec 2022	Low Tide (ft)	0.36
C6	13 Dec 2022	Low Tide Time	300
C6	13 Dec 2022	Comments	Kelp Debris
C6	21 Dec 2022	Depth (m)	1
C6	21 Dec 2022	Arrive Time	921
C6	21 Dec 2022	Depart Time	924
C6	21 Dec 2022	Air Temp (C)	14.2
C6	21 Dec 2022	Weather	Clear
C6	21 Dec 2022	Visibility (mi)	11
C6	21 Dec 2022	Wind Speed (kts)	3.1
C6	21 Dec 2022	Wind Dir	NW
C6	21 Dec 2022	Water Color	Greenish-Blue
C6	21 Dec 2022	Wave Ht Low (ft)	3
C6	21 Dec 2022	Wave Period (sec)	13
C6	21 Dec 2022	Sea State	Calm
C6	21 Dec 2022	High Tide (ft)	6.38
C6	21 Dec 2022	High Tide Time	1442
C6	21 Dec 2022	Low Tide (ft)	-1.08
C6	21 Dec 2022	Low Tide Time	2200
C6	21 Dec 2022	Comments	none
C6	27 Dec 2022	Depth (m)	9
C6	27 Dec 2022	Arrive Time	910
C6	27 Dec 2022	Depart Time	912
C6	27 Dec 2022	Air Temp (C)	13.8
C6	27 Dec 2022	Weather	Fog
C6	27 Dec 2022	Visibility (mi)	0
C6	27 Dec 2022	Wind Speed (kts)	0
C6	27 Dec 2022	Wind Dir	N
C6	27 Dec 2022	Water Color	Blue
C6	27 Dec 2022	Wave Ht Low (ft)	5.6
C6	27 Dec 2022	Wave Period (sec)	11
C6	27 Dec 2022	Sea State	Regular Swell
C6	27 Dec 2022	High Tide (ft)	5.52
C6	27 Dec 2022	High Tide Time	1930
C6	27 Dec 2022	Low Tide (ft)	-0.61
C6	27 Dec 2022	Low Tide Time	248
C6	27 Dec 2022	Comments	none
C7	01 Dec 2022	Depth (m)	18
C7	01 Dec 2022	Arrive Time	817
C7	01 Dec 2022	Depart Time	821

Station	Date	Parameter	Value
C7	01 Dec 2022	Air Temp (C)	14.7
C7	01 Dec 2022	Weather	Overcast
C7	01 Dec 2022	Visibility (mi)	11
C7	01 Dec 2022	Wind Speed (kts)	2.3
C7	01 Dec 2022	Wind Dir	SW
C7	01 Dec 2022	Water Color	Greenish-Blue
C7	01 Dec 2022	Wave Ht Low (ft)	3
C7	01 Dec 2022	Wave Period (sec)	15
C7	01 Dec 2022	Sea State	Light Chop
C7	01 Dec 2022	High Tide (ft)	4.58
C7	01 Dec 2022	High Tide Time	1230
C7	01 Dec 2022	Low Tide (ft)	0.43
C7	01 Dec 2022	Low Tide Time	624
C7	01 Dec 2022	Comments	none
C7	05 Dec 2022	Depth (m)	18
C7	05 Dec 2022	Arrive Time	906
C7	05 Dec 2022	Depart Time	912
C7	05 Dec 2022	Air Temp (C)	15.6
C7	05 Dec 2022	Weather	Partly Cloudy
C7	05 Dec 2022	Visibility (mi)	12
C7	05 Dec 2022	Wind Speed (kts)	9.7
C7	05 Dec 2022	Wind Dir	NW
C7	05 Dec 2022	Water Color	Greenish-Blue
C7	05 Dec 2022	Wave Ht Low (ft)	4
C7	05 Dec 2022	Wave Period (sec)	15
C7	05 Dec 2022	Sea State	Light Chop
C7	05 Dec 2022	High Tide (ft)	5.97
C7	05 Dec 2022	High Tide Time	1448
C7	05 Dec 2022	Low Tide (ft)	-0.35
C7	05 Dec 2022	Low Tide Time	2154
C7	05 Dec 2022	Comments	none
C7	13 Dec 2022	Depth (m)	18
C7	13 Dec 2022	Arrive Time	1017
C7	13 Dec 2022	Depart Time	1022
C7	13 Dec 2022	Air Temp (C)	12.2
C7	13 Dec 2022	Weather	Overcast
C7	13 Dec 2022	Visibility (mi)	10
C7	13 Dec 2022	Wind Speed (kts)	6.7
C7	13 Dec 2022	Wind Dir	SE
C7	13 Dec 2022	Water Color	Blueish-Green
C7	13 Dec 2022	Wave Ht Low (ft)	5.2
C7	13 Dec 2022	Wave Period (sec)	11
C7	13 Dec 2022	Sea State	Regular Swell
C7	13 Dec 2022	High Tide (ft)	4.68
C7	13 Dec 2022	High Tide Time	1906
C7	13 Dec 2022	Low Tide (ft)	0.36
C7	13 Dec 2022	Low Tide Time	300
C7	13 Dec 2022	Comments	Lobster Floats
C7	21 Dec 2022	Depth (m)	19
C7	21 Dec 2022	Arrive Time	843
C7	21 Dec 2022	Depart Time	850
C7	21 Dec 2022	Air Temp (C)	13.5
C7	21 Dec 2022	Weather	Clear
C7	21 Dec 2022	Visibility (mi)	11
C7	21 Dec 2022	Wind Speed (kts)	5.9
C7	21 Dec 2022	Wind Dir	NE
C7	21 Dec 2022	Water Color	Blue
C7	21 Dec 2022	Wave Ht Low (ft)	3

Station	Date	Parameter	Value
C7	21 Dec 2022	Wave Period (sec)	13
C7	21 Dec 2022	Sea State	Calm
C7	21 Dec 2022	High Tide (ft)	6.38
C7	21 Dec 2022	High Tide Time	1442
C7	21 Dec 2022	Low Tide (ft)	-1.08
C7	21 Dec 2022	Low Tide Time	2200
C7	21 Dec 2022	Comments	none
C7	27 Dec 2022	Depth (m)	17
C7	27 Dec 2022	Arrive Time	838
C7	27 Dec 2022	Depart Time	842
C7	27 Dec 2022	Air Temp (C)	13.4
C7	27 Dec 2022	Weather	Fog
C7	27 Dec 2022	Visibility (mi)	0
C7	27 Dec 2022	Wind Speed (kts)	7.9
C7	27 Dec 2022	Wind Dir	N
C7	27 Dec 2022	Water Color	Blue
C7	27 Dec 2022	Wave Ht Low (ft)	5.6
C7	27 Dec 2022	Wave Period (sec)	11
C7	27 Dec 2022	Sea State	Regular Swell
C7	27 Dec 2022	High Tide (ft)	5.52
C7	27 Dec 2022	High Tide Time	1930
C7	27 Dec 2022	Low Tide (ft)	-0.61
C7	27 Dec 2022	Low Tide Time	248
C7	27 Dec 2022	Comments	none
C8	01 Dec 2022	Depth (m)	19
C8	01 Dec 2022	Arrive Time	827
C8	01 Dec 2022	Depart Time	830
C8	01 Dec 2022	Air Temp (C)	14.3
C8	01 Dec 2022	Weather	Overcast
C8	01 Dec 2022	Visibility (mi)	11
C8	01 Dec 2022	Wind Speed (kts)	4.5
C8	01 Dec 2022	Wind Dir	NE
C8	01 Dec 2022	Water Color	Greenish-Blue
C8	01 Dec 2022	Wave Ht Low (ft)	3
C8	01 Dec 2022	Wave Period (sec)	15
C8	01 Dec 2022	Sea State	Light Chop
C8	01 Dec 2022	High Tide (ft)	4.58
C8	01 Dec 2022	High Tide Time	1230
C8	01 Dec 2022	Low Tide (ft)	0.43
C8	01 Dec 2022	Low Tide Time	624
C8	01 Dec 2022	Comments	none
C8	05 Dec 2022	Depth (m)	19
C8	05 Dec 2022	Arrive Time	917
C8	05 Dec 2022	Depart Time	923
C8	05 Dec 2022	Air Temp (C)	15.8
C8	05 Dec 2022	Weather	Partly Cloudy
C8	05 Dec 2022	Visibility (mi)	12
C8	05 Dec 2022	Wind Speed (kts)	8.5
C8	05 Dec 2022	Wind Dir	NW
C8	05 Dec 2022	Water Color	Greenish-Blue
C8	05 Dec 2022	Wave Ht Low (ft)	4
C8	05 Dec 2022	Wave Period (sec)	15
C8	05 Dec 2022	Sea State	Light Chop
C8	05 Dec 2022	High Tide (ft)	5.97
C8	05 Dec 2022	High Tide Time	1448
C8	05 Dec 2022	Low Tide (ft)	-0.35
C8	05 Dec 2022	Low Tide Time	2154
C8	05 Dec 2022	Comments	none

Station	Date	Parameter	Value
C8	13 Dec 2022	Depth (m)	19
C8	13 Dec 2022	Arrive Time	1029
C8	13 Dec 2022	Depart Time	1033
C8	13 Dec 2022	Air Temp (C)	12.4
C8	13 Dec 2022	Weather	Overcast
C8	13 Dec 2022	Visibility (mi)	10
C8	13 Dec 2022	Wind Speed (kts)	7.4
C8	13 Dec 2022	Wind Dir	E
C8	13 Dec 2022	Water Color	Greenish-Blue
C8	13 Dec 2022	Wave Ht Low (ft)	5.2
C8	13 Dec 2022	Wave Period (sec)	11
C8	13 Dec 2022	Sea State	Regular Swell
C8	13 Dec 2022	High Tide (ft)	4.68
C8	13 Dec 2022	High Tide Time	1906
C8	13 Dec 2022	Low Tide (ft)	0.36
C8	13 Dec 2022	Low Tide Time	300
C8	13 Dec 2022	Comments	none
C8	21 Dec 2022	Depth (m)	20
C8	21 Dec 2022	Arrive Time	901
C8	21 Dec 2022	Depart Time	904
C8	21 Dec 2022	Air Temp (C)	12.5
C8	21 Dec 2022	Weather	Clear
C8	21 Dec 2022	Visibility (mi)	11
C8	21 Dec 2022	Wind Speed (kts)	5.2
C8	21 Dec 2022	Wind Dir	NE
C8	21 Dec 2022	Water Color	Blue
C8	21 Dec 2022	Wave Ht Low (ft)	3
C8	21 Dec 2022	Wave Period (sec)	13
C8	21 Dec 2022	Sea State	Calm
C8	21 Dec 2022	High Tide (ft)	6.38
C8	21 Dec 2022	High Tide Time	1442
C8	21 Dec 2022	Low Tide (ft)	-1.08
C8	21 Dec 2022	Low Tide Time	2200
C8	21 Dec 2022	Comments	none
C8	27 Dec 2022	Depth (m)	20
C8	27 Dec 2022	Arrive Time	848
C8	27 Dec 2022	Depart Time	853
C8	27 Dec 2022	Air Temp (C)	13.3
C8	27 Dec 2022	Weather	Fog
C8	27 Dec 2022	Visibility (mi)	0
C8	27 Dec 2022	Wind Speed (kts)	12.5
C8	27 Dec 2022	Wind Dir	N
C8	27 Dec 2022	Water Color	Blue
C8	27 Dec 2022	Wave Ht Low (ft)	5.6
C8	27 Dec 2022	Wave Period (sec)	11
C8	27 Dec 2022	Sea State	Regular Swell
C8	27 Dec 2022	High Tide (ft)	5.52
C8	27 Dec 2022	High Tide Time	1930
C8	27 Dec 2022	Low Tide (ft)	-0.61
C8	27 Dec 2022	Low Tide Time	248
C8	27 Dec 2022	Comments	none

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 (σ -t)	Chlor (μ g/L)
A1	01 Dec 2022	1	15.35	85.75	7.5	33.49	8.1	24.7	2.12
A1	01 Dec 2022	2	15.35	85.75	7.5	33.49	8.1	24.7	2.13
A1	01 Dec 2022	3	15.35	85.79	7.4	33.49	8.1	24.7	2.12
A1	01 Dec 2022	4	15.30	85.35	7.4	33.49	8.1	24.7	2.46
A1	01 Dec 2022	5	15.29	84.82	7.5	33.49	8.1	24.7	2.66
A1	01 Dec 2022	6	15.26	84.79	7.4	33.49	8.1	24.8	2.69
A1	01 Dec 2022	7	15.23	84.22	7.4	33.49	8.1	24.8	2.85
A1	01 Dec 2022	8	15.23	83.97	7.4	33.49	8.1	24.8	2.84
A1	01 Dec 2022	9	15.20	84.05	7.4	33.49	8.1	24.8	2.76
A1	01 Dec 2022	10	15.17	83.79	7.4	33.49	8.1	24.8	2.85
A1	01 Dec 2022	11	15.17	83.71	7.4	33.49	8.1	24.8	2.68
A1	01 Dec 2022	12	15.15	83.70	7.4	33.49	8.1	24.8	2.53
A1	01 Dec 2022	13	15.14	84.16	7.4	33.49	8.1	24.8	2.17
A1	01 Dec 2022	14	15.14	84.60	7.4	33.49	8.1	24.8	1.89
A1	01 Dec 2022	15	15.11	84.91	7.4	33.49	8.1	24.8	1.70
A1	01 Dec 2022	16	15.07	85.29	7.3	33.49	8.1	24.8	1.52
A1	01 Dec 2022	17	14.72	85.79	6.9	33.47	8.1	24.9	1.28
A1	01 Dec 2022	18	13.95	86.59	6.6	33.46	8.0	25.0	1.07
A1	05 Dec 2022	1	15.37	88.58	7.5	33.46	8.0	24.7	1.12
A1	05 Dec 2022	2	15.36	88.18	7.5	33.46	8.0	24.7	1.13
A1	05 Dec 2022	3	15.36	88.83	7.5	33.46	8.0	24.7	1.16
A1	05 Dec 2022	4	15.33	88.81	7.4	33.46	8.0	24.7	1.19
A1	05 Dec 2022	5	15.25	88.52	7.4	33.46	8.0	24.7	1.28
A1	05 Dec 2022	6	15.20	88.73	7.3	33.46	8.0	24.7	1.26
A1	05 Dec 2022	7	15.17	88.83	7.2	33.46	8.0	24.7	1.28
A1	05 Dec 2022	8	14.90	88.85	7.0	33.46	8.0	24.8	1.33
A1	05 Dec 2022	9	14.58	88.81	6.8	33.45	8.0	24.9	1.03
A1	05 Dec 2022	10	14.48	88.91	6.7	33.44	8.0	24.9	0.88
A1	05 Dec 2022	11	14.32	89.19	6.6	33.43	8.0	24.9	0.81
A1	05 Dec 2022	12	14.21	89.43	6.5	33.43	8.0	24.9	0.80
A1	05 Dec 2022	13	14.20	89.62	6.5	33.42	8.0	24.9	0.80
A1	05 Dec 2022	14	14.09	89.46	6.3	33.43	8.0	25.0	0.81
A1	05 Dec 2022	15	13.99	89.42	6.3	33.43	7.9	25.0	0.82
A1	05 Dec 2022	16	13.84	89.02	6.1	33.42	7.9	25.0	0.75
A1	05 Dec 2022	17	13.59	88.11	5.9	33.42	7.9	25.1	0.71
A1	05 Dec 2022	18	13.56	87.13	5.9	33.42	7.9	25.1	0.64
A1	13 Dec 2022	1	14.26	65.85	7.0	33.43	8.0	24.9	1.25
A1	13 Dec 2022	2	14.26	66.23	7.0	33.43	8.0	24.9	1.40
A1	13 Dec 2022	3	14.26	65.49	7.0	33.43	8.0	24.9	1.52
A1	13 Dec 2022	4	14.26	65.40	7.0	33.43	8.0	24.9	1.59
A1	13 Dec 2022	5	14.26	64.72	7.0	33.43	8.0	24.9	1.60
A1	13 Dec 2022	6	14.27	65.19	7.0	33.43	8.0	24.9	1.64
A1	13 Dec 2022	7	14.27	64.82	6.9	33.43	8.0	24.9	1.62
A1	13 Dec 2022	8	14.27	64.29	6.9	33.43	8.0	24.9	1.57
A1	13 Dec 2022	9	14.27	64.94	7.0	33.43	8.0	24.9	1.63
A1	13 Dec 2022	10	14.27	65.55	7.0	33.43	8.0	24.9	2.11
A1	13 Dec 2022	11	14.26	64.72	6.8	33.43	8.0	24.9	2.01
A1	13 Dec 2022	12	14.26	63.03	6.6	33.43	8.0	24.9	1.56
A1	13 Dec 2022	13	14.26	59.37	6.3	33.43	8.0	24.9	1.54
A1	13 Dec 2022	14	14.26	60.79	6.5	33.43	8.0	24.9	1.46
A1	13 Dec 2022	15	14.26	62.93	6.8	33.44	8.0	24.9	1.41
A1	13 Dec 2022	16	14.24	62.75	6.7	33.44	8.0	24.9	1.28
A1	13 Dec 2022	17	14.24	61.54	6.7	33.44	8.0	24.9	1.17

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A1	13 Dec 2022	18	14.14	60.17	6.6	33.44	8.0	25.0	1.08
A1	21 Dec 2022	1	14.18	88.54	7.2	33.43	8.0	24.9	0.96
A1	21 Dec 2022	2	14.18	89.95	7.2	33.43	8.0	24.9	0.97
A1	21 Dec 2022	3	14.18	89.61	7.1	33.43	8.0	24.9	0.96
A1	21 Dec 2022	4	14.18	89.86	7.1	33.43	8.0	24.9	1.02
A1	21 Dec 2022	5	14.18	90.14	7.2	33.43	8.0	24.9	1.05
A1	21 Dec 2022	6	14.17	90.09	7.1	33.43	8.0	24.9	1.05
A1	21 Dec 2022	7	14.11	89.98	6.9	33.43	8.0	24.9	1.03
A1	21 Dec 2022	8	13.94	89.99	6.6	33.43	8.0	25.0	0.82
A1	21 Dec 2022	9	13.97	90.17	6.5	33.42	8.0	25.0	0.74
A1	21 Dec 2022	10	13.75	89.91	6.3	33.44	8.0	25.0	0.74
A1	21 Dec 2022	11	13.73	89.64	6.2	33.43	8.0	25.0	0.80
A1	21 Dec 2022	12	13.69	89.70	6.2	33.43	8.0	25.0	0.72
A1	21 Dec 2022	13	13.66	89.68	6.1	33.43	8.0	25.0	0.67
A1	21 Dec 2022	14	13.62	89.78	6.1	33.42	8.0	25.0	0.66
A1	21 Dec 2022	15	13.53	89.82	6.0	33.42	8.0	25.1	0.67
A1	21 Dec 2022	16	13.37	88.56	5.9	33.43	7.9	25.1	0.67
A1	21 Dec 2022	17	13.30	85.73	5.8	33.43	7.9	25.1	0.69
A1	21 Dec 2022	18	13.21	85.38	5.7	33.43	7.9	25.1	0.68
A1	21 Dec 2022	19	13.07	85.52	5.6	33.44	7.9	25.2	0.66
A1	27 Dec 2022	1	14.97	90.89	7.8	33.45	8.1	24.8	1.15
A1	27 Dec 2022	2	14.96	90.77	7.8	33.45	8.1	24.8	1.13
A1	27 Dec 2022	3	14.96	90.75	7.8	33.45	8.1	24.8	1.17
A1	27 Dec 2022	4	14.96	90.86	7.8	33.45	8.1	24.8	1.16
A1	27 Dec 2022	5	14.96	90.82	7.8	33.45	8.1	24.8	1.25
A1	27 Dec 2022	6	14.96	90.80	7.8	33.45	8.1	24.8	1.21
A1	27 Dec 2022	7	14.96	90.82	7.7	33.45	8.1	24.8	1.23
A1	27 Dec 2022	8	14.95	90.84	7.7	33.45	8.1	24.8	1.20
A1	27 Dec 2022	9	14.94	90.79	7.7	33.44	8.1	24.8	1.17
A1	27 Dec 2022	10	14.90	90.72	7.6	33.44	8.1	24.8	1.16
A1	27 Dec 2022	11	14.86	90.53	7.6	33.44	8.1	24.8	1.20
A1	27 Dec 2022	12	14.84	90.45	7.6	33.44	8.1	24.8	1.23
A1	27 Dec 2022	13	14.80	90.25	7.5	33.44	8.1	24.8	1.14
A1	27 Dec 2022	14	14.74	90.08	7.5	33.43	8.1	24.8	1.12
A1	27 Dec 2022	15	14.65	89.84	7.4	33.43	8.1	24.8	1.11
A1	27 Dec 2022	16	14.59	89.46	7.3	33.42	8.1	24.8	1.09
A1	27 Dec 2022	17	14.42	88.51	7.2	33.42	8.1	24.9	1.01
A1	27 Dec 2022	18	14.23	84.96	7.1	33.41	8.1	24.9	0.86
A6	01 Dec 2022	1	15.23	86.26	6.3	33.46	8.1	24.7	1.73
A6	01 Dec 2022	2	15.23	86.26	6.8	33.47	8.1	24.7	2.25
A6	01 Dec 2022	3	15.23	86.29	7.0	33.47	8.1	24.7	2.17
A6	01 Dec 2022	4	15.23	86.30	7.1	33.47	8.1	24.7	2.35
A6	01 Dec 2022	5	15.20	86.23	7.1	33.48	8.1	24.8	2.29
A6	01 Dec 2022	6	15.14	86.21	7.1	33.48	8.1	24.8	2.24
A6	01 Dec 2022	7	15.14	86.09	7.1	33.48	8.1	24.8	2.22
A6	01 Dec 2022	8	15.14	86.05	7.0	33.48	8.1	24.8	2.00
A6	01 Dec 2022	9	15.13	86.01	7.1	33.48	8.1	24.8	1.89
A6	01 Dec 2022	10	15.13	86.08	7.1	33.48	8.1	24.8	1.87
A6	01 Dec 2022	11	15.14	86.03	7.1	33.48	8.1	24.8	1.77
A6	01 Dec 2022	12	15.13	85.92	7.1	33.48	8.1	24.8	1.82
A6	01 Dec 2022	13	15.12	86.02	7.0	33.48	8.1	24.8	1.76
A6	01 Dec 2022	14	15.11	86.27	7.0	33.48	8.1	24.8	1.68
A6	01 Dec 2022	15	15.09	86.74	7.0	33.48	8.1	24.8	1.62
A6	01 Dec 2022	16	15.08	87.52	7.0	33.48	8.1	24.8	1.49
A6	01 Dec 2022	17	15.03	88.00	6.9	33.47	8.1	24.8	1.34
A6	01 Dec 2022	18	15.01	88.52	6.8	33.47	8.1	24.8	1.20
A6	01 Dec 2022	19	15.05	88.70	6.8	33.47	8.0	24.8	1.04

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
A6	05 Dec 2022	1	15.52	86.69	7.8	33.47	8.1	24.7	1.40
A6	05 Dec 2022	2	15.50	86.45	7.8	33.47	8.1	24.7	1.47
A6	05 Dec 2022	3	15.48	86.06	7.8	33.47	8.1	24.7	1.60
A6	05 Dec 2022	4	15.46	86.21	7.8	33.46	8.1	24.7	1.78
A6	05 Dec 2022	5	15.44	86.37	7.8	33.46	8.1	24.7	1.92
A6	05 Dec 2022	6	15.42	86.50	7.7	33.46	8.1	24.7	1.99
A6	05 Dec 2022	7	15.40	86.77	7.6	33.46	8.1	24.7	1.96
A6	05 Dec 2022	8	15.39	86.96	7.6	33.46	8.1	24.7	2.01
A6	05 Dec 2022	9	15.38	87.16	7.6	33.46	8.1	24.7	1.95
A6	05 Dec 2022	10	15.38	87.29	7.6	33.46	8.1	24.7	1.89
A6	05 Dec 2022	11	15.36	87.34	7.6	33.46	8.1	24.7	1.88
A6	05 Dec 2022	12	15.28	87.63	7.5	33.46	8.1	24.7	1.85
A6	05 Dec 2022	13	15.25	88.27	7.4	33.46	8.1	24.7	1.66
A6	05 Dec 2022	14	15.16	88.37	7.3	33.46	8.1	24.7	1.58
A6	05 Dec 2022	15	15.12	88.82	7.2	33.45	8.0	24.8	1.41
A6	05 Dec 2022	16	15.09	88.92	7.1	33.45	8.0	24.8	1.31
A6	05 Dec 2022	17	15.02	89.11	7.0	33.45	8.0	24.8	1.25
A6	05 Dec 2022	18	14.90	89.42	6.8	33.44	8.0	24.8	1.15
A6	05 Dec 2022	19	14.26	89.67	6.5	33.43	8.0	24.9	1.00
A6	05 Dec 2022	20	14.13	89.46	6.3	33.42	8.0	24.9	0.84
A6	13 Dec 2022	1	14.22	83.05	7.0	33.43	8.0	24.9	1.07
A6	13 Dec 2022	2	14.22	83.23	7.1	33.43	8.0	24.9	1.05
A6	13 Dec 2022	3	14.24	83.31	7.1	33.43	8.0	24.9	1.07
A6	13 Dec 2022	4	14.25	84.60	7.1	33.43	8.0	24.9	1.22
A6	13 Dec 2022	5	14.24	85.24	7.1	33.43	8.0	24.9	1.34
A6	13 Dec 2022	6	14.25	85.66	7.1	33.43	8.0	24.9	1.43
A6	13 Dec 2022	7	14.26	85.84	7.1	33.43	8.0	24.9	1.52
A6	13 Dec 2022	8	14.25	85.84	7.1	33.43	8.0	24.9	1.58
A6	13 Dec 2022	9	14.25	85.87	7.2	33.43	8.0	24.9	1.77
A6	13 Dec 2022	10	14.25	85.81	7.2	33.43	8.0	24.9	1.71
A6	13 Dec 2022	11	14.24	85.66	7.1	33.43	8.0	24.9	1.69
A6	13 Dec 2022	12	14.24	85.60	7.2	33.43	8.0	24.9	1.71
A6	13 Dec 2022	13	14.24	85.71	7.2	33.43	8.0	24.9	1.74
A6	13 Dec 2022	14	14.22	85.44	7.1	33.43	8.0	24.9	1.78
A6	13 Dec 2022	15	14.17	84.73	7.0	33.43	8.0	24.9	1.72
A6	13 Dec 2022	16	14.17	84.51	7.0	33.43	8.0	24.9	1.66
A6	13 Dec 2022	17	14.17	84.43	7.0	33.43	8.0	24.9	1.62
A6	13 Dec 2022	18	14.17	84.46	7.0	33.43	8.0	24.9	1.54
A6	13 Dec 2022	19	14.10	84.64	6.9	33.43	8.0	25.0	1.48
A6	21 Dec 2022	1	14.32	90.22	7.2	33.43	8.1	24.9	1.07
A6	21 Dec 2022	2	14.23	87.79	7.1	33.43	8.1	24.9	1.04
A6	21 Dec 2022	3	14.19	80.40	7.1	33.43	8.1	24.9	1.02
A6	21 Dec 2022	4	14.14	89.28	7.0	33.43	8.0	24.9	1.00
A6	21 Dec 2022	5	14.13	90.39	7.0	33.43	8.0	24.9	1.01
A6	21 Dec 2022	6	14.11	90.44	7.0	33.43	8.0	24.9	1.02
A6	21 Dec 2022	7	14.10	90.48	7.0	33.43	8.0	25.0	0.99
A6	21 Dec 2022	8	14.09	90.60	6.9	33.43	8.0	25.0	1.00
A6	21 Dec 2022	9	13.96	90.65	6.7	33.43	8.0	25.0	1.00
A6	21 Dec 2022	10	13.81	90.55	6.6	33.43	8.0	25.0	0.94
A6	21 Dec 2022	11	13.70	90.28	6.4	33.43	8.0	25.0	0.88
A6	21 Dec 2022	12	13.59	89.87	6.3	33.43	8.0	25.1	0.87
A6	21 Dec 2022	13	13.38	89.60	6.1	33.44	8.0	25.1	0.81
A6	21 Dec 2022	14	13.34	89.44	6.0	33.43	8.0	25.1	0.75
A6	21 Dec 2022	15	13.31	89.39	5.9	33.43	8.0	25.1	0.74
A6	21 Dec 2022	16	13.31	89.34	6.0	33.44	8.0	25.1	0.74
A6	21 Dec 2022	17	13.30	89.36	6.0	33.43	8.0	25.1	0.74
A6	21 Dec 2022	18	13.24	89.32	5.9	33.43	8.0	25.1	0.76
A6	21 Dec 2022	19	13.17	89.28	5.8	33.44	8.0	25.1	0.74

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
A6	27 Dec 2022	1	14.99	89.70	7.9	33.45	8.1	24.8	1.42
A6	27 Dec 2022	2	14.99	89.72	7.9	33.45	8.1	24.8	1.38
A6	27 Dec 2022	3	14.99	89.67	7.9	33.45	8.1	24.8	1.49
A6	27 Dec 2022	4	14.99	89.64	7.9	33.45	8.1	24.8	1.53
A6	27 Dec 2022	5	14.98	89.74	7.9	33.45	8.1	24.8	1.50
A6	27 Dec 2022	6	14.97	89.75	7.9	33.45	8.1	24.8	1.50
A6	27 Dec 2022	7	14.96	89.83	7.8	33.45	8.1	24.8	1.46
A6	27 Dec 2022	8	14.95	89.78	7.8	33.45	8.1	24.8	1.47
A6	27 Dec 2022	9	14.95	89.88	7.8	33.45	8.1	24.8	1.46
A6	27 Dec 2022	10	14.95	89.99	7.8	33.45	8.1	24.8	1.43
A6	27 Dec 2022	11	14.94	89.96	7.7	33.45	8.1	24.8	1.50
A6	27 Dec 2022	12	14.90	89.90	7.7	33.45	8.1	24.8	1.41
A6	27 Dec 2022	13	14.88	89.66	7.7	33.45	8.1	24.8	1.34
A6	27 Dec 2022	14	14.88	89.42	7.7	33.45	8.1	24.8	1.28
A6	27 Dec 2022	15	14.87	89.36	7.6	33.45	8.1	24.8	1.26
A6	27 Dec 2022	16	14.85	89.35	7.6	33.45	8.1	24.8	1.24
A6	27 Dec 2022	17	14.83	89.29	7.7	33.45	8.1	24.8	1.21
A6	27 Dec 2022	18	14.81	89.23	7.7	33.44	8.1	24.8	1.18
A6	27 Dec 2022	19	14.79	89.14	7.7	33.44	8.1	24.8	1.19
A7	01 Dec 2022	1	15.20	85.63	7.2	33.48	8.1	24.8	2.10
A7	01 Dec 2022	2	15.21	85.66	7.2	33.48	8.1	24.8	2.17
A7	01 Dec 2022	3	15.21	85.54	7.2	33.48	8.1	24.8	2.19
A7	01 Dec 2022	4	15.21	85.60	7.2	33.48	8.1	24.8	2.21
A7	01 Dec 2022	5	15.21	85.60	7.2	33.48	8.1	24.8	2.30
A7	01 Dec 2022	6	15.21	85.42	7.2	33.48	8.1	24.8	2.34
A7	01 Dec 2022	7	15.21	85.47	7.2	33.48	8.1	24.8	2.27
A7	01 Dec 2022	8	15.21	85.58	7.2	33.48	8.1	24.8	2.27
A7	01 Dec 2022	9	15.18	85.49	7.2	33.48	8.1	24.8	2.27
A7	01 Dec 2022	10	15.19	85.17	7.3	33.48	8.1	24.8	2.22
A7	01 Dec 2022	11	15.19	84.65	7.4	33.48	8.1	24.8	2.22
A7	01 Dec 2022	12	15.19	84.65	7.4	33.48	8.1	24.8	2.09
A7	01 Dec 2022	13	15.17	84.70	7.3	33.48	8.1	24.8	2.01
A7	01 Dec 2022	14	15.15	84.99	7.2	33.48	8.1	24.8	1.97
A7	01 Dec 2022	15	15.13	85.07	7.2	33.48	8.1	24.8	1.95
A7	01 Dec 2022	16	15.08	85.23	7.0	33.47	8.1	24.8	1.81
A7	01 Dec 2022	17	14.99	85.50	6.9	33.47	8.1	24.8	1.69
A7	01 Dec 2022	18	14.81	86.36	6.7	33.46	8.0	24.8	1.51
A7	01 Dec 2022	19	14.72	87.02	6.6	33.46	8.0	24.8	1.27
A7	05 Dec 2022	1	15.66	86.77	7.9	33.46	8.1	24.6	1.16
A7	05 Dec 2022	2	15.66	87.87	7.8	33.46	8.1	24.6	1.21
A7	05 Dec 2022	3	15.65	87.82	7.8	33.46	8.1	24.6	1.25
A7	05 Dec 2022	4	15.58	87.90	7.8	33.46	8.1	24.7	1.40
A7	05 Dec 2022	5	15.57	87.88	7.8	33.46	8.1	24.7	1.45
A7	05 Dec 2022	6	15.57	87.97	7.8	33.46	8.1	24.7	1.52
A7	05 Dec 2022	7	15.53	87.99	7.7	33.46	8.1	24.7	1.60
A7	05 Dec 2022	8	15.51	87.95	7.7	33.46	8.1	24.7	1.67
A7	05 Dec 2022	9	15.47	87.94	7.6	33.46	8.1	24.7	1.66
A7	05 Dec 2022	10	15.47	88.03	7.6	33.46	8.1	24.7	1.71
A7	05 Dec 2022	11	15.40	88.10	7.5	33.46	8.1	24.7	1.66
A7	05 Dec 2022	12	15.36	88.20	7.5	33.46	8.1	24.7	1.60
A7	05 Dec 2022	13	15.34	88.38	7.5	33.46	8.1	24.7	1.55
A7	05 Dec 2022	14	15.32	88.47	7.4	33.45	8.1	24.7	1.48
A7	05 Dec 2022	15	15.19	88.67	7.3	33.45	8.1	24.7	1.39
A7	05 Dec 2022	16	15.00	89.21	7.1	33.45	8.0	24.8	1.18
A7	05 Dec 2022	17	14.95	89.45	7.0	33.45	8.0	24.8	1.03
A7	05 Dec 2022	18	14.75	89.45	6.8	33.44	8.0	24.8	0.90
A7	05 Dec 2022	19	14.70	88.27	6.8	33.45	8.0	24.8	0.74
A7	13 Dec 2022	1	14.28	81.76	6.9	33.43	8.0	24.9	1.11

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
A7	13 Dec 2022	2	14.28	81.91	6.9	33.43	8.0	24.9	1.13
A7	13 Dec 2022	3	14.26	82.37	6.9	33.43	8.0	24.9	1.22
A7	13 Dec 2022	4	14.25	83.40	6.9	33.43	8.0	24.9	1.36
A7	13 Dec 2022	5	14.25	83.77	6.9	33.43	8.0	24.9	1.42
A7	13 Dec 2022	6	14.24	83.87	6.9	33.43	8.0	24.9	1.57
A7	13 Dec 2022	7	14.23	84.71	7.0	33.43	8.0	24.9	1.72
A7	13 Dec 2022	8	14.18	85.12	7.0	33.43	8.0	24.9	1.70
A7	13 Dec 2022	9	14.15	85.70	7.0	33.43	8.0	24.9	1.57
A7	13 Dec 2022	10	14.13	86.09	7.0	33.43	8.0	24.9	1.51
A7	13 Dec 2022	11	14.11	86.23	7.0	33.42	8.0	24.9	1.47
A7	13 Dec 2022	12	14.10	86.08	7.0	33.42	8.0	24.9	1.52
A7	13 Dec 2022	13	14.07	86.27	6.9	33.42	8.0	25.0	1.50
A7	13 Dec 2022	14	14.01	86.36	6.9	33.42	8.0	25.0	1.38
A7	13 Dec 2022	15	13.99	86.65	6.8	33.42	8.0	25.0	1.33
A7	13 Dec 2022	16	13.96	87.02	6.8	33.42	8.0	25.0	1.28
A7	13 Dec 2022	17	13.95	86.96	6.8	33.42	8.0	25.0	1.25
A7	13 Dec 2022	18	13.85	86.54	6.7	33.43	8.0	25.0	1.13
A7	13 Dec 2022	19	13.82	84.58	6.6	33.43	8.0	25.0	0.96
A7	21 Dec 2022	1	14.30	89.47	7.4	33.44	8.0	24.9	1.01
A7	21 Dec 2022	2	14.30	89.49	7.3	33.44	8.0	24.9	1.01
A7	21 Dec 2022	3	14.24	89.44	7.2	33.44	8.0	24.9	1.10
A7	21 Dec 2022	4	14.19	89.46	7.0	33.43	8.0	24.9	1.07
A7	21 Dec 2022	5	14.13	90.40	6.9	33.43	8.0	24.9	0.97
A7	21 Dec 2022	6	14.11	90.82	6.9	33.43	8.0	25.0	0.92
A7	21 Dec 2022	7	14.06	90.78	6.8	33.43	8.0	25.0	0.92
A7	21 Dec 2022	8	13.90	90.32	6.6	33.43	8.0	25.0	0.86
A7	21 Dec 2022	9	13.83	90.14	6.5	33.43	8.0	25.0	0.82
A7	21 Dec 2022	10	13.62	90.17	6.3	33.44	8.0	25.1	0.78
A7	21 Dec 2022	11	13.54	90.02	6.2	33.43	8.0	25.1	0.75
A7	21 Dec 2022	12	13.43	90.01	6.1	33.43	8.0	25.1	0.74
A7	21 Dec 2022	13	13.31	90.25	5.9	33.43	8.0	25.1	0.73
A7	21 Dec 2022	14	13.27	90.40	5.9	33.43	8.0	25.1	0.74
A7	21 Dec 2022	15	13.24	90.35	5.8	33.43	8.0	25.1	0.72
A7	21 Dec 2022	16	13.20	90.11	5.8	33.43	8.0	25.1	0.72
A7	21 Dec 2022	17	13.18	89.80	5.7	33.43	8.0	25.1	0.70
A7	21 Dec 2022	18	13.15	89.69	5.7	33.43	8.0	25.1	0.72
A7	21 Dec 2022	19	13.00	89.38	5.6	33.44	7.9	25.2	0.70
A7	21 Dec 2022	20	12.99	88.80	5.5	33.44	7.9	25.2	0.68
A7	27 Dec 2022	1	15.08	90.50	7.8	33.45	8.1	24.8	1.22
A7	27 Dec 2022	2	15.07	90.51	7.8	33.45	8.1	24.8	1.28
A7	27 Dec 2022	3	15.07	90.55	7.8	33.45	8.1	24.8	1.41
A7	27 Dec 2022	4	15.06	90.61	7.8	33.45	8.1	24.8	1.27
A7	27 Dec 2022	5	15.06	90.52	7.8	33.45	8.1	24.8	1.31
A7	27 Dec 2022	6	15.06	90.66	7.8	33.45	8.1	24.8	1.26
A7	27 Dec 2022	7	15.05	90.66	7.7	33.45	8.1	24.8	1.37
A7	27 Dec 2022	8	15.04	90.63	7.8	33.45	8.1	24.8	1.37
A7	27 Dec 2022	9	15.03	90.60	7.8	33.45	8.1	24.8	1.27
A7	27 Dec 2022	10	15.02	90.57	7.8	33.45	8.1	24.8	1.30
A7	27 Dec 2022	11	15.01	90.51	7.8	33.45	8.1	24.8	1.40
A7	27 Dec 2022	12	14.99	90.66	7.8	33.45	8.1	24.8	1.38
A7	27 Dec 2022	13	14.98	90.68	7.7	33.45	8.1	24.8	1.30
A7	27 Dec 2022	14	14.93	90.63	7.6	33.45	8.1	24.8	1.35
A7	27 Dec 2022	15	14.85	90.40	7.5	33.44	8.1	24.8	1.26
A7	27 Dec 2022	16	14.68	90.04	7.4	33.44	8.1	24.8	1.16
A7	27 Dec 2022	17	14.69	88.57	7.3	33.44	8.1	24.8	1.10
A7	27 Dec 2022	18	14.51	87.95	7.2	33.43	8.1	24.9	1.02
A7	27 Dec 2022	19	14.31	86.28	7.1	33.42	8.1	24.9	0.85
C4	01 Dec 2022	1	15.14	84.83	5.5	33.47	8.1	24.8	1.94

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C4	01 Dec 2022	2	15.15	82.30	6.3	33.48	8.1	24.8	2.03
C4	01 Dec 2022	3	15.15	84.25	6.6	33.49	8.1	24.8	1.87
C4	01 Dec 2022	4	15.14	84.59	6.8	33.49	8.1	24.8	1.99
C4	01 Dec 2022	5	15.11	85.21	7.1	33.51	8.1	24.8	1.92
C4	01 Dec 2022	6	15.09	86.18	7.1	33.50	8.1	24.8	1.47
C4	01 Dec 2022	7	15.08	86.58	7.0	33.49	8.1	24.8	1.18
C4	01 Dec 2022	8	15.08	86.58	7.1	33.50	8.1	24.8	1.08
C4	01 Dec 2022	9	15.08	86.63	7.0	33.50	8.1	24.8	0.97
C4	01 Dec 2022	10	15.08	86.42	7.0	33.50	8.1	24.8	0.92
C4	05 Dec 2022	1	15.73	72.14	7.1	33.50	8.0	24.7	0.87
C4	05 Dec 2022	2	15.70	72.07	7.1	33.50	8.0	24.7	0.93
C4	05 Dec 2022	3	15.58	73.37	7.1	33.49	8.0	24.7	1.16
C4	05 Dec 2022	4	15.54	75.10	7.1	33.48	8.0	24.7	1.23
C4	05 Dec 2022	5	15.47	78.08	7.2	33.47	8.0	24.7	1.26
C4	05 Dec 2022	6	15.44	80.11	7.2	33.47	8.0	24.7	1.30
C4	05 Dec 2022	7	15.40	82.50	7.2	33.47	8.0	24.7	1.24
C4	05 Dec 2022	8	15.37	83.38	7.1	33.47	8.0	24.7	1.14
C4	05 Dec 2022	9	15.22	84.38	6.9	33.47	8.0	24.7	1.01
C4	05 Dec 2022	10	15.10	85.45	6.5	33.46	8.0	24.8	0.85
C4	05 Dec 2022	11	14.90	83.84	6.0	33.47	8.0	24.8	0.67
C4	13 Dec 2022	1	14.27	67.70	6.5	33.40	8.0	24.9	1.48
C4	13 Dec 2022	2	14.28	67.59	6.9	33.41	8.0	24.9	1.56
C4	13 Dec 2022	3	14.25	67.13	7.1	33.43	8.0	24.9	1.62
C4	13 Dec 2022	4	14.18	67.53	7.2	33.43	8.0	24.9	1.48
C4	13 Dec 2022	5	14.17	68.89	7.2	33.42	8.0	24.9	1.53
C4	13 Dec 2022	6	14.16	69.44	7.2	33.42	8.0	24.9	1.64
C4	13 Dec 2022	7	14.15	68.87	7.1	33.42	8.0	24.9	1.74
C4	13 Dec 2022	8	14.17	67.80	7.0	33.42	8.0	24.9	1.88
C4	13 Dec 2022	9	14.18	58.72	7.0	33.42	8.0	24.9	1.75
C4	13 Dec 2022	10	14.18	50.12	7.0	33.42	8.0	24.9	1.59
C4	13 Dec 2022	11	14.20	36.68	6.9	33.42	8.0	24.9	1.46
C4	21 Dec 2022	1	14.26	88.35	7.2	33.44	8.1	24.9	0.83
C4	21 Dec 2022	2	14.26	88.33	7.2	33.44	8.1	24.9	0.80
C4	21 Dec 2022	3	14.20	88.18	7.0	33.44	8.1	24.9	0.80
C4	21 Dec 2022	4	14.19	87.96	6.9	33.44	8.1	24.9	0.83
C4	21 Dec 2022	5	14.19	87.47	6.9	33.44	8.0	24.9	0.86
C4	21 Dec 2022	6	14.18	87.30	6.9	33.44	8.0	24.9	0.92
C4	21 Dec 2022	7	14.17	87.02	6.8	33.44	8.0	24.9	0.98
C4	21 Dec 2022	8	14.16	85.35	6.7	33.44	8.0	24.9	0.97
C4	21 Dec 2022	9	14.13	83.70	6.6	33.43	8.0	24.9	0.93
C4	21 Dec 2022	10	14.11	81.76	6.5	33.43	8.0	25.0	0.87
C4	21 Dec 2022	11	14.10	79.16	6.5	33.43	8.0	25.0	0.85
C4	27 Dec 2022	1	14.82	88.40	7.6	33.45	8.1	24.8	1.03
C4	27 Dec 2022	2	14.82	88.40	7.6	33.45	8.1	24.8	1.10
C4	27 Dec 2022	3	14.80	88.00	7.6	33.45	8.1	24.8	1.19
C4	27 Dec 2022	4	14.77	88.23	7.5	33.45	8.1	24.8	1.16
C4	27 Dec 2022	5	14.71	88.40	7.4	33.44	8.1	24.8	1.21
C4	27 Dec 2022	6	14.57	88.37	7.3	33.43	8.1	24.9	1.23
C4	27 Dec 2022	7	14.39	88.05	7.1	33.43	8.1	24.9	1.09
C4	27 Dec 2022	8	14.27	87.40	6.8	33.42	8.1	24.9	1.02
C4	27 Dec 2022	9	14.13	85.13	6.5	33.42	8.1	24.9	0.80
C4	27 Dec 2022	10	14.10	71.90	6.3	33.42	8.1	24.9	0.69
C4	27 Dec 2022	11	14.10	57.26	6.3	33.41	8.0	24.9	0.63
C4	27 Dec 2022	12	14.09	54.53	6.2	33.41	8.0	24.9	0.62
C5	01 Dec 2022	1	15.25	81.66	7.1	33.49	8.1	24.8	1.66
C5	01 Dec 2022	2	15.24	80.74	7.1	33.49	8.1	24.8	1.71

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C5	01 Dec 2022	3	15.23	80.28	7.1	33.49	8.1	24.8	1.71
C5	01 Dec 2022	4	15.18	78.80	7.0	33.49	8.1	24.8	1.61
C5	01 Dec 2022	5	15.15	74.21	6.9	33.50	8.1	24.8	1.44
C5	01 Dec 2022	6	15.14	71.75	6.9	33.50	8.0	24.8	1.34
C5	01 Dec 2022	7	15.14	72.36	6.8	33.50	8.0	24.8	1.31
C5	01 Dec 2022	8	15.12	70.74	6.8	33.50	8.0	24.8	1.23
C5	01 Dec 2022	9	15.13	62.51	6.8	33.50	8.0	24.8	1.22
C5	01 Dec 2022	10	15.13	47.46	6.7	33.50	8.0	24.8	1.35
C5	05 Dec 2022	1	15.57	80.69	5.7	33.40	8.0	24.6	0.89
C5	05 Dec 2022	2	15.56	80.70	6.0	33.44	8.0	24.6	0.86
C5	05 Dec 2022	3	15.53	80.87	6.9	33.47	8.1	24.7	0.81
C5	05 Dec 2022	4	15.41	82.06	7.1	33.49	8.1	24.7	0.82
C5	05 Dec 2022	5	15.26	82.75	7.1	33.50	8.0	24.8	0.98
C5	05 Dec 2022	6	15.05	77.69	6.8	33.49	8.0	24.8	1.05
C5	05 Dec 2022	7	14.92	73.82	6.6	33.47	8.0	24.8	1.08
C5	05 Dec 2022	8	14.88	69.51	6.4	33.46	8.0	24.8	0.90
C5	05 Dec 2022	9	14.79	65.57	6.3	33.46	8.0	24.8	0.89
C5	05 Dec 2022	10	14.71	64.39	6.3	33.47	8.0	24.9	0.82
C5	05 Dec 2022	11	14.66	55.38	6.2	33.46	8.0	24.9	0.81
C5	13 Dec 2022	1	14.31	24.52	7.4	33.41	8.0	24.9	0.85
C5	13 Dec 2022	2	14.31	23.88	7.5	33.41	8.0	24.9	0.88
C5	13 Dec 2022	3	14.30	22.83	7.3	33.42	8.0	24.9	0.92
C5	13 Dec 2022	4	14.27	21.57	7.0	33.43	8.0	24.9	0.88
C5	13 Dec 2022	5	14.25	20.41	7.0	33.44	8.0	24.9	0.87
C5	13 Dec 2022	6	14.24	19.14	7.3	33.42	8.0	24.9	0.89
C5	13 Dec 2022	7	14.23	17.26	7.4	33.42	8.0	24.9	0.91
C5	13 Dec 2022	8	14.23	15.99	7.4	33.42	8.0	24.9	0.90
C5	13 Dec 2022	9	14.23	14.52	7.3	33.42	8.0	24.9	0.97
C5	13 Dec 2022	10	14.23	10.36	7.1	33.42	8.0	24.9	0.98
C5	13 Dec 2022	11	14.22	3.36	6.8	33.42	8.0	24.9	1.02
C5	21 Dec 2022	1	14.42	85.91	7.6	33.45	8.1	24.9	0.70
C5	21 Dec 2022	2	14.42	85.77	7.6	33.45	8.1	24.9	0.69
C5	21 Dec 2022	3	14.40	87.18	7.6	33.45	8.1	24.9	0.72
C5	21 Dec 2022	4	14.38	87.11	7.6	33.45	8.1	24.9	0.79
C5	21 Dec 2022	5	14.38	86.96	7.6	33.45	8.1	24.9	0.88
C5	21 Dec 2022	6	14.37	86.58	7.7	33.45	8.1	24.9	1.03
C5	21 Dec 2022	7	14.36	85.95	7.7	33.45	8.1	24.9	0.99
C5	21 Dec 2022	8	14.34	85.66	7.6	33.45	8.1	24.9	1.01
C5	21 Dec 2022	9	14.29	84.23	7.2	33.44	8.1	24.9	0.94
C5	21 Dec 2022	10	14.20	71.57	6.8	33.44	8.1	24.9	0.95
C5	27 Dec 2022	1	14.90	80.62	7.4	33.46	8.1	24.8	0.98
C5	27 Dec 2022	2	14.89	80.05	7.4	33.47	8.1	24.8	1.05
C5	27 Dec 2022	3	14.88	79.70	7.4	33.47	8.1	24.8	1.10
C5	27 Dec 2022	4	14.88	77.85	7.4	33.47	8.1	24.8	1.16
C5	27 Dec 2022	5	14.83	77.61	7.2	33.46	8.1	24.8	1.12
C5	27 Dec 2022	6	14.72	75.10	7.0	33.46	8.1	24.8	0.99
C5	27 Dec 2022	7	14.66	66.02	6.9	33.45	8.1	24.9	0.82
C5	27 Dec 2022	8	14.65	54.85	6.8	33.45	8.1	24.9	0.76
C5	27 Dec 2022	9	14.64	40.60	6.8	33.45	8.0	24.9	0.79
C5	27 Dec 2022	10	14.63	32.14	6.7	33.45	8.0	24.9	0.88
C5	27 Dec 2022	11	14.54	16.00	6.5	33.44	8.0	24.9	1.19
C6	01 Dec 2022	1	15.23	85.27	7.4	33.48	8.1	24.7	1.65
C6	01 Dec 2022	2	15.23	83.60	7.4	33.48	8.1	24.7	1.76
C6	01 Dec 2022	3	15.23	86.57	7.4	33.48	8.1	24.7	1.79
C6	01 Dec 2022	4	15.23	86.89	7.4	33.48	8.1	24.7	1.80
C6	01 Dec 2022	5	15.23	86.88	7.4	33.48	8.1	24.7	1.87

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C6	01 Dec 2022	6	15.23	86.88	7.3	33.48	8.1	24.7	1.77
C6	01 Dec 2022	7	15.21	87.09	7.0	33.48	8.1	24.8	1.44
C6	01 Dec 2022	8	15.20	86.97	6.9	33.48	8.1	24.8	1.01
C6	01 Dec 2022	9	15.19	86.26	6.8	33.48	8.1	24.8	0.87
C6	05 Dec 2022	1	15.59	82.77	7.3	33.48	8.0	24.7	1.03
C6	05 Dec 2022	2	15.54	83.17	7.3	33.48	8.0	24.7	1.09
C6	05 Dec 2022	3	15.46	83.70	7.2	33.48	8.0	24.7	1.15
C6	05 Dec 2022	4	15.30	84.08	7.0	33.47	8.0	24.7	1.00
C6	05 Dec 2022	5	15.08	84.75	6.9	33.46	8.0	24.8	0.81
C6	05 Dec 2022	6	15.07	85.83	6.8	33.45	8.0	24.8	0.72
C6	05 Dec 2022	7	14.96	84.79	6.7	33.45	8.0	24.8	0.69
C6	05 Dec 2022	8	14.94	83.57	6.7	33.45	8.0	24.8	0.64
C6	05 Dec 2022	9	14.95	83.44	6.8	33.45	8.0	24.8	0.68
C6	05 Dec 2022	10	14.94	82.83	6.8	33.45	8.0	24.8	0.62
C6	13 Dec 2022	1	14.31	58.53	6.8	33.43	8.0	24.9	0.71
C6	13 Dec 2022	2	14.30	57.62	6.8	33.43	8.0	24.9	0.73
C6	13 Dec 2022	3	14.24	57.38	6.7	33.43	8.0	24.9	0.78
C6	13 Dec 2022	4	14.16	59.79	6.6	33.43	8.0	24.9	0.84
C6	13 Dec 2022	5	14.15	64.37	6.5	33.43	8.0	24.9	0.83
C6	13 Dec 2022	6	14.13	69.60	6.5	33.44	8.0	24.9	0.81
C6	13 Dec 2022	7	14.11	71.48	6.5	33.44	8.0	25.0	0.83
C6	13 Dec 2022	8	14.07	73.42	6.4	33.44	8.0	25.0	0.81
C6	13 Dec 2022	9	14.06	69.92	6.4	33.44	8.0	25.0	0.82
C6	13 Dec 2022	10	14.07	66.08	6.4	33.44	8.0	25.0	0.81
C6	21 Dec 2022	1	14.36	86.83	7.9	33.45	8.1	24.9	0.64
C6	21 Dec 2022	2	14.36	88.96	7.9	33.45	8.1	24.9	0.64
C6	21 Dec 2022	3	14.35	89.40	7.8	33.45	8.1	24.9	0.65
C6	21 Dec 2022	4	14.35	89.28	7.8	33.45	8.1	24.9	0.70
C6	21 Dec 2022	5	14.34	89.36	7.8	33.45	8.1	24.9	0.76
C6	21 Dec 2022	6	14.33	89.43	7.8	33.45	8.1	24.9	0.77
C6	21 Dec 2022	7	14.33	89.46	7.8	33.45	8.1	24.9	0.82
C6	21 Dec 2022	8	14.33	89.48	7.7	33.45	8.1	24.9	0.82
C6	21 Dec 2022	9	14.32	89.52	7.8	33.45	8.1	24.9	0.83
C6	21 Dec 2022	10	14.31	89.51	7.8	33.45	8.1	24.9	0.82
C6	27 Dec 2022	1	14.64	80.95	7.6	33.45	8.1	24.9	0.97
C6	27 Dec 2022	2	14.64	80.71	7.6	33.45	8.1	24.9	1.05
C6	27 Dec 2022	3	14.64	80.47	7.6	33.45	8.1	24.9	1.10
C6	27 Dec 2022	4	14.61	80.18	7.6	33.45	8.1	24.9	1.17
C6	27 Dec 2022	5	14.55	78.88	7.4	33.45	8.1	24.9	1.25
C6	27 Dec 2022	6	14.48	72.98	7.3	33.45	8.1	24.9	1.29
C6	27 Dec 2022	7	14.34	62.52	6.9	33.44	8.1	24.9	0.97
C6	27 Dec 2022	8	14.11	42.46	6.3	33.44	8.0	25.0	1.05
C6	27 Dec 2022	9	14.10	20.45	6.1	33.43	8.0	25.0	1.08
C6	27 Dec 2022	10	14.10	13.19	6.1	33.43	8.0	25.0	1.13
C7	01 Dec 2022	1	15.27	87.28	7.5	33.47	8.1	24.7	1.66
C7	01 Dec 2022	2	15.27	87.22	7.5	33.47	8.1	24.7	1.64
C7	01 Dec 2022	3	15.27	87.34	7.5	33.47	8.1	24.7	1.77
C7	01 Dec 2022	4	15.27	87.33	7.4	33.47	8.1	24.7	1.79
C7	01 Dec 2022	5	15.23	87.29	7.4	33.47	8.1	24.7	1.81
C7	01 Dec 2022	6	15.19	87.49	7.3	33.47	8.1	24.7	1.74
C7	01 Dec 2022	7	15.14	87.78	7.3	33.47	8.1	24.8	1.71
C7	01 Dec 2022	8	15.12	87.99	7.2	33.47	8.1	24.8	1.67
C7	01 Dec 2022	9	15.10	88.04	7.2	33.47	8.1	24.8	1.55
C7	01 Dec 2022	10	15.08	87.92	7.2	33.47	8.1	24.8	1.51
C7	01 Dec 2022	11	15.06	88.05	7.1	33.47	8.1	24.8	1.50
C7	01 Dec 2022	12	15.05	88.03	7.1	33.46	8.1	24.8	1.45

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C7	01 Dec 2022	13	15.04	88.08	7.1	33.46	8.1	24.8	1.46
C7	01 Dec 2022	14	15.04	88.14	7.0	33.46	8.1	24.8	1.43
C7	01 Dec 2022	15	15.03	88.24	7.0	33.46	8.1	24.8	1.43
C7	01 Dec 2022	16	14.99	88.48	6.9	33.46	8.1	24.8	1.31
C7	01 Dec 2022	17	14.83	88.70	6.6	33.46	8.1	24.8	1.14
C7	01 Dec 2022	18	14.69	88.03	6.3	33.45	8.0	24.8	0.93
C7	05 Dec 2022	1	15.53	82.76	7.9	33.47	8.1	24.7	1.42
C7	05 Dec 2022	2	15.53	77.99	7.9	33.47	8.1	24.7	1.50
C7	05 Dec 2022	3	15.48	84.43	7.9	33.47	8.1	24.7	1.59
C7	05 Dec 2022	4	15.47	84.99	7.8	33.47	8.1	24.7	1.75
C7	05 Dec 2022	5	15.46	85.25	7.8	33.47	8.1	24.7	2.04
C7	05 Dec 2022	6	15.45	85.06	7.8	33.47	8.1	24.7	2.52
C7	05 Dec 2022	7	15.46	84.89	7.8	33.47	8.1	24.7	3.01
C7	05 Dec 2022	8	15.45	84.77	7.8	33.47	8.1	24.7	2.82
C7	05 Dec 2022	9	15.45	84.82	7.8	33.47	8.1	24.7	2.72
C7	05 Dec 2022	10	15.45	84.98	7.7	33.47	8.1	24.7	2.73
C7	05 Dec 2022	11	15.34	85.34	7.6	33.47	8.1	24.7	2.30
C7	05 Dec 2022	12	15.33	86.93	7.6	33.46	8.1	24.7	1.89
C7	05 Dec 2022	13	15.24	87.24	7.4	33.46	8.1	24.7	1.82
C7	05 Dec 2022	14	15.14	88.48	7.3	33.46	8.1	24.8	1.51
C7	05 Dec 2022	15	15.13	89.01	7.2	33.45	8.1	24.8	1.33
C7	05 Dec 2022	16	14.88	89.31	7.0	33.45	8.0	24.8	1.16
C7	05 Dec 2022	17	14.69	88.95	6.8	33.44	8.0	24.8	0.91
C7	05 Dec 2022	18	14.59	87.21	6.7	33.44	8.0	24.9	0.75
C7	13 Dec 2022	1	14.53	74.27	7.4	33.43	8.0	24.9	1.10
C7	13 Dec 2022	2	14.52	77.09	7.4	33.43	8.0	24.9	1.17
C7	13 Dec 2022	3	14.51	78.23	7.3	33.43	8.0	24.9	1.22
C7	13 Dec 2022	4	14.49	77.57	7.2	33.43	8.0	24.9	1.38
C7	13 Dec 2022	5	14.49	79.30	7.2	33.43	8.0	24.9	1.58
C7	13 Dec 2022	6	14.48	80.37	7.2	33.43	8.0	24.9	1.70
C7	13 Dec 2022	7	14.47	81.44	7.2	33.43	8.0	24.9	1.82
C7	13 Dec 2022	8	14.46	83.13	7.2	33.43	8.0	24.9	1.88
C7	13 Dec 2022	9	14.44	84.72	7.1	33.43	8.0	24.9	1.76
C7	13 Dec 2022	10	14.42	85.87	7.1	33.43	8.0	24.9	1.72
C7	13 Dec 2022	11	14.39	86.38	7.0	33.44	8.0	24.9	1.61
C7	13 Dec 2022	12	14.39	86.66	7.0	33.44	8.0	24.9	1.51
C7	13 Dec 2022	13	14.38	87.03	7.0	33.44	8.0	24.9	1.51
C7	13 Dec 2022	14	14.38	87.21	6.9	33.44	8.0	24.9	1.46
C7	13 Dec 2022	15	14.37	87.47	6.9	33.44	8.0	24.9	1.45
C7	13 Dec 2022	16	14.35	87.67	6.8	33.44	8.0	24.9	1.38
C7	13 Dec 2022	17	14.21	87.71	6.6	33.45	8.0	24.9	1.29
C7	13 Dec 2022	18	14.22	77.74	6.5	33.44	8.0	24.9	1.04
C7	21 Dec 2022	1	14.43	88.89	7.7	33.43	8.1	24.9	0.96
C7	21 Dec 2022	2	14.42	88.91	7.6	33.43	8.1	24.9	0.96
C7	21 Dec 2022	3	14.42	88.88	7.6	33.43	8.1	24.9	0.99
C7	21 Dec 2022	4	14.42	88.85	7.6	33.43	8.1	24.9	1.10
C7	21 Dec 2022	5	14.39	88.80	7.5	33.43	8.1	24.9	1.17
C7	21 Dec 2022	6	14.28	88.97	7.2	33.43	8.1	24.9	1.10
C7	21 Dec 2022	7	14.18	89.48	7.0	33.43	8.1	24.9	0.98
C7	21 Dec 2022	8	14.10	90.24	6.9	33.43	8.1	24.9	0.89
C7	21 Dec 2022	9	14.03	90.62	6.8	33.43	8.1	25.0	0.86
C7	21 Dec 2022	10	13.97	90.86	6.8	33.43	8.0	25.0	0.85
C7	21 Dec 2022	11	13.91	90.82	6.7	33.42	8.0	25.0	0.83
C7	21 Dec 2022	12	13.85	90.70	6.6	33.43	8.0	25.0	0.85
C7	21 Dec 2022	13	13.84	90.64	6.5	33.42	8.0	25.0	0.83
C7	21 Dec 2022	14	13.81	90.66	6.5	33.42	8.0	25.0	0.84
C7	21 Dec 2022	15	13.81	90.69	6.5	33.42	8.0	25.0	0.84
C7	21 Dec 2022	16	13.80	90.66	6.5	33.42	8.0	25.0	0.84

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C7	21 Dec 2022	17	13.73	90.79	6.4	33.42	8.0	25.0	0.84
C7	21 Dec 2022	18	13.56	90.80	6.2	33.43	8.0	25.1	0.79
C7	27 Dec 2022	1	14.74	89.48	7.8	33.44	8.1	24.8	1.55
C7	27 Dec 2022	2	14.74	89.42	7.8	33.44	8.1	24.8	1.54
C7	27 Dec 2022	3	14.73	89.44	7.8	33.44	8.1	24.8	1.52
C7	27 Dec 2022	4	14.73	89.55	7.8	33.44	8.1	24.8	1.60
C7	27 Dec 2022	5	14.71	89.50	7.8	33.44	8.1	24.8	1.53
C7	27 Dec 2022	6	14.70	89.44	7.8	33.44	8.1	24.8	1.61
C7	27 Dec 2022	7	14.67	89.47	7.8	33.44	8.1	24.8	1.59
C7	27 Dec 2022	8	14.66	89.49	7.7	33.44	8.1	24.8	1.52
C7	27 Dec 2022	9	14.63	89.34	7.7	33.43	8.1	24.8	1.54
C7	27 Dec 2022	10	14.61	89.18	7.7	33.43	8.1	24.8	1.55
C7	27 Dec 2022	11	14.55	89.03	7.6	33.43	8.1	24.9	1.58
C7	27 Dec 2022	12	14.47	88.74	7.6	33.43	8.1	24.9	1.56
C7	27 Dec 2022	13	14.45	87.92	7.5	33.43	8.1	24.9	1.56
C7	27 Dec 2022	14	14.43	87.42	7.4	33.42	8.1	24.9	1.44
C7	27 Dec 2022	15	14.26	86.88	7.2	33.43	8.1	24.9	1.31
C7	27 Dec 2022	16	14.17	83.95	7.1	33.43	8.1	24.9	1.06
C7	27 Dec 2022	17	14.10	79.32	6.8	33.43	8.0	25.0	0.84
C7	27 Dec 2022	18	14.05	74.35	6.7	33.43	8.0	25.0	0.65
C8	01 Dec 2022	1	15.34	87.54	7.7	33.48	8.1	24.7	1.68
C8	01 Dec 2022	2	15.34	87.59	7.7	33.48	8.1	24.7	1.77
C8	01 Dec 2022	3	15.34	87.58	7.7	33.48	8.1	24.7	1.84
C8	01 Dec 2022	4	15.34	87.60	7.7	33.48	8.1	24.7	2.04
C8	01 Dec 2022	5	15.34	87.61	7.6	33.47	8.1	24.7	1.96
C8	01 Dec 2022	6	15.32	87.77	7.6	33.47	8.1	24.7	1.81
C8	01 Dec 2022	7	15.27	87.89	7.5	33.47	8.1	24.7	1.72
C8	01 Dec 2022	8	15.22	88.09	7.4	33.46	8.1	24.7	1.73
C8	01 Dec 2022	9	15.18	88.64	7.4	33.46	8.1	24.7	1.51
C8	01 Dec 2022	10	15.13	88.65	7.3	33.46	8.1	24.8	1.46
C8	01 Dec 2022	11	15.09	88.60	7.3	33.46	8.1	24.8	1.42
C8	01 Dec 2022	12	15.06	88.78	7.2	33.46	8.1	24.8	1.37
C8	01 Dec 2022	13	15.00	88.85	7.2	33.46	8.1	24.8	1.28
C8	01 Dec 2022	14	14.98	88.75	7.1	33.45	8.1	24.8	1.22
C8	01 Dec 2022	15	14.97	88.75	7.1	33.45	8.1	24.8	1.17
C8	01 Dec 2022	16	14.96	88.85	7.0	33.45	8.1	24.8	1.09
C8	01 Dec 2022	17	14.87	88.79	6.9	33.45	8.1	24.8	0.96
C8	01 Dec 2022	18	14.74	88.39	6.8	33.44	8.1	24.8	0.99
C8	01 Dec 2022	19	14.73	87.19	6.8	33.44	8.1	24.8	0.88
C8	05 Dec 2022	1	15.45	79.94	7.6	33.46	8.1	24.7	2.07
C8	05 Dec 2022	2	15.43	79.80	7.6	33.46	8.1	24.7	2.47
C8	05 Dec 2022	3	15.46	79.80	7.5	33.46	8.1	24.7	2.63
C8	05 Dec 2022	4	15.31	79.84	7.4	33.47	8.1	24.7	2.66
C8	05 Dec 2022	5	15.27	81.24	7.3	33.47	8.0	24.7	2.68
C8	05 Dec 2022	6	15.24	82.28	7.3	33.47	8.0	24.7	2.88
C8	05 Dec 2022	7	15.23	82.48	7.3	33.47	8.0	24.7	2.63
C8	05 Dec 2022	8	15.22	83.87	7.3	33.47	8.0	24.7	2.51
C8	05 Dec 2022	9	15.21	84.72	7.2	33.47	8.0	24.7	2.21
C8	05 Dec 2022	10	15.22	85.37	7.3	33.47	8.0	24.7	1.99
C8	05 Dec 2022	11	15.18	85.77	7.2	33.46	8.0	24.7	1.82
C8	05 Dec 2022	12	15.15	86.13	7.2	33.47	8.0	24.8	1.71
C8	05 Dec 2022	13	15.15	86.21	7.2	33.46	8.0	24.8	1.71
C8	05 Dec 2022	14	15.04	86.13	7.0	33.46	8.0	24.8	1.58
C8	05 Dec 2022	15	14.95	84.21	7.0	33.46	8.0	24.8	1.43
C8	05 Dec 2022	16	14.95	81.79	7.0	33.45	8.0	24.8	1.38
C8	05 Dec 2022	17	14.83	80.74	6.8	33.45	8.0	24.8	1.30
C8	05 Dec 2022	18	14.83	79.94	6.8	33.45	8.0	24.8	1.22
C8	05 Dec 2022	19	14.66	79.97	6.8	33.44	8.0	24.8	1.16

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C8	05 Dec 2022	20	14.58	79.31	6.7	33.44	8.0	24.9	1.07
C8	13 Dec 2022	1	14.59	84.37	7.3	33.42	8.1	24.8	0.93
C8	13 Dec 2022	2	14.59	84.10	7.4	33.42	8.1	24.8	1.01
C8	13 Dec 2022	3	14.58	81.06	7.3	33.43	8.1	24.8	0.98
C8	13 Dec 2022	4	14.56	83.84	7.3	33.43	8.1	24.9	0.97
C8	13 Dec 2022	5	14.56	84.79	7.3	33.43	8.1	24.9	1.08
C8	13 Dec 2022	6	14.55	85.08	7.3	33.43	8.1	24.9	1.22
C8	13 Dec 2022	7	14.55	85.40	7.2	33.43	8.1	24.9	1.36
C8	13 Dec 2022	8	14.54	85.85	7.2	33.43	8.1	24.9	1.46
C8	13 Dec 2022	9	14.51	86.53	7.2	33.43	8.1	24.9	1.53
C8	13 Dec 2022	10	14.46	87.78	7.1	33.44	8.0	24.9	1.48
C8	13 Dec 2022	11	14.46	88.79	7.1	33.44	8.0	24.9	1.41
C8	13 Dec 2022	12	14.45	89.02	7.1	33.44	8.0	24.9	1.34
C8	13 Dec 2022	13	14.44	89.05	7.1	33.44	8.0	24.9	1.36
C8	13 Dec 2022	14	14.43	89.16	7.1	33.44	8.0	24.9	1.34
C8	13 Dec 2022	15	14.42	89.31	7.0	33.44	8.0	24.9	1.34
C8	13 Dec 2022	16	14.36	89.42	7.0	33.44	8.0	24.9	1.34
C8	13 Dec 2022	17	14.20	89.13	6.8	33.44	8.0	24.9	1.23
C8	13 Dec 2022	18	14.08	88.58	6.6	33.44	8.0	25.0	1.18
C8	13 Dec 2022	19	13.86	80.37	6.4	33.45	8.0	25.0	1.08
C8	13 Dec 2022	20	13.84	69.51	6.3	33.45	8.0	25.0	1.09
C8	21 Dec 2022	1	14.36	88.42	7.6	33.42	8.1	24.9	1.19
C8	21 Dec 2022	2	14.36	88.48	7.6	33.42	8.1	24.9	1.20
C8	21 Dec 2022	3	14.36	88.54	7.6	33.42	8.1	24.9	1.27
C8	21 Dec 2022	4	14.36	88.24	7.6	33.42	8.1	24.9	1.38
C8	21 Dec 2022	5	14.36	88.23	7.6	33.42	8.1	24.9	1.41
C8	21 Dec 2022	6	14.36	88.35	7.6	33.42	8.1	24.9	1.44
C8	21 Dec 2022	7	14.35	88.61	7.6	33.42	8.1	24.9	1.50
C8	21 Dec 2022	8	14.35	88.58	7.5	33.42	8.1	24.9	1.52
C8	21 Dec 2022	9	14.34	88.62	7.5	33.42	8.1	24.9	1.54
C8	21 Dec 2022	10	14.33	89.00	7.5	33.42	8.1	24.9	1.56
C8	21 Dec 2022	11	14.32	89.26	7.4	33.42	8.1	24.9	1.49
C8	21 Dec 2022	12	14.29	89.53	7.3	33.42	8.1	24.9	1.46
C8	21 Dec 2022	13	14.26	89.82	7.2	33.43	8.1	24.9	1.38
C8	21 Dec 2022	14	14.25	90.05	7.2	33.42	8.1	24.9	1.32
C8	21 Dec 2022	15	14.21	90.19	7.1	33.43	8.1	24.9	1.26
C8	21 Dec 2022	16	14.15	90.40	7.0	33.43	8.1	24.9	1.19
C8	21 Dec 2022	17	14.10	90.60	6.9	33.42	8.1	24.9	1.11
C8	21 Dec 2022	18	14.00	90.73	6.7	33.42	8.1	25.0	1.05
C8	21 Dec 2022	19	13.73	90.75	6.4	33.42	8.0	25.0	0.97
C8	21 Dec 2022	20	13.55	90.71	6.3	33.43	8.0	25.1	0.86
C8	27 Dec 2022	1	14.45	88.56	7.7	33.42	8.1	24.9	1.49
C8	27 Dec 2022	2	14.45	88.50	7.7	33.42	8.1	24.9	1.54
C8	27 Dec 2022	3	14.45	88.69	7.7	33.42	8.1	24.9	1.65
C8	27 Dec 2022	4	14.45	87.66	7.7	33.42	8.1	24.9	1.83
C8	27 Dec 2022	5	14.43	87.62	7.7	33.42	8.1	24.9	1.73
C8	27 Dec 2022	6	14.44	88.56	7.7	33.42	8.1	24.9	1.64
C8	27 Dec 2022	7	14.44	88.62	7.7	33.42	8.1	24.9	1.75
C8	27 Dec 2022	8	14.43	88.59	7.7	33.42	8.1	24.9	1.75
C8	27 Dec 2022	9	14.42	88.52	7.7	33.42	8.1	24.9	1.86
C8	27 Dec 2022	10	14.40	88.49	7.6	33.42	8.1	24.9	1.77
C8	27 Dec 2022	11	14.38	88.35	7.6	33.42	8.1	24.9	1.91
C8	27 Dec 2022	12	14.35	88.00	7.6	33.42	8.1	24.9	1.82
C8	27 Dec 2022	13	14.34	87.80	7.6	33.42	8.1	24.9	1.87
C8	27 Dec 2022	14	14.30	87.66	7.6	33.42	8.1	24.9	1.99
C8	27 Dec 2022	15	14.29	87.25	7.6	33.42	8.1	24.9	2.11
C8	27 Dec 2022	16	14.27	87.16	7.5	33.42	8.1	24.9	2.06
C8	27 Dec 2022	17	14.19	86.77	7.3	33.42	8.1	24.9	2.07

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C8	27 Dec 2022	18	14.15	84.46	7.2	33.42	8.1	24.9	1.74
C8	27 Dec 2022	19	14.13	78.70	7.0	33.42	8.1	24.9	1.57
C8	27 Dec 2022	20	14.12	76.46	7.0	33.42	8.1	24.9	1.44

NA = not available

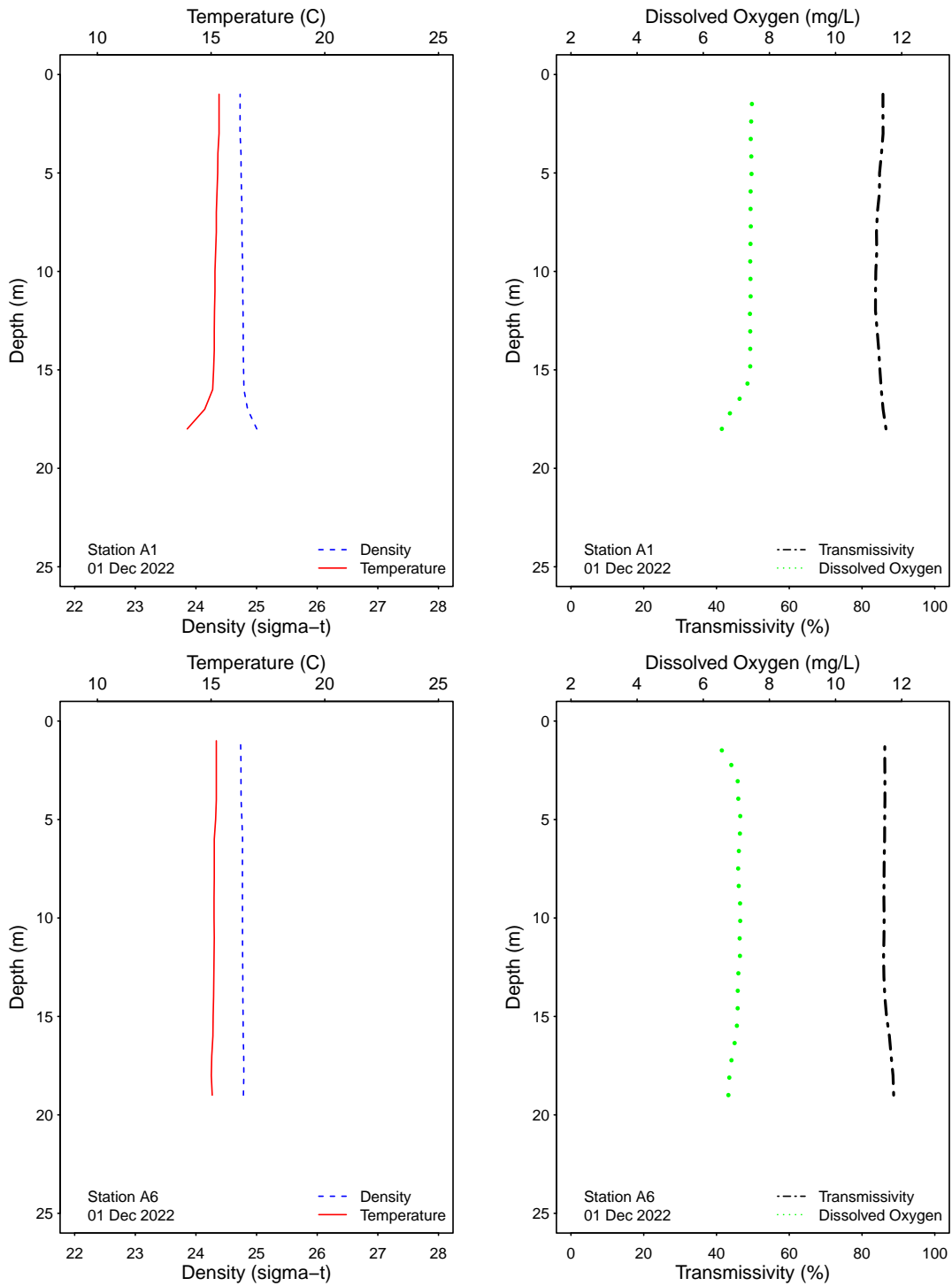


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

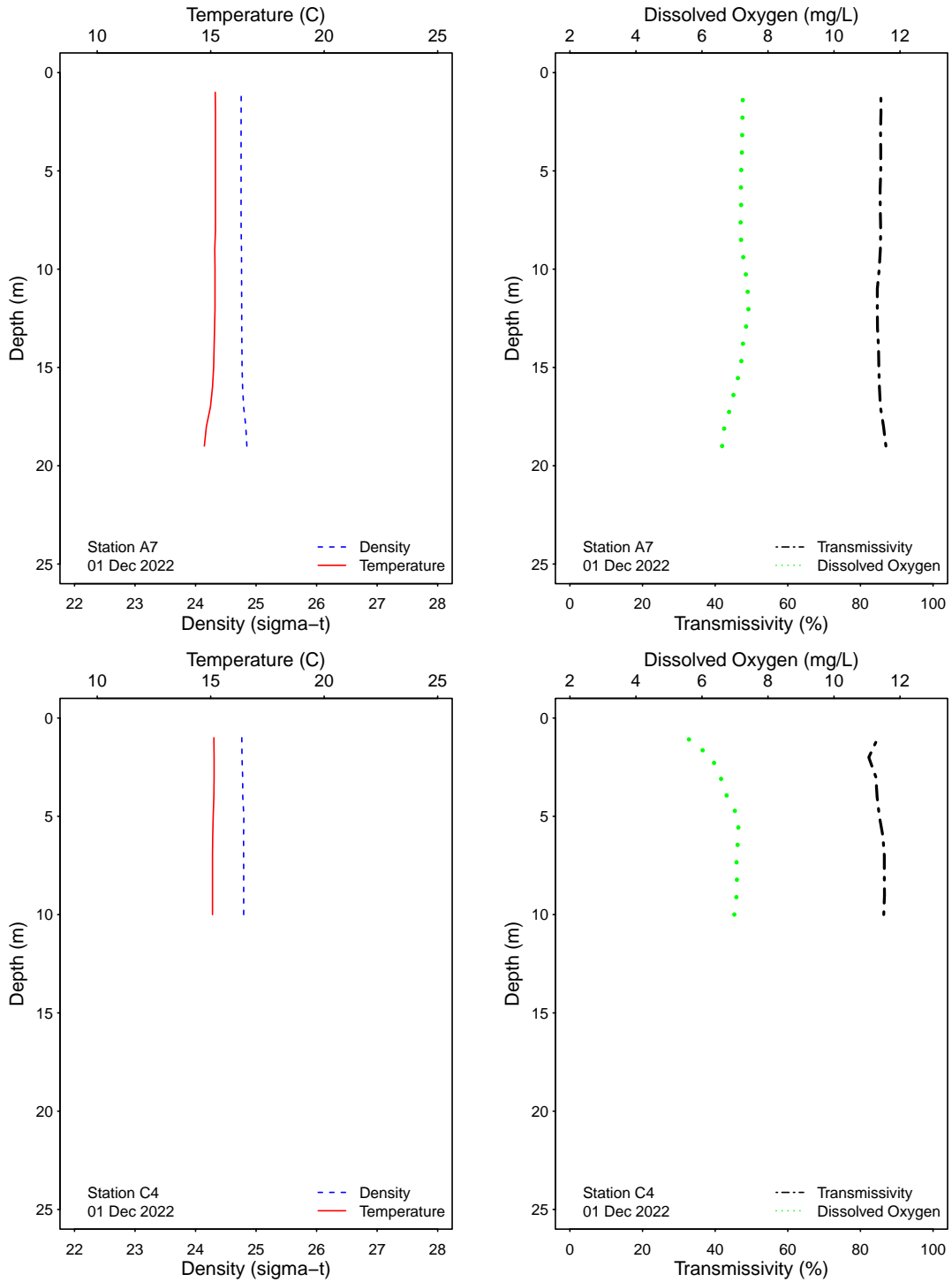


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

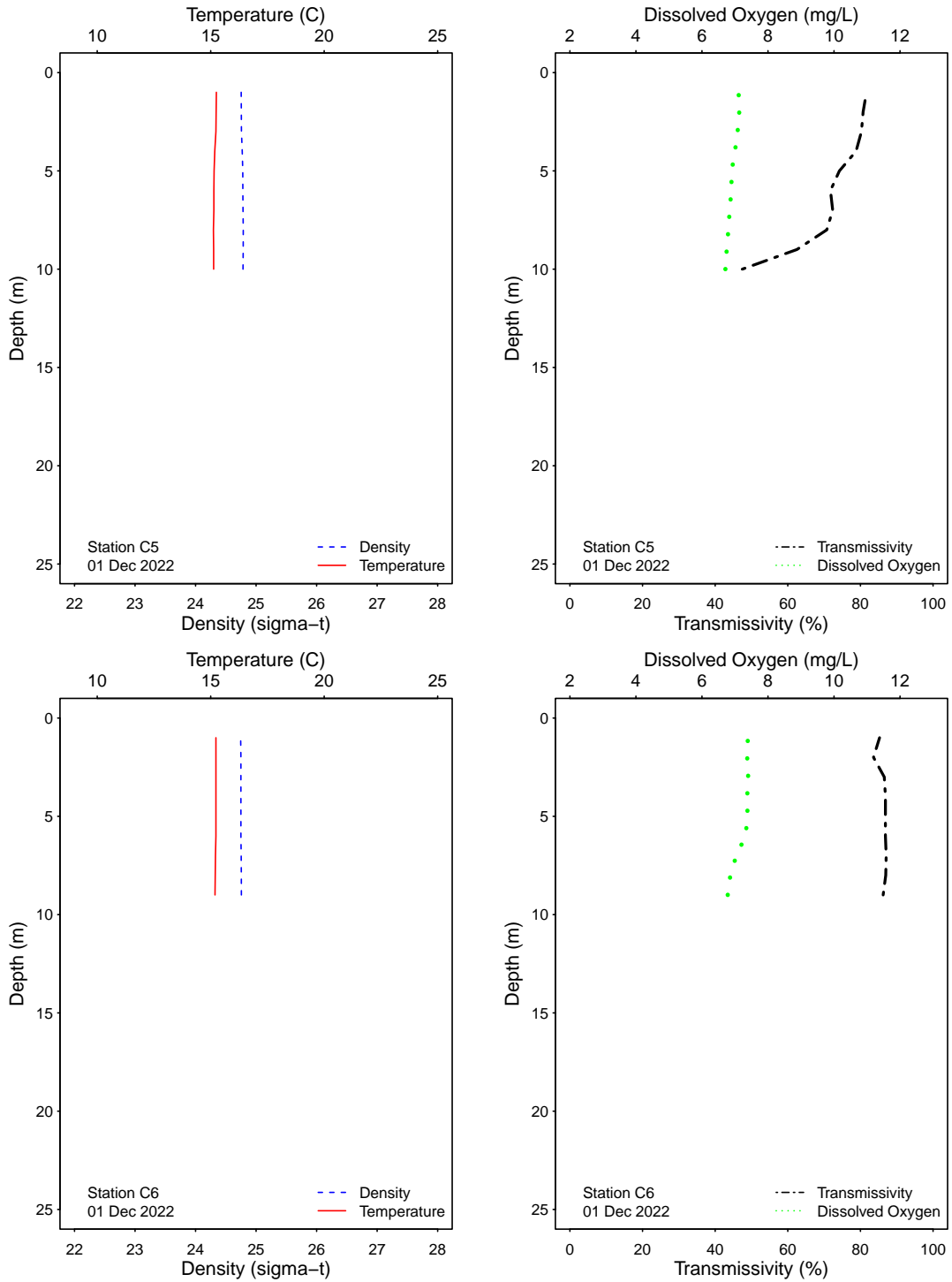


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

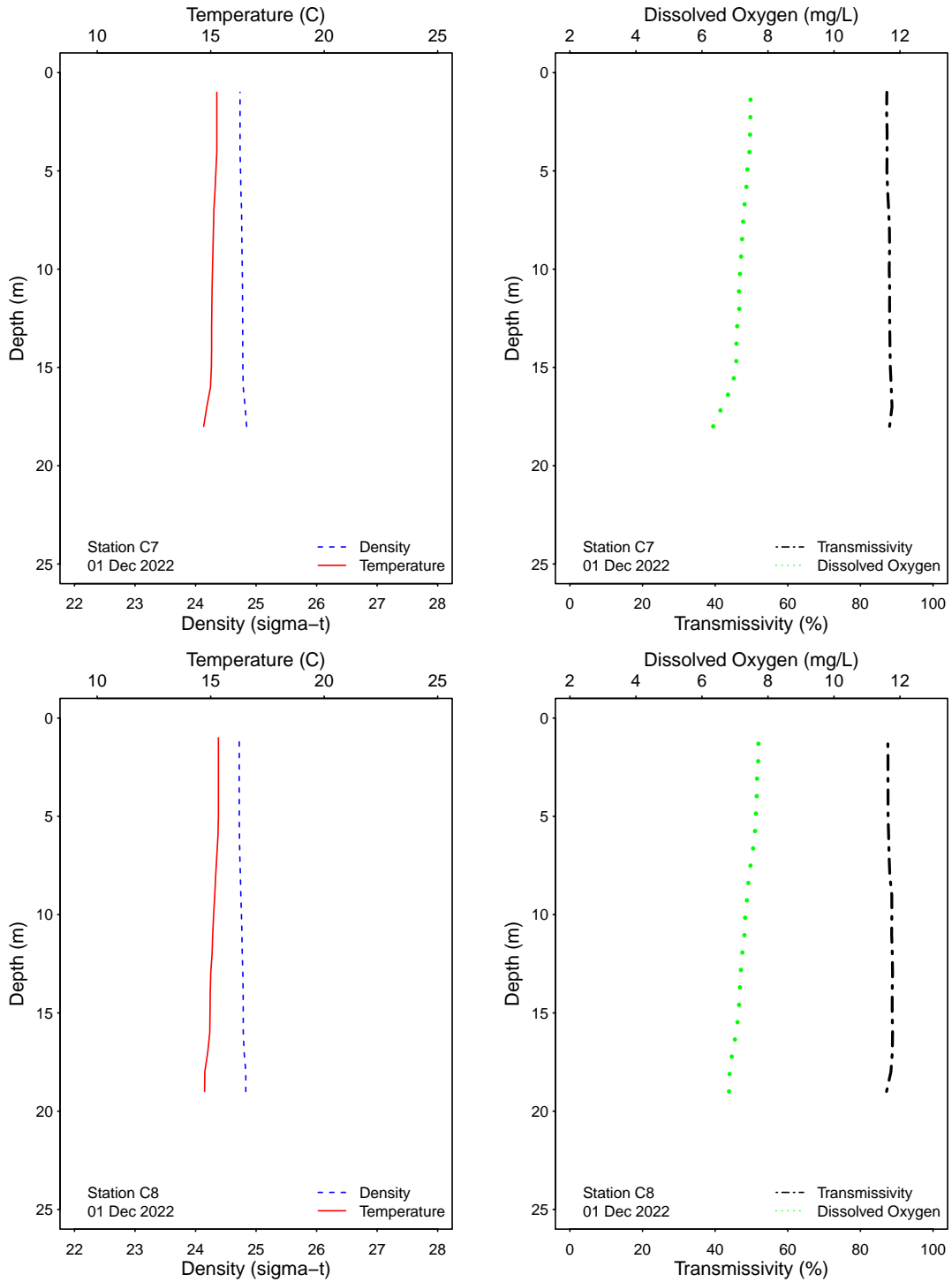


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

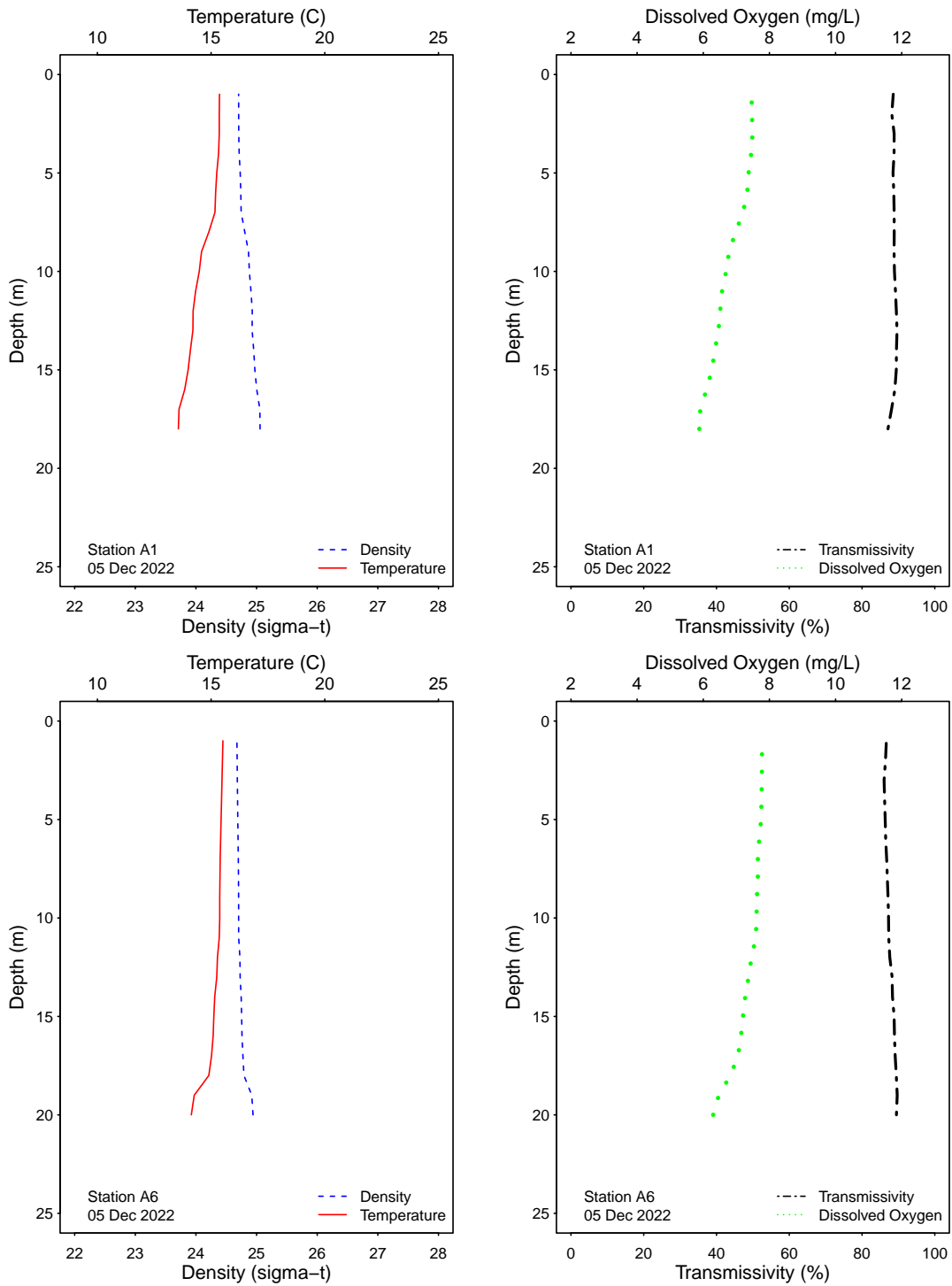


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

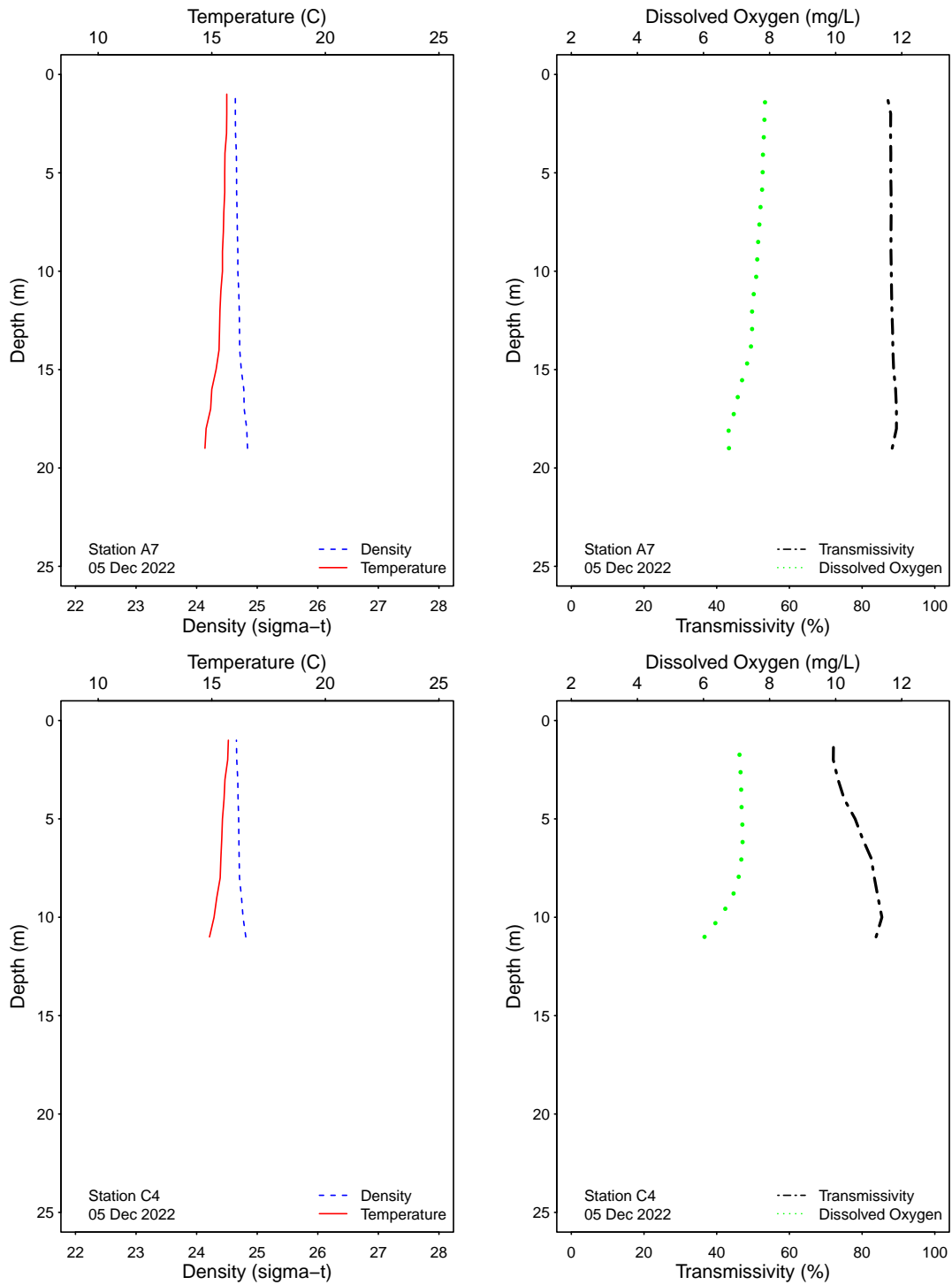


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

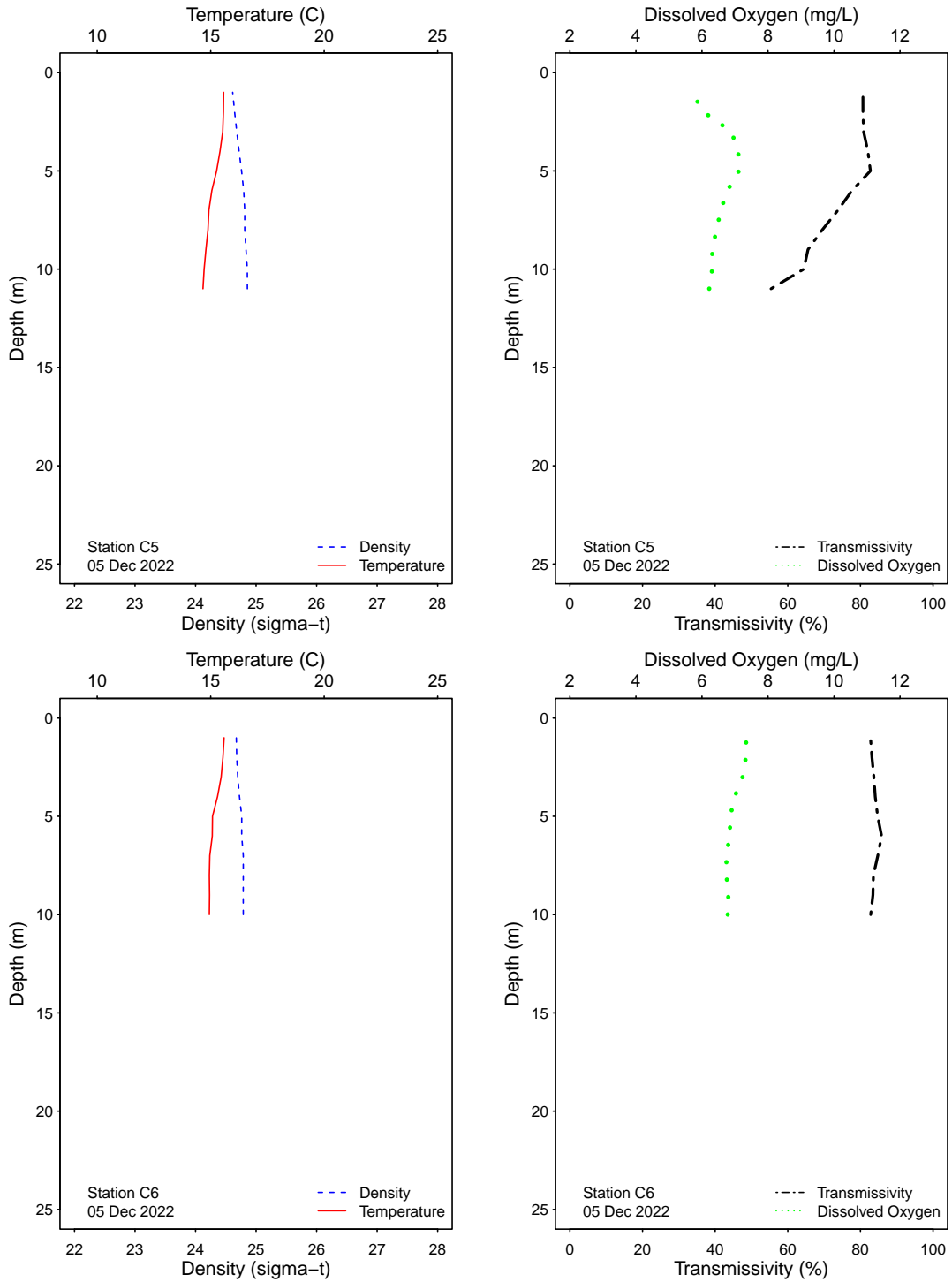


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

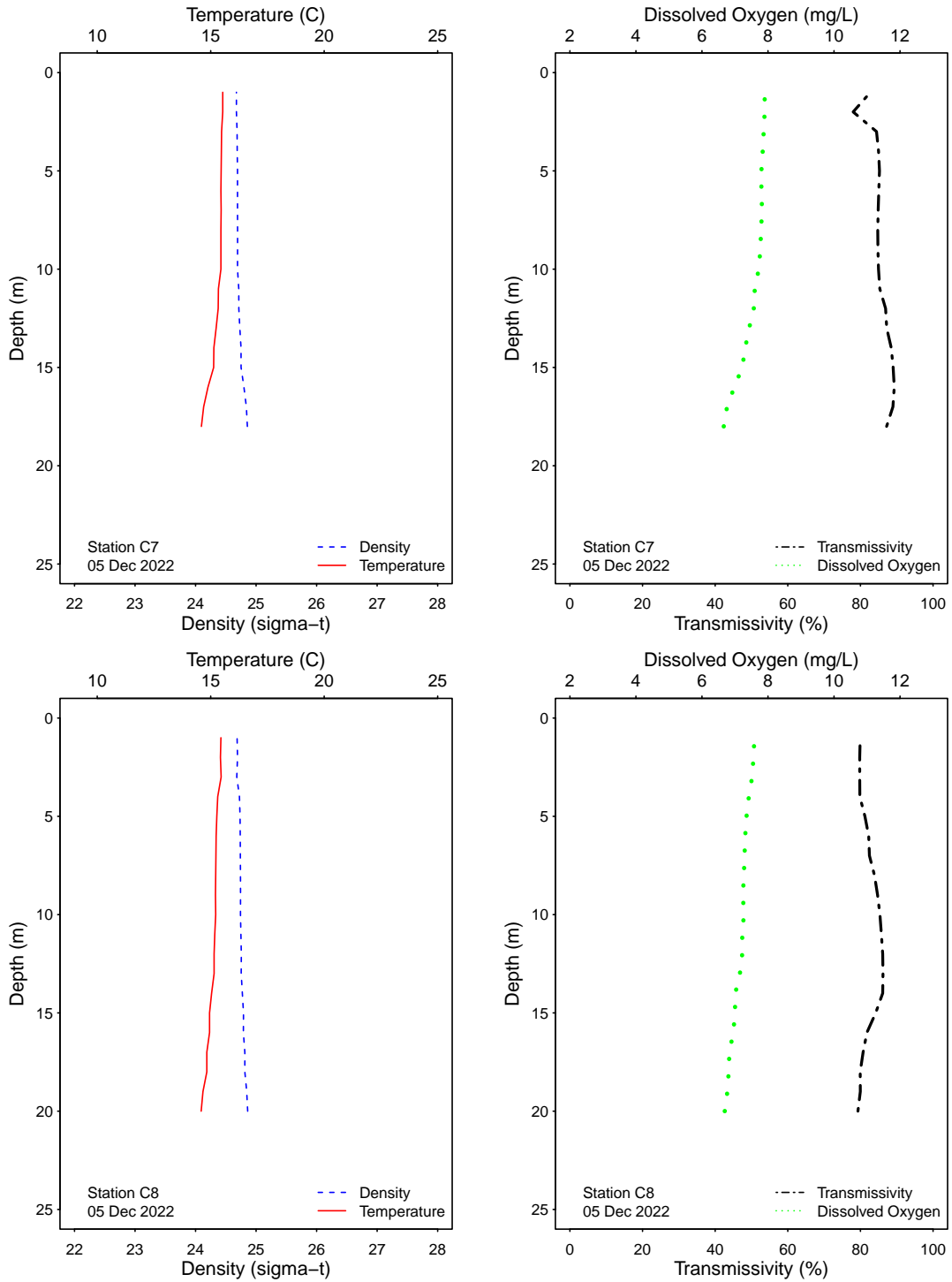


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

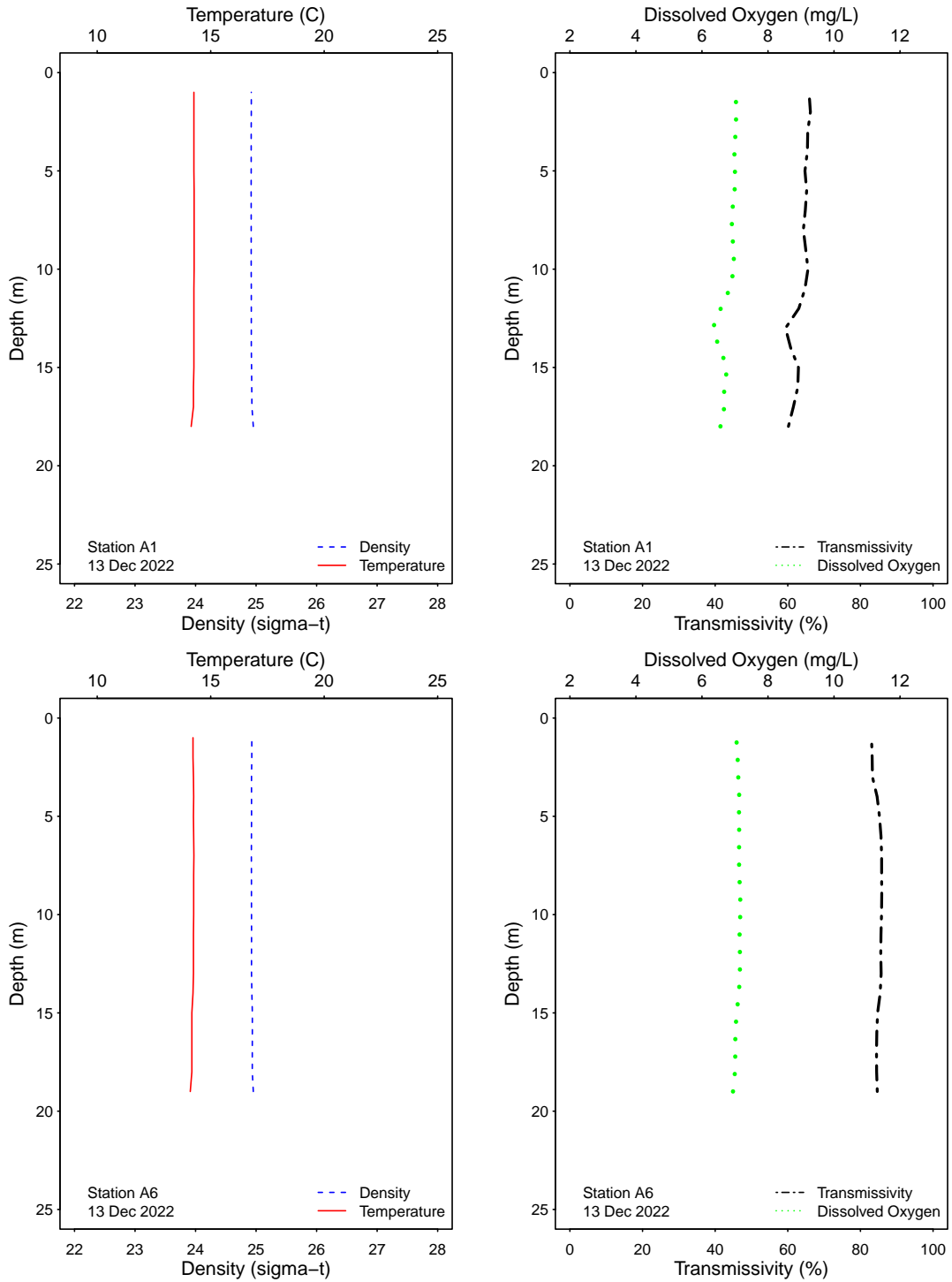


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

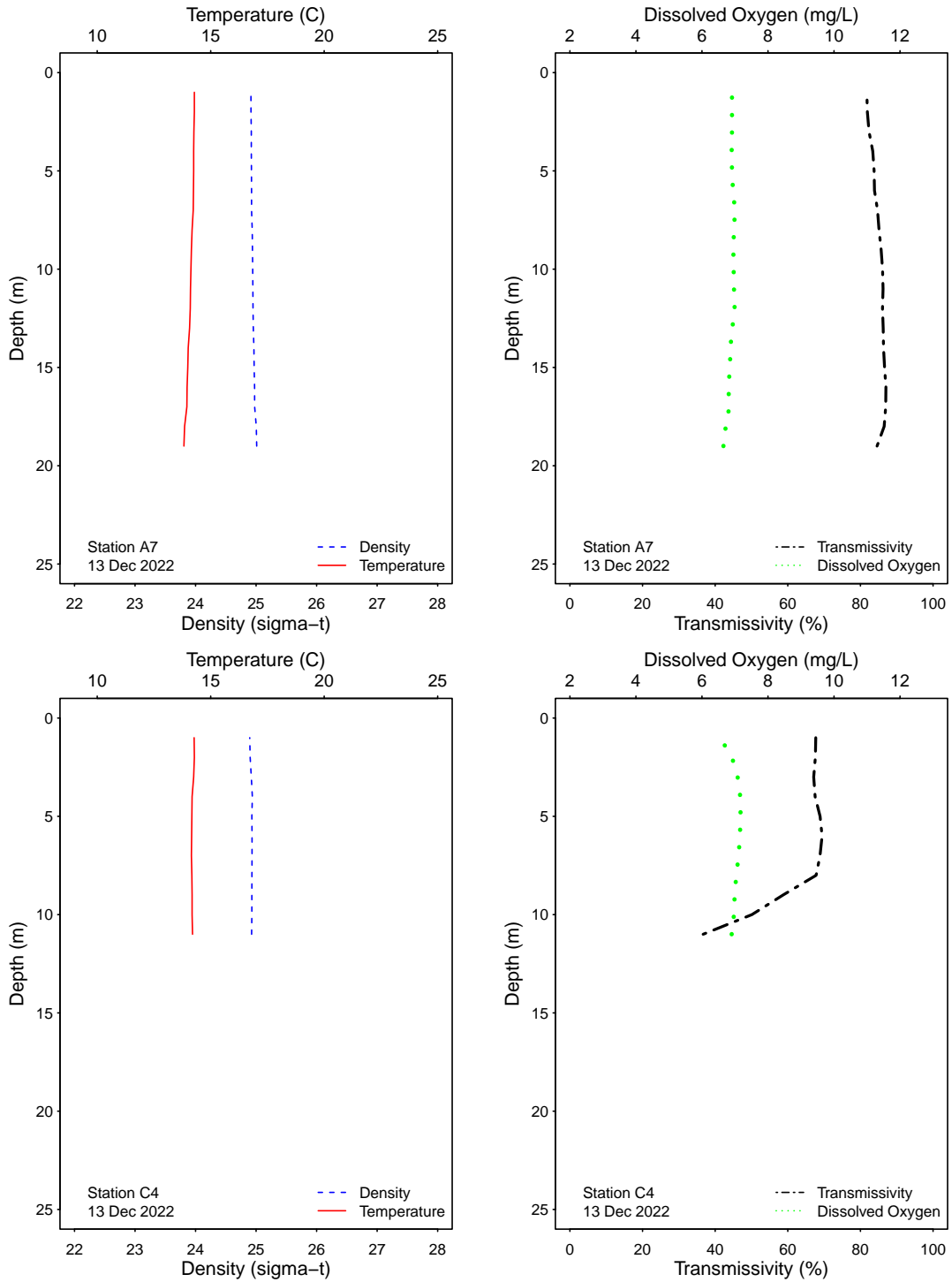


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

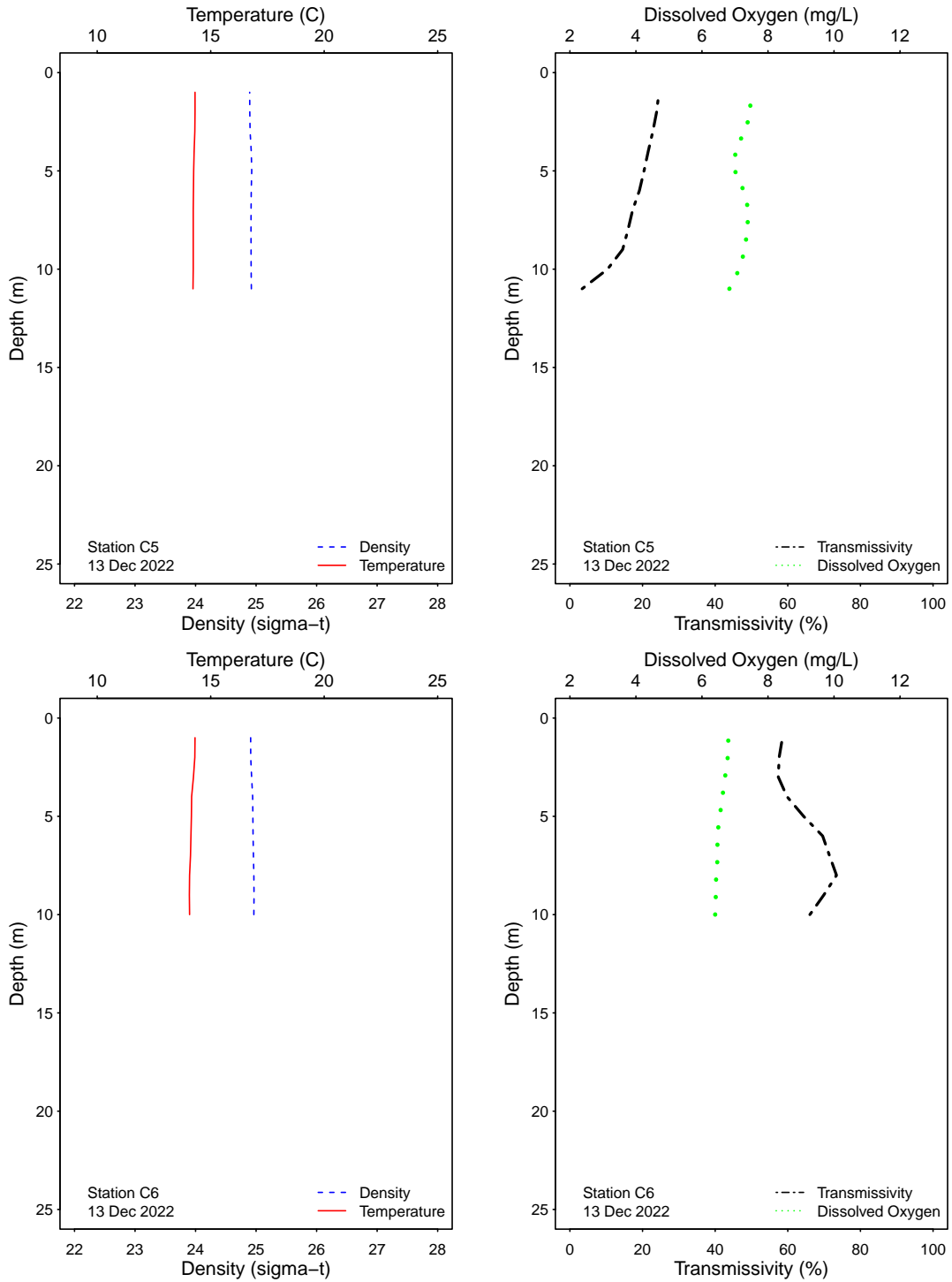


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

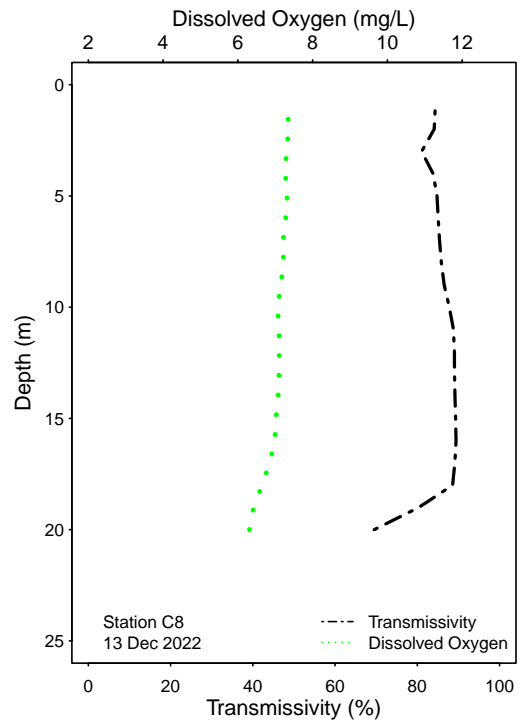
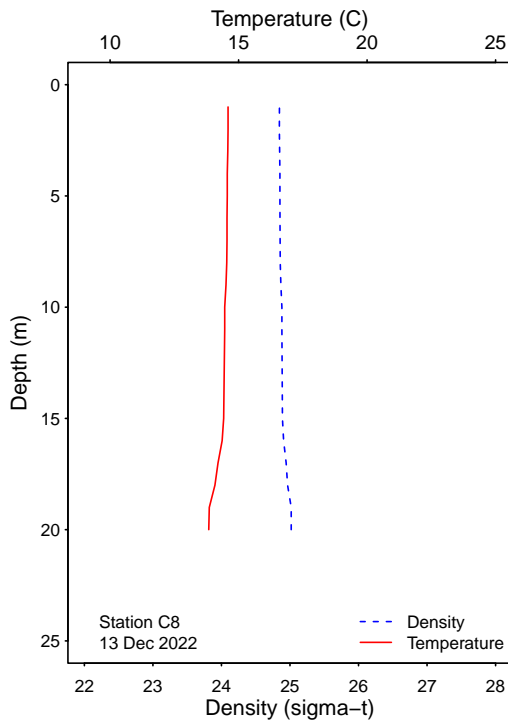
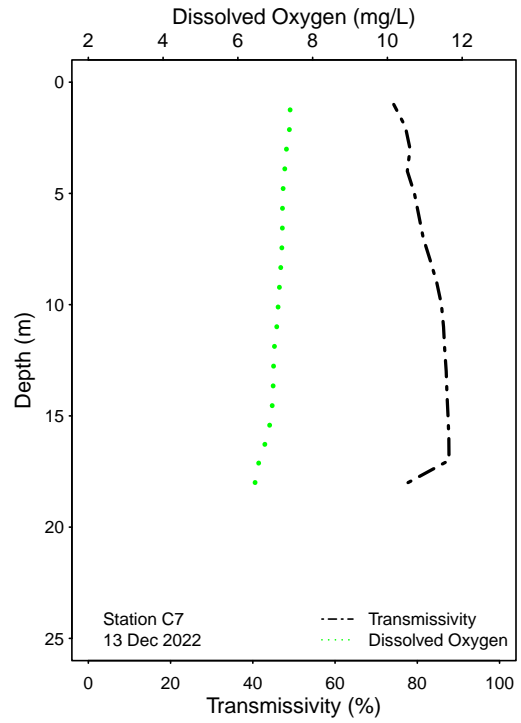
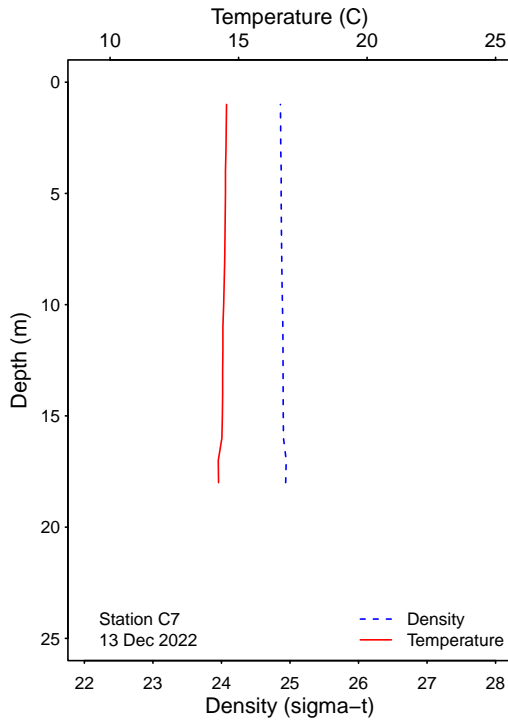


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

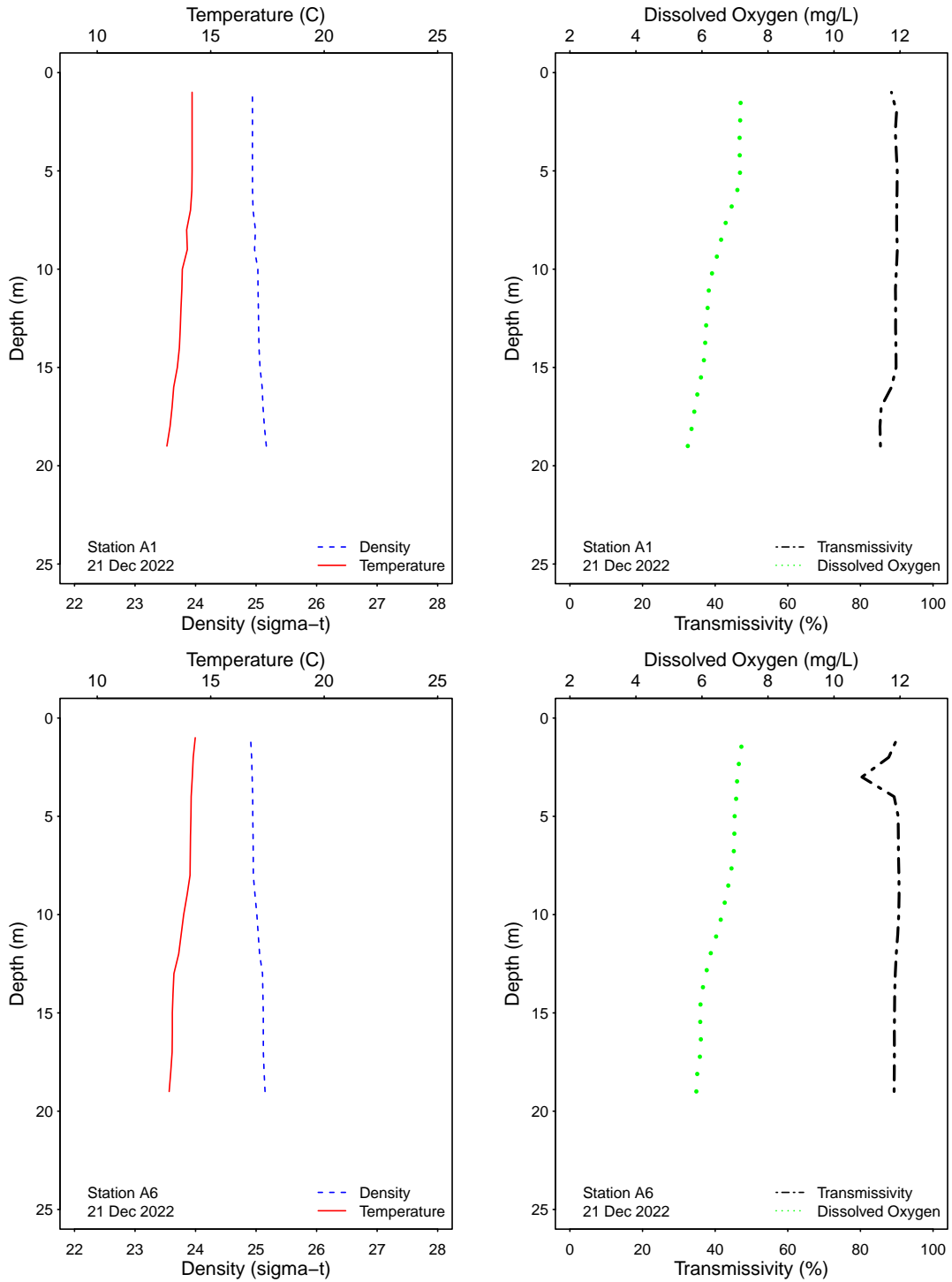


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

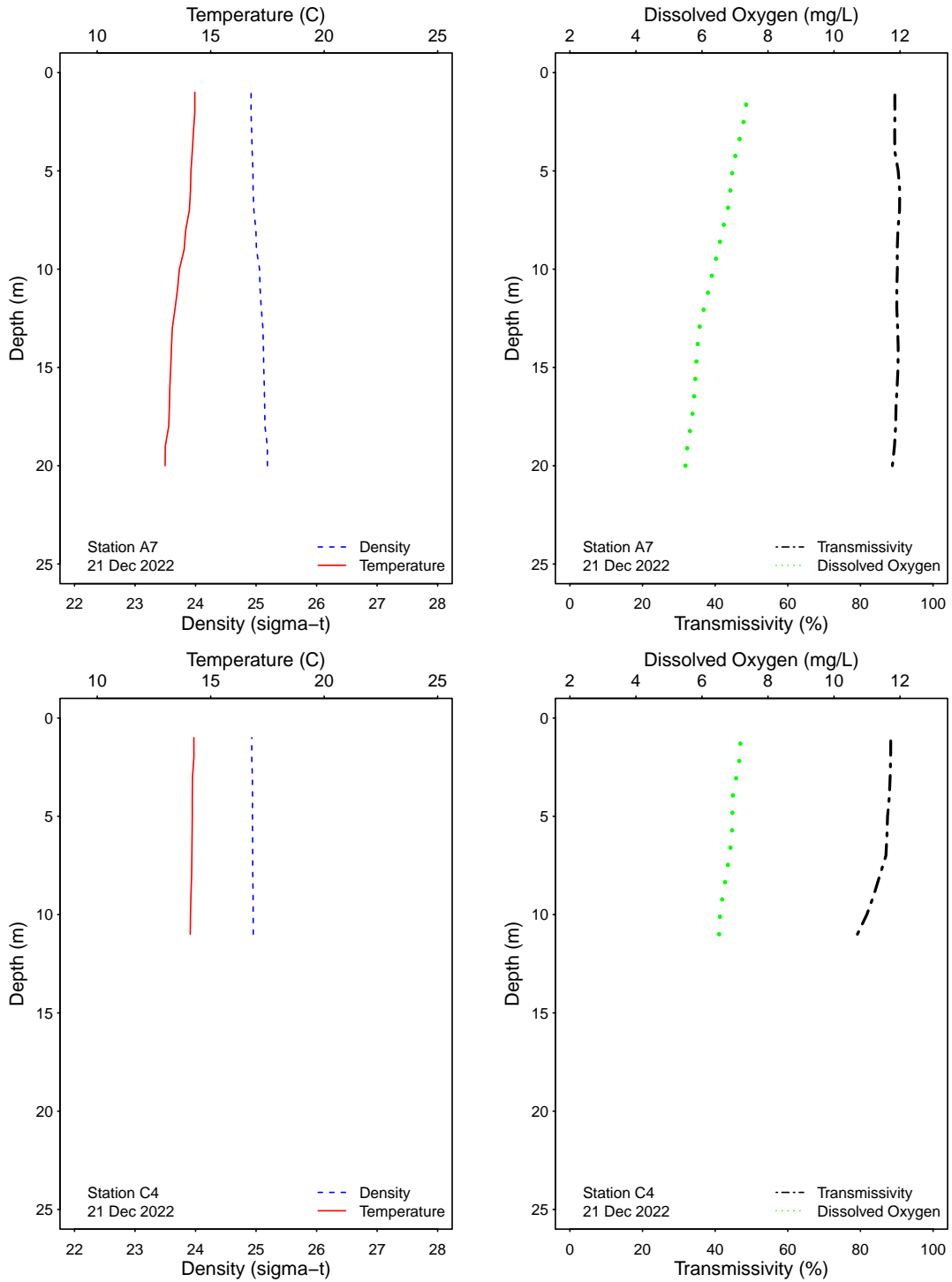


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

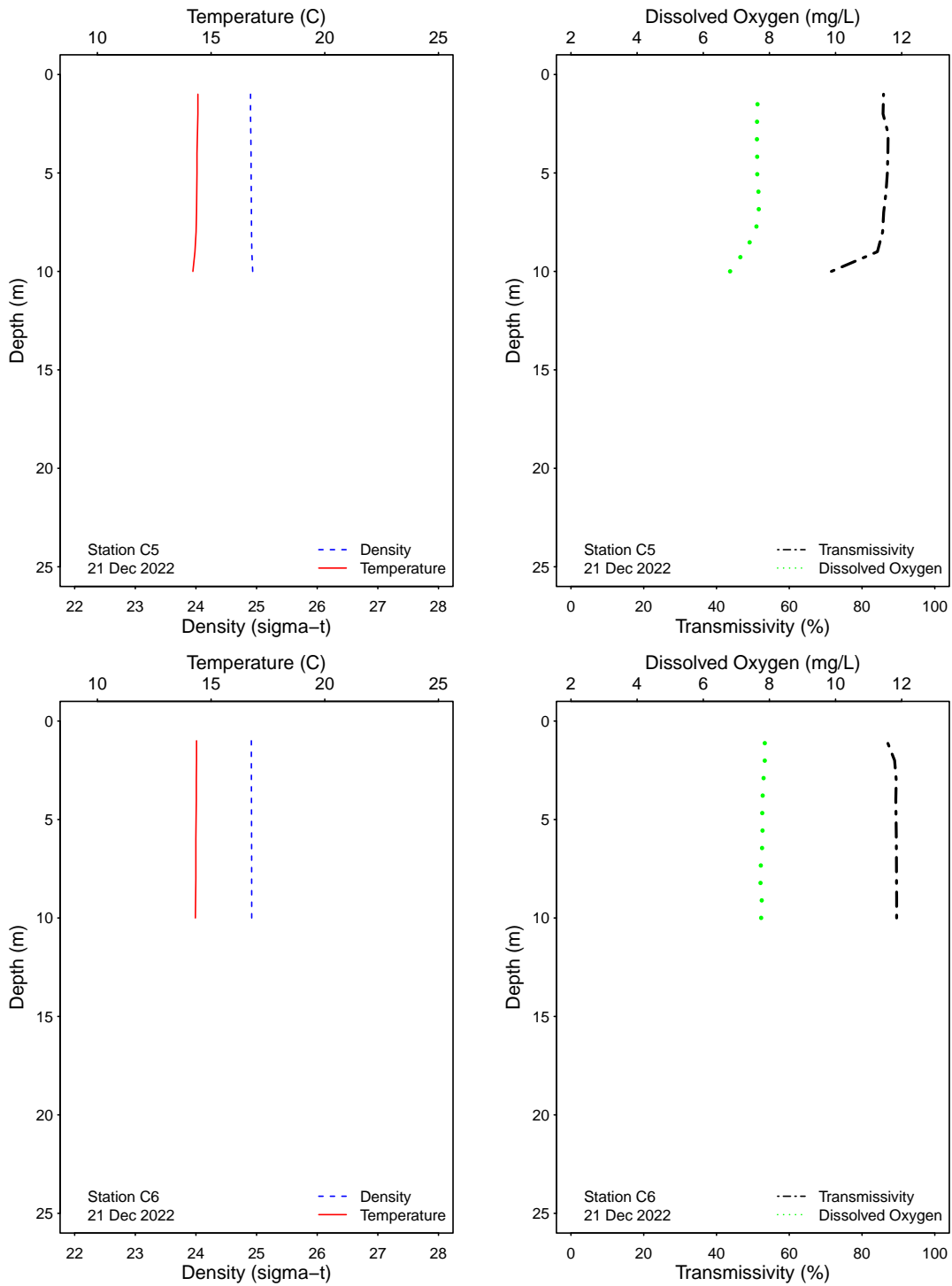


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

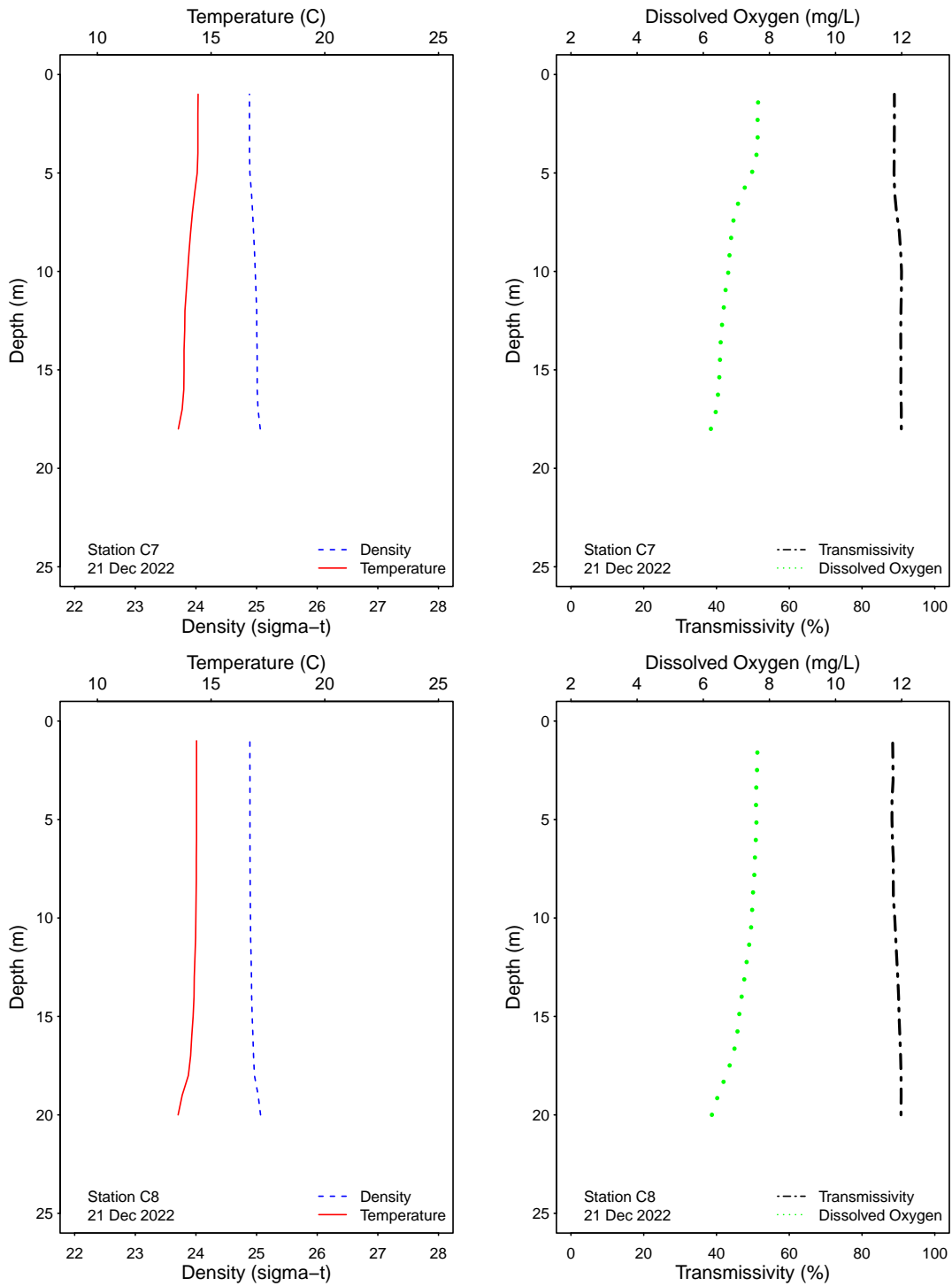


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

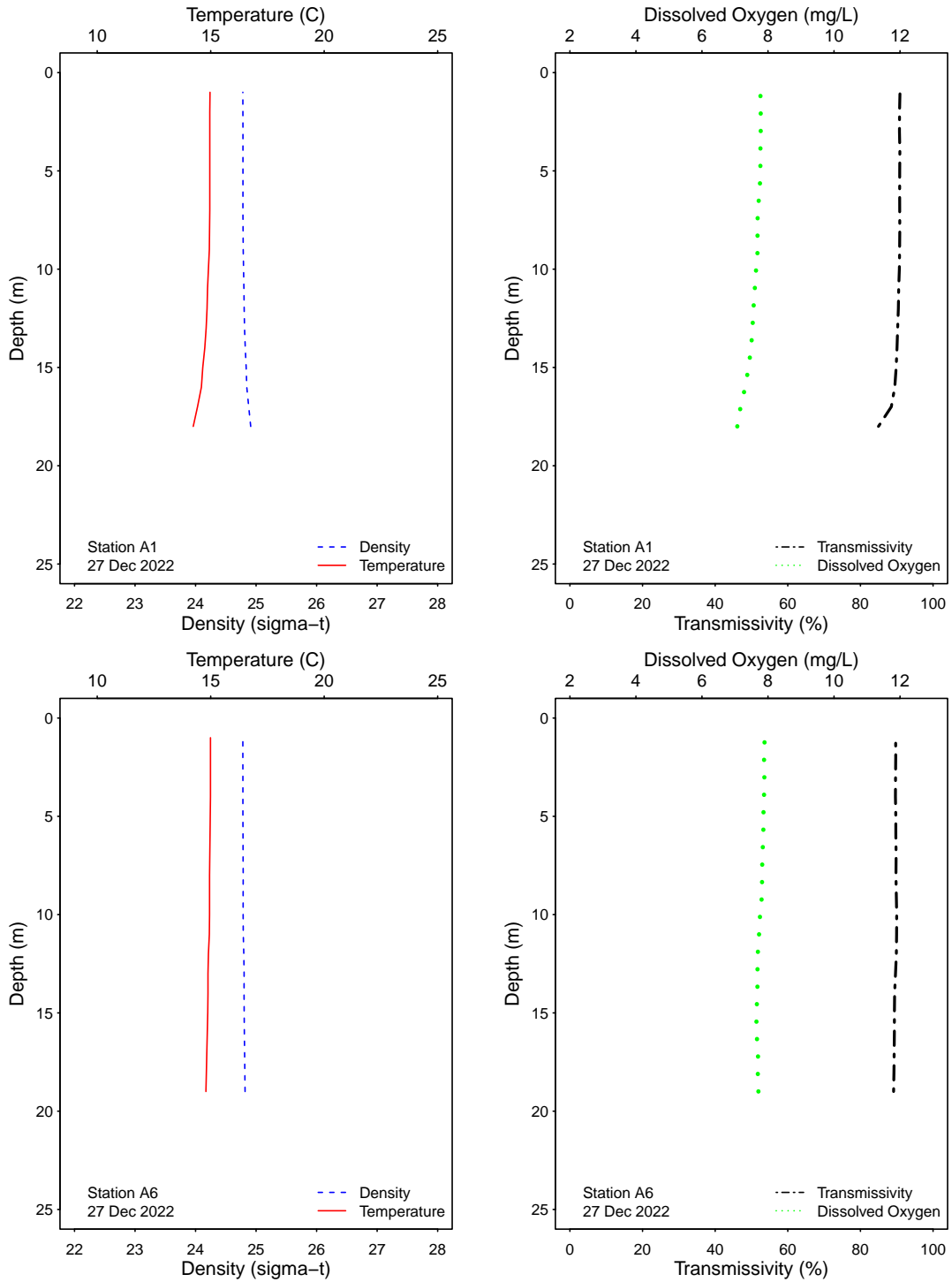


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

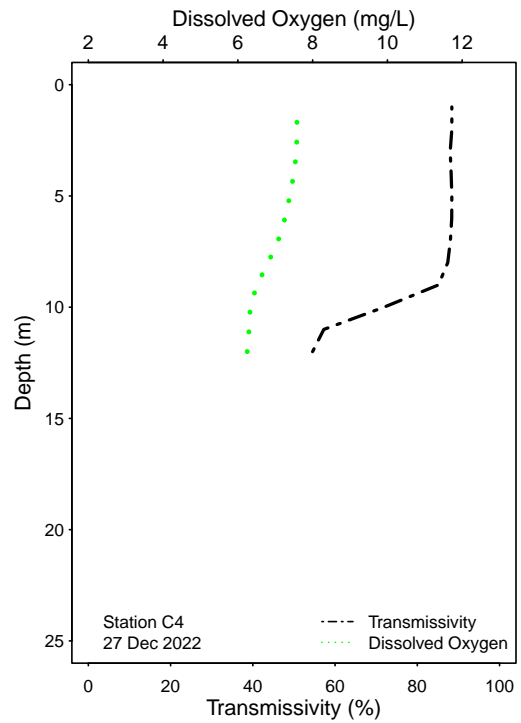
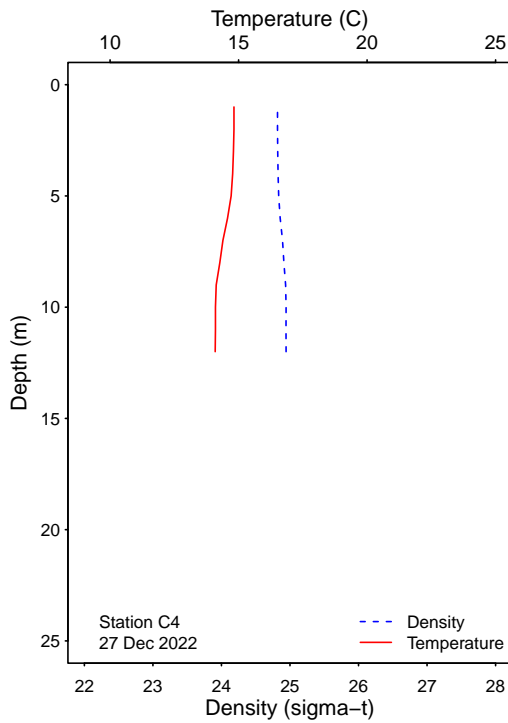
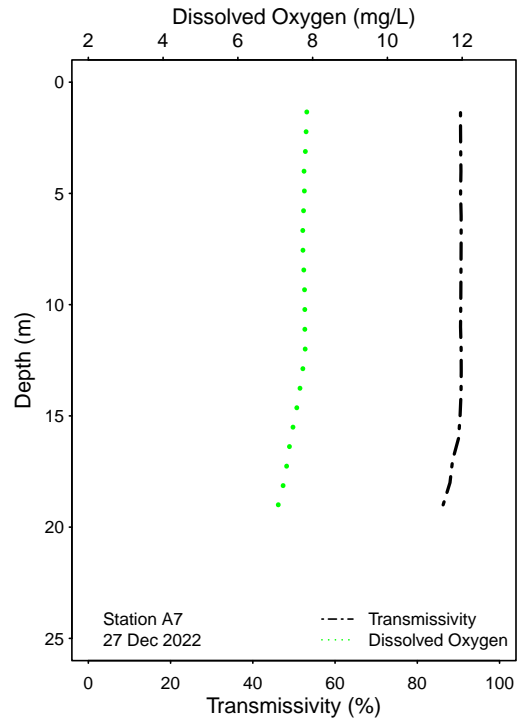
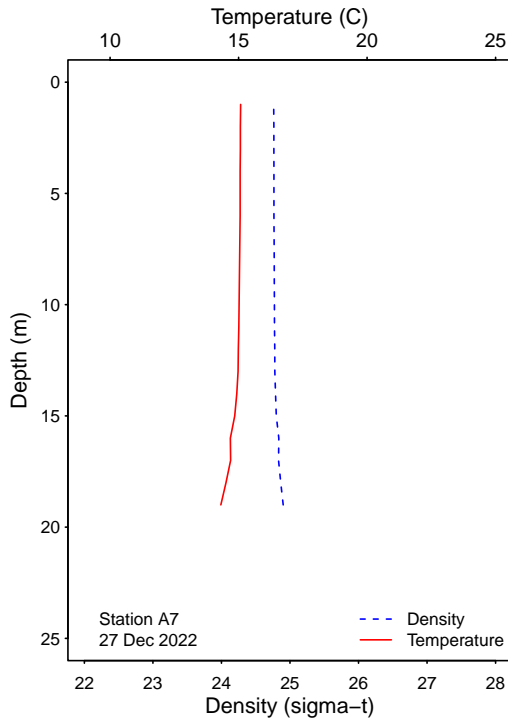


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

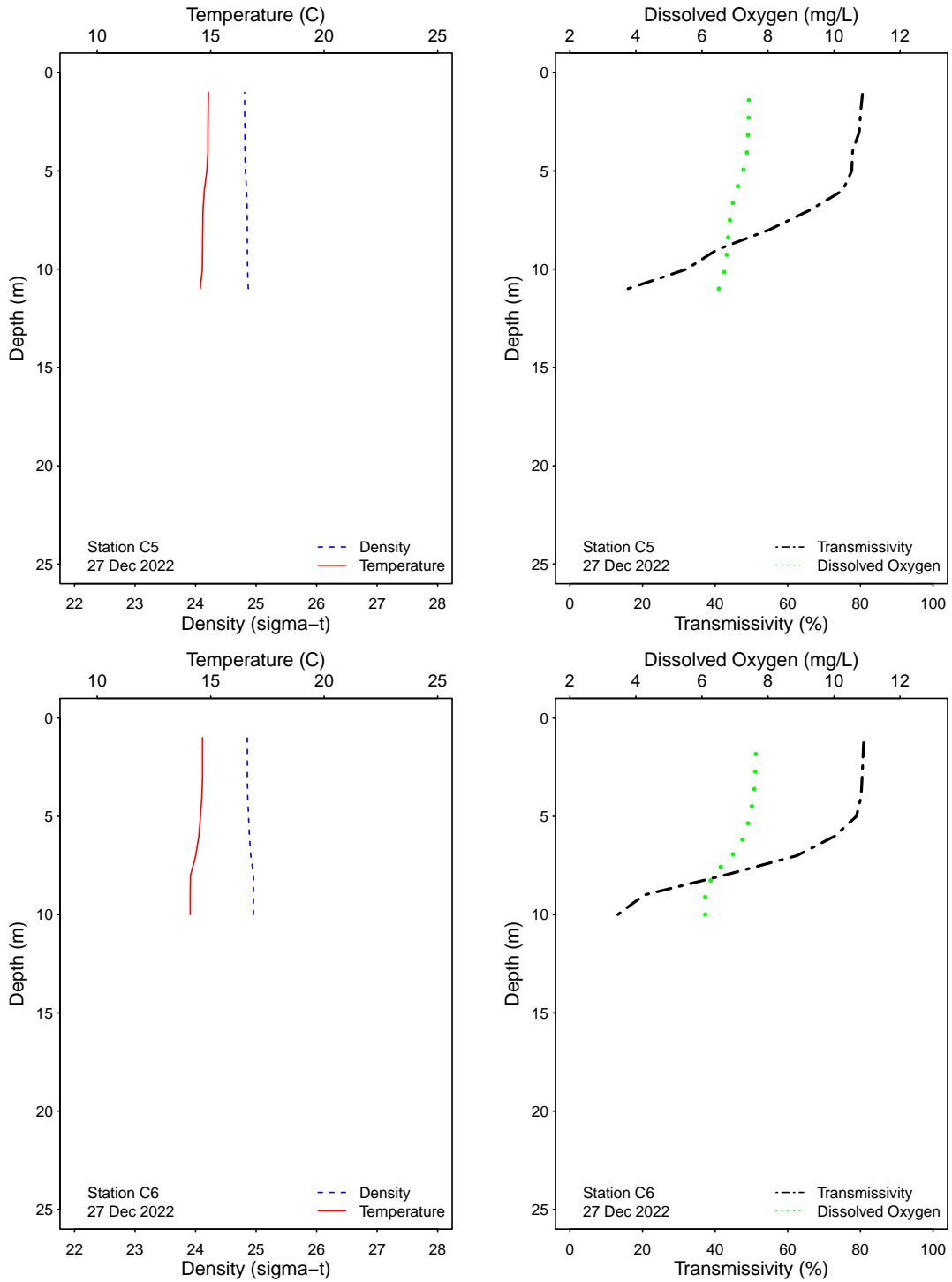


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

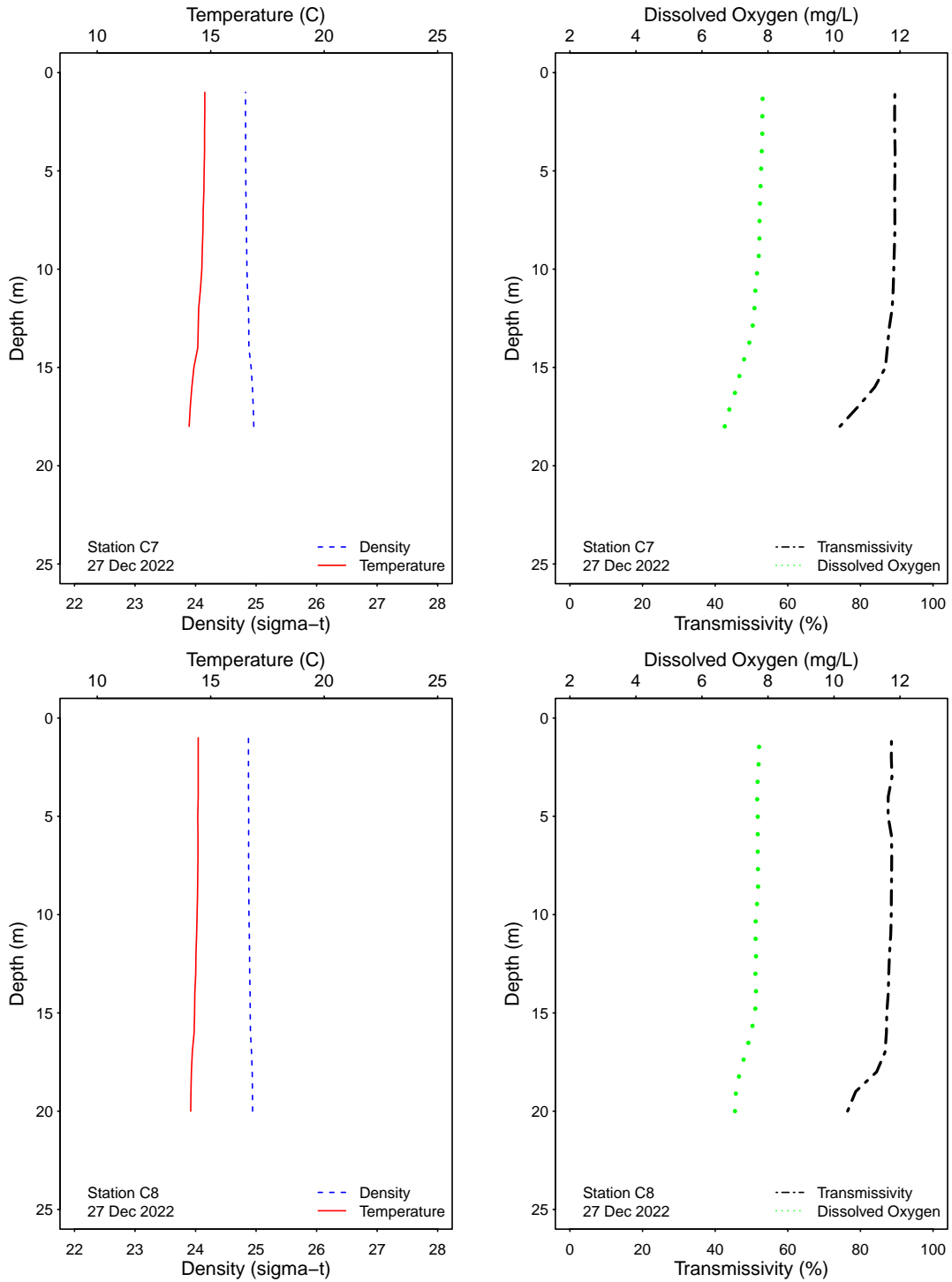


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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* (Enteroc) are reported as CFU/100 mL.

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enteroc
A7	01 Dec 2022	18	KA	LAB DUPLICATE	24e	2e	<2
A7	05 Dec 2022	18	CRE	LAB DUPLICATE	60e	10e	<2
A7	13 Dec 2022	18	CRE	LAB DUPLICATE	36e	6e	2e
A7	21 Dec 2022	18	KT	LAB DUPLICATE	4e	<2	<2
A7	27 Dec 2022	18	BS	LAB DUPLICATE	<2	<2	<2
C7	01 Dec 2022	18	KA	LAB DUPLICATE	8e	<2	<2
C7	05 Dec 2022	18	CRE	LAB DUPLICATE	2e	<2	<2
C7	13 Dec 2022	18	CRE	LAB DUPLICATE	10e	<2	2e
C7	21 Dec 2022	18	KT	LAB DUPLICATE	54	12e	<2
C7	27 Dec 2022	18	BS	LAB DUPLICATE	2e	<2	<2
C8	01 Dec 2022	12	KA	LAB DUPLICATE	2e	<2	<2
C8	05 Dec 2022	12	CRE	LAB DUPLICATE	2e	<2	<2
C8	13 Dec 2022	12	CRE	LAB DUPLICATE	6e	<2	<2
C8	21 Dec 2022	12	KT	LAB DUPLICATE	2e	4e	<2
C8	27 Dec 2022	12	BS	LAB DUPLICATE	<2	<2	<2
D12	05 Dec 2022		BS	FIELD DUPLICATE	2e	2e	4e
D12	05 Dec 2022		BS	LAB DUPLICATE	2e	2e	6e
D12	14 Dec 2022		CRE	FIELD DUPLICATE	<20	<20	<2
D12	14 Dec 2022		CRE	LAB DUPLICATE	<20	4e	<2
D12	21 Dec 2022		CRE	FIELD DUPLICATE	16e	16e	8e
D12	21 Dec 2022		CRE	LAB DUPLICATE	12e	8e	14e
D12	28 Dec 2022		KT	FIELD DUPLICATE	<20	<2	<2
D12	28 Dec 2022		KA	LAB DUPLICATE	<20	<2	2e

ns = not sampled

ND = no data

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 Dec 2022	4	8	8	35	4	13	7	3
02 Dec 2022	4	8	8	35	4	13	7	3
03 Dec 2022	4	8	8	35	4	13	7	3
04 Dec 2022	4	8	8	35	4	13	7	3
05 Dec 2022	4	7	7	32	3	12	6	3
06 Dec 2022	4	7	7	32	3	12	6	3
07 Dec 2022	4	8	8	34	4	8	5	3
08 Dec 2022	4	8	8	34	4	7	5	3
09 Dec 2022	4	8	8	34	4	7	5	3
10 Dec 2022	4	8	8	34	4	7	5	3
11 Dec 2022	4	8	8	34	4	7	5	3
12 Dec 2022	4	8	8	34	4	7	5	3
13 Dec 2022	4	8	8	34	4	7	5	3
14 Dec 2022	4	5	4	13	4	6	5	3
15 Dec 2022	4	5	4	15	4	6	5	3
16 Dec 2022	4	5	4	15	4	6	5	3
17 Dec 2022	4	5	4	15	4	6	5	3
18 Dec 2022	4	5	4	15	4	6	5	3
19 Dec 2022	4	5	4	15	4	6	5	3
20 Dec 2022	4	5	4	15	4	6	5	3
21 Dec 2022	3	3	3	7	2	3	3	4
22 Dec 2022	3	2	3	6	2	3	3	4
23 Dec 2022	3	2	3	6	2	3	3	4
24 Dec 2022	3	2	3	6	2	3	3	4
25 Dec 2022	3	2	3	6	2	3	3	4
26 Dec 2022	3	2	3	6	2	3	3	4
27 Dec 2022	3	2	3	6	2	3	3	4
28 Dec 2022	4	2	3	9	4	5	6	4
29 Dec 2022	4	2	3	9	4	5	6	4
30 Dec 2022	4	2	3	9	4	5	6	4
31 Dec 2022	4	2	3	9	4	5	6	4

* Geometric mean calculated using n<5
 ns = not sampled

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
December	IC	IC	IC	IC	IC	IC	E	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 Dec 2022	20	200	20	200	20	80	20	4
02 Dec 2022	11	110	11	120	20	110	14	4
03 Dec 2022	11	110	11	200	20	110	14	4
04 Dec 2022	11	110	11	200	20	110	14	4
05 Dec 2022	20	20	2	105	20	20	12	4
06 Dec 2022	20	20	2	105	20	20	12	4
07 Dec 2022	20	20	2	105	20	20	12	4
08 Dec 2022	20	20	2	105	20	20	12	4
09 Dec 2022	11	20	2	10	15	20	10	3
10 Dec 2022	11	20	2	6	15	20	10	3
11 Dec 2022	11	20	2	6	15	20	10	3
12 Dec 2022	11	20	2	6	15	20	10	3
13 Dec 2022	11	20	2	6	15	20	10	3
14 Dec 2022	2	20	2	10	20	20	12	4
15 Dec 2022	2	20	2	10	20	20	12	4
16 Dec 2022	11	20	2	35	20	110	16	3
17 Dec 2022	11	20	2	35	20	110	16	3
18 Dec 2022	11	20	2	35	20	110	16	3
19 Dec 2022	11	20	2	35	20	110	16	3
20 Dec 2022	11	20	2	35	20	110	16	3
21 Dec 2022	2	20	2	25	23	20	10	12
22 Dec 2022	2	20	2	25	23	20	10	12
23 Dec 2022	2	20	2	25	23	20	10	12
24 Dec 2022	2	20	2	25	23	20	10	12
25 Dec 2022	2	20	2	25	23	20	10	12
26 Dec 2022	2	20	2	25	23	20	10	12
27 Dec 2022	2	20	2	25	23	20	10	12
28 Dec 2022	2	20	2	40	26	20	12	20
29 Dec 2022	2	20	2	40	26	20	12	20
30 Dec 2022	11	20	6	50	43	110	16	20
31 Dec 2022	11	20	6	50	43	110	16	20

* 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
December	IC	IC	IC	IC	E	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 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 >30 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Dec 2022	2	2	2	2	2	2	3	2
02 Dec 2022	2	2	2	2	2	2	3	2
03 Dec 2022	2	2	2	2	2	2	3	2
04 Dec 2022	2	2	2	2	2	2	3	2
05 Dec 2022	2	2	2	2	2	2	3	2
06 Dec 2022	2	2	2	2	2	2	2	2
07 Dec 2022	2	2	2	2	2	2	2	2
08 Dec 2022	2	2	2	2	2	2	2	2
09 Dec 2022	2	2	2	2	2	2	2	2
10 Dec 2022	2	2	2	2	2	2	2	2
11 Dec 2022	2	2	2	2	2	2	2	2
12 Dec 2022	2	2	2	2	2	2	2	2
13 Dec 2022	2	2	2	2	2	2	2	2
14 Dec 2022	2	2	2	2	2	2	2	2
15 Dec 2022	2	2	2	2	2	2	2	2
16 Dec 2022	2	2	2	2	2	2	2	2
17 Dec 2022	2	2	2	2	2	2	2	2
18 Dec 2022	2	2	2	2	2	2	2	2
19 Dec 2022	2	2	2	2	2	2	2	2
20 Dec 2022	2	2	2	2	2	2	2	2
21 Dec 2022	2	2	2	2	2	2	2	2
22 Dec 2022	2	2	2	2	2	2	2	2
23 Dec 2022	2	2	2	2	2	2	2	2
24 Dec 2022	2	2	2	2	2	2	2	2
25 Dec 2022	2	2	2	2	2	2	2	2
26 Dec 2022	2	2	2	2	2	2	2	2
27 Dec 2022	2	2	2	2	2	2	2	2
28 Dec 2022	2	2	2	2	2	2	2	2
29 Dec 2022	2	2	2	2	2	2	2	2
30 Dec 2022	2	2	2	2	2	2	2	2
31 Dec 2022	2	2	2	2	2	2	2	2

* Geometric mean calculated using n<5

Table B.6

Summary of compliance at the PLOO kelp 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
December	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

