



# **POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT**

## **POINT LOMA WASTEWATER TREATMENT PLANT**

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

# **JULY 2021**

Environmental Monitoring and Technical Services  
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**Public Utilities Department**

Environmental Monitoring & Technical Services Division

August 31, 2021

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 July 2021 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,

A handwritten signature in black ink, appearing to read "Peter S. Vroom".

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  $\geq 4$  scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. Additionally, CTD profile data for each water sample depth are presented with the bacteriological data.

### ***Offshore Stations***

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

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

### ***Bacteriological Reporting and Quality Assurance***

Estimated values for bacteriological analyses are denoted by greater than (>), less than (<), or estimated (e) qualifiers and result from plates with colony counts above or below the permissible counting limits established in Bordner et al. (1978)<sup>1</sup>. 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:**

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

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

Quality controls of bacteriological data include laboratory and field duplicate analyses. Laboratory duplicates are performed on approximately 10% of the water quality samples, while field duplicates are performed six times a month (see Appendix A). Laboratory duplicates represent two aliquots of the original sample that are split in the laboratory and analyzed by the same analyst using identical procedures within the same analytical run. The results of these analyses provide a measure of intra-analyst precision. In contrast, field duplicates represent two separate samples collected at the same time from the same site, which are handled under identical circumstances and treated the same throughout field and lab procedures. The results of these analyses provide a measure of precision associated with sample collection, preservation, storage, and lab procedures. The sign test (see Gilbert, 1987<sup>2</sup>) 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 2021 Quality Assurance Report, which will be completed in March 2022.

## SUMMARY OF RESULTS

As of October 2020, new 2019 Ocean Plan Water Quality Objectives are included for a six-week rolling geometric mean of *Enterococcus* density, which shall not exceed 30 cfu/100 ml, and a Statistical Threshold Value (STV) for *Enterococcus*, which shall not exceed 110 cfu/100 ml for more than 10% of samples per month (see Appendix B).

### ***Shore Stations***

- The eight shore stations (D4, D5, D7, D8-B, D9, D10, D11, D12) were sampled on July 7, 14, 21, and 28.
- During July, each of the shore stations was in compliance with the various 2015 California Ocean Plan (Ocean Plan) water contact standards.
- Nothing of sewage origin was observed at any of the shore stations.
- 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 July 6, 12, 21, and 26.
- During July, each of the kelp stations was in compliance with the various 2015 California Ocean Plan (Ocean Plan) water contact standards.

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

- Water column temperatures ranged from 11.67 to 21.60°C. The difference between surface and bottom waters ranged from 5.22 to 9.59°C.
- Chlorophyll *a* concentrations ranged from 0.42 to 7.33 µg/L.
- Nothing of sewage origin was observed at any of the kelp stations.

#### ***Offshore Stations***

- Quarterly water quality sampling was not conducted during July at the offshore stations. The next quarterly sampling is scheduled for August 2021.



## 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 Jul 2021	10	32	32	23	36	76	23	14
02 Jul 2021	15	36	36	24	30	106	24	24
03 Jul 2021	15	36	36	24	30	106	24	24
04 Jul 2021	15	36	36	24	30	106	24	24
05 Jul 2021	15	36	36	24	30	106	24	24
06 Jul 2021	15	36	36	24	30	106	24	24
07 Jul 2021	16	32	32	23	27	100	22	23
08 Jul 2021	16	32	32	23	27	100	22	23
09 Jul 2021	11	36	36	24	30	106	19	24
10 Jul 2021	11	36	36	24	30	106	19	24
11 Jul 2021	11	36	36	24	30	106	19	24
12 Jul 2021	11	36	36	24	30	106	19	24
13 Jul 2021	11	36	36	24	30	106	19	24
14 Jul 2021	8	32	32	23	27	76	31	21
15 Jul 2021	8	32	32	23	27	76	31	21
16 Jul 2021	11	36	36	24	33	60	35	22
17 Jul 2021	11	36	36	24	33	60	35	22
18 Jul 2021	11	36	36	24	33	60	35	22
19 Jul 2021	11	36	36	24	33	60	35	22
20 Jul 2021	11	36	36	24	33	60	35	22
21 Jul 2021	13	32	32	23	27	48	31	13
22 Jul 2021	13	32	32	23	27	48	31	13
23 Jul 2021	11	20	20	13	16	28	35	12
24 Jul 2021	11	20	20	13	16	28	35	12
25 Jul 2021	11	20	20	13	16	28	35	12
26 Jul 2021	11	20	20	13	16	28	35	12
27 Jul 2021	11	20	20	13	16	28	35	12
28 Jul 2021	13	20	32	18	17	26	50	13
29 Jul 2021	13	20	32	18	17	26	50	13
30 Jul 2021	11	20	36	26	18	28	63	10
31 Jul 2021	11	20	36	26	18	28	63	10

\* 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 Jul 2021	2	2	2	3	3	5	6	2
02 Jul 2021	2	2	2	4	3	6	5	2
03 Jul 2021	2	2	2	4	3	6	5	2
04 Jul 2021	2	2	2	4	3	6	5	2
05 Jul 2021	2	2	2	4	3	6	5	2
06 Jul 2021	2	2	2	4	3	6	5	2
07 Jul 2021	2	2	3	3	3	5	4	3
08 Jul 2021	2	2	3	3	3	5	4	3
09 Jul 2021	3	2	3	4	3	7	5	2
10 Jul 2021	3	2	3	4	3	7	5	2
11 Jul 2021	3	2	3	4	3	7	5	2
12 Jul 2021	3	2	3	4	3	7	5	2
13 Jul 2021	3	2	3	4	3	7	5	2
14 Jul 2021	2	2	3	3	3	8	6	3
15 Jul 2021	2	2	3	3	3	8	6	3
16 Jul 2021	3	2	3	4	3	9	6	3
17 Jul 2021	3	2	3	4	3	9	6	3
18 Jul 2021	3	2	3	4	3	9	6	3
19 Jul 2021	3	2	3	4	3	9	6	3
20 Jul 2021	3	2	3	4	3	9	6	3
21 Jul 2021	2	2	3	4	3	7	5	3
22 Jul 2021	2	2	3	4	3	7	5	3
23 Jul 2021	3	2	3	2	2	6	6	3
24 Jul 2021	3	2	3	2	2	6	6	3
25 Jul 2021	3	2	3	2	2	6	6	3
26 Jul 2021	3	2	3	2	2	6	6	3
27 Jul 2021	3	2	3	2	2	6	6	3
28 Jul 2021	2	2	3	2	2	5	10	3
29 Jul 2021	2	2	3	2	2	5	10	3
30 Jul 2021	3	2	3	2	2	4	10	3
31 Jul 2021	3	2	3	2	2	4	10	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 Jul 2021	2	2	2	2	3	5	3	3
02 Jul 2021	2	2	3	2	3	6	3	3
03 Jul 2021	2	2	3	2	3	6	3	3
04 Jul 2021	2	2	3	2	3	6	3	3
05 Jul 2021	2	2	3	2	3	6	3	3
06 Jul 2021	2	2	3	2	3	6	3	3
07 Jul 2021	2	3	4	2	3	6	3	3
08 Jul 2021	2	3	4	2	3	6	3	3
09 Jul 2021	2	4	5	2	3	8	2	3
10 Jul 2021	2	4	5	2	3	8	2	3
11 Jul 2021	2	4	5	2	3	8	2	3
12 Jul 2021	2	4	5	2	3	8	2	3
13 Jul 2021	2	4	5	2	3	8	2	3
14 Jul 2021	2	3	4	2	3	7	5	3
15 Jul 2021	2	3	4	2	3	7	5	3
16 Jul 2021	2	4	5	2	3	8	5	3
17 Jul 2021	2	4	5	2	3	8	5	3
18 Jul 2021	2	4	5	2	3	8	5	3
19 Jul 2021	2	4	5	2	3	8	5	3
20 Jul 2021	2	4	5	2	3	8	5	3
21 Jul 2021	2	3	4	2	3	6	4	3
22 Jul 2021	2	3	4	2	3	6	4	3
23 Jul 2021	2	4	4	2	2	5	5	3
24 Jul 2021	2	4	4	2	2	5	5	3
25 Jul 2021	2	4	4	2	2	5	5	3
26 Jul 2021	2	4	4	2	2	5	5	3
27 Jul 2021	2	4	4	2	2	5	5	3
28 Jul 2021	2	3	3	2	2	5	6	2
29 Jul 2021	2	3	3	2	2	5	6	2
30 Jul 2021	2	4	4	2	2	4	8	2
31 Jul 2021	2	4	4	2	2	4	8	2

\* 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
07 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
14 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
21 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
28 Jul 2021	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
07 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
14 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
21 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
28 Jul 2021	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
07 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
14 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
21 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
28 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.7**

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
07 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
14 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
21 Jul 2021	IC	IC	IC	IC	IC	IC	IC	IC
28 Jul 2021	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* (Enter) are reported as CFU/100 mL. The fecal:total coliform ratio (F:T) is unitless. Comments follow the data summary.

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
D4	07 Jul 2021	1009	20e	6e	<2	0.30
D4	14 Jul 2021	752	<2	<2	<2	1.00
D4	21 Jul 2021	842	<20	<2	<2	0.10
D4	28 Jul 2021	807	<20	<2	<2	0.10
D5	07 Jul 2021	1028	<20	<2	<20	0.10
D5	14 Jul 2021	734	<20	<2	<2	0.10
D5	21 Jul 2021	830	20e	2e	<2	0.10
D5	28 Jul 2021	747	<20	<2	<2	0.10
D7	07 Jul 2021	932	<20	8e	<20	0.40
D7	14 Jul 2021	819	20e	<2	<2	0.10
D7	21 Jul 2021	909	<20	2e	<2	0.10
D7	28 Jul 2021	841	<200	2e	<2	0.01
D8-B	07 Jul 2021	916	<20	<2	<2	0.10
D8-B	14 Jul 2021	843	<20	<2	<2	0.10
D8-B	21 Jul 2021	938	<20	4e	<2	0.20
D8-B	28 Jul 2021	903	60e	2e	<2	0.03
D9	07 Jul 2021	904	20e	<2	<2	0.10
D9	14 Jul 2021	856	20e	2e	<2	0.10
D9	21 Jul 2021	954	12e	<2	2e	0.17
D9	28 Jul 2021	916	20e	<2	2e	0.10
D10	07 Jul 2021	835	80e	4e	6e	0.05
D10	14 Jul 2021	912	20e	<20	6e	1.00
D10	21 Jul 2021	1015	<20	2e	2e	0.10
D10	28 Jul 2021	934	20e	<2	4e	0.10
D11	07 Jul 2021	823	18e	2e	2e	0.11
D11	14 Jul 2021	929	<200	<20	78	0.10
D11	21 Jul 2021	1034	<20	<2	2e	0.10
D11	28 Jul 2021	1012	220e	110	12e	0.50
D12	07 Jul 2021	802	20e	4e	2e	0.20
D12	14 Jul 2021	1014	14e	4e	2e	0.29
D12	21 Jul 2021	1111	<2	<2	2e	1.00
D12	28 Jul 2021	1040	<20	<2	<2	0.10

ns = not sampled

ND = no data

**Table 2.9**

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

Station	Date	Parameter	Value
D4	07 Jul 2021	Arrive Time	1009
D4	07 Jul 2021	Weather	Cloudy
D4	07 Jul 2021	Wind Speed (kts)	1.5
D4	07 Jul 2021	Wind Dir	W
D4	07 Jul 2021	Animal Life	2 Pelicans; 2 Terns
D4	07 Jul 2021	Floatables	None
D4	07 Jul 2021	Water Color	Blue
D4	07 Jul 2021	Current Direction	
D4	07 Jul 2021	Water Temp (C)	20.2
D4	07 Jul 2021	Wave Height Low (ft)	1
D4	07 Jul 2021	High Tide (ft)	3.43
D4	07 Jul 2021	High Tide Time	922
D4	07 Jul 2021	Low Tide (ft)	-0.15
D4	07 Jul 2021	Low Tide Time	300
D4	07 Jul 2021	Comments	Water turbid; Kelp; Seagrass; Algae; Trash-3
D4	14 Jul 2021	Arrive Time	752
D4	14 Jul 2021	Weather	Overcast
D4	14 Jul 2021	Wind Speed (kts)	3.2
D4	14 Jul 2021	Wind Dir	SW
D4	14 Jul 2021	Animal Life	5 Birds
D4	14 Jul 2021	Floatables	None
D4	14 Jul 2021	Water Color	Green
D4	14 Jul 2021	Current Direction	N
D4	14 Jul 2021	Water Temp (C)	21.8
D4	14 Jul 2021	Wave Height Low (ft)	2
D4	14 Jul 2021	High Tide (ft)	4.01
D4	14 Jul 2021	High Tide Time	1338
D4	14 Jul 2021	Low Tide (ft)	-0.13
D4	14 Jul 2021	Low Tide Time	701
D4	14 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-2
D4	21 Jul 2021	Arrive Time	842
D4	21 Jul 2021	Weather	Sunny
D4	21 Jul 2021	Wind Speed (kts)	2.9
D4	21 Jul 2021	Wind Dir	NW
D4	21 Jul 2021	Animal Life	None
D4	21 Jul 2021	Floatables	None
D4	21 Jul 2021	Water Color	Green
D4	21 Jul 2021	Current Direction	S
D4	21 Jul 2021	Water Temp (C)	21.5
D4	21 Jul 2021	Wave Height Low (ft)	2
D4	21 Jul 2021	High Tide (ft)	3.66
D4	21 Jul 2021	High Tide Time	836
D4	21 Jul 2021	Low Tide (ft)	-0.78
D4	21 Jul 2021	Low Tide Time	215
D4	21 Jul 2021	Comments	Water clear; Kelp; Algae; Trash-1
D4	28 Jul 2021	Arrive Time	807
D4	28 Jul 2021	Weather	Partly cloudy
D4	28 Jul 2021	Wind Speed (kts)	4
D4	28 Jul 2021	Wind Dir	NW
D4	28 Jul 2021	Animal Life	5 birds, 1 Seagull
D4	28 Jul 2021	Floatables	None
D4	28 Jul 2021	Water Color	Green
D4	28 Jul 2021	Current Direction	S

Station	Date	Parameter	Value
D4	28 Jul 2021	Water Temp (C)	21
D4	28 Jul 2021	Wave Height Low (ft)	1
D4	28 Jul 2021	High Tide (ft)	5.08
D4	28 Jul 2021	High Tide Time	8
D4	28 Jul 2021	Low Tide (ft)	0.23
D4	28 Jul 2021	Low Tide Time	703
D4	28 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1
D5	07 Jul 2021	Arrive Time	1028
D5	07 Jul 2021	Weather	Cloudy
D5	07 Jul 2021	Wind Speed (kts)	1.3
D5	07 Jul 2021	Wind Dir	W
D5	07 Jul 2021	Animal Life	1 Cormorant
D5	07 Jul 2021	Floatables	Foam
D5	07 Jul 2021	Water Color	Brown
D5	07 Jul 2021	Current Direction	
D5	07 Jul 2021	Water Temp (C)	21.3
D5	07 Jul 2021	Wave Height Low (ft)	1
D5	07 Jul 2021	High Tide (ft)	3.43
D5	07 Jul 2021	High Tide Time	922
D5	07 Jul 2021	Low Tide (ft)	-0.15
D5	07 Jul 2021	Low Tide Time	300
D5	07 Jul 2021	Comments	Water turbid; Kelp; Seagrass; Algae; Trash-1
D5	14 Jul 2021	Arrive Time	734
D5	14 Jul 2021	Weather	Overcast
D5	14 Jul 2021	Wind Speed (kts)	0
D5	14 Jul 2021	Wind Dir	
D5	14 Jul 2021	Animal Life	None
D5	14 Jul 2021	Floatables	Foam
D5	14 Jul 2021	Water Color	Green
D5	14 Jul 2021	Current Direction	N
D5	14 Jul 2021	Water Temp (C)	22.7
D5	14 Jul 2021	Wave Height Low (ft)	1
D5	14 Jul 2021	High Tide (ft)	4.01
D5	14 Jul 2021	High Tide Time	1338
D5	14 Jul 2021	Low Tide (ft)	-0.13
D5	14 Jul 2021	Low Tide Time	701
D5	14 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-2
D5	21 Jul 2021	Arrive Time	830
D5	21 Jul 2021	Weather	Sunny
D5	21 Jul 2021	Wind Speed (kts)	0
D5	21 Jul 2021	Wind Dir	
D5	21 Jul 2021	Animal Life	None
D5	21 Jul 2021	Floatables	None
D5	21 Jul 2021	Water Color	Green
D5	21 Jul 2021	Current Direction	S
D5	21 Jul 2021	Water Temp (C)	21.4
D5	21 Jul 2021	Wave Height Low (ft)	3
D5	21 Jul 2021	High Tide (ft)	3.66
D5	21 Jul 2021	High Tide Time	836
D5	21 Jul 2021	Low Tide (ft)	-0.78
D5	21 Jul 2021	Low Tide Time	215
D5	21 Jul 2021	Comments	Water turbid; Algae; Trash-1
D5	28 Jul 2021	Arrive Time	747
D5	28 Jul 2021	Weather	Partly cloudy
D5	28 Jul 2021	Wind Speed (kts)	5
D5	28 Jul 2021	Wind Dir	N
D5	28 Jul 2021	Animal Life	2 Seagulls

Station	Date	Parameter	Value
D5	28 Jul 2021	Floatables	None
D5	28 Jul 2021	Water Color	Green
D5	28 Jul 2021	Current Direction	S
D5	28 Jul 2021	Water Temp (C)	20.9
D5	28 Jul 2021	Wave Height Low (ft)	2
D5	28 Jul 2021	High Tide (ft)	5.08
D5	28 Jul 2021	High Tide Time	8
D5	28 Jul 2021	Low Tide (ft)	0.23
D5	28 Jul 2021	Low Tide Time	703
D5	28 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1
D7	07 Jul 2021	Arrive Time	932
D7	07 Jul 2021	Weather	Cloudy
D7	07 Jul 2021	Wind Speed (kts)	0.3
D7	07 Jul 2021	Wind Dir	SW
D7	07 Jul 2021	Animal Life	1 Cormorant
D7	07 Jul 2021	Floatables	None
D7	07 Jul 2021	Water Color	Green
D7	07 Jul 2021	Current Direction	S
D7	07 Jul 2021	Water Temp (C)	21.4
D7	07 Jul 2021	Wave Height Low (ft)	3
D7	07 Jul 2021	High Tide (ft)	3.43
D7	07 Jul 2021	High Tide Time	922
D7	07 Jul 2021	Low Tide (ft)	-0.15
D7	07 Jul 2021	Low Tide Time	300
D7	07 Jul 2021	Comments	Water turbid; Kelp; Seagrass; Algae; Trash-1; 1 Person; 5 Surfers
D7	14 Jul 2021	Arrive Time	819
D7	14 Jul 2021	Weather	Overcast
D7	14 Jul 2021	Wind Speed (kts)	6.9
D7	14 Jul 2021	Wind Dir	S
D7	14 Jul 2021	Animal Life	1 Bird; 26 Surfers
D7	14 Jul 2021	Floatables	None
D7	14 Jul 2021	Water Color	Green
D7	14 Jul 2021	Current Direction	N
D7	14 Jul 2021	Water Temp (C)	23
D7	14 Jul 2021	Wave Height Low (ft)	1
D7	14 Jul 2021	High Tide (ft)	4.01
D7	14 Jul 2021	High Tide Time	1338
D7	14 Jul 2021	Low Tide (ft)	-0.13
D7	14 Jul 2021	Low Tide Time	701
D7	14 Jul 2021	Comments	Water clear; Kelp ; Seagrass; Algae; Trash-1
D7	21 Jul 2021	Arrive Time	909
D7	21 Jul 2021	Weather	Sunny
D7	21 Jul 2021	Wind Speed (kts)	2.1
D7	21 Jul 2021	Wind Dir	W
D7	21 Jul 2021	Animal Life	None
D7	21 Jul 2021	Floatables	None
D7	21 Jul 2021	Water Color	Green
D7	21 Jul 2021	Current Direction	S
D7	21 Jul 2021	Water Temp (C)	22.2
D7	21 Jul 2021	Wave Height Low (ft)	3
D7	21 Jul 2021	High Tide (ft)	3.66
D7	21 Jul 2021	High Tide Time	836
D7	21 Jul 2021	Low Tide (ft)	-0.78
D7	21 Jul 2021	Low Tide Time	215
D7	21 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1; 4 Surfers
D7	28 Jul 2021	Arrive Time	841

Station	Date	Parameter	Value
D7	28 Jul 2021	Weather	Partly cloudy
D7	28 Jul 2021	Wind Speed (kts)	4.6
D7	28 Jul 2021	Wind Dir	N
D7	28 Jul 2021	Animal Life	1 Seagull
D7	28 Jul 2021	Floatables	None
D7	28 Jul 2021	Water Color	Green
D7	28 Jul 2021	Current Direction	S
D7	28 Jul 2021	Water Temp (C)	20.4
D7	28 Jul 2021	Wave Height Low (ft)	2
D7	28 Jul 2021	High Tide (ft)	5.08
D7	28 Jul 2021	High Tide Time	8
D7	28 Jul 2021	Low Tide (ft)	0.23
D7	28 Jul 2021	Low Tide Time	703
D7	28 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1; 3 Persons; 8 Surfers
D8-B	07 Jul 2021	Arrive Time	916
D8-B	07 Jul 2021	Weather	Cloudy
D8-B	07 Jul 2021	Wind Speed (kts)	1.3
D8-B	07 Jul 2021	Wind Dir	W
D8-B	07 Jul 2021	Animal Life	2 Terns; 1 Dog
D8-B	07 Jul 2021	Floatables	Foam
D8-B	07 Jul 2021	Water Color	Green
D8-B	07 Jul 2021	Current Direction	N
D8-B	07 Jul 2021	Water Temp (C)	20.8
D8-B	07 Jul 2021	Wave Height Low (ft)	2
D8-B	07 Jul 2021	High Tide (ft)	3.43
D8-B	07 Jul 2021	High Tide Time	922
D8-B	07 Jul 2021	Low Tide (ft)	-0.15
D8-B	07 Jul 2021	Low Tide Time	300
D8-B	07 Jul 2021	Comments	Water turbid; Kelp; Algae; Trash-1; 1 Person
D8-B	14 Jul 2021	Arrive Time	843
D8-B	14 Jul 2021	Weather	Overcast
D8-B	14 Jul 2021	Wind Speed (kts)	0
D8-B	14 Jul 2021	Wind Dir	
D8-B	14 Jul 2021	Animal Life	9 Surfers
D8-B	14 Jul 2021	Floatables	Foam
D8-B	14 Jul 2021	Water Color	Green
D8-B	14 Jul 2021	Current Direction	N
D8-B	14 Jul 2021	Water Temp (C)	23.1
D8-B	14 Jul 2021	Wave Height Low (ft)	2
D8-B	14 Jul 2021	High Tide (ft)	4.01
D8-B	14 Jul 2021	High Tide Time	1338
D8-B	14 Jul 2021	Low Tide (ft)	-0.13
D8-B	14 Jul 2021	Low Tide Time	701
D8-B	14 Jul 2021	Comments	Water turbid; Kelp; Algae; Trash-1
D8-B	21 Jul 2021	Arrive Time	938
D8-B	21 Jul 2021	Weather	Sunny
D8-B	21 Jul 2021	Wind Speed (kts)	2.3
D8-B	21 Jul 2021	Wind Dir	W
D8-B	21 Jul 2021	Animal Life	None
D8-B	21 Jul 2021	Floatables	Foam
D8-B	21 Jul 2021	Water Color	Green
D8-B	21 Jul 2021	Current Direction	S
D8-B	21 Jul 2021	Water Temp (C)	22.4
D8-B	21 Jul 2021	Wave Height Low (ft)	2
D8-B	21 Jul 2021	High Tide (ft)	3.66
D8-B	21 Jul 2021	High Tide Time	836
D8-B	21 Jul 2021	Low Tide (ft)	-0.78

Station	Date	Parameter	Value
D8-B	21 Jul 2021	Low Tide Time	215
D8-B	21 Jul 2021	Comments	Water turbid; Kelp; Algae; Debris; Trash-1; 1 Person
D8-B	28 Jul 2021	Arrive Time	903
D8-B	28 Jul 2021	Weather	Sunny
D8-B	28 Jul 2021	Wind Speed (kts)	0
D8-B	28 Jul 2021	Wind Dir	
D8-B	28 Jul 2021	Animal Life	2 Pelicans
D8-B	28 Jul 2021	Floatables	None
D8-B	28 Jul 2021	Water Color	Green
D8-B	28 Jul 2021	Current Direction	S
D8-B	28 Jul 2021	Water Temp (C)	20.4
D8-B	28 Jul 2021	Wave Height Low (ft)	2
D8-B	28 Jul 2021	High Tide (ft)	5.08
D8-B	28 Jul 2021	High Tide Time	8
D8-B	28 Jul 2021	Low Tide (ft)	0.23
D8-B	28 Jul 2021	Low Tide Time	703
D8-B	28 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1; 1 Person; 1 Surfer
D9	07 Jul 2021	Arrive Time	904
D9	07 Jul 2021	Weather	Cloudy
D9	07 Jul 2021	Wind Speed (kts)	2.3
D9	07 Jul 2021	Wind Dir	W
D9	07 Jul 2021	Animal Life	2 Pelicans; 1 Seagull
D9	07 Jul 2021	Floatables	Foam
D9	07 Jul 2021	Water Color	Green
D9	07 Jul 2021	Current Direction	N
D9	07 Jul 2021	Water Temp (C)	21
D9	07 Jul 2021	Wave Height Low (ft)	3
D9	07 Jul 2021	High Tide (ft)	3.43
D9	07 Jul 2021	High Tide Time	922
D9	07 Jul 2021	Low Tide (ft)	-0.15
D9	07 Jul 2021	Low Tide Time	300
D9	07 Jul 2021	Comments	Water turbid; Algae; Trash-1; 2 Persons
D9	14 Jul 2021	Arrive Time	856
D9	14 Jul 2021	Weather	Overcast
D9	14 Jul 2021	Wind Speed (kts)	3.3
D9	14 Jul 2021	Wind Dir	SW
D9	14 Jul 2021	Animal Life	1 Bird; 3 Persons; 2 Surfers
D9	14 Jul 2021	Floatables	Foam; Film
D9	14 Jul 2021	Water Color	Green
D9	14 Jul 2021	Current Direction	N
D9	14 Jul 2021	Water Temp (C)	22.9
D9	14 Jul 2021	Wave Height Low (ft)	2
D9	14 Jul 2021	High Tide (ft)	4.01
D9	14 Jul 2021	High Tide Time	1338
D9	14 Jul 2021	Low Tide (ft)	-0.13
D9	14 Jul 2021	Low Tide Time	701
D9	14 Jul 2021	Comments	Water turbid; Kelp; Seagrass; Algae; Trash-1
D9	21 Jul 2021	Arrive Time	954
D9	21 Jul 2021	Weather	Sunny
D9	21 Jul 2021	Wind Speed (kts)	4
D9	21 Jul 2021	Wind Dir	W
D9	21 Jul 2021	Animal Life	None
D9	21 Jul 2021	Floatables	None
D9	21 Jul 2021	Water Color	Green
D9	21 Jul 2021	Current Direction	N
D9	21 Jul 2021	Water Temp (C)	22.7

Station	Date	Parameter	Value
D9	21 Jul 2021	Wave Height Low (ft)	3
D9	21 Jul 2021	High Tide (ft)	3.66
D9	21 Jul 2021	High Tide Time	836
D9	21 Jul 2021	Low Tide (ft)	-0.78
D9	21 Jul 2021	Low Tide Time	215
D9	21 Jul 2021	Comments	Water turbid; Kelp; Algae; Trash-1; 1 Person
D9	28 Jul 2021	Arrive Time	916
D9	28 Jul 2021	Weather	Sunny
D9	28 Jul 2021	Wind Speed (kts)	2.9
D9	28 Jul 2021	Wind Dir	W
D9	28 Jul 2021	Animal Life	2 Dogs
D9	28 Jul 2021	Floatables	None
D9	28 Jul 2021	Water Color	Green
D9	28 Jul 2021	Current Direction	S
D9	28 Jul 2021	Water Temp (C)	22
D9	28 Jul 2021	Wave Height Low (ft)	3
D9	28 Jul 2021	High Tide (ft)	5.08
D9	28 Jul 2021	High Tide Time	8
D9	28 Jul 2021	Low Tide (ft)	0.23
D9	28 Jul 2021	Low Tide Time	703
D9	28 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1; 5 Persons
D10	07 Jul 2021	Arrive Time	835
D10	07 Jul 2021	Weather	Cloudy
D10	07 Jul 2021	Wind Speed (kts)	1.5
D10	07 Jul 2021	Wind Dir	W
D10	07 Jul 2021	Animal Life	1 Seagull; 4 Dogs
D10	07 Jul 2021	Floatables	Foam
D10	07 Jul 2021	Water Color	Brown
D10	07 Jul 2021	Current Direction	N
D10	07 Jul 2021	Water Temp (C)	20.7
D10	07 Jul 2021	Wave Height Low (ft)	2
D10	07 Jul 2021	High Tide (ft)	3.43
D10	07 Jul 2021	High Tide Time	922
D10	07 Jul 2021	Low Tide (ft)	-0.15
D10	07 Jul 2021	Low Tide Time	300
D10	07 Jul 2021	Comments	Water turbid; Kelp; Seagrass; 20 Persons; 2 Swimmers; 22 Surfers
D10	14 Jul 2021	Arrive Time	912
D10	14 Jul 2021	Weather	Overcast
D10	14 Jul 2021	Wind Speed (kts)	3.1
D10	14 Jul 2021	Wind Dir	SW
D10	14 Jul 2021	Animal Life	27 Surfers; 1 Dog; 44 Persons; 6 Birds
D10	14 Jul 2021	Floatables	Foam; Film
D10	14 Jul 2021	Water Color	Green
D10	14 Jul 2021	Current Direction	N
D10	14 Jul 2021	Water Temp (C)	23.4
D10	14 Jul 2021	Wave Height Low (ft)	3
D10	14 Jul 2021	High Tide (ft)	4.01
D10	14 Jul 2021	High Tide Time	1338
D10	14 Jul 2021	Low Tide (ft)	-0.13
D10	14 Jul 2021	Low Tide Time	701
D10	14 Jul 2021	Comments	Water turbid; Kelp; Seagrass; Trash-1
D10	21 Jul 2021	Arrive Time	1015
D10	21 Jul 2021	Weather	Sunny
D10	21 Jul 2021	Wind Speed (kts)	3.6
D10	21 Jul 2021	Wind Dir	W
D10	21 Jul 2021	Animal Life	None

Station	Date	Parameter	Value
D10	21 Jul 2021	Floatables	None
D10	21 Jul 2021	Water Color	Green
D10	21 Jul 2021	Current Direction	N
D10	21 Jul 2021	Water Temp (C)	22.8
D10	21 Jul 2021	Wave Height Low (ft)	2
D10	21 Jul 2021	High Tide (ft)	3.66
D10	21 Jul 2021	High Tide Time	836
D10	21 Jul 2021	Low Tide (ft)	-0.78
D10	21 Jul 2021	Low Tide Time	215
D10	21 Jul 2021	Comments	Water turbid; Kelp; Seagrass; Trash-1; 65 Persons; 27 Surfers; 25 Swimmers
D10	28 Jul 2021	Arrive Time	934
D10	28 Jul 2021	Weather	Sunny
D10	28 Jul 2021	Wind Speed (kts)	5
D10	28 Jul 2021	Wind Dir	W
D10	28 Jul 2021	Animal Life	None
D10	28 Jul 2021	Floatables	None
D10	28 Jul 2021	Water Color	Green
D10	28 Jul 2021	Current Direction	S
D10	28 Jul 2021	Water Temp (C)	21.2
D10	28 Jul 2021	Wave Height Low (ft)	2
D10	28 Jul 2021	High Tide (ft)	5.08
D10	28 Jul 2021	High Tide Time	8
D10	28 Jul 2021	Low Tide (ft)	0.23
D10	28 Jul 2021	Low Tide Time	703
D10	28 Jul 2021	Comments	Water clear; Kelp; Seagrass; Trash-1; 28 Persons; 16 Surfers; 29 Swimmers
D11	07 Jul 2021	Arrive Time	823
D11	07 Jul 2021	Weather	Cloudy
D11	07 Jul 2021	Wind Speed (kts)	1.5
D11	07 Jul 2021	Wind Dir	W
D11	07 Jul 2021	Animal Life	4 Godwits
D11	07 Jul 2021	Floatables	None
D11	07 Jul 2021	Water Color	Blue
D11	07 Jul 2021	Current Direction	S
D11	07 Jul 2021	Water Temp (C)	21.4
D11	07 Jul 2021	Wave Height Low (ft)	3
D11	07 Jul 2021	High Tide (ft)	3.43
D11	07 Jul 2021	High Tide Time	922
D11	07 Jul 2021	Low Tide (ft)	-0.15
D11	07 Jul 2021	Low Tide Time	300
D11	07 Jul 2021	Comments	Water clear; Kelp; Seagrass; Trash-1; 3 Persons; 1 Walker; 18 Surfers
D11	14 Jul 2021	Arrive Time	929
D11	14 Jul 2021	Weather	Overcast
D11	14 Jul 2021	Wind Speed (kts)	3.8
D11	14 Jul 2021	Wind Dir	SW
D11	14 Jul 2021	Animal Life	3 Birds; 7 Dogs; 6 Swimmers; 16 Persons; 18 Surfers; 2 Fishermen
D11	14 Jul 2021	Floatables	Foam; Film
D11	14 Jul 2021	Water Color	Green
D11	14 Jul 2021	Current Direction	N
D11	14 Jul 2021	Water Temp (C)	23.4
D11	14 Jul 2021	Wave Height Low (ft)	4
D11	14 Jul 2021	High Tide (ft)	4.01
D11	14 Jul 2021	High Tide Time	1338
D11	14 Jul 2021	Low Tide (ft)	-0.13
D11	14 Jul 2021	Low Tide Time	701

Station	Date	Parameter	Value
D11	14 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1
D11	21 Jul 2021	Arrive Time	1034
D11	21 Jul 2021	Weather	Sunny
D11	21 Jul 2021	Wind Speed (kts)	4.2
D11	21 Jul 2021	Wind Dir	W
D11	21 Jul 2021	Animal Life	None
D11	21 Jul 2021	Floatables	Foam
D11	21 Jul 2021	Water Color	Green
D11	21 Jul 2021	Current Direction	S
D11	21 Jul 2021	Water Temp (C)	23.1
D11	21 Jul 2021	Wave Height Low (ft)	2
D11	21 Jul 2021	High Tide (ft)	3.66
D11	21 Jul 2021	High Tide Time	836
D11	21 Jul 2021	Low Tide (ft)	-0.78
D11	21 Jul 2021	Low Tide Time	215
D11	21 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1; 33 Persons; 23 Surfers; 9 Swimmers
D11	28 Jul 2021	Arrive Time	1012
D11	28 Jul 2021	Weather	Sunny
D11	28 Jul 2021	Wind Speed (kts)	4.6
D11	28 Jul 2021	Wind Dir	W
D11	28 Jul 2021	Animal Life	2 Dogs
D11	28 Jul 2021	Floatables	None
D11	28 Jul 2021	Water Color	Green
D11	28 Jul 2021	Current Direction	S
D11	28 Jul 2021	Water Temp (C)	21.6
D11	28 Jul 2021	Wave Height Low (ft)	2
D11	28 Jul 2021	High Tide (ft)	5.08
D11	28 Jul 2021	High Tide Time	8
D11	28 Jul 2021	Low Tide (ft)	0.23
D11	28 Jul 2021	Low Tide Time	703
D11	28 Jul 2021	Comments	Water clear; Kelp; Trash-1; 15 Persons; 19 Surfers; 9 Swimmers
D12	07 Jul 2021	Arrive Time	802
D12	07 Jul 2021	Weather	Cloudy
D12	07 Jul 2021	Wind Speed (kts)	3.4
D12	07 Jul 2021	Wind Dir	SW
D12	07 Jul 2021	Animal Life	4 Godwits; 2 Pelicans; 10 Pigeons; 1 Seagull
D12	07 Jul 2021	Floatables	None
D12	07 Jul 2021	Water Color	Blue
D12	07 Jul 2021	Current Direction	N
D12	07 Jul 2021	Water Temp (C)	22.2
D12	07 Jul 2021	Wave Height Low (ft)	3
D12	07 Jul 2021	High Tide (ft)	3.43
D12	07 Jul 2021	High Tide Time	922
D12	07 Jul 2021	Low Tide (ft)	-0.15
D12	07 Jul 2021	Low Tide Time	300
D12	07 Jul 2021	Comments	Water clear; Kelp; Seagrass; Trash-1; 5 Persons; 2 Walkers; 2 Joggers; 7 Surfers
D12	14 Jul 2021	Arrive Time	1014
D12	14 Jul 2021	Weather	Partly cloudy
D12	14 Jul 2021	Wind Speed (kts)	6.6
D12	14 Jul 2021	Wind Dir	SW
D12	14 Jul 2021	Animal Life	49 Persons; 1 Surfers; 29 Boogie boarders
D12	14 Jul 2021	Floatables	Foam
D12	14 Jul 2021	Water Color	Green
D12	14 Jul 2021	Current Direction	SW

Station	Date	Parameter	Value
D12	14 Jul 2021	Water Temp (C)	26.5
D12	14 Jul 2021	Wave Height Low (ft)	2
D12	14 Jul 2021	High Tide (ft)	4.01
D12	14 Jul 2021	High Tide Time	1338
D12	14 Jul 2021	Low Tide (ft)	-0.13
D12	14 Jul 2021	Low Tide Time	701
D12	14 Jul 2021	Comments	Water clear; Kelp; Seagrass; Algae; Trash-1
D12	21 Jul 2021	Arrive Time	1111
D12	21 Jul 2021	Weather	Sunny
D12	21 Jul 2021	Wind Speed (kts)	6.6
D12	21 Jul 2021	Wind Dir	NW
D12	21 Jul 2021	Animal Life	None
D12	21 Jul 2021	Floatables	None
D12	21 Jul 2021	Water Color	Green
D12	21 Jul 2021	Current Direction	S
D12	21 Jul 2021	Water Temp (C)	22.6
D12	21 Jul 2021	Wave Height Low (ft)	2
D12	21 Jul 2021	High Tide (ft)	3.66
D12	21 Jul 2021	High Tide Time	836
D12	21 Jul 2021	Low Tide (ft)	-0.78
D12	21 Jul 2021	Low Tide Time	215
D12	21 Jul 2021	Comments	Water clear; Kelp; Seagrass; Trash-1; 64 Persons; 27 Swimmers
D12	28 Jul 2021	Arrive Time	1040
D12	28 Jul 2021	Weather	Sunny
D12	28 Jul 2021	Wind Speed (kts)	4.4
D12	28 Jul 2021	Wind Dir	W
D12	28 Jul 2021	Animal Life	None
D12	28 Jul 2021	Floatables	None
D12	28 Jul 2021	Water Color	Green
D12	28 Jul 2021	Current Direction	S
D12	28 Jul 2021	Water Temp (C)	22.4
D12	28 Jul 2021	Wave Height Low (ft)	2
D12	28 Jul 2021	High Tide (ft)	5.08
D12	28 Jul 2021	High Tide Time	8
D12	28 Jul 2021	Low Tide (ft)	0.23
D12	28 Jul 2021	Low Tide Time	703
D12	28 Jul 2021	Comments	Water clear; Kelp; Seagrass; Trash-1; 67 Persons; 2 Fishermans; 3 Surfers; 18 Swimmers



# 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 Jul 2021	3	4	4	4	4	10	4	5
02 Jul 2021	3	4	4	4	4	10	4	5
03 Jul 2021	3	4	4	4	4	10	4	5
04 Jul 2021	3	4	4	4	4	10	4	5
05 Jul 2021	3	4	4	4	4	10	4	5
06 Jul 2021	3	4	5	3	3	7	4	4
07 Jul 2021	3	4	5	3	3	7	4	4
08 Jul 2021	3	4	5	4	4	8	4	5
09 Jul 2021	3	4	5	4	4	8	4	5
10 Jul 2021	3	4	5	4	4	8	4	5
11 Jul 2021	3	4	5	4	4	8	4	5
12 Jul 2021	3	5	6	5	3	6	3	4
13 Jul 2021	3	5	6	5	3	6	3	4
14 Jul 2021	3	5	6	5	3	6	3	4
15 Jul 2021	2	3	5	6	4	8	4	5
16 Jul 2021	2	3	5	6	4	8	4	5
17 Jul 2021	2	3	5	6	4	8	4	5
18 Jul 2021	2	3	5	6	4	8	4	5
19 Jul 2021	2	3	5	6	4	8	4	5
20 Jul 2021	2	3	5	6	4	8	4	5
21 Jul 2021	2	3	6	5	4	8	3	5
22 Jul 2021	3	3	7	3	3	4	2	3
23 Jul 2021	3	3	7	3	3	4	2	3
24 Jul 2021	3	3	7	3	3	4	2	3
25 Jul 2021	3	3	7	3	3	4	2	3
26 Jul 2021	3	3	6	3	3	5	2	3
27 Jul 2021	3	3	6	3	3	5	2	3
28 Jul 2021	3	3	6	3	3	5	2	3
29 Jul 2021	3	3	8	3	3	4	2	2
30 Jul 2021	3	3	8	3	3	4	2	2
31 Jul 2021	3	3	8	3	3	4	2	2

\* 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 Jul 2021	2	2	2	2	2	2	2	2
02 Jul 2021	2	2	2	2	2	2	2	2
03 Jul 2021	2	2	2	2	2	2	2	2
04 Jul 2021	2	2	2	2	2	2	2	2
05 Jul 2021	2	2	2	2	2	2	2	2
06 Jul 2021	2	2	3	2	2	2	2	2
07 Jul 2021	2	2	3	2	2	2	2	2
08 Jul 2021	2	2	3	2	2	2	2	2
09 Jul 2021	2	2	3	2	2	2	2	2
10 Jul 2021	2	2	3	2	2	2	2	2
11 Jul 2021	2	2	3	2	2	2	2	2
12 Jul 2021	2	2	3	2	2	2	2	2
13 Jul 2021	2	2	3	2	2	2	2	2
14 Jul 2021	2	2	3	2	2	2	2	2
15 Jul 2021	2	2	3	2	2	2	2	2
16 Jul 2021	2	2	3	2	2	2	2	2
17 Jul 2021	2	2	3	2	2	2	2	2
18 Jul 2021	2	2	3	2	2	2	2	2
19 Jul 2021	2	2	3	2	2	2	2	2
20 Jul 2021	2	2	3	2	2	2	2	2
21 Jul 2021	2	2	3	2	2	2	2	2
22 Jul 2021	2	2	3	2	2	2	2	2
23 Jul 2021	2	2	3	2	2	2	2	2
24 Jul 2021	2	2	3	2	2	2	2	2
25 Jul 2021	2	2	3	2	2	2	2	2
26 Jul 2021	2	2	3	2	2	2	2	2
27 Jul 2021	2	2	3	2	2	2	2	2
28 Jul 2021	2	2	3	2	2	2	2	2
29 Jul 2021	2	2	3	2	2	2	2	2
30 Jul 2021	2	2	3	2	2	2	2	2
31 Jul 2021	2	2	3	2	2	2	2	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 Jul 2021	2	2	2	2	2	2	3	2
02 Jul 2021	2	2	2	2	2	2	3	2
03 Jul 2021	2	2	2	2	2	2	3	2
04 Jul 2021	2	2	2	2	2	2	3	2
05 Jul 2021	2	2	2	2	2	2	3	2
06 Jul 2021	2	2	2	2	2	2	3	2
07 Jul 2021	2	2	2	2	2	2	3	2
08 Jul 2021	2	2	2	2	2	2	3	2
09 Jul 2021	2	2	2	2	2	2	3	2
10 Jul 2021	2	2	2	2	2	2	3	2
11 Jul 2021	2	2	2	2	2	2	3	2
12 Jul 2021	2	2	2	2	2	2	3	2
13 Jul 2021	2	2	2	2	2	2	3	2
14 Jul 2021	2	2	2	2	2	2	3	2
15 Jul 2021	2	2	2	2	2	2	3	2
16 Jul 2021	2	2	2	2	2	2	3	2
17 Jul 2021	2	2	2	2	2	2	3	2
18 Jul 2021	2	2	2	2	2	2	3	2
19 Jul 2021	2	2	2	2	2	2	3	2
20 Jul 2021	2	2	2	2	2	2	3	2
21 Jul 2021	2	2	2	2	2	2	3	2
22 Jul 2021	2	2	2	2	2	2	2	2
23 Jul 2021	2	2	2	2	2	2	2	2
24 Jul 2021	2	2	2	2	2	2	2	2
25 Jul 2021	2	2	2	2	2	2	2	2
26 Jul 2021	2	2	2	2	2	2	2	2
27 Jul 2021	2	2	2	2	2	2	2	2
28 Jul 2021	2	2	2	2	2	2	2	2
29 Jul 2021	2	2	2	2	2	2	2	2
30 Jul 2021	2	2	2	2	2	2	2	2
31 Jul 2021	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
06 Jul 2021	IC							
12 Jul 2021	IC							
21 Jul 2021	IC							
26 Jul 2021	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
06 Jul 2021	IC							
12 Jul 2021	IC							
21 Jul 2021	IC							
26 Jul 2021	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
06 Jul 2021	IC							
12 Jul 2021	IC							
21 Jul 2021	IC							
26 Jul 2021	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
06 Jul 2021	IC							
12 Jul 2021	IC							
21 Jul 2021	IC							
26 Jul 2021	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* (Enter) 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	Enter	F:T	Temp	XMS	DO	Sal	pH
A1	06 Jul 2021	753	1	<2	<2	<2	1.0	19.6	76.42	8.6	33.62	8.2
A1	06 Jul 2021	753	12	<2	<2	<2	1.0	16.6	76.19	8.6	33.58	8.1
A1	06 Jul 2021	753	18	2e	<2	2e	1.0	13.0	85.53	7.1	33.51	8.0
A1	12 Jul 2021	941	1	<2	2e	<2	1.0	20.2	78.11	8.4	33.60	8.2
A1	12 Jul 2021	941	12	<2	<2	<2	1.0	13.8	79.93	7.2	33.52	8.0
A1	12 Jul 2021	941	18	8e	2e	<2	0.2	12.6	85.54	6.7	33.49	8.0
A1	21 Jul 2021	856	1	<2	<2	<2	1.0	19.3	80.58	8.6	33.57	8.2
A1	21 Jul 2021	856	12	2e	<2	<2	1.0	13.4	76.59	7.6	33.57	8.0
A1	21 Jul 2021	856	18	4e	<2	<2	0.5	12.1	85.13	6.3	33.58	7.9
A1	26 Jul 2021	920	1	<2	<2	<2	1.0	19.0	74.59	8.7	33.57	8.2
A1	26 Jul 2021	920	12	<2	<2	<2	1.0	13.5	75.96	7.7	33.51	8.1
A1	26 Jul 2021	920	18	4e	4e	<2	1.0	13.2	79.28	7.2	33.53	8.0
A6	06 Jul 2021	931	1	<2	<2	<2	1.0	19.8	77.23	8.2	33.61	8.2
A6	06 Jul 2021	931	12	<2	<2	<2	1.0	16.8	76.48	8.3	33.58	8.1
A6	06 Jul 2021	931	18	<2	<2	<2	1.0	14.5	81.84	7.7	33.52	8.1
A6	12 Jul 2021	1006	1	<2	<2	<2	1.0	21.5	80.94	8.0	33.59	8.2
A6	12 Jul 2021	1006	12	6e	<2	2e	0.3	11.9	87.01	6.4	33.45	8.0
A6	12 Jul 2021	1006	18	12e	4e	<2	0.3	11.9	86.65	6.3	33.48	7.9
A6	21 Jul 2021	1044	1	<2	<2	<2	1.0	19.7	75.20	8.6	33.58	8.2
A6	21 Jul 2021	1044	12	<2	<2	<2	1.0	12.4	85.62	6.5	33.52	8.0
A6	21 Jul 2021	1044	18	4e	<2	<2	0.5	11.8	87.00	5.9	33.56	7.9
A6	26 Jul 2021	945	1	<2	<2	<2	1.0	20.1	76.69	8.9	33.55	8.2
A6	26 Jul 2021	945	12	2e	<2	<2	1.0	13.7	80.49	7.4	33.49	8.1
A6	26 Jul 2021	945	18	6e	4e	<2	0.7	12.5	85.38	6.3	33.52	8.0
A7	06 Jul 2021	918	1	<2	<2	<2	1.0	20.0	77.92	8.4	33.63	8.2
A7	06 Jul 2021	918	12	10e	4e	<2	0.4	15.9	79.15	8.3	33.51	8.1
A7	06 Jul 2021	918	18	40	6e	<2	0.1	13.8	81.86	7.5	33.55	8.0
A7	12 Jul 2021	952	1	<2	<2	<2	1.0	21.2	80.11	8.2	33.61	8.2
A7	12 Jul 2021	952	12	2e	<2	<2	1.0	12.9	84.23	7.0	33.49	8.0
A7	12 Jul 2021	952	18	<20	4e	<2	0.2	12.1	86.70	6.4	33.47	8.0
A7	21 Jul 2021	1024	1	<2	<2	<2	1.0	18.8	79.32	8.6	33.53	8.2
A7	21 Jul 2021	1024	12	<2	<2	<2	1.0	14.2	74.15	8.1	33.53	8.1
A7	21 Jul 2021	1024	18	26e	6e	<2	0.2	11.8	86.55	6.0	33.58	7.9
A7	26 Jul 2021	933	1	<2	<2	<2	1.0	19.1	76.34	8.6	33.59	8.2
A7	26 Jul 2021	933	12	2e	<2	<2	1.0	13.7	80.20	7.6	33.52	8.1
A7	26 Jul 2021	933	18	4e	<2	<2	0.5	13.2	83.78	6.7	33.53	8.0
C4	06 Jul 2021	1043	1	<2	<2	<2	1.0	20.4	72.14	7.8	33.61	8.2
C4	06 Jul 2021	1043	3	<2	<2	<2	1.0	20.1	73.19	7.9	33.63	8.2
C4	06 Jul 2021	1043	9	<2	<2	<2	1.0	15.1	77.78	7.1	33.55	8.1

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C4	12 Jul 2021	1114	1	<20	<2	<2	0.1	20.4	75.77	8.3	33.62	8.2
C4	12 Jul 2021	1114	3	<20	<2	<2	0.1	20.1	74.84	8.1	33.63	8.2
C4	12 Jul 2021	1114	9	<2	<2	<2	1.0	14.9	74.82	6.8	33.48	8.1
C4	21 Jul 2021	1149	1	<2	<2	<2	1.0	19.9	78.74	8.9	33.59	8.2
C4	21 Jul 2021	1149	3	<2	<2	<2	1.0	18.7	79.18	8.9	33.59	8.2
C4	21 Jul 2021	1149	9	<2	<2	<2	1.0	15.0	72.01	8.2	33.55	8.1
C4	26 Jul 2021	1054	1	<2	<2	<2	1.0	20.1	75.98	8.8	33.56	8.2
C4	26 Jul 2021	1054	3	<2	<2	<2	1.0	19.0	75.00	8.4	33.62	8.2
C4	26 Jul 2021	1054	9	2e	2e	<2	1.0	14.6	80.15	6.2	33.50	8.0
C5	06 Jul 2021	1030	1	<2	<2	<2	1.0	20.1	75.59	8.0	33.61	8.2
C5	06 Jul 2021	1030	3	<2	<2	<2	1.0	19.6	76.45	8.2	33.61	8.2
C5	06 Jul 2021	1030	9	<2	<2	<2	1.0	14.8	78.15	7.7	33.48	8.1
C5	12 Jul 2021	1103	1	<2	<2	<2	1.0	21.1	79.28	8.2	33.62	8.2
C5	12 Jul 2021	1103	3	<2	<2	<2	1.0	20.9	78.87	7.9	33.62	8.2
C5	12 Jul 2021	1103	9	2e	<2	<2	1.0	14.8	83.88	7.2	33.49	8.1
C5	21 Jul 2021	1138	1	<2	<2	<2	1.0	20.6	79.87	8.6	33.60	8.2
C5	21 Jul 2021	1138	3	<20	<2	<2	0.1	18.3	72.83	8.7	33.59	8.2
C5	21 Jul 2021	1138	9	<2	<2	<2	1.0	13.8	80.05	7.8	33.52	8.1
C5	26 Jul 2021	1044	1	<2	<2	<2	1.0	19.6	76.52	8.6	33.57	8.2
C5	26 Jul 2021	1044	3	<2	<2	<2	1.0	17.6	77.23	7.9	33.66	8.2
C5	26 Jul 2021	1044	9	<2	<2	<2	1.0	14.5	82.30	7.2	33.50	8.1
C6	06 Jul 2021	1020	1	<2	<2	<2	1.0	20.3	77.37	8.1	33.60	8.2
C6	06 Jul 2021	1020	3	<2	<2	<2	1.0	20.2	76.44	7.9	33.61	8.2
C6	06 Jul 2021	1020	9	<2	<2	<2	1.0	15.0	79.12	7.7	33.60	8.1
C6	12 Jul 2021	1051	1	<2	<2	<2	1.0	21.6	79.74	7.8	33.63	8.2
C6	12 Jul 2021	1051	3	<2	<2	<2	1.0	21.0	79.72	7.5	33.62	8.2
C6	12 Jul 2021	1051	9	2e	<2	<2	1.0	14.8	82.92	7.3	33.48	8.1
C6	21 Jul 2021	1128	1	<20	<2	<2	0.1	19.8	74.51	8.2	33.58	8.2
C6	21 Jul 2021	1128	3	2e	<2	<2	1.0	19.7	73.72	8.1	33.57	8.2
C6	21 Jul 2021	1128	9	<2	<2	<2	1.0	13.4	81.54	7.7	33.55	8.1
C6	26 Jul 2021	1033	1	<20	<2	<2	0.1	20.4	77.15	8.4	33.58	8.2
C6	26 Jul 2021	1033	3	<2	<2	<2	1.0	17.1	77.14	8.2	33.67	8.2
C6	26 Jul 2021	1033	9	2e	<2	<2	1.0	14.8	81.75	7.3	33.50	8.1
C7	06 Jul 2021	948	1	<2	<2	<2	1.0	20.0	79.15	8.1	33.60	8.2
C7	06 Jul 2021	948	12	<2	<2	<2	1.0	15.1	80.82	7.8	33.52	8.1
C7	06 Jul 2021	948	18	2e	<2	<2	1.0	13.1	84.74	7.1	33.50	8.0
C7	12 Jul 2021	1021	1	<2	<2	<2	1.0	21.4	81.04	8.1	33.62	8.2
C7	12 Jul 2021	1021	12	<2	<2	<2	1.0	14.7	79.15	7.8	33.52	8.1
C7	12 Jul 2021	1021	18	<2	<2	<2	1.0	12.9	84.97	6.8	33.48	8.0
C7	21 Jul 2021	1056	1	<2	<2	<2	1.0	20.5	78.82	8.1	33.65	8.2
C7	21 Jul 2021	1056	12	<2	<2	<2	1.0	12.9	77.51	7.3	33.57	8.0
C7	21 Jul 2021	1056	18	<2	<2	<2	1.0	12.1	86.67	6.2	33.57	7.9
C7	26 Jul 2021	1000	1	<2	<2	<2	1.0	18.5	77.40	8.6	33.55	8.2
C7	26 Jul 2021	1000	12	<2	<2	<2	1.0	13.3	77.47	7.5	33.47	8.1
C7	26 Jul 2021	1000	18	<2	<2	<2	1.0	12.8	84.51	6.5	33.50	8.0

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Depth</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>	<b>Temp</b>	<b>XMS</b>	<b>DO</b>	<b>Sal</b>	<b>pH</b>
C8	06 Jul 2021	1002	1	<2	<2	<2	1.0	19.9	74.59	7.8	33.60	8.1
C8	06 Jul 2021	1002	12	<2	<2	<2	1.0	14.4	79.56	8.1	33.50	8.1
C8	06 Jul 2021	1002	18	<2	<2	<2	1.0	12.8	85.70	6.8	33.51	8.0
C8	12 Jul 2021	1033	1	<2	<2	<2	1.0	21.6	78.03	8.0	33.62	8.2
C8	12 Jul 2021	1033	12	<2	<2	2e	1.0	13.8	81.01	7.5	33.47	8.1
C8	12 Jul 2021	1033	18	<2	<2	<2	1.0	13.4	83.97	7.2	33.49	8.0
C8	21 Jul 2021	1107	1	<2	2e	<2	1.0	21.1	78.63	8.2	33.59	8.2
C8	21 Jul 2021	1107	12	<2	<2	<2	1.0	13.1	76.85	7.5	33.57	8.1
C8	21 Jul 2021	1107	18	8e	<2	<2	0.2	12.2	86.54	6.2	33.57	8.0
C8	26 Jul 2021	1012	1	<2	<2	<2	1.0	18.4	74.41	8.7	33.60	8.2
C8	26 Jul 2021	1012	12	<2	<2	<2	1.0	13.5	78.33	7.5	33.48	8.1
C8	26 Jul 2021	1012	18	<2	<2	<2	1.0	12.7	84.14	6.4	33.51	8.0

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	06 Jul 2021	Depth (m)	18.1
A1	06 Jul 2021	Arrive Time	753
A1	06 Jul 2021	Depart Time	755
A1	06 Jul 2021	Air Temp (C)	17.6
A1	06 Jul 2021	Weather	Partly Cloudy
A1	06 Jul 2021	Visibility (mi)	11
A1	06 Jul 2021	Wind Speed (kts)	5.8
A1	06 Jul 2021	Wind Dir	SW
A1	06 Jul 2021	Water Color	Greenish-Blue
A1	06 Jul 2021	Wave Ht Low (ft)	2
A1	06 Jul 2021	Wave Period (sec)	12
A1	06 Jul 2021	Sea State	Calm
A1	06 Jul 2021	High Tide (ft)	5.663006
A1	06 Jul 2021	High Tide Time	1930
A1	06 Jul 2021	Low Tide (ft)	0.193579
A1	06 Jul 2021	Low Tide Time	224
A1	06 Jul 2021	Comments	Kelp; Kelp Debris
A1	12 Jul 2021	Depth (m)	17.4
A1	12 Jul 2021	Arrive Time	941
A1	12 Jul 2021	Depart Time	944
A1	12 Jul 2021	Air Temp (C)	19.9
A1	12 Jul 2021	Weather	Overcast
A1	12 Jul 2021	Visibility (mi)	9
A1	12 Jul 2021	Wind Speed (kts)	1
A1	12 Jul 2021	Wind Dir	E
A1	12 Jul 2021	Water Color	Greenish-Blue
A1	12 Jul 2021	Wave Ht Low (ft)	2
A1	12 Jul 2021	Wave Period (sec)	12
A1	12 Jul 2021	Sea State	Light Chop
A1	12 Jul 2021	High Tide (ft)	5.771279
A1	12 Jul 2021	High Tide Time	2300
A1	12 Jul 2021	Low Tide (ft)	-0.501993
A1	12 Jul 2021	Low Tide Time	548
A1	12 Jul 2021	Comments	Kelp
A1	21 Jul 2021	Depth (m)	22
A1	21 Jul 2021	Arrive Time	856
A1	21 Jul 2021	Depart Time	904
A1	21 Jul 2021	Air Temp (C)	20.5
A1	21 Jul 2021	Weather	Partly Cloudy
A1	21 Jul 2021	Visibility (mi)	10
A1	21 Jul 2021	Wind Speed (kts)	1.5
A1	21 Jul 2021	Wind Dir	N
A1	21 Jul 2021	Water Color	Blueish-Green
A1	21 Jul 2021	Wave Ht Low (ft)	3.9
A1	21 Jul 2021	Wave Period (sec)	14
A1	21 Jul 2021	Sea State	Wind Ripples
A1	21 Jul 2021	High Tide (ft)	6.75
A1	21 Jul 2021	High Tide Time	1936
A1	21 Jul 2021	Low Tide (ft)	-0.76
A1	21 Jul 2021	Low Tide Time	218
A1	21 Jul 2021	Comments	Kelp Debris
A1	26 Jul 2021	Depth (m)	18
A1	26 Jul 2021	Arrive Time	920

Station	Date	Parameter	Value
A1	26 Jul 2021	Depart Time	928
A1	26 Jul 2021	Air Temp (C)	20.1
A1	26 Jul 2021	Weather	Overcast
A1	26 Jul 2021	Visibility (mi)	8
A1	26 Jul 2021	Wind Speed (kts)	5.5
A1	26 Jul 2021	Wind Dir	SW
A1	26 Jul 2021	Water Color	Blue
A1	26 Jul 2021	Wave Ht Low (ft)	3
A1	26 Jul 2021	Wave Period (sec)	13
A1	26 Jul 2021	Sea State	Light Chop
A1	26 Jul 2021	High Tide (ft)	5.82
A1	26 Jul 2021	High Tide Time	2324
A1	26 Jul 2021	Low Tide (ft)	-0.73
A1	26 Jul 2021	Low Tide Time	542
A1	26 Jul 2021	Comments	Kelp
A6	06 Jul 2021	Depth (m)	18.4
A6	06 Jul 2021	Arrive Time	931
A6	06 Jul 2021	Depart Time	936
A6	06 Jul 2021	Air Temp (C)	17.9
A6	06 Jul 2021	Weather	Partly Cloudy
A6	06 Jul 2021	Visibility (mi)	12
A6	06 Jul 2021	Wind Speed (kts)	2.4
A6	06 Jul 2021	Wind Dir	W
A6	06 Jul 2021	Water Color	Green
A6	06 Jul 2021	Wave Ht Low (ft)	2
A6	06 Jul 2021	Wave Period (sec)	12
A6	06 Jul 2021	Sea State	Calm
A6	06 Jul 2021	High Tide (ft)	5.663006
A6	06 Jul 2021	High Tide Time	1930
A6	06 Jul 2021	Low Tide (ft)	0.193579
A6	06 Jul 2021	Low Tide Time	224
A6	06 Jul 2021	Comments	Kelp; Kelp Debris
A6	12 Jul 2021	Depth (m)	18.4
A6	12 Jul 2021	Arrive Time	1006
A6	12 Jul 2021	Depart Time	1009
A6	12 Jul 2021	Air Temp (C)	20.1
A6	12 Jul 2021	Weather	Overcast
A6	12 Jul 2021	Visibility (mi)	9
A6	12 Jul 2021	Wind Speed (kts)	6.3
A6	12 Jul 2021	Wind Dir	E
A6	12 Jul 2021	Water Color	Greenish-Blue
A6	12 Jul 2021	Wave Ht Low (ft)	2
A6	12 Jul 2021	Wave Period (sec)	12
A6	12 Jul 2021	Sea State	Light Chop
A6	12 Jul 2021	High Tide (ft)	5.771279
A6	12 Jul 2021	High Tide Time	2300
A6	12 Jul 2021	Low Tide (ft)	-0.501993
A6	12 Jul 2021	Low Tide Time	548
A6	12 Jul 2021	Comments	Kelp
A6	21 Jul 2021	Depth (m)	19
A6	21 Jul 2021	Arrive Time	1044
A6	21 Jul 2021	Depart Time	1048
A6	21 Jul 2021	Air Temp (C)	20.7
A6	21 Jul 2021	Weather	Partly Cloudy
A6	21 Jul 2021	Visibility (mi)	10
A6	21 Jul 2021	Wind Speed (kts)	3.9
A6	21 Jul 2021	Wind Dir	W
A6	21 Jul 2021	Water Color	Blueish-Green

Station	Date	Parameter	Value
A6	21 Jul 2021	Wave Ht Low (ft)	3.9
A6	21 Jul 2021	Wave Period (sec)	14
A6	21 Jul 2021	Sea State	Wind Ripples
A6	21 Jul 2021	High Tide (ft)	6.75
A6	21 Jul 2021	High Tide Time	1936
A6	21 Jul 2021	Low Tide (ft)	-0.76
A6	21 Jul 2021	Low Tide Time	218
A6	21 Jul 2021	Comments	none
A6	26 Jul 2021	Depth (m)	20
A6	26 Jul 2021	Arrive Time	945
A6	26 Jul 2021	Depart Time	953
A6	26 Jul 2021	Air Temp (C)	20.2
A6	26 Jul 2021	Weather	Overcast
A6	26 Jul 2021	Visibility (mi)	8
A6	26 Jul 2021	Wind Speed (kts)	5.8
A6	26 Jul 2021	Wind Dir	SW
A6	26 Jul 2021	Water Color	Blueish-Green
A6	26 Jul 2021	Wave Ht Low (ft)	3
A6	26 Jul 2021	Wave Period (sec)	13
A6	26 Jul 2021	Sea State	Light Chop
A6	26 Jul 2021	High Tide (ft)	5.82
A6	26 Jul 2021	High Tide Time	2324
A6	26 Jul 2021	Low Tide (ft)	-0.73
A6	26 Jul 2021	Low Tide Time	542
A6	26 Jul 2021	Comments	Kelp
A7	06 Jul 2021	Depth (m)	20
A7	06 Jul 2021	Arrive Time	918
A7	06 Jul 2021	Depart Time	921
A7	06 Jul 2021	Air Temp (C)	17.8
A7	06 Jul 2021	Weather	Partly Cloudy
A7	06 Jul 2021	Visibility (mi)	12
A7	06 Jul 2021	Wind Speed (kts)	6
A7	06 Jul 2021	Wind Dir	SW
A7	06 Jul 2021	Water Color	Green
A7	06 Jul 2021	Wave Ht Low (ft)	2
A7	06 Jul 2021	Wave Period (sec)	12
A7	06 Jul 2021	Sea State	Calm
A7	06 Jul 2021	High Tide (ft)	5.663006
A7	06 Jul 2021	High Tide Time	1930
A7	06 Jul 2021	Low Tide (ft)	0.193579
A7	06 Jul 2021	Low Tide Time	224
A7	06 Jul 2021	Comments	Kelp
A7	12 Jul 2021	Depth (m)	19.4
A7	12 Jul 2021	Arrive Time	952
A7	12 Jul 2021	Depart Time	956
A7	12 Jul 2021	Air Temp (C)	20.2
A7	12 Jul 2021	Weather	Overcast
A7	12 Jul 2021	Visibility (mi)	9
A7	12 Jul 2021	Wind Speed (kts)	3.5
A7	12 Jul 2021	Wind Dir	E
A7	12 Jul 2021	Water Color	Greenish-Blue
A7	12 Jul 2021	Wave Ht Low (ft)	2
A7	12 Jul 2021	Wave Period (sec)	12
A7	12 Jul 2021	Sea State	Light Chop
A7	12 Jul 2021	High Tide (ft)	5.771279
A7	12 Jul 2021	High Tide Time	2300
A7	12 Jul 2021	Low Tide (ft)	-0.501993
A7	12 Jul 2021	Low Tide Time	548

Station	Date	Parameter	Value
A7	12 Jul 2021	Comments	Kelp
A7	21 Jul 2021	Depth (m)	19
A7	21 Jul 2021	Arrive Time	1024
A7	21 Jul 2021	Depart Time	1030
A7	21 Jul 2021	Air Temp (C)	20.6
A7	21 Jul 2021	Weather	Partly Cloudy
A7	21 Jul 2021	Visibility (mi)	10
A7	21 Jul 2021	Wind Speed (kts)	4.1
A7	21 Jul 2021	Wind Dir	W
A7	21 Jul 2021	Water Color	Blueish-Green
A7	21 Jul 2021	Wave Ht Low (ft)	3.9
A7	21 Jul 2021	Wave Period (sec)	14
A7	21 Jul 2021	Sea State	Wind Ripples
A7	21 Jul 2021	High Tide (ft)	6.75
A7	21 Jul 2021	High Tide Time	1936
A7	21 Jul 2021	Low Tide (ft)	-0.76
A7	21 Jul 2021	Low Tide Time	218
A7	21 Jul 2021	Comments	none
A7	26 Jul 2021	Depth (m)	18
A7	26 Jul 2021	Arrive Time	933
A7	26 Jul 2021	Depart Time	937
A7	26 Jul 2021	Air Temp (C)	20
A7	26 Jul 2021	Weather	Overcast
A7	26 Jul 2021	Visibility (mi)	8
A7	26 Jul 2021	Wind Speed (kts)	5.6
A7	26 Jul 2021	Wind Dir	W
A7	26 Jul 2021	Water Color	Blueish-Green
A7	26 Jul 2021	Wave Ht Low (ft)	3
A7	26 Jul 2021	Wave Period (sec)	13
A7	26 Jul 2021	Sea State	Light Chop
A7	26 Jul 2021	High Tide (ft)	5.82
A7	26 Jul 2021	High Tide Time	2324
A7	26 Jul 2021	Low Tide (ft)	-0.73
A7	26 Jul 2021	Low Tide Time	542
A7	26 Jul 2021	Comments	Boat on station; Unable to get depth; Kelp
C4	06 Jul 2021	Depth (m)	11.6
C4	06 Jul 2021	Arrive Time	1043
C4	06 Jul 2021	Depart Time	1046
C4	06 Jul 2021	Air Temp (C)	18.1
C4	06 Jul 2021	Weather	Partly Cloudy
C4	06 Jul 2021	Visibility (mi)	12
C4	06 Jul 2021	Wind Speed (kts)	2.9
C4	06 Jul 2021	Wind Dir	W
C4	06 Jul 2021	Water Color	Greenish-Brown
C4	06 Jul 2021	Wave Ht Low (ft)	2
C4	06 Jul 2021	Wave Period (sec)	12
C4	06 Jul 2021	Sea State	Calm
C4	06 Jul 2021	High Tide (ft)	5.663006
C4	06 Jul 2021	High Tide Time	1930
C4	06 Jul 2021	Low Tide (ft)	0.193579
C4	06 Jul 2021	Low Tide Time	224
C4	06 Jul 2021	Comments	Kelp; Kelp Debris; Seagrass
C4	12 Jul 2021	Depth (m)	11.3
C4	12 Jul 2021	Arrive Time	1114
C4	12 Jul 2021	Depart Time	1117
C4	12 Jul 2021	Air Temp (C)	19.9
C4	12 Jul 2021	Weather	Overcast

Station	Date	Parameter	Value
C4	12 Jul 2021	Visibility (mi)	9
C4	12 Jul 2021	Wind Speed (kts)	8.2
C4	12 Jul 2021	Wind Dir	S
C4	12 Jul 2021	Water Color	Green
C4	12 Jul 2021	Wave Ht Low (ft)	2
C4	12 Jul 2021	Wave Period (sec)	12
C4	12 Jul 2021	Sea State	Light Chop
C4	12 Jul 2021	High Tide (ft)	5.771279
C4	12 Jul 2021	High Tide Time	2300
C4	12 Jul 2021	Low Tide (ft)	-0.501993
C4	12 Jul 2021	Low Tide Time	548
C4	12 Jul 2021	Comments	none
C4	21 Jul 2021	Depth (m)	11
C4	21 Jul 2021	Arrive Time	1149
C4	21 Jul 2021	Depart Time	1153
C4	21 Jul 2021	Air Temp (C)	20.6
C4	21 Jul 2021	Weather	Partly Cloudy
C4	21 Jul 2021	Visibility (mi)	10
C4	21 Jul 2021	Wind Speed (kts)	6.6
C4	21 Jul 2021	Wind Dir	NW
C4	21 Jul 2021	Water Color	Blueish-Green
C4	21 Jul 2021	Wave Ht Low (ft)	3.9
C4	21 Jul 2021	Wave Period (sec)	14
C4	21 Jul 2021	Sea State	Wind Ripples
C4	21 Jul 2021	High Tide (ft)	6.75
C4	21 Jul 2021	High Tide Time	1936
C4	21 Jul 2021	Low Tide (ft)	-0.76
C4	21 Jul 2021	Low Tide Time	218
C4	21 Jul 2021	Comments	Kelp; Kelp Debris
C4	26 Jul 2021	Depth (m)	11
C4	26 Jul 2021	Arrive Time	1054
C4	26 Jul 2021	Depart Time	1059
C4	26 Jul 2021	Air Temp (C)	20.2
C4	26 Jul 2021	Weather	Overcast
C4	26 Jul 2021	Visibility (mi)	8
C4	26 Jul 2021	Wind Speed (kts)	5
C4	26 Jul 2021	Wind Dir	W
C4	26 Jul 2021	Water Color	Blueish-Green
C4	26 Jul 2021	Wave Ht Low (ft)	3
C4	26 Jul 2021	Wave Period (sec)	13
C4	26 Jul 2021	Sea State	Light Chop
C4	26 Jul 2021	High Tide (ft)	5.82
C4	26 Jul 2021	High Tide Time	2324
C4	26 Jul 2021	Low Tide (ft)	-0.73
C4	26 Jul 2021	Low Tide Time	542
C4	26 Jul 2021	Comments	none
C5	06 Jul 2021	Depth (m)	10.2
C5	06 Jul 2021	Arrive Time	1030
C5	06 Jul 2021	Depart Time	1033
C5	06 Jul 2021	Air Temp (C)	17.6
C5	06 Jul 2021	Weather	Partly Cloudy
C5	06 Jul 2021	Visibility (mi)	12
C5	06 Jul 2021	Wind Speed (kts)	9
C5	06 Jul 2021	Wind Dir	W
C5	06 Jul 2021	Water Color	Green
C5	06 Jul 2021	Wave Ht Low (ft)	2
C5	06 Jul 2021	Wave Period (sec)	12
C5	06 Jul 2021	Sea State	Calm

Station	Date	Parameter	Value
C5	06 Jul 2021	High Tide (ft)	5.663006
C5	06 Jul 2021	High Tide Time	1930
C5	06 Jul 2021	Low Tide (ft)	0.193579
C5	06 Jul 2021	Low Tide Time	224
C5	06 Jul 2021	Comments	none
C5	12 Jul 2021	Depth (m)	10.8
C5	12 Jul 2021	Arrive Time	1103
C5	12 Jul 2021	Depart Time	1108
C5	12 Jul 2021	Air Temp (C)	20
C5	12 Jul 2021	Weather	Overcast
C5	12 Jul 2021	Visibility (mi)	9
C5	12 Jul 2021	Wind Speed (kts)	9.2
C5	12 Jul 2021	Wind Dir	S
C5	12 Jul 2021	Water Color	Green
C5	12 Jul 2021	Wave Ht Low (ft)	2
C5	12 Jul 2021	Wave Period (sec)	12
C5	12 Jul 2021	Sea State	Light Chop
C5	12 Jul 2021	High Tide (ft)	5.771279
C5	12 Jul 2021	High Tide Time	2300
C5	12 Jul 2021	Low Tide (ft)	-0.501993
C5	12 Jul 2021	Low Tide Time	548
C5	12 Jul 2021	Comments	none
C5	21 Jul 2021	Depth (m)	10
C5	21 Jul 2021	Arrive Time	1138
C5	21 Jul 2021	Depart Time	1142
C5	21 Jul 2021	Air Temp (C)	20.7
C5	21 Jul 2021	Weather	Partly Cloudy
C5	21 Jul 2021	Visibility (mi)	10
C5	21 Jul 2021	Wind Speed (kts)	5.1
C5	21 Jul 2021	Wind Dir	NW
C5	21 Jul 2021	Water Color	Blueish-Green
C5	21 Jul 2021	Wave Ht Low (ft)	3.9
C5	21 Jul 2021	Wave Period (sec)	14
C5	21 Jul 2021	Sea State	Wind Ripples
C5	21 Jul 2021	High Tide (ft)	6.75
C5	21 Jul 2021	High Tide Time	1936
C5	21 Jul 2021	Low Tide (ft)	-0.76
C5	21 Jul 2021	Low Tide Time	218
C5	21 Jul 2021	Comments	Kelp; Kelp Debris
C5	26 Jul 2021	Depth (m)	10
C5	26 Jul 2021	Arrive Time	1044
C5	26 Jul 2021	Depart Time	1048
C5	26 Jul 2021	Air Temp (C)	20.2
C5	26 Jul 2021	Weather	Overcast
C5	26 Jul 2021	Visibility (mi)	8
C5	26 Jul 2021	Wind Speed (kts)	5.3
C5	26 Jul 2021	Wind Dir	W
C5	26 Jul 2021	Water Color	Blueish-Green
C5	26 Jul 2021	Wave Ht Low (ft)	3
C5	26 Jul 2021	Wave Period (sec)	13
C5	26 Jul 2021	Sea State	Light Chop
C5	26 Jul 2021	High Tide (ft)	5.82
C5	26 Jul 2021	High Tide Time	2324
C5	26 Jul 2021	Low Tide (ft)	-0.73
C5	26 Jul 2021	Low Tide Time	542
C5	26 Jul 2021	Comments	none
C6	06 Jul 2021	Depth (m)	9.2

Station	Date	Parameter	Value
C6	06 Jul 2021	Arrive Time	1020
C6	06 Jul 2021	Depart Time	1022
C6	06 Jul 2021	Air Temp (C)	17.6
C6	06 Jul 2021	Weather	Partly Cloudy
C6	06 Jul 2021	Visibility (mi)	12
C6	06 Jul 2021	Wind Speed (kts)	6.9
C6	06 Jul 2021	Wind Dir	SW
C6	06 Jul 2021	Water Color	Green
C6	06 Jul 2021	Wave Ht Low (ft)	2
C6	06 Jul 2021	Wave Period (sec)	12
C6	06 Jul 2021	Sea State	Calm
C6	06 Jul 2021	High Tide (ft)	5.663006
C6	06 Jul 2021	High Tide Time	1930
C6	06 Jul 2021	Low Tide (ft)	0.193579
C6	06 Jul 2021	Low Tide Time	224
C6	06 Jul 2021	Comments	Kelp Debris; Seagrass
C6	12 Jul 2021	Depth (m)	9.7
C6	12 Jul 2021	Arrive Time	1051
C6	12 Jul 2021	Depart Time	1054
C6	12 Jul 2021	Air Temp (C)	20
C6	12 Jul 2021	Weather	Overcast
C6	12 Jul 2021	Visibility (mi)	9
C6	12 Jul 2021	Wind Speed (kts)	6.8
C6	12 Jul 2021	Wind Dir	SE
C6	12 Jul 2021	Water Color	Green
C6	12 Jul 2021	Wave Ht Low (ft)	2
C6	12 Jul 2021	Wave Period (sec)	12
C6	12 Jul 2021	Sea State	Light Chop
C6	12 Jul 2021	High Tide (ft)	5.771279
C6	12 Jul 2021	High Tide Time	2300
C6	12 Jul 2021	Low Tide (ft)	-0.501993
C6	12 Jul 2021	Low Tide Time	548
C6	12 Jul 2021	Comments	Kelp; Kelp Debris
C6	21 Jul 2021	Depth (m)	9
C6	21 Jul 2021	Arrive Time	1128
C6	21 Jul 2021	Depart Time	1132
C6	21 Jul 2021	Air Temp (C)	20.6
C6	21 Jul 2021	Weather	Partly Cloudy
C6	21 Jul 2021	Visibility (mi)	10
C6	21 Jul 2021	Wind Speed (kts)	5.5
C6	21 Jul 2021	Wind Dir	W
C6	21 Jul 2021	Water Color	Blueish-Green
C6	21 Jul 2021	Wave Ht Low (ft)	3.9
C6	21 Jul 2021	Wave Period (sec)	14
C6	21 Jul 2021	Sea State	Wind Ripples
C6	21 Jul 2021	High Tide (ft)	6.75
C6	21 Jul 2021	High Tide Time	1936
C6	21 Jul 2021	Low Tide (ft)	-0.76
C6	21 Jul 2021	Low Tide Time	218
C6	21 Jul 2021	Comments	Kelp Debris
C6	26 Jul 2021	Depth (m)	9
C6	26 Jul 2021	Arrive Time	1033
C6	26 Jul 2021	Depart Time	1041
C6	26 Jul 2021	Air Temp (C)	20.3
C6	26 Jul 2021	Weather	Overcast
C6	26 Jul 2021	Visibility (mi)	8
C6	26 Jul 2021	Wind Speed (kts)	5
C6	26 Jul 2021	Wind Dir	W

Station	Date	Parameter	Value
C6	26 Jul 2021	Water Color	Blueish-Green
C6	26 Jul 2021	Wave Ht Low (ft)	3
C6	26 Jul 2021	Wave Period (sec)	13
C6	26 Jul 2021	Sea State	Light Chop
C6	26 Jul 2021	High Tide (ft)	5.82
C6	26 Jul 2021	High Tide Time	2324
C6	26 Jul 2021	Low Tide (ft)	-0.73
C6	26 Jul 2021	Low Tide Time	542
C6	26 Jul 2021	Comments	none
C7	06 Jul 2021	Depth (m)	18.1
C7	06 Jul 2021	Arrive Time	948
C7	06 Jul 2021	Depart Time	951
C7	06 Jul 2021	Air Temp (C)	17.8
C7	06 Jul 2021	Weather	Partly Cloudy
C7	06 Jul 2021	Visibility (mi)	12
C7	06 Jul 2021	Wind Speed (kts)	6.3
C7	06 Jul 2021	Wind Dir	SW
C7	06 Jul 2021	Water Color	Green
C7	06 Jul 2021	Wave Ht Low (ft)	2
C7	06 Jul 2021	Wave Period (sec)	12
C7	06 Jul 2021	Sea State	Calm
C7	06 Jul 2021	High Tide (ft)	5.663006
C7	06 Jul 2021	High Tide Time	1930
C7	06 Jul 2021	Low Tide (ft)	0.193579
C7	06 Jul 2021	Low Tide Time	224
C7	06 Jul 2021	Comments	Kelp; Kelp Debris
C7	12 Jul 2021	Depth (m)	17.7
C7	12 Jul 2021	Arrive Time	1021
C7	12 Jul 2021	Depart Time	1025
C7	12 Jul 2021	Air Temp (C)	20.3
C7	12 Jul 2021	Weather	Overcast
C7	12 Jul 2021	Visibility (mi)	9
C7	12 Jul 2021	Wind Speed (kts)	7.9
C7	12 Jul 2021	Wind Dir	SE
C7	12 Jul 2021	Water Color	Greenish-Blue
C7	12 Jul 2021	Wave Ht Low (ft)	2
C7	12 Jul 2021	Wave Period (sec)	12
C7	12 Jul 2021	Sea State	Light Chop
C7	12 Jul 2021	High Tide (ft)	5.771279
C7	12 Jul 2021	High Tide Time	2300
C7	12 Jul 2021	Low Tide (ft)	-0.501993
C7	12 Jul 2021	Low Tide Time	548
C7	12 Jul 2021	Comments	Kelp
C7	21 Jul 2021	Depth (m)	18
C7	21 Jul 2021	Arrive Time	1056
C7	21 Jul 2021	Depart Time	1100
C7	21 Jul 2021	Air Temp (C)	20.7
C7	21 Jul 2021	Weather	Partly Cloudy
C7	21 Jul 2021	Visibility (mi)	10
C7	21 Jul 2021	Wind Speed (kts)	4.8
C7	21 Jul 2021	Wind Dir	W
C7	21 Jul 2021	Water Color	Blueish-Green
C7	21 Jul 2021	Wave Ht Low (ft)	3.9
C7	21 Jul 2021	Wave Period (sec)	14
C7	21 Jul 2021	Sea State	Wind Ripples
C7	21 Jul 2021	High Tide (ft)	6.75
C7	21 Jul 2021	High Tide Time	1936
C7	21 Jul 2021	Low Tide (ft)	-0.76

Station	Date	Parameter	Value
C7	21 Jul 2021	Low Tide Time	218
C7	21 Jul 2021	Comments	Kelp Debris
C7	26 Jul 2021	Depth (m)	18
C7	26 Jul 2021	Arrive Time	1000
C7	26 Jul 2021	Depart Time	1007
C7	26 Jul 2021	Air Temp (C)	20.1
C7	26 Jul 2021	Weather	Overcast
C7	26 Jul 2021	Visibility (mi)	8
C7	26 Jul 2021	Wind Speed (kts)	5.6
C7	26 Jul 2021	Wind Dir	SW
C7	26 Jul 2021	Water Color	Blueish-Green
C7	26 Jul 2021	Wave Ht Low (ft)	3
C7	26 Jul 2021	Wave Period (sec)	13
C7	26 Jul 2021	Sea State	Light Chop
C7	26 Jul 2021	High Tide (ft)	5.82
C7	26 Jul 2021	High Tide Time	2324
C7	26 Jul 2021	Low Tide (ft)	-0.73
C7	26 Jul 2021	Low Tide Time	542
C7	26 Jul 2021	Comments	Kelp
C8	06 Jul 2021	Depth (m)	19.7
C8	06 Jul 2021	Arrive Time	1002
C8	06 Jul 2021	Depart Time	1004
C8	06 Jul 2021	Air Temp (C)	17.6
C8	06 Jul 2021	Weather	Partly Cloudy
C8	06 Jul 2021	Visibility (mi)	12
C8	06 Jul 2021	Wind Speed (kts)	7.3
C8	06 Jul 2021	Wind Dir	W
C8	06 Jul 2021	Water Color	Green
C8	06 Jul 2021	Wave Ht Low (ft)	2
C8	06 Jul 2021	Wave Period (sec)	12
C8	06 Jul 2021	Sea State	Calm
C8	06 Jul 2021	High Tide (ft)	5.663006
C8	06 Jul 2021	High Tide Time	1930
C8	06 Jul 2021	Low Tide (ft)	0.193579
C8	06 Jul 2021	Low Tide Time	224
C8	06 Jul 2021	Comments	none
C8	12 Jul 2021	Depth (m)	19.3
C8	12 Jul 2021	Arrive Time	1033
C8	12 Jul 2021	Depart Time	1035
C8	12 Jul 2021	Air Temp (C)	20.3
C8	12 Jul 2021	Weather	Overcast
C8	12 Jul 2021	Visibility (mi)	9
C8	12 Jul 2021	Wind Speed (kts)	11
C8	12 Jul 2021	Wind Dir	SE
C8	12 Jul 2021	Water Color	Greenish-Blue
C8	12 Jul 2021	Wave Ht Low (ft)	2
C8	12 Jul 2021	Wave Period (sec)	12
C8	12 Jul 2021	Sea State	Light Chop
C8	12 Jul 2021	High Tide (ft)	5.771279
C8	12 Jul 2021	High Tide Time	2300
C8	12 Jul 2021	Low Tide (ft)	-0.501993
C8	12 Jul 2021	Low Tide Time	548
C8	12 Jul 2021	Comments	none
C8	21 Jul 2021	Depth (m)	19
C8	21 Jul 2021	Arrive Time	1107
C8	21 Jul 2021	Depart Time	1111
C8	21 Jul 2021	Air Temp (C)	20.7

Station	Date	Parameter	Value
C8	21 Jul 2021	Weather	Partly Cloudy
C8	21 Jul 2021	Visibility (mi)	10
C8	21 Jul 2021	Wind Speed (kts)	6.8
C8	21 Jul 2021	Wind Dir	W
C8	21 Jul 2021	Water Color	Blueish-Green
C8	21 Jul 2021	Wave Ht Low (ft)	3.9
C8	21 Jul 2021	Wave Period (sec)	14
C8	21 Jul 2021	Sea State	Wind Ripples
C8	21 Jul 2021	High Tide (ft)	6.75
C8	21 Jul 2021	High Tide Time	1936
C8	21 Jul 2021	Low Tide (ft)	-0.76
C8	21 Jul 2021	Low Tide Time	218
C8	21 Jul 2021	Comments	none
C8	26 Jul 2021	Depth (m)	19
C8	26 Jul 2021	Arrive Time	1012
C8	26 Jul 2021	Depart Time	1016
C8	26 Jul 2021	Air Temp (C)	20.4
C8	26 Jul 2021	Weather	Overcast
C8	26 Jul 2021	Visibility (mi)	8
C8	26 Jul 2021	Wind Speed (kts)	6.9
C8	26 Jul 2021	Wind Dir	W
C8	26 Jul 2021	Water Color	Blueish-Green
C8	26 Jul 2021	Wave Ht Low (ft)	3
C8	26 Jul 2021	Wave Period (sec)	13
C8	26 Jul 2021	Sea State	Light Chop
C8	26 Jul 2021	High Tide (ft)	5.82
C8	26 Jul 2021	High Tide Time	2324
C8	26 Jul 2021	Low Tide (ft)	-0.73
C8	26 Jul 2021	Low Tide Time	542
C8	26 Jul 2021	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 ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A1	06 Jul 2021	1	19.58	76.42	8.6	33.62	8.2	23.8	1.70
A1	06 Jul 2021	2	19.56	77.48	8.6	33.63	8.2	23.8	1.69
A1	06 Jul 2021	3	19.51	78.40	8.6	33.62	8.2	23.8	1.71
A1	06 Jul 2021	4	19.42	78.67	8.6	33.62	8.2	23.9	1.83
A1	06 Jul 2021	5	19.34	78.88	8.6	33.62	8.2	23.9	1.97
A1	06 Jul 2021	6	19.31	78.88	8.6	33.62	8.2	23.9	1.95
A1	06 Jul 2021	7	19.02	78.84	8.5	33.63	8.2	24.0	2.21
A1	06 Jul 2021	8	17.54	78.24	8.5	33.65	8.2	24.4	2.94
A1	06 Jul 2021	9	16.97	76.51	8.6	33.58	8.1	24.4	3.38
A1	06 Jul 2021	10	16.77	76.30	8.6	33.56	8.1	24.5	3.60
A1	06 Jul 2021	11	16.77	76.29	8.7	33.54	8.1	24.4	3.71
A1	06 Jul 2021	12	16.55	76.19	8.6	33.58	8.1	24.5	3.73
A1	06 Jul 2021	13	16.39	76.02	8.5	33.54	8.1	24.5	3.94
A1	06 Jul 2021	14	15.53	75.36	8.0	33.63	8.1	24.8	4.15
A1	06 Jul 2021	15	14.47	79.67	8.1	33.49	8.1	24.9	3.53
A1	06 Jul 2021	16	13.76	83.22	7.6	33.53	8.0	25.1	2.85
A1	06 Jul 2021	17	13.19	85.13	7.3	33.48	8.0	25.2	2.13
A1	06 Jul 2021	18	13.00	85.53	7.1	33.51	8.0	25.2	1.84
A1	12 Jul 2021	1	20.16	78.11	8.4	33.60	8.2	23.7	1.44
A1	12 Jul 2021	2	20.20	78.51	8.4	33.61	8.2	23.6	1.41
A1	12 Jul 2021	3	20.13	78.89	8.4	33.62	8.2	23.7	1.48
A1	12 Jul 2021	4	19.93	78.38	8.4	33.62	8.2	23.7	1.54
A1	12 Jul 2021	5	19.52	78.20	8.3	33.64	8.2	23.8	1.66
A1	12 Jul 2021	6	18.30	76.41	8.3	33.65	8.2	24.2	2.13
A1	12 Jul 2021	7	17.63	75.05	8.2	33.60	8.2	24.3	2.94
A1	12 Jul 2021	8	16.62	73.81	8.1	33.61	8.1	24.5	3.59
A1	12 Jul 2021	9	15.84	72.89	7.9	33.58	8.1	24.7	4.23
A1	12 Jul 2021	10	14.81	72.56	7.7	33.59	8.1	24.9	4.89
A1	12 Jul 2021	11	14.19	77.35	7.4	33.53	8.1	25.0	4.88
A1	12 Jul 2021	12	13.79	79.93	7.2	33.52	8.0	25.1	4.26
A1	12 Jul 2021	13	13.52	81.20	7.1	33.50	8.0	25.1	3.56
A1	12 Jul 2021	14	13.28	83.25	7.0	33.52	8.0	25.2	2.74
A1	12 Jul 2021	15	12.96	84.43	6.9	33.50	8.0	25.2	2.27
A1	12 Jul 2021	16	12.89	85.02	6.8	33.49	8.0	25.2	1.89
A1	12 Jul 2021	17	12.76	85.43	6.7	33.49	8.0	25.3	1.73
A1	12 Jul 2021	18	12.63	85.54	6.7	33.49	8.0	25.3	1.62
A1	12 Jul 2021	19	12.45	85.60	6.6	33.48	8.0	25.3	1.48
A1	21 Jul 2021	1	19.26	80.58	8.6	33.57	8.2	23.9	0.71
A1	21 Jul 2021	2	18.62	80.34	8.5	33.70	8.2	24.1	0.73
A1	21 Jul 2021	3	17.93	79.43	8.6	33.63	8.1	24.2	0.74
A1	21 Jul 2021	4	17.80	79.81	8.6	33.60	8.1	24.2	0.76
A1	21 Jul 2021	5	17.29	79.21	8.6	33.64	8.1	24.4	0.85
A1	21 Jul 2021	6	17.00	78.40	8.6	33.59	8.1	24.4	0.97
A1	21 Jul 2021	7	16.84	78.19	8.4	33.63	8.1	24.5	1.20
A1	21 Jul 2021	8	15.16	76.65	8.4	33.75	8.1	25.0	1.47
A1	21 Jul 2021	9	14.52	74.30	8.4	33.63	8.1	25.0	1.72
A1	21 Jul 2021	10	13.76	73.54	8.0	33.64	8.1	25.2	2.13
A1	21 Jul 2021	11	13.58	75.52	7.8	33.56	8.0	25.2	3.24
A1	21 Jul 2021	12	13.39	76.59	7.6	33.57	8.0	25.2	4.30
A1	21 Jul 2021	13	13.22	77.61	7.4	33.55	8.0	25.2	4.71
A1	21 Jul 2021	14	13.09	79.23	7.3	33.55	8.0	25.3	4.95
A1	21 Jul 2021	15	12.86	81.55	7.1	33.58	8.0	25.3	4.83
A1	21 Jul 2021	16	12.57	82.74	6.9	33.58	8.0	25.4	4.48

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A1	21 Jul 2021	17	12.21	83.80	6.6	33.60	7.9	25.5	4.29
A1	21 Jul 2021	18	12.07	85.13	6.3	33.58	7.9	25.5	3.75
A1	21 Jul 2021	19	12.06	85.43	6.2	33.58	7.9	25.5	3.15
A1	21 Jul 2021	20	12.06	85.13	6.2	33.58	7.9	25.5	2.53
A1	26 Jul 2021	1	19.01	74.59	8.7	33.57	8.2	23.9	2.79
A1	26 Jul 2021	2	18.59	73.84	8.7	33.60	8.2	24.1	2.81
A1	26 Jul 2021	3	18.17	72.57	8.7	33.58	8.2	24.1	2.99
A1	26 Jul 2021	4	17.68	70.67	8.6	33.61	8.2	24.3	3.64
A1	26 Jul 2021	5	17.06	70.28	8.4	33.60	8.2	24.4	4.85
A1	26 Jul 2021	6	16.33	71.14	8.2	33.61	8.2	24.6	5.79
A1	26 Jul 2021	7	14.76	72.21	8.1	33.74	8.1	25.1	6.29
A1	26 Jul 2021	8	13.84	73.21	8.0	33.58	8.1	25.1	6.40
A1	26 Jul 2021	9	13.70	74.36	7.9	33.53	8.1	25.1	6.44
A1	26 Jul 2021	10	13.62	75.28	7.8	33.51	8.1	25.1	6.40
A1	26 Jul 2021	11	13.59	75.60	7.7	33.50	8.1	25.1	6.30
A1	26 Jul 2021	12	13.54	75.96	7.7	33.51	8.1	25.1	5.97
A1	26 Jul 2021	13	13.44	76.28	7.6	33.51	8.1	25.2	5.65
A1	26 Jul 2021	14	13.36	76.50	7.5	33.52	8.1	25.2	5.46
A1	26 Jul 2021	15	13.29	77.80	7.4	33.52	8.0	25.2	5.30
A1	26 Jul 2021	16	13.25	78.80	7.3	33.52	8.0	25.2	5.02
A1	26 Jul 2021	17	13.18	79.28	7.2	33.53	8.0	25.2	4.52
A6	06 Jul 2021	1	19.82	77.23	8.2	33.61	8.2	23.8	1.21
A6	06 Jul 2021	2	19.75	77.58	8.3	33.62	8.2	23.8	1.19
A6	06 Jul 2021	3	19.68	77.78	8.3	33.63	8.2	23.8	1.29
A6	06 Jul 2021	4	19.54	77.77	8.5	33.63	8.2	23.8	1.41
A6	06 Jul 2021	5	19.52	77.75	8.5	33.62	8.2	23.8	1.54
A6	06 Jul 2021	6	19.51	77.72	8.5	33.62	8.2	23.8	1.67
A6	06 Jul 2021	7	19.47	77.65	8.6	33.62	8.2	23.8	1.76
A6	06 Jul 2021	8	19.42	77.56	8.5	33.62	8.2	23.9	1.81
A6	06 Jul 2021	9	19.24	77.14	8.6	33.65	8.2	23.9	1.85
A6	06 Jul 2021	10	17.84	75.86	8.6	33.71	8.2	24.3	2.27
A6	06 Jul 2021	11	17.14	76.19	8.4	33.62	8.2	24.4	2.94
A6	06 Jul 2021	12	16.84	76.48	8.3	33.58	8.1	24.5	3.24
A6	06 Jul 2021	13	16.66	77.04	8.3	33.57	8.1	24.5	3.43
A6	06 Jul 2021	14	16.47	77.57	8.3	33.57	8.1	24.5	3.38
A6	06 Jul 2021	15	16.19	78.35	8.1	33.56	8.1	24.6	3.21
A6	06 Jul 2021	16	15.17	80.56	7.8	33.63	8.1	24.9	2.97
A6	06 Jul 2021	17	14.69	81.54	7.7	33.53	8.1	24.9	2.49
A6	06 Jul 2021	18	14.52	81.84	7.7	33.52	8.1	24.9	2.41
A6	06 Jul 2021	19	14.34	82.25	7.6	33.52	8.1	25.0	2.22
A6	12 Jul 2021	1	21.50	80.94	8.0	33.59	8.2	23.3	0.99
A6	12 Jul 2021	2	21.47	81.05	8.0	33.60	8.2	23.3	1.03
A6	12 Jul 2021	3	21.06	80.94	7.8	33.62	8.2	23.4	1.10
A6	12 Jul 2021	4	19.02	78.83	7.8	33.61	8.2	24.0	1.39
A6	12 Jul 2021	5	16.64	78.16	7.4	33.63	8.1	24.5	2.00
A6	12 Jul 2021	6	14.52	81.86	7.3	33.50	8.1	24.9	2.04
A6	12 Jul 2021	7	13.93	83.41	7.0	33.49	8.0	25.0	1.66
A6	12 Jul 2021	8	13.33	84.49	6.8	33.45	8.0	25.1	1.32
A6	12 Jul 2021	9	13.04	85.66	6.6	33.46	8.0	25.2	1.12
A6	12 Jul 2021	10	12.25	86.19	6.5	33.46	8.0	25.3	0.98
A6	12 Jul 2021	11	12.05	86.84	6.5	33.44	8.0	25.4	0.84
A6	12 Jul 2021	12	11.95	87.01	6.4	33.45	8.0	25.4	0.79
A6	12 Jul 2021	13	11.92	86.78	6.4	33.45	7.9	25.4	0.74
A6	12 Jul 2021	14	11.91	86.68	6.3	33.46	7.9	25.4	0.72
A6	12 Jul 2021	15	11.91	86.68	6.3	33.47	7.9	25.4	0.69
A6	12 Jul 2021	16	11.91	86.65	6.3	33.47	7.9	25.4	0.69
A6	12 Jul 2021	17	11.91	86.65	6.3	33.48	7.9	25.4	0.70
A6	12 Jul 2021	18	11.91	86.65	6.3	33.48	7.9	25.4	0.70

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A6	12 Jul 2021	19	11.92	86.15	6.3	33.48	7.9	25.4	0.74
A6	21 Jul 2021	1	19.69	75.20	8.6	33.58	8.2	23.8	0.73
A6	21 Jul 2021	2	19.05	79.25	8.7	33.65	8.2	24.0	0.75
A6	21 Jul 2021	3	18.24	79.46	8.7	33.63	8.2	24.2	0.78
A6	21 Jul 2021	4	17.07	79.02	8.6	33.64	8.2	24.5	0.85
A6	21 Jul 2021	5	16.39	78.51	8.4	33.60	8.2	24.6	1.07
A6	21 Jul 2021	6	14.86	76.99	8.1	33.69	8.1	25.0	1.40
A6	21 Jul 2021	7	14.28	76.80	7.7	33.57	8.1	25.0	1.73
A6	21 Jul 2021	8	13.74	79.11	7.4	33.60	8.1	25.2	2.13
A6	21 Jul 2021	9	13.41	81.03	7.0	33.56	8.0	25.2	2.12
A6	21 Jul 2021	10	12.74	83.82	6.8	33.57	8.0	25.3	1.89
A6	21 Jul 2021	11	12.54	84.95	6.6	33.52	8.0	25.3	1.58
A6	21 Jul 2021	12	12.40	85.62	6.5	33.52	8.0	25.4	1.39
A6	21 Jul 2021	13	12.26	85.81	6.5	33.52	8.0	25.4	1.22
A6	21 Jul 2021	14	12.14	86.07	6.4	33.53	8.0	25.4	1.15
A6	21 Jul 2021	15	12.01	86.63	6.3	33.53	8.0	25.4	1.11
A6	21 Jul 2021	16	11.91	87.05	6.1	33.54	8.0	25.5	1.16
A6	21 Jul 2021	17	11.77	87.25	6.0	33.56	7.9	25.5	1.01
A6	21 Jul 2021	18	11.75	87.00	5.9	33.56	7.9	25.5	0.91
A6	21 Jul 2021	19	11.71	87.47	5.9	33.56	7.9	25.5	0.84
A6	21 Jul 2021	20	11.69	87.56	5.8	33.56	7.9	25.5	0.84
A6	21 Jul 2021	21	11.67	87.56	5.8	33.56	7.9	25.5	0.77
A6	26 Jul 2021	1	20.15	76.69	8.9	33.55	8.2	23.6	2.12
A6	26 Jul 2021	2	20.08	76.76	8.8	33.58	8.2	23.7	2.11
A6	26 Jul 2021	3	18.79	76.58	8.9	33.61	8.2	24.0	2.37
A6	26 Jul 2021	4	18.04	74.81	8.9	33.57	8.2	24.2	3.23
A6	26 Jul 2021	5	17.50	73.32	8.7	33.55	8.2	24.3	4.06
A6	26 Jul 2021	6	16.02	71.99	8.4	33.61	8.2	24.7	4.85
A6	26 Jul 2021	7	14.87	71.86	8.0	33.55	8.1	24.9	5.72
A6	26 Jul 2021	8	14.20	76.46	7.9	33.49	8.1	25.0	5.54
A6	26 Jul 2021	9	13.94	76.52	8.0	33.47	8.1	25.0	5.24
A6	26 Jul 2021	10	13.90	78.10	7.6	33.48	8.1	25.0	4.71
A6	26 Jul 2021	11	13.81	80.41	7.4	33.49	8.1	25.1	3.73
A6	26 Jul 2021	12	13.70	80.49	7.4	33.49	8.1	25.1	3.24
A6	26 Jul 2021	13	13.67	81.39	7.2	33.49	8.0	25.1	2.94
A6	26 Jul 2021	14	13.45	83.09	6.8	33.52	8.0	25.2	2.45
A6	26 Jul 2021	15	13.03	84.05	6.5	33.53	8.0	25.2	1.73
A6	26 Jul 2021	16	12.71	85.08	6.4	33.52	8.0	25.3	1.35
A6	26 Jul 2021	17	12.62	85.36	6.3	33.51	8.0	25.3	1.17
A6	26 Jul 2021	18	12.52	85.38	6.3	33.52	8.0	25.3	1.05
A6	26 Jul 2021	19	12.36	85.47	6.2	33.53	8.0	25.4	0.96
A6	26 Jul 2021	20	12.29	85.53	6.2	33.53	8.0	25.4	0.93
A7	06 Jul 2021	1	20.00	77.92	8.4	33.63	8.2	23.7	1.02
A7	06 Jul 2021	2	19.96	77.69	8.4	33.63	8.2	23.7	1.09
A7	06 Jul 2021	3	19.89	77.88	8.5	33.63	8.2	23.7	1.20
A7	06 Jul 2021	4	19.79	78.33	8.6	33.63	8.2	23.8	1.36
A7	06 Jul 2021	5	19.36	78.54	8.7	33.65	8.2	23.9	1.70
A7	06 Jul 2021	6	19.02	77.16	8.6	33.63	8.2	24.0	2.00
A7	06 Jul 2021	7	17.58	75.82	8.6	33.64	8.2	24.3	2.51
A7	06 Jul 2021	8	17.27	76.14	8.5	33.58	8.2	24.4	2.88
A7	06 Jul 2021	9	16.94	76.05	8.4	33.58	8.2	24.4	3.07
A7	06 Jul 2021	10	16.18	77.83	8.3	33.55	8.1	24.6	2.89
A7	06 Jul 2021	11	15.94	78.64	8.3	33.53	8.1	24.6	2.87
A7	06 Jul 2021	12	15.86	79.15	8.3	33.51	8.1	24.6	2.88
A7	06 Jul 2021	13	15.57	79.00	8.2	33.52	8.1	24.7	2.85
A7	06 Jul 2021	14	15.54	79.36	8.2	33.51	8.1	24.7	2.89
A7	06 Jul 2021	15	15.38	79.82	8.2	33.52	8.1	24.7	2.73
A7	06 Jul 2021	16	15.44	79.78	8.2	33.51	8.1	24.7	2.73

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A7	06 Jul 2021	17	15.32	79.60	7.8	33.52	8.1	24.8	2.67
A7	06 Jul 2021	18	13.75	81.86	7.5	33.55	8.0	25.1	2.00
A7	06 Jul 2021	19	14.10	84.02	7.5	33.49	8.0	25.0	1.82
A7	12 Jul 2021	1	21.18	80.11	8.2	33.61	8.2	23.4	1.22
A7	12 Jul 2021	2	20.82	79.96	8.3	33.63	8.2	23.5	1.29
A7	12 Jul 2021	3	20.32	79.74	8.3	33.62	8.2	23.6	1.39
A7	12 Jul 2021	4	19.34	79.06	8.3	33.63	8.2	23.9	1.53
A7	12 Jul 2021	5	18.09	77.49	8.0	33.61	8.2	24.2	2.07
A7	12 Jul 2021	6	16.04	78.13	7.7	33.63	8.1	24.7	2.67
A7	12 Jul 2021	7	15.53	81.67	7.5	33.51	8.1	24.7	2.52
A7	12 Jul 2021	8	14.29	81.96	7.4	33.53	8.1	25.0	2.12
A7	12 Jul 2021	9	14.03	82.21	7.4	33.49	8.0	25.0	1.99
A7	12 Jul 2021	10	13.79	82.66	7.3	33.50	8.0	25.1	1.95
A7	12 Jul 2021	11	13.33	82.93	7.2	33.49	8.0	25.2	1.94
A7	12 Jul 2021	12	12.95	84.23	7.0	33.49	8.0	25.2	1.83
A7	12 Jul 2021	13	12.67	85.46	6.7	33.48	8.0	25.3	1.55
A7	12 Jul 2021	14	12.40	86.35	6.6	33.47	8.0	25.3	1.22
A7	12 Jul 2021	15	12.32	86.45	6.5	33.47	8.0	25.3	0.96
A7	12 Jul 2021	16	12.18	86.46	6.4	33.47	8.0	25.4	0.92
A7	12 Jul 2021	17	12.12	86.62	6.4	33.47	8.0	25.4	0.86
A7	12 Jul 2021	18	12.10	86.70	6.4	33.47	8.0	25.4	0.80
A7	12 Jul 2021	19	12.09	86.61	6.4	33.47	8.0	25.4	0.80
A7	21 Jul 2021	1	18.78	79.32	8.6	33.53	8.2	24.0	1.03
A7	21 Jul 2021	2	18.63	79.30	8.5	33.60	8.2	24.0	1.03
A7	21 Jul 2021	3	17.56	79.16	8.6	33.61	8.2	24.3	1.06
A7	21 Jul 2021	4	17.16	78.67	8.5	33.59	8.2	24.4	1.19
A7	21 Jul 2021	5	16.59	77.33	8.5	33.58	8.1	24.5	1.34
A7	21 Jul 2021	6	16.17	77.01	8.5	33.58	8.1	24.6	1.56
A7	21 Jul 2021	7	15.59	76.54	8.4	33.58	8.1	24.7	1.93
A7	21 Jul 2021	8	14.96	75.37	8.4	33.57	8.1	24.9	2.50
A7	21 Jul 2021	9	14.69	74.34	8.4	33.52	8.1	24.9	3.18
A7	21 Jul 2021	10	14.62	74.04	8.4	33.51	8.1	24.9	4.15
A7	21 Jul 2021	11	14.44	74.02	8.3	33.52	8.1	25.0	4.93
A7	21 Jul 2021	12	14.19	74.15	8.1	33.53	8.1	25.0	5.25
A7	21 Jul 2021	13	13.73	75.70	7.8	33.56	8.1	25.1	5.48
A7	21 Jul 2021	14	13.26	77.45	7.3	33.54	8.0	25.2	5.19
A7	21 Jul 2021	15	12.91	82.01	6.9	33.52	8.0	25.3	4.74
A7	21 Jul 2021	16	12.66	84.14	6.6	33.53	8.0	25.3	3.64
A7	21 Jul 2021	17	12.09	85.55	6.3	33.59	8.0	25.5	2.60
A7	21 Jul 2021	18	11.82	86.55	6.0	33.58	7.9	25.5	2.17
A7	21 Jul 2021	19	11.79	87.00	5.8	33.57	7.9	25.5	1.82
A7	26 Jul 2021	1	19.10	76.34	8.6	33.59	8.2	23.9	2.41
A7	26 Jul 2021	2	17.91	73.51	8.8	33.62	8.2	24.2	2.60
A7	26 Jul 2021	3	16.85	70.39	8.6	33.66	8.2	24.5	3.07
A7	26 Jul 2021	4	15.20	69.64	8.4	33.60	8.2	24.9	3.75
A7	26 Jul 2021	5	14.98	70.99	8.4	33.53	8.1	24.8	5.12
A7	26 Jul 2021	6	14.33	73.23	8.2	33.55	8.1	25.0	6.48
A7	26 Jul 2021	7	14.17	74.76	8.0	33.52	8.1	25.0	6.97
A7	26 Jul 2021	8	14.06	75.69	8.0	33.51	8.1	25.0	6.70
A7	26 Jul 2021	9	13.95	76.48	7.9	33.51	8.1	25.0	6.51
A7	26 Jul 2021	10	13.84	77.58	7.9	33.51	8.1	25.1	6.02
A7	26 Jul 2021	11	13.76	78.17	7.9	33.50	8.1	25.1	5.61
A7	26 Jul 2021	12	13.72	80.20	7.6	33.52	8.1	25.1	5.09
A7	26 Jul 2021	13	13.58	81.66	7.2	33.53	8.0	25.1	4.42
A7	26 Jul 2021	14	13.47	81.86	7.0	33.53	8.0	25.2	3.77
A7	26 Jul 2021	15	13.27	82.74	6.9	33.54	8.0	25.2	3.08
A7	26 Jul 2021	16	13.23	83.72	6.7	33.53	8.0	25.2	2.63
A7	26 Jul 2021	17	13.22	83.78	6.7	33.53	8.0	25.2	2.44

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )	
C4	06 Jul 2021	1	20.36	72.14	7.8	33.61	8.2	23.6	0.76	
	06 Jul 2021	2	20.33	72.60	7.8	33.61	8.2	23.6	0.82	
	06 Jul 2021	3	20.08	73.19	7.9	33.63	8.2	23.7	0.97	
	06 Jul 2021	4	19.80	75.30	8.1	33.61	8.2	23.8	1.15	
	06 Jul 2021	5	19.30	76.10	8.1	33.64	8.2	23.9	1.35	
	06 Jul 2021	6	18.75	76.96	8.2	33.57	8.2	24.0	1.56	
	06 Jul 2021	7	17.37	77.51	7.6	33.69	8.2	24.4	1.47	
	06 Jul 2021	8	16.19	78.99	7.3	33.56	8.1	24.6	1.12	
	06 Jul 2021	9	15.08	77.78	7.1	33.55	8.1	24.8	0.84	
	06 Jul 2021	10	14.98	76.81	7.1	33.49	8.0	24.8	0.75	
	06 Jul 2021	11	14.31	75.01	7.3	33.50	8.0	25.0	0.75	
	06 Jul 2021	12	14.22	74.65	7.4	33.47	8.0	25.0	0.78	
C4	12 Jul 2021	1	20.39	75.77	8.3	33.62	8.2	23.6	1.21	
	12 Jul 2021	2	20.36	75.84	8.2	33.62	8.2	23.6	1.27	
	12 Jul 2021	3	20.08	74.84	8.1	33.63	8.2	23.7	1.55	
	12 Jul 2021	4	19.83	73.74	7.9	33.63	8.2	23.8	1.91	
	12 Jul 2021	5	19.75	72.07	7.7	33.62	8.2	23.8	2.20	
	12 Jul 2021	6	17.63	73.38	7.9	33.59	8.2	24.3	2.04	
	12 Jul 2021	7	17.26	74.99	7.5	33.53	8.1	24.3	1.94	
	12 Jul 2021	8	15.55	76.36	7.1	33.50	8.1	24.7	1.46	
	12 Jul 2021	9	14.89	74.82	6.8	33.48	8.1	24.8	0.93	
	12 Jul 2021	10	14.58	70.55	6.6	33.48	8.0	24.9	0.70	
	12 Jul 2021	11	14.26	59.92	6.5	33.47	8.0	25.0	0.61	
	21 Jul 2021	1	19.86	78.74	8.9	33.59	8.2	23.7	0.75	
C4	21 Jul 2021	2	19.18	78.93	8.9	33.62	8.2	23.9	0.75	
	21 Jul 2021	3	18.67	79.18	8.9	33.59	8.2	24.0	0.77	
	21 Jul 2021	4	18.18	78.69	8.9	33.59	8.2	24.2	0.89	
	21 Jul 2021	5	17.37	78.41	8.7	33.61	8.2	24.4	1.04	
	21 Jul 2021	6	16.48	77.66	8.7	33.60	8.2	24.6	1.18	
	21 Jul 2021	7	16.16	75.43	8.6	33.54	8.2	24.6	1.60	
	21 Jul 2021	8	15.63	73.51	8.4	33.58	8.2	24.7	2.03	
	21 Jul 2021	9	15.04	72.01	8.2	33.55	8.1	24.8	2.61	
	21 Jul 2021	10	14.66	72.45	7.7	33.56	8.1	24.9	3.39	
	21 Jul 2021	11	14.00	64.73	7.4	33.52	8.1	25.0	3.46	
	26 Jul 2021	1	20.06	75.98	8.8	33.56	8.2	23.6	1.85	
	26 Jul 2021	2	20.00	75.70	8.6	33.57	8.2	23.7	1.95	
C4	26 Jul 2021	3	18.99	75.00	8.4	33.62	8.2	24.0	2.22	
	26 Jul 2021	4	17.83	72.89	8.3	33.59	8.2	24.2	2.96	
	26 Jul 2021	5	16.88	72.11	8.0	33.58	8.2	24.4	3.76	
	26 Jul 2021	6	15.90	72.55	7.3	33.57	8.1	24.7	4.00	
	26 Jul 2021	7	15.32	76.26	6.7	33.52	8.1	24.8	3.15	
	26 Jul 2021	8	14.98	79.43	6.4	33.51	8.0	24.8	2.19	
	26 Jul 2021	9	14.65	80.15	6.2	33.50	8.0	24.9	1.47	
	26 Jul 2021	10	14.54	77.71	6.0	33.48	8.0	24.9	1.07	
	26 Jul 2021	11	14.50	72.08	5.9	33.48	8.0	24.9	0.78	
	C5	06 Jul 2021	1	20.10	75.59	8.0	33.61	8.2	23.7	0.81
	C5	06 Jul 2021	2	19.89	75.56	8.0	33.63	8.2	23.7	0.88
	C5	06 Jul 2021	3	19.63	76.45	8.2	33.61	8.2	23.8	0.99
	C5	06 Jul 2021	4	19.53	78.77	8.2	33.61	8.2	23.8	1.10
	C5	06 Jul 2021	5	18.62	79.02	8.2	33.66	8.2	24.1	1.35
	C5	06 Jul 2021	6	17.11	78.45	8.2	33.63	8.2	24.4	1.35
	C5	06 Jul 2021	7	17.26	80.55	7.8	33.55	8.1	24.3	1.28
	C5	06 Jul 2021	8	15.30	79.05	7.3	33.58	8.1	24.8	0.90
	C5	06 Jul 2021	9	14.75	78.15	7.7	33.48	8.1	24.9	0.77
	C5	06 Jul 2021	10	14.93	77.81	7.8	33.42	8.1	24.8	0.73

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C5	12 Jul 2021	1	21.09	79.28	8.2	33.62	8.2	23.4	0.88
	12 Jul 2021	2	21.09	79.36	8.2	33.62	8.2	23.4	0.93
	12 Jul 2021	3	20.87	78.87	7.9	33.62	8.2	23.5	0.98
	12 Jul 2021	4	19.49	79.06	7.7	33.61	8.2	23.8	0.97
	12 Jul 2021	5	17.94	80.79	7.5	33.58	8.2	24.2	1.00
	12 Jul 2021	6	16.67	82.54	7.5	33.53	8.1	24.5	0.92
	12 Jul 2021	7	15.82	82.53	7.5	33.51	8.1	24.6	0.83
	12 Jul 2021	8	15.42	82.70	7.4	33.49	8.1	24.7	0.85
	12 Jul 2021	9	14.79	83.88	7.2	33.49	8.1	24.9	0.85
	12 Jul 2021	10	14.32	84.19	7.2	33.48	8.1	24.9	0.76
	12 Jul 2021	11	14.19	83.02	7.3	33.49	8.1	25.0	0.66
C5	21 Jul 2021	1	20.63	79.87	8.6	33.60	8.2	23.5	0.47
	21 Jul 2021	2	19.27	77.40	8.6	33.68	8.2	23.9	0.48
	21 Jul 2021	3	18.27	72.83	8.7	33.59	8.2	24.1	0.62
	21 Jul 2021	4	17.03	74.00	8.4	33.67	8.2	24.5	0.93
	21 Jul 2021	5	15.67	74.19	8.4	33.62	8.2	24.8	1.36
	21 Jul 2021	6	15.02	74.05	8.4	33.55	8.1	24.8	2.43
	21 Jul 2021	7	14.84	75.25	8.3	33.53	8.1	24.9	3.59
	21 Jul 2021	8	14.28	77.07	8.0	33.55	8.1	25.0	4.13
	21 Jul 2021	9	13.85	80.05	7.8	33.52	8.1	25.1	3.81
	21 Jul 2021	10	13.62	81.53	7.7	33.52	8.1	25.1	3.33
	26 Jul 2021	1	19.63	76.52	8.6	33.57	8.2	23.8	1.79
C5	26 Jul 2021	2	19.10	76.72	8.4	33.55	8.2	23.9	1.96
	26 Jul 2021	3	17.61	77.23	7.9	33.66	8.2	24.3	2.13
	26 Jul 2021	4	16.59	78.70	7.7	33.56	8.1	24.5	2.22
	26 Jul 2021	5	15.91	79.23	7.5	33.55	8.1	24.7	2.17
	26 Jul 2021	6	15.42	80.87	7.4	33.53	8.1	24.7	2.07
	26 Jul 2021	7	15.11	81.24	7.3	33.51	8.1	24.8	1.92
	26 Jul 2021	8	14.66	81.93	7.2	33.52	8.1	24.9	1.76
	26 Jul 2021	9	14.53	82.30	7.2	33.50	8.1	24.9	1.58
	26 Jul 2021	10	14.41	82.39	7.2	33.50	8.1	24.9	1.45
	26 Jul 2021	11	14.30	82.39	7.2	33.50	8.1	24.9	1.45
C6	06 Jul 2021	1	20.32	77.37	8.1	33.60	8.2	23.6	0.79
	06 Jul 2021	2	20.29	78.09	8.0	33.61	8.2	23.6	0.82
	06 Jul 2021	3	20.21	76.44	7.9	33.61	8.2	23.6	0.89
	06 Jul 2021	4	20.08	73.18	7.8	33.61	8.2	23.7	1.06
	06 Jul 2021	5	19.11	75.01	8.0	33.72	8.2	24.0	1.20
	06 Jul 2021	6	18.06	77.09	8.2	33.65	8.2	24.2	1.49
	06 Jul 2021	7	16.53	78.77	7.8	33.71	8.1	24.6	1.64
	06 Jul 2021	8	15.93	79.15	7.6	33.54	8.1	24.6	1.26
	06 Jul 2021	9	15.03	79.12	7.7	33.60	8.1	24.9	0.92
	06 Jul 2021	10	14.90	79.12	7.7	33.60	8.1	24.9	0.92
C6	12 Jul 2021	1	21.60	79.74	7.8	33.63	8.2	23.3	0.97
	12 Jul 2021	2	21.59	80.06	7.7	33.63	8.2	23.3	1.03
	12 Jul 2021	3	21.00	79.72	7.5	33.62	8.2	23.4	1.12
	12 Jul 2021	4	20.06	78.96	7.1	33.60	8.2	23.7	1.11
	12 Jul 2021	5	17.70	78.14	7.2	33.60	8.1	24.3	1.24
	12 Jul 2021	6	16.00	79.11	7.4	33.53	8.1	24.6	1.40
	12 Jul 2021	7	15.50	81.13	7.5	33.49	8.1	24.7	1.17
	12 Jul 2021	8	15.23	82.34	7.4	33.48	8.1	24.8	0.91
	12 Jul 2021	9	14.79	82.92	7.3	33.48	8.1	24.8	0.68
	12 Jul 2021	10	14.53	80.65	7.5	33.47	8.1	24.9	0.53
C6	21 Jul 2021	1	19.75	74.51	8.2	33.58	8.2	23.7	0.42
	21 Jul 2021	2	19.70	74.00	8.3	33.58	8.2	23.8	0.44
	21 Jul 2021	3	19.71	73.72	8.1	33.57	8.2	23.7	0.45
	21 Jul 2021	4	18.79	73.58	8.1	33.69	8.2	24.1	0.44
	21 Jul 2021	5	15.99	73.91	8.4	33.77	8.2	24.8	0.47
	21 Jul 2021	6	15.22	73.88	8.3	33.61	8.1	24.9	0.70

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C6	21 Jul 2021	7	13.98	76.84	7.9	33.67	8.1	25.2	1.24
C6	21 Jul 2021	8	13.58	79.80	7.7	33.57	8.1	25.2	1.34
C6	21 Jul 2021	9	13.45	81.54	7.7	33.55	8.1	25.2	0.98
C6	26 Jul 2021	1	20.45	77.15	8.4	33.58	8.2	23.6	1.34
C6	26 Jul 2021	2	19.73	76.98	8.2	33.64	8.2	23.8	1.41
C6	26 Jul 2021	3	17.07	77.14	8.2	33.67	8.2	24.5	1.91
C6	26 Jul 2021	4	15.95	76.60	8.0	33.56	8.2	24.7	2.84
C6	26 Jul 2021	5	15.55	77.34	7.8	33.53	8.1	24.7	2.94
C6	26 Jul 2021	6	15.33	78.77	7.7	33.51	8.1	24.8	2.72
C6	26 Jul 2021	7	15.15	79.59	7.5	33.51	8.1	24.8	2.48
C6	26 Jul 2021	8	14.85	80.09	7.4	33.51	8.1	24.9	2.30
C6	26 Jul 2021	9	14.79	81.75	7.3	33.50	8.1	24.9	1.77
C7	06 Jul 2021	1	19.96	79.15	8.1	33.60	8.2	23.7	0.85
C7	06 Jul 2021	2	19.94	79.72	8.1	33.61	8.2	23.7	0.88
C7	06 Jul 2021	3	19.93	80.02	8.2	33.61	8.2	23.7	0.92
C7	06 Jul 2021	4	19.81	79.96	8.2	33.62	8.2	23.8	0.99
C7	06 Jul 2021	5	19.54	79.02	8.2	33.63	8.2	23.8	1.11
C7	06 Jul 2021	6	18.92	78.57	8.3	33.64	8.2	24.0	1.28
C7	06 Jul 2021	7	17.89	77.04	8.6	33.65	8.2	24.3	1.57
C7	06 Jul 2021	8	17.61	75.10	8.7	33.60	8.2	24.3	1.91
C7	06 Jul 2021	9	17.09	74.87	8.4	33.60	8.2	24.4	2.29
C7	06 Jul 2021	10	15.65	75.12	8.0	33.62	8.1	24.8	2.67
C7	06 Jul 2021	11	15.37	79.25	7.9	33.49	8.1	24.7	2.54
C7	06 Jul 2021	12	15.13	80.82	7.8	33.52	8.1	24.8	2.35
C7	06 Jul 2021	13	14.77	82.05	8.0	33.48	8.1	24.9	2.03
C7	06 Jul 2021	14	14.78	82.29	7.9	33.48	8.1	24.8	1.99
C7	06 Jul 2021	15	13.88	82.60	7.8	33.52	8.1	25.1	2.27
C7	06 Jul 2021	16	13.40	83.20	7.4	33.50	8.0	25.1	2.40
C7	06 Jul 2021	17	13.13	85.01	7.1	33.51	8.0	25.2	1.54
C7	06 Jul 2021	18	13.08	84.74	7.1	33.50	8.0	25.2	1.21
C7	12 Jul 2021	1	21.36	81.04	8.1	33.62	8.2	23.3	1.02
C7	12 Jul 2021	2	19.82	80.60	8.2	33.64	8.2	23.8	1.12
C7	12 Jul 2021	3	17.79	79.29	8.8	33.59	8.2	24.2	1.41
C7	12 Jul 2021	4	16.69	77.69	9.1	33.55	8.2	24.5	1.67
C7	12 Jul 2021	5	16.35	76.88	9.1	33.53	8.2	24.5	2.00
C7	12 Jul 2021	6	16.18	76.11	9.1	33.53	8.2	24.6	2.56
C7	12 Jul 2021	7	16.00	76.01	9.0	33.53	8.2	24.6	3.03
C7	12 Jul 2021	8	15.73	75.82	8.9	33.53	8.2	24.7	3.50
C7	12 Jul 2021	9	15.57	75.52	8.7	33.53	8.2	24.7	3.86
C7	12 Jul 2021	10	15.23	75.74	8.5	33.53	8.1	24.8	4.11
C7	12 Jul 2021	11	15.03	77.56	8.2	33.52	8.1	24.8	4.00
C7	12 Jul 2021	12	14.73	79.15	7.8	33.52	8.1	24.9	3.67
C7	12 Jul 2021	13	14.12	81.91	7.5	33.51	8.1	25.0	2.98
C7	12 Jul 2021	14	13.88	82.21	7.3	33.51	8.1	25.1	2.45
C7	12 Jul 2021	15	13.56	83.85	7.0	33.50	8.0	25.1	1.94
C7	12 Jul 2021	16	13.18	85.02	6.9	33.49	8.0	25.2	1.54
C7	12 Jul 2021	17	12.89	85.26	6.8	33.48	8.0	25.2	1.25
C7	12 Jul 2021	18	12.93	84.97	6.8	33.48	8.0	25.2	1.01
C7	21 Jul 2021	1	20.48	78.82	8.1	33.65	8.2	23.6	0.74
C7	21 Jul 2021	2	19.86	78.61	8.2	33.63	8.2	23.8	0.75
C7	21 Jul 2021	3	18.87	78.68	8.2	33.72	8.2	24.1	0.75
C7	21 Jul 2021	4	17.91	77.77	8.3	33.69	8.2	24.3	0.80
C7	21 Jul 2021	5	17.39	76.46	8.3	33.66	8.2	24.4	0.91
C7	21 Jul 2021	6	16.01	76.43	8.5	33.68	8.2	24.7	1.13
C7	21 Jul 2021	7	15.61	76.56	8.6	33.59	8.1	24.8	1.46
C7	21 Jul 2021	8	15.25	76.14	8.3	33.62	8.1	24.9	1.71
C7	21 Jul 2021	9	13.72	76.49	8.1	33.71	8.1	25.2	2.02

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C7	21 Jul 2021	10	13.40	76.76	7.9	33.57	8.1	25.2	2.46
C7	21 Jul 2021	11	13.18	75.99	7.7	33.56	8.1	25.2	3.08
C7	21 Jul 2021	12	12.93	77.51	7.3	33.57	8.0	25.3	3.67
C7	21 Jul 2021	13	12.68	81.63	7.0	33.56	8.0	25.3	4.35
C7	21 Jul 2021	14	12.65	84.03	6.8	33.56	8.0	25.4	4.48
C7	21 Jul 2021	15	12.43	85.48	6.5	33.56	8.0	25.4	3.67
C7	21 Jul 2021	16	12.32	85.89	6.3	33.57	8.0	25.4	3.24
C7	21 Jul 2021	17	12.10	86.61	6.2	33.58	8.0	25.5	2.32
C7	21 Jul 2021	18	12.08	86.67	6.2	33.57	7.9	25.5	1.82
C7	26 Jul 2021	1	18.46	77.40	8.6	33.55	8.2	24.1	2.96
C7	26 Jul 2021	2	16.68	75.43	8.7	33.64	8.2	24.5	3.31
C7	26 Jul 2021	3	15.63	73.53	8.6	33.55	8.2	24.7	4.64
C7	26 Jul 2021	4	15.01	71.83	8.8	33.51	8.1	24.8	5.87
C7	26 Jul 2021	5	14.92	71.48	8.8	33.48	8.2	24.8	6.52
C7	26 Jul 2021	6	14.62	71.28	8.7	33.50	8.1	24.9	6.97
C7	26 Jul 2021	7	14.23	71.60	8.5	33.49	8.1	25.0	7.30
C7	26 Jul 2021	8	14.09	72.43	8.3	33.48	8.1	25.0	7.33
C7	26 Jul 2021	9	13.88	73.52	8.2	33.48	8.1	25.0	7.15
C7	26 Jul 2021	10	13.72	74.51	8.0	33.48	8.1	25.1	6.98
C7	26 Jul 2021	11	13.43	75.15	7.8	33.49	8.1	25.1	6.39
C7	26 Jul 2021	12	13.30	77.47	7.5	33.47	8.1	25.1	5.57
C7	26 Jul 2021	13	13.25	78.49	7.4	33.47	8.0	25.2	5.02
C7	26 Jul 2021	14	13.17	79.06	7.2	33.48	8.0	25.2	4.36
C7	26 Jul 2021	15	12.88	80.86	6.8	33.51	8.0	25.3	3.81
C7	26 Jul 2021	16	12.81	83.17	6.6	33.49	8.0	25.3	2.97
C7	26 Jul 2021	17	12.83	84.08	6.5	33.49	8.0	25.3	2.21
C7	26 Jul 2021	18	12.82	84.51	6.5	33.50	8.0	25.3	1.82
C8	06 Jul 2021	1	19.95	74.59	7.8	33.60	8.1	23.7	1.02
C8	06 Jul 2021	2	19.53	75.06	8.0	33.60	8.1	23.8	1.03
C8	06 Jul 2021	3	19.22	76.26	8.0	33.62	8.1	23.9	1.16
C8	06 Jul 2021	4	17.05	74.81	8.6	33.66	8.2	24.5	1.74
C8	06 Jul 2021	5	16.96	74.16	8.7	33.55	8.2	24.4	2.07
C8	06 Jul 2021	6	16.27	75.22	8.5	33.56	8.1	24.6	2.44
C8	06 Jul 2021	7	16.08	76.26	8.5	33.52	8.1	24.6	2.69
C8	06 Jul 2021	8	15.55	77.91	8.4	33.51	8.1	24.7	2.71
C8	06 Jul 2021	9	15.46	78.43	8.4	33.49	8.1	24.7	2.79
C8	06 Jul 2021	10	15.15	78.95	8.5	33.48	8.1	24.8	2.85
C8	06 Jul 2021	11	15.07	79.47	8.5	33.48	8.1	24.8	2.92
C8	06 Jul 2021	12	14.42	79.56	8.1	33.50	8.1	24.9	3.02
C8	06 Jul 2021	13	13.80	80.94	7.8	33.48	8.1	25.1	3.14
C8	06 Jul 2021	14	13.49	81.86	7.7	33.46	8.0	25.1	2.84
C8	06 Jul 2021	15	13.55	84.48	7.5	33.47	8.0	25.1	2.53
C8	06 Jul 2021	16	13.07	85.44	7.1	33.50	8.0	25.2	1.63
C8	06 Jul 2021	17	13.05	85.73	7.0	33.50	8.0	25.2	1.30
C8	06 Jul 2021	18	12.82	85.70	6.8	33.51	8.0	25.3	1.11
C8	06 Jul 2021	19	12.74	85.29	6.8	33.51	7.9	25.3	1.00
C8	06 Jul 2021	20	12.93	85.14	6.9	33.49	7.9	25.2	1.05
C8	12 Jul 2021	1	21.57	78.03	8.0	33.62	8.2	23.3	1.13
C8	12 Jul 2021	2	21.56	79.04	8.0	33.63	8.2	23.3	1.19
C8	12 Jul 2021	3	21.40	78.56	8.0	33.62	8.2	23.3	1.35
C8	12 Jul 2021	4	20.79	77.80	8.0	33.62	8.2	23.5	1.63
C8	12 Jul 2021	5	20.48	77.62	7.9	33.60	8.2	23.6	1.95
C8	12 Jul 2021	6	18.32	77.59	8.2	33.60	8.2	24.1	2.29
C8	12 Jul 2021	7	16.33	76.68	8.6	33.56	8.2	24.6	2.71
C8	12 Jul 2021	8	15.39	76.12	8.2	33.53	8.2	24.7	3.21
C8	12 Jul 2021	9	14.04	77.28	7.8	33.51	8.1	25.0	3.61
C8	12 Jul 2021	10	13.92	79.20	7.7	33.48	8.1	25.0	3.57
C8	12 Jul 2021	11	13.86	80.34	7.6	33.48	8.1	25.0	3.36

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C8	12 Jul 2021	12	13.79	81.01	7.5	33.47	8.1	25.1	3.05
C8	12 Jul 2021	13	13.76	81.75	7.5	33.48	8.1	25.1	2.56
C8	12 Jul 2021	14	13.61	83.06	7.4	33.48	8.1	25.1	2.09
C8	12 Jul 2021	15	13.54	83.74	7.3	33.48	8.0	25.1	1.70
C8	12 Jul 2021	16	13.52	83.80	7.3	33.49	8.0	25.1	1.51
C8	12 Jul 2021	17	13.48	83.81	7.2	33.49	8.0	25.1	1.47
C8	12 Jul 2021	18	13.45	83.97	7.2	33.49	8.0	25.1	1.41
C8	12 Jul 2021	19	13.44	84.05	7.2	33.50	8.0	25.1	1.36
C8	21 Jul 2021	1	21.13	78.63	8.2	33.59	8.2	23.4	0.65
C8	21 Jul 2021	2	20.97	77.93	8.0	33.64	8.2	23.5	0.66
C8	21 Jul 2021	3	19.15	77.78	8.1	33.82	8.2	24.1	0.66
C8	21 Jul 2021	4	18.72	77.07	8.2	33.62	8.2	24.0	0.72
C8	21 Jul 2021	5	17.76	75.74	8.2	33.78	8.2	24.4	0.94
C8	21 Jul 2021	6	16.21	76.35	8.4	33.77	8.2	24.8	1.04
C8	21 Jul 2021	7	15.26	77.59	8.6	33.66	8.2	24.9	1.22
C8	21 Jul 2021	8	14.66	76.03	8.7	33.62	8.2	25.0	1.49
C8	21 Jul 2021	9	14.75	75.23	8.6	33.54	8.2	24.9	2.23
C8	21 Jul 2021	10	13.87	73.71	8.3	33.63	8.1	25.2	3.01
C8	21 Jul 2021	11	13.41	75.86	7.8	33.59	8.1	25.2	3.59
C8	21 Jul 2021	12	13.14	76.85	7.5	33.57	8.1	25.3	4.33
C8	21 Jul 2021	13	12.91	82.75	7.2	33.60	8.0	25.3	4.86
C8	21 Jul 2021	14	12.59	84.83	6.7	33.58	8.0	25.4	4.69
C8	21 Jul 2021	15	12.39	85.31	6.4	33.58	8.0	25.4	4.05
C8	21 Jul 2021	16	12.22	85.92	6.3	33.58	8.0	25.4	3.23
C8	21 Jul 2021	17	12.26	86.43	6.2	33.57	8.0	25.4	2.28
C8	21 Jul 2021	18	12.15	86.54	6.2	33.57	8.0	25.4	1.72
C8	21 Jul 2021	19	12.16	86.47	6.1	33.57	8.0	25.4	1.49
C8	26 Jul 2021	1	18.44	74.41	8.7	33.60	8.2	24.1	3.07
C8	26 Jul 2021	2	16.91	73.35	9.0	33.58	8.2	24.4	3.56
C8	26 Jul 2021	3	16.20	71.47	9.1	33.54	8.2	24.6	4.54
C8	26 Jul 2021	4	15.54	71.17	9.2	33.51	8.2	24.7	5.47
C8	26 Jul 2021	5	15.28	70.98	9.0	33.49	8.2	24.8	5.99
C8	26 Jul 2021	6	14.86	71.49	8.9	33.49	8.2	24.8	6.39
C8	26 Jul 2021	7	14.49	71.80	8.7	33.49	8.2	24.9	6.79
C8	26 Jul 2021	8	14.07	72.44	8.4	33.48	8.1	25.0	7.02
C8	26 Jul 2021	9	13.81	74.38	8.0	33.47	8.1	25.0	6.60
C8	26 Jul 2021	10	13.74	75.76	7.8	33.48	8.1	25.1	5.91
C8	26 Jul 2021	11	13.60	76.89	7.6	33.48	8.1	25.1	5.11
C8	26 Jul 2021	12	13.52	78.33	7.5	33.48	8.1	25.1	4.53
C8	26 Jul 2021	13	13.51	79.26	7.3	33.48	8.1	25.1	3.82
C8	26 Jul 2021	14	13.49	80.01	7.2	33.49	8.0	25.1	3.35
C8	26 Jul 2021	15	13.47	80.73	7.0	33.50	8.0	25.1	2.89
C8	26 Jul 2021	16	13.29	81.44	6.7	33.52	8.0	25.2	2.41
C8	26 Jul 2021	17	12.92	83.18	6.5	33.52	8.0	25.3	1.82
C8	26 Jul 2021	18	12.70	84.14	6.4	33.51	8.0	25.3	1.57
C8	26 Jul 2021	19	12.70	84.64	6.4	33.50	8.0	25.3	1.44

NA = not available

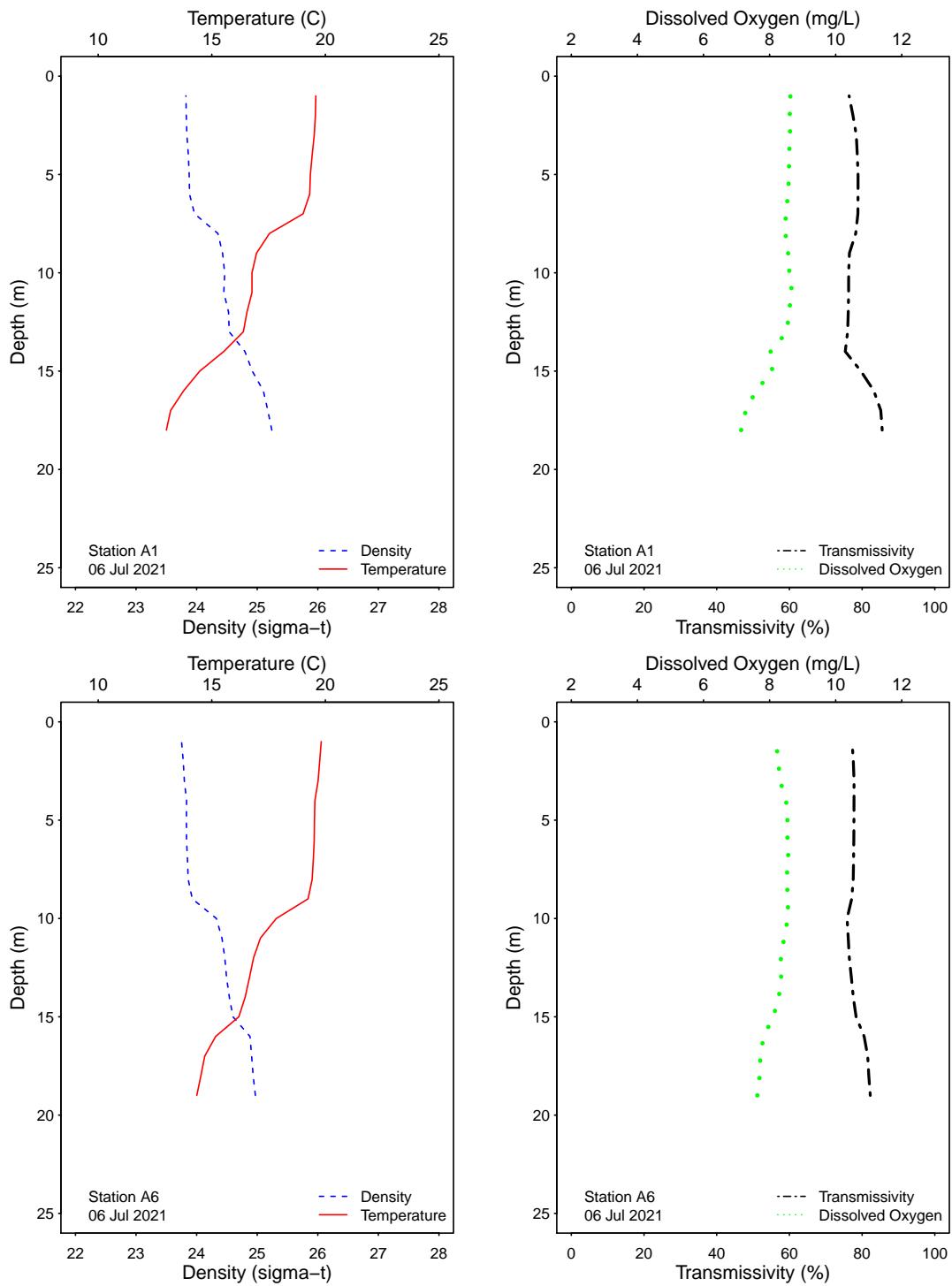


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

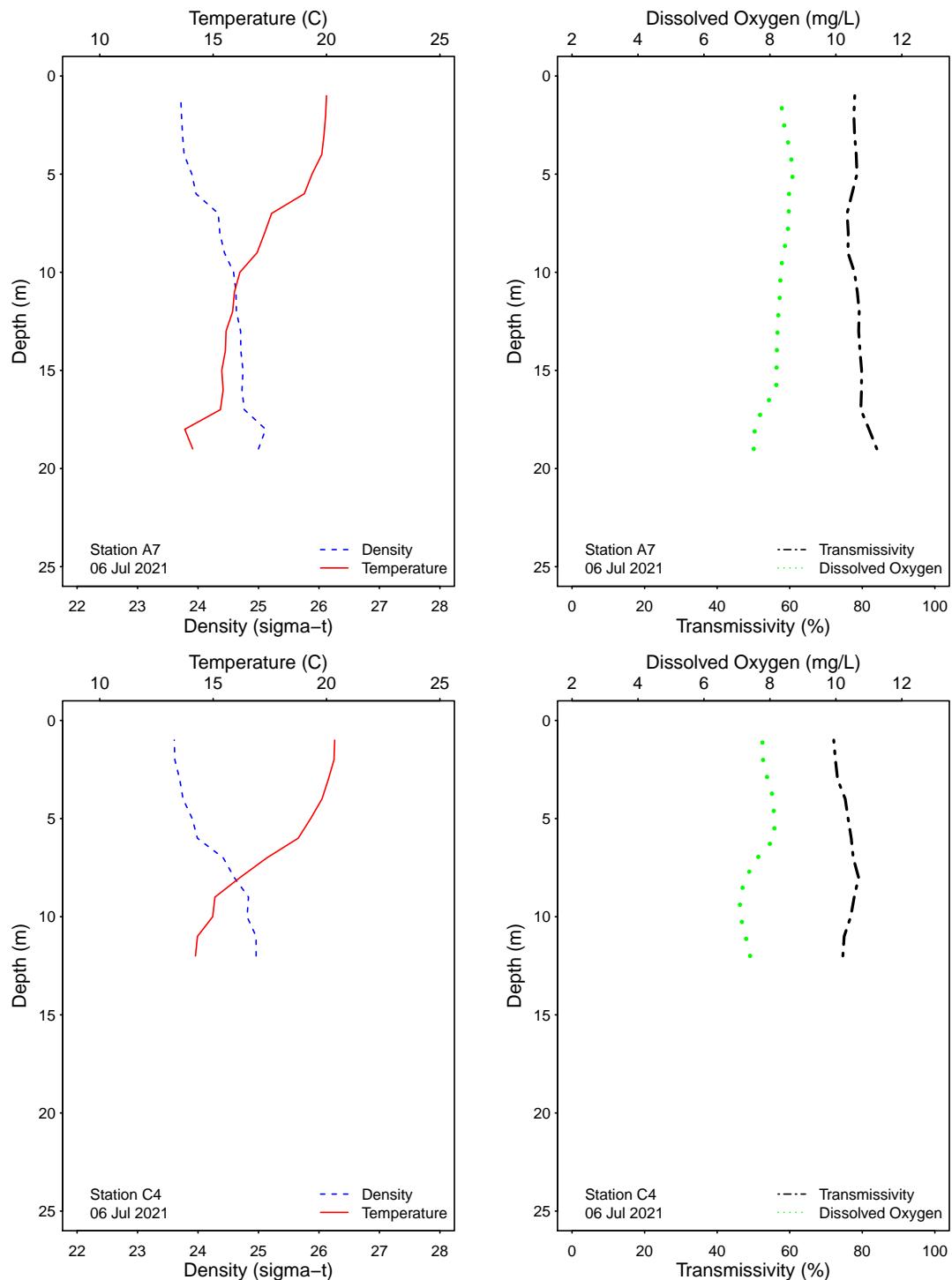


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

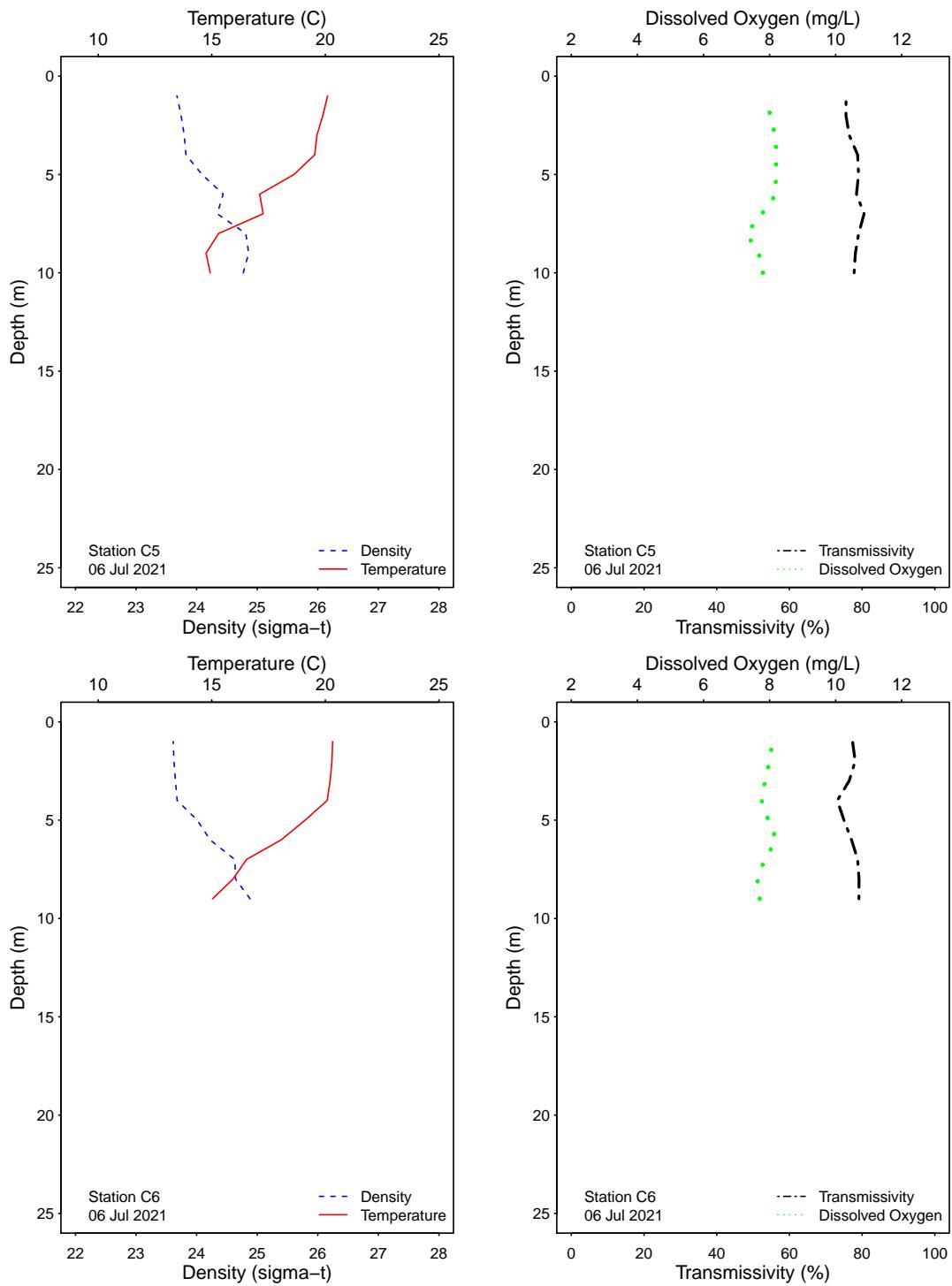


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

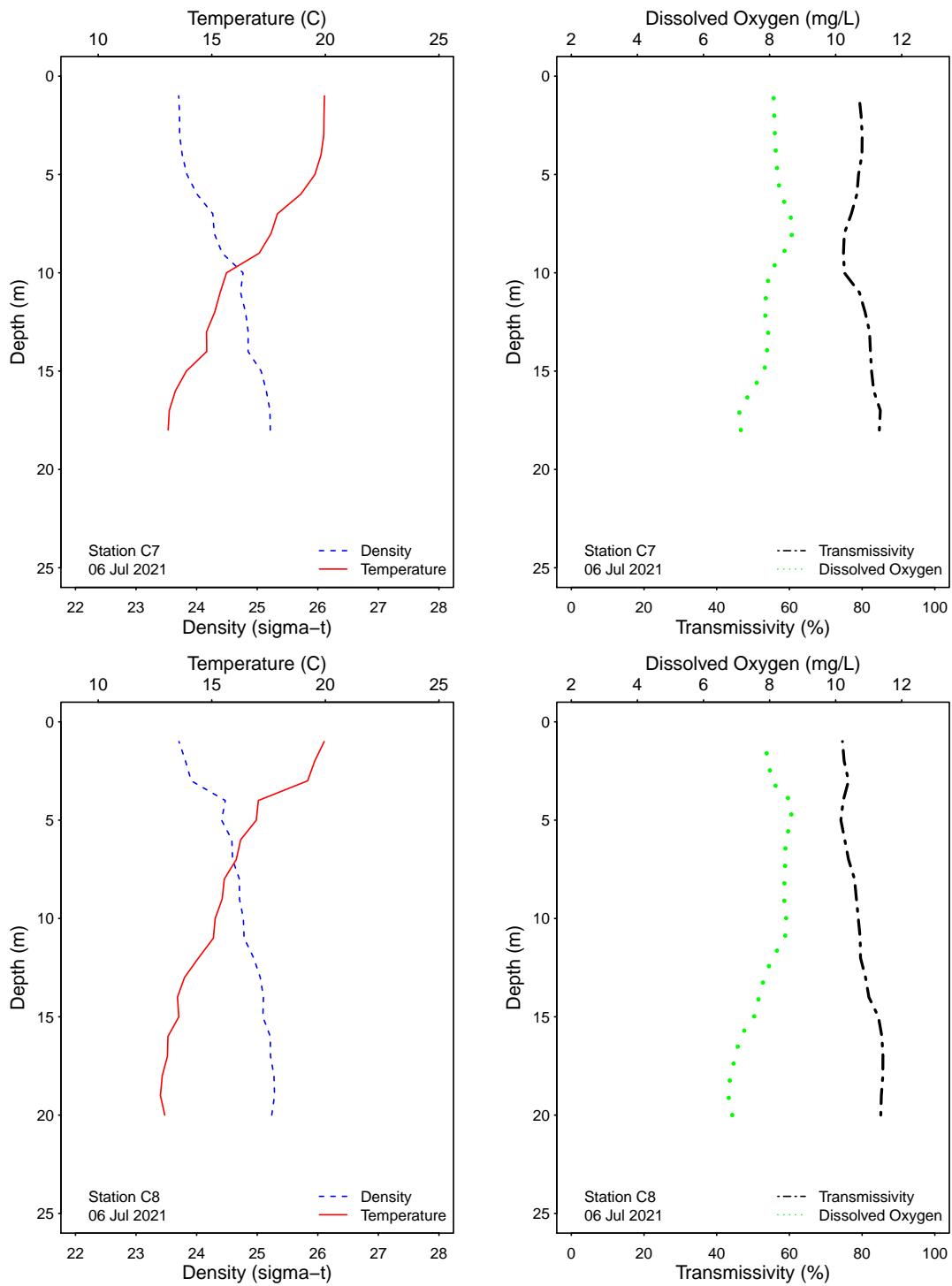


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

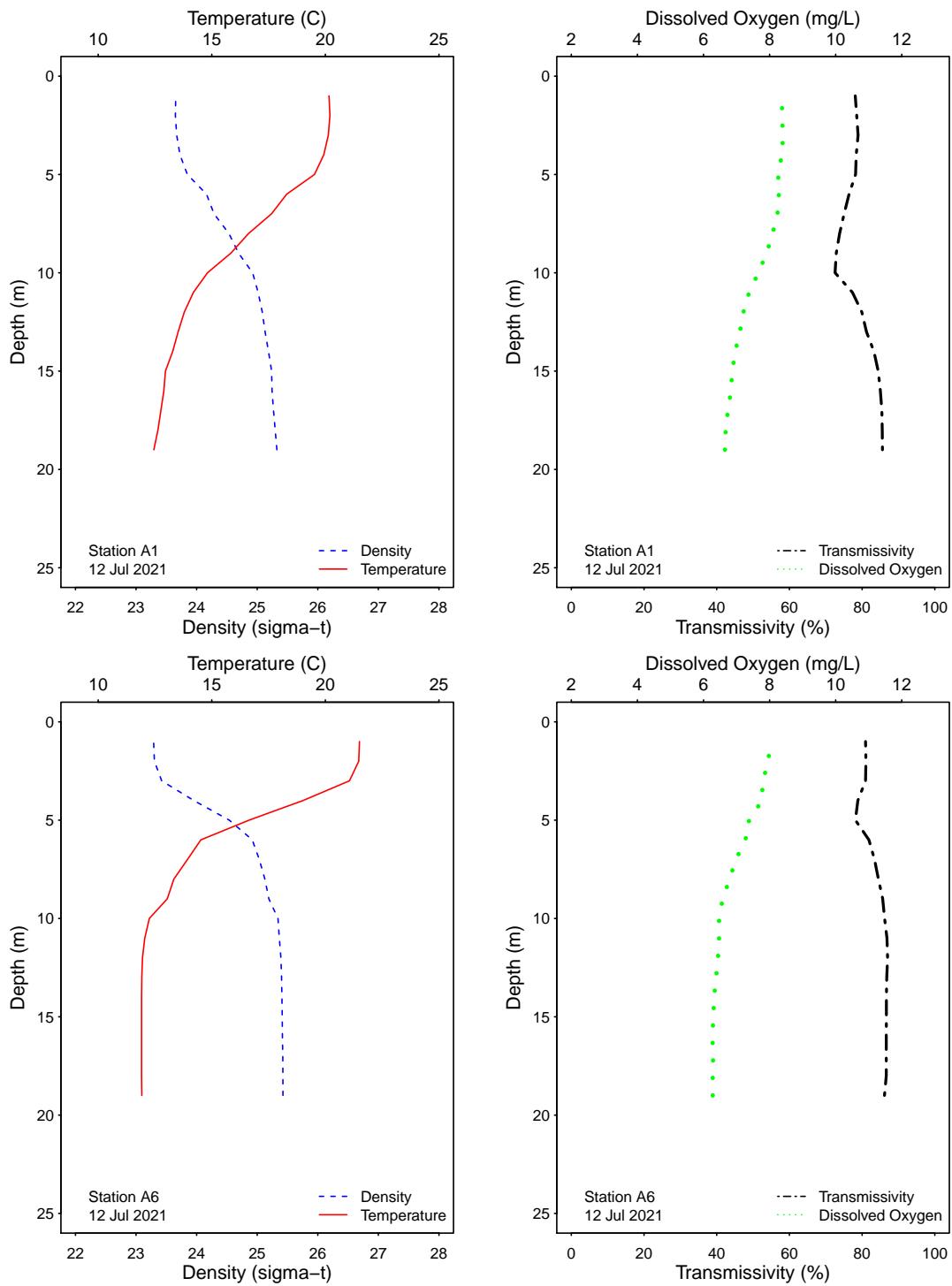


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

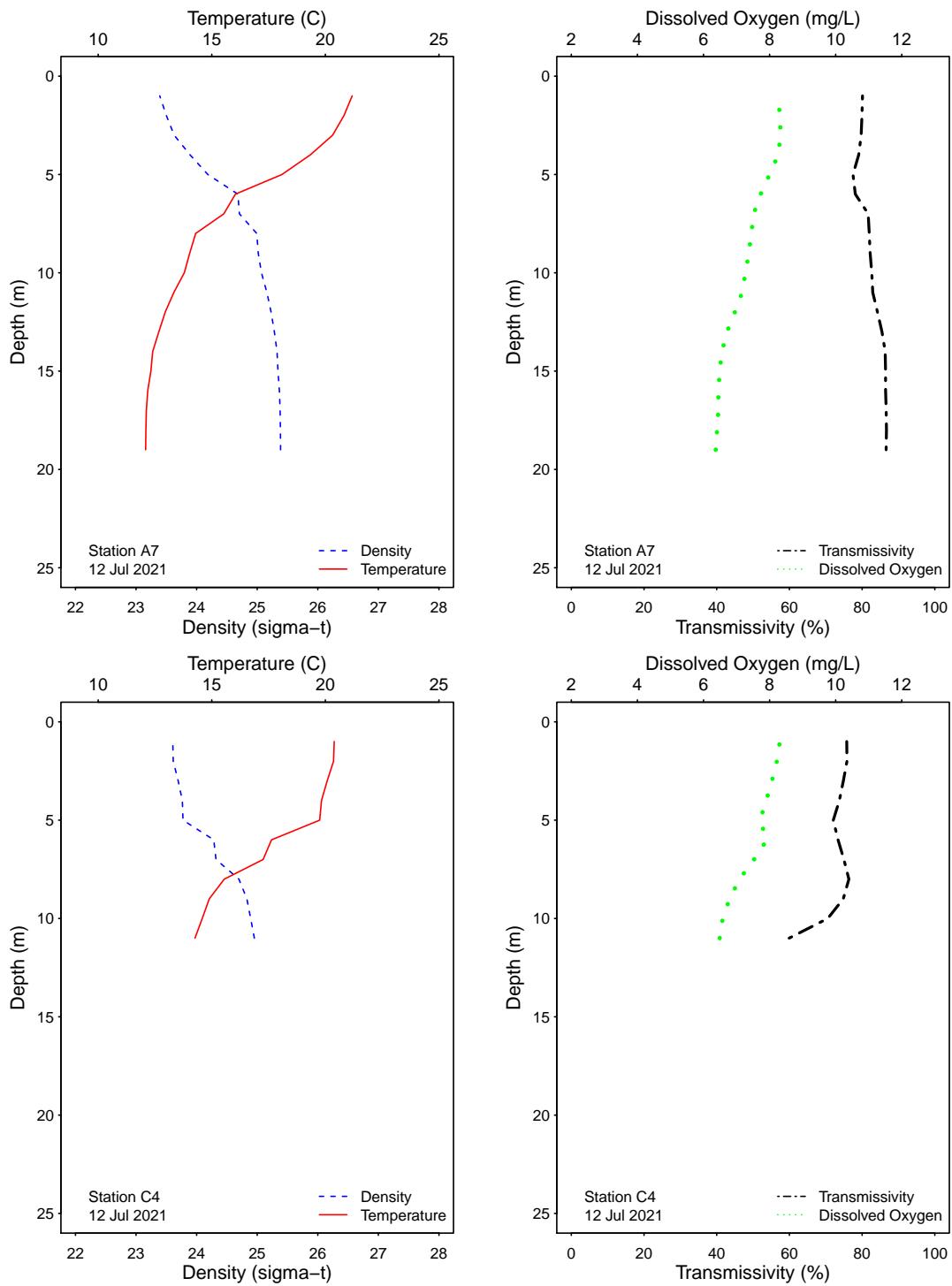


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

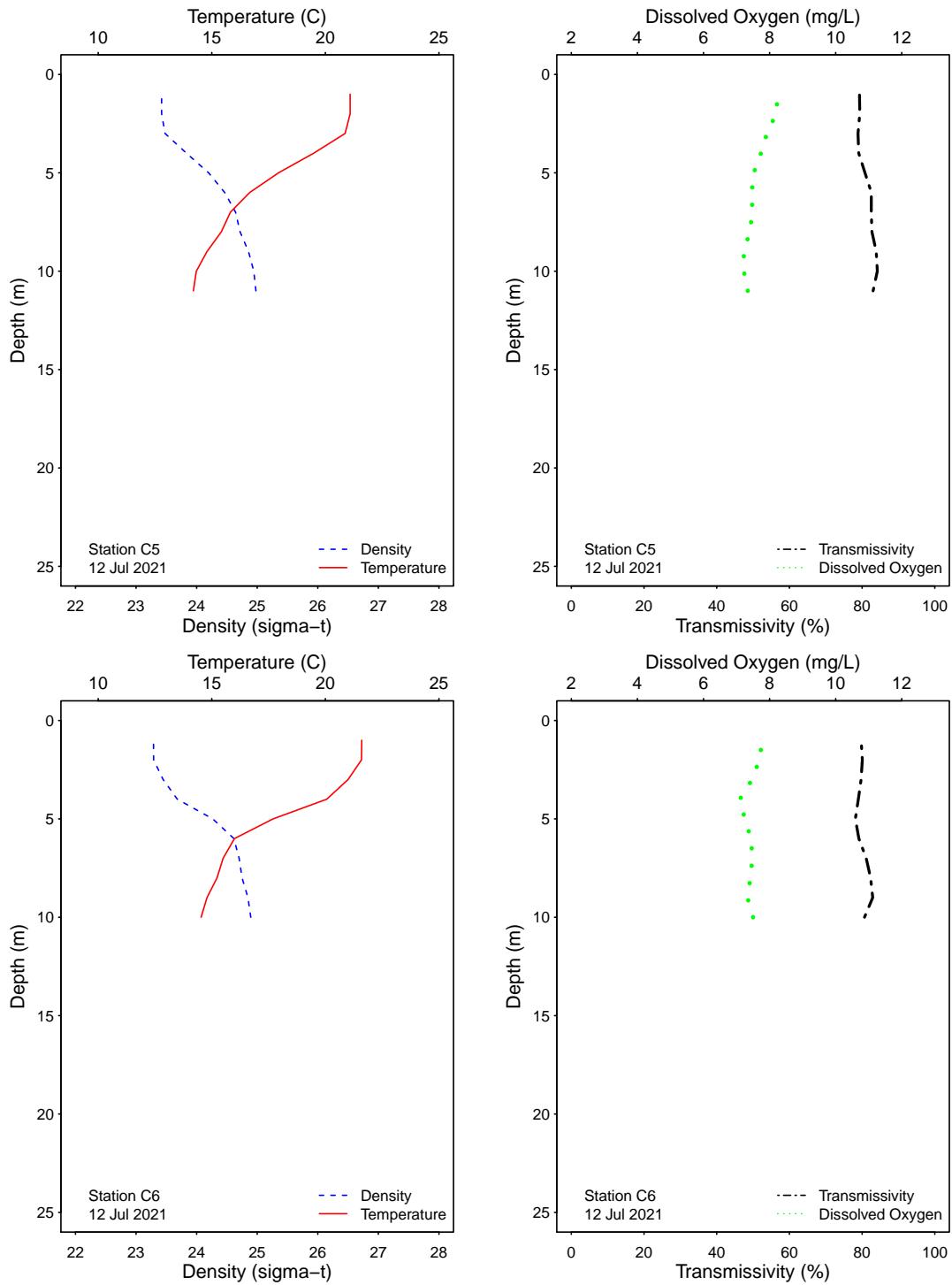


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

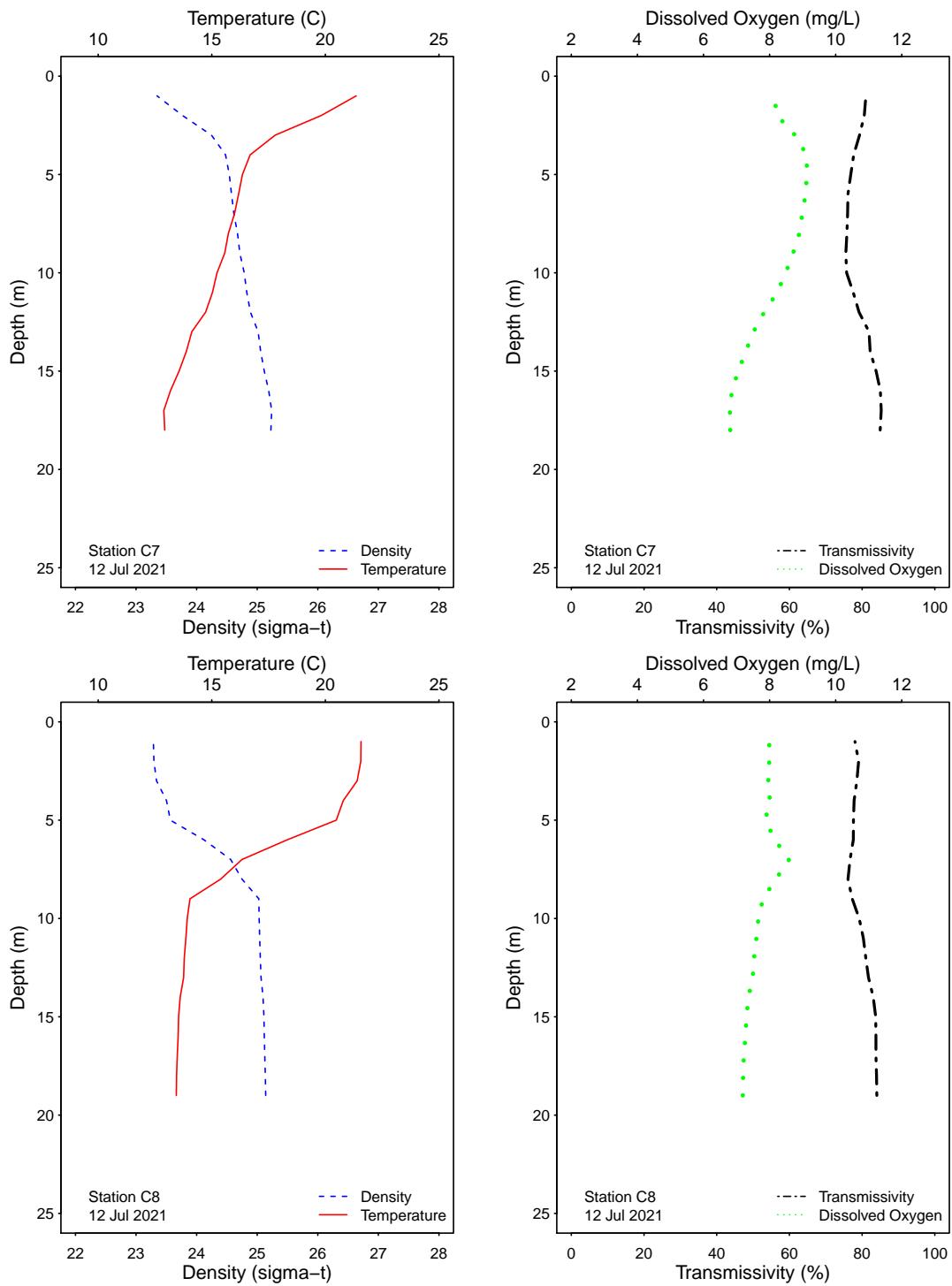


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

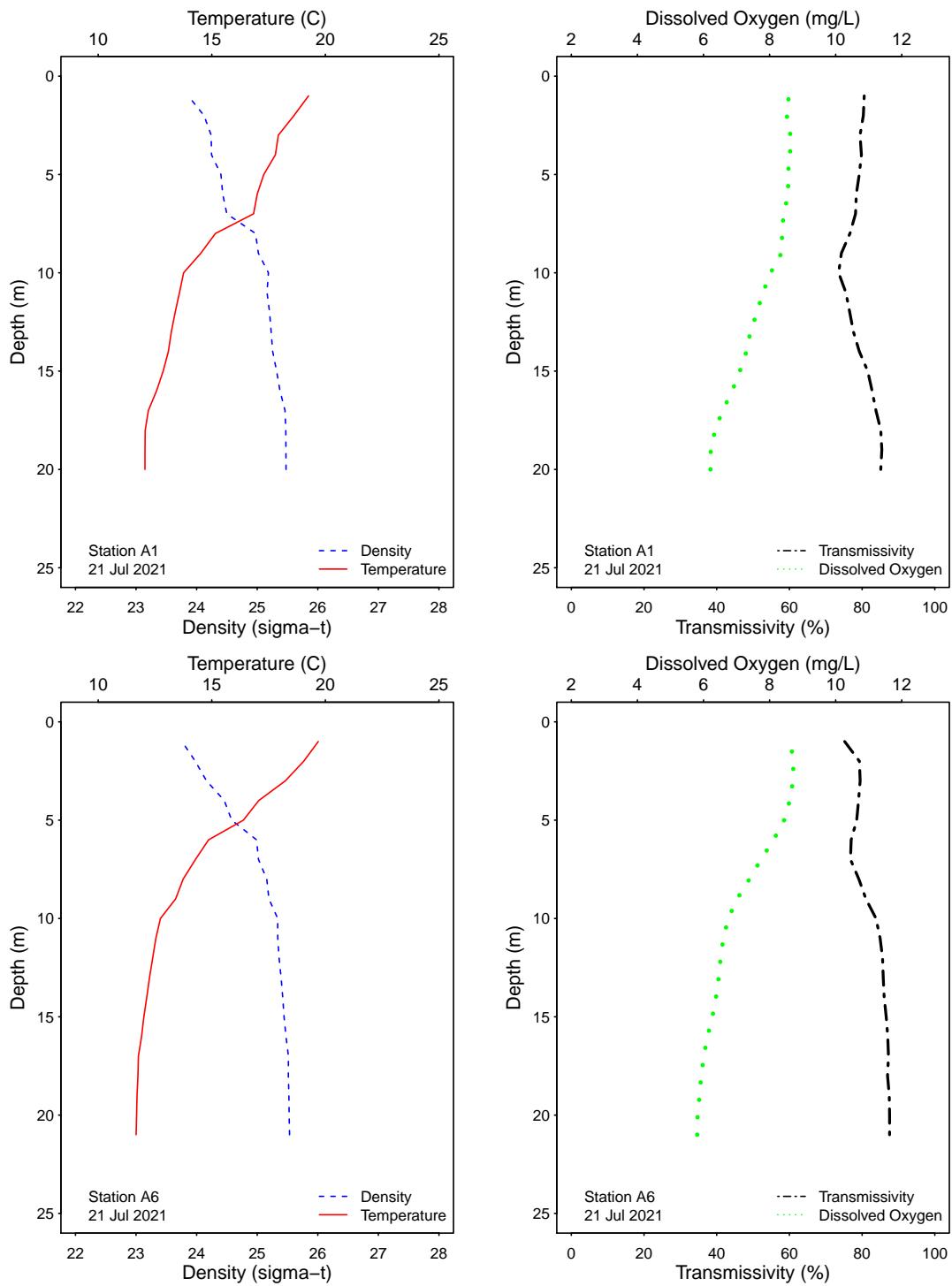


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

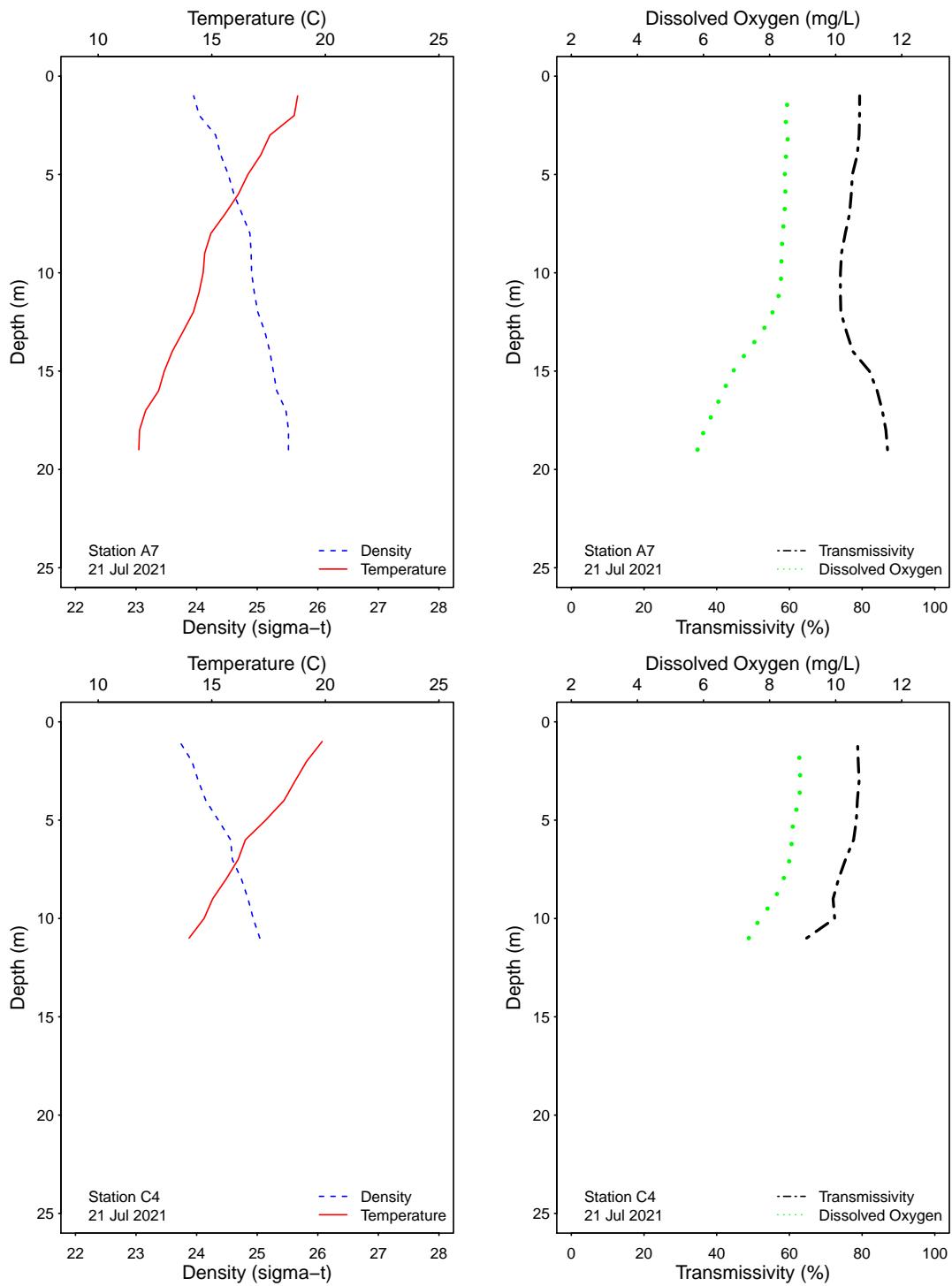


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

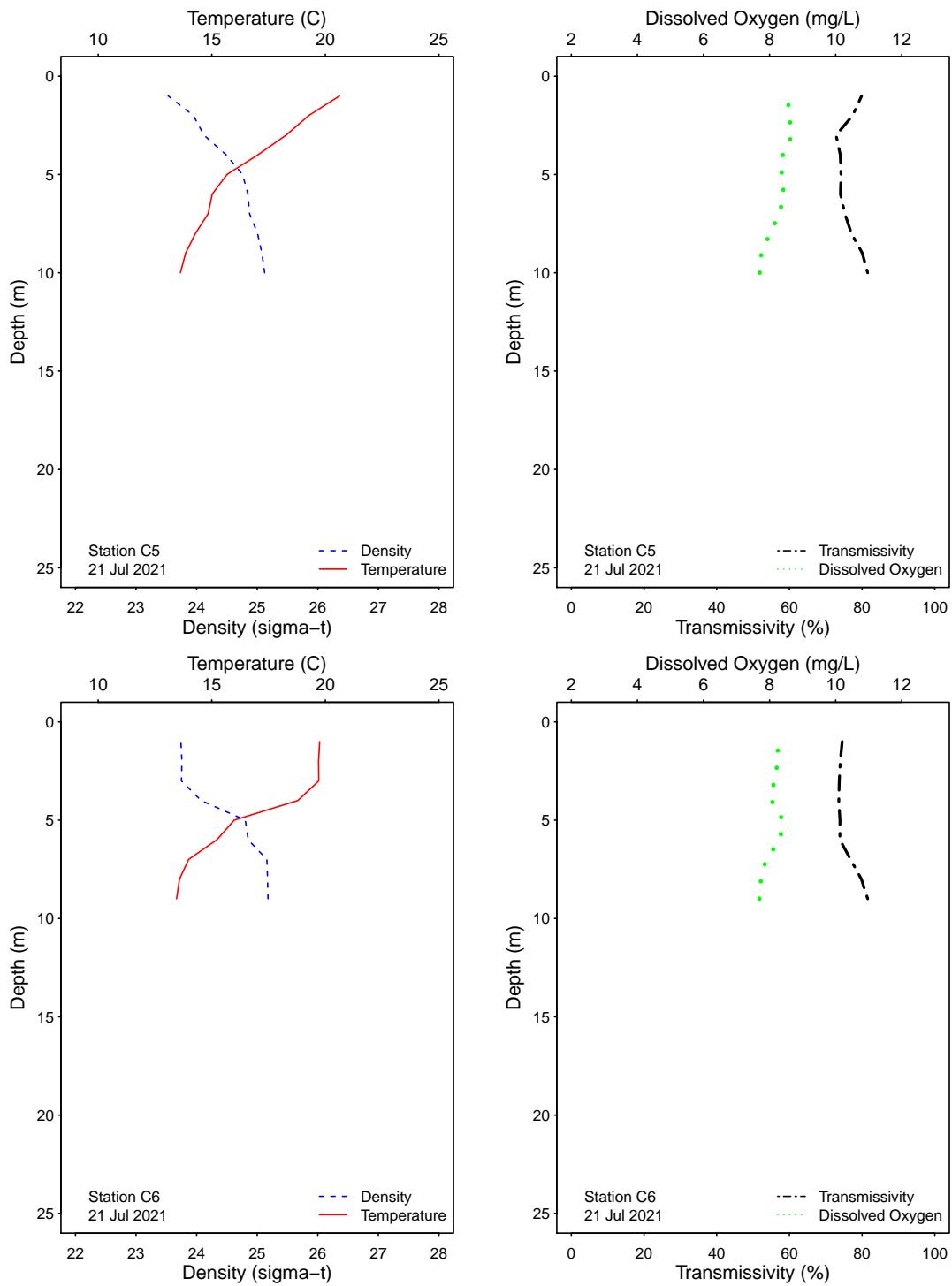


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

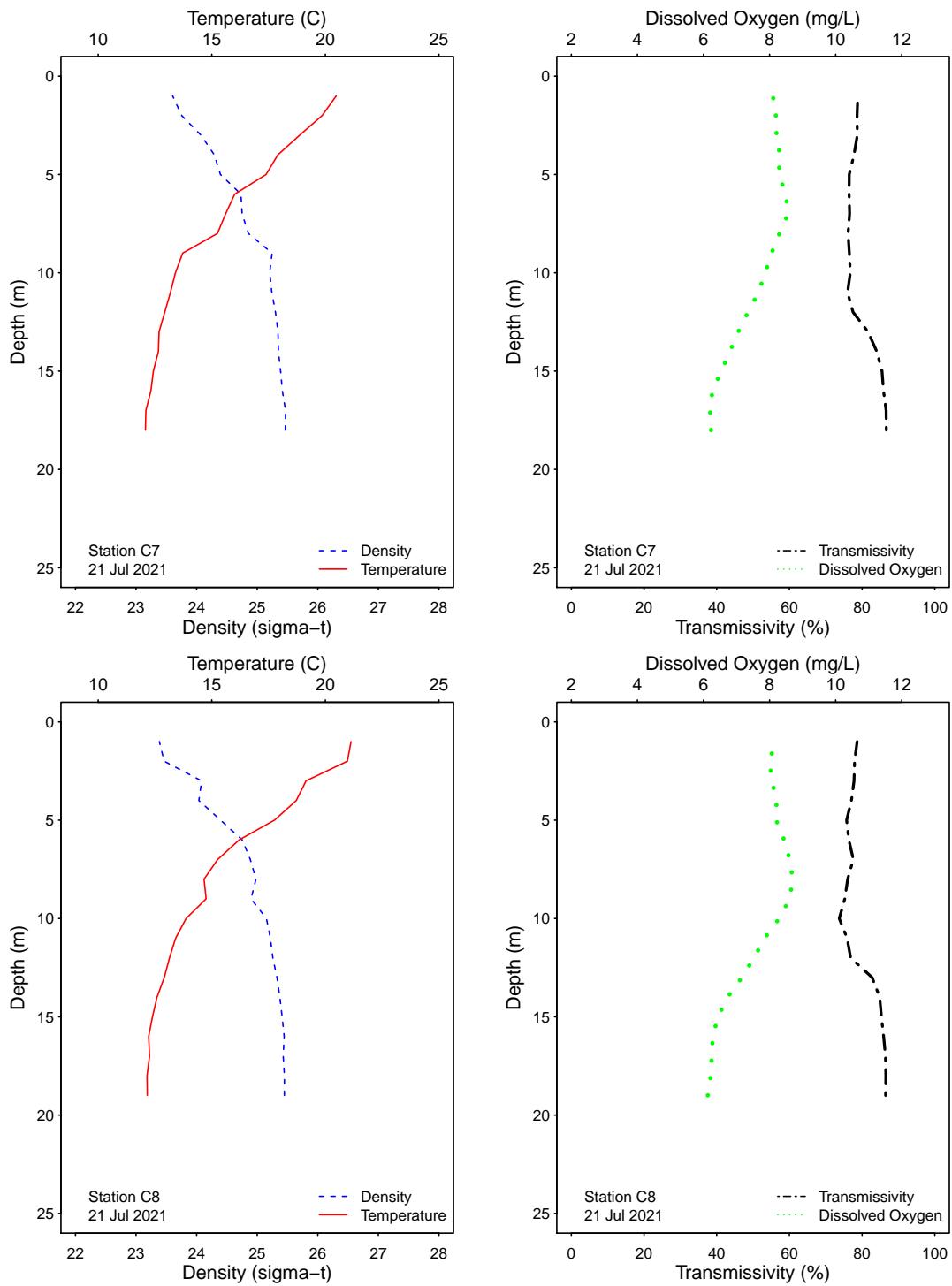


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

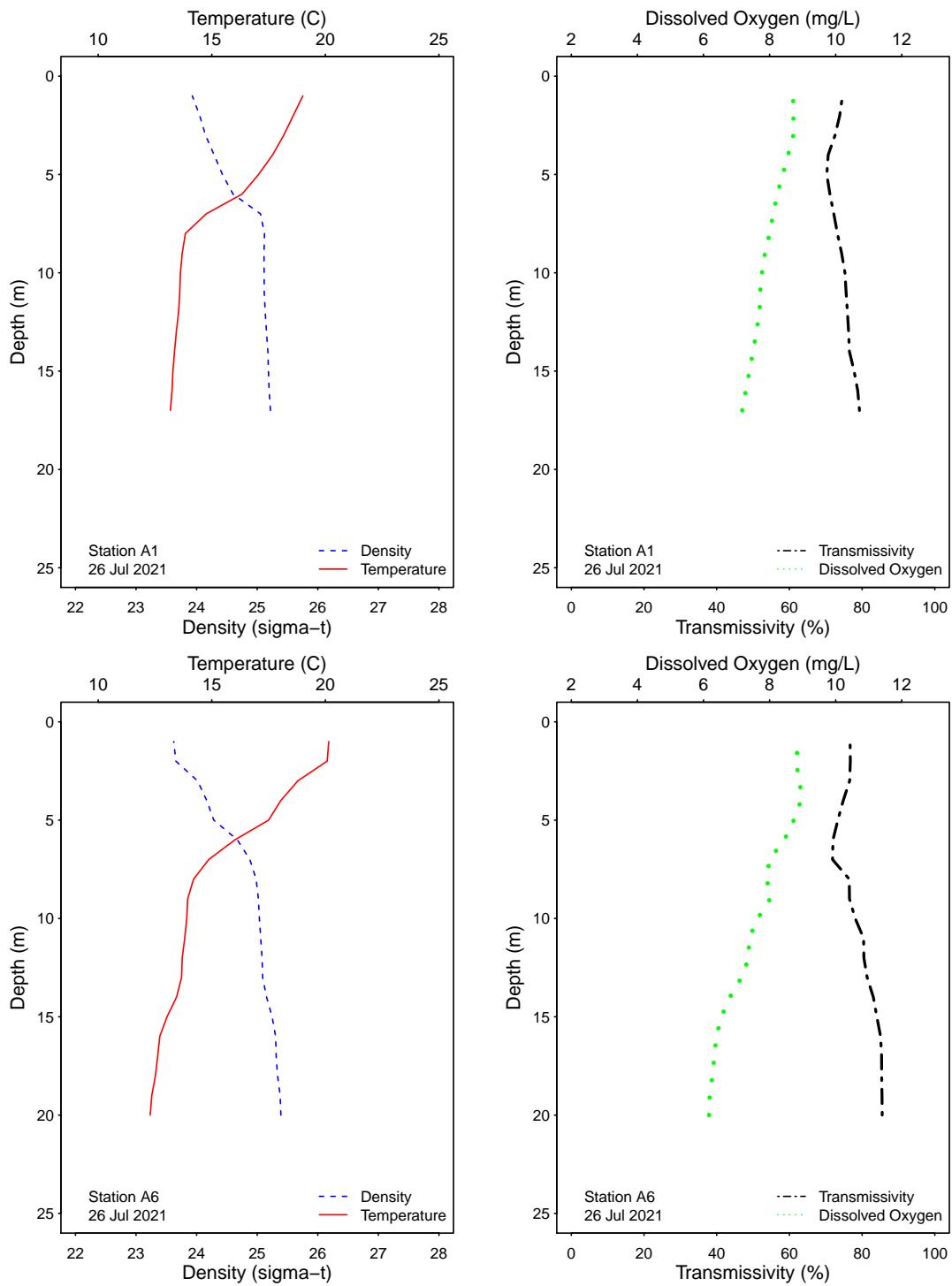


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

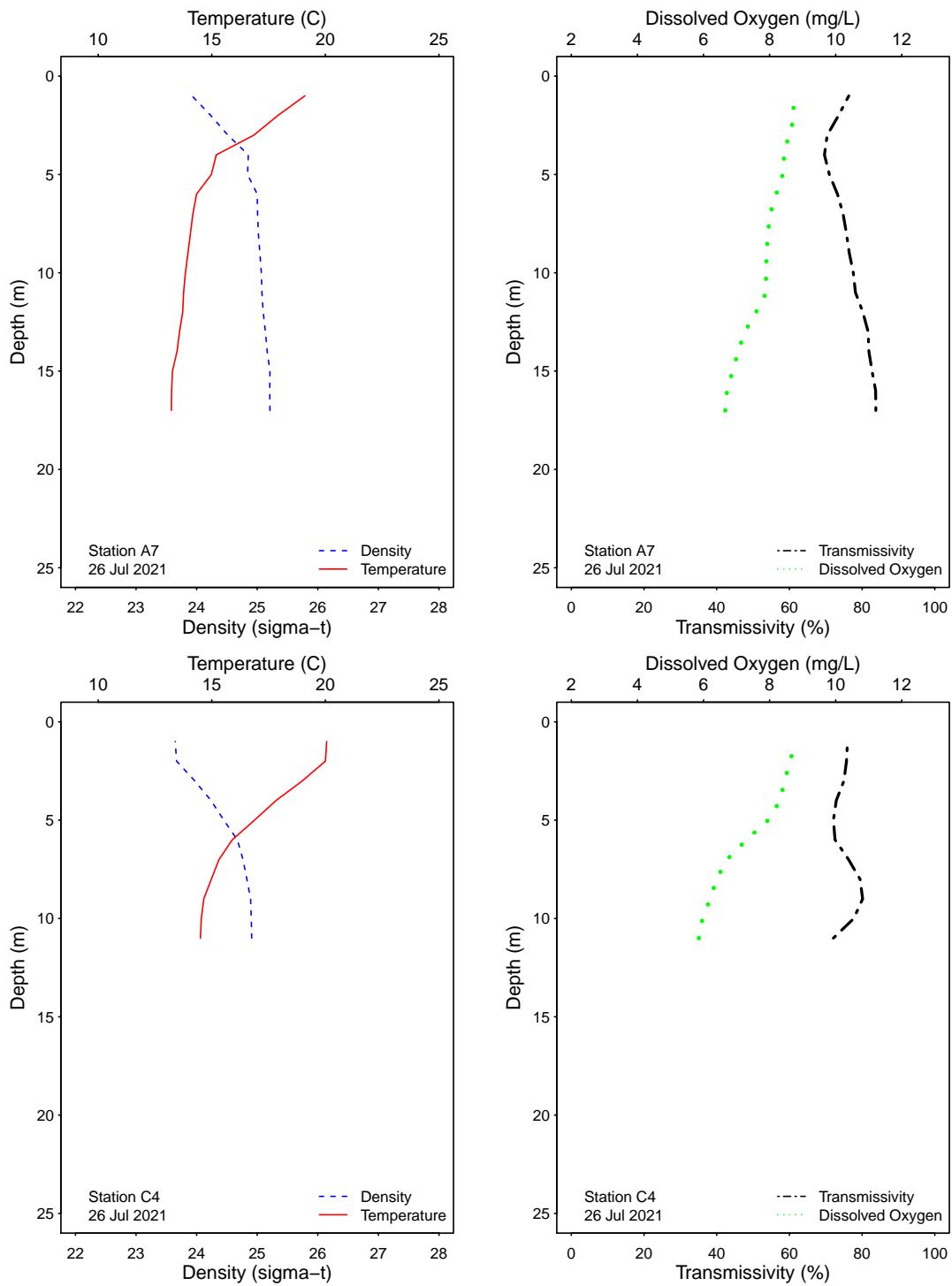


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

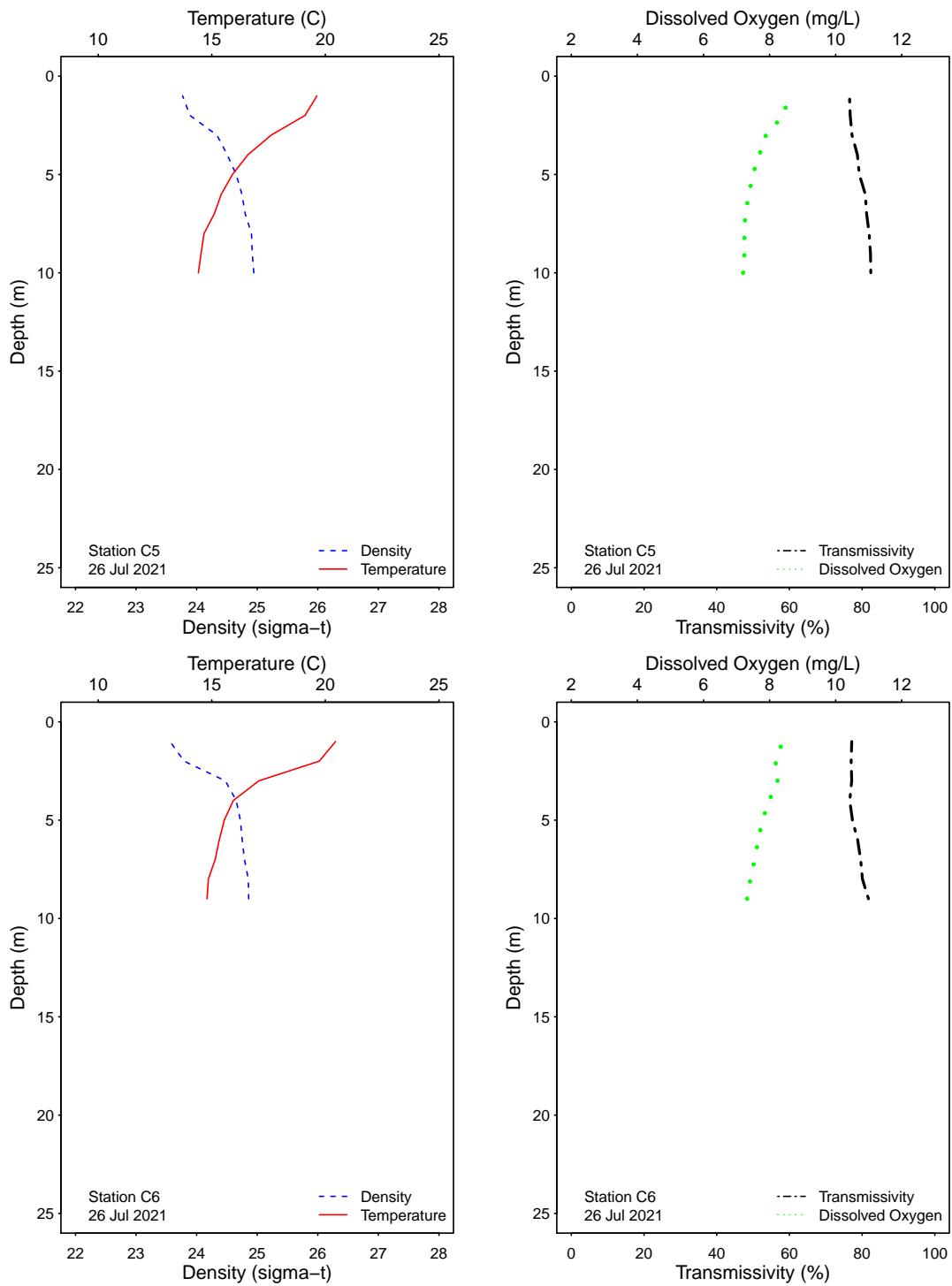


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

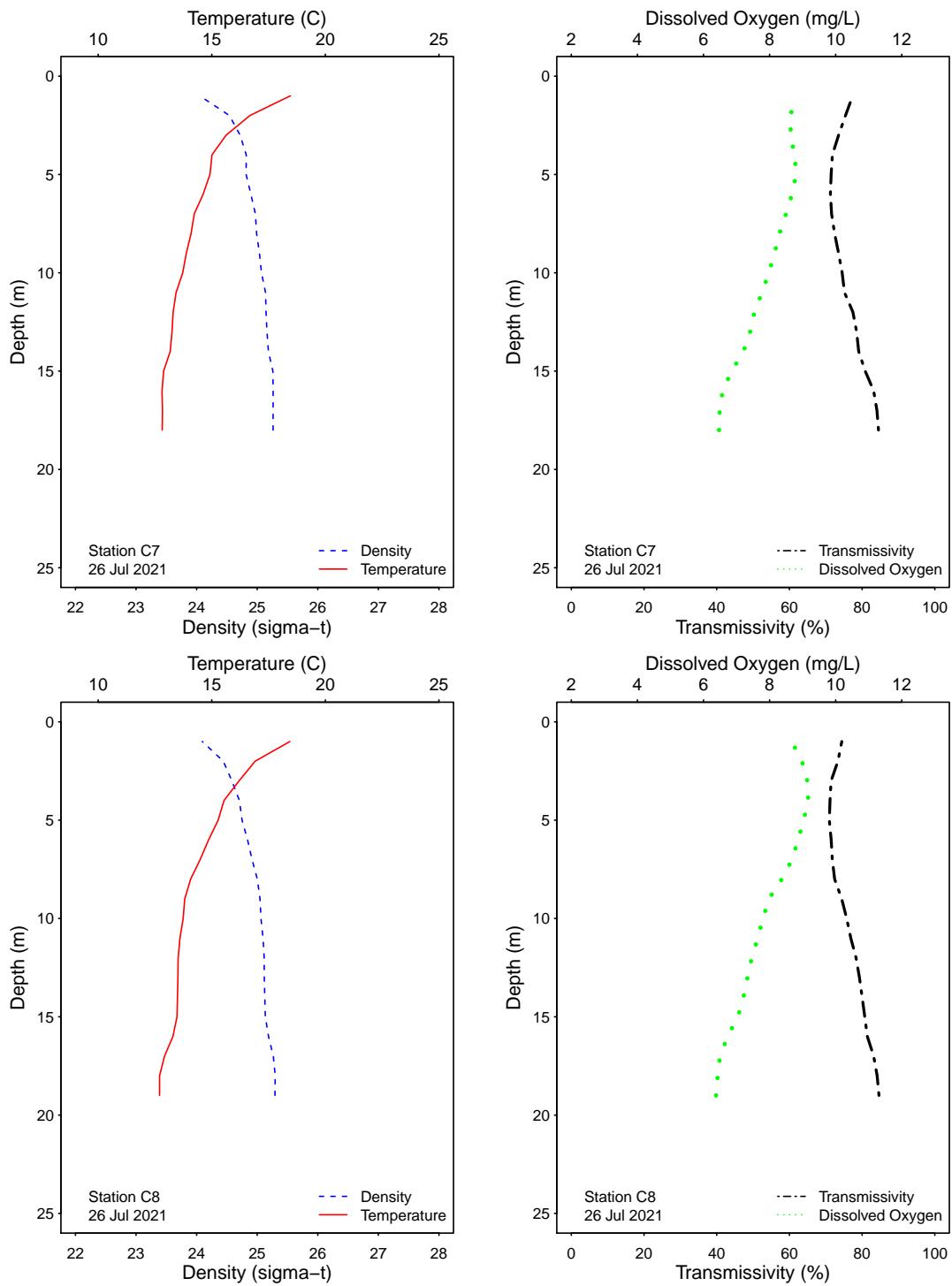


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.



## 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* (Enter) are reported as CFU/100 mL.

<b>Station</b>	<b>Date</b>	<b>Depth</b>	<b>Analyst</b>	<b>Procedure</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>
A7	06 Jul 2021	18	KA	LAB DUPLICATE	38e	6e	<2
A7	12 Jul 2021	18	BS	LAB DUPLICATE	16e	2e	<2
A7	21 Jul 2021	18	JF	LAB DUPLICATE	26e	2e	<2
A7	26 Jul 2021	18	AR	LAB DUPLICATE	10e	<2	<2
C7	06 Jul 2021	18	BS	LAB DUPLICATE	2e	<2	<2
C7	12 Jul 2021	18	CRE	LAB DUPLICATE	2e	<2	<2
C7	21 Jul 2021	18	JF	LAB DUPLICATE	2e	<2	<2
C7	26 Jul 2021	18	AR	LAB DUPLICATE	<2	<2	<2
C8	06 Jul 2021	12	CRE	LAB DUPLICATE	<2	<2	<2
C8	12 Jul 2021	12	CRE	LAB DUPLICATE	2e	<2	<2
C8	21 Jul 2021	12	JF	LAB DUPLICATE	<2	<2	<2
C8	26 Jul 2021	12	AR	LAB DUPLICATE	<2	<2	<2
D12	07 Jul 2021		HF	FIELD DUPLICATE	<20	<2	<2
D12	07 Jul 2021		HF	LAB DUPLICATE	20e	6e	<2
D12	14 Jul 2021		CRE	FIELD DUPLICATE	4e	<2	10e
D12	14 Jul 2021		CRE	LAB DUPLICATE	16e	6e	4e
D12	21 Jul 2021		JF	FIELD DUPLICATE	2e	<2	<2
D12	21 Jul 2021		JF	LAB DUPLICATE	2e	<2	<2
D12	28 Jul 2021		CRE	FIELD DUPLICATE	<20	<2	<2
D12	28 Jul 2021		CRE	LAB DUPLICATE	<20	<2	<2

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 Jul 2021	2	2	3	2	3	5	3	3
02 Jul 2021	2	2	3	2	3	5	3	3
03 Jul 2021	2	2	3	2	3	5	3	3
04 Jul 2021	2	2	3	2	3	5	3	3
05 Jul 2021	2	2	3	2	3	5	3	3
06 Jul 2021	2	2	3	2	3	5	3	3
07 Jul 2021	2	3	4	2	3	5	3	3
08 Jul 2021	2	3	4	2	3	5	3	3
09 Jul 2021	2	3	4	2	3	5	3	3
10 Jul 2021	2	3	4	2	3	5	3	3
11 Jul 2021	2	3	4	2	3	5	3	3
12 Jul 2021	2	3	4	2	3	5	3	3
13 Jul 2021	2	3	4	2	3	5	3	3
14 Jul 2021	2	3	4	2	3	6	5	3
15 Jul 2021	2	3	4	2	3	6	5	3
16 Jul 2021	2	3	4	2	3	6	5	3
17 Jul 2021	2	3	4	2	3	6	5	3
18 Jul 2021	2	3	4	2	3	6	5	3
19 Jul 2021	2	3	4	2	3	6	5	3
20 Jul 2021	2	3	4	2	3	6	5	3
21 Jul 2021	2	3	4	2	3	6	4	3
22 Jul 2021	2	3	4	2	3	6	4	3
23 Jul 2021	2	3	4	2	3	6	4	3
24 Jul 2021	2	3	4	2	3	6	4	3
25 Jul 2021	2	3	4	2	3	6	4	3
26 Jul 2021	2	3	4	2	3	6	4	3
27 Jul 2021	2	3	4	2	3	6	4	3
28 Jul 2021	2	3	4	2	3	6	5	3
29 Jul 2021	2	3	4	2	3	6	5	3
30 Jul 2021	2	3	4	2	3	6	5	3
31 Jul 2021	2	3	4	2	3	6	5	3

\* 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
July	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

# Kelp Stations



**Table B.3**

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 Jul 2021	2	3	2	2	2	2	3	2
02 Jul 2021	2	3	2	2	2	2	3	2
03 Jul 2021	2	3	2	2	2	2	3	2
04 Jul 2021	2	3	2	2	2	2	3	2
05 Jul 2021	2	3	2	2	2	2	3	2
06 Jul 2021	2	2	2	2	2	2	3	2
07 Jul 2021	2	2	2	2	2	2	3	2
08 Jul 2021	2	2	2	2	2	2	2	2
09 Jul 2021	2	2	2	2	2	2	2	2
10 Jul 2021	2	2	2	2	2	2	2	2
11 Jul 2021	2	2	2	2	2	2	2	2
12 Jul 2021	2	2	2	2	2	2	2	2
13 Jul 2021	2	2	2	2	2	2	2	2
14 Jul 2021	2	2	2	2	2	2	2	2
15 Jul 2021	2	2	2	2	2	2	2	2
16 Jul 2021	2	2	2	2	2	2	2	2
17 Jul 2021	2	2	2	2	2	2	2	2
18 Jul 2021	2	2	2	2	2	2	2	2
19 Jul 2021	2	2	2	2	2	2	2	2
20 Jul 2021	2	2	2	2	2	2	3	2
21 Jul 2021	2	2	2	2	2	2	2	2
22 Jul 2021	2	2	2	2	2	2	2	2
23 Jul 2021	2	2	2	2	2	2	2	2
24 Jul 2021	2	2	2	2	2	2	2	2
25 Jul 2021	2	2	2	2	2	2	2	2
26 Jul 2021	2	2	2	2	2	2	2	2
27 Jul 2021	2	2	2	2	2	2	2	2
28 Jul 2021	2	2	2	2	2	2	2	2
29 Jul 2021	2	2	2	2	2	2	2	2
30 Jul 2021	2	2	2	2	2	2	2	2
31 Jul 2021	2	2	2	2	2	2	2	2

\* Geometric mean calculated using n<5

**Table B.4**

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
July	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data