



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 2019
REVISED MARCH 2021

Environmental Monitoring and Technical Services
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Public Utilities Department

Environmental Monitoring & Technical Services Division

April 1, 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 revised July 2019 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 revised report is being submitted to address data integrity issues identified to the Board in the letter dated October 22, 2020, subject: "San Diego NPDES Shoreline Sampling Program Report."

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 blue ink, appearing to read "Peter S. Vroom".

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

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 lack of access has resulted in the following modifications:

- Station D8 was replaced by alternate station D8-A during July 2016. However, due to increasing instability, City staff have been unable to safely access and sample station D8-A since February 7, 2018. During March 2018, the City identified an alternate location for stations D8/D8-A. This new station, designated D8-B, is located about 150 feet north of D8-A.

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

Kelp Bed Stations

The eight kelp stations were 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 consisted primarily of collecting seawater samples at discrete depths to determine concentrations of indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). Water column profiles of various physical/chemical parameters were also generated during each sampling event, and visual observations of weather and water conditions were recorded at each station.

Seawater samples at the kelp bed stations were collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses were 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* were generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data at a rate of ≥ 4 scans per second. These scans were 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); 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 were 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 were extracted from the CTD profiles and presented with the bacteriological data.

Bacteriological Reporting and Quality Assurance

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

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

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

- (1) Total coliform density shall not exceed 1000 CFU/100 mL;

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

- (2) Fecal coliform density shall not exceed 200 CFU/100 mL;
- (3) *Enterococcus* density shall not exceed 35 CFU/100 mL.

Single Sample Maximums:

- (1) 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 exactly 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) 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 2019 Quality Assurance Report, which will be completed in March 2020.

SUMMARY OF RESULTS

Shore Stations

- The eight shore stations (D4, D5, D7, D8-B, D9, D10, D11, D12) were sampled five times during July (i.e. July 1, 10, 17, 24, 31). Subsequent to initial reporting, the samples (or resamples) collected at stations D7 and D9 on July 17 and 18, respectively, were determined to be problematic. The results from these samples (or resamples) have been removed from this report.
- Two of these stations were out of compliance with one or more of the California Ocean Plan (Ocean Plan) water-contact standards as follows:
 - o The single sample maximum (SSM) standard for *Enterococcus* densities was exceeded at station D8-B, and D9 on July 17.
 - o Per permit requirements, a resample was collected in response to these SSM exceedances (see Table 2.8 for details).
- 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 surfgrass. 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 details (<https://www.sandiego.gov/public-utilities/sustainability/ocean-monitoring/reports>).
- Nothing of sewage origin was observed at any of the shore stations.

Kelp Bed Stations

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled five times during July (i.e. July 1, 8, 15, 24, 30).
- All eight of these stations were in compliance with various water-contact standards specified in the Ocean Plan.
- Water column temperatures ranged from 11.10 to 21.43°C. The difference between surface and bottom waters ranged from 0.26 to 10.09°C, indicating that the water column was stratified at some of the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0.34 to 8.4 µg/L, suggesting the presence of phytoplankton blooms during the month.
- 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 2019.



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 2019	20	23	44	101	39	48	45	13
02 Jul 2019	20	23	44	101	39	48	45	13
03 Jul 2019	20	23	44	101	39	48	45	13
04 Jul 2019	20	23	44	101	39	48	45	13
05 Jul 2019	20	23	44	101	39	48	45	13
06 Jul 2019	36	20	36	68	47	42	31	20
07 Jul 2019	36	20	36	68	47	42	31	20
08 Jul 2019	36	20	36	68	47	42	31	20
09 Jul 2019	36	20	36	68	47	42	31	20
10 Jul 2019	32	20	32	50	39	36	29	20
11 Jul 2019	32	20	32	50	39	36	29	20
12 Jul 2019	20	20	20	43	47	42	31	20
13 Jul 2019	20	20	20	43	47	42	31	20
14 Jul 2019	20	20	20	43	47	42	31	20
15 Jul 2019	20	20	20	43	47	42	31	20
16 Jul 2019	20	20	20	43	47	42	31	20
17 Jul 2019	20	20	20	36	72	58	29	32
18 Jul 2019	20	20	20	36	72	58	29	32
19 Jul 2019	20	20	20	36	72	58	29	32
20 Jul 2019	20	20	20	43	56	63	26	63
21 Jul 2019	20	20	20	43	56	63	26	63
22 Jul 2019	20	20	20	43	56	63	26	63
23 Jul 2019	20	20	20	43	56	63	26	63
24 Jul 2019	20	20	20	36	45	50	25	80
25 Jul 2019	20	20	20	36	45	50	25	80
26 Jul 2019	36	36	43	36	75	63	36	112
27 Jul 2019	36	36	43	36	75	63	36	112
28 Jul 2019	36	36	43	36	75	63	36	112
29 Jul 2019	36	36	43	36	75	63	36	112
30 Jul 2019	36	36	43	36	75	63	36	112
31 Jul 2019	20	20	43	36	56	36	36	112

* 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 2019	4	5	9	12	2	9	8	2
02 Jul 2019	4	5	9	12	2	9	8	2
03 Jul 2019	4	5	9	12	2	9	8	2
04 Jul 2019	4	5	9	12	2	9	8	2
05 Jul 2019	4	5	9	12	2	9	8	2
06 Jul 2019	4	7	8	4	3	8	7	2
07 Jul 2019	4	7	8	4	3	8	7	2
08 Jul 2019	4	7	8	4	3	8	7	2
09 Jul 2019	4	7	8	4	3	8	7	2
10 Jul 2019	4	9	7	4	2	8	5	2
11 Jul 2019	4	9	7	4	2	8	5	2
12 Jul 2019	4	7	5	4	3	11	7	2
13 Jul 2019	4	7	5	4	3	11	7	2
14 Jul 2019	4	7	5	4	3	11	7	2
15 Jul 2019	4	7	5	4	3	11	7	2
16 Jul 2019	4	7	5	4	3	11	7	2
17 Jul 2019	4	5	5	4	4	9	6	2
18 Jul 2019	4	5	5	4	4	9	6	2
19 Jul 2019	4	5	5	4	4	9	6	2
20 Jul 2019	4	4	5	4	4	8	4	2
21 Jul 2019	4	4	5	4	4	8	4	2
22 Jul 2019	4	4	5	4	4	8	4	2
23 Jul 2019	4	4	5	4	4	8	4	2
24 Jul 2019	4	3	4	4	4	8	6	3
25 Jul 2019	4	3	4	4	4	8	6	3
26 Jul 2019	4	4	5	4	4	7	6	4
27 Jul 2019	4	4	5	4	4	7	6	4
28 Jul 2019	4	4	5	4	4	7	6	4
29 Jul 2019	4	4	5	4	4	7	6	4
30 Jul 2019	4	4	5	4	4	7	6	4
31 Jul 2019	2	4	4	2	3	6	7	5

* 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 2019	2	2	6	5	3	5	6	2
02 Jul 2019	2	2	6	5	3	5	6	2
03 Jul 2019	2	2	6	5	3	5	6	2
04 Jul 2019	2	2	6	5	3	5	6	2
05 Jul 2019	2	2	6	5	3	5	6	2
06 Jul 2019	2	2	4	4	2	4	4	2
07 Jul 2019	2	2	4	4	2	4	4	2
08 Jul 2019	2	2	4	4	2	4	4	2
09 Jul 2019	2	2	4	4	2	4	4	2
10 Jul 2019	2	2	4	4	2	3	4	2
11 Jul 2019	2	2	4	4	2	3	4	2
12 Jul 2019	2	2	4	4	2	4	4	2
13 Jul 2019	2	2	4	4	2	4	4	2
14 Jul 2019	2	2	4	4	2	4	4	2
15 Jul 2019	2	2	4	4	2	4	4	2
16 Jul 2019	2	2	4	4	2	4	4	2
17 Jul 2019	2	2	4	13	9	4	5	2
18 Jul 2019	2	2	4	13	9	4	5	2
19 Jul 2019	2	2	4	13	9	4	5	2
20 Jul 2019	2	2	4	25	13	4	3	2
21 Jul 2019	2	2	4	25	13	4	3	2
22 Jul 2019	2	2	4	25	13	4	3	2
23 Jul 2019	2	2	4	25	13	4	3	2
24 Jul 2019	2	2	6	13	9	3	3	4
25 Jul 2019	2	2	6	13	9	3	3	4
26 Jul 2019	2	2	9	13	13	4	3	4
27 Jul 2019	2	2	9	13	13	4	3	4
28 Jul 2019	2	2	9	13	13	4	3	4
29 Jul 2019	2	2	9	13	13	4	3	4
30 Jul 2019	2	2	9	13	13	4	3	4
31 Jul 2019	2	2	9	8	11	5	3	4

* 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
01 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
10 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
17 Jul 2019	IC	IC	ns	IC	IC	IC	IC	IC
24 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
31 Jul 2019	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
01 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
10 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
17 Jul 2019	IC	IC	ns	IC	IC	IC	IC	IC
24 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
31 Jul 2019	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
01 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
10 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
17 Jul 2019	IC	IC	ns	E	E	IC	IC	IC
18 Jul 2019	ns	ns	IC	IC	ns	ns	ns	ns
24 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
31 Jul 2019	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
01 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
10 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
17 Jul 2019	IC	IC	ns	IC	IC	IC	IC	IC
24 Jul 2019	IC	IC	IC	IC	IC	IC	IC	IC
31 Jul 2019	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.

Station	Date	Time	Total	Fecal	Enter	F:T
D4	01 Jul 2019	759	<200	40e	4e	0.20
D4	10 Jul 2019	1019	<20	<2	<2	0.10
D4	17 Jul 2019	904	<20	<2	2e	0.10
D4	24 Jul 2019	929	<20	<2	<2	0.10
D4	31 Jul 2019	800	20e	<2	4e	0.10
D5	01 Jul 2019	749	<200	<2	2e	0.01
D5	10 Jul 2019	1044	<20	<20	<2	1.00
D5	17 Jul 2019	837	<20	2e	2e	0.10
D5	24 Jul 2019	913	<20	<2	<2	0.10
D5	31 Jul 2019	749	<20	<2	<2	0.10
D7	01 Jul 2019	816	<200	<20	20e	0.10
D7	10 Jul 2019	930	<20	4e	2e	0.20
D7	18 Jul 2019	1111	ns	ns	<2	ns
D7	24 Jul 2019	851	<20	<2	16e	0.10
D7	31 Jul 2019	823	<200	8e	26e	0.04
D8-B	01 Jul 2019	827	<200	<20	<20	0.10
D8-B	10 Jul 2019	913	<20	<2	<2	0.10
D8-B	17 Jul 2019	947	20e	2e	400e	0.10
D8-B	18 Jul 2019	1118	ns	ns	<2	ns
D8-B	24 Jul 2019	835	20e	<2	<2	0.10
D8-B	31 Jul 2019	841	<200	4e	2e	0.02
D9	01 Jul 2019	836	<200	6e	4e	0.03
D9	10 Jul 2019	858	20e	2e	<2	0.10
D9	17 Jul 2019	1003	400e	14e	2000e	0.04
D9	24 Jul 2019	818	20e	<2	<2	0.10
D9	31 Jul 2019	903	60e	<2	<2	0.03
D10	01 Jul 2019	848	200e	4e	8e	0.02
D10	10 Jul 2019	822	20e	10e	<2	0.50
D10	17 Jul 2019	1020	<200	4e	8e	0.02
D10	24 Jul 2019	757	<20	12e	<2	0.60
D10	31 Jul 2019	915	<20	2e	14e	0.10
D11	01 Jul 2019	856	<200	4e	6e	0.02
D11	10 Jul 2019	810	<20	<2	2e	0.10
D11	17 Jul 2019	1050	20e	6e	6e	0.30
D11	24 Jul 2019	733	20e	<20	2e	1.00
D11	31 Jul 2019	931	<200	12e	6e	0.06
D12	01 Jul 2019	915	<200	2e	2e	0.01
D12	10 Jul 2019	748	<20	<2	<2	0.10
D12	17 Jul 2019	1118	<200	<2	<2	0.01
D12	24 Jul 2019	710	<200	30e	42	0.15
D12	31 Jul 2019	957	<200	6e	2e	0.03

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
D7	18 Jul 2019			Resample
D8-B	18 Jul 2019			Resample

Table 2.9

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

Station	Date	Parameter	Value
D4	01 Jul 2019	Arrive Time	759
D4	01 Jul 2019	Weather	Overcast
D4	01 Jul 2019	Wind Speed (kts)	0.3
D4	01 Jul 2019	Wind Dir	S
D4	01 Jul 2019	Animal Life	None
D4	01 Jul 2019	Floatables	Foam; Film
D4	01 Jul 2019	Water Color	Green
D4	01 Jul 2019	Current Direction	S
D4	01 Jul 2019	Water Temp (C)	20.6
D4	01 Jul 2019	Wave Height Low (ft)	1
D4	01 Jul 2019	High Tide (ft)	3.8
D4	01 Jul 2019	High Tide Time	931
D4	01 Jul 2019	Low Tide (ft)	-0.8
D4	01 Jul 2019	Low Tide Time	315
D4	01 Jul 2019	Comments	Kelp; Seagrass; Algae; Debris; Water clear
D4	10 Jul 2019	Arrive Time	1019
D4	10 Jul 2019	Weather	Partly Cloudy
D4	10 Jul 2019	Wind Speed (kts)	5.8
D4	10 Jul 2019	Wind Dir	S
D4	10 Jul 2019	Animal Life	2 Seagulls
D4	10 Jul 2019	Floatables	None
D4	10 Jul 2019	Water Color	Green
D4	10 Jul 2019	Current Direction	S
D4	10 Jul 2019	Water Temp (C)	23.4
D4	10 Jul 2019	Wave Height Low (ft)	3
D4	10 Jul 2019	High Tide (ft)	3.5
D4	10 Jul 2019	High Tide Time	435
D4	10 Jul 2019	Low Tide (ft)	1.1
D4	10 Jul 2019	Low Tide Time	1034
D4	10 Jul 2019	Comments	Kelp; Seagrass; Algae; 4 Boats; Water clear
D4	17 Jul 2019	Arrive Time	904
D4	17 Jul 2019	Weather	Cloudy
D4	17 Jul 2019	Wind Speed (kts)	6
D4	17 Jul 2019	Wind Dir	W
D4	17 Jul 2019	Animal Life	None
D4	17 Jul 2019	Floatables	None
D4	17 Jul 2019	Water Color	Green
D4	17 Jul 2019	Current Direction	N
D4	17 Jul 2019	Water Temp (C)	20.8
D4	17 Jul 2019	Wave Height Low (ft)	4
D4	17 Jul 2019	High Tide (ft)	3.9
D4	17 Jul 2019	High Tide Time	1058
D4	17 Jul 2019	Low Tide (ft)	-0.7
D4	17 Jul 2019	Low Tide Time	439
D4	17 Jul 2019	Comments	Kelp; Seagrass; Algae; Water clear
D4	24 Jul 2019	Arrive Time	929
D4	24 Jul 2019	Weather	Sunny
D4	24 Jul 2019	Wind Speed (kts)	4.4
D4	24 Jul 2019	Wind Dir	S
D4	24 Jul 2019	Animal Life	None
D4	24 Jul 2019	Floatables	None
D4	24 Jul 2019	Water Color	Green
D4	24 Jul 2019	Current Direction	S

Station	Date	Parameter	Value
D4	24 Jul 2019	Water Temp (C)	25.1
D4	24 Jul 2019	Wave Height Low (ft)	1
D4	24 Jul 2019	High Tide (ft)	4.3
D4	24 Jul 2019	High Tide Time	1538
D4	24 Jul 2019	Low Tide (ft)	1.5
D4	24 Jul 2019	Low Tide Time	842
D4	24 Jul 2019	Comments	Kelp; Seagrass; Algae; 3 Surfers; 9 Boats; Water clear
D4	31 Jul 2019	Arrive Time	800
D4	31 Jul 2019	Weather	Overcast
D4	31 Jul 2019	Wind Speed (kts)	1.9
D4	31 Jul 2019	Wind Dir	N
D4	31 Jul 2019	Animal Life	2 Cormorants
D4	31 Jul 2019	Floatables	None
D4	31 Jul 2019	Water Color	Green
D4	31 Jul 2019	Current Direction	N
D4	31 Jul 2019	Water Temp (C)	21.4
D4	31 Jul 2019	Wave Height Low (ft)	1
D4	31 Jul 2019	High Tide (ft)	4.2
D4	31 Jul 2019	High Tide Time	956
D4	31 Jul 2019	Low Tide (ft)	-1.2
D4	31 Jul 2019	Low Tide Time	339
D4	31 Jul 2019	Comments	Kelp; Seagrass; Algae; 4 Boats; Water clear
D5	01 Jul 2019	Arrive Time	749
D5	01 Jul 2019	Weather	Overcast
D5	01 Jul 2019	Wind Speed (kts)	2.1
D5	01 Jul 2019	Wind Dir	S
D5	01 Jul 2019	Animal Life	1 Pelican; 1 Seagull
D5	01 Jul 2019	Floatables	Foam; Film
D5	01 Jul 2019	Water Color	Green
D5	01 Jul 2019	Current Direction	S
D5	01 Jul 2019	Water Temp (C)	19.4
D5	01 Jul 2019	Wave Height Low (ft)	1
D5	01 Jul 2019	High Tide (ft)	3.8
D5	01 Jul 2019	High Tide Time	931
D5	01 Jul 2019	Low Tide (ft)	-0.8
D5	01 Jul 2019	Low Tide Time	315
D5	01 Jul 2019	Comments	Kelp; Seagrass; Algae; Debris; Water clear
D5	10 Jul 2019	Arrive Time	1044
D5	10 Jul 2019	Weather	Partly Cloudy
D5	10 Jul 2019	Wind Speed (kts)	3.4
D5	10 Jul 2019	Wind Dir	NW
D5	10 Jul 2019	Animal Life	1 Seagull
D5	10 Jul 2019	Floatables	Foam
D5	10 Jul 2019	Water Color	Green
D5	10 Jul 2019	Current Direction	NW
D5	10 Jul 2019	Water Temp (C)	23.3
D5	10 Jul 2019	Wave Height Low (ft)	3
D5	10 Jul 2019	High Tide (ft)	3.5
D5	10 Jul 2019	High Tide Time	435
D5	10 Jul 2019	Low Tide (ft)	1.1
D5	10 Jul 2019	Low Tide Time	1034
D5	10 Jul 2019	Comments	Kelp; Seagrass; Algae; 3 Boats; Water clear
D5	17 Jul 2019	Arrive Time	837
D5	17 Jul 2019	Weather	Cloudy
D5	17 Jul 2019	Wind Speed (kts)	3.4
D5	17 Jul 2019	Wind Dir	W
D5	17 Jul 2019	Animal Life	None

Station	Date	Parameter	Value
D5	17 Jul 2019	Floatables	None
D5	17 Jul 2019	Water Color	Green
D5	17 Jul 2019	Current Direction	N
D5	17 Jul 2019	Water Temp (C)	20
D5	17 Jul 2019	Wave Height Low (ft)	4
D5	17 Jul 2019	High Tide (ft)	3.9
D5	17 Jul 2019	High Tide Time	1058
D5	17 Jul 2019	Low Tide (ft)	-0.7
D5	17 Jul 2019	Low Tide Time	439
D5	17 Jul 2019	Comments	Kelp; Seagrass; Algae; Water clear
D5	24 Jul 2019	Arrive Time	913
D5	24 Jul 2019	Weather	Sunny
D5	24 Jul 2019	Wind Speed (kts)	1.3
D5	24 Jul 2019	Wind Dir	SW
D5	24 Jul 2019	Animal Life	None
D5	24 Jul 2019	Floatables	Foam
D5	24 Jul 2019	Water Color	Green
D5	24 Jul 2019	Current Direction	SW
D5	24 Jul 2019	Water Temp (C)	23.8
D5	24 Jul 2019	Wave Height Low (ft)	2
D5	24 Jul 2019	High Tide (ft)	4.3
D5	24 Jul 2019	High Tide Time	1538
D5	24 Jul 2019	Low Tide (ft)	1.5
D5	24 Jul 2019	Low Tide Time	842
D5	24 Jul 2019	Comments	Kelp; Seagrass; Algae; 8 Boats; Water clear
D5	31 Jul 2019	Arrive Time	749
D5	31 Jul 2019	Weather	Overcast
D5	31 Jul 2019	Wind Speed (kts)	0
D5	31 Jul 2019	Wind Dir	
D5	31 Jul 2019	Animal Life	3 Seagulls
D5	31 Jul 2019	Floatables	Foam
D5	31 Jul 2019	Water Color	Green
D5	31 Jul 2019	Current Direction	S
D5	31 Jul 2019	Water Temp (C)	22
D5	31 Jul 2019	Wave Height Low (ft)	1
D5	31 Jul 2019	High Tide (ft)	4.2
D5	31 Jul 2019	High Tide Time	956
D5	31 Jul 2019	Low Tide (ft)	-1.2
D5	31 Jul 2019	Low Tide Time	339
D5	31 Jul 2019	Comments	Kelp; Seagrass; Algae; 3 Boats; Water clear
D7	01 Jul 2019	Arrive Time	816
D7	01 Jul 2019	Weather	Overcast
D7	01 Jul 2019	Wind Speed (kts)	1.5
D7	01 Jul 2019	Wind Dir	E
D7	01 Jul 2019	Animal Life	None
D7	01 Jul 2019	Floatables	Foam; Film
D7	01 Jul 2019	Water Color	Green
D7	01 Jul 2019	Current Direction	E
D7	01 Jul 2019	Water Temp (C)	19.3
D7	01 Jul 2019	Wave Height Low (ft)	2
D7	01 Jul 2019	High Tide (ft)	3.8
D7	01 Jul 2019	High Tide Time	931
D7	01 Jul 2019	Low Tide (ft)	-0.8
D7	01 Jul 2019	Low Tide Time	315
D7	01 Jul 2019	Comments	Kelp; Seagrass; Algae; 4 Surfers; Water clear
D7	10 Jul 2019	Arrive Time	930
D7	10 Jul 2019	Weather	Overcast

Station	Date	Parameter	Value
D7	10 Jul 2019	Wind Speed (kts)	4
D7	10 Jul 2019	Wind Dir	E
D7	10 Jul 2019	Animal Life	None
D7	10 Jul 2019	Floatables	None
D7	10 Jul 2019	Water Color	Green
D7	10 Jul 2019	Current Direction	E
D7	10 Jul 2019	Water Temp (C)	22.7
D7	10 Jul 2019	Wave Height Low (ft)	3
D7	10 Jul 2019	High Tide (ft)	3.5
D7	10 Jul 2019	High Tide Time	435
D7	10 Jul 2019	Low Tide (ft)	1.1
D7	10 Jul 2019	Low Tide Time	1034
D7	10 Jul 2019	Comments	Kelp; Seagrass; Algae; 43 Surfers; 2 Boats; Water clear
D7	24 Jul 2019	Arrive Time	851
D7	24 Jul 2019	Weather	Overcast
D7	24 Jul 2019	Wind Speed (kts)	5.3
D7	24 Jul 2019	Wind Dir	S
D7	24 Jul 2019	Animal Life	None
D7	24 Jul 2019	Floatables	None
D7	24 Jul 2019	Water Color	Green
D7	24 Jul 2019	Current Direction	S
D7	24 Jul 2019	Water Temp (C)	23.7
D7	24 Jul 2019	Wave Height Low (ft)	2
D7	24 Jul 2019	High Tide (ft)	3.4
D7	24 Jul 2019	High Tide Time	210
D7	24 Jul 2019	Low Tide (ft)	1.5
D7	24 Jul 2019	Low Tide Time	842
D7	24 Jul 2019	Comments	Kelp; Seagrass; Algae; 9 Persons; 23 Surfers; 4 Boats; Water clear
D7	31 Jul 2019	Arrive Time	823
D7	31 Jul 2019	Weather	Overcast
D7	31 Jul 2019	Wind Speed (kts)	2.7
D7	31 Jul 2019	Wind Dir	N
D7	31 Jul 2019	Animal Life	1 Seagull
D7	31 Jul 2019	Floatables	None
D7	31 Jul 2019	Water Color	Green
D7	31 Jul 2019	Current Direction	N
D7	31 Jul 2019	Water Temp (C)	22.6
D7	31 Jul 2019	Wave Height Low (ft)	2
D7	31 Jul 2019	High Tide (ft)	4.2
D7	31 Jul 2019	High Tide Time	956
D7	31 Jul 2019	Low Tide (ft)	-1.2
D7	31 Jul 2019	Low Tide Time	339
D7	31 Jul 2019	Comments	Kelp; Seagrass; Algae; 1 Surfer; Water clear
D8-B	01 Jul 2019	Arrive Time	827
D8-B	01 Jul 2019	Weather	Partly Cloudy
D8-B	01 Jul 2019	Wind Speed (kts)	1.9
D8-B	01 Jul 2019	Wind Dir	E
D8-B	01 Jul 2019	Animal Life	None
D8-B	01 Jul 2019	Floatables	Foam; Film
D8-B	01 Jul 2019	Water Color	Green
D8-B	01 Jul 2019	Current Direction	E
D8-B	01 Jul 2019	Water Temp (C)	18.9
D8-B	01 Jul 2019	Wave Height Low (ft)	2
D8-B	01 Jul 2019	High Tide (ft)	3.8
D8-B	01 Jul 2019	High Tide Time	931
D8-B	01 Jul 2019	Low Tide (ft)	-0.8
D8-B	01 Jul 2019	Low Tide Time	315

Station	Date	Parameter	Value
D8-B	01 Jul 2019	Comments	Kelp; Seagrass; Algae; Water clear
D8-B	10 Jul 2019	Arrive Time	913
D8-B	10 Jul 2019	Weather	Overcast
D8-B	10 Jul 2019	Wind Speed (kts)	3.1
D8-B	10 Jul 2019	Wind Dir	NE
D8-B	10 Jul 2019	Animal Life	None
D8-B	10 Jul 2019	Floatables	Foam
D8-B	10 Jul 2019	Water Color	Green
D8-B	10 Jul 2019	Current Direction	NE
D8-B	10 Jul 2019	Water Temp (C)	22.6
D8-B	10 Jul 2019	Wave Height Low (ft)	3
D8-B	10 Jul 2019	High Tide (ft)	3.5
D8-B	10 Jul 2019	High Tide Time	435
D8-B	10 Jul 2019	Low Tide (ft)	1.1
D8-B	10 Jul 2019	Low Tide Time	1034
D8-B	10 Jul 2019	Comments	Kelp; Seagrass; Algae; Debris; Water clear
D8-B	17 Jul 2019	Arrive Time	947
D8-B	17 Jul 2019	Weather	Cloudy
D8-B	17 Jul 2019	Wind Speed (kts)	5.4
D8-B	17 Jul 2019	Wind Dir	W
D8-B	17 Jul 2019	Animal Life	None
D8-B	17 Jul 2019	Floatables	None
D8-B	17 Jul 2019	Water Color	Green
D8-B	17 Jul 2019	Current Direction	N
D8-B	17 Jul 2019	Water Temp (C)	20.3
D8-B	17 Jul 2019	Wave Height Low (ft)	3
D8-B	17 Jul 2019	High Tide (ft)	3.9
D8-B	17 Jul 2019	High Tide Time	1058
D8-B	17 Jul 2019	Low Tide (ft)	-0.7
D8-B	17 Jul 2019	Low Tide Time	439
D8-B	17 Jul 2019	Comments	Kelp; Seagrass; Water clear
D8-B	24 Jul 2019	Arrive Time	835
D8-B	24 Jul 2019	Weather	Partly Cloudy
D8-B	24 Jul 2019	Wind Speed (kts)	1.7
D8-B	24 Jul 2019	Wind Dir	NE
D8-B	24 Jul 2019	Animal Life	None
D8-B	24 Jul 2019	Floatables	None
D8-B	24 Jul 2019	Water Color	Green
D8-B	24 Jul 2019	Current Direction	NE
D8-B	24 Jul 2019	Water Temp (C)	23.6
D8-B	24 Jul 2019	Wave Height Low (ft)	1
D8-B	24 Jul 2019	High Tide (ft)	3.4
D8-B	24 Jul 2019	High Tide Time	210
D8-B	24 Jul 2019	Low Tide (ft)	1.5
D8-B	24 Jul 2019	Low Tide Time	842
D8-B	24 Jul 2019	Comments	Kelp; Seagrass; Algae; 2 Persons; 4 Boats; Water clear
D8-B	31 Jul 2019	Arrive Time	841
D8-B	31 Jul 2019	Weather	Overcast
D8-B	31 Jul 2019	Wind Speed (kts)	0
D8-B	31 Jul 2019	Wind Dir	
D8-B	31 Jul 2019	Animal Life	1 Dog
D8-B	31 Jul 2019	Floatables	Foam
D8-B	31 Jul 2019	Water Color	Green
D8-B	31 Jul 2019	Current Direction	S
D8-B	31 Jul 2019	Water Temp (C)	22.3
D8-B	31 Jul 2019	Wave Height Low (ft)	2
D8-B	31 Jul 2019	High Tide (ft)	4.2

Station	Date	Parameter	Value
D8-B	31 Jul 2019	High Tide Time	956
D8-B	31 Jul 2019	Low Tide (ft)	-1.2
D8-B	31 Jul 2019	Low Tide Time	339
D8-B	31 Jul 2019	Comments	Kelp; Seagrass; Algae; Debris; 3 Persons; Water clear
D9	01 Jul 2019	Arrive Time	836
D9	01 Jul 2019	Weather	Partly Cloudy
D9	01 Jul 2019	Wind Speed (kts)	2.3
D9	01 Jul 2019	Wind Dir	E
D9	01 Jul 2019	Animal Life	None
D9	01 Jul 2019	Floatables	Foam; Film
D9	01 Jul 2019	Water Color	Colorless
D9	01 Jul 2019	Current Direction	E
D9	01 Jul 2019	Water Temp (C)	19.2
D9	01 Jul 2019	Wave Height Low (ft)	2
D9	01 Jul 2019	High Tide (ft)	3.8
D9	01 Jul 2019	High Tide Time	931
D9	01 Jul 2019	Low Tide (ft)	-0.8
D9	01 Jul 2019	Low Tide Time	315
D9	01 Jul 2019	Comments	Kelp; Seagrass; Algae; Water clear
D9	10 Jul 2019	Arrive Time	858
D9	10 Jul 2019	Weather	Overcast
D9	10 Jul 2019	Wind Speed (kts)	3.6
D9	10 Jul 2019	Wind Dir	E
D9	10 Jul 2019	Animal Life	None
D9	10 Jul 2019	Floatables	Foam
D9	10 Jul 2019	Water Color	Green
D9	10 Jul 2019	Current Direction	E
D9	10 Jul 2019	Water Temp (C)	22.8
D9	10 Jul 2019	Wave Height Low (ft)	2
D9	10 Jul 2019	High Tide (ft)	3.5
D9	10 Jul 2019	High Tide Time	435
D9	10 Jul 2019	Low Tide (ft)	1.1
D9	10 Jul 2019	Low Tide Time	1034
D9	10 Jul 2019	Comments	Kelp; Seagrass; Algae; 1 Boat; Water clear
D9	17 Jul 2019	Arrive Time	1003
D9	17 Jul 2019	Weather	Cloudy
D9	17 Jul 2019	Wind Speed (kts)	5
D9	17 Jul 2019	Wind Dir	W
D9	17 Jul 2019	Animal Life	None
D9	17 Jul 2019	Floatables	None
D9	17 Jul 2019	Water Color	Green
D9	17 Jul 2019	Current Direction	N
D9	17 Jul 2019	Water Temp (C)	20.9
D9	17 Jul 2019	Wave Height Low (ft)	3
D9	17 Jul 2019	High Tide (ft)	3.9
D9	17 Jul 2019	High Tide Time	1058
D9	17 Jul 2019	Low Tide (ft)	-0.7
D9	17 Jul 2019	Low Tide Time	439
D9	17 Jul 2019	Comments	Kelp; Seagrass; Water clear
D9	24 Jul 2019	Arrive Time	818
D9	24 Jul 2019	Weather	Foggy
D9	24 Jul 2019	Wind Speed (kts)	4
D9	24 Jul 2019	Wind Dir	E
D9	24 Jul 2019	Animal Life	None
D9	24 Jul 2019	Floatables	None
D9	24 Jul 2019	Water Color	Green
D9	24 Jul 2019	Current Direction	E

Station	Date	Parameter	Value
D9	24 Jul 2019	Water Temp (C)	23.8
D9	24 Jul 2019	Wave Height Low (ft)	2
D9	24 Jul 2019	High Tide (ft)	3.4
D9	24 Jul 2019	High Tide Time	210
D9	24 Jul 2019	Low Tide (ft)	1.5
D9	24 Jul 2019	Low Tide Time	842
D9	24 Jul 2019	Comments	Kelp; Seagrass; Algae; 1 Boat; Water clear
D9	31 Jul 2019	Arrive Time	903
D9	31 Jul 2019	Weather	Overcast
D9	31 Jul 2019	Wind Speed (kts)	0
D9	31 Jul 2019	Wind Dir	
D9	31 Jul 2019	Animal Life	None
D9	31 Jul 2019	Floatables	Foam
D9	31 Jul 2019	Water Color	Green
D9	31 Jul 2019	Current Direction	S
D9	31 Jul 2019	Water Temp (C)	22.4
D9	31 Jul 2019	Wave Height Low (ft)	2
D9	31 Jul 2019	High Tide (ft)	4.2
D9	31 Jul 2019	High Tide Time	956
D9	31 Jul 2019	Low Tide (ft)	-1.2
D9	31 Jul 2019	Low Tide Time	339
D9	31 Jul 2019	Comments	Kelp; 3 Persons; 2 Surfers; 3 Boats; Water clear
D10	01 Jul 2019	Arrive Time	848
D10	01 Jul 2019	Weather	Partly Cloudy
D10	01 Jul 2019	Wind Speed (kts)	2.3
D10	01 Jul 2019	Wind Dir	E
D10	01 Jul 2019	Animal Life	None
D10	01 Jul 2019	Floatables	Foam; Film
D10	01 Jul 2019	Water Color	Green
D10	01 Jul 2019	Current Direction	E
D10	01 Jul 2019	Water Temp (C)	20
D10	01 Jul 2019	Wave Height Low (ft)	2
D10	01 Jul 2019	High Tide (ft)	3.8
D10	01 Jul 2019	High Tide Time	931
D10	01 Jul 2019	Low Tide (ft)	-0.8
D10	01 Jul 2019	Low Tide Time	315
D10	01 Jul 2019	Comments	Kelp; Seagrass; 11 Persons; 15 Surfers; Water clear
D10	10 Jul 2019	Arrive Time	822
D10	10 Jul 2019	Weather	Overcast
D10	10 Jul 2019	Wind Speed (kts)	2.9
D10	10 Jul 2019	Wind Dir	E
D10	10 Jul 2019	Animal Life	30 Seagulls
D10	10 Jul 2019	Floatables	Foam
D10	10 Jul 2019	Water Color	Green
D10	10 Jul 2019	Current Direction	E
D10	10 Jul 2019	Water Temp (C)	22.4
D10	10 Jul 2019	Wave Height Low (ft)	2
D10	10 Jul 2019	High Tide (ft)	3.5
D10	10 Jul 2019	High Tide Time	435
D10	10 Jul 2019	Low Tide (ft)	1.1
D10	10 Jul 2019	Low Tide Time	1034
D10	10 Jul 2019	Comments	Kelp; Seagrass; 15 Persons; 31 Surfers; 1 Boat; Water clear
D10	17 Jul 2019	Arrive Time	1020
D10	17 Jul 2019	Weather	Cloudy
D10	17 Jul 2019	Wind Speed (kts)	4.4
D10	17 Jul 2019	Wind Dir	W
D10	17 Jul 2019	Animal Life	None

Station	Date	Parameter	Value
D10	17 Jul 2019	Floatables	None
D10	17 Jul 2019	Water Color	Green
D10	17 Jul 2019	Current Direction	N
D10	17 Jul 2019	Water Temp (C)	21.5
D10	17 Jul 2019	Wave Height Low (ft)	5
D10	17 Jul 2019	High Tide (ft)	3.9
D10	17 Jul 2019	High Tide Time	1058
D10	17 Jul 2019	Low Tide (ft)	-0.7
D10	17 Jul 2019	Low Tide Time	439
D10	17 Jul 2019	Comments	Kelp; Seagrass; 18 Persons; 13 Surfers; Water clear
D10	24 Jul 2019	Arrive Time	757
D10	24 Jul 2019	Weather	Partly Cloudy
D10	24 Jul 2019	Wind Speed (kts)	5.4
D10	24 Jul 2019	Wind Dir	E
D10	24 Jul 2019	Animal Life	2 Dogs; 11 Seagulls
D10	24 Jul 2019	Floatables	Foam
D10	24 Jul 2019	Water Color	Green
D10	24 Jul 2019	Current Direction	E
D10	24 Jul 2019	Water Temp (C)	23.5
D10	24 Jul 2019	Wave Height Low (ft)	2
D10	24 Jul 2019	High Tide (ft)	3.4
D10	24 Jul 2019	High Tide Time	210
D10	24 Jul 2019	Low Tide (ft)	1.5
D10	24 Jul 2019	Low Tide Time	842
D10	24 Jul 2019	Comments	24 Persons; 21 Surfers; 2 Swimmers
D10	31 Jul 2019	Arrive Time	915
D10	31 Jul 2019	Weather	Overcast
D10	31 Jul 2019	Wind Speed (kts)	1.9
D10	31 Jul 2019	Wind Dir	E
D10	31 Jul 2019	Animal Life	None
D10	31 Jul 2019	Floatables	Foam; Film
D10	31 Jul 2019	Water Color	Green
D10	31 Jul 2019	Current Direction	E
D10	31 Jul 2019	Water Temp (C)	22.4
D10	31 Jul 2019	Wave Height Low (ft)	2
D10	31 Jul 2019	High Tide (ft)	4.2
D10	31 Jul 2019	High Tide Time	956
D10	31 Jul 2019	Low Tide (ft)	-1.2
D10	31 Jul 2019	Low Tide Time	339
D10	31 Jul 2019	Comments	Kelp; Seagrass; 50 Persons; 27 Surfers; 1 Swimmer; Water clear
D11	01 Jul 2019	Arrive Time	856
D11	01 Jul 2019	Weather	Sunny
D11	01 Jul 2019	Wind Speed (kts)	3.6
D11	01 Jul 2019	Wind Dir	E
D11	01 Jul 2019	Animal Life	None
D11	01 Jul 2019	Floatables	Foam; Film
D11	01 Jul 2019	Water Color	Green
D11	01 Jul 2019	Current Direction	E
D11	01 Jul 2019	Water Temp (C)	21.1
D11	01 Jul 2019	Wave Height Low (ft)	2
D11	01 Jul 2019	High Tide (ft)	3.8
D11	01 Jul 2019	High Tide Time	931
D11	01 Jul 2019	Low Tide (ft)	1.8
D11	01 Jul 2019	Low Tide Time	1427
D11	01 Jul 2019	Comments	Kelp; Seagrass; Algae; 10 Persons; 17 Surfers; Water clear
D11	10 Jul 2019	Arrive Time	810

Station	Date	Parameter	Value
D11	10 Jul 2019	Weather	Overcast
D11	10 Jul 2019	Wind Speed (kts)	2.3
D11	10 Jul 2019	Wind Dir	E
D11	10 Jul 2019	Animal Life	1 Dog
D11	10 Jul 2019	Floatables	None
D11	10 Jul 2019	Water Color	Green
D11	10 Jul 2019	Current Direction	E
D11	10 Jul 2019	Water Temp (C)	22.3
D11	10 Jul 2019	Wave Height Low (ft)	2
D11	10 Jul 2019	High Tide (ft)	3.5
D11	10 Jul 2019	High Tide Time	435
D11	10 Jul 2019	Low Tide (ft)	1.1
D11	10 Jul 2019	Low Tide Time	1034
D11	10 Jul 2019	Comments	Kelp; Seagrass; 10 Persons; 3 Boats; 1 Tractor; Water clear
D11	17 Jul 2019	Arrive Time	1050
D11	17 Jul 2019	Weather	Cloudy
D11	17 Jul 2019	Wind Speed (kts)	5.8
D11	17 Jul 2019	Wind Dir	W
D11	17 Jul 2019	Animal Life	3 Dogs
D11	17 Jul 2019	Floatables	None
D11	17 Jul 2019	Water Color	Green
D11	17 Jul 2019	Current Direction	N
D11	17 Jul 2019	Water Temp (C)	21.1
D11	17 Jul 2019	Wave Height Low (ft)	4
D11	17 Jul 2019	High Tide (ft)	3.9
D11	17 Jul 2019	High Tide Time	1058
D11	17 Jul 2019	Low Tide (ft)	2.1
D11	17 Jul 2019	Low Tide Time	1555
D11	17 Jul 2019	Comments	Kelp; Seagrass; 2 Persons; 5 Surfers; Water clear
D11	24 Jul 2019	Arrive Time	733
D11	24 Jul 2019	Weather	Sunny
D11	24 Jul 2019	Wind Speed (kts)	1.5
D11	24 Jul 2019	Wind Dir	S
D11	24 Jul 2019	Animal Life	2 Dogs; 2 Seagulls
D11	24 Jul 2019	Floatables	Foam
D11	24 Jul 2019	Water Color	Green
D11	24 Jul 2019	Current Direction	S
D11	24 Jul 2019	Water Temp (C)	23.2
D11	24 Jul 2019	Wave Height Low (ft)	2
D11	24 Jul 2019	High Tide (ft)	3.4
D11	24 Jul 2019	High Tide Time	210
D11	24 Jul 2019	Low Tide (ft)	1.5
D11	24 Jul 2019	Low Tide Time	842
D11	24 Jul 2019	Comments	Kelp; Seagrass; 7 Persons; 27 Surfers; 3 Boats; Water clear
D11	31 Jul 2019	Arrive Time	931
D11	31 Jul 2019	Weather	Overcast
D11	31 Jul 2019	Wind Speed (kts)	2.1
D11	31 Jul 2019	Wind Dir	E
D11	31 Jul 2019	Animal Life	None
D11	31 Jul 2019	Floatables	Foam
D11	31 Jul 2019	Water Color	Green
D11	31 Jul 2019	Current Direction	E
D11	31 Jul 2019	Water Temp (C)	22.7
D11	31 Jul 2019	Wave Height Low (ft)	2
D11	31 Jul 2019	High Tide (ft)	4.2
D11	31 Jul 2019	High Tide Time	956
D11	31 Jul 2019	Low Tide (ft)	1.6
D11	31 Jul 2019	Low Tide Time	1503

Station	Date	Parameter	Value
D11	31 Jul 2019	Comments	Kelp; Seagrass; Algae; 1 Jogger; 10 Persons; 35 Surfers; 4 Swimmers; Water clear
D12	01 Jul 2019	Arrive Time	915
D12	01 Jul 2019	Weather	Partly Cloudy
D12	01 Jul 2019	Wind Speed (kts)	3.1
D12	01 Jul 2019	Wind Dir	S
D12	01 Jul 2019	Animal Life	None
D12	01 Jul 2019	Floatables	None
D12	01 Jul 2019	Water Color	Green
D12	01 Jul 2019	Current Direction	S
D12	01 Jul 2019	Water Temp (C)	24.1
D12	01 Jul 2019	Wave Height Low (ft)	2
D12	01 Jul 2019	High Tide (ft)	3.8
D12	01 Jul 2019	High Tide Time	931
D12	01 Jul 2019	Low Tide (ft)	1.8
D12	01 Jul 2019	Low Tide Time	1427
D12	01 Jul 2019	Comments	Kelp; Seagrass; 16 Persons; 2 Swimmers; Water clear
D12	10 Jul 2019	Arrive Time	748
D12	10 Jul 2019	Weather	Partly Cloudy
D12	10 Jul 2019	Wind Speed (kts)	1.5
D12	10 Jul 2019	Wind Dir	E
D12	10 Jul 2019	Animal Life	1 Dog; 18 Seagulls
D12	10 Jul 2019	Floatables	None
D12	10 Jul 2019	Water Color	Blue
D12	10 Jul 2019	Current Direction	E
D12	10 Jul 2019	Water Temp (C)	22.7
D12	10 Jul 2019	Wave Height Low (ft)	2
D12	10 Jul 2019	High Tide (ft)	3.5
D12	10 Jul 2019	High Tide Time	435
D12	10 Jul 2019	Low Tide (ft)	1.1
D12	10 Jul 2019	Low Tide Time	1034
D12	10 Jul 2019	Comments	Kelp; Seagrass; 1 Jogger; 7 Persons; 3 Surfers; Water clear
D12	17 Jul 2019	Arrive Time	1118
D12	17 Jul 2019	Weather	Cloudy
D12	17 Jul 2019	Wind Speed (kts)	5.4
D12	17 Jul 2019	Wind Dir	W
D12	17 Jul 2019	Animal Life	None
D12	17 Jul 2019	Floatables	None
D12	17 Jul 2019	Water Color	Green
D12	17 Jul 2019	Current Direction	N
D12	17 Jul 2019	Water Temp (C)	20.7
D12	17 Jul 2019	Wave Height Low (ft)	3
D12	17 Jul 2019	High Tide (ft)	3.9
D12	17 Jul 2019	High Tide Time	1058
D12	17 Jul 2019	Low Tide (ft)	2.1
D12	17 Jul 2019	Low Tide Time	1555
D12	17 Jul 2019	Comments	Kelp; Seagrass; 25 Persons; 5 Swimmers; Water clear
D12	24 Jul 2019	Arrive Time	710
D12	24 Jul 2019	Weather	Sunny
D12	24 Jul 2019	Wind Speed (kts)	2.9
D12	24 Jul 2019	Wind Dir	S
D12	24 Jul 2019	Animal Life	26 Seagulls
D12	24 Jul 2019	Floatables	Plastic debris trash
D12	24 Jul 2019	Water Color	Green
D12	24 Jul 2019	Current Direction	S
D12	24 Jul 2019	Water Temp (C)	24.8
D12	24 Jul 2019	Wave Height Low (ft)	2

Station	Date	Parameter	Value
D12	24 Jul 2019	High Tide (ft)	3.4
D12	24 Jul 2019	High Tide Time	210
D12	24 Jul 2019	Low Tide (ft)	1.5
D12	24 Jul 2019	Low Tide Time	842
D12	24 Jul 2019	Comments	Kelp; Seagrass; Debris; 10 Persons; 8 Surfers; 1 Swimmer; Water clear
D12	31 Jul 2019	Arrive Time	957
D12	31 Jul 2019	Weather	Overcast
D12	31 Jul 2019	Wind Speed (kts)	1.1
D12	31 Jul 2019	Wind Dir	E
D12	31 Jul 2019	Animal Life	1 Cormorant; 1 Godwit
D12	31 Jul 2019	Floatables	None
D12	31 Jul 2019	Water Color	Green
D12	31 Jul 2019	Current Direction	E
D12	31 Jul 2019	Water Temp (C)	22.1
D12	31 Jul 2019	Wave Height Low (ft)	2
D12	31 Jul 2019	High Tide (ft)	4.2
D12	31 Jul 2019	High Tide Time	956
D12	31 Jul 2019	Low Tide (ft)	1.6
D12	31 Jul 2019	Low Tide Time	1503
D12	31 Jul 2019	Comments	Kelp; Seagrass; 60 Persons; 20 Surfers; 15 Swimmers; Water clear

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 2019	5	11	7	7	11	9	4	5
02 Jul 2019	5	11	7	7	11	9	4	5
03 Jul 2019	6	10	9	6	7	5	3	6
04 Jul 2019	6	10	9	6	7	5	3	6
05 Jul 2019	6	10	9	6	7	5	3	6
06 Jul 2019	6	10	9	6	7	5	3	6
07 Jul 2019	6	10	9	6	7	5	3	6
08 Jul 2019	5	7	7	5	5	4	3	5
09 Jul 2019	5	7	7	5	5	4	3	5
10 Jul 2019	6	10	9	6	7	5	3	5
11 Jul 2019	6	10	9	6	7	5	3	5
12 Jul 2019	6	10	9	6	7	5	3	5
13 Jul 2019	6	10	9	6	7	5	3	5
14 Jul 2019	6	10	9	6	7	5	3	5
15 Jul 2019	7	10	13	8	8	6	3	6
16 Jul 2019	7	10	13	8	8	6	3	6
17 Jul 2019	6	8	15	6	7	4	3	4
18 Jul 2019	6	8	15	6	7	4	3	4
19 Jul 2019	6	8	15	6	7	4	3	4
20 Jul 2019	6	8	15	6	7	4	3	4
21 Jul 2019	6	8	15	6	7	4	3	4
22 Jul 2019	6	8	15	6	7	4	3	4
23 Jul 2019	6	8	15	6	7	4	3	4
24 Jul 2019	6	9	16	8	9	5	4	6
25 Jul 2019	6	7	19	11	9	7	4	7
26 Jul 2019	6	7	19	11	9	7	4	7
27 Jul 2019	6	7	19	11	9	7	4	7
28 Jul 2019	6	7	19	11	9	7	4	7
29 Jul 2019	6	7	19	11	9	7	4	7
30 Jul 2019	5	6	12	8	7	5	4	6
31 Jul 2019	4	5	9	6	6	5	4	6

* Geometric mean calculated using n<5

Table 3.2

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jul 2019	3	2	3	2	2	2	2	2
02 Jul 2019	3	2	3	2	2	2	2	2
03 Jul 2019	4	2	3	2	2	2	2	2
04 Jul 2019	4	2	3	2	2	2	2	2
05 Jul 2019	4	2	3	2	2	2	2	2
06 Jul 2019	4	2	3	2	2	2	2	2
07 Jul 2019	4	2	3	2	2	2	2	2
08 Jul 2019	3	2	3	2	2	2	2	2
09 Jul 2019	3	2	3	2	2	2	2	2
10 Jul 2019	4	2	3	2	2	2	2	2
11 Jul 2019	4	2	3	2	2	2	2	2
12 Jul 2019	4	2	3	2	2	2	2	2
13 Jul 2019	4	2	3	2	2	2	2	2
14 Jul 2019	4	2	3	2	2	2	2	2
15 Jul 2019	3	2	3	2	2	2	2	2
16 Jul 2019	3	2	3	2	2	2	2	2
17 Jul 2019	3	2	3	2	2	2	2	2
18 Jul 2019	3	2	3	2	2	2	2	2
19 Jul 2019	3	2	3	2	2	2	2	2
20 Jul 2019	3	2	3	2	2	2	2	2
21 Jul 2019	3	2	3	2	2	2	2	2
22 Jul 2019	3	2	3	2	2	2	2	2
23 Jul 2019	3	2	3	2	2	2	2	2
24 Jul 2019	3	2	4	2	2	2	2	3
25 Jul 2019	3	2	4	2	2	2	2	3
26 Jul 2019	3	2	4	2	2	2	2	3
27 Jul 2019	3	2	4	2	2	2	2	3
28 Jul 2019	3	2	4	2	2	2	2	3
29 Jul 2019	3	2	4	2	2	2	2	3
30 Jul 2019	2	2	3	2	2	2	2	3
31 Jul 2019	2	2	2	2	2	2	2	3

* 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 2019	2	2	2	2	2	2	2	2
02 Jul 2019	2	2	2	2	2	2	2	2
03 Jul 2019	2	2	2	2	2	2	2	2
04 Jul 2019	2	2	2	2	2	2	2	2
05 Jul 2019	2	2	2	2	2	2	2	2
06 Jul 2019	2	2	2	2	2	2	2	2
07 Jul 2019	2	2	2	2	2	2	2	2
08 Jul 2019	2	2	2	2	2	2	2	2
09 Jul 2019	2	2	2	2	2	2	2	2
10 Jul 2019	2	2	2	2	2	2	2	2
11 Jul 2019	2	2	2	2	2	2	2	2
12 Jul 2019	2	2	2	2	2	2	2	2
13 Jul 2019	2	2	2	2	2	2	2	2
14 Jul 2019	2	2	2	2	2	2	2	2
15 Jul 2019	2	2	2	2	2	2	2	2
16 Jul 2019	2	2	2	2	2	2	2	2
17 Jul 2019	2	2	2	2	2	2	2	2
18 Jul 2019	2	2	2	2	2	2	2	2
19 Jul 2019	2	2	2	2	2	2	2	2
20 Jul 2019	2	2	2	2	2	2	2	2
21 Jul 2019	2	2	2	2	2	2	2	2
22 Jul 2019	2	2	2	2	2	2	2	2
23 Jul 2019	2	2	2	2	2	2	2	2
24 Jul 2019	2	2	2	2	2	2	2	2
25 Jul 2019	2	2	2	2	2	2	2	2
26 Jul 2019	2	2	2	2	2	2	2	2
27 Jul 2019	2	2	2	2	2	2	2	2
28 Jul 2019	2	2	2	2	2	2	2	2
29 Jul 2019	2	2	2	2	2	2	2	2
30 Jul 2019	2	2	2	2	2	2	2	2
31 Jul 2019	2	2	2	2	2	2	2	2

* Geometric mean calculated using n<5

Table 3.4

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jul 2019	IC							
08 Jul 2019	IC							
15 Jul 2019	IC							
24 Jul 2019	IC							
30 Jul 2019	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.5

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jul 2019	IC							
08 Jul 2019	IC							
15 Jul 2019	IC							
24 Jul 2019	IC							
30 Jul 2019	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.6

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jul 2019	IC							
08 Jul 2019	IC							
15 Jul 2019	IC							
24 Jul 2019	IC							
30 Jul 2019	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.7

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jul 2019	IC							
08 Jul 2019	IC							
15 Jul 2019	IC							
24 Jul 2019	IC							
30 Jul 2019	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	01 Jul 2019	745	1	2e	<2	<2	1.00	16.4	82.30	6.8	33.66	8.1
A1	01 Jul 2019	745	12	<2	<2	<2	1.00	12.4	86.12	5.4	33.64	8.1
A1	01 Jul 2019	745	18	18e	8e	<2	0.44	12.0	86.17	5.1	33.66	8.0
A1	08 Jul 2019	743	1	<2	<2	<2	1.00	19.1	77.11	7.6	33.71	8.1
A1	08 Jul 2019	743	12	<2	<2	<2	1.00	15.0	79.59	7.2	33.64	8.1
A1	08 Jul 2019	743	18	<2	<2	<2	1.00	14.2	81.85	6.4	33.64	8.1
A1	15 Jul 2019	744	1	<2	<2	<2	1.00	19.4	82.03	7.4	33.73	8.1
A1	15 Jul 2019	744	12	8e	<2	<2	0.25	11.9	85.50	5.2	33.66	8.0
A1	15 Jul 2019	744	18	12e	4e	<2	0.33	11.5	86.71	5.0	33.68	8.0
A1	24 Jul 2019	759	1	<2	<2	<2	1.00	20.2	81.69	8.2	33.74	8.2
A1	24 Jul 2019	759	12	6e	<2	<2	0.33	12.8	83.32	6.0	33.66	7.9
A1	24 Jul 2019	759	18	<20	<2	<2	0.10	11.7	85.19	4.9	33.72	7.9
A1	30 Jul 2019	756	1	<2	<2	<2	1.00	18.4	70.71	10.2	33.65	8.3
A1	30 Jul 2019	756	12	<2	<2	<2	1.00	13.9	73.73	8.4	33.62	8.3
A1	30 Jul 2019	756	18	2e	<2	<2	1.00	12.8	83.77	6.8	33.59	8.2
A6	01 Jul 2019	814	1	<2	<2	<2	1.00	17.7	77.18	8.4	33.67	8.2
A6	01 Jul 2019	814	12	8e	2e	<2	0.25	13.2	81.79	5.8	33.65	8.1
A6	01 Jul 2019	814	18	22e	10e	<2	0.45	12.2	87.09	4.9	33.66	8.1
A6	08 Jul 2019	807	1	<2	<2	<2	1.00	19.3	84.27	7.8	33.72	8.2
A6	08 Jul 2019	807	12	<2	<2	<2	1.00	17.9	78.98	7.7	33.68	8.2
A6	08 Jul 2019	807	18	2e	<2	<2	1.00	14.1	83.00	6.8	33.67	8.2
A6	15 Jul 2019	812	1	<2	<2	<2	1.00	20.2	82.94	7.7	33.75	8.2
A6	15 Jul 2019	812	12	2e	<2	<2	1.00	14.1	83.72	5.7	33.70	8.1
A6	15 Jul 2019	812	18	24e	<2	<2	0.08	12.4	84.94	5.0	33.59	8.0
A6	24 Jul 2019	831	1	<2	<2	<2	1.00	20.5	81.84	8.1	33.73	8.2
A6	24 Jul 2019	831	12	18e	<2	<2	0.11	14.0	81.48	6.6	33.65	8.0
A6	24 Jul 2019	831	18	26e	2e	<2	0.08	13.1	84.57	5.9	33.66	8.0
A6	30 Jul 2019	826	1	<2	<2	<2	1.00	20.2	77.06	8.4	33.76	8.3
A6	30 Jul 2019	826	12	<2	<2	<2	1.00	15.0	74.17	8.3	33.65	8.3
A6	30 Jul 2019	826	18	<2	<2	<2	1.00	12.5	85.13	6.4	33.67	8.3
A7	01 Jul 2019	759	1	<20	<2	<2	0.10	17.7	80.16	8.2	33.66	8.2
A7	01 Jul 2019	759	12	20e	12e	<4	0.60	12.2	86.86	5.1	33.66	8.1
A7	01 Jul 2019	759	18	100e	18e	4e	0.18	11.6	87.43	4.8	33.67	8.1
A7	08 Jul 2019	755	1	<2	<2	<2	1.00	19.2	82.48	7.7	33.71	8.2
A7	08 Jul 2019	755	12	<2	<2	<2	1.00	15.2	82.80	6.6	33.68	8.1
A7	08 Jul 2019	755	18	<2	<2	<2	1.00	14.5	82.14	6.8	33.65	8.1
A7	15 Jul 2019	758	1	<2	<2	<2	1.00	20.0	81.11	8.1	33.74	8.2
A7	15 Jul 2019	758	12	<200	2e	<2	0.01	11.6	86.26	5.0	33.66	8.1
A7	15 Jul 2019	758	18	8e	<2	<2	0.25	11.5	86.34	4.8	33.69	8.0

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
A7	24 Jul 2019	814	1	<2	<2	<2	1.00	20.5	78.04	8.1	33.74	8.2
A7	24 Jul 2019	814	12	40e	4e	<2	0.10	13.3	84.18	6.3	33.66	8.0
A7	24 Jul 2019	814	18	<20	8e	<2	0.40	12.2	85.46	5.3	33.69	7.9
A7	30 Jul 2019	808	1	<2	<2	<2	1.00	18.9	78.14	8.3	33.70	8.2
A7	30 Jul 2019	808	12	<2	<2	<2	1.00	13.2	73.87	7.7	33.59	8.2
A7	30 Jul 2019	808	18	<2	<2	<2	1.00	13.0	80.19	6.8	33.62	8.2
C4	01 Jul 2019	921	1	<20	<2	<2	0.10	18.8	79.68	9.0	33.69	8.3
C4	01 Jul 2019	921	3	<20	<2	<2	0.10	17.7	77.85	6.9	33.76	8.3
C4	01 Jul 2019	921	9	<20	<2	<2	0.10	13.3	83.63	3.8	33.63	8.2
C4	08 Jul 2019	925	1	<2	<2	<2	1.00	18.9	71.25	7.5	33.70	8.2
C4	08 Jul 2019	925	3	2e	<2	<2	1.00	18.9	71.13	7.4	33.70	8.2
C4	08 Jul 2019	925	9	<2	<2	<2	1.00	18.7	65.73	7.0	33.70	8.1
C4	15 Jul 2019	921	1	<20	<2	<2	0.10	20.0	74.91	8.2	33.74	8.2
C4	15 Jul 2019	921	3	<20	<2	<2	0.10	20.0	76.31	8.1	33.74	8.2
C4	15 Jul 2019	921	9	<20	<2	<2	0.10	13.1	78.96	4.0	33.66	8.1
C4	24 Jul 2019	947	1	<20	<2	<2	0.10	21.2	79.65	8.6	33.76	8.3
C4	24 Jul 2019	947	3	<20	<2	<2	0.10	21.2	79.95	8.4	33.76	8.3
C4	24 Jul 2019	947	9	<20	2e	<2	0.10	13.2	68.66	4.3	33.71	7.8
C4	30 Jul 2019	934	1	<2	<2	<2	1.00	19.2	73.73	8.7	33.69	8.2
C4	30 Jul 2019	934	3	<2	<2	<2	1.00	18.7	73.91	8.7	33.73	8.2
C4	30 Jul 2019	934	9	<2	<2	<2	1.00	14.7	77.72	6.1	33.63	8.2
C5	01 Jul 2019	910	1	<20	2e	<2	0.10	18.4	78.13	8.8	33.69	8.3
C5	01 Jul 2019	910	3	<20	6e	<2	0.30	17.4	76.88	7.4	33.76	8.3
C5	01 Jul 2019	910	9	<2	<2	<2	1.00	13.2	85.49	5.4	33.65	8.2
C5	08 Jul 2019	916	1	<2	<2	<2	1.00	19.2	82.63	7.8	33.71	8.2
C5	08 Jul 2019	916	3	<2	2e	<2	1.00	19.1	81.59	7.7	33.71	8.2
C5	08 Jul 2019	916	9	<2	<2	<2	1.00	16.9	81.21	6.4	33.74	8.2
C5	15 Jul 2019	910	1	<20	<2	<2	0.10	20.1	81.56	8.0	33.75	8.2
C5	15 Jul 2019	910	3	<2	<2	<2	1.00	20.0	80.69	7.8	33.75	8.2
C5	15 Jul 2019	910	9	<20	<2	<2	0.10	14.4	82.98	5.3	33.69	8.1
C5	24 Jul 2019	933	1	<20	<2	<2	0.10	21.2	81.22	8.5	33.76	8.2
C5	24 Jul 2019	933	3	<20	<2	<2	0.10	20.6	80.89	8.2	33.78	8.2
C5	24 Jul 2019	933	9	<20	<2	<2	0.10	13.5	82.78	6.7	33.65	8.0
C5	30 Jul 2019	924	1	<2	<2	<2	1.00	21.2	79.27	8.1	33.75	8.2
C5	30 Jul 2019	924	3	<2	<2	<2	1.00	19.7	77.60	7.6	33.78	8.3
C5	30 Jul 2019	924	9	<2	<2	<2	1.00	13.8	82.60	6.9	33.59	8.2
C6	01 Jul 2019	901	1	<20	<2	<2	0.10	17.8	75.78	8.2	33.67	8.3
C6	01 Jul 2019	901	3	<2	<2	<2	1.00	16.1	74.59	7.5	33.72	8.2
C6	01 Jul 2019	901	9	<2	<2	<2	1.00	13.8	81.20	5.6	33.66	8.2
C6	08 Jul 2019	902	1	2e	<2	<2	1.00	19.3	85.07	7.7	33.71	8.2
C6	08 Jul 2019	902	3	<2	<2	<2	1.00	19.3	85.23	7.7	33.71	8.2
C6	08 Jul 2019	902	9	<2	<2	<2	1.00	17.9	82.82	7.0	33.71	8.2
C6	15 Jul 2019	859	1	<20	<2	<2	0.10	20.2	80.88	8.1	33.75	8.2
C6	15 Jul 2019	859	3	<2	<2	<2	1.00	20.1	80.74	7.7	33.75	8.2
C6	15 Jul 2019	859	9	<2	<2	<2	1.00	15.4	81.94	5.3	33.68	8.1
C6	24 Jul 2019	921	1	<20	<2	<2	0.10	20.9	79.88	8.5	33.74	8.2

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
C6	24 Jul 2019	921	3	<20	<2	2e	0.10	21.0	80.56	8.4	33.75	8.2
C6	24 Jul 2019	921	9	<2	<2	<2	1.00	15.2	78.98	7.6	33.59	8.1
C6	30 Jul 2019	931	1	<2	<2	<2	1.00	21.4	76.95	8.4	33.74	8.2
C6	30 Jul 2019	931	3	<2	<2	<2	1.00	18.5	75.74	8.3	33.81	8.2
C6	30 Jul 2019	931	9	<2	<2	<2	1.00	14.2	80.47	6.2	33.60	8.2
C7	01 Jul 2019	829	1	<2	<2	<2	1.00	16.1	73.18	8.1	33.64	8.2
C7	01 Jul 2019	829	12	4e	<2	<2	0.50	13.3	80.75	6.3	33.62	8.2
C7	01 Jul 2019	829	18	2e	<2	<2	1.00	12.7	86.36	4.8	33.65	8.1
C7	08 Jul 2019	823	1	<2	<2	<2	1.00	19.4	84.26	7.9	33.72	8.2
C7	08 Jul 2019	823	12	<2	<2	<2	1.00	18.2	82.80	7.6	33.70	8.2
C7	08 Jul 2019	823	18	<2	<2	<2	1.00	14.5	83.28	6.2	33.67	8.2
C7	15 Jul 2019	828	1	<2	<2	<2	1.00	20.2	82.68	7.7	33.72	8.2
C7	15 Jul 2019	828	12	<2	<2	<2	1.00	13.8	82.85	6.4	33.64	8.1
C7	15 Jul 2019	828	18	6e	<2	<2	0.33	11.9	85.18	4.8	33.67	8.0
C7	24 Jul 2019	847	1	20e	<2	<2	0.10	21.2	79.14	7.9	33.75	8.2
C7	24 Jul 2019	847	12	2e	2e	<2	1.00	14.1	79.92	7.1	33.64	8.1
C7	24 Jul 2019	847	18	<20	<2	<2	0.10	13.0	83.32	6.2	33.70	8.0
C7	30 Jul 2019	842	1	<2	2e	<2	1.00	20.8	77.54	8.7	33.74	8.2
C7	30 Jul 2019	842	12	4e	<2	<2	0.50	13.1	81.88	7.2	33.59	8.3
C7	30 Jul 2019	842	18	4e	<2	<2	0.50	12.5	85.26	6.3	33.62	8.2
C8	01 Jul 2019	840	1	<2	<2	<2	1.00	16.5	73.79	8.2	33.66	8.2
C8	01 Jul 2019	840	12	<2	<2	<2	1.00	13.1	82.19	5.4	33.66	8.1
C8	01 Jul 2019	840	18	10e	10e	<2	1.00	12.4	86.20	4.6	33.66	8.1
C8	08 Jul 2019	841	1	2e	<2	<2	1.00	19.4	84.56	7.9	33.72	8.2
C8	08 Jul 2019	841	12	2e	<2	<2	1.00	19.0	83.60	7.8	33.71	8.2
C8	08 Jul 2019	841	18	2e	<2	<2	1.00	14.9	83.34	6.4	33.73	8.2
C8	15 Jul 2019	839	1	<20	<2	<2	0.10	20.2	77.94	8.0	33.74	8.2
C8	15 Jul 2019	839	12	<2	<2	<2	1.00	13.8	81.96	6.5	33.73	8.2
C8	15 Jul 2019	839	18	<2	<2	<2	1.00	12.9	84.09	5.4	33.67	8.1
C8	24 Jul 2019	901	1	<2	<2	<2	1.00	21.2	78.94	8.0	33.74	8.2
C8	24 Jul 2019	901	12	<2	<2	<2	1.00	14.4	76.44	7.2	33.71	8.1
C8	24 Jul 2019	901	18	100e	12e	<2	0.12	11.2	85.62	4.9	33.71	7.9
C8	30 Jul 2019	853	1	<2	<2	<2	1.00	20.9	74.44	8.7	33.73	8.3
C8	30 Jul 2019	853	12	<2	<2	<2	1.00	13.3	79.94	7.1	33.61	8.3
C8	30 Jul 2019	853	18	2e	<2	<2	1.00	12.5	84.99	6.4	33.62	8.2

ns = not sampled

ND = no data

Table 3.9

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

Station	Date	Parameter	Value
A1	01 Jul 2019	Depth (m)	21
A1	01 Jul 2019	Arrive Time	745
A1	01 Jul 2019	Depart Time	752
A1	01 Jul 2019	Air Temp (C)	17
A1	01 Jul 2019	Weather	Continuous layer of clouds
A1	01 Jul 2019	Visibility (mi)	4
A1	01 Jul 2019	Wind Speed (kts)	6
A1	01 Jul 2019	Wind Dir	N
A1	01 Jul 2019	Water Color	Brownish-Green
A1	01 Jul 2019	Wave Ht Low (ft)	4
A1	01 Jul 2019	Wave Period (sec)	7
A1	01 Jul 2019	Sea State	Light chop
A1	01 Jul 2019	High Tide (ft)	3.76
A1	01 Jul 2019	High Tide Time	931
A1	01 Jul 2019	Low Tide (ft)	1.8
A1	01 Jul 2019	Low Tide Time	1427
A1	01 Jul 2019	Comments	Kelp
A1	08 Jul 2019	Depth (m)	19
A1	08 Jul 2019	Arrive Time	743
A1	08 Jul 2019	Depart Time	746
A1	08 Jul 2019	Air Temp (C)	18
A1	08 Jul 2019	Weather	Continuous layer of clouds
A1	08 Jul 2019	Visibility (mi)	6
A1	08 Jul 2019	Wind Speed (kts)	6
A1	08 Jul 2019	Wind Dir	S
A1	08 Jul 2019	Water Color	Brownish-Green
A1	08 Jul 2019	Wave Ht Low (ft)	2
A1	08 Jul 2019	Wave Period (sec)	13
A1	08 Jul 2019	Sea State	Calm
A1	08 Jul 2019	High Tide (ft)	4.65
A1	08 Jul 2019	High Tide Time	1526
A1	08 Jul 2019	Low Tide (ft)	0.17
A1	08 Jul 2019	Low Tide Time	840
A1	08 Jul 2019	Comments	Kelp; Kelp debris
A1	15 Jul 2019	Depth (m)	20
A1	15 Jul 2019	Arrive Time	744
A1	15 Jul 2019	Depart Time	747
A1	15 Jul 2019	Air Temp (C)	18
A1	15 Jul 2019	Weather	Fog
A1	15 Jul 2019	Visibility (mi)	2
A1	15 Jul 2019	Wind Speed (kts)	4
A1	15 Jul 2019	Wind Dir	NE
A1	15 Jul 2019	Water Color	Greenish-Blue
A1	15 Jul 2019	Wave Ht Low (ft)	3
A1	15 Jul 2019	Wave Period (sec)	13
A1	15 Jul 2019	Sea State	Calm
A1	15 Jul 2019	High Tide (ft)	3.81
A1	15 Jul 2019	High Tide Time	950
A1	15 Jul 2019	Low Tide (ft)	2.02
A1	15 Jul 2019	Low Tide Time	1442
A1	15 Jul 2019	Comments	none
A1	24 Jul 2019	Depth (m)	18
A1	24 Jul 2019	Arrive Time	759

Station	Date	Parameter	Value
A1	24 Jul 2019	Depart Time	805
A1	24 Jul 2019	Air Temp (C)	0
A1	24 Jul 2019	Weather	Clear
A1	24 Jul 2019	Visibility (mi)	10
A1	24 Jul 2019	Wind Speed (kts)	0
A1	24 Jul 2019	Wind Dir	
A1	24 Jul 2019	Water Color	Bluish-Green
A1	24 Jul 2019	Wave Ht Low (ft)	3
A1	24 Jul 2019	Wave Period (sec)	13
A1	24 Jul 2019	Sea State	Calm
A1	24 Jul 2019	High Tide (ft)	6.33
A1	24 Jul 2019	High Tide Time	2106
A1	24 Jul 2019	Low Tide (ft)	-0.71
A1	24 Jul 2019	Low Tide Time	405
A1	24 Jul 2019	Comments	none
A1	30 Jul 2019	Depth (m)	17
A1	30 Jul 2019	Arrive Time	756
A1	30 Jul 2019	Depart Time	803
A1	30 Jul 2019	Air Temp (C)	18
A1	30 Jul 2019	Weather	Overcast
A1	30 Jul 2019	Visibility (mi)	5
A1	30 Jul 2019	Wind Speed (kts)	12
A1	30 Jul 2019	Wind Dir	SE
A1	30 Jul 2019	Water Color	Greenish-Blue
A1	30 Jul 2019	Wave Ht Low (ft)	3
A1	30 Jul 2019	Wave Period (sec)	11
A1	30 Jul 2019	Sea State	Calm
A1	30 Jul 2019	High Tide (ft)	6.33
A1	30 Jul 2019	High Tide Time	2106
A1	30 Jul 2019	Low Tide (ft)	-0.71
A1	30 Jul 2019	Low Tide Time	405
A1	30 Jul 2019	Comments	none
A6	01 Jul 2019	Depth (m)	19
A6	01 Jul 2019	Arrive Time	814
A6	01 Jul 2019	Depart Time	818
A6	01 Jul 2019	Air Temp (C)	17
A6	01 Jul 2019	Weather	Continuous layer of clouds
A6	01 Jul 2019	Visibility (mi)	4
A6	01 Jul 2019	Wind Speed (kts)	4
A6	01 Jul 2019	Wind Dir	NE
A6	01 Jul 2019	Water Color	Brownish-Green
A6	01 Jul 2019	Wave Ht Low (ft)	4
A6	01 Jul 2019	Wave Period (sec)	7
A6	01 Jul 2019	Sea State	Light chop
A6	01 Jul 2019	High Tide (ft)	3.76
A6	01 Jul 2019	High Tide Time	931
A6	01 Jul 2019	Low Tide (ft)	1.8
A6	01 Jul 2019	Low Tide Time	1427
A6	01 Jul 2019	Comments	Kelp
A6	08 Jul 2019	Depth (m)	18
A6	08 Jul 2019	Arrive Time	807
A6	08 Jul 2019	Depart Time	809
A6	08 Jul 2019	Air Temp (C)	18
A6	08 Jul 2019	Weather	Continuous layer of clouds
A6	08 Jul 2019	Visibility (mi)	7
A6	08 Jul 2019	Wind Speed (kts)	4
A6	08 Jul 2019	Wind Dir	SE
A6	08 Jul 2019	Water Color	Greenish-Blue

Station	Date	Parameter	Value
A6	08 Jul 2019	Wave Ht Low (ft)	2
A6	08 Jul 2019	Wave Period (sec)	13
A6	08 Jul 2019	Sea State	Calm
A6	08 Jul 2019	High Tide (ft)	4.65
A6	08 Jul 2019	High Tide Time	1526
A6	08 Jul 2019	Low Tide (ft)	0.17
A6	08 Jul 2019	Low Tide Time	840
A6	08 Jul 2019	Comments	Kelp
A6	15 Jul 2019	Depth (m)	18
A6	15 Jul 2019	Arrive Time	812
A6	15 Jul 2019	Depart Time	814
A6	15 Jul 2019	Air Temp (C)	18
A6	15 Jul 2019	Weather	Fog
A6	15 Jul 2019	Visibility (mi)	2
A6	15 Jul 2019	Wind Speed (kts)	2
A6	15 Jul 2019	Wind Dir	NW
A6	15 Jul 2019	Water Color	Greenish-Blue
A6	15 Jul 2019	Wave Ht Low (ft)	2
A6	15 Jul 2019	Wave Period (sec)	13
A6	15 Jul 2019	Sea State	Calm
A6	15 Jul 2019	High Tide (ft)	3.81
A6	15 Jul 2019	High Tide Time	950
A6	15 Jul 2019	Low Tide (ft)	2.02
A6	15 Jul 2019	Low Tide Time	1442
A6	15 Jul 2019	Comments	Kelp
A6	24 Jul 2019	Depth (m)	18
A6	24 Jul 2019	Arrive Time	831
A6	24 Jul 2019	Depart Time	836
A6	24 Jul 2019	Air Temp (C)	0
A6	24 Jul 2019	Weather	Haze
A6	24 Jul 2019	Visibility (mi)	10
A6	24 Jul 2019	Wind Speed (kts)	0
A6	24 Jul 2019	Wind Dir	
A6	24 Jul 2019	Water Color	Bluish-Green
A6	24 Jul 2019	Wave Ht Low (ft)	3
A6	24 Jul 2019	Wave Period (sec)	11
A6	24 Jul 2019	Sea State	Calm
A6	24 Jul 2019	High Tide (ft)	6.33
A6	24 Jul 2019	High Tide Time	2106
A6	24 Jul 2019	Low Tide (ft)	-0.71
A6	24 Jul 2019	Low Tide Time	405
A6	24 Jul 2019	Comments	none
A6	30 Jul 2019	Depth (m)	19
A6	30 Jul 2019	Arrive Time	826
A6	30 Jul 2019	Depart Time	834
A6	30 Jul 2019	Air Temp (C)	18
A6	30 Jul 2019	Weather	Overcast
A6	30 Jul 2019	Visibility (mi)	5
A6	30 Jul 2019	Wind Speed (kts)	8
A6	30 Jul 2019	Wind Dir	SE
A6	30 Jul 2019	Water Color	Greenish-Blue
A6	30 Jul 2019	Wave Ht Low (ft)	3
A6	30 Jul 2019	Wave Period (sec)	11
A6	30 Jul 2019	Sea State	Calm
A6	30 Jul 2019	High Tide (ft)	6.33
A6	30 Jul 2019	High Tide Time	2106
A6	30 Jul 2019	Low Tide (ft)	-0.71
A6	30 Jul 2019	Low Tide Time	405

Station	Date	Parameter	Value
A6	30 Jul 2019	Comments	Kelp
A7	01 Jul 2019	Depth (m)	20
A7	01 Jul 2019	Arrive Time	759
A7	01 Jul 2019	Depart Time	806
A7	01 Jul 2019	Air Temp (C)	17
A7	01 Jul 2019	Weather	Continuous layer of clouds
A7	01 Jul 2019	Visibility (mi)	4
A7	01 Jul 2019	Wind Speed (kts)	4
A7	01 Jul 2019	Wind Dir	N
A7	01 Jul 2019	Water Color	Brownish-Green
A7	01 Jul 2019	Wave Ht Low (ft)	4
A7	01 Jul 2019	Wave Period (sec)	7
A7	01 Jul 2019	Sea State	Light chop
A7	01 Jul 2019	High Tide (ft)	3.76
A7	01 Jul 2019	High Tide Time	931
A7	01 Jul 2019	Low Tide (ft)	1.8
A7	01 Jul 2019	Low Tide Time	1427
A7	01 Jul 2019	Comments	Kelp; One sea lion on station
A7	08 Jul 2019	Depth (m)	18
A7	08 Jul 2019	Arrive Time	755
A7	08 Jul 2019	Depart Time	758
A7	08 Jul 2019	Air Temp (C)	18
A7	08 Jul 2019	Weather	Continuous layer of clouds
A7	08 Jul 2019	Visibility (mi)	7
A7	08 Jul 2019	Wind Speed (kts)	5
A7	08 Jul 2019	Wind Dir	S
A7	08 Jul 2019	Water Color	Green
A7	08 Jul 2019	Wave Ht Low (ft)	2
A7	08 Jul 2019	Wave Period (sec)	13
A7	08 Jul 2019	Sea State	Calm
A7	08 Jul 2019	High Tide (ft)	4.65
A7	08 Jul 2019	High Tide Time	1526
A7	08 Jul 2019	Low Tide (ft)	0.17
A7	08 Jul 2019	Low Tide Time	840
A7	08 Jul 2019	Comments	Kelp; Kelp debris
A7	15 Jul 2019	Depth (m)	20
A7	15 Jul 2019	Arrive Time	758
A7	15 Jul 2019	Depart Time	802
A7	15 Jul 2019	Air Temp (C)	18
A7	15 Jul 2019	Weather	Fog
A7	15 Jul 2019	Visibility (mi)	3
A7	15 Jul 2019	Wind Speed (kts)	2
A7	15 Jul 2019	Wind Dir	N
A7	15 Jul 2019	Water Color	Greenish-Blue
A7	15 Jul 2019	Wave Ht Low (ft)	2
A7	15 Jul 2019	Wave Period (sec)	13
A7	15 Jul 2019	Sea State	Calm
A7	15 Jul 2019	High Tide (ft)	3.81
A7	15 Jul 2019	High Tide Time	950
A7	15 Jul 2019	Low Tide (ft)	2.02
A7	15 Jul 2019	Low Tide Time	1442
A7	15 Jul 2019	Comments	Kelp; Kelp debris
A7	24 Jul 2019	Depth (m)	18
A7	24 Jul 2019	Arrive Time	814
A7	24 Jul 2019	Depart Time	821
A7	24 Jul 2019	Air Temp (C)	0
A7	24 Jul 2019	Weather	Clear

Station	Date	Parameter	Value
A7	24 Jul 2019	Visibility (mi)	10
A7	24 Jul 2019	Wind Speed (kts)	0
A7	24 Jul 2019	Wind Dir	
A7	24 Jul 2019	Water Color	Bluish-Green
A7	24 Jul 2019	Wave Ht Low (ft)	3
A7	24 Jul 2019	Wave Period (sec)	11
A7	24 Jul 2019	Sea State	Calm
A7	24 Jul 2019	High Tide (ft)	6.33
A7	24 Jul 2019	High Tide Time	2106
A7	24 Jul 2019	Low Tide (ft)	-0.71
A7	24 Jul 2019	Low Tide Time	405
A7	24 Jul 2019	Comments	none
A7	30 Jul 2019	Depth (m)	17
A7	30 Jul 2019	Arrive Time	808
A7	30 Jul 2019	Depart Time	817
A7	30 Jul 2019	Air Temp (C)	18
A7	30 Jul 2019	Weather	Overcast
A7	30 Jul 2019	Visibility (mi)	5
A7	30 Jul 2019	Wind Speed (kts)	6
A7	30 Jul 2019	Wind Dir	E
A7	30 Jul 2019	Water Color	Greenish-Blue
A7	30 Jul 2019	Wave Ht Low (ft)	3
A7	30 Jul 2019	Wave Period (sec)	11
A7	30 Jul 2019	Sea State	Calm
A7	30 Jul 2019	High Tide (ft)	6.33
A7	30 Jul 2019	High Tide Time	2106
A7	30 Jul 2019	Low Tide (ft)	-0.71
A7	30 Jul 2019	Low Tide Time	405
A7	30 Jul 2019	Comments	Kelp
C4	01 Jul 2019	Depth (m)	12
C4	01 Jul 2019	Arrive Time	921
C4	01 Jul 2019	Depart Time	927
C4	01 Jul 2019	Air Temp (C)	18
C4	01 Jul 2019	Weather	Partly Cloudy
C4	01 Jul 2019	Visibility (mi)	4
C4	01 Jul 2019	Wind Speed (kts)	8
C4	01 Jul 2019	Wind Dir	N
C4	01 Jul 2019	Water Color	Green
C4	01 Jul 2019	Wave Ht Low (ft)	4
C4	01 Jul 2019	Wave Period (sec)	7
C4	01 Jul 2019	Sea State	Light chop
C4	01 Jul 2019	High Tide (ft)	3.76
C4	01 Jul 2019	High Tide Time	931
C4	01 Jul 2019	Low Tide (ft)	1.8
C4	01 Jul 2019	Low Tide Time	1427
C4	01 Jul 2019	Comments	none
C4	08 Jul 2019	Depth (m)	11
C4	08 Jul 2019	Arrive Time	925
C4	08 Jul 2019	Depart Time	928
C4	08 Jul 2019	Air Temp (C)	18
C4	08 Jul 2019	Weather	Continuous layer of clouds
C4	08 Jul 2019	Visibility (mi)	8
C4	08 Jul 2019	Wind Speed (kts)	5
C4	08 Jul 2019	Wind Dir	SW
C4	08 Jul 2019	Water Color	Green
C4	08 Jul 2019	Wave Ht Low (ft)	2
C4	08 Jul 2019	Wave Period (sec)	13
C4	08 Jul 2019	Sea State	Light chop

Station	Date	Parameter	Value
C4	08 Jul 2019	High Tide (ft)	4.65
C4	08 Jul 2019	High Tide Time	1526
C4	08 Jul 2019	Low Tide (ft)	0.17
C4	08 Jul 2019	Low Tide Time	840
C4	08 Jul 2019	Comments	Kelp
C4	15 Jul 2019	Depth (m)	12
C4	15 Jul 2019	Arrive Time	921
C4	15 Jul 2019	Depart Time	923
C4	15 Jul 2019	Air Temp (C)	18
C4	15 Jul 2019	Weather	Continuous layer of clouds
C4	15 Jul 2019	Visibility (mi)	5
C4	15 Jul 2019	Wind Speed (kts)	9
C4	15 Jul 2019	Wind Dir	NW
C4	15 Jul 2019	Water Color	Green
C4	15 Jul 2019	Wave Ht Low (ft)	2
C4	15 Jul 2019	Wave Period (sec)	13
C4	15 Jul 2019	Sea State	Calm
C4	15 Jul 2019	High Tide (ft)	3.81
C4	15 Jul 2019	High Tide Time	950
C4	15 Jul 2019	Low Tide (ft)	2.02
C4	15 Jul 2019	Low Tide Time	1442
C4	15 Jul 2019	Comments	Kelp; Seagrass
C4	24 Jul 2019	Depth (m)	9
C4	24 Jul 2019	Arrive Time	947
C4	24 Jul 2019	Depart Time	953
C4	24 Jul 2019	Air Temp (C)	0
C4	24 Jul 2019	Weather	Partly Cloudy
C4	24 Jul 2019	Visibility (mi)	10
C4	24 Jul 2019	Wind Speed (kts)	0
C4	24 Jul 2019	Wind Dir	
C4	24 Jul 2019	Water Color	Bluish-Green
C4	24 Jul 2019	Wave Ht Low (ft)	3
C4	24 Jul 2019	Wave Period (sec)	11
C4	24 Jul 2019	Sea State	Calm
C4	24 Jul 2019	High Tide (ft)	6.33
C4	24 Jul 2019	High Tide Time	2106
C4	24 Jul 2019	Low Tide (ft)	-0.71
C4	24 Jul 2019	Low Tide Time	405
C4	24 Jul 2019	Comments	none
C4	30 Jul 2019	Depth (m)	13
C4	30 Jul 2019	Arrive Time	934
C4	30 Jul 2019	Depart Time	939
C4	30 Jul 2019	Air Temp (C)	19
C4	30 Jul 2019	Weather	Overcast
C4	30 Jul 2019	Visibility (mi)	5
C4	30 Jul 2019	Wind Speed (kts)	12
C4	30 Jul 2019	Wind Dir	S
C4	30 Jul 2019	Water Color	Greenish-Blue
C4	30 Jul 2019	Wave Ht Low (ft)	3
C4	30 Jul 2019	Wave Period (sec)	11
C4	30 Jul 2019	Sea State	Calm
C4	30 Jul 2019	High Tide (ft)	6.33
C4	30 Jul 2019	High Tide Time	2106
C4	30 Jul 2019	Low Tide (ft)	-0.71
C4	30 Jul 2019	Low Tide Time	405
C4	30 Jul 2019	Comments	Kelp
C5	01 Jul 2019	Depth (m)	13

Station	Date	Parameter	Value
C5	01 Jul 2019	Arrive Time	910
C5	01 Jul 2019	Depart Time	921
C5	01 Jul 2019	Air Temp (C)	18
C5	01 Jul 2019	Weather	Partly Cloudy
C5	01 Jul 2019	Visibility (mi)	4
C5	01 Jul 2019	Wind Speed (kts)	4
C5	01 Jul 2019	Wind Dir	N
C5	01 Jul 2019	Water Color	Green
C5	01 Jul 2019	Wave Ht Low (ft)	4
C5	01 Jul 2019	Wave Period (sec)	7
C5	01 Jul 2019	Sea State	Light chop
C5	01 Jul 2019	High Tide (ft)	3.76
C5	01 Jul 2019	High Tide Time	931
C5	01 Jul 2019	Low Tide (ft)	1.8
C5	01 Jul 2019	Low Tide Time	1427
C5	01 Jul 2019	Comments	none
C5	08 Jul 2019	Depth (m)	12
C5	08 Jul 2019	Arrive Time	916
C5	08 Jul 2019	Depart Time	917
C5	08 Jul 2019	Air Temp (C)	18
C5	08 Jul 2019	Weather	Continuous layer of clouds
C5	08 Jul 2019	Visibility (mi)	8
C5	08 Jul 2019	Wind Speed (kts)	7
C5	08 Jul 2019	Wind Dir	SW
C5	08 Jul 2019	Water Color	Green
C5	08 Jul 2019	Wave Ht Low (ft)	2
C5	08 Jul 2019	Wave Period (sec)	13
C5	08 Jul 2019	Sea State	Light chop
C5	08 Jul 2019	High Tide (ft)	4.65
C5	08 Jul 2019	High Tide Time	1526
C5	08 Jul 2019	Low Tide (ft)	0.17
C5	08 Jul 2019	Low Tide Time	840
C5	08 Jul 2019	Comments	Kelp
C5	15 Jul 2019	Depth (m)	11
C5	15 Jul 2019	Arrive Time	910
C5	15 Jul 2019	Depart Time	912
C5	15 Jul 2019	Air Temp (C)	18
C5	15 Jul 2019	Weather	Partly Cloudy
C5	15 Jul 2019	Visibility (mi)	5
C5	15 Jul 2019	Wind Speed (kts)	6
C5	15 Jul 2019	Wind Dir	NW
C5	15 Jul 2019	Water Color	Brownish-Green
C5	15 Jul 2019	Wave Ht Low (ft)	3
C5	15 Jul 2019	Wave Period (sec)	9
C5	15 Jul 2019	Sea State	Calm
C5	15 Jul 2019	High Tide (ft)	3.81
C5	15 Jul 2019	High Tide Time	950
C5	15 Jul 2019	Low Tide (ft)	2.02
C5	15 Jul 2019	Low Tide Time	1442
C5	15 Jul 2019	Comments	Kelp
C5	24 Jul 2019	Depth (m)	9
C5	24 Jul 2019	Arrive Time	933
C5	24 Jul 2019	Depart Time	941
C5	24 Jul 2019	Air Temp (C)	0
C5	24 Jul 2019	Weather	Haze
C5	24 Jul 2019	Visibility (mi)	10
C5	24 Jul 2019	Wind Speed (kts)	0
C5	24 Jul 2019	Wind Dir	

Station	Date	Parameter	Value
C5	24 Jul 2019	Water Color	Bluish-Green
C5	24 Jul 2019	Wave Ht Low (ft)	3
C5	24 Jul 2019	Wave Period (sec)	11
C5	24 Jul 2019	Sea State	Calm
C5	24 Jul 2019	High Tide (ft)	6.33
C5	24 Jul 2019	High Tide Time	2106
C5	24 Jul 2019	Low Tide (ft)	-0.71
C5	24 Jul 2019	Low Tide Time	405
C5	24 Jul 2019	Comments	none
C5	30 Jul 2019	Depth (m)	11
C5	30 Jul 2019	Arrive Time	924
C5	30 Jul 2019	Depart Time	928
C5	30 Jul 2019	Air Temp (C)	19
C5	30 Jul 2019	Weather	Overcast
C5	30 Jul 2019	Visibility (mi)	5
C5	30 Jul 2019	Wind Speed (kts)	7
C5	30 Jul 2019	Wind Dir	SW
C5	30 Jul 2019	Water Color	Greenish-Blue
C5	30 Jul 2019	Wave Ht Low (ft)	3
C5	30 Jul 2019	Wave Period (sec)	11
C5	30 Jul 2019	Sea State	Calm
C5	30 Jul 2019	High Tide (ft)	6.33
C5	30 Jul 2019	High Tide Time	2106
C5	30 Jul 2019	Low Tide (ft)	-0.71
C5	30 Jul 2019	Low Tide Time	405
C5	30 Jul 2019	Comments	Kelp
C6	01 Jul 2019	Depth (m)	10
C6	01 Jul 2019	Arrive Time	901
C6	01 Jul 2019	Depart Time	910
C6	01 Jul 2019	Air Temp (C)	18
C6	01 Jul 2019	Weather	Partly Cloudy
C6	01 Jul 2019	Visibility (mi)	4
C6	01 Jul 2019	Wind Speed (kts)	6
C6	01 Jul 2019	Wind Dir	N
C6	01 Jul 2019	Water Color	Green
C6	01 Jul 2019	Wave Ht Low (ft)	4
C6	01 Jul 2019	Wave Period (sec)	7
C6	01 Jul 2019	Sea State	Light chop
C6	01 Jul 2019	High Tide (ft)	3.76
C6	01 Jul 2019	High Tide Time	931
C6	01 Jul 2019	Low Tide (ft)	1.8
C6	01 Jul 2019	Low Tide Time	1427
C6	01 Jul 2019	Comments	Kelp
C6	08 Jul 2019	Depth (m)	9
C6	08 Jul 2019	Arrive Time	902
C6	08 Jul 2019	Depart Time	904
C6	08 Jul 2019	Air Temp (C)	18
C6	08 Jul 2019	Weather	Continuous layer of clouds
C6	08 Jul 2019	Visibility (mi)	8
C6	08 Jul 2019	Wind Speed (kts)	6
C6	08 Jul 2019	Wind Dir	SW
C6	08 Jul 2019	Water Color	Green
C6	08 Jul 2019	Wave Ht Low (ft)	2
C6	08 Jul 2019	Wave Period (sec)	13
C6	08 Jul 2019	Sea State	Light chop
C6	08 Jul 2019	High Tide (ft)	4.65
C6	08 Jul 2019	High Tide Time	1526
C6	08 Jul 2019	Low Tide (ft)	0.17

Station	Date	Parameter	Value
C6	08 Jul 2019	Low Tide Time	840
C6	08 Jul 2019	Comments	Kelp debris
C6	15 Jul 2019	Depth (m)	10
C6	15 Jul 2019	Arrive Time	859
C6	15 Jul 2019	Depart Time	903
C6	15 Jul 2019	Air Temp (C)	18
C6	15 Jul 2019	Weather	Partly Cloudy
C6	15 Jul 2019	Visibility (mi)	5
C6	15 Jul 2019	Wind Speed (kts)	6
C6	15 Jul 2019	Wind Dir	NW
C6	15 Jul 2019	Water Color	Brownish-Green
C6	15 Jul 2019	Wave Ht Low (ft)	3
C6	15 Jul 2019	Wave Period (sec)	9
C6	15 Jul 2019	Sea State	Calm
C6	15 Jul 2019	High Tide (ft)	3.81
C6	15 Jul 2019	High Tide Time	950
C6	15 Jul 2019	Low Tide (ft)	2.02
C6	15 Jul 2019	Low Tide Time	1442
C6	15 Jul 2019	Comments	Kelp
C6	24 Jul 2019	Depth (m)	10
C6	24 Jul 2019	Arrive Time	921
C6	24 Jul 2019	Depart Time	928
C6	24 Jul 2019	Air Temp (C)	0
C6	24 Jul 2019	Weather	Haze
C6	24 Jul 2019	Visibility (mi)	10
C6	24 Jul 2019	Wind Speed (kts)	0
C6	24 Jul 2019	Wind Dir	
C6	24 Jul 2019	Water Color	Bluish-Green
C6	24 Jul 2019	Wave Ht Low (ft)	3
C6	24 Jul 2019	Wave Period (sec)	11
C6	24 Jul 2019	Sea State	Calm
C6	24 Jul 2019	High Tide (ft)	6.33
C6	24 Jul 2019	High Tide Time	2106
C6	24 Jul 2019	Low Tide (ft)	-0.71
C6	24 Jul 2019	Low Tide Time	405
C6	24 Jul 2019	Comments	none
C6	30 Jul 2019	Depth (m)	10
C6	30 Jul 2019	Arrive Time	913
C6	30 Jul 2019	Depart Time	917
C6	30 Jul 2019	Air Temp (C)	19
C6	30 Jul 2019	Weather	Overcast
C6	30 Jul 2019	Visibility (mi)	5
C6	30 Jul 2019	Wind Speed (kts)	10
C6	30 Jul 2019	Wind Dir	S
C6	30 Jul 2019	Water Color	Greenish-Blue
C6	30 Jul 2019	Wave Ht Low (ft)	3
C6	30 Jul 2019	Wave Period (sec)	11
C6	30 Jul 2019	Sea State	Calm
C6	30 Jul 2019	High Tide (ft)	6.33
C6	30 Jul 2019	High Tide Time	2106
C6	30 Jul 2019	Low Tide (ft)	-0.71
C6	30 Jul 2019	Low Tide Time	405
C6	30 Jul 2019	Comments	Kelp
C7	01 Jul 2019	Depth (m)	18
C7	01 Jul 2019	Arrive Time	829
C7	01 Jul 2019	Depart Time	838
C7	01 Jul 2019	Air Temp (C)	17

Station	Date	Parameter	Value
C7	01 Jul 2019	Weather	Partly Cloudy
C7	01 Jul 2019	Visibility (mi)	4
C7	01 Jul 2019	Wind Speed (kts)	8
C7	01 Jul 2019	Wind Dir	NW
C7	01 Jul 2019	Water Color	Green
C7	01 Jul 2019	Wave Ht Low (ft)	4
C7	01 Jul 2019	Wave Period (sec)	7
C7	01 Jul 2019	Sea State	Light chop
C7	01 Jul 2019	High Tide (ft)	3.76
C7	01 Jul 2019	High Tide Time	931
C7	01 Jul 2019	Low Tide (ft)	1.8
C7	01 Jul 2019	Low Tide Time	1427
C7	01 Jul 2019	Comments	Kelp
C7	08 Jul 2019	Depth (m)	18
C7	08 Jul 2019	Arrive Time	823
C7	08 Jul 2019	Depart Time	833
C7	08 Jul 2019	Air Temp (C)	18
C7	08 Jul 2019	Weather	Continuous layer of clouds
C7	08 Jul 2019	Visibility (mi)	7
C7	08 Jul 2019	Wind Speed (kts)	7
C7	08 Jul 2019	Wind Dir	SW
C7	08 Jul 2019	Water Color	Bluish-Green
C7	08 Jul 2019	Wave Ht Low (ft)	2
C7	08 Jul 2019	Wave Period (sec)	13
C7	08 Jul 2019	Sea State	Calm
C7	08 Jul 2019	High Tide (ft)	4.65
C7	08 Jul 2019	High Tide Time	1526
C7	08 Jul 2019	Low Tide (ft)	0.17
C7	08 Jul 2019	Low Tide Time	840
C7	08 Jul 2019	Comments	Kelp
C7	15 Jul 2019	Depth (m)	19
C7	15 Jul 2019	Arrive Time	828
C7	15 Jul 2019	Depart Time	830
C7	15 Jul 2019	Air Temp (C)	18
C7	15 Jul 2019	Weather	Fog
C7	15 Jul 2019	Visibility (mi)	2
C7	15 Jul 2019	Wind Speed (kts)	2
C7	15 Jul 2019	Wind Dir	N
C7	15 Jul 2019	Water Color	Greenish-Blue
C7	15 Jul 2019	Wave Ht Low (ft)	2
C7	15 Jul 2019	Wave Period (sec)	13
C7	15 Jul 2019	Sea State	Calm
C7	15 Jul 2019	High Tide (ft)	3.81
C7	15 Jul 2019	High Tide Time	950
C7	15 Jul 2019	Low Tide (ft)	2.02
C7	15 Jul 2019	Low Tide Time	1442
C7	15 Jul 2019	Comments	Kelp
C7	24 Jul 2019	Depth (m)	19
C7	24 Jul 2019	Arrive Time	847
C7	24 Jul 2019	Depart Time	852
C7	24 Jul 2019	Air Temp (C)	0
C7	24 Jul 2019	Weather	Haze
C7	24 Jul 2019	Visibility (mi)	10
C7	24 Jul 2019	Wind Speed (kts)	0
C7	24 Jul 2019	Wind Dir	
C7	24 Jul 2019	Water Color	Bluish-Green
C7	24 Jul 2019	Wave Ht Low (ft)	3
C7	24 Jul 2019	Wave Period (sec)	11

Station	Date	Parameter	Value
C7	24 Jul 2019	Sea State	Calm
C7	24 Jul 2019	High Tide (ft)	6.33
C7	24 Jul 2019	High Tide Time	2106
C7	24 Jul 2019	Low Tide (ft)	-0.71
C7	24 Jul 2019	Low Tide Time	405
C7	24 Jul 2019	Comments	none
C7	30 Jul 2019	Depth (m)	18
C7	30 Jul 2019	Arrive Time	842
C7	30 Jul 2019	Depart Time	848
C7	30 Jul 2019	Air Temp (C)	19
C7	30 Jul 2019	Weather	Overcast
C7	30 Jul 2019	Visibility (mi)	5
C7	30 Jul 2019	Wind Speed (kts)	0
C7	30 Jul 2019	Wind Dir	
C7	30 Jul 2019	Water Color	Greenish-Blue
C7	30 Jul 2019	Wave Ht Low (ft)	3
C7	30 Jul 2019	Wave Period (sec)	11
C7	30 Jul 2019	Sea State	Calm
C7	30 Jul 2019	High Tide (ft)	6.33
C7	30 Jul 2019	High Tide Time	2106
C7	30 Jul 2019	Low Tide (ft)	-0.71
C7	30 Jul 2019	Low Tide Time	405
C7	30 Jul 2019	Comments	none
C8	01 Jul 2019	Depth (m)	20
C8	01 Jul 2019	Arrive Time	840
C8	01 Jul 2019	Depart Time	845
C8	01 Jul 2019	Air Temp (C)	17
C8	01 Jul 2019	Weather	Partly Cloudy
C8	01 Jul 2019	Visibility (mi)	4
C8	01 Jul 2019	Wind Speed (kts)	8
C8	01 Jul 2019	Wind Dir	NW
C8	01 Jul 2019	Water Color	Green
C8	01 Jul 2019	Wave Ht Low (ft)	4
C8	01 Jul 2019	Wave Period (sec)	7
C8	01 Jul 2019	Sea State	Light chop
C8	01 Jul 2019	High Tide (ft)	3.76
C8	01 Jul 2019	High Tide Time	931
C8	01 Jul 2019	Low Tide (ft)	1.8
C8	01 Jul 2019	Low Tide Time	1427
C8	01 Jul 2019	Comments	none
C8	08 Jul 2019	Depth (m)	19
C8	08 Jul 2019	Arrive Time	841
C8	08 Jul 2019	Depart Time	843
C8	08 Jul 2019	Air Temp (C)	18
C8	08 Jul 2019	Weather	Continuous layer of clouds
C8	08 Jul 2019	Visibility (mi)	7
C8	08 Jul 2019	Wind Speed (kts)	4
C8	08 Jul 2019	Wind Dir	SW
C8	08 Jul 2019	Water Color	Bluish-Green
C8	08 Jul 2019	Wave Ht Low (ft)	2
C8	08 Jul 2019	Wave Period (sec)	13
C8	08 Jul 2019	Sea State	Light chop
C8	08 Jul 2019	High Tide (ft)	4.65
C8	08 Jul 2019	High Tide Time	1526
C8	08 Jul 2019	Low Tide (ft)	0.17
C8	08 Jul 2019	Low Tide Time	840
C8	08 Jul 2019	Comments	none

Station	Date	Parameter	Value
C8	15 Jul 2019	Depth (m)	18
C8	15 Jul 2019	Arrive Time	839
C8	15 Jul 2019	Depart Time	842
C8	15 Jul 2019	Air Temp (C)	18
C8	15 Jul 2019	Weather	Fog
C8	15 Jul 2019	Visibility (mi)	4
C8	15 Jul 2019	Wind Speed (kts)	4
C8	15 Jul 2019	Wind Dir	NW
C8	15 Jul 2019	Water Color	Greenish-Blue
C8	15 Jul 2019	Wave Ht Low (ft)	2
C8	15 Jul 2019	Wave Period (sec)	13
C8	15 Jul 2019	Sea State	Calm
C8	15 Jul 2019	High Tide (ft)	3.81
C8	15 Jul 2019	High Tide Time	950
C8	15 Jul 2019	Low Tide (ft)	2.02
C8	15 Jul 2019	Low Tide Time	1442
C8	15 Jul 2019	Comments	Kelp
C8	24 Jul 2019	Depth (m)	18
C8	24 Jul 2019	Arrive Time	901
C8	24 Jul 2019	Depart Time	906
C8	24 Jul 2019	Air Temp (C)	0
C8	24 Jul 2019	Weather	Haze
C8	24 Jul 2019	Visibility (mi)	10
C8	24 Jul 2019	Wind Speed (kts)	0
C8	24 Jul 2019	Wind Dir	
C8	24 Jul 2019	Water Color	Bluish-Green
C8	24 Jul 2019	Wave Ht Low (ft)	3
C8	24 Jul 2019	Wave Period (sec)	11
C8	24 Jul 2019	Sea State	Calm
C8	24 Jul 2019	High Tide (ft)	6.33
C8	24 Jul 2019	High Tide Time	2106
C8	24 Jul 2019	Low Tide (ft)	-0.71
C8	24 Jul 2019	Low Tide Time	405
C8	24 Jul 2019	Comments	none
C8	30 Jul 2019	Depth (m)	20
C8	30 Jul 2019	Arrive Time	853
C8	30 Jul 2019	Depart Time	858
C8	30 Jul 2019	Air Temp (C)	19
C8	30 Jul 2019	Weather	Overcast
C8	30 Jul 2019	Visibility (mi)	5
C8	30 Jul 2019	Wind Speed (kts)	6
C8	30 Jul 2019	Wind Dir	E
C8	30 Jul 2019	Water Color	Greenish-Blue
C8	30 Jul 2019	Wave Ht Low (ft)	3
C8	30 Jul 2019	Wave Period (sec)	11
C8	30 Jul 2019	Sea State	Calm
C8	30 Jul 2019	High Tide (ft)	6.33
C8	30 Jul 2019	High Tide Time	2106
C8	30 Jul 2019	Low Tide (ft)	-0.71
C8	30 Jul 2019	Low Tide Time	405
C8	30 Jul 2019	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	01 Jul 2019	1	16.35	82.30	6.8	33.66	8.1	24.6	0.85
A1	01 Jul 2019	2	16.16	71.08	6.6	33.68	8.1	24.7	0.97
A1	01 Jul 2019	3	14.35	79.86	7.2	33.76	8.1	25.2	1.93
A1	01 Jul 2019	4	13.77	79.75	7.4	33.66	8.1	25.2	3.42
A1	01 Jul 2019	5	13.35	78.49	7.2	33.63	8.1	25.3	4.88
A1	01 Jul 2019	6	13.23	79.09	7.0	33.61	8.1	25.3	5.20
A1	01 Jul 2019	7	13.02	78.37	6.9	33.62	8.1	25.3	5.87
A1	01 Jul 2019	8	12.88	78.91	6.9	33.61	8.1	25.3	5.91
A1	01 Jul 2019	9	12.82	80.89	6.6	33.61	8.1	25.4	5.21
A1	01 Jul 2019	10	12.58	84.75	6.2	33.63	8.1	25.4	3.37
A1	01 Jul 2019	11	12.43	86.00	5.7	33.64	8.1	25.5	2.00
A1	01 Jul 2019	12	12.37	86.12	5.4	33.64	8.1	25.5	1.25
A1	01 Jul 2019	13	12.22	86.94	5.3	33.66	8.1	25.5	1.00
A1	01 Jul 2019	14	12.12	87.12	5.3	33.65	8.1	25.5	0.90
A1	01 Jul 2019	15	12.04	87.14	5.2	33.66	8.1	25.5	0.79
A1	01 Jul 2019	16	12.00	87.17	5.1	33.66	8.1	25.5	0.70
A1	01 Jul 2019	17	11.98	87.20	5.0	33.66	8.1	25.6	0.63
A1	01 Jul 2019	18	11.99	86.17	5.1	33.66	8.0	25.5	0.59
A1	08 Jul 2019	1	19.11	77.11	7.6	33.71	8.1	24.0	1.45
A1	08 Jul 2019	2	19.10	76.78	7.6	33.71	8.1	24.0	1.50
A1	08 Jul 2019	3	19.10	77.47	7.6	33.71	8.1	24.0	1.52
A1	08 Jul 2019	4	19.10	77.40	7.6	33.71	8.1	24.0	1.62
A1	08 Jul 2019	5	19.10	77.60	7.6	33.71	8.1	24.0	1.66
A1	08 Jul 2019	6	19.09	77.72	7.6	33.71	8.1	24.0	1.67
A1	08 Jul 2019	7	18.82	78.22	7.4	33.73	8.1	24.1	1.62
A1	08 Jul 2019	8	17.44	79.29	7.4	33.76	8.1	24.5	1.84
A1	08 Jul 2019	9	16.35	78.69	7.8	33.69	8.1	24.7	2.13
A1	08 Jul 2019	10	15.83	78.55	7.8	33.64	8.1	24.7	2.36
A1	08 Jul 2019	11	15.09	79.03	7.2	33.68	8.1	24.9	2.39
A1	08 Jul 2019	12	14.96	79.59	7.2	33.64	8.1	24.9	2.41
A1	08 Jul 2019	13	14.82	79.37	7.3	33.64	8.1	25.0	2.48
A1	08 Jul 2019	14	14.74	79.47	7.2	33.64	8.1	25.0	2.45
A1	08 Jul 2019	15	14.40	80.85	6.8	33.65	8.1	25.1	1.97
A1	08 Jul 2019	16	14.34	81.25	6.6	33.64	8.1	25.1	1.73
A1	08 Jul 2019	17	14.21	81.42	6.5	33.65	8.1	25.1	1.61
A1	08 Jul 2019	18	14.18	81.85	6.4	33.64	8.1	25.1	1.48
A1	15 Jul 2019	1	19.36	82.03	7.4	33.73	8.1	24.0	1.20
A1	15 Jul 2019	2	18.70	81.17	6.7	33.81	8.1	24.2	1.29
A1	15 Jul 2019	3	16.22	81.81	6.6	33.75	8.1	24.7	1.73
A1	15 Jul 2019	4	15.54	81.78	6.8	33.70	8.1	24.9	2.12
A1	15 Jul 2019	5	15.12	80.61	6.9	33.66	8.1	24.9	2.66
A1	15 Jul 2019	6	14.73	80.11	6.8	33.66	8.1	25.0	3.24
A1	15 Jul 2019	7	14.14	80.71	6.5	33.66	8.0	25.1	3.01
A1	15 Jul 2019	8	14.08	81.12	6.3	33.65	8.0	25.1	2.70
A1	15 Jul 2019	9	13.61	81.92	6.0	33.70	8.0	25.3	2.24
A1	15 Jul 2019	10	12.84	83.27	5.6	33.68	8.0	25.4	1.66
A1	15 Jul 2019	11	12.21	84.52	5.3	33.69	8.0	25.5	1.34
A1	15 Jul 2019	12	11.94	85.50	5.2	33.66	8.0	25.6	1.07
A1	15 Jul 2019	13	11.88	85.90	5.2	33.66	8.0	25.6	0.96
A1	15 Jul 2019	14	11.83	86.09	5.1	33.67	8.0	25.6	0.91
A1	15 Jul 2019	15	11.71	86.27	5.1	33.68	8.0	25.6	0.95
A1	15 Jul 2019	16	11.64	86.45	5.0	33.67	8.0	25.6	0.96
A1	15 Jul 2019	17	11.55	86.62	5.0	33.68	8.0	25.6	0.92
A1	15 Jul 2019	18	11.53	86.71	5.0	33.68	8.0	25.7	0.93

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A1	15 Jul 2019	19	11.50	86.77	4.9	33.69	7.9	25.7	0.85
A1	24 Jul 2019	1	20.25	81.69	8.2	33.74	8.2	23.7	0.75
A1	24 Jul 2019	2	20.13	81.45	8.2	33.76	8.2	23.8	0.76
A1	24 Jul 2019	3	18.29	80.49	8.0	33.83	8.2	24.3	1.04
A1	24 Jul 2019	4	16.30	79.85	7.9	33.72	8.1	24.7	1.44
A1	24 Jul 2019	5	14.29	79.65	7.4	33.73	8.1	25.1	1.95
A1	24 Jul 2019	6	13.76	80.15	7.1	33.64	8.0	25.2	2.27
A1	24 Jul 2019	7	13.42	81.07	6.8	33.65	8.0	25.3	2.17
A1	24 Jul 2019	8	13.26	82.19	6.7	33.62	8.0	25.3	2.07
A1	24 Jul 2019	9	13.02	82.14	6.5	33.64	8.0	25.3	1.97
A1	24 Jul 2019	10	12.95	82.53	6.3	33.64	8.0	25.4	1.92
A1	24 Jul 2019	11	12.89	82.96	6.1	33.65	8.0	25.4	1.70
A1	24 Jul 2019	12	12.83	83.32	6.0	33.66	7.9	25.4	1.53
A1	24 Jul 2019	13	12.69	83.47	5.8	33.67	7.9	25.4	1.38
A1	24 Jul 2019	14	12.58	83.73	5.6	33.68	7.9	25.4	1.20
A1	24 Jul 2019	15	12.52	84.09	5.5	33.68	7.9	25.5	1.13
A1	24 Jul 2019	16	12.42	84.26	5.4	33.69	7.9	25.5	0.99
A1	24 Jul 2019	17	12.14	84.77	5.1	33.70	7.9	25.6	0.83
A1	24 Jul 2019	18	11.72	85.19	4.9	33.72	7.9	25.6	0.63
A1	24 Jul 2019	19	11.63	85.48	4.9	33.70	7.8	25.6	0.54
A1	30 Jul 2019	1	18.38	70.71	10.2	33.65	8.3	24.1	2.55
A1	30 Jul 2019	2	18.34	70.29	10.1	33.66	8.3	24.2	2.71
A1	30 Jul 2019	3	17.78	72.57	10.4	33.68	8.3	24.3	3.14
A1	30 Jul 2019	4	17.40	71.63	10.5	33.66	8.3	24.4	3.71
A1	30 Jul 2019	5	16.92	70.64	10.6	33.66	8.3	24.5	4.38
A1	30 Jul 2019	6	16.38	69.46	10.6	33.65	8.3	24.6	5.31
A1	30 Jul 2019	7	15.52	68.65	10.6	33.66	8.3	24.8	6.18
A1	30 Jul 2019	8	15.06	69.05	10.6	33.62	8.3	24.9	6.63
A1	30 Jul 2019	9	14.84	69.70	10.5	33.61	8.3	24.9	6.78
A1	30 Jul 2019	10	14.78	69.81	10.3	33.60	8.3	24.9	6.45
A1	30 Jul 2019	11	14.62	71.19	9.4	33.61	8.3	25.0	6.49
A1	30 Jul 2019	12	13.90	73.73	8.4	33.62	8.3	25.1	6.41
A1	30 Jul 2019	13	13.73	77.48	7.8	33.60	8.3	25.2	5.62
A1	30 Jul 2019	14	13.04	81.13	7.4	33.64	8.3	25.3	4.21
A1	30 Jul 2019	15	12.87	82.74	7.0	33.60	8.2	25.3	2.89
A1	30 Jul 2019	16	12.85	83.54	7.0	33.59	8.2	25.3	2.04
A1	30 Jul 2019	17	12.79	83.59	6.9	33.60	8.2	25.4	1.91
A1	30 Jul 2019	18	12.80	83.77	6.8	33.59	8.2	25.3	1.96
A6	01 Jul 2019	1	17.67	77.18	8.4	33.67	8.2	24.3	1.87
A6	01 Jul 2019	2	16.36	76.52	7.9	33.76	8.2	24.7	3.80
A6	01 Jul 2019	3	15.00	73.73	7.8	33.69	8.2	25.0	6.30
A6	01 Jul 2019	4	14.67	75.00	7.6	33.64	8.2	25.0	6.77
A6	01 Jul 2019	5	14.03	75.03	7.1	33.66	8.2	25.1	8.07
A6	01 Jul 2019	6	13.78	75.08	6.7	33.64	8.2	25.2	8.40
A6	01 Jul 2019	7	13.67	76.18	6.5	33.63	8.2	25.2	7.88
A6	01 Jul 2019	8	13.66	76.67	6.3	33.63	8.2	25.2	8.25
A6	01 Jul 2019	9	13.58	77.40	6.2	33.64	8.2	25.2	7.11
A6	01 Jul 2019	10	13.49	78.01	6.1	33.64	8.2	25.2	5.88
A6	01 Jul 2019	11	13.36	80.34	5.9	33.65	8.2	25.3	4.14
A6	01 Jul 2019	12	13.23	81.79	5.8	33.65	8.1	25.3	2.54
A6	01 Jul 2019	13	13.14	84.18	5.6	33.65	8.1	25.3	1.58
A6	01 Jul 2019	14	12.70	85.44	5.3	33.68	8.1	25.4	0.98
A6	01 Jul 2019	15	12.40	86.42	5.2	33.67	8.1	25.5	0.70
A6	01 Jul 2019	16	12.27	86.55	5.1	33.66	8.1	25.5	0.55
A6	01 Jul 2019	17	12.20	86.84	5.0	33.66	8.1	25.5	0.50
A6	01 Jul 2019	18	12.16	87.09	4.9	33.66	8.1	25.5	0.48
A6	01 Jul 2019	19	12.15	86.84	4.9	33.66	8.1	25.5	0.45

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A6	08 Jul 2019	1	19.34	84.27	7.8	33.72	8.2	24.0	0.65
A6	08 Jul 2019	2	19.33	84.55	7.8	33.72	8.2	24.0	0.71
A6	08 Jul 2019	3	19.33	84.82	7.8	33.72	8.2	24.0	0.71
A6	08 Jul 2019	4	19.33	84.92	7.8	33.72	8.2	24.0	0.72
A6	08 Jul 2019	5	19.32	84.92	7.7	33.72	8.2	24.0	0.76
A6	08 Jul 2019	6	19.31	84.82	7.7	33.72	8.2	24.0	0.80
A6	08 Jul 2019	7	19.27	84.54	7.6	33.72	8.2	24.0	0.81
A6	08 Jul 2019	8	18.81	83.82	7.6	33.73	8.2	24.1	1.11
A6	08 Jul 2019	9	18.38	81.02	7.6	33.71	8.2	24.2	1.53
A6	08 Jul 2019	10	18.12	79.26	7.6	33.70	8.2	24.2	1.74
A6	08 Jul 2019	11	18.00	78.89	7.6	33.69	8.2	24.3	1.86
A6	08 Jul 2019	12	17.87	78.98	7.7	33.68	8.2	24.3	1.89
A6	08 Jul 2019	13	17.71	79.31	7.5	33.69	8.2	24.3	1.80
A6	08 Jul 2019	14	17.14	80.40	7.2	33.71	8.2	24.5	1.52
A6	08 Jul 2019	15	16.15	82.22	6.9	33.71	8.2	24.7	1.15
A6	08 Jul 2019	16	15.11	82.99	6.8	33.70	8.2	24.9	1.14
A6	08 Jul 2019	17	14.51	83.10	6.8	33.67	8.2	25.1	1.26
A6	08 Jul 2019	18	14.13	83.00	6.8	33.67	8.2	25.1	1.28
A6	15 Jul 2019	1	20.21	82.94	7.7	33.75	8.2	23.8	1.00
A6	15 Jul 2019	2	20.22	82.89	7.6	33.75	8.2	23.8	1.01
A6	15 Jul 2019	3	20.20	83.35	7.7	33.75	8.2	23.8	1.04
A6	15 Jul 2019	4	20.14	83.35	7.6	33.75	8.2	23.8	1.10
A6	15 Jul 2019	5	20.03	83.34	7.7	33.75	8.2	23.8	1.18
A6	15 Jul 2019	6	19.72	82.70	7.6	33.76	8.2	23.9	1.31
A6	15 Jul 2019	7	19.00	81.93	7.5	33.76	8.2	24.1	1.63
A6	15 Jul 2019	8	18.27	81.11	7.4	33.74	8.2	24.2	1.93
A6	15 Jul 2019	9	17.42	80.80	6.8	33.74	8.2	24.4	1.86
A6	15 Jul 2019	10	15.82	81.55	6.2	33.77	8.2	24.8	1.50
A6	15 Jul 2019	11	14.81	82.90	6.0	33.70	8.1	25.0	1.15
A6	15 Jul 2019	12	14.08	83.72	5.7	33.70	8.1	25.2	0.95
A6	15 Jul 2019	13	12.99	84.70	5.4	33.71	8.1	25.4	0.82
A6	15 Jul 2019	14	12.31	85.39	5.1	33.70	8.1	25.5	0.73
A6	15 Jul 2019	15	11.83	85.82	4.9	33.67	8.1	25.6	0.71
A6	15 Jul 2019	16	11.73	85.85	4.9	33.66	8.0	25.6	0.68
A6	15 Jul 2019	17	11.65	85.42	4.8	33.67	8.0	25.6	0.65
A6	15 Jul 2019	18	12.38	84.94	5.0	33.59	8.0	25.4	0.66
A6	24 Jul 2019	1	20.48	81.84	8.1	33.73	8.2	23.7	0.77
A6	24 Jul 2019	2	20.50	81.94	8.1	33.74	8.2	23.7	0.79
A6	24 Jul 2019	3	19.90	81.85	8.2	33.76	8.2	23.8	0.97
A6	24 Jul 2019	4	19.56	81.36	8.0	33.73	8.2	23.9	1.17
A6	24 Jul 2019	5	18.38	80.95	8.1	33.77	8.2	24.2	1.40
A6	24 Jul 2019	6	17.63	80.55	8.2	33.69	8.2	24.4	1.70
A6	24 Jul 2019	7	17.11	80.16	7.7	33.71	8.2	24.5	1.92
A6	24 Jul 2019	8	15.39	79.56	7.8	33.71	8.1	24.9	2.33
A6	24 Jul 2019	9	15.30	79.88	7.7	33.61	8.1	24.8	2.80
A6	24 Jul 2019	10	14.68	79.39	7.3	33.67	8.1	25.0	2.79
A6	24 Jul 2019	11	14.24	80.18	6.9	33.66	8.1	25.1	2.45
A6	24 Jul 2019	12	14.01	81.48	6.6	33.65	8.0	25.1	1.94
A6	24 Jul 2019	13	13.81	82.78	6.3	33.66	8.0	25.2	1.60
A6	24 Jul 2019	14	13.47	83.46	6.2	33.66	8.0	25.3	1.41
A6	24 Jul 2019	15	13.32	83.76	6.1	33.65	8.0	25.3	1.23
A6	24 Jul 2019	16	13.30	84.27	6.0	33.65	8.0	25.3	1.17
A6	24 Jul 2019	17	13.26	84.38	6.0	33.66	8.0	25.3	1.11
A6	24 Jul 2019	18	13.12	84.57	5.9	33.66	8.0	25.3	0.97
A6	24 Jul 2019	19	12.95	84.85	5.7	33.68	8.0	25.4	0.88
A6	24 Jul 2019	20	12.80	85.21	5.6	33.67	7.9	25.4	0.84
A6	24 Jul 2019	21	12.79	85.24	5.6	33.67	7.9	25.4	0.79
A6	30 Jul 2019	1	20.21	77.06	8.4	33.76	8.3	23.8	2.05

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A6	30 Jul 2019	2	19.46	76.38	8.5	33.87	8.3	24.0	2.01
A6	30 Jul 2019	3	18.62	75.55	8.6	33.88	8.3	24.3	2.31
A6	30 Jul 2019	4	17.69	74.77	8.7	33.80	8.3	24.4	2.83
A6	30 Jul 2019	5	17.38	74.08	8.8	33.73	8.3	24.4	3.45
A6	30 Jul 2019	6	16.99	73.91	8.8	33.73	8.3	24.5	3.84
A6	30 Jul 2019	7	16.59	73.56	8.8	33.70	8.3	24.6	4.29
A6	30 Jul 2019	8	16.40	73.45	8.8	33.66	8.3	24.6	4.63
A6	30 Jul 2019	9	16.34	73.54	8.8	33.66	8.3	24.6	4.68
A6	30 Jul 2019	10	15.89	73.72	8.6	33.73	8.3	24.8	4.41
A6	30 Jul 2019	11	15.26	74.20	8.4	33.67	8.3	24.9	4.92
A6	30 Jul 2019	12	15.00	74.17	8.3	33.65	8.3	24.9	5.18
A6	30 Jul 2019	13	14.90	74.43	8.2	33.64	8.3	24.9	5.29
A6	30 Jul 2019	14	14.59	74.34	8.1	33.67	8.3	25.0	5.54
A6	30 Jul 2019	15	14.17	75.91	7.7	33.67	8.3	25.1	5.59
A6	30 Jul 2019	16	13.61	79.10	7.2	33.71	8.3	25.3	4.80
A6	30 Jul 2019	17	12.98	83.39	6.7	33.69	8.3	25.4	3.50
A6	30 Jul 2019	18	12.52	85.13	6.4	33.67	8.3	25.5	2.30
A7	01 Jul 2019	1	17.69	80.16	8.2	33.66	8.2	24.3	1.17
A7	01 Jul 2019	2	17.73	79.84	7.6	33.66	8.2	24.3	1.16
A7	01 Jul 2019	3	14.91	79.76	7.7	33.81	8.2	25.1	2.33
A7	01 Jul 2019	4	14.15	79.23	7.7	33.62	8.2	25.1	3.67
A7	01 Jul 2019	5	13.58	78.35	6.8	33.64	8.2	25.2	4.56
A7	01 Jul 2019	6	13.27	78.94	6.0	33.63	8.2	25.3	3.82
A7	01 Jul 2019	7	12.90	82.26	5.5	33.64	8.2	25.4	2.13
A7	01 Jul 2019	8	12.67	84.85	5.3	33.64	8.1	25.4	1.26
A7	01 Jul 2019	9	12.51	86.01	5.2	33.64	8.1	25.4	0.82
A7	01 Jul 2019	10	12.44	86.66	5.2	33.64	8.1	25.4	0.67
A7	01 Jul 2019	11	12.39	86.68	5.1	33.64	8.1	25.5	0.62
A7	01 Jul 2019	12	12.21	86.86	5.1	33.66	8.1	25.5	0.60
A7	01 Jul 2019	13	12.03	86.96	5.1	33.66	8.1	25.5	0.63
A7	01 Jul 2019	14	11.88	87.14	5.1	33.66	8.1	25.6	0.64
A7	01 Jul 2019	15	11.83	87.30	5.0	33.66	8.1	25.6	0.65
A7	01 Jul 2019	16	11.67	87.36	4.9	33.68	8.1	25.6	0.63
A7	01 Jul 2019	17	11.63	87.43	4.8	33.67	8.1	25.6	0.59
A7	01 Jul 2019	18	11.63	87.43	4.8	33.67	8.1	25.6	0.55
A7	01 Jul 2019	19	11.63	87.16	4.8	33.68	8.1	25.6	0.52
A7	08 Jul 2019	1	19.19	82.48	7.7	33.71	8.2	24.0	0.91
A7	08 Jul 2019	2	19.18	82.53	7.8	33.71	8.2	24.0	0.98
A7	08 Jul 2019	3	19.19	82.55	7.8	33.71	8.2	24.0	1.02
A7	08 Jul 2019	4	19.18	82.56	7.7	33.71	8.2	24.0	1.05
A7	08 Jul 2019	5	19.11	82.18	7.7	33.71	8.2	24.0	1.13
A7	08 Jul 2019	6	18.85	81.53	7.6	33.72	8.2	24.1	1.28
A7	08 Jul 2019	7	18.62	80.68	7.6	33.71	8.2	24.1	1.43
A7	08 Jul 2019	8	18.30	80.03	7.4	33.72	8.2	24.2	1.64
A7	08 Jul 2019	9	18.00	80.13	7.3	33.70	8.2	24.3	1.72
A7	08 Jul 2019	10	17.34	80.99	6.7	33.78	8.2	24.5	1.65
A7	08 Jul 2019	11	15.56	82.64	6.4	33.77	8.2	24.9	1.26
A7	08 Jul 2019	12	15.15	82.80	6.6	33.68	8.1	24.9	1.16
A7	08 Jul 2019	13	14.77	81.86	6.8	33.68	8.1	25.0	1.43
A7	08 Jul 2019	14	14.52	81.79	6.9	33.65	8.1	25.0	1.54
A7	08 Jul 2019	15	14.48	81.93	6.9	33.64	8.1	25.0	1.63
A7	08 Jul 2019	16	14.47	82.01	6.8	33.64	8.1	25.0	1.55
A7	08 Jul 2019	17	14.50	82.07	6.8	33.64	8.1	25.0	1.52
A7	08 Jul 2019	18	14.54	82.14	6.8	33.65	8.1	25.0	1.44
A7	15 Jul 2019	1	20.02	81.11	8.1	33.74	8.2	23.8	1.34
A7	15 Jul 2019	2	19.99	82.05	8.0	33.74	8.2	23.8	1.42
A7	15 Jul 2019	3	19.89	81.92	7.9	33.75	8.2	23.8	1.51
A7	15 Jul 2019	4	19.61	81.70	7.4	33.76	8.2	23.9	1.60

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A7	15 Jul 2019	5	17.97	81.22	6.7	33.83	8.2	24.4	1.64
A7	15 Jul 2019	6	16.21	81.87	6.4	33.75	8.2	24.7	1.58
A7	15 Jul 2019	7	14.91	82.18	6.3	33.73	8.1	25.0	1.68
A7	15 Jul 2019	8	13.75	82.35	5.9	33.73	8.1	25.3	1.58
A7	15 Jul 2019	9	12.57	83.90	5.5	33.70	8.1	25.5	1.22
A7	15 Jul 2019	10	12.18	85.13	5.2	33.65	8.1	25.5	0.98
A7	15 Jul 2019	11	11.87	85.67	5.1	33.68	8.1	25.6	0.95
A7	15 Jul 2019	12	11.58	86.26	5.0	33.66	8.1	25.6	0.93
A7	15 Jul 2019	13	11.54	86.59	4.9	33.66	8.0	25.6	0.87
A7	15 Jul 2019	14	11.54	86.31	4.9	33.67	8.0	25.6	0.88
A7	15 Jul 2019	15	11.53	86.42	4.9	33.68	8.0	25.6	0.81
A7	15 Jul 2019	16	11.52	86.50	4.8	33.68	8.0	25.7	0.80
A7	15 Jul 2019	17	11.51	86.43	4.8	33.69	8.0	25.7	0.82
A7	15 Jul 2019	18	11.50	86.34	4.8	33.69	8.0	25.7	0.77
A7	15 Jul 2019	19	11.50	86.02	4.8	33.69	8.0	25.7	0.73
A7	24 Jul 2019	1	20.54	78.04	8.1	33.74	8.2	23.7	0.89
A7	24 Jul 2019	2	20.14	79.99	8.2	33.76	8.2	23.8	1.06
A7	24 Jul 2019	3	19.81	80.38	8.2	33.73	8.2	23.8	1.34
A7	24 Jul 2019	4	18.74	80.71	8.2	33.76	8.2	24.1	1.61
A7	24 Jul 2019	5	18.10	80.22	8.1	33.73	8.2	24.3	1.95
A7	24 Jul 2019	6	16.66	80.14	7.6	33.74	8.2	24.6	2.32
A7	24 Jul 2019	7	14.81	79.50	7.2	33.72	8.1	25.0	2.45
A7	24 Jul 2019	8	13.81	80.35	6.8	33.66	8.0	25.2	2.14
A7	24 Jul 2019	9	13.54	82.05	6.6	33.64	8.0	25.2	1.62
A7	24 Jul 2019	10	13.45	83.52	6.4	33.64	8.0	25.2	1.24
A7	24 Jul 2019	11	13.42	83.98	6.4	33.64	8.0	25.3	1.08
A7	24 Jul 2019	12	13.30	84.18	6.3	33.66	8.0	25.3	1.02
A7	24 Jul 2019	13	13.11	84.24	6.0	33.66	8.0	25.3	0.93
A7	24 Jul 2019	14	12.74	84.59	5.8	33.69	8.0	25.4	0.86
A7	24 Jul 2019	15	12.53	84.71	5.6	33.67	7.9	25.5	0.80
A7	24 Jul 2019	16	12.42	85.11	5.5	33.68	7.9	25.5	0.74
A7	24 Jul 2019	17	12.33	85.46	5.4	33.67	7.9	25.5	0.67
A7	24 Jul 2019	18	12.25	85.46	5.3	33.69	7.9	25.5	0.65
A7	24 Jul 2019	19	12.03	85.39	5.2	33.70	7.9	25.6	0.70
A7	30 Jul 2019	1	18.90	78.14	8.3	33.70	8.2	24.1	2.05
A7	30 Jul 2019	2	18.10	77.27	8.6	33.72	8.2	24.3	2.66
A7	30 Jul 2019	3	17.35	75.34	8.9	33.67	8.2	24.4	3.47
A7	30 Jul 2019	4	16.94	74.33	8.7	33.66	8.2	24.5	4.08
A7	30 Jul 2019	5	15.60	73.52	8.3	33.70	8.2	24.8	4.69
A7	30 Jul 2019	6	13.86	73.62	8.2	33.64	8.2	25.2	5.75
A7	30 Jul 2019	7	13.42	73.89	8.1	33.58	8.2	25.2	6.75
A7	30 Jul 2019	8	13.43	73.79	8.1	33.56	8.2	25.2	7.09
A7	30 Jul 2019	9	13.49	73.75	8.0	33.58	8.2	25.2	7.46
A7	30 Jul 2019	10	13.21	73.58	7.9	33.59	8.2	25.3	7.80
A7	30 Jul 2019	11	13.18	73.56	7.8	33.58	8.2	25.3	7.75
A7	30 Jul 2019	12	13.16	73.87	7.7	33.59	8.2	25.3	7.68
A7	30 Jul 2019	13	13.13	74.31	7.6	33.59	8.2	25.3	7.42
A7	30 Jul 2019	14	13.08	74.51	7.5	33.60	8.2	25.3	6.80
A7	30 Jul 2019	15	13.04	75.85	7.4	33.60	8.2	25.3	5.76
A7	30 Jul 2019	16	13.02	77.67	7.3	33.61	8.2	25.3	4.66
A7	30 Jul 2019	17	12.99	79.58	7.0	33.61	8.2	25.3	3.60
A7	30 Jul 2019	18	12.96	80.19	6.8	33.62	8.2	25.3	2.44
A7	30 Jul 2019	19	12.86	82.08	6.6	33.64	8.2	25.4	1.76
C4	01 Jul 2019	1	18.80	79.68	9.0	33.69	8.3	24.1	0.71
C4	01 Jul 2019	2	18.76	79.44	8.6	33.69	8.3	24.1	0.78
C4	01 Jul 2019	3	17.74	77.85	6.9	33.76	8.3	24.4	1.18
C4	01 Jul 2019	4	15.93	77.86	5.3	33.77	8.3	24.8	1.22
C4	01 Jul 2019	5	14.76	81.16	5.2	33.71	8.2	25.0	1.09

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
C4	01 Jul 2019	6	14.09	82.93	5.8	33.67	8.2	25.1	1.04
C4	01 Jul 2019	7	13.68	83.45	5.8	33.66	8.2	25.2	1.06
C4	01 Jul 2019	8	13.34	84.18	4.9	33.64	8.2	25.3	0.91
C4	01 Jul 2019	9	13.26	83.63	3.8	33.63	8.2	25.3	0.57
C4	01 Jul 2019	10	13.50	82.61	3.8	33.63	8.1	25.2	0.59
C4	01 Jul 2019	11	13.20	79.29	2.9	33.65	8.1	25.3	0.41
C4	01 Jul 2019	12	13.19	78.85	2.6	33.65	8.1	25.3	0.34
C4	08 Jul 2019	1	18.91	71.25	7.5	33.70	8.2	24.1	0.91
C4	08 Jul 2019	2	18.90	70.86	7.4	33.70	8.2	24.1	0.96
C4	08 Jul 2019	3	18.90	71.13	7.4	33.70	8.2	24.1	0.98
C4	08 Jul 2019	4	18.89	71.60	7.4	33.70	8.2	24.1	0.97
C4	08 Jul 2019	5	18.89	71.27	7.4	33.70	8.2	24.1	0.97
C4	08 Jul 2019	6	18.87	70.49	7.3	33.70	8.1	24.1	0.98
C4	08 Jul 2019	7	18.84	70.01	7.2	33.71	8.1	24.1	0.93
C4	08 Jul 2019	8	18.77	69.50	7.1	33.70	8.1	24.1	0.87
C4	08 Jul 2019	9	18.69	65.73	7.0	33.70	8.1	24.1	0.90
C4	08 Jul 2019	10	18.65	57.60	7.0	33.70	8.1	24.1	0.98
C4	15 Jul 2019	1	19.99	74.91	8.2	33.74	8.2	23.8	1.23
C4	15 Jul 2019	2	20.03	76.38	8.1	33.74	8.2	23.8	1.20
C4	15 Jul 2019	3	20.02	76.31	8.1	33.74	8.2	23.8	1.22
C4	15 Jul 2019	4	19.84	76.46	7.6	33.77	8.2	23.9	1.20
C4	15 Jul 2019	5	18.45	76.73	6.0	33.86	8.2	24.3	1.06
C4	15 Jul 2019	6	14.49	77.16	4.5	33.92	8.2	25.2	0.77
C4	15 Jul 2019	7	13.43	80.12	4.4	33.72	8.1	25.3	0.59
C4	15 Jul 2019	8	13.15	81.45	4.2	33.67	8.1	25.3	0.51
C4	15 Jul 2019	9	13.05	78.96	4.0	33.66	8.1	25.3	0.44
C4	15 Jul 2019	10	13.04	77.06	4.0	33.66	8.0	25.3	0.43
C4	15 Jul 2019	11	13.03	71.78	3.9	33.66	8.0	25.4	0.42
C4	24 Jul 2019	1	21.18	79.65	8.6	33.76	8.3	23.5	0.70
C4	24 Jul 2019	2	21.23	80.04	8.5	33.75	8.2	23.5	0.70
C4	24 Jul 2019	3	21.20	79.95	8.4	33.76	8.3	23.5	0.74
C4	24 Jul 2019	4	21.13	80.19	8.5	33.76	8.2	23.5	0.81
C4	24 Jul 2019	5	21.15	79.94	8.4	33.76	8.2	23.5	0.83
C4	24 Jul 2019	6	20.81	80.00	8.0	33.78	8.2	23.6	0.90
C4	24 Jul 2019	7	18.40	79.72	6.1	33.98	8.2	24.4	0.87
C4	24 Jul 2019	8	14.32	71.48	4.6	33.83	8.0	25.2	0.98
C4	24 Jul 2019	9	13.23	68.66	4.3	33.71	7.8	25.3	0.82
C4	24 Jul 2019	10	12.85	71.32	4.2	33.65	7.8	25.4	0.55
C4	24 Jul 2019	11	12.72	67.58	4.2	33.64	7.8	25.4	0.54
C4	30 Jul 2019	1	19.25	73.73	8.7	33.69	8.2	24.0	2.77
C4	30 Jul 2019	2	19.60	73.56	8.6	33.70	8.2	23.9	2.64
C4	30 Jul 2019	3	18.69	73.91	8.7	33.73	8.2	24.1	3.05
C4	30 Jul 2019	4	17.90	73.23	8.6	33.71	8.2	24.3	3.77
C4	30 Jul 2019	5	16.73	72.75	8.5	33.68	8.2	24.6	4.77
C4	30 Jul 2019	6	15.84	73.29	8.2	33.65	8.2	24.7	5.37
C4	30 Jul 2019	7	15.42	74.61	7.7	33.63	8.2	24.8	4.92
C4	30 Jul 2019	8	15.01	76.37	7.0	33.63	8.2	24.9	4.14
C4	30 Jul 2019	9	14.73	77.72	6.1	33.63	8.2	25.0	3.11
C4	30 Jul 2019	10	14.47	78.66	5.1	33.63	8.2	25.0	1.82
C4	30 Jul 2019	11	14.35	78.01	4.7	33.62	8.2	25.0	1.11
C5	01 Jul 2019	1	18.38	78.13	8.8	33.69	8.3	24.2	0.80
C5	01 Jul 2019	2	18.29	78.40	8.4	33.69	8.3	24.2	1.00
C5	01 Jul 2019	3	17.43	76.88	7.4	33.76	8.3	24.5	1.75
C5	01 Jul 2019	4	15.97	75.35	6.6	33.71	8.3	24.8	3.15
C5	01 Jul 2019	5	15.19	77.88	6.3	33.71	8.3	24.9	3.05
C5	01 Jul 2019	6	14.13	82.30	6.4	33.68	8.2	25.1	1.97

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
C5	01 Jul 2019	7	13.75	81.90	6.1	33.66	8.2	25.2	1.53
C5	01 Jul 2019	8	13.48	84.79	5.6	33.65	8.2	25.2	0.93
C5	01 Jul 2019	9	13.25	85.49	5.4	33.65	8.2	25.3	0.68
C5	01 Jul 2019	10	13.18	85.70	5.3	33.64	8.2	25.3	0.63
C5	01 Jul 2019	11	13.08	84.64	5.3	33.65	8.2	25.3	0.53
C5	08 Jul 2019	1	19.17	82.63	7.8	33.71	8.2	24.0	0.75
C5	08 Jul 2019	2	19.14	81.93	7.7	33.71	8.2	24.0	0.78
C5	08 Jul 2019	3	19.14	81.59	7.7	33.71	8.2	24.0	0.84
C5	08 Jul 2019	4	19.10	81.23	7.6	33.71	8.2	24.0	0.82
C5	08 Jul 2019	5	19.02	80.45	7.5	33.71	8.2	24.0	0.76
C5	08 Jul 2019	6	18.60	79.64	7.3	33.72	8.2	24.1	0.80
C5	08 Jul 2019	7	18.12	79.77	7.3	33.71	8.2	24.3	0.92
C5	08 Jul 2019	8	17.85	80.60	7.0	33.70	8.2	24.3	0.97
C5	08 Jul 2019	9	16.89	81.21	6.4	33.74	8.2	24.6	0.83
C5	08 Jul 2019	10	15.81	79.21	6.2	33.72	8.2	24.8	0.70
C5	08 Jul 2019	11	15.34	70.66	6.2	33.66	8.2	24.9	0.63
C5	15 Jul 2019	1	20.08	81.56	8.0	33.75	8.2	23.8	1.18
C5	15 Jul 2019	2	20.06	81.46	8.0	33.75	8.2	23.8	1.25
C5	15 Jul 2019	3	19.96	80.69	7.8	33.75	8.2	23.8	1.31
C5	15 Jul 2019	4	19.62	80.76	7.1	33.77	8.2	23.9	1.21
C5	15 Jul 2019	5	18.03	80.94	6.1	33.81	8.2	24.4	0.86
C5	15 Jul 2019	6	16.53	81.83	5.6	33.76	8.2	24.7	0.67
C5	15 Jul 2019	7	15.54	82.44	5.5	33.73	8.1	24.9	0.60
C5	15 Jul 2019	8	14.88	82.65	5.4	33.69	8.1	25.0	0.58
C5	15 Jul 2019	9	14.42	82.98	5.3	33.69	8.1	25.1	0.57
C5	15 Jul 2019	10	14.05	83.06	5.2	33.66	8.1	25.1	0.49
C5	15 Jul 2019	11	14.03	82.51	5.2	33.66	8.1	25.1	0.46
C5	24 Jul 2019	1	21.23	81.22	8.5	33.76	8.2	23.5	0.72
C5	24 Jul 2019	2	21.13	81.03	8.4	33.69	8.2	23.5	0.79
C5	24 Jul 2019	3	20.58	80.89	8.2	33.78	8.2	23.7	0.92
C5	24 Jul 2019	4	19.88	81.04	8.0	33.77	8.2	23.9	1.07
C5	24 Jul 2019	5	18.88	80.77	7.7	33.78	8.2	24.1	1.14
C5	24 Jul 2019	6	16.95	80.69	7.6	33.80	8.2	24.6	1.20
C5	24 Jul 2019	7	15.07	81.23	7.6	33.72	8.1	25.0	1.16
C5	24 Jul 2019	8	14.13	82.11	7.3	33.67	8.1	25.1	1.02
C5	24 Jul 2019	9	13.48	82.78	6.7	33.65	8.0	25.3	0.77
C5	24 Jul 2019	10	13.08	83.39	6.3	33.65	8.0	25.3	0.52
C5	24 Jul 2019	11	12.90	82.49	6.3	33.63	8.0	25.3	0.43
C5	30 Jul 2019	1	21.20	79.27	8.1	33.75	8.2	23.5	1.03
C5	30 Jul 2019	2	21.00	79.03	8.0	33.76	8.3	23.5	1.26
C5	30 Jul 2019	3	19.66	77.60	7.6	33.78	8.3	23.9	2.02
C5	30 Jul 2019	4	17.35	75.55	7.2	33.79	8.3	24.5	2.79
C5	30 Jul 2019	5	15.16	75.10	7.0	33.71	8.3	24.9	2.78
C5	30 Jul 2019	6	14.61	79.43	6.8	33.65	8.3	25.0	2.08
C5	30 Jul 2019	7	14.10	82.04	6.9	33.62	8.3	25.1	1.83
C5	30 Jul 2019	8	13.91	82.37	6.9	33.60	8.2	25.1	1.66
C5	30 Jul 2019	9	13.79	82.60	6.9	33.59	8.2	25.1	1.44
C5	30 Jul 2019	10	13.76	83.05	6.9	33.60	8.2	25.2	1.21
C5	30 Jul 2019	11	13.88	83.35	6.9	33.58	8.2	25.1	1.21
C6	01 Jul 2019	1	17.76	75.78	8.2	33.67	8.3	24.3	1.47
C6	01 Jul 2019	2	16.89	75.40	7.9	33.71	8.3	24.6	1.92
C6	01 Jul 2019	3	16.07	74.59	7.5	33.72	8.2	24.7	2.95
C6	01 Jul 2019	4	15.11	74.58	7.2	33.69	8.2	24.9	3.69
C6	01 Jul 2019	5	14.61	78.98	6.8	33.66	8.2	25.0	3.46
C6	01 Jul 2019	6	14.39	81.77	6.4	33.65	8.2	25.1	3.04
C6	01 Jul 2019	7	14.12	82.77	6.1	33.66	8.2	25.1	2.40

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
C6	01 Jul 2019	8	14.02	83.53	5.9	33.63	8.2	25.1	1.65
C6	01 Jul 2019	9	13.83	81.20	5.6	33.66	8.2	25.2	1.15
C6	08 Jul 2019	1	19.33	85.07	7.7	33.71	8.2	24.0	0.56
C6	08 Jul 2019	2	19.33	85.17	7.7	33.71	8.2	24.0	0.62
C6	08 Jul 2019	3	19.32	85.23	7.7	33.71	8.2	24.0	0.66
C6	08 Jul 2019	4	19.32	85.07	7.6	33.71	8.2	24.0	0.68
C6	08 Jul 2019	5	19.30	84.95	7.6	33.71	8.2	24.0	0.69
C6	08 Jul 2019	6	19.20	84.87	7.4	33.72	8.2	24.0	0.64
C6	08 Jul 2019	7	18.88	84.66	7.2	33.72	8.2	24.1	0.60
C6	08 Jul 2019	8	18.30	83.67	7.0	33.72	8.2	24.2	0.57
C6	08 Jul 2019	9	17.89	82.82	7.0	33.71	8.2	24.3	0.55
C6	15 Jul 2019	1	20.22	80.88	8.1	33.75	8.2	23.7	1.31
C6	15 Jul 2019	2	20.20	80.71	8.0	33.75	8.2	23.8	1.39
C6	15 Jul 2019	3	20.13	80.74	7.7	33.75	8.2	23.8	1.41
C6	15 Jul 2019	4	19.38	80.65	7.0	33.81	8.2	24.0	1.28
C6	15 Jul 2019	5	18.58	80.43	6.6	33.73	8.2	24.2	1.78
C6	15 Jul 2019	6	16.74	81.81	6.2	33.84	8.2	24.7	1.49
C6	15 Jul 2019	7	16.17	83.22	6.0	33.69	8.1	24.7	1.05
C6	15 Jul 2019	8	16.11	83.08	5.7	33.71	8.1	24.7	0.92
C6	15 Jul 2019	9	15.41	81.94	5.3	33.68	8.1	24.9	0.64
C6	15 Jul 2019	10	15.25	79.96	5.2	33.69	8.1	24.9	0.53
C6	24 Jul 2019	1	20.91	79.88	8.5	33.74	8.2	23.6	0.99
C6	24 Jul 2019	2	21.00	80.61	8.5	33.75	8.2	23.5	0.93
C6	24 Jul 2019	3	21.00	80.56	8.4	33.75	8.2	23.5	1.00
C6	24 Jul 2019	4	20.65	79.24	8.3	33.73	8.2	23.6	1.63
C6	24 Jul 2019	5	20.17	78.90	8.4	33.73	8.2	23.8	1.47
C6	24 Jul 2019	6	18.99	78.93	8.2	33.68	8.2	24.0	1.43
C6	24 Jul 2019	7	17.88	79.09	8.0	33.68	8.2	24.3	1.68
C6	24 Jul 2019	8	16.43	79.15	7.5	33.64	8.1	24.6	1.83
C6	24 Jul 2019	9	15.17	78.98	7.6	33.59	8.1	24.9	1.35
C6	30 Jul 2019	1	21.43	76.95	8.4	33.74	8.2	23.4	1.51
C6	30 Jul 2019	2	20.93	76.74	8.2	33.76	8.2	23.6	1.71
C6	30 Jul 2019	3	18.48	75.74	8.3	33.81	8.2	24.2	2.45
C6	30 Jul 2019	4	16.47	73.78	8.1	33.73	8.2	24.7	4.12
C6	30 Jul 2019	5	15.27	73.01	7.6	33.66	8.2	24.9	5.05
C6	30 Jul 2019	6	14.86	75.60	7.3	33.63	8.2	24.9	4.15
C6	30 Jul 2019	7	14.58	78.82	6.9	33.62	8.2	25.0	2.87
C6	30 Jul 2019	8	14.33	81.23	6.3	33.61	8.2	25.0	1.52
C6	30 Jul 2019	9	14.23	80.47	6.2	33.60	8.2	25.1	0.88
C7	01 Jul 2019	1	16.12	73.18	8.1	33.64	8.2	24.7	3.06
C7	01 Jul 2019	2	16.10	72.73	8.1	33.67	8.2	24.7	2.95
C7	01 Jul 2019	3	15.46	73.67	8.5	33.68	8.2	24.9	3.15
C7	01 Jul 2019	4	15.38	75.27	8.7	33.65	8.2	24.8	3.31
C7	01 Jul 2019	5	15.45	74.46	8.3	33.64	8.2	24.8	3.69
C7	01 Jul 2019	6	14.87	77.12	7.8	33.69	8.2	25.0	4.02
C7	01 Jul 2019	7	14.30	78.75	7.4	33.66	8.2	25.1	4.26
C7	01 Jul 2019	8	14.03	79.06	7.5	33.64	8.2	25.1	3.99
C7	01 Jul 2019	9	13.80	79.10	7.4	33.64	8.2	25.2	4.09
C7	01 Jul 2019	10	13.63	79.25	7.0	33.63	8.2	25.2	4.27
C7	01 Jul 2019	11	13.39	79.88	6.5	33.65	8.2	25.3	4.23
C7	01 Jul 2019	12	13.34	80.75	6.3	33.62	8.2	25.3	3.95
C7	01 Jul 2019	13	13.23	81.45	6.0	33.66	8.2	25.3	3.91
C7	01 Jul 2019	14	13.09	82.59	5.5	33.64	8.2	25.3	2.95
C7	01 Jul 2019	15	12.90	84.04	5.1	33.66	8.1	25.4	1.69
C7	01 Jul 2019	16	12.85	85.69	4.9	33.65	8.1	25.4	1.07
C7	01 Jul 2019	17	12.72	86.16	4.8	33.66	8.1	25.4	0.87

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
C7	01 Jul 2019	18	12.67	86.36	4.8	33.65	8.1	25.4	0.69
C7	08 Jul 2019	1	19.35	84.26	7.9	33.72	8.2	23.9	0.62
C7	08 Jul 2019	2	19.35	84.75	7.9	33.72	8.2	23.9	0.64
C7	08 Jul 2019	3	19.34	84.81	7.8	33.72	8.2	24.0	0.66
C7	08 Jul 2019	4	19.30	84.55	7.8	33.72	8.2	24.0	0.71
C7	08 Jul 2019	5	19.19	84.54	7.7	33.72	8.2	24.0	0.77
C7	08 Jul 2019	6	19.04	84.14	7.8	33.71	8.2	24.0	0.87
C7	08 Jul 2019	7	18.94	82.68	7.8	33.71	8.2	24.1	0.98
C7	08 Jul 2019	8	18.66	82.41	7.8	33.70	8.2	24.1	1.06
C7	08 Jul 2019	9	18.58	82.65	7.7	33.70	8.2	24.1	1.17
C7	08 Jul 2019	10	18.56	82.78	7.7	33.69	8.2	24.1	1.34
C7	08 Jul 2019	11	18.48	82.81	7.6	33.70	8.2	24.2	1.46
C7	08 Jul 2019	12	18.24	82.80	7.6	33.70	8.2	24.2	1.49
C7	08 Jul 2019	13	18.09	82.79	7.5	33.69	8.2	24.2	1.52
C7	08 Jul 2019	14	18.02	83.21	7.4	33.70	8.2	24.3	1.37
C7	08 Jul 2019	15	17.43	83.43	7.0	33.72	8.2	24.4	1.30
C7	08 Jul 2019	16	16.71	83.39	6.5	33.71	8.2	24.6	1.08
C7	08 Jul 2019	17	14.99	83.35	6.2	33.70	8.2	25.0	0.91
C7	08 Jul 2019	18	14.51	83.28	6.2	33.67	8.2	25.1	0.74
C7	15 Jul 2019	1	20.21	82.68	7.7	33.72	8.2	23.7	1.09
C7	15 Jul 2019	2	20.31	82.47	7.5	33.74	8.2	23.7	1.18
C7	15 Jul 2019	3	19.60	81.78	7.7	33.75	8.2	23.9	1.64
C7	15 Jul 2019	4	19.02	81.18	7.7	33.73	8.2	24.1	1.93
C7	15 Jul 2019	5	18.02	80.07	7.8	33.74	8.2	24.3	2.15
C7	15 Jul 2019	6	17.12	79.57	7.7	33.71	8.2	24.5	2.31
C7	15 Jul 2019	7	16.54	79.76	7.6	33.68	8.2	24.6	2.47
C7	15 Jul 2019	8	16.03	79.57	7.5	33.68	8.2	24.7	2.85
C7	15 Jul 2019	9	15.19	79.30	7.3	33.68	8.1	24.9	3.11
C7	15 Jul 2019	10	14.45	79.94	7.0	33.67	8.1	25.1	2.75
C7	15 Jul 2019	11	14.04	81.07	6.6	33.64	8.1	25.1	2.06
C7	15 Jul 2019	12	13.85	82.85	6.4	33.64	8.1	25.2	1.58
C7	15 Jul 2019	13	13.46	83.42	5.9	33.66	8.1	25.3	1.18
C7	15 Jul 2019	14	12.96	84.34	5.4	33.68	8.1	25.4	0.90
C7	15 Jul 2019	15	12.44	84.84	5.1	33.69	8.1	25.5	0.70
C7	15 Jul 2019	16	12.02	85.29	4.9	33.68	8.0	25.6	0.65
C7	15 Jul 2019	17	11.90	85.17	4.8	33.67	8.0	25.6	0.60
C7	15 Jul 2019	18	11.86	85.18	4.8	33.67	8.0	25.6	0.61
C7	15 Jul 2019	19	11.87	85.12	4.8	33.67	8.0	25.6	0.58
C7	24 Jul 2019	1	21.21	79.14	7.9	33.75	8.2	23.5	1.09
C7	24 Jul 2019	2	21.21	79.26	8.0	33.75	8.2	23.5	1.09
C7	24 Jul 2019	3	20.86	79.85	8.0	33.77	8.2	23.6	1.13
C7	24 Jul 2019	4	19.38	79.82	8.1	33.85	8.2	24.0	1.23
C7	24 Jul 2019	5	18.16	79.56	8.6	33.73	8.2	24.3	1.43
C7	24 Jul 2019	6	18.00	79.76	8.6	33.68	8.2	24.3	1.53
C7	24 Jul 2019	7	17.54	79.89	8.6	33.70	8.2	24.4	1.58
C7	24 Jul 2019	8	16.86	79.69	8.5	33.69	8.2	24.5	1.76
C7	24 Jul 2019	9	16.11	78.92	8.1	33.72	8.2	24.7	2.12
C7	24 Jul 2019	10	14.64	77.43	7.7	33.70	8.1	25.0	3.02
C7	24 Jul 2019	11	14.29	78.79	7.3	33.65	8.1	25.1	3.35
C7	24 Jul 2019	12	14.13	79.92	7.1	33.64	8.1	25.1	3.20
C7	24 Jul 2019	13	14.00	79.70	7.0	33.64	8.0	25.1	3.12
C7	24 Jul 2019	14	13.97	79.84	7.0	33.63	8.0	25.1	3.14
C7	24 Jul 2019	15	13.90	80.09	7.0	33.65	8.0	25.2	3.13
C7	24 Jul 2019	16	13.87	80.28	6.9	33.64	8.0	25.2	3.00
C7	24 Jul 2019	17	13.90	80.55	6.7	33.64	8.0	25.2	2.94
C7	24 Jul 2019	18	12.98	83.32	6.2	33.70	8.0	25.4	2.20
C7	30 Jul 2019	1	20.84	77.54	8.7	33.74	8.2	23.6	1.53

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C7	30 Jul 2019	2	20.55	77.93	8.8	33.74	8.3	23.7	1.69
C7	30 Jul 2019	3	20.34	77.45	8.9	33.74	8.3	23.7	1.89
C7	30 Jul 2019	4	19.98	76.49	8.9	33.73	8.3	23.8	2.20
C7	30 Jul 2019	5	18.91	75.06	9.3	33.73	8.3	24.1	2.73
C7	30 Jul 2019	6	18.90	74.47	9.2	33.69	8.3	24.0	3.00
C7	30 Jul 2019	7	18.23	73.95	8.8	33.68	8.3	24.2	3.35
C7	30 Jul 2019	8	16.65	71.90	8.0	33.76	8.3	24.6	4.30
C7	30 Jul 2019	9	14.60	71.21	7.7	33.70	8.3	25.1	5.52
C7	30 Jul 2019	10	14.60	75.01	7.4	33.62	8.3	25.0	5.72
C7	30 Jul 2019	11	13.38	79.97	7.2	33.65	8.3	25.3	4.22
C7	30 Jul 2019	12	13.09	81.88	7.2	33.59	8.3	25.3	3.07
C7	30 Jul 2019	13	13.23	82.37	7.0	33.60	8.3	25.3	2.87
C7	30 Jul 2019	14	12.74	83.30	6.9	33.61	8.3	25.4	2.26
C7	30 Jul 2019	15	12.63	84.26	6.6	33.61	8.2	25.4	1.72
C7	30 Jul 2019	16	12.60	85.12	6.5	33.61	8.2	25.4	1.36
C7	30 Jul 2019	17	12.53	85.37	6.4	33.62	8.2	25.4	1.09
C7	30 Jul 2019	18	12.47	85.26	6.3	33.62	8.2	25.4	0.92
C7	30 Jul 2019	19	12.49	85.14	6.3	33.62	8.2	25.4	0.91
C8	01 Jul 2019	1	16.49	73.79	8.2	33.66	8.2	24.6	1.62
C8	01 Jul 2019	2	15.43	72.83	7.8	33.70	8.2	24.9	2.13
C8	01 Jul 2019	3	14.86	74.12	7.7	33.67	8.2	25.0	2.71
C8	01 Jul 2019	4	14.44	75.13	7.5	33.67	8.2	25.1	3.47
C8	01 Jul 2019	5	14.00	74.72	7.3	33.64	8.2	25.1	4.56
C8	01 Jul 2019	6	14.02	75.09	7.3	33.61	8.2	25.1	5.31
C8	01 Jul 2019	7	13.85	76.75	6.9	33.65	8.2	25.2	5.27
C8	01 Jul 2019	8	13.55	77.98	6.5	33.63	8.2	25.2	5.26
C8	01 Jul 2019	9	13.59	77.24	6.4	33.64	8.2	25.2	4.97
C8	01 Jul 2019	10	13.32	79.01	6.0	33.65	8.2	25.3	5.06
C8	01 Jul 2019	11	13.23	80.15	5.7	33.64	8.1	25.3	4.43
C8	01 Jul 2019	12	13.05	82.19	5.4	33.66	8.1	25.3	3.68
C8	01 Jul 2019	13	12.90	83.39	5.2	33.65	8.1	25.4	2.50
C8	01 Jul 2019	14	12.79	84.48	5.0	33.65	8.1	25.4	1.76
C8	01 Jul 2019	15	12.68	85.68	4.9	33.65	8.1	25.4	1.10
C8	01 Jul 2019	16	12.62	86.19	4.8	33.65	8.1	25.4	0.88
C8	01 Jul 2019	17	12.53	86.29	4.7	33.66	8.1	25.4	0.68
C8	01 Jul 2019	18	12.40	86.20	4.6	33.66	8.1	25.5	0.55
C8	01 Jul 2019	19	12.30	85.98	4.7	33.66	8.1	25.5	0.43
C8	08 Jul 2019	1	19.45	84.56	7.9	33.72	8.2	23.9	0.57
C8	08 Jul 2019	2	19.43	84.83	7.9	33.72	8.2	23.9	0.55
C8	08 Jul 2019	3	19.43	85.06	7.9	33.72	8.2	23.9	0.59
C8	08 Jul 2019	4	19.43	85.06	7.9	33.72	8.2	23.9	0.62
C8	08 Jul 2019	5	19.43	85.13	7.9	33.72	8.2	23.9	0.66
C8	08 Jul 2019	6	19.43	85.10	7.9	33.72	8.2	23.9	0.63
C8	08 Jul 2019	7	19.43	85.04	7.9	33.72	8.2	23.9	0.64
C8	08 Jul 2019	8	19.42	84.99	7.9	33.72	8.2	23.9	0.64
C8	08 Jul 2019	9	19.40	84.98	7.8	33.72	8.2	23.9	0.69
C8	08 Jul 2019	10	19.22	84.33	7.8	33.72	8.2	24.0	0.83
C8	08 Jul 2019	11	19.15	83.69	7.8	33.70	8.2	24.0	0.97
C8	08 Jul 2019	12	19.03	83.60	7.8	33.71	8.2	24.0	1.03
C8	08 Jul 2019	13	18.93	83.39	7.7	33.70	8.2	24.1	1.09
C8	08 Jul 2019	14	18.65	82.94	7.6	33.72	8.2	24.1	1.31
C8	08 Jul 2019	15	18.13	82.74	7.6	33.71	8.2	24.3	1.40
C8	08 Jul 2019	16	17.88	82.80	7.5	33.69	8.2	24.3	1.38
C8	08 Jul 2019	17	17.48	83.81	7.0	33.74	8.2	24.4	1.24
C8	08 Jul 2019	18	14.95	83.34	6.4	33.73	8.2	25.0	0.82
C8	15 Jul 2019	1	20.19	77.94	8.0	33.74	8.2	23.8	1.78
C8	15 Jul 2019	2	20.25	77.56	8.0	33.74	8.2	23.7	1.81
C8	15 Jul 2019	3	20.03	77.46	8.0	33.76	8.2	23.8	1.89

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	15 Jul 2019	4	19.67	77.83	8.0	33.76	8.2	23.9	1.89
C8	15 Jul 2019	5	18.70	79.13	7.9	33.78	8.2	24.2	1.88
C8	15 Jul 2019	6	17.96	78.33	7.9	33.73	8.2	24.3	2.21
C8	15 Jul 2019	7	17.39	78.32	8.0	33.70	8.2	24.4	2.64
C8	15 Jul 2019	8	17.24	78.08	8.0	33.68	8.2	24.4	2.90
C8	15 Jul 2019	9	16.71	77.78	7.8	33.70	8.2	24.6	3.01
C8	15 Jul 2019	10	15.57	78.33	7.4	33.76	8.2	24.9	3.06
C8	15 Jul 2019	11	14.65	80.66	6.9	33.67	8.2	25.0	2.44
C8	15 Jul 2019	12	13.80	81.96	6.5	33.73	8.2	25.2	1.93
C8	15 Jul 2019	13	13.38	83.37	6.1	33.65	8.1	25.3	1.38
C8	15 Jul 2019	14	13.22	84.21	5.9	33.66	8.1	25.3	0.99
C8	15 Jul 2019	15	13.14	84.14	5.7	33.66	8.1	25.3	0.88
C8	15 Jul 2019	16	12.94	84.31	5.5	33.67	8.1	25.4	0.71
C8	15 Jul 2019	17	12.90	84.04	5.4	33.67	8.1	25.4	0.63
C8	15 Jul 2019	18	12.89	84.09	5.4	33.67	8.1	25.4	0.59
C8	15 Jul 2019	19	12.90	84.15	5.4	33.67	8.1	25.4	0.59
C8	24 Jul 2019	1	21.19	78.94	8.0	33.74	8.2	23.5	1.01
C8	24 Jul 2019	2	21.05	79.07	8.1	33.75	8.2	23.5	1.03
C8	24 Jul 2019	3	20.91	79.41	8.2	33.74	8.2	23.6	1.15
C8	24 Jul 2019	4	20.05	79.48	8.3	33.78	8.2	23.8	1.22
C8	24 Jul 2019	5	18.95	79.56	8.6	33.73	8.2	24.1	1.35
C8	24 Jul 2019	6	18.43	79.25	8.6	33.70	8.2	24.2	1.48
C8	24 Jul 2019	7	17.36	79.70	8.7	33.70	8.2	24.4	1.68
C8	24 Jul 2019	8	17.08	79.60	8.7	33.66	8.2	24.5	1.96
C8	24 Jul 2019	9	16.77	79.25	8.6	33.66	8.2	24.5	2.15
C8	24 Jul 2019	10	16.69	79.35	8.4	33.65	8.2	24.6	2.26
C8	24 Jul 2019	11	15.86	78.93	7.8	33.71	8.2	24.8	2.79
C8	24 Jul 2019	12	14.38	76.44	7.2	33.71	8.1	25.1	3.41
C8	24 Jul 2019	13	13.86	78.12	6.8	33.66	8.0	25.2	2.68
C8	24 Jul 2019	14	13.64	81.61	6.6	33.64	8.0	25.2	2.04
C8	24 Jul 2019	15	13.49	82.57	6.4	33.65	8.0	25.2	1.60
C8	24 Jul 2019	16	13.05	84.11	6.0	33.67	8.0	25.4	1.05
C8	24 Jul 2019	17	12.27	84.84	5.3	33.72	7.9	25.5	0.72
C8	24 Jul 2019	18	11.19	85.62	4.9	33.71	7.9	25.7	0.57
C8	24 Jul 2019	19	11.10	86.15	4.8	33.68	7.8	25.7	0.48
C8	30 Jul 2019	1	20.85	74.44	8.7	33.73	8.3	23.6	1.83
C8	30 Jul 2019	2	20.85	75.11	8.7	33.74	8.3	23.6	1.93
C8	30 Jul 2019	3	20.78	75.22	8.8	33.73	8.3	23.6	2.06
C8	30 Jul 2019	4	20.73	75.15	8.8	33.73	8.3	23.6	2.16
C8	30 Jul 2019	5	20.68	75.16	8.7	33.73	8.3	23.6	2.22
C8	30 Jul 2019	6	19.84	75.30	8.5	33.78	8.3	23.9	2.42
C8	30 Jul 2019	7	17.44	73.91	8.9	33.75	8.3	24.4	2.86
C8	30 Jul 2019	8	15.68	72.95	8.8	33.70	8.3	24.8	3.62
C8	30 Jul 2019	9	14.70	72.14	8.4	33.65	8.3	25.0	4.65
C8	30 Jul 2019	10	14.21	72.74	7.9	33.62	8.3	25.1	5.39
C8	30 Jul 2019	11	13.65	75.92	7.4	33.61	8.3	25.2	4.99
C8	30 Jul 2019	12	13.33	79.94	7.1	33.61	8.3	25.2	3.67
C8	30 Jul 2019	13	13.09	81.99	6.9	33.61	8.3	25.3	2.78
C8	30 Jul 2019	14	12.94	83.25	6.8	33.60	8.3	25.3	2.13
C8	30 Jul 2019	15	12.86	83.81	6.7	33.61	8.3	25.3	1.83
C8	30 Jul 2019	16	12.70	84.43	6.6	33.61	8.3	25.4	1.53
C8	30 Jul 2019	17	12.67	84.97	6.4	33.61	8.2	25.4	1.40
C8	30 Jul 2019	18	12.50	84.99	6.4	33.62	8.2	25.4	1.25
C8	30 Jul 2019	19	12.48	84.80	6.4	33.62	8.2	25.4	1.31

NA = not available

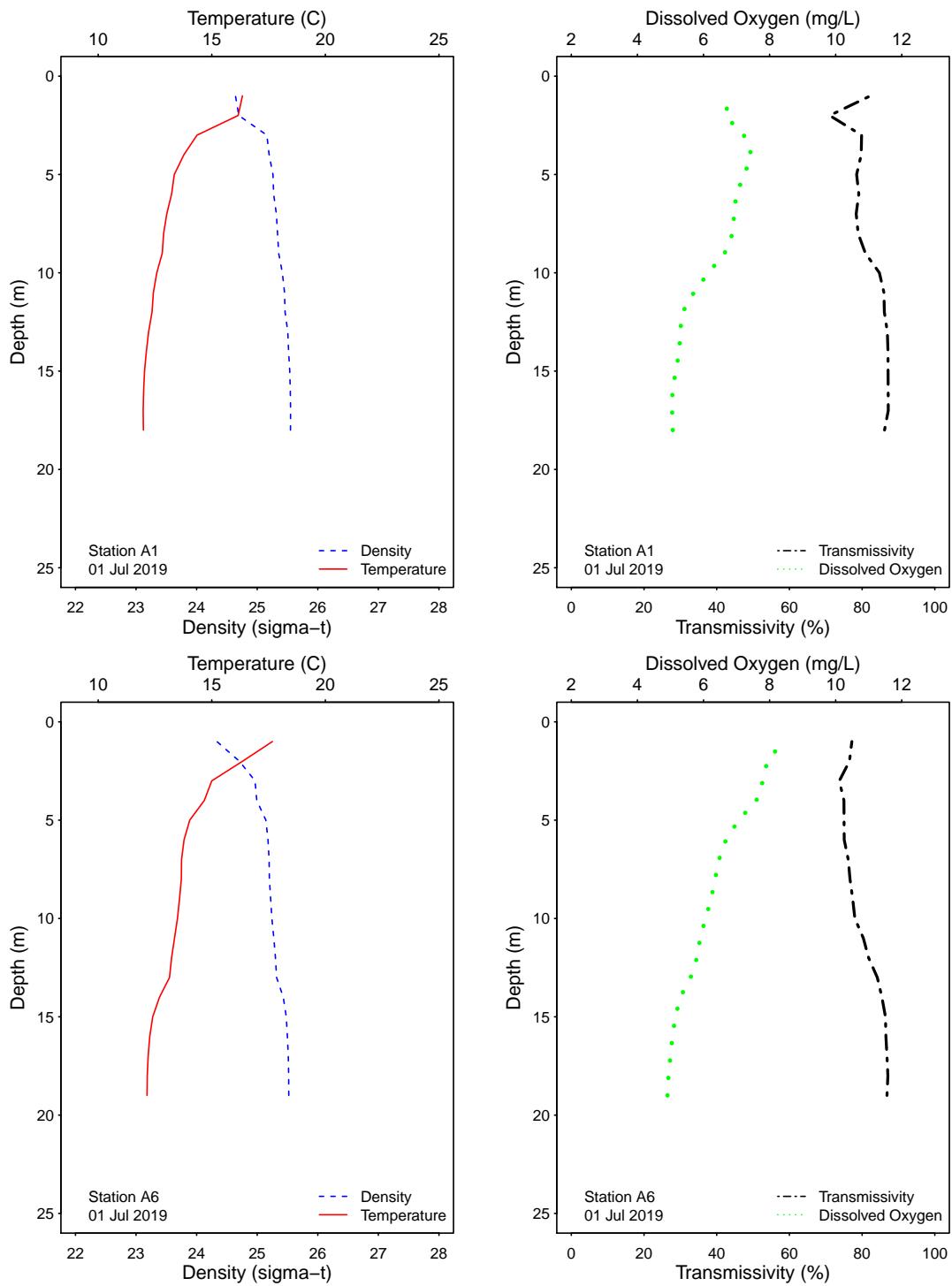


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

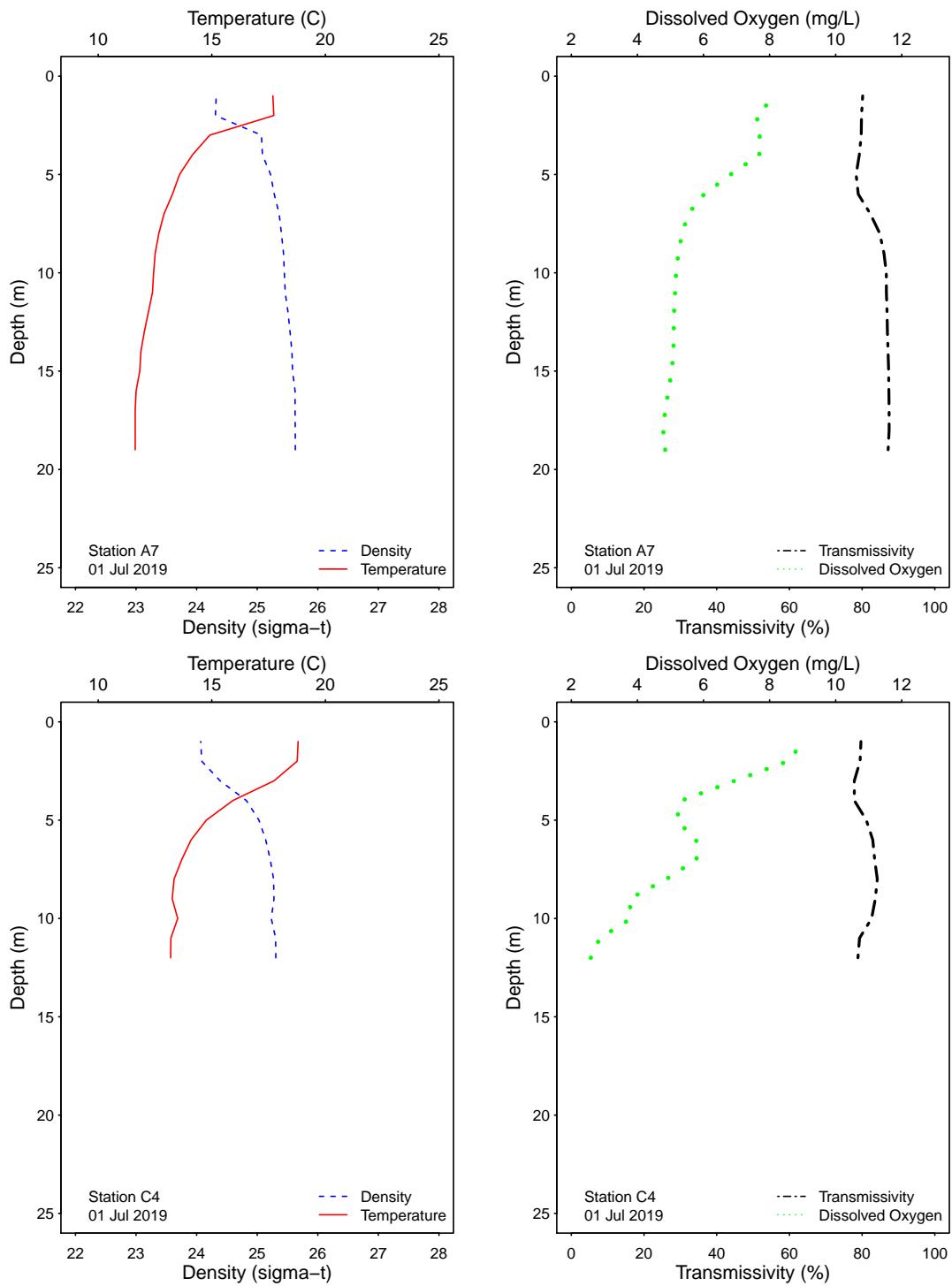


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

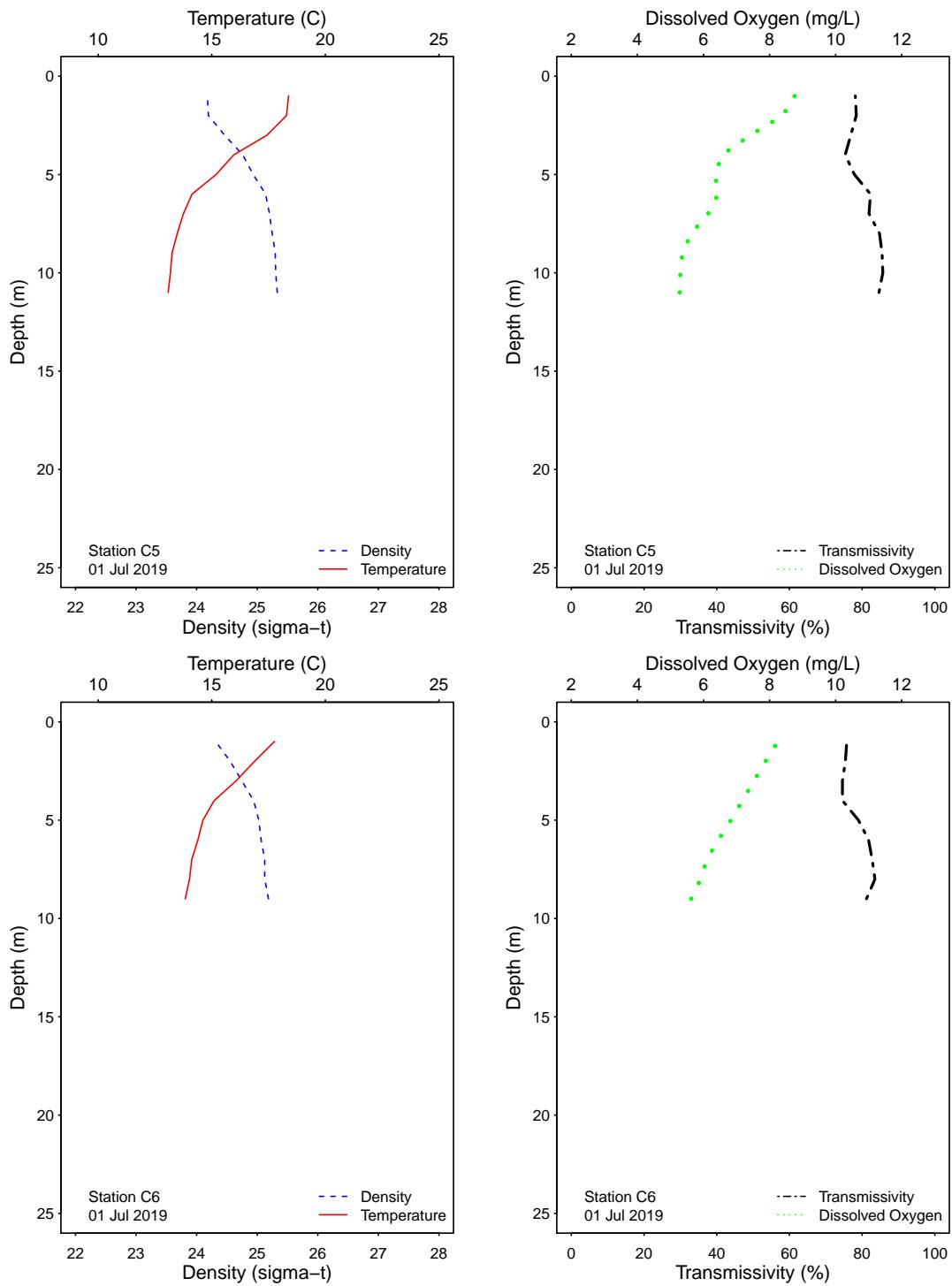


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

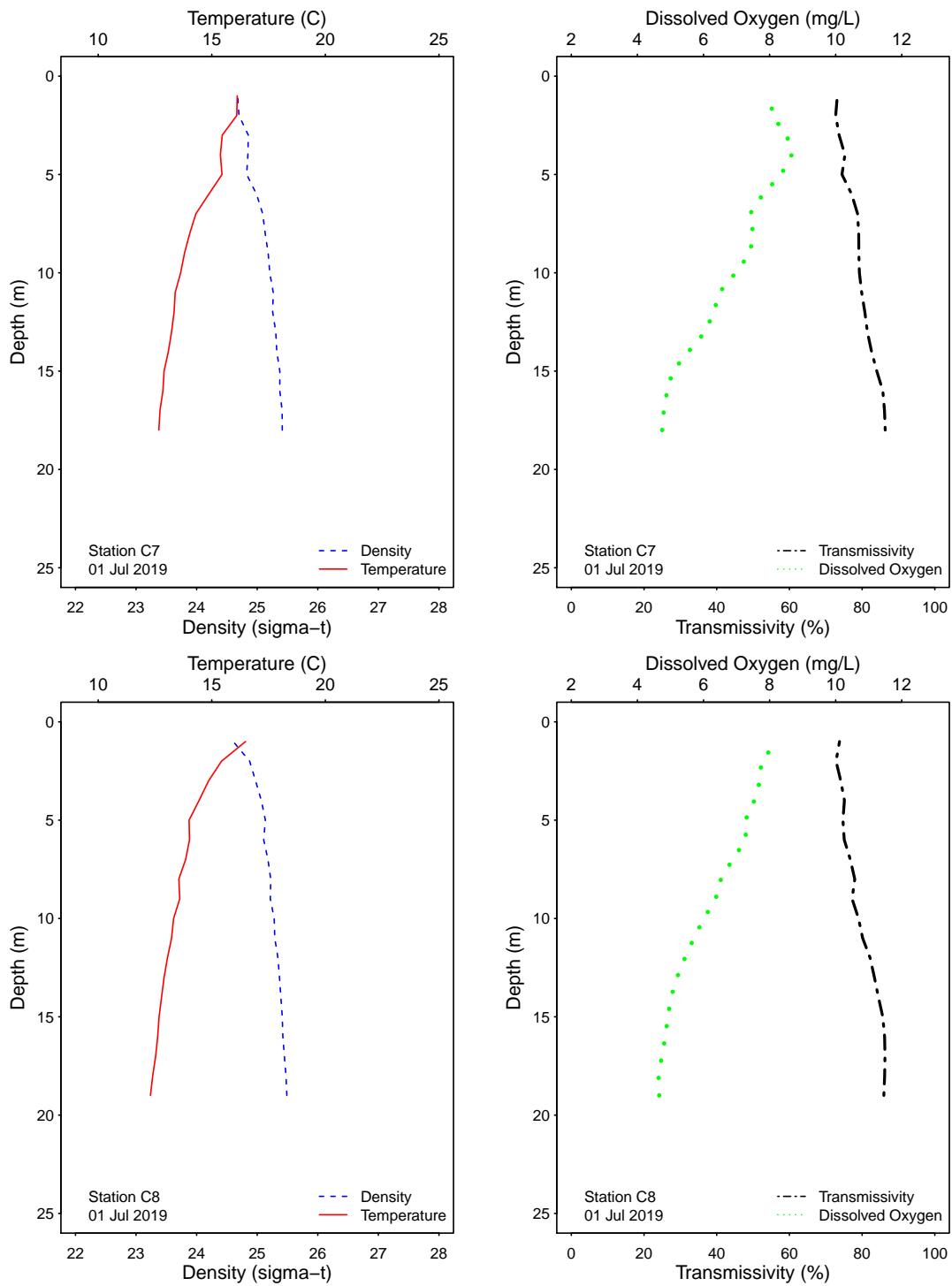


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

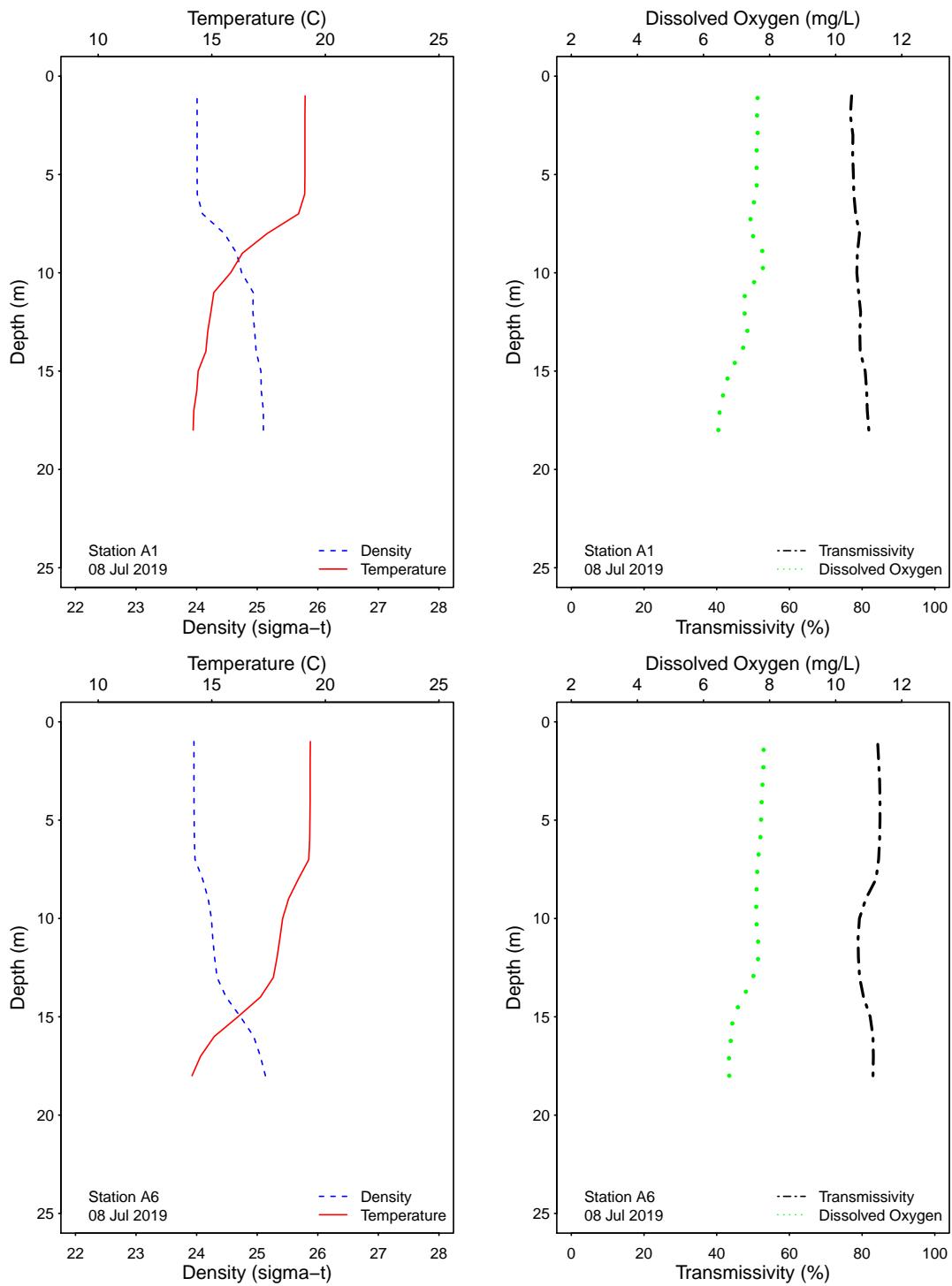


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

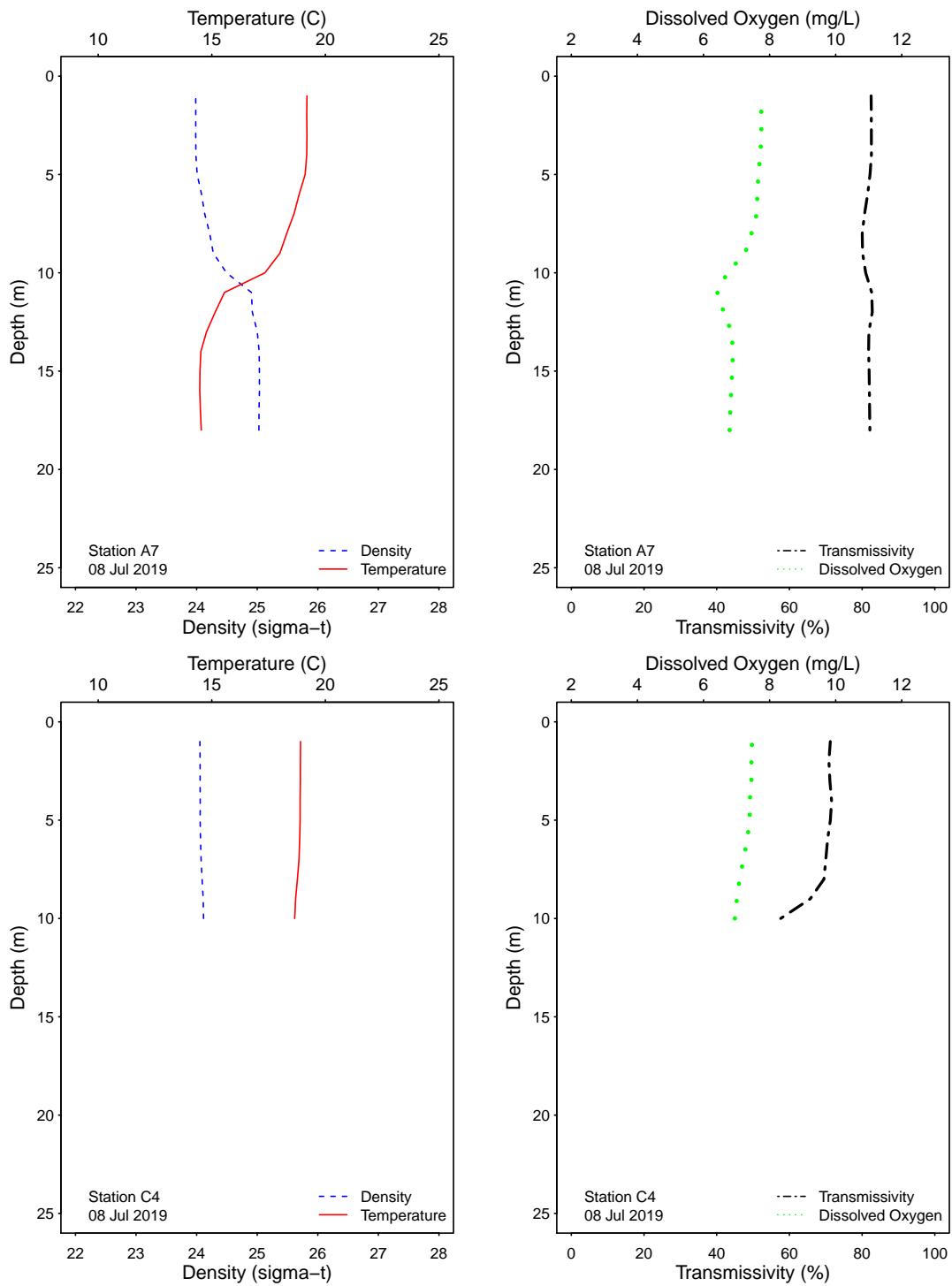


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

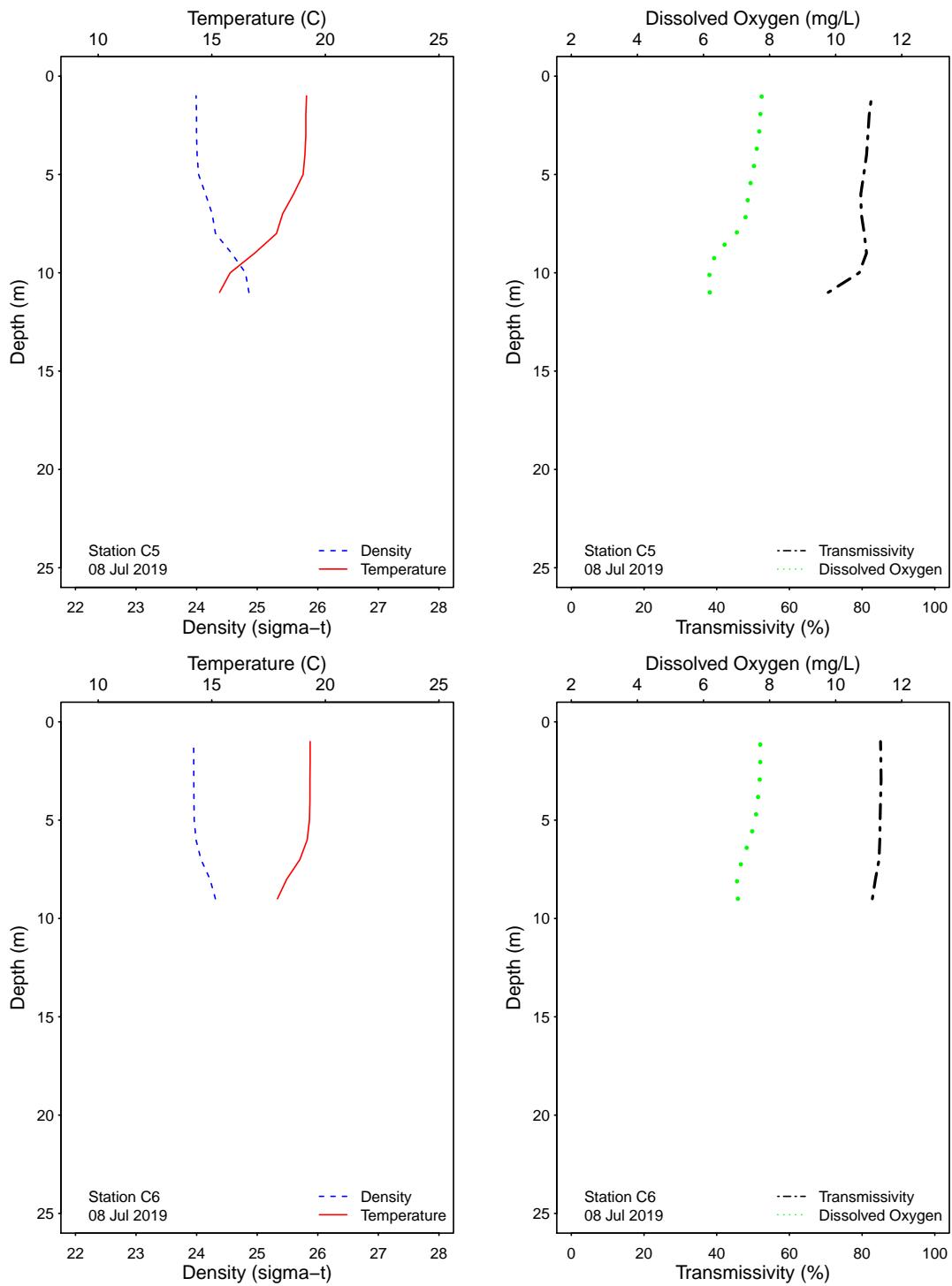


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

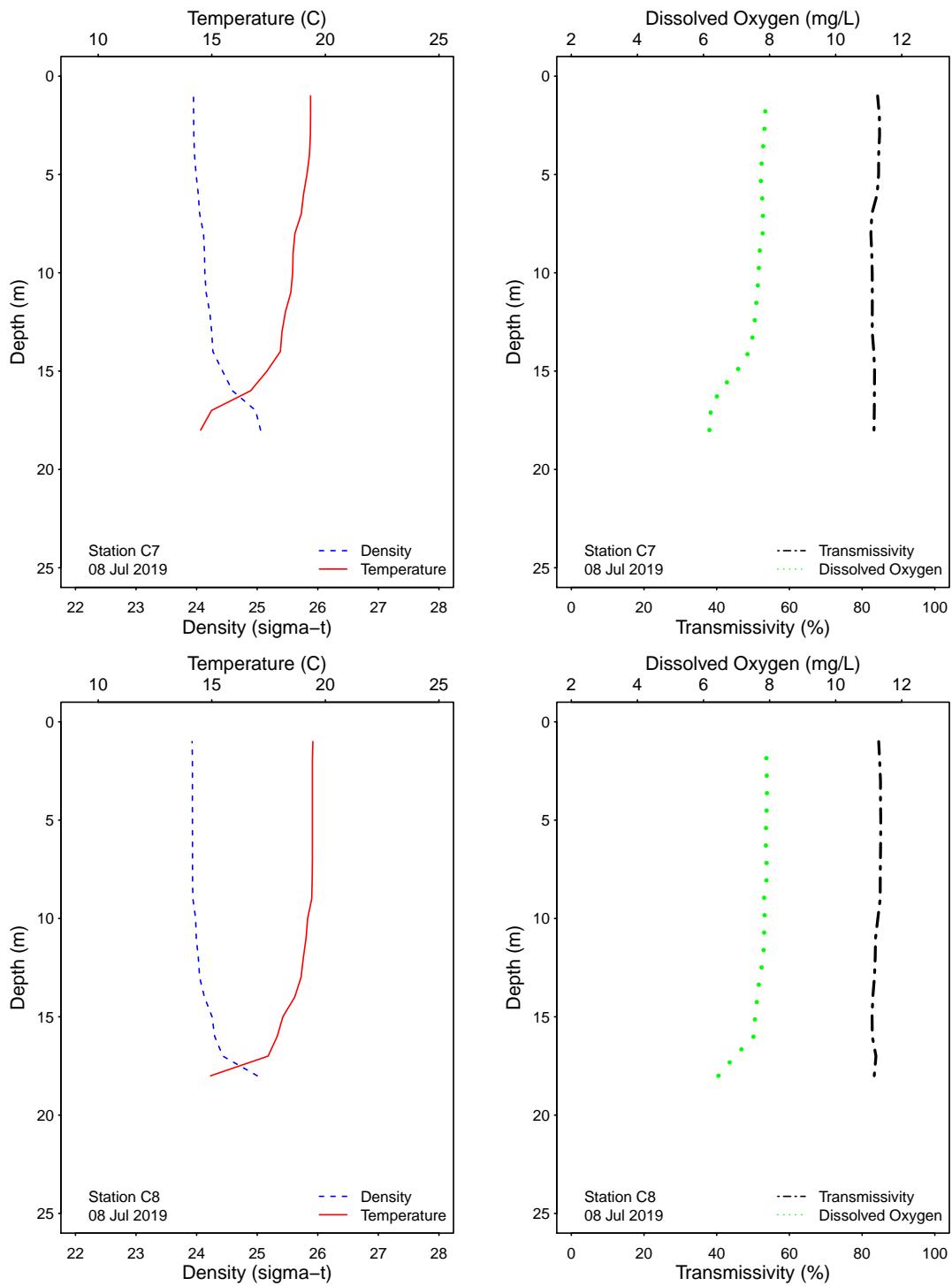


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

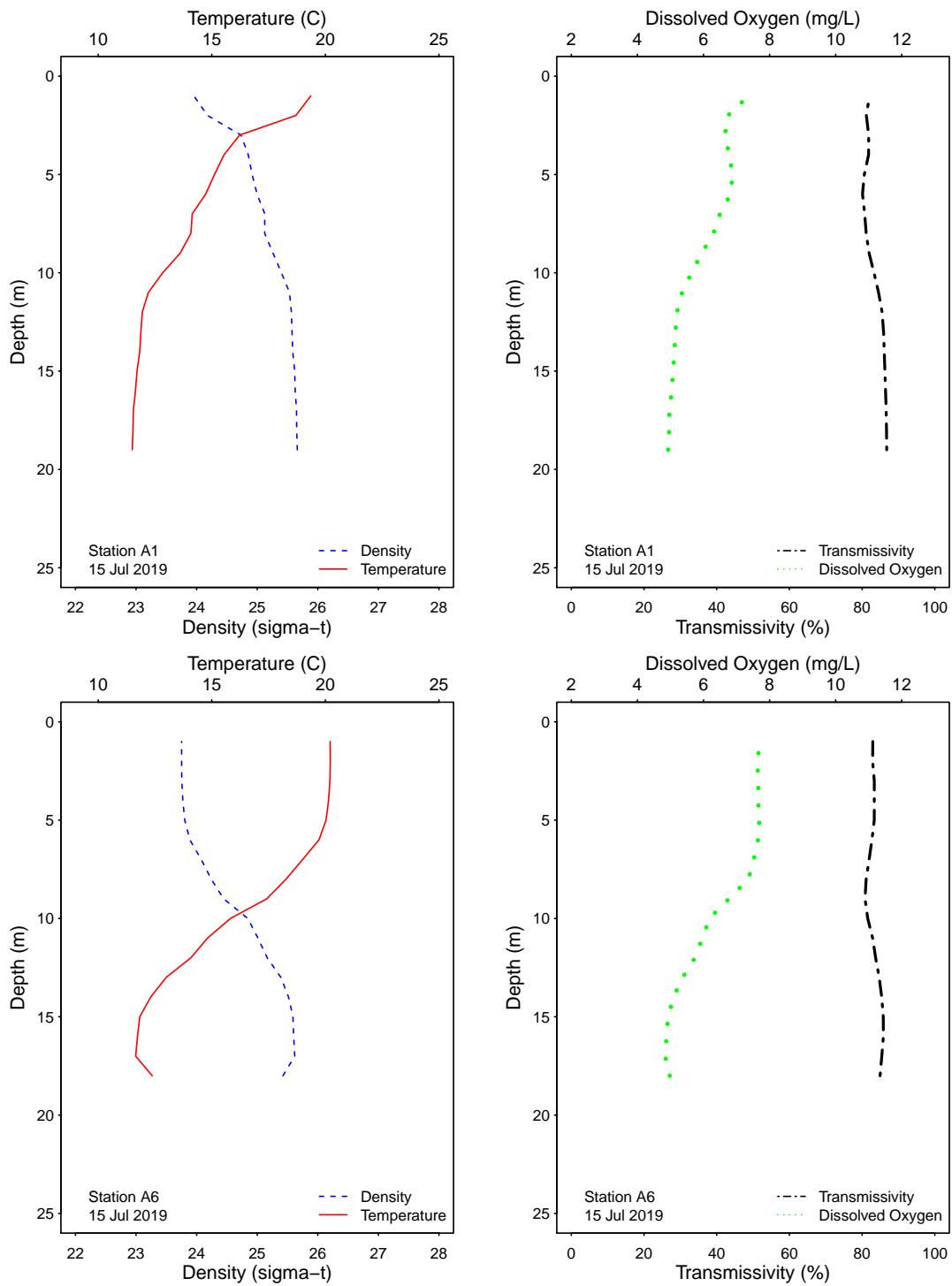


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

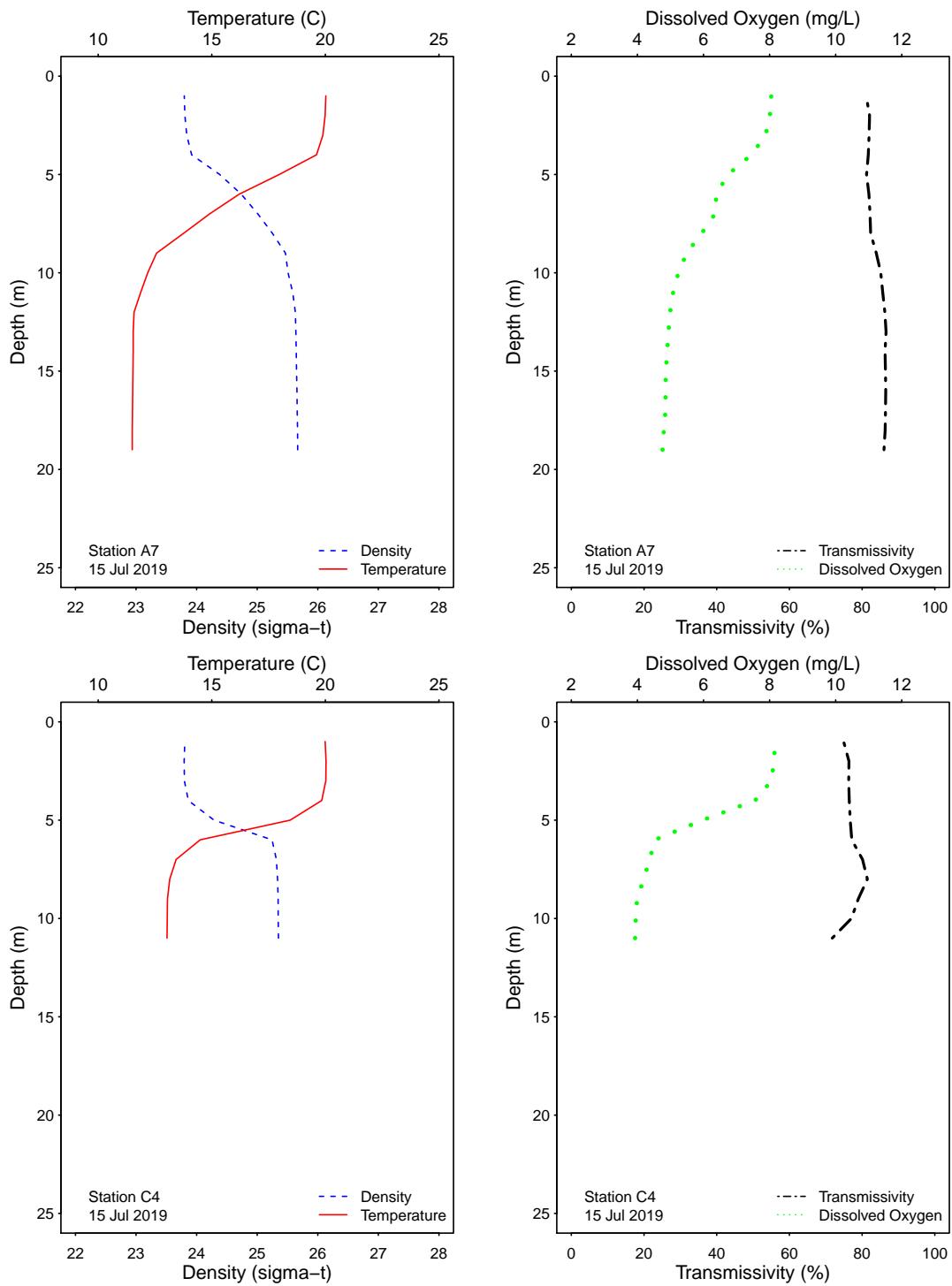


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

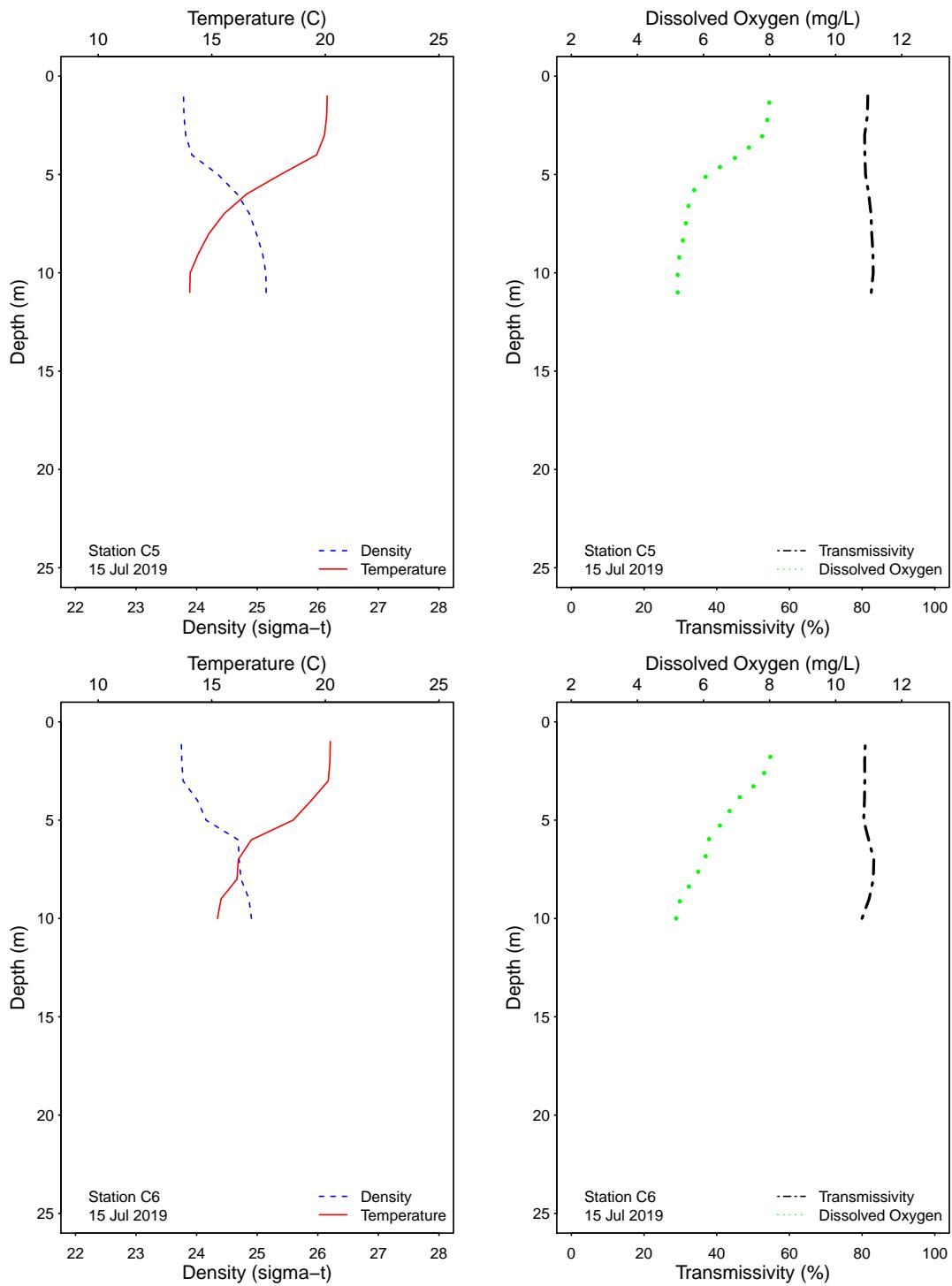


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

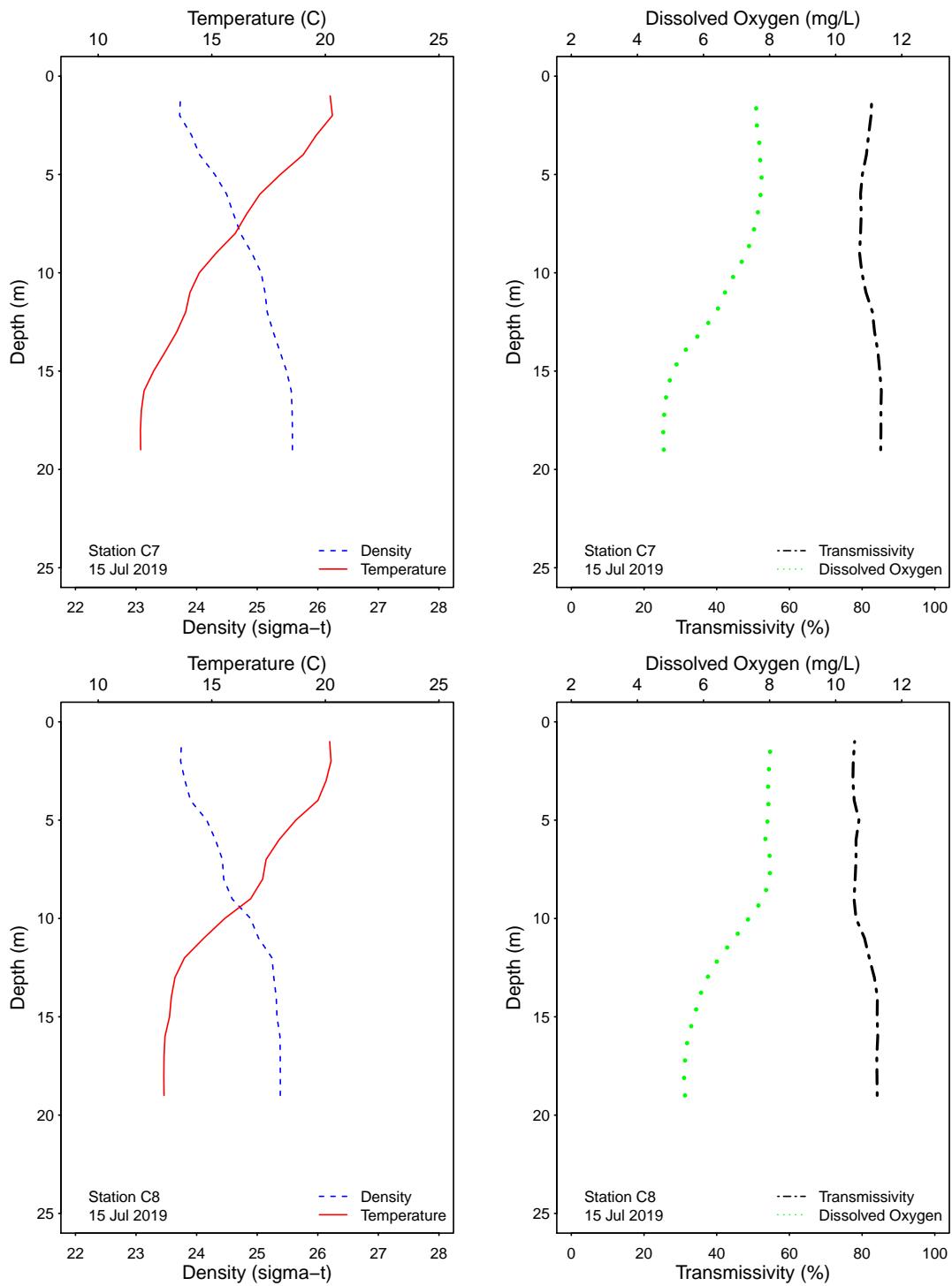


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

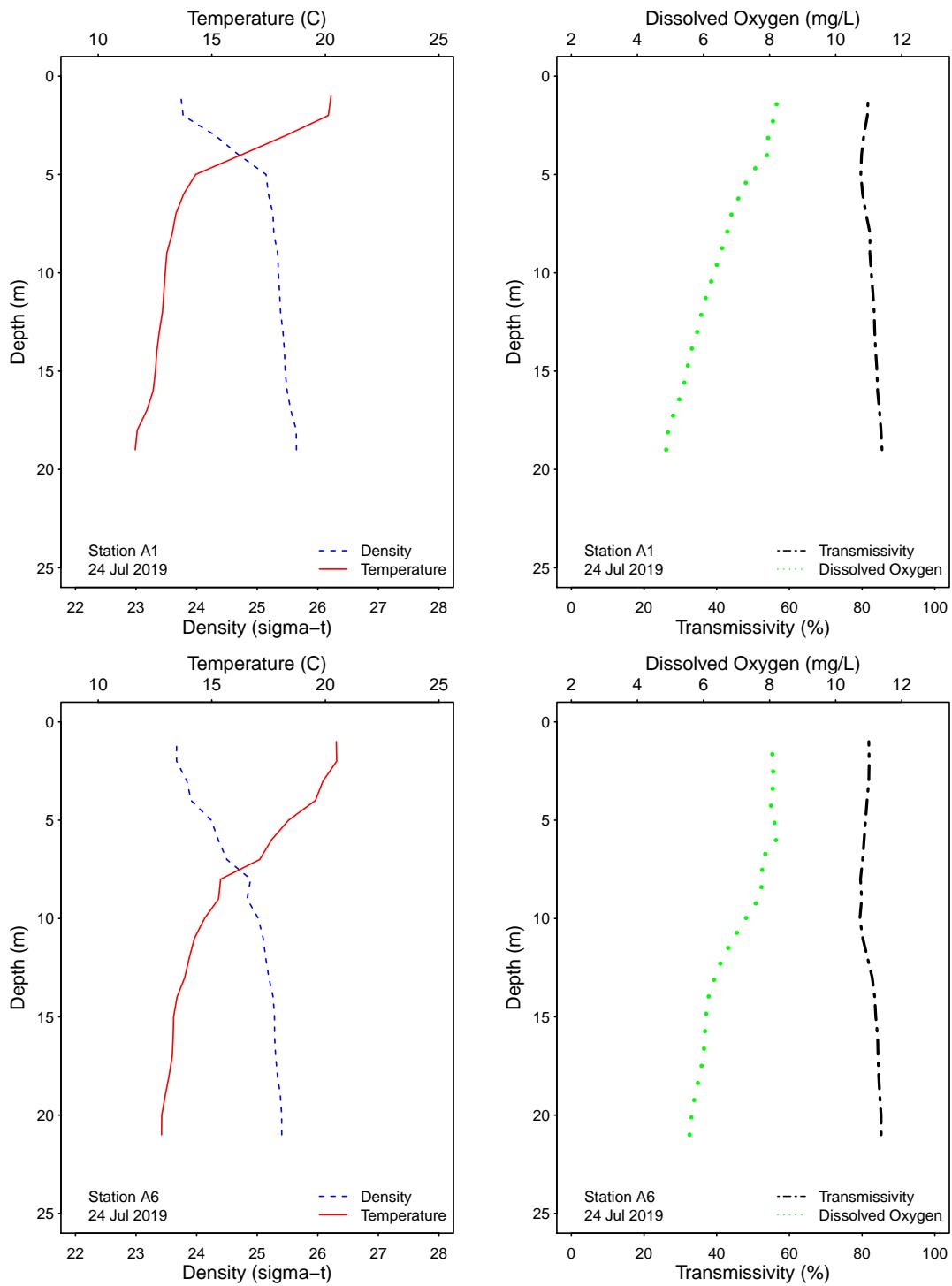


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

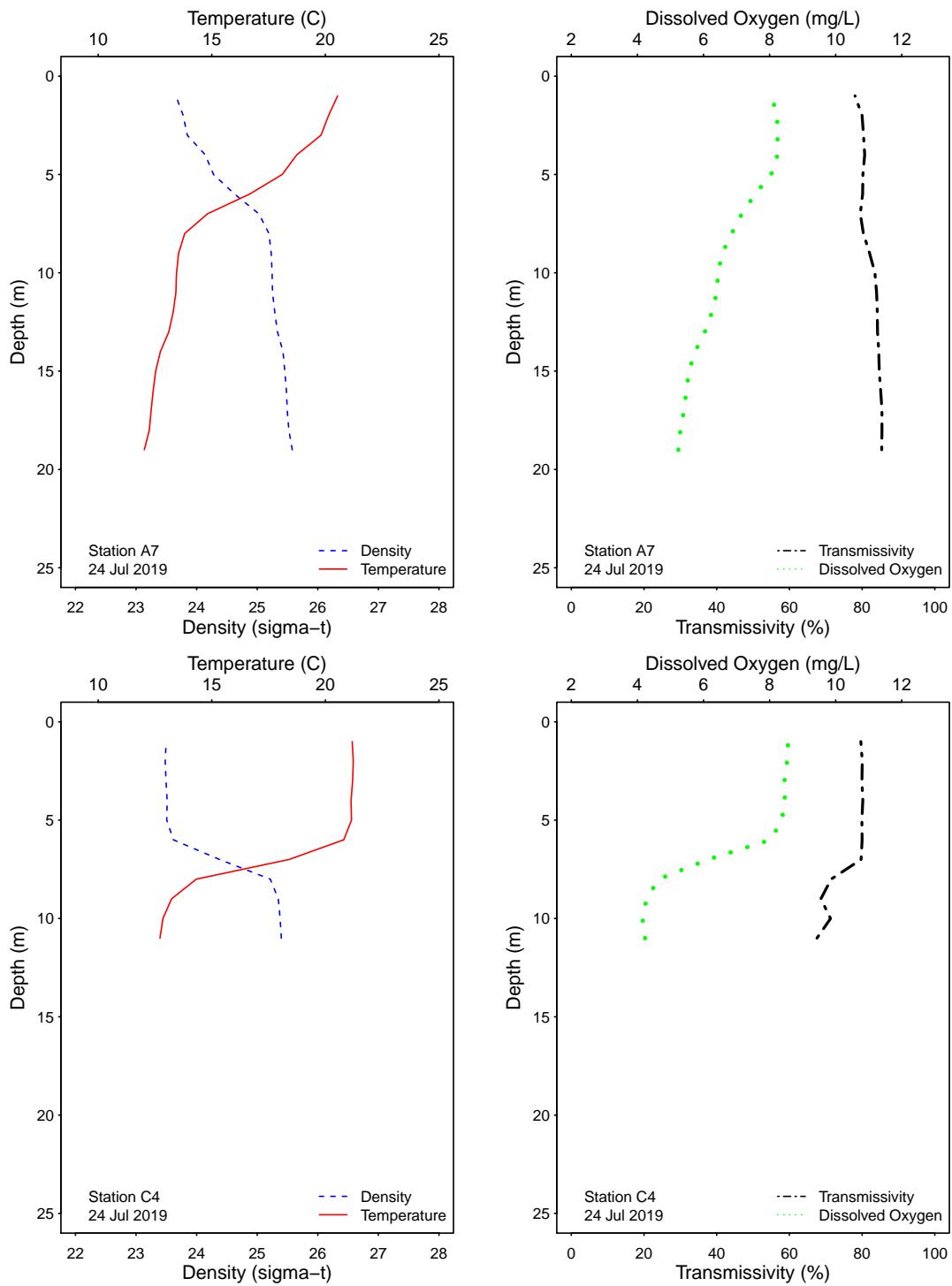


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

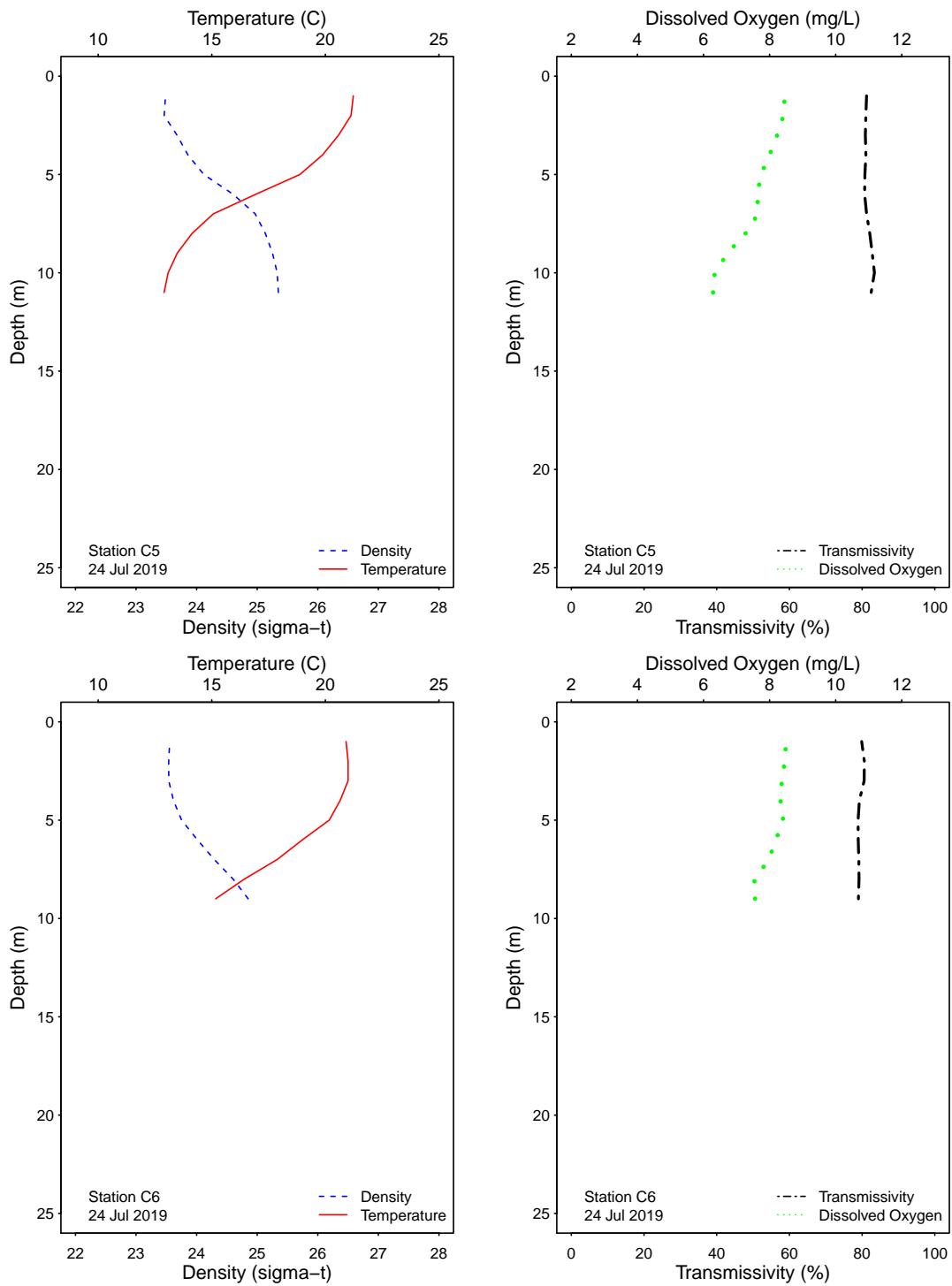


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

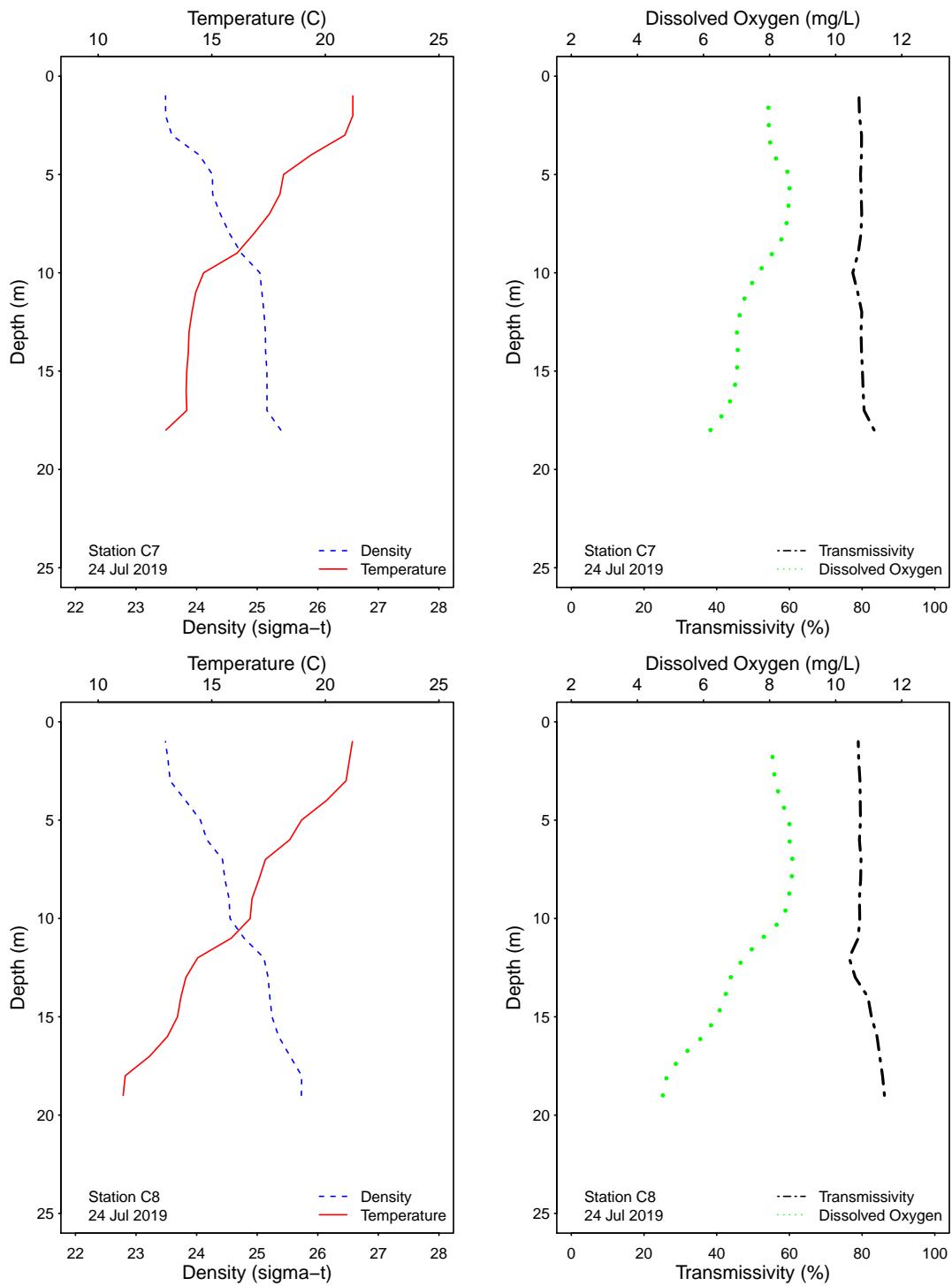


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

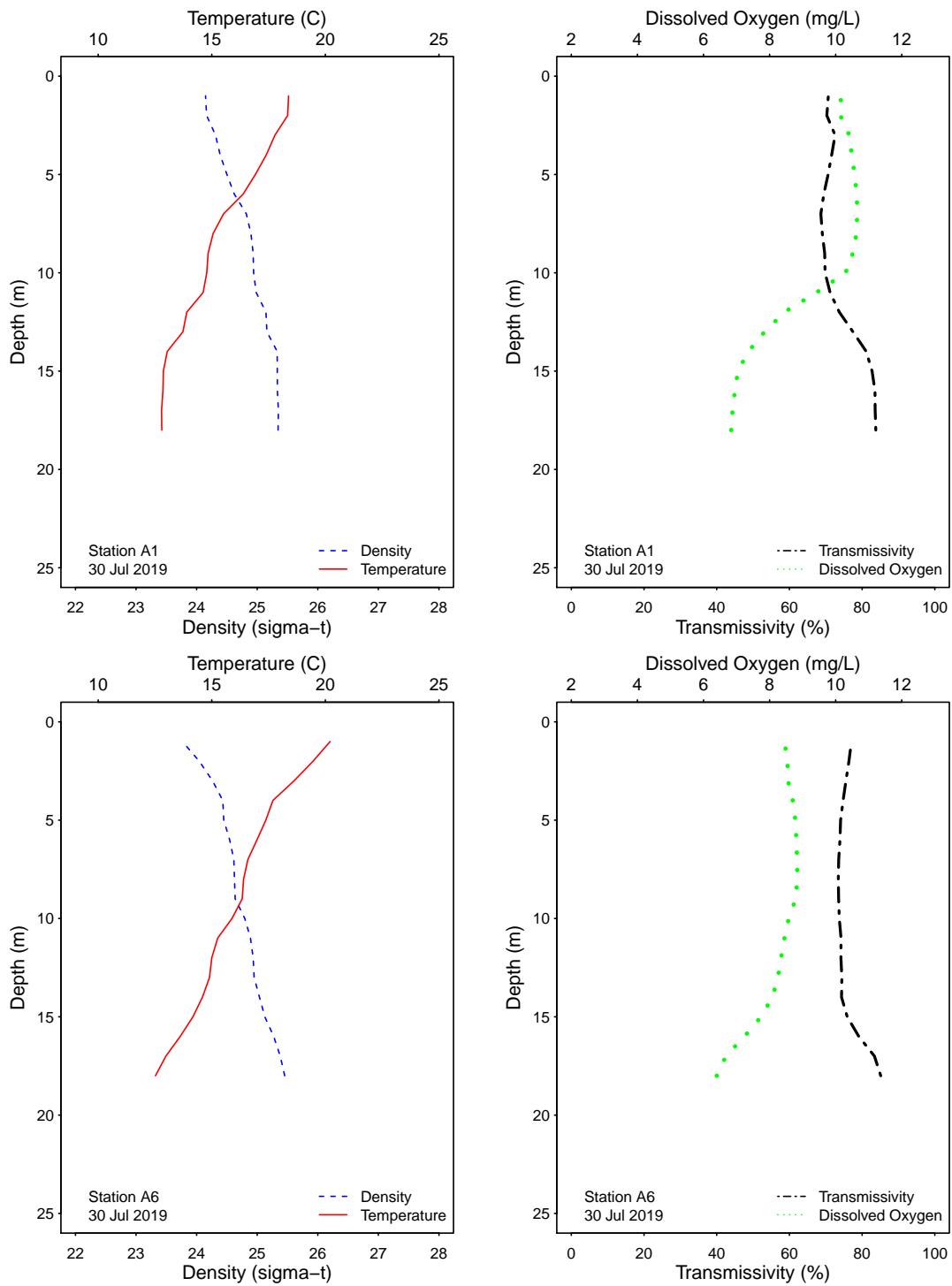


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

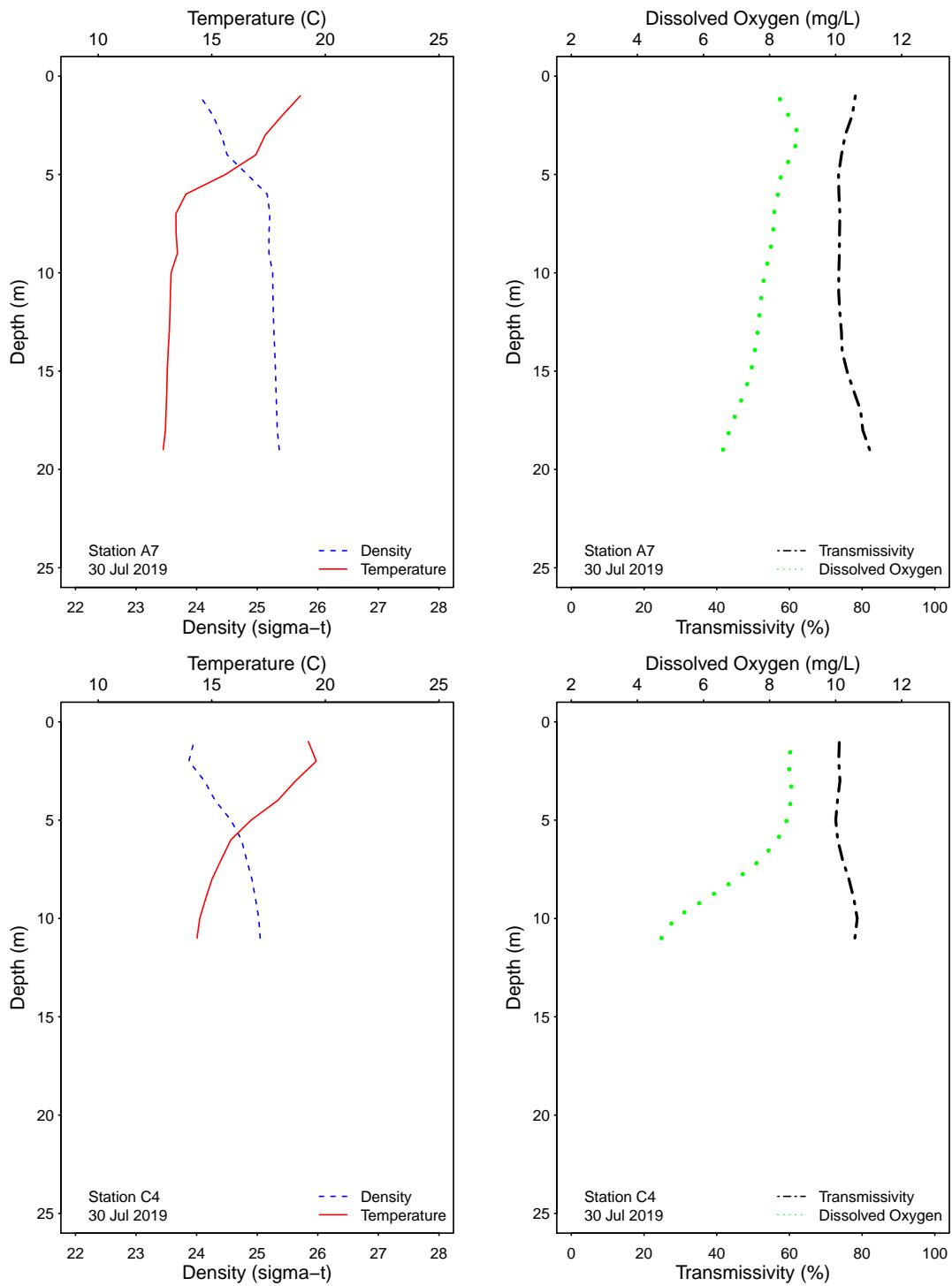


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

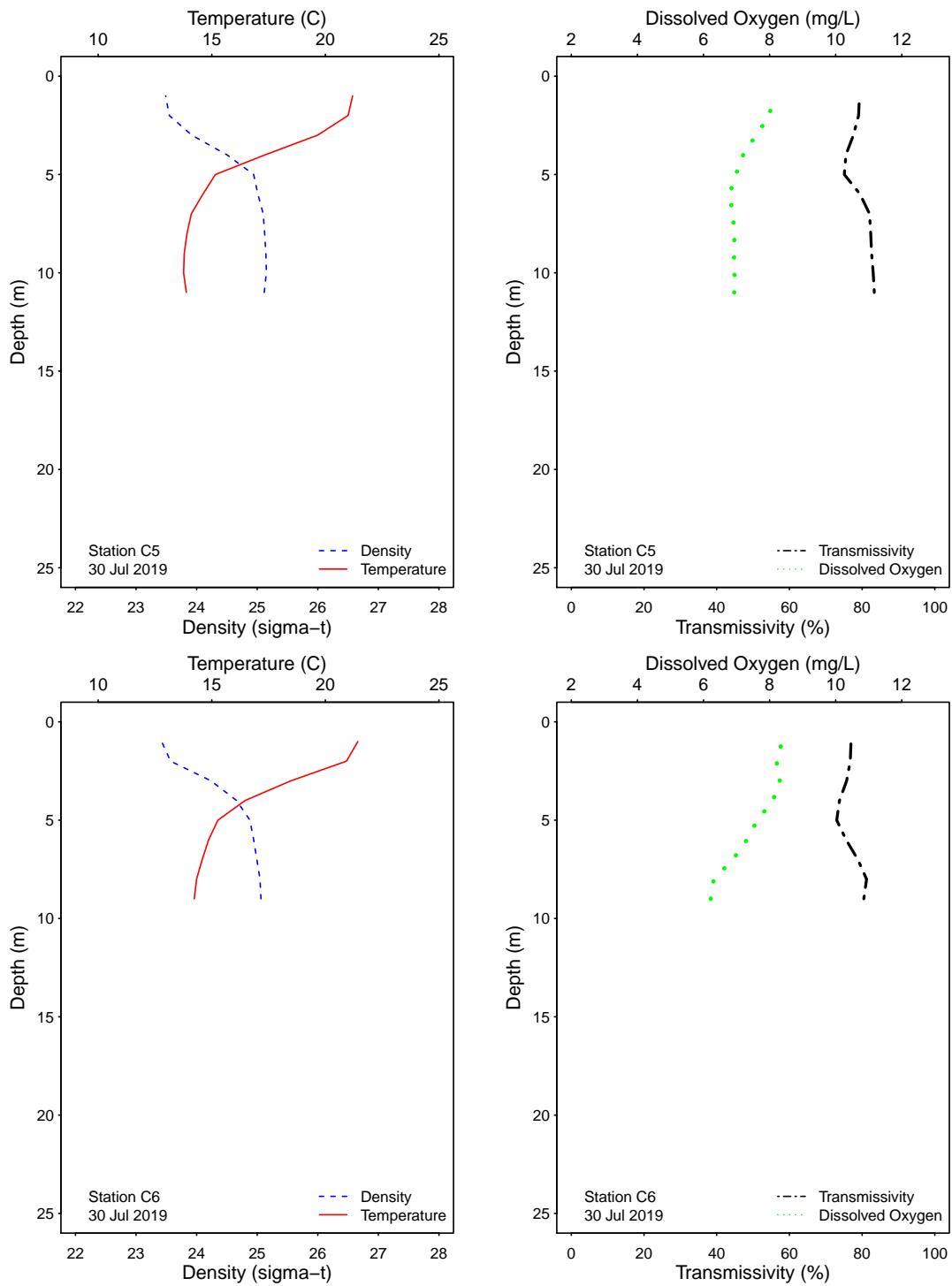


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

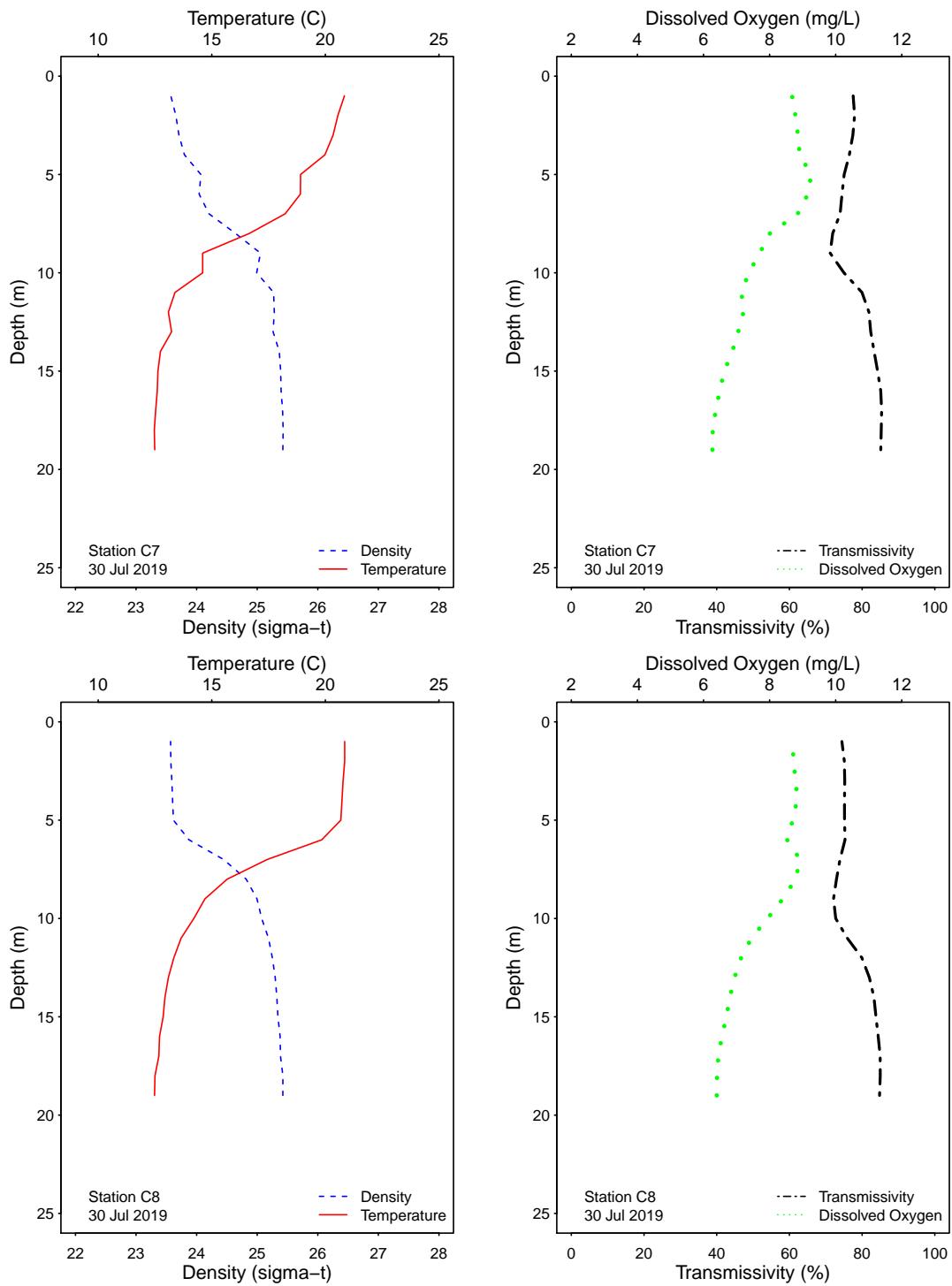


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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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.

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enter
A7	01 Jul 2019	18	AR	LAB DUPLICATE	80e	18e	<2
A7	08 Jul 2019	18	BS	LAB DUPLICATE	<2	<2	<2
A7	15 Jul 2019	18	BS	LAB DUPLICATE	12e	<2	<2
A7	24 Jul 2019	18	AE	LAB DUPLICATE	34e	4e	2e
A7	30 Jul 2019	18	AR	LAB DUPLICATE	<2	<2	<2
C7	01 Jul 2019	18	AR	LAB DUPLICATE	2e	<2	<2
C7	08 Jul 2019	18	AR	LAB DUPLICATE	<2	<2	<2
C7	15 Jul 2019	18	AE	LAB DUPLICATE	6e	<2	<2
C7	24 Jul 2019	18	AE	LAB DUPLICATE	<20	<2	<2
C7	30 Jul 2019	18	AR	LAB DUPLICATE	<2	2e	<2
C8	01 Jul 2019	12	AR	LAB DUPLICATE	6e	<2	<2
C8	08 Jul 2019	12	AE	LAB DUPLICATE	<2	<2	<2
C8	15 Jul 2019	12	AE	LAB DUPLICATE	<20	<2	<2
C8	24 Jul 2019	12	JF	LAB DUPLICATE	<2	<2	<2
C8	30 Jul 2019	12	AR	LAB DUPLICATE	<2	<2	<2
D12	01 Jul 2019		AE	FIELD DUPLICATE	<200	<2	2e
D12	01 Jul 2019		AE	LAB DUPLICATE	<200	4e	<2
D12	10 Jul 2019		AE	FIELD DUPLICATE	2e	<2	<2
D12	10 Jul 2019		BS	LAB DUPLICATE	<20	<2	<2
D12	17 Jul 2019		AR	FIELD DUPLICATE	<20	<2	<2
D12	17 Jul 2019		JF	LAB DUPLICATE	<20	<2	<2
D12	24 Jul 2019		AE	FIELD DUPLICATE	<200	36e	28e
D12	24 Jul 2019		AE	LAB DUPLICATE	<200	52	30e
D12	31 Jul 2019		JT	FIELD DUPLICATE	<200	8e	2e
D12	31 Jul 2019		JT	LAB DUPLICATE	<200	<2	<2

ns = not sampled

ND = no data

